MS710, MS711, MS810, MS811, MS812, MS817n, M5155, M5163, and M5170

4063-2xx, -4xx, -63x, -83x

Service Manual

- **Start diagnostics**

- **Maintenance**

- **Safety and notices**

- **Trademarks**

- **Index**

Product information

Product name:
Lexmark MS710, MS711, MS810, MS811, MS812, MS817, M5155, M5163, and M5170

Machine type:
4063

Model(s):
2xx, 4xx, 63x, 83x

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Table of contents

Table of contents

Table of contents

Table of contents

Table of contents

Table of contents

Table of contents

Table of contents

Table of contents

Table of contents

Table of contents

Table of contents

Notices and safety information

Laser notices

Laser notice

The printer is certified in the U.S. to conform to the requirements of DHHS 21 CFR, Chapter I, Subchapter J for Class I (1) laser products, and elsewhere is certified as a Class I laser product conforming to the requirements of IEC 60825-1.

Class I laser products are not considered to be hazardous. The printer contains internally a Class IIIb (3b) laser that is nominally a 10 milliwatt gallium arsenide laser operating in the wavelength of 787-800 nanometers. The laser system and printer are designed so there is never any human access to laser radiation above a Class I level during normal operation, user maintenance, or prescribed service condition.

Laser-Hinweis

Der Drucker wurde in den USA zertifiziert und entspricht den DHHS-Vorschriften 21 CFR, Kapitel I, Unterkapitel J für Laserprodukte der Klasse I (1); andernorts ist er als Laserprodukt der Klasse I zertifiziert, das den IEC 60825-1-Anforderungen entspricht.

Laserprodukte der Klasse I werden nicht als gefährlich eingestuft. Der Drucker enthält im Inneren einen Laser der Klasse IIIb (3b), und zwar einen 10-Milliwatt-Gallium-Arsenid-Laser, der im Wellenlängenbereich von 787 bis 800 Nanometern arbeitet. Das Lasersystem und der Drucker sind so konstruiert, dass unter normalen Betriebsbedingungen, bei der Wartung durch den Benutzer oder bei den vorgeschriebenen Wartungsbedingungen Menschen keiner Laserstrahlung ausgesetzt sind, die die Werte für Klasse I überschreitet.

Avis relatif à l'utilisation du laser

L'imprimante est certifiée conforme aux exigences de la réglementation des Etats-Unis relative aux produits laser (DHHS 21 CFR, Chapter I, Subchapter J for Class I (1)). Pour les autres pays, elle est certifiée conforme aux exigences des normes IEC 60825-1 relatives aux produits laser de classe I.

Les produits laser de Classe I ne sont pas considérés comme dangereux. L'imprimante contient un laser de classe IIIb (3b), laser arséniure de gallium 10 milliwatts opérant sur une longueur d'onde de l'ordre de 787 à 800 nanomètres. Le système laser ainsi que l'imprimante ont été conçus de manière à ce que personne ne soit exposé à des rayonnements laser dépassant le niveau de classe I dans le cadre d'un fonctionnement normal, de l'entretien par l'utilisateur ou de la maintenance.

Avvertenze sui prodotti laser

La stampante è certificata negli Stati Uniti come stampante conforme ai requisiti DHHS 21 CFR, Capitolo I, Sottocapitolo J per i prodotti laser di Classe I (1), mentre in altri paesi è certificata come prodotto laser di Classe I conforme ai requisiti IEC 60825-1.

I prodotti laser di Classe I non sono considerati pericolosi. La stampante contiene un laser di Classe IIIb (3b), che è nominalmente un laser ad arseniuro di gallio a 10milliwatt funzionante a una lunghezza d'onda di 787-800 nanometri. Il sistema laser e la stampante sono stati progettati in modo da impedire l'esposizione a radiazioni laser superiori al livello previsto dalla Classe I durante le normali operazioni di stampa, manutenzione o assistenza.

Aviso de láser

Esta impresora se ha certificado en EE. UU. de conformidad con los requisitos de DHHS 21 CFR, capítulo I, subcapítulo J, para los productos láser de Clase I (1), y en otros países está certificada como un producto láser de Clase I de acuerdo con los requisitos de IEC 60825-1.

Los productos láser de Clase I no se consideran peligrosos. La impresora contiene un láser interno de Clase IIIb (3b) que nominalmente es un láser de arseniuro de galio de 10 milivatios que funciona en una longitud de onda de 787-800 nanómetros. El sistema láser y la impresora se han diseñado para que ningún individuo acceda nunca a las radiaciones láser por encima del nivel de Clase I durante su uso normal, ni en tareas de mantenimiento o intervenciones de servicio técnico prescritas.

Aviso sobre laser

A impressora foi certificada nos EUA por estar em conformidade com os requisitos do DHHS 21 CFR, capítulo I, subcapítulo J, para produtos a laser de Classe I (1) e, nos demais países, foi certificada como produto a laser de Classe I em conformidade com os requisitos da IEC 60825-1.

Os produtos a laser de Classe I não são considerados perigosos. A impressora contém, internamente, um laser de Classe IIIb (3b) que é um laser de arsenieto de gálio de 10 miliwatts operando no comprimento de onda de 787-800 nanômetros. O sistema do laser e a impressora foram projetados para que jamais haja acesso humano à radiação do laser acima do nível da Classe I durante a operação normal ou a manutenção pelo usuário ou sob as condições de manutenção prescritas.

Laserinformatie

Deze printer is in de Verenigde Staten gecertificeerd als een product dat voldoet aan de vereisten van DHHS 21 CFR, hoofdstuk 1, paragraaf J voor laserproducten van klasse I (1). Elders is de printer gecertificeerd als een laserproduct van klasse I dat voldoet aan de vereisten van IEC 60825-1.

Laserproducten van klasse I worden geacht geen gevaar op te leveren. De printer bevat intern een laser van klasse IIIb (3b), een galliumarsenide laser met een nominaal vermogen van 10 milliwatt en een golflengtebereik van 787-800 nanometer. Het lasersysteem en de printer zijn zodanig ontworpen dat gebruikers nooit blootstaan aan laserstraling die hoger is dan het toegestane niveau voor klasse I-apparaten, tijdens normaal gebruik, onderhoudswerkzaamheden door de gebruiker of voorgeschreven servicewerkzaamheden.

Lasererklæring

Denne printer er certificeret i USA i henhold til kravene i DHHS 21 CFR, afsnit I, underafsnit J, for Klasse I-laserprodukter (1) og certificeret andetsteds som et Klasse I-laserprodukt i henhold til kravene i IEC 60825-1.

Klasse I-laserprodukter anses ikke for at være farlige. Printeren indeholder internt en klasse IIIb (3b)-laser, der nominelt er en 10 milliwatt galliumarsenid-laser, som fungerer i bølgelængdeområdet 787-800 nanometer. Lasersystemet og printeren er udviklet på en sådan måde, at der ikke er en direkte laserstråling, der overskrider Klasse I-niveauet under normal brug, brugers vedligeholdelse eller de foreskrevne servicebetingelser.

Laserilmoitus

Tämä tulostin on sertifioitu Yhdysvalloissa DHHS 21 CFR, Chapter I, Subchapter J -standardin mukaiseksi luokan I (1) -lasertuotteeksi ja muualla IEC 60825-1 -standardin mukaiseksi luokan I lasertuotteeksi.

Luokan I lasertuotteita ei pidetä haitallisina. Tulostimen sisällä on luokan IIIb (3b) laser, joka on nimellisteholtaan 10 mW:n galliumarsenidilaser ja toimii 787–800 nanometrin aallonpituuksilla. Laserjärjestelmä ja tulostin ovat rakenteeltaan sellaisia, että käyttäjä ei joudu alttiiksi luokkaa 1 suuremmalle säteilylle normaalin käytön, ylläpidon tai huollon aikana.

Lasermeddelande

Skrivaren är certifierad i USA enligt kraven i DHHS 21 CFR, avsnitt I, underavsnitt J för laserprodukter av klass I (1) och i andra länder är den certifierad som en laserprodukt av klass I som uppfyller kraven i IEC 60825-1.

Laserprodukter av klass I anses inte vara skadliga. Skrivaren innehåller en klass IIIb (3b)-laser, vilket är en 10 mW galliumarseniklaser som arbetar inom en våglängd på 787–800 nm. Lasersystemet och skrivaren är utformade så att människor aldrig utsätts för laserstrålning över klass I-nivå under normala förhållanden vid användning, underhåll eller service.

Lasermerknad

Skriveren er sertifisert i USA for samsvar med kravene i DHHS 21 CFR, kapittel I, underkapittel J for laserprodukter av klasse I (1), og er andre steder sertifisert som et laserprodukt av klasse I som samsvarer med kravene i IEC 60825-1.

Laserprodukter av klasse I anses ikke som helseskadelige. Skriveren inneholder en intern laser av klasse IIIb (3b) som nominelt er en 10 milliwatt galliumarsenid-laser, og som opererer i bølgelengder på 787-800 nanometer. Lasersystemet og skriveren er utformet slik at mennesker ikke utsettes for laserstråling utover nivået i klasse I under normal drift, vedlikehold eller foreskrevet service.

Avís sobre el làser

Als EUA, la impressora està certificada de conformitat amb els requisits del capítol I, apartat J del CFR 21 del Departament de Salut i Serveis Humans per a productes làser de classe I (1) i a la resta de països està certificada com a producte làser de classe I d'acord amb els requisits de la norma IEC 60825-1.

Els productes làser de classe I no es consideren perillosos. A l'interior de la impressora hi ha un làser de classe IIIb (3b) que nominalment es un arsenur de galió de 10 mil·liwatts que funciona a una longitud d'ona de 787-800 nanòmetres. El sistema làser y la impressora s'han dissenyat amb l'objectiu d'impedir l'accés humà de la radiació làser superior al nivell de classe I durant un funcionament normal, el manteniment per part de l'usuari o les condicions de servei prescrites.

レーザーに関する通知

本機は、米国においてクラス I （1） レーザー製品に対する DHHS 21 CFR、Chapter I、Subchapter J の要件に準拠し、その他の国では IEC 60825-1 の要件に準拠するクラス I レーザー製品として認可されています。

クラス I レーザー製品は、危険性がないとみなされています。 本機には、クラス IIIb（3b） レーザーが内蔵されています。これは、787 〜 800 ナノメートルの波長で動作する定格 7 ミリワットのガリウムヒ素レーザーです。 レーザーシステムとプリンタは、通常の操作、ユーザーによるメンテナンス、または所定のサービス条件の下で、ユーザーがクラス I レベルを超えるレーザー放射に絶対にさらされないように設計されています。

레이저 관련 공지

이 프린터는 미국에서 DHHS 21 CFR, Chapter I, Subchapter J의 요구 사항을 준수하는 클래스 I(1) 레이저 제품으로 승인되었으며 이외 지역에서 IEC 60825-1의 요구 사항을 준수하는 클래스 I 레이저 제품으로 승인되었습니다.

Class I 레이저 제품은 위험한 제품으로 간주되지 않습니다. 프린터에는 655-675 나노미터의 파장 영역에서 작동하는 공칭 7밀리와트 갈륨 비소 레이저인 클래스 IIIb(3b) 레이저가 내부에 포함되어 있습니다. 레이저 시스템과 프린터는 정상적인 작동, 사용자 유지 관리 또는 사전 설명된 서비스 조건에는 사람에게 클래스 I 수준 이상의 레이저 방사가 노출되지 않도록 설계되었습니다.

激光注意事项

本打印机在美国认证合乎 DHHS 21 CFR Chapter I，Subchapter J 对分类 I（1）激光产品的标准，而在其他地区则被认证是合乎 IEC 60825-1 的分类 I 激光产品。

一般认为分类 I 激光产品不具有危险性。本打印机内部含有分类 IIIb（3b）的激光，在操作过程中会产生额定 7 毫瓦的砷化镓激光，其波长范围在 787-800nm 之间。本激光系统及打印机的设计，在一般操作、使用者维护或规定内的维修情况下，不会使人体接触分类 I 以上等级的辐射。

雷射聲明

本印表機係經過美國核可，符合 DHHS 21 CFR，Chapter I，Subchapter J 規定的 I (1) 級雷射產品激光注意事項；在美國以外的地區，為符合 IEC 60825-1 規定的 I 級雷射產品。

根據 I 級雷射產品的規定，這類產品不會對人體造成傷害。本機所採用之 IIIb (3b) 級雷射只會產生 7 百萬分之一瓦特 (milliwatt)、波長 787 至 800 億分之一米 (nanometer) 的鎵砷放射線 (gallium arsenide laser)。使用者只要以正確的方法操作及維護保養，並依照先前所述之維修方式進行修護，此印表機與其雷射系統絕不會產生 I 級以上的放射線，而對人體造成傷害。

Safety information

Safety information

- The safety of this product is based on testing and approvals of the original design and specific components. The manufacturer is not responsible for safety in the event of use of unauthorized replacement parts.

- The maintenance information for this product has been prepared for use by a professional service person and is not intended to be used by others.

- There may be an increased risk of electric shock and personal injury during disassembly and servicing of this product. Professional service personnel should understand this and take necessary precautions.

CAUTION—POTENTIAL INJURY

The lithium battery in this product is not intended to be replaced. There is a danger of explosion if a lithium battery is incorrectly replaced. Do not recharge, disassemble, or incinerate a lithium battery. Discard used lithium batteries according to the manufacturer's instructions and local regulations.

Consignes de sécurité

- La sécurité de ce produit repose sur des tests et des agréations portant sur sa conception d'origine et sur des composants particuliers. Le fabricant n'assume aucune responsabilité concernant la sécurité en cas d'utilisation de pièces de rechange non agréées.

- Les consignes d'entretien et de réparation de ce produit s'adressent uniquement à un personnel de maintenance qualifié.

- Le démontage et l'entretien de ce produit pouvant présenter certains risques électriques, le personnel d'entretien qualifié devra prendre toutes les précautions nécessaires.

> **AVERTISSEMENT—RISQUE DE BLESSURE**
>
> La batterie lithium de ce produit n'est pas destinée à être remplacée. Il existe un risque d'explosion si une batterie lithium est placée de façon incorrecte. Ne rechargez pas, ne démontez pas et n'incinérez pas une batterie lithium. Mettez les batteries lithium usagées au rebut selon les instructions du fabricant et les réglementations locales.

Norme di sicurezza

- La sicurezza del prodotto si basa sui test e sull'approvazione del progetto originale e dei componenti specifici. Il produttore non è responsabile per la sicurezza in caso di sostituzione non autorizzata delle parti.
- Le informazioni riguardanti la manutenzione di questo prodotto sono indirizzate soltanto al personale di assistenza autorizzato.
- Durante lo smontaggio e la manutenzione di questo prodotto, il rischio di subire scosse elettriche e danni alla persona è più elevato. Il personale di assistenza autorizzato deve, quindi, adottare le precauzioni necessarie.

> **ATTENZIONE — PERICOLO DI LESIONI**
>
> La batteria al litio presente del prodotto non deve essere sostituita. In caso di sostituzione errata della batteria al litio, potrebbe verificarsi un'esplosione. Non ricaricare, smontare o bruciare batterie al litio. Smaltire le batterie al litio usate seguendo le istruzioni del produttore e le norme locali.

Sicherheitshinweise

- Die Sicherheit dieses Produkts basiert auf Tests und Zulassungen des ursprünglichen Modells und bestimmter Bauteile. Bei Verwendung nicht genehmigter Ersatzteile wird vom Hersteller keine Verantwortung oder Haftung für die Sicherheit übernommen.
- Die Wartungsinformationen für dieses Produkt sind ausschließlich für die Verwendung durch einen Wartungsfachmann bestimmt.
- Während des Auseinandernehmens und der Wartung des Geräts besteht ein zusätzliches Risiko eines elektrischen Schlags und körperlicher Verletzung. Das zuständige Fachpersonal sollte entsprechende Vorsichtsmaßnahmen treffen.

> **VORSICHT - VERLETZUNGSGEFAHR**
>
> Die Lithiumbatterie in diesem Produkt darf nicht ausgetauscht werden. Wird eine Lithiumbatterie nicht ordnungsgemäß ausgetauscht, besteht Explosionsgefahr. Lithiumbatterien dürfen auf keinen Fall wieder aufgeladen, auseinander genommen oder verbrannt werden. Befolgen Sie zum Entsorgen verbrauchter Lithiumbatterien die Anweisungen des Herstellers und die örtlichen Bestimmungen.

Pautas de Seguridad

- La seguridad de este producto se basa en pruebas y aprobaciones del diseño original y componentes específicos. El fabricante no es responsable de la seguridad en caso de uso de piezas de repuesto no autorizadas.
- La información sobre el mantenimiento de este producto está dirigida exclusivamente al personal cualificado de mantenimiento.
- Existe mayor riesgo de descarga eléctrica y de daños personales durante el desmontaje y la reparación de la máquina. El personal cualificado debe ser consciente de este peligro y tomar las precauciones necesarias.

PRECAUCIÓN: POSIBLES DAÑOS PERSONALES

La batería de litio de este producto no debe reemplazarse. Existe riesgo de explosión si se sustituye incorrectamente una batería de litio. No recargue, desmonte ni incinere una batería de litio. Deseche las baterías de litio según las instrucciones del fabricante y las normativas locales.

Informações de Segurança

- A segurança deste produto baseia-se em testes e aprovações do modelo original e de componentes específicos. O fabricante não é responsável pela segunrança, no caso de uso de peças de substituição não autorizadas.

- As informações de segurança relativas a este produto destinam-se a profissionais destes serviços e não devem ser utilizadas por outras pessoas.

- Risco de choques eléctricos e ferimentos graves durante a desmontagem e manutenção deste produto. Os profissionais destes serviços devem estar avisados deste facto e tomar os cuidados necessários.

ATENÇÃO — RISCO DE FERIMENTO

A bateria de lítio neste produto não deve ser substituída. Existe o risco de explosão se uma bateria de lítio for substituída incorretamente. Não recarregue, desmonte ou incinere uma bateria de lítio. Descarte as baterias de lítio usadas de acordo com as instruções do fabricante e regulamentos locais.

Informació de Seguretat

- La seguretat d'aquest producte es basa en l'avaluació i aprovació del disseny original i els components específics. El fabricant no es fa responsable de les qüestions de seguretat si s'utilitzen peces de recanvi no autoritzades.

- La informació pel manteniment d'aquest producte està orientada exclusivament a professionals i no està destinada a ningú que no ho sigui.

- El risc de xoc elèctric i de danys personals pot augmentar durant el procés de desmuntatge i de servei d'aquest producte. El personal professional ha d'estar-ne assabentat i prendre les mesures convenients.

ATENCIÓ

La bateria de liti d'aquest producte no ha estat dissenyada perquè es substitueixi. Hi ha perill d'explosió si no es substitueix correctament la bateria de liti. No recarregueu, desmunteu o incinereu una bateria de liti. Desfeu-vos de les bateries de liti usades d'acord amb les instruccions del fabricant i les regulacions locals.

안전 사항

- 본 제품은 원래 설계및특정 구성에 대한 테스트 결과로 안정 성이 입증된 것입니다. 따라서 무허가 교체부 품을 사용하는 경 우 에는 제조업체에서 안전에 대한 책임을 지지 않습니다.

- 본 제품에 관한 유지 보수 설명 서는 전문 서비스 기술자 용으로 작성된 것이므로, 비 전문가는 사용할 수 없 습니다.

- 본 제품을 해체하거나 정비할 경우, 전 기전 인 충 경 을 받거나 상 처를 입을 위험이 커집니다. 전문 서비스 기술자는 이 사실을 숙지하고, 필요한 예방조치를 취하도록 하십시오.

주의—부상 위험

이 제품에 들어 있는 리튬 배터리는 교체할 수 없습니다. 리튬 배터리를 잘못 교체하면 폭발할 위험 이 있습니다. 리튬 배터리를 재충전하거나, 분해하거나, 태우지 마십시오. 제조업체의 지침과 지역 규정에 따라 다 쓴 리튬 배터리를 폐기하십시오.

安全信息

- 本产品的安全性以原来**设计**和特定**产**品的**测试结**果和**认证为**基础。万一使用来**经许**可的替**换**部件，制造商不**对**安全性**负责**。

- 本产品的**维护**信息**仅**供**专业**服**务**人**员**使用，并不打算**证**其他人使用。

- 本产品在拆卸、**维修时**，遭受**电击**或人员受**伤**的危**险**性会增高，**专业**服**务**人员**对这**点必**须**有所了触，并采取必要的**预**防措施。

> ⚠️ 当心一可能的**伤害**：
> 本产品中的**锂电**池不可更**换**。如果不正确更**换锂电**池，可能会有爆炸危**险**。不要再 充**电**、拆解或焚**烧锂电**池。丢弃旧的**锂电**池**时应**按照制造商的指**导**及当地法**规进**行**处**理。

Service conventions and change history

This manual contains maintenance procedures for service personnel.

It is divided into the following chapters:

- **General information** contains a general description of the printer. Special tools and test equipment are discussed.
- **Diagnostic information** contains diagnostic aids you can use to isolate failing FRUs. These diagnostic aids include error code tables, symptom tables, and service checks.
- **Service menus** contains descriptions of the printer interface, the user and service menus.
- **Repair information** provides instructions for making printer adjustments and removing and installing FRUs.
- **Component locations** uses illustrations to identify the basic printer parts.
- **Maintenance** contains the lubrication specifications and recommendations to prevent problems.
- **Parts catalog** contains illustrations and part numbers for individual FRUs.
- **Appendix A: Printer specifications** contains detailed specifications about the product.
- **Appendix B: Options and features** contains the available options and other features of the product.
- **Appendix C: Theory of operation** contains the theory of operation.
- **Appendix D: Acronyms** contains the list of acronyms in the manual and their meanings.

Service manual conventions

Note: A *note* provides additional information.

Warning—Potential Damage: A *warning* identifies something that may damage the product hardware or software.

This service manual uses several different types of caution statements:

CAUTION—POTENTIAL INJURY: A *caution* identifies something that may cause harm to the service technician.

CAUTION—SHOCK HAZARD: This type of caution indicates a danger from hazardous voltage in the area of the product where you are working. Unplug the product before you start working, or use caution if the product must receive power to perform the task.

CAUTION—HOT SURFACE: This type of caution indicates a hot surface.

CAUTION—TIPPING HAZARD: This type of caution indicates a tipping hazard.

CAUTION—PINCH HAZARD: This type of caution indicates a risk of being caught between moving parts.

Change history

May 31, 2017

- Updated 40X4827 to 40X9652 in the topic "Miscellaneous" in the "Parts catalog" chapter.

May 23, 2017

- Added "MS817n" in the cover.
- Added "MS817n" in the introduction to the "General information" chapter.
- Added 41X2038 to the revised topic "Control panel" in the "Parts catalog" chapter.

April 12, 2017

- Added "Tray Linking" in the Configuration menu group.
- Updated the electronics catalog to change the description for 40X7685 to "Imaging unit contact block".
- Overhauled the entire **"Fixing print quality issues" on page 63**, which includes the replacement of the existing print quality icons with actual print defect outputs. Contents from the Service Manuals and KB articles are merged to come up with these new/updated checks.

March 23, 2017

- Added the staple, hole punch finisher rear cover to the topic "Staple, hole punch finisher option 1" in the chapter "Parts catalog."
- Added the louver to the topic "Covers" in the chapter "Parts catalog."
- Added items to the topic "Miscellaneous" in the chapter "Parts catalog."

February 9, 2017

- Updated the **"LVPS failure service check" on page 302**.

January 24, 2017

- Updated **"Fusers" on page 885**.

November 10, 2016

- Added PN 41X1721 in the Electronics assembly topic of the Parts catalog chapter.
- Added the HVPS contacts removal topic in the Repair information chapter.

September 30, 2016

- Created **"CTLS cable removal" on page 479**.

September 5, 2016

- Created this new base printer symptom check: **"Messy output stack service check" on page 348**.
- Under Diagnostic Information > Paper jams, moved as siblings of "Understanding jam messages and locations" all the paper jam removal topics.
- Created a new group (Other symptoms) where the following base printer symptom checks are contained:
  - Messy output stack service check
  - Network service check
  - Dead machine service check
  - Blank display, five beeps service check
- Updated **"Frame" on page 895** to add this new FRU: 41X0793 (fuser drive release link).

June 28, 2016

- Updated the "LES Applications" topic in the "Service menus" chapter.
- Changed 41X0955 with 41X0529 in the "Staple finisher option 1" topic and updated its graphic in the "Parts catalog" chapter.

June 20, 2016

- Changed 40X8594 to 41X0829 and 40X8597 to 41X0841 in the "Miscellaneous" topic in the "Parts catalog" chapter.

May 5, 2016

- New service check topic was added to address the 953.xx errors.

April 11, 2016

- Updated the Fuser cooling fan removal topic in the Repair information chapter.

March 28, 2016

- A 202.01 error code was removed from the 202 paper jams messages.
- A 203.01 error code was added to the 203 paper jams messages.
- User attendance messages topics in the Diagnostic information chapter were revised.
- Added the topic "Cleaning the printhead mirror and glass" in the "Cleaning the printer" group in the "Maintenance" chapter.
- Added the cleaning kit (P/N 41X1007) in the topic "Miscellaneous" in the "Parts catalog" chapter.

February 26, 2016

- Changed the part number for the optional 550-sheet tray insert from 40X7742 to 41X0976.
- Changed the description of a FRU item from "250-sheet tray" to "250-sheet tray insert".

February 18, 2016

- Added the topic "Enabling the security reset jumper" in "Appendix A: Printer specifications" chapter.

February 10, 2016

- Revised step 11, including art, in the duplex removal topic in the "Repair information" chapter.

January 28, 2016

- Replaced "sensor (pick)" to "sensor (trailing edge)" in all instances in the service manual.

January 12, 2016

- Changed part number of tray insert from 40X7742 to 41X0976.

December 14, 2015

- Updated **"[x]-page jam, remove paper, open stapler door. Leave paper in bin.[455–457]" on page 123** to include removal of the partial slab of staples before reinstalling the staple cartridge.
- Created **"Toner level contact removal" on page 491**.

November 16, 2015

- Updated the user attendance error code table and **"Toner dispense failure service check" on page 289**.
- Updated **"Miscellaneous" on page 955** to add 41X0548 (550-sheet tray rear guide lock block).
- Updated **"Sensor (duplex path) never- or late-arriving jam service check" on page 146**.
- Created **"False paper tray empty message service check" on page 353**.
- Updated all "Load [paper source]...." topics to add reference to this new service check, **"False paper tray empty message service check" on page 353**.
- Updated **"Sensor (input) never- or late-arriving jam service check" on page 129**.

October 29, 2015

- The paper tray assemblies were updated to correct the callouts for the pick sensor and pass-through sensor.
- Updated the option tray assemblies to add the media feeder sensors (media empty and pick roller position), and to make it consistent with the standard tray assembly.

September 11, 2015

- Created the Uneven print density service check topic.
- Added 40X9650.
- Changed the description for 40X7685.
- Added 41X0654.

August 19, 2015

- Updated **"Frame" on page 895** to separate the media size sensor from the left frame extension.
- Updated **"Staple finisher option 1" on page 931** and **"Mailbox option 1" on page 939** to replace 40X8739 with 41X0955.
- Updated **"Staple, hole punch finisher option 2" on page 947** to remove the stapler main motor.

July 13, 2015

- Updated **"Paper tray" on page 901** to change and rearrange the callout numbers and position of the interrupt sensors (media empty and pick roller position).

April 8, 2015

- A note was added to the Replacing fuser maintenance kits topic, to clarify purpose of the Roller kit.

March 10, 2015

- Replaced PN 40X7591 with PN 41X0782 in the 250-sheet tray option and 550-sheet tray option assemblies in the Parts catalog chapter.

February 6, 2015

- White streaks and voided areas check was added to the Diagnostic information.
- Imaging unit smart chip contact and toner cartridge smart chip contact removals were added to the Repair information.
- Cross-references were revised in the Electronics parts catalog.

January 23, 2015

- The action for resolving the 325.64 error code has been replaced.
- Steps were added to the Solid black pages topic under Diagnostic information.
- Step for checking blank pages was added to the 241.06 service check.

August 27, 2014

- Avoiding jams topic was added to the diagnostic information.
- Main drive motor control jam service check was revised to include checking of the imaging unit.
- Fuser drive motor control jam service check was revised to include checking of the paper source, firmware version, and power source.
- Model number information was added to the parts catalog control panel FRU descriptions.

August 13, 2014

- Blank display and noise (five beeps) symptoms were added. Blank display, five beeps service check topic was added to address the symptoms.
- New error codes were added (126.06, 126.24, and 201.22).
- LVPS service check was revised.

July 4, 2014

- The staple cartridge holder (40X7466) FRU was added to the Staple finisher option 2 and Staple, hole punch finisher 1 Parts catalog assemblies.

May 7, 2014

- A warning for turning off the printer prior to removal was added to the fuser removal topic.

March 3, 2014

- Added the Restoring solutions, licenses, and configuration settings topic under Removal precautions.
- Updated the Restoring the printer configuration after replacing the controller board topic.
- Changed the title from eSF backup to Backing up eSF solutions and settings, and updated the topic.
- Updated the Controller board removal topic.
- Editorial changes

January 17, 2014

- Restore factory defaults topics were added to the service menus.
- Updating the printer firmware topics were added to the repair information.
- Updated the User attendance messages (0–99.99) table.
- Toner add error service check topic was added to the diagnostic information.

January 6, 2014

- Parts catalog FRU (40X9754—Transfer guide static brush) was added.

November 26, 2013

- Updated the Toner add motor removal topic in the Repair information chapter.
- Updated the Miscellaneous topic in the Parts catalog chapter.

- Updated the description for the 200.05 paper jam error message.

October 23, 2013

- The following FRUs were included:
  - 40X7683—Internal duplex with cable
  - 40X7668—Duplex rear flap

August 23, 2013

- The list of sensors supported for the Base sensor test was updated.

August 15, 2013

- Topic for restoring the printer configuration after replacing the controller board was added.
- Additional procedure added for the installation note for the controller board removal topic.
- The following Option FRUs were included in the parts catalog:

Output expander option FRUs
  - 40X8256—Output expander diverter motor
  - 40X8721—Output expander option latch
  - 40X8714—Output expander main motor
  - 40X7592—Sensor (OE rear door interlock)
  - 40X8726—Output expander drive gear
  - 40X8722—Output expander diverter plunger assembly
  - 40X7592—Sensor (OE diverter plunger HP)
  - 40X8732—Output expander drive belt
  - 40X8718—Output expander belt tensioner
  - 40X8717—Output expander bin
  - 40X8729—Sensor (OE pass through)
  - 40X2000—Output expander diverter spring
  - 40X8713—Output expander diverter
  - 40X8715—Output expander sensor cover
  - 40X8712—Output expander bin full flag

High capacity output expander option FRUs
  - 40X8730—HCOE main motor
  - 40X8721—HCOE option latch
  - 40X8256—HCOE diverter motor
  - 40X8731—HCOE Tray pinion
  - 40X8733—HCOE Tray spring
  - 40X7592—Sensor (HCOE rear door interlock)
  - 40X8728—Sensor (HCOE tray HP)
  - 40X8726—HCOE main drive gear assembly
  - 40X8722—HCOE diverter plunger assembly
  - 40X7592—Sensor (HCOE diverter HP)

- 40X8733—HCOE Tray spring
- 40X8732—HCOE drive belt
- 40X8718—HCOE belt tensioner
- 40X8727—HCOE bin
- 40X8729—Sensor (HCOE pass through)
- 40X2000—HCOE top diverter spring
- 40X8713—HCOE top diverter
- 40X8715—HCOE sensor cover
- 40X8712—HCOE bin full flag

Staple finisher option FRUs

- 40X8740—Media pusher assembly
- 40X8721—Stapler option latch
- 40X8739—Stapler main motor
- 40X8256—Stapler diverter motor
- 40X8722—Stapler diverter plunger assembly
- 40X8744—Stapler tray link assembly
- 40X7592—Sensor (stapler diverter plunger HP)
- 40X7592—Sensor (paddle motor HP)
- 40X8741—Stapler drive gear assembly
- 40X7592—Sensor (stapler rear door interlock)
- 40X8742—Stapler tray spring
- 40X8745—Sensor (stapler ejector HP)
- 40X7592—Sensor (media pusher HP)
- 40X8745—Sensor (throat media present)
- 40X8218—Stapler output bin LED
- 40X8743—Tamper assembly
- 40X7592—Sensor (left tamper motor HP)
- 40X7592—Sensor (right tamper motor HP)
- 40X8738—Stapler ejector motor assembly
- 40X8134—Sensor (stapler pass through)
- 40X8214—Stapler rear door

Mailbox option FRUs

- 40X8739—Mailbox main motor
- 40X7592—Sensor (mailbox rear door interlock)
- 40X8721—Mailbox option latch
- 40X8726—Mailbox main drive gear
- 40X8722—Mailbox diverter plunger assembly
- 40X8196—Mailbox top cover
- 40X8720—Mailbox top bin cover with bail
- 40X8719—Sensor (mailbox pass through)
- 40X8725—Mailbox top diverter spring

Service conventions and change history

- 40X8723—Mailbox top diverter
- 40X8724—Mailbox middle diverter
- Parts catalog FRU (40X8693—Relocation kit (MX810)) was added.

July 9, 2013

- Added new information to the Fuser maintenance kits topic
- The following Option-related service checks were revised:
  - Finisher diverter jam service check
  - Finisher left tamper jam service check
  - Finisher right tamper jam service check
  - Finisher tray holder jam service check
  - Finisher ejector jam service check
  - Sensor (throat media present) jam service check
  - Finisher (HPU) diverter jam service check
  - Finisher (HPU) left tamper jam service check
  - Finisher (HPU) right tamper jam service check
  - Finisher (HPU) tray holder jam service check
  - Finisher (HPU) ejector jam service check
  - Finisher (HPU) main motor jam service check
  - Sensor (HPU finisher pass through) jam service check

June 27, 2013

- The following Option-related topics were added:

  Output option service checks
  - Mailbox main motor jam service check
  - Mailbox diverter jam service check
  - HCOE media entrance jam service check
  - HCOE main motor jam service check
  - Finisher main motor jam service check
  - Finisher (HPU) main motor jam service check
  - Finisher (HPU) ejector jam service check
  - Sensor (HPU finisher pass through) jam service check
  - Finisher (HPU) left tamper jam service check
  - Finisher (HPU) right tamper jam service check
  - Finisher (HPU) diverter jam service check
  - Finisher (HPU) paddle jam service check
  - Finisher (HPU) tray holder jam service check
  - Sensor (HPU throat media present) jam service check
  - Stapler carriage (HPU) jam service check
  - HPU feed motor jam service check
  - Sensor (HPU media align) jam service check

- Sensor (HPU trailing edge) jam service check
- Sensor (HPU leading edge) jam service check
- HPU motor jam service check
- HPU communication error jam service check
- Output expander main motor service check
- Sensor (OE pass through) jam service check
- Output expander media entrance jam service check
- Output expander diverter jam service check
- Mailbox undetected service check
- Stuck media on hole puncher service check
- Missing or misaligned hole punch service check
- Hole punch box undetected service check
- Finisher door (HPU) undetected service check
- Output expander rear door undetected service check
- Output expander undetected service check
- Output expander bin error service check
- HCOE bin error service check
- HCOE undetected service check
- HCOE rear door undetected service check

Output option removals
- HCOE bin full flag removal
- Output expander drive gear removal
- Staple, hole punch finisher option removal
- Stapler cartridge access door removal
- Hole punch box removal
- Staple, hole punch left cover removal
- Staple, hole punch right cover removal
- Sensor (cartridge door interlock) removal
- Stapler door close limit switch removal
- Stapler carriage assembly removal
- Sensor (throat media present) removal
- Staple, hole punch latch removal
- Stapler controller PCBA removal
- Stapler main motor removal
- Stapler paddle motor removal
- Sensor (paddle motor HP) removal
- Stapler diverter motor removal
- Stapler diverter plunger assembly removal
- Stapler drive gear assembly removal
- Sensor (bin full send) removal
- Sensor (bin full receive) removal

- Staple, hole punch lower interface cable removal
- Media pusher assembly removal
- Standard output bin LED removal
- Sensor (finisher bin media present) removal
- Staple, hole punch top cover removal
- Sensor (right tamper motor HP) removal
- Sensor (left tamper motor HP) removal
- Stapler tamper assembly removal
- Tamper motor (right) removal
- Tamper motor (left) removal
- Tamper drive belt removal
- Stapler output bin LED removal
- Staple, hole punch tray link tension spring removal
- Staple, hole punch tray link removal
- Sensor (hole punch box present) removal
- Sensor (HPU rear door interlock) removal

Staple, hole punch finisher parts catalog

- Staple, hole punch finisher option 1
- Staple, hole punch finisher option 2
- Staple, hole punch finisher option 3
- Staple, hole punch finisher option 4

- The following topics were removed:
  - Output expander failure service check
  - Output expander jam service check
- The following topics were revised:
  - 3xx error messages (300-399.99)
  - 4xx error messages (400-499.99)
  - Option tray symptoms
  - Sensor (mailbox pass through) jam service check
  - Mailbox diverter jam service check
  - HCOE diverter jam service check
  - Sensor (HCOE pass through) jam service check
  - Sensor (finisher pass through) jam service check
  - Finisher left tamper jam service check
  - Finisher right tamper jam service check
  - Finisher ejector jam service check
  - Finisher diverter jam service check
  - Finisher paddle jam service check
  - Finisher tray holder jam service check
  - Mailbox incorrect bin exit service check
  - Finisher door undetected service check

- Stapler carriage failure service check
- Finisher bin media present error service check
- Output options
- Added Bin insert (40X8855) to Parts catalog Assembly 1.

May 14, 2013
- Updated the Transfer roll removal procedure.
- The following Option-related topics were added:
  - Output expander diverter removal
  - Output expander bin full flag removal
  - HCOE bin full flag removal
  - HCOE top diverter spring removal
  - HCOE diverter plunger assembly removal

April 29, 2013
- Added the Security reset jumper topic to Appendix A.

April 17, 2013
- Changed Miscellaneous cooling fan service check to Fuser cooling fan service check.
- Added Fuser cooling fan removal procedure.
- Added part numbers 40X8803 and 40X8804 to Duplex parts catalog assembly.
- Updated Japan power cord part number.
- Deleted duplicate and inapplicable entries in Miscellaneous parts catalog assembly.
- The following Option-related topics were added:

  Output expander option removals
  - Output expander option latch removal
  - Output expander diverter motor removal
  - Output expander diverter plunger assembly removal
  - Output expander main motor removal
  - Sensor (OE rear door interlock) removal
  - Sensor (OE diverter plunger HP) removal
  - Output expander diverter spring removal
  - Output expander drive belt removal
  - Output expander belt tensioner removal
  - Output expander bin removal
  - Sensor (OE pass through) removal

  High capacity output expander option removals
  - HCOE latch removal
  - HCOE diverter motor removal
  - Sensor (HCOE tray HP) removal
  - HCOE tray spring removal

- HCOE tray pinion removal
- Sensor (HCOE rear door interlock) removal
- HCOE drive belt removal
- HCOE belt tensioner removal
- HCOE main drive gear assembly removal
- HCOE main motor removal
- Sensor (HCOE diverter HP) removal
- HCOE top diverter removal
- HCOE tray shaft removal
- HCOE tray removal
- Sensor (pass through) removal

Staple finisher option removals
- Sensor (throat media present) removal
- Stapler option latch removal
- Stapler tray spring removal
- Stapler tray link assembly removal
- Sensor (stapler rear door interlock) removal
- Sensor (paddle motor HP) removal
- Sensor (right tamper motor HP) removal
- Sensor (left tamper motor HP) removal
- Tamper assembly removal
- Stapler output bin LED removal
- Stapler main motor removal
- Stapler diverter motor removal
- Stapler diverter plunger assembly removal
- Stapler drive gear assembly removal
- Media pusher assembly removal
- Stapler feed roll removal
- Stapler chute assembly removal
- Sensor (stapler pass through) removal
- Stapler ejector motor assembly removal
- Sensor (stapler ejector HP) removal
- Sensor (media pusher HP) removal

Mailbox option removals
- Mailbox top bin cover with bail removal
- Mailbox option latch removal
- Sensor (mailbox rear door interlock) removal
- Sensor (mailbox diverter HP) removal
- Mailbox diverter plunger assembly removal
- Mailbox main drive gear removal
- Mailbox main motor removal

Service conventions and change history

- – Mailbox top diverter removal
- – Mailbox middle diverter removal
- – Mailbox top diverter spring removal
- – Sensor (mailbox pass through) removal

February 13, 2013

- Added 31.66 and 250.08 error code descriptions.
- Added MPF solenoid removal procedure.

February 4, 2013

- 10.xx and 24x.08 errors were added to the User attendance messages table.
- 24x.08 errors were added to the 24x paper jams and Input option jam error messages tables.
- New topic for updating the firmware was added to the Service menus chapter.
- BSD machines were added to the list of models under the General information chapter.

General information

The Lexmark™M5150, M5160, M5170, MS710, MS711, MS810, MS811, and MS812 printers are network-capable laser printers that print monochrome print jobs. All information in this service manual pertains to all models unless explicitly noted.

The printers are available in the following models:

Model	Configuration	Machine type / model number
MS710dn	Network, duplex printer	4063-832
MS711dn	Network, duplex printer	4063-835
MS810n	Network	4063-210
MS810dn	Network, duplex printer	4063-230
MS810de	Network, 4.3" e-Task touch screen, duplex printer	4063-23E
MS817n	Network	4063-210
M5155	Network, 4.3" e-Task touch screen, duplex printer	4063-29E
M5163	Network, 4.3" e-Task touch screen, duplex printer	4063-49E
MS811n	Network	4063-410
M5163dn	Network	4063-490
MS811dn	Network, duplex printer	4063-430
MS812dn	Network, duplex printer	4063-630
MS812de	Network, 7" e-Task touch screen, duplex printer	4063-63E

The diagnostic information in this manual leads you to the correct field replaceable unit (FRU) or part. Use the error code charts, symptom index, and service checks to determine the symptom and then repair the failure. After you complete the repair, perform tests as needed to verify the repair.

To begin diagnosing a problem, go to **"Diagnostics and troubleshooting" on page 61**. See **"Parts removal" on page 425** for information about removing and reinstalling parts. See **"Parts catalog" on page 878** to help identify parts.

Media guidelines

Paper guidelines

Selecting the correct paper or specialty media reduces printing problems. For the best print quality, try a sample of the paper or specialty media before buying large quantities.

Paper characteristics

The following paper characteristics affect print quality and reliability. Consider these characteristics when evaluating new paper stock.

Weight

The standard printer trays can automatically feed paper weights up to 90-g/m^2 (24-lb) bond grain long paper. The optional trays can automatically feed paper weights up to 120-g/m^2 (32-lb) bond grain long paper. The multipurpose feeder can automatically feed paper weights up to 163-g/m^2 (43-lb) bond grain long paper. Paper lighter than 60 g/m^2 (16 lb) might not be stiff enough to feed properly, causing jams. For best performance, use 75-g/m^2 (20-lb) bond grain long paper. For paper smaller than 182 x 257 mm (7.2 x 10.1 inches), it is recommended to use 90 g/m^2 (24 lb) or heavier paper.

Note: Two-sided printing is supported only for 60–90-g/m^2 (16–24-lb) bond paper.

Curl

Curl is the tendency for paper to curl at its edges. Excessive curl can cause paper feeding problems. Curl can occur after the paper passes through the printer, where it is exposed to high temperatures. Storing paper unwrapped in hot, humid, cold, or dry conditions, even in the trays, can contribute to paper curling prior to printing and can cause feeding problems.

Smoothness

Paper smoothness directly affects print quality. If paper is too rough, toner cannot fuse to it properly. If paper is too smooth, it can cause paper feeding or print quality issues. Always use paper between 100 and 300 Sheffield points; smoothness between 150–250 Sheffield points produces the best print quality.

Moisture content

The amount of moisture in paper affects both print quality and the ability of the printer to feed the paper correctly. Leave paper in its original wrapper until it is time to use it. This limits the exposure of paper to moisture changes that can degrade its performance.

Condition paper before printing by storing it in its original wrapper in the same environment as the printer for 24–48 hours before printing. Extend the time to several days if the storage or transportation environment is very different from the printer environment. Thick paper may also require a longer conditioning period.

Grain direction

Grain refers to the alignment of the paper fibers in a sheet of paper. Grain is either *grain long*, running the length of the paper, or *grain short*, running the width of the paper.

For 60–90-g/m^2 (16–24-lb) bond paper, grain long paper is recommended.

Fiber content

Most high-quality xerographic paper is made from 100% chemically treated pulped wood. This content provides the paper with a high degree of stability resulting in fewer paper feeding problems and better print quality. Paper containing fibers such as cotton can negatively affect paper handling.

Unacceptable paper

The following paper types are not recommended for use with the printer:
- Chemically-treated papers used to make copies without carbon paper, also known as carbonless papers, carbonless copy paper (CCP), or no carbon required (NCR) paper
- Preprinted papers with chemicals that may contaminate the printer
- Preprinted papers that can be affected by the temperature in the printer fuser

General information

- Preprinted papers that require a registration (the precise print location on the page) greater than ±2.4 mm (±0.9 inch), such as optical character recognition (OCR) forms

  In some cases, registration can be adjusted with a software application to successfully print on these forms:
- Coated papers (erasable bond), synthetic papers, thermal papers
- Rough-edged, rough or heavily textured surface papers, or curled papers
- Recycled papers that fail EN12281:2002 (European)
- Paper weighing less than 60 g/m^2 (16 lb)
- Multiple-part forms or documents

Selecting paper

Using the appropriate paper prevents jams and helps ensure trouble-free printing.

To help avoid paper jams and poor print quality:
- *Always* use new, undamaged paper.
- Before loading paper, know the recommended printable side of the paper. This information is usually indicated on the paper package.
- *Do not* use paper that has been cut or trimmed by hand.
- *Do not* mix paper sizes, types, or weights in the same tray; mixing results in jams.
- *Do not* use coated papers unless they are specifically designed for electrophotographic printing.

Selecting preprinted forms and letterhead

Use these guidelines when selecting preprinted forms and letterhead:
- Use grain long for 60 to 90 g/m^2 (16 to 24 lb) weight paper.
- Use only forms and letterhead printed using an offset lithographic or engraved printing process.
- Avoid papers with rough or heavily textured surfaces.

Use papers printed with heat-resistant inks designed for use in xerographic copiers. The ink must be able to withstand temperatures up to 190°C (374°F) without melting or releasing hazardous emissions. Use inks that are not affected by the resin in toner. Inks that are oxidation-set or oil-based generally meet these requirements; latex inks might not. When in doubt, contact the paper supplier.

Preprinted papers such as letterhead must be able to withstand temperatures up to 190°C (374°F) without melting or releasing hazardous emissions.

Storing paper

Use these paper storage guidelines to help avoid jams and uneven print quality:
- For best results, store paper where the temperature is 21°C (70°F) and the relative humidity is 40 percent. Most label manufacturers recommend printing in a temperature range of 18–24°C (65–75°F) with relative humidity between 40 and 60 percent.
- Store paper in cartons, on a pallet or shelf, rather than on the floor.
- Store individual packages on a flat surface.
- Do not store anything on top of individual paper packages.
- Take paper out of the carton or wrapper only when you are ready to load it in the printer. The carton and wrapper help keep the paper clean, dry, and flat.

Using recycled paper and other office papers

As an environmentally conscientious company, Lexmark supports the use of recycled paper produced specifically for use in laser (electrophotographic) printers.

While no blanket statement can be made that all recycled paper will feed well, Lexmark consistently tests papers that represent recycled cut size copier papers available on the global market. This scientific testing is conducted with rigor and discipline. Many factors are taken into consideration both separately and as a whole, including the following:

- Amount of post-consumer waste (Lexmark tests up to 100% post-consumer waste content.)
- Temperature and humidity conditions (Testing chambers simulate climates from all over the world.)
- Moisture content (Business papers should have low moisture: 4–5%.)
- Bending resistance and proper stiffness means optimum feeding through the printer.
- Thickness (impacts how much can be loaded into a tray)
- Surface roughness (measured in Sheffield units, impacts print clarity and how well toner fuses to the paper)
- Surface friction (determines how easily sheets can be separated)
- Grain and formation (impacts curling, which also influences the mechanics of how the paper behaves as it moves through the printer)
- Brightness and texture (look and feel)

Recycled papers are better than ever; however, the amount of recycled content in a paper affects the degree of control over foreign matter. And while recycled papers are one good path to printing in an environmentally responsible manner, they are not perfect. The energy required to de-ink and deal with additives such as colorants and "glue" often generates more carbon emissions than does normal paper production. However, using recycled papers enables better resource management overall.

Lexmark concerns itself with the responsible use of paper in general based on life cycle assessments of its products. To gain a better understanding of the impact of printers on the environment, the company commissioned a number of life cycle assessments and found that paper was identified as the primary contributor (up to 80%) of carbon emissions caused throughout the entire life of a device (from design to end-of-life). This is due to the energy-intensive manufacturing processes required to make paper.

Thus, Lexmark seeks to educate customers and partners on minimizing the impact of paper. Using recycled paper is one way. Eliminating excessive and unnecessary paper consumption is another. Lexmark is well-equipped to help customers minimize printing and copying waste. In addition, the company encourages purchasing paper from suppliers who demonstrate their commitment to sustainable forestry practices.

Lexmark does not endorse specific suppliers, although a converter's product list for special applications is maintained. However, the following paper choice guidelines will help alleviate the environmental impact of printing:

1 Minimize paper consumption.

2 Be selective about the origin of wood fiber. Buy from suppliers who carry certifications such as the Forestry Stewardship Council (FSC) or The Program for the Endorsement of Forest Certification (PEFC). These certifications guarantee that the paper manufacturer uses wood pulp from forestry operators that employ environmentally and socially responsible forest management and restoration practices.

3 Choose the most appropriate paper for printing needs: normal 75 or 80 g/m^2 certified paper, lower weight paper, or recycled paper.

Unacceptable paper examples

Test results indicate that the following paper types are at risk for use with laser printers:

- Chemically treated papers used to make copies without carbon paper, also known as *carbonless papers*
- Preprinted papers with chemicals that may contaminate the printer
- Preprinted papers that can be affected by the temperature in the printer fuser
- Preprinted papers that require a registration (the precise location on the page) greater than ± 2.3 mm (± 0.9 in.), such as optical character recognition (OCR) forms. In some cases, registration can be adjusted with a software application to successfully print on these forms.)
- Coated papers (erasable bond), synthetic papers, thermal papers
- Rough-edged, rough or heavily textured surface papers or curled papers
- Recycled papers that fail EN12281:2002 (European testing)
- Paper weighing less than 60 g/m^2 (16 lb)
- Multiple part forms or documents

For more information about Lexmark, visit **www.lexmark.com**. General sustainability-related information can be found at the **Environmental Sustainability** link.

Using specialty media

Tips on using card stock

Card stock is heavy, single-ply specialty media. Many of its variable characteristics, such as moisture content, thickness, and texture, can significantly affect print quality.

- From the printer control panel, set the paper size, type, texture, and weight in the Paper menu to match the card stock loaded in the tray.
- Print samples on the card stock being considered for use before buying large quantities.
- Specify the paper texture and weight from the tray settings to match the paper loaded in the tray.
- Preprinting, perforation, and creasing may significantly affect the print quality and cause jams or other paper feed problems.
- Before loading the card stock on the tray, flex and fan the card stock to loosen them. Straighten the edges on a level surface.

Tips on using envelopes

- From the printer control panel, set the paper size, type, texture, and weight in the Paper menu to match the envelopes loaded in the tray.
- Print samples on the envelopes being considered for use before buying large quantities.
- Use envelopes designed specifically for laser printers.
- For best performance, use envelopes made from 90-g/m^2 (24-lb) paper or 25% cotton.
- Use only new envelopes from undamaged packages.
- To optimize performance and minimize jams, do not use envelopes that:
  - Have excessive curl or twist.
  - Are stuck together or damaged in any way.
  - Have windows, holes, perforations, cutouts, or embossing.
  - Have metal clasps, string ties, or folding bars.

    – Have an interlocking design.

    – Have postage stamps attached.

    – Have any exposed adhesive when the flap is in the sealed or closed position.

    – Have bent corners.

    – Have rough, cockle, or laid finishes.

- Adjust the width guides to fit the width of the envelopes.
- Before loading the envelopes on the tray, flex the stack of envelopes back and forth to loosen them, and then fan them. Straighten the edges on a level surface.

Note: A combination of high humidity (over 60%) and high printing temperature may wrinkle or seal envelopes.

Tips on using labels

- From the printer control panel, set the paper size, type, texture, and weight in the Paper menu to match the labels loaded in the tray.
- Print samples on labels being considered for use before buying large quantities.
- For more information on label printing, characteristics, and design, see the *Card Stock & Label Guide* at **http://support.lexmark.com**.
- Use labels designed specifically for laser printers.
- Do not use labels with slick backing material.
- Use full label sheets. Partial sheets may cause labels to peel off during printing, resulting in a jam. Partial sheets also contaminate the printer and the cartridge with adhesive, and could void the printer and toner cartridge warranties.
- Do not use labels with exposed adhesive.
- Before loading labels on the tray, flex and fan labels to loosen them. Straighten the edges on a level surface.

Tips on using letterhead

- Use letterhead designed specifically for laser printers.
- Print samples on the letterhead being considered for use before buying large quantities.
- Before loading letterhead, flex and fan the sheets to prevent them from sticking together.
- Page orientation is important when printing on letterhead.

Source	Printing	Printable side	Paper orientation
Trays	One-sided	Facedown	Load the sheet with the top edge toward the front of the tray.
Trays	Two-sided	Faceup	Load the sheet with the bottom edge entering the printer first.
Multipurpose feeder	One-sided	Faceup	Load the sheet with the top edge entering the printer first.
Note: Check with the manufacturer or vendor to determine whether the preprinted letterhead is acceptable for laser printers.			

Source	Printing	Printable side	Paper orientation
Multipurpose feeder	Two-sided	Facedown	Load the sheet with the bottom edge entering the printer first.
Note: Check with the manufacturer or vendor to determine whether the preprinted letterhead is acceptable for laser printers.			

Tips on using transparencies

- From the printer control panel, set the paper size, type, texture, and weight in the Paper menu to match the transparencies loaded in the tray.
- Print a test page on the transparencies being considered for use before buying large quantities.
- Use transparencies designed specifically for laser printers.
- Avoid getting fingerprints on the transparencies to prevent print quality problems.
- Before loading transparencies, flex and fan the sheets to prevent them from sticking together.
- When printing on large volumes of transparencies, make sure to print by batches of only up to 20 with an interval of at least three minutes between batches, to prevent the transparencies from sticking together in the bin. You can also remove transparencies from the bin by batches of 20.

Supported paper sizes, types, and weights

The following tables provide information on standard and optional paper sources and the types of paper they support.

Note: For an unlisted paper size, select the closest *larger* listed size.

Paper types and weights supported by the printer

The printer engine supports 60–176-g/m^2 (16–47-lb) paper weights.

Paper type	250- or 550-sheet trays	2100-sheet tray	Multipurpose feeder	Duplex
Paper	✓	✓	✓	✓
Card stock	✓	X	✓	✓
Paper labels	✓	X	✓	X
Vinyl Labels	✓	X	✓	X
Pharmacy labels	✓	X	✓	✓
Transparencies	✓	X	✓	X

Paper sizes supported by the printer

Paper size	Dimensions	Standard or optional 250- or 550-sheet trays	Optional 2100-sheet tray	Multipurpose feeder	Duplex
A4	210 x 297 mm (8.3 x 11.7 in.)	✓	✓	✓	✓
A5	148 x 210 mm (5.8 x 8.3 in.)	✓	✓	✓	✓
A6	105 x 148 mm (4.1 x 5.8 in.)	✓	X	✓	✓
JIS B5	182 x 257 mm (7.2 x 10.1 in.)	✓	X	✓	✓
Letter	216 x 279 mm (8.5 x 11 in.)	✓	✓	✓	✓
Legal	216 x 356 mm (8.5 x 14 in.)	✓	✓	✓	✓
Executive	184 x 267 mm (7.3 x 10.5 in.)	✓	X	✓	✓
Oficio	216 x 340 mm (8.5 x 13.4 in.)	✓	✓	✓	✓
Folio	216 x 330 mm (8.5 x 13 in.)	✓	✓	✓	✓
Statement	140 x 216 mm (5.5 x 8.5 in.)	✓	X	✓	✓
Universal	105 x 148 mm to 216 x 356 mm (4.13 x 5.83 in. to 8.5 x 14 in.)	✓	X	✓	✓
	70 x 127 mm to 216 x 356 mm (2.76 x 5 to 8.5 x 14 in.)	X	X	✓	X

Paper sizes, types, and weights supported by the optional finishers

Supported paper sizes

Paper size	4-bin mailbox	Offset stacker	Staple finisher	Staple, hole punch finisher
A6	√	X	X	X
A5	√	√	√[2]	√[2]
JIS B5	√	√	√[1]	√[1]
Executive	√	√	√[1]	√[1]
Letter	√	√	√	√
A4	√	√	√	√
Legal	√	√	√	√[3]
Folio	√	√	√	√[3]
Statement	√	√	√[1]	√[1]
Universal	√	X	√[4]	X

[1] The finisher stacks the paper but does not staple or punch holes in it.

[2] The finisher staples the paper if it is loaded long edge first.

[3] The finisher stacks and staples the paper but does not punch holes in it.

[4] The finisher staples the paper if its width is between 8.27 and 8.54 inches.

Supported paper types and weights

Paper type	Paper weight	4-bin mailbox	Offset stacker	Staple finisher	Staple, hole punch finisher
Plain paper	90–176 g/m^2 (24–47 lb)	X	X	X	X
	60–90 g/m^2 (16–24 lb)	√	√	√	√
Card stock	163 g/m^2 (90 lb), grain long	X	√	√ *	√ *
	199 g/m^2 (110 lb), grain short	X	X	X	X
Transparency	146 g/m^2 (39 lb)	X	√	√ *	√ *

* The finisher stacks the paper but does not staple or punch holes in it.

Paper type	Paper weight	4-bin mailbox	Offset stacker	Staple finisher	Staple, hole punch finisher
Recycled	90–176 g/m² (24–47 lb)	X	X	X	X
	60–90 g/m² (16–24 lb)	✓	✓	✓	✓
Paper labels	180 g/m² (48 lb)	X	X	X	X
Vinyl labels	300 g/m² (92 lb)	X	X	X	X
Dual web and Integrated	180 g/m² (48 lb)	X	X	X	X
Polyester	220 g/m² (59 lb)	X	X	X	X
Bond	90–176 g/m² (24–47 lb)	X	X	X	X
	60–90 g/m² (16–24 lb)	✓	✓	✓	✓
Envelope	105 g/m² (28 lb)	X	X	X	X
Letterhead	90–176 g/m² (24–47 lb)	X	X	X	X
	60–90 g/m² (16–24 lb)	✓	✓	✓	✓
Preprinted	90–176 g/m² (24–47 lb)	X	X	X	X
	60–90 g/m² (16–24 lb)	✓	✓	✓	✓
Colored paper	90–176 g/m² (24–47 lb)	X	X	X	X
	60–90 g/m² (16–24 lb)	✓	✓	✓	✓
Light paper	60–90 g/m² (16–24 lb)	✓	✓	✓	✓
Heavy paper	60–90 g/m² (16–24 lb)	✓	✓	✓	✓

* The finisher stacks the paper but does not staple or punch holes in it.

Paper type	Paper weight	4-bin mailbox	Offset stacker	Staple finisher	Staple, hole punch finisher
Rough/cotton	60–90 g/m² (16–24 lb)	✓	✓	✓	✓
Custom type [x]	60–90 g/m² (16–24 lb)	✓	✓	✓	✓

* The finisher stacks the paper but does not staple or punch holes in it.

Data security notice

1 The printer contains various types of memory that store printer and network settings, information from embedded solutions, and user data.

The following are the types of memory and data that they store.

- **Volatile memory**—The printer uses standard random access memory (RAM) to buffer user data temporarily during simple print and copy jobs.
- **Non-volatile memory**—The printer may use two forms of non-volatile memory: EEPROM and NAND (flash memory). Both types are used to store the operating system, printer settings, network information, scanner and bookmark settings, and embedded solutions.
- **Hard disk memory**—The printer hard disk is designed for printer-specific functionality and cannot be used for the long-term storage of data that is not print-related. The hard disk can retain buffered user data from complex print jobs, form data, and font data.

To erase volatile memory, turn off the printer.

To erase the non-volatile and printer hard disk memory, see **"Configuration menu" on page 412**.

The following parts are capable of storing memory:

- Printer control panel
- User interface controller card (UICC)
- Controller board
- Optional hard disk

Note: The control panel and controller board contain NVRAM.

2 After removing the old part, return it to your next level of support.

Tools required for service

- Flat-blade screwdrivers, various sizes
- #1 Phillips screwdriver, magnetic
- #2 Phillips screwdriver, magnetic
- #2 Phillips screwdriver, magnetic short-blade
- 7/32 inch (5.5 mm) open-end wrench

- 7.0 mm nut driver

- Needle-nose pliers

- Diagonal side cutters

- Spring hook

- Feeler gauges

- Analog or digital multimeter

- Parallel wrap plug 1319128

- Twinax/serial debug cable 1381963

- Coax/serial debug cable 1381964

- Flashlight (optional)

- 3 mm hex wrench

- 5.5 mm hex wrench

General information

Diagnostics and troubleshooting

⚠ **CAUTION—SHOCK HAZARD:** If you are accessing the controller board or installing optional hardware or memory devices sometime after setting up the printer, then turn the printer off, and unplug the power cord from the electrical outlet before continuing. If you have any other devices attached to the printer, then turn them off as well, and unplug any cables going into the printer.

⚠ **CAUTION—POTENTIAL INJURY:** The printer weight is greater than 18 kg (40 lb) and requires two or more trained personnel to lift it safely.

⚠ **CAUTION—HOT SURFACE:** The inside of the printer might be hot. To reduce the risk of injury from a hot component, allow the surface to cool before touching.

Troubleshooting overview

Performing the initial troubleshooting check

Before you start the troubleshooting procedures, perform the following checks:

- With the power cord unplugged from the electrical outlet, check that the cord is free from the breakage, short circuits, disconnected wires, or incorrect connections.

- Make sure the printer is properly grounded. Check the power cord ground terminal.

- Make sure the power supply line voltage is within 10% of the rated line voltage.

- Make sure the machine is securely installed on a level surface in a well-ventilated area.

- Make sure the room temperature is between 16 and 32°C (60 and 90°F) and that the relative humidity is between 20 and 80%.

- Avoid sites generating ammonia gas, high temperature, high humidity (near water faucets, kettles, humidifiers), cold spaces, near open flames, and dusty areas.

- Avoid sites exposed to direct sunlight.

- Make sure the paper is the recommended paper for this printer.

- Make a trial print with paper from a newly opened package, and check the result.

Power-on Reset (POR) sequence

When you turn on the printer, it performs a POR sequence.

Check for correct POR functioning of the base printer by observing the following:

1 The LED turns on.

2 The main fan turns on.

3 The operator panel turns on.

4 The fuser heater turns on. The fuser takes longer to warm up from a cold start than a warm start.

5 The operator panel LED starts blinking.

6 A splash screen appears on the display. The following errors or messages may appear:
- Close Door or Insert Cartridge appear if the front access door is open or the print cartridge is missing
- Cartridge errors, such as Defective Cartridge or Missing Cartridge

7 Ready appears on the display.

8 The main drive motor turns on.

9 The EP drive assembly drives the developer shaft located in the print cartridge.

10 The exit rollers turn.

11 The printer may begin calibration.

Using Safe Mode

Safe Mode lets the printer continue to operate in a special limited mode in which it attempts to continue offering as much functionality as possible despite known issues. See **"Safe Mode print behavior" on page 62**.

Warning—Potential Damage: Safe Mode is intended as a short-term workaround and should be used only in the case of a non-critical error when a print job must be completed before service can be arranged to repair the printer. The printer must be returned to standard operating mode before diagnostics can be run or full-function printing can continue.

You can enter Safe Mode in one of the following ways:

- Enter Safe Mode from the Configuration menu, and then POR the printer. See **"Safe Mode" on page 415**.

- For 2.4" display models, press the **Stop** and **Back** keys, and then POR the printer.

- For 4.3" and 7" display touch-screen models, press the **6** and **7** keys, and then POR the printer.

- For LED models, you must contact the next level of technical support for assistance.

Return the printer to standard operating mode to service the printer and return to full-function printing.

Safe Mode print behavior

The following table outlines the behavior for this printer model while in Safe Mode:

Safe Mode engine features	Engine behavior	Control panel behavior
Simplex printing only	Reports that duplex printing is disabled.	Duplex print option is not selectable.
Ignore duplex sensor		
Ignore standard bin full sensor	Standard bin full messages are not reported.	Standard bin full messages will not occur.
Print at narrow media operating point	Pages are printed slower.	N/A
Ignore all input options	Reports that only Tray 1 is installed.	Only Tray 1 and the MPF are selectable.

Safe Mode engine features	Engine behavior	Control panel behavior
Ignore all output options	Does not any report installed finishing options.	No finishing options are selectable.
Ignore rear door sensor	Rear door open messages are not reported.	Rear door open messages do not occur.
Reduce print speed	Pages are printed slower.	N/A
Reduce time to first print	Slower time to first print.	N/A

Fixing print quality issues

The symptoms described in this chapter might require replacement of one or more CRUs (Customer Replaceable Units) designated as supplies or maintenance items, which are the responsibility of the customer. With the customer's permission, you might need to install a developer (toner) cartridge.

Initial print quality check
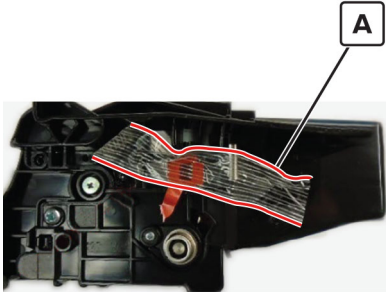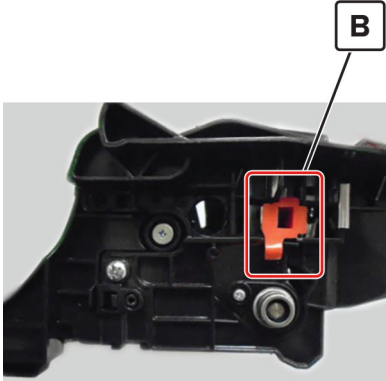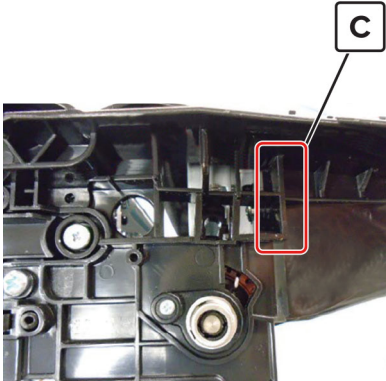
Before troubleshooting specific print problems, complete the following initial print quality check:
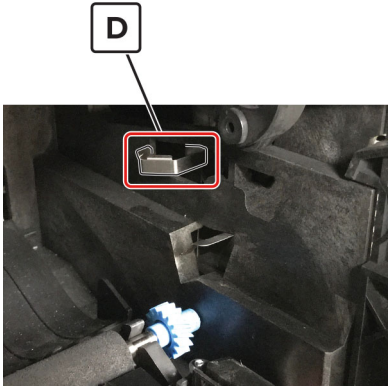
- The printer must be in a location that follows the recommended operating environment specifications. See **"Environment" on page 960**.

- Check the life status of all supplies. Any supply that is low should be replaced.

- Load 20‑lb plain letter or A4 paper. Make sure the paper guides are properly set and locked. From the control panel, set the paper size and type to match the paper loaded in the tray.

- Print a menu settings page. Be sure to keep the original menu settings page to restore the customer's custom settings if needed.

- Verify on the menu settings page if the following are set to their default values:
  - Print resolution: 600 dpi
  - Toner darkness: 8

- Check the transfer roll for damage. Replace if damaged.

- Check the toner cartridge and imaging unit for damage. Replace if damaged.

- Print the print quality pages to see if the problem remains. Use Tray 1 to test print quality problems.

- Print a print quality test page, and then look for variations in the print from what is expected. Verify if the settings under EP Setup are set to their default values. See **"EP Defaults" on page 408**.

- Check to ensure the correct printer driver for the installed software is being used. An incorrect printer driver for the installed software can cause problems. Incorrect characters could print, and the copy may not fit the page correctly.

Gray background on prints check

Actions	Yes	No

Step 1
a Turn off the printer, wait for 10 seconds, and then turn on the printer.
b From the printer control panel:
   1 Increase the toner darkness in the Quality menu.
      Note: 8 is the factory default setting.
   2 Set the paper type, texture, and weight in the Paper menu to match the paper loaded.
 	
Does the problem remain?
	Go to step 2.	The problem is solved.

Step 2 Check if the printer is using a genuine and supported Lexmark toner cartridge. **Note:** If the printer is using a third-party cartridge, then refer the users to their cartridge supplier. Is the printer using a genuine and supported toner cartridge?	Go to step 4.	Go to step 3.
Step 3 Install a genuine and supported toner cartridge. Does the problem remain?	Go to step 4.	The problem is solved.
Step 4 Check if the serial number of the imaging unit has 12, 13, or 14 in the fourth and fifth digits. (Example: CAS13xxxxxxx). Does the serial number have 12, 13, or 14 in the fourth and fifth digits?	Go to step 7.	Go to step 5.

Actions	Yes	No
Step 5 **a** Remove any packing material left on the imaging unit, including pieces of tape (A) on the side of the unit and the red separator plastic (B). **Note:** You may need a pair of pliers to remove a piece of broken plastic inside the imaging unit. **b** Check the charge roller contact on the right side of the imaging unit for damage and proper installation. **Note:** If the contact is missing (C), it may have been detached while removing the tape from the imaging unit. Is the charge roller contact damaged, contaminated, or missing?	Go to step 6.	Go to step 7.
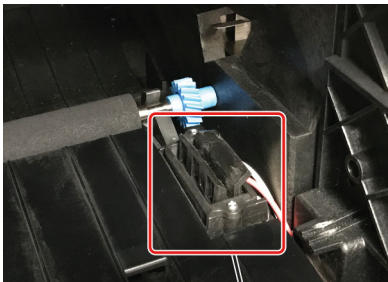
Actions	Yes	No
Step 6 Reinstall, repair, or replace the charge roller contact on the imaging unit. Does the problem remain?	Go to step 7.	The problem is solved.
Step 7 Replace the imaging unit. Does the problem remain?	Go to step 8.	The problem is solved.
Step 8 Make sure that connection J9 (HVPS) on the controller board and the connections on the HVPS are properly connected. Are the connections properly connected?	Go to step 10.	Go to step 9.
Step 9 Reseat the connections. Does the problem remain?	Go to step 10.	The problem is solved.
Step 10 **Note:** Poor electrical contact to the photoconductor is the most likely source of a full page background defect. **a** Remove any contamination from the HVPS contact (charge system) (D) on the right side of the frame. **b** Perform a print test. Does the problem remain?	Go to step 11.	The problem is solved.
Step 11 Check if the HVPS contact (charge system) is bent, damaged, or not in proper contact with the imaging unit. Is the contact free from damage and in proper contact with the imaging unit?	Go to step 13.	Go to step 12.
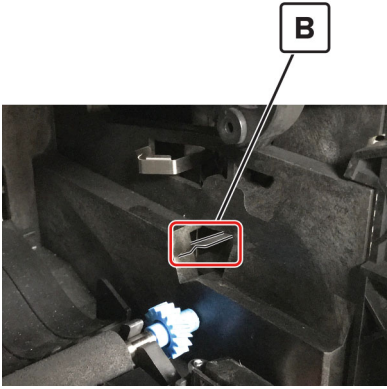
Actions	Yes	No
Step 12 Repair or replace the HVPS contacts. See **"HVPS contacts removal" on page 591**. Does the problem remain?	Go to step 13.	The problem is solved.
Step 13 Check all connections in the HVPS for proper connection. Is the HVPS properly connected?	Go to step 15.	Go to step 14.
Step 14 Replace the connections. Does the problem remain?	Go to step 15.	The problem is solved.
Step 15 Replace the HVPS. See **"HVPS removal" on page 590**. Does the problem remain?	Contact the next level of support.	The problem is solved.

Printer is printing blank pages check

Actions	Yes	No
Step 1 Check if the printer is using a genuine and supported Lexmark toner cartridge. **Note:** If the printer is using a third-party cartridge, then refer the users to their cartridge supplier. Is the printer using a genuine and supported toner cartridge?	Go to step 3.	Go to step 2.
Step 2 Install a genuine and supported toner cartridge. Does the problem remain?	Go to step 3.	The problem is solved.

Actions	Yes	No
Step 3 a Check and remove any packing material left on the imaging unit. b Firmly shake the imaging unit to redistribute the toner, and then reinstall it. Does the problem remain?	Go to step 4.	The problem is solved.
Step 4 Check the imaging unit for damage and proper installation, and replace if necessary. Does the problem remain?	Go to step 5.	The problem is solved.
Step 5 Check the transfer roller for proper installation. Is the transfer roller properly installed?	Go to step 7.	Go to step 6.
Step 6 Reinstall the transfer roller. Does the problem remain?	Go to step 7.	The problem is solved.
Step 7 Check the transfer roller for surface contamination and damage. Is the transfer roller free of contamination and damage?	Go to step 8.	Go to step 15.
Step 8 a Remove any contamination from the CTLS contacts on the imaging unit contact block (A). A b Make sure that the imaging unit contact block is properly installed. Does the problem remain?	Go to step 9.	The problem is solved.

Actions	Yes	No
Step 9 Check if the HVPS contact (B) is bent, damaged, or not in proper contact with the imaging unit. Is the contact free from damage, not bent and in proper contact with the imaging unit?	Go to step 11.	Go to step 10.
Step 10 Repair or replace the HVPS contacts. See **"HVPS contacts removal" on page 591**. Does the problem remain?	Go to step 11.	The problem is solved.
Step 11 Check all the connections on the HVPS for proper connection. Is the HVPS properly connected?	Go to step 13.	Go to step 12.
Step 12 Replace the connections. Does the problem remain?	Go to step 13.	The problem is solved.
Step 13 Reseat connection J9 on the controller board. Does the problem remain?	Go to step 14.	The problem is solved.
Step 14 Replace the connection. Does the problem remain?	Go to step 15.	The problem is solved.
Step 15 Replace the transfer roller. See **"Transfer roller removal" on page 488**. Does the problem remain?	Go to step 16.	The problem is solved.

Actions	Yes	No
Step 16 Check the transfer roller left contact spring on the transfer roller left arm for damage. Is contract spring free of damage?	Go to step 18.	Go to step 17.
Step 17 Replace the transfer roller left arm with cable. See **"Transfer roller left arm with cable removal" on page 484**. Does the problem remain?	Go to step 18.	The problem is solved.

Step 18
 	
a Check the coupler for signs of damage. The coupler is located on the main drive motor of the printer.
    • Good condition
 	
    • Bad condition
 	
b If the coupler is damaged, then replace the main drive motor. See **"Main drive motor removal" on page 574**.
 	
Does the problem remain?
	Go to step 19.	The problem is solved.

Actions	Yes	No
Step 19 Reseat the cables J101 (video) and MIR MTR on the controller board. Does the problem remain?	Go to step 20.	The problem is solved.
Step 20 Replace the laser printhead. See **"Laser printhead removal" on page 458**. Does the problem remain?	Contact the next level of support.	The problem is solved.

Print is too dark check

Actions	Yes	No
Step 1 Check if the printer is using a genuine and supported Lexmark toner cartridge. **Note:** If the printer is using a third-party cartridge, then refer the users to their cartridge supplier. Is the printer using a genuine and supported toner cartridge?	Go to step 3.	Go to step 2.
Step 2 Install a genuine and supported toner cartridge. Does the problem remain?	Go to step 3.	The problem is solved.
Step 3 **a** Turn off the printer, wait for 10 seconds, and then turn on the printer. **b** Reduce the toner darkness. From the control panel, navigate to: **Settings** > **Print Settings** > **Quality menu** **Note:** 8 is the factory default setting. Does the problem remain?	Go to step 4.	The problem is solved.

Actions	Yes	No
Step 4 From the control panel, set the paper type, texture, and weight in the Paper menu to match the paper loaded. Does the problem remain?	Go to step 5.	The problem is solved.
Step 5 Depending on the operating system, specify the paper type, texture, and weight from Printing Preferences or Print dialog. Does the problem remain?	Go to step 6.	The problem is solved.
Step 6 **a** Check if the paper loaded has texture or rough finishes. **b** From the control panel, set the paper texture in the Paper menu to match the texture of the paper loaded. Does the problem remain?	Go to step 7.	The problem is solved.
Step 7 Make sure that the paper loaded is from a fresh package. **Note:** Paper absorbs moisture due to high humidity. Store paper in its original wrapper until you use it. Does the problem remain?	Go to step 8.	The problem is solved.
Step 8 Replace the imaging unit. Does the problem remain?	Go to step 9.	The problem is solved.
Step 9 Check if the HVPS contacts (A) are bent, damaged, or not in proper contact with the imaging unit. A Are the contacts free from damage, not bent and in proper contact with the imaging unit?	Go to step 11.	Go to step 10.

Actions	Yes	No
Step 10 Repair or replace the HVPS contacts. See **"HVPS contacts removal" on page 591**. Does the problem remain?	Go to step 11.	The problem is solved.
Step 11 Check all the connections on the HVPS for proper connection. Is the HVPS properly connected?	Contact the next level of support.	Go to step 12.
Step 12 Replace the connections. Does the problem remain?	Go to step 13.	The problem is solved.
Step 13 Replace the HVPS. See **"HVPS removal" on page 590**. Does the problem remain?	Contact the next level of support.	The problem is solved.

Toner specks appear on prints check
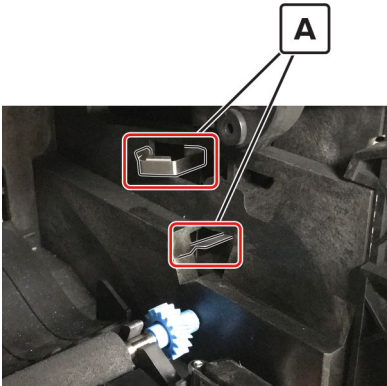
Actions	Yes	No
Step 1 Check if the printer is using a genuine and supported Lexmark toner cartridge. **Note:** If the printer is using a third-party cartridge, then refer the users to their cartridge supplier. Is the printer using a genuine and supported toner cartridge?	Go to step 3.	Go to step 2.
Step 2 Install a genuine and supported toner cartridge. Does the problem remain?	Go to step 3.	The problem is solved.

Actions	Yes	No
Step 3 Check if toner specks appear only on the edges or back side of the pages. Do toner specks appear only on the edges or back side of the pages?	Go to step 4.	Go to step 5.
Step 4 Replace the transfer roller. See **"Transfer roller removal" on page 488**. Does the problem remain?	Go to step 5.	The problem is solved.

Step 5
a Check the status of the imaging unit.
    1 From the home screen, select **Status/supplies**.
    2 Select **View Supplies** .
b Check the condition of the imaging unit.
 	
Is the imaging unit near end of life and/or showing signs of toner leakage?
	Go to step 6.	Go to step 7.

Step 6 Replace the imaging unit. Does the problem remain?	Go to step 7.	The problem is solved.
Step 7 Check the printer for stray toner contamination. Is the printer contaminated with stray toner?	Go to step 8.	Contact the next level of support.
Step 8 Using an approved toner vaccum cleaner, completely clean the printer, toner cartridge, and imaging unit of toner contamination. Does the problem remain?	Contact the next level of support.	The problem is solved.

Print is too light check

Actions	Yes	No
Step 1 Check if the printer is using a genuine and supported Lexmark toner cartridge. **Note:** If the printer is using a third-party cartridge, then refer the users to their cartridge supplier. Is the printer using a genuine and supported toner cartridge?	Go to step 3.	Go to step 2.
Step 2 Install a genuine and supported toner cartridge. Does the problem remain?	Go to step 3.	The problem is solved.

Step 3
a Turn off the printer, wait for 10 seconds, and then turn on the printer.
b From the control panel:
  1 Increase the toner darkness in the Quality menu.
    Note: 8 is the factory default setting.
  2 Set the paper type, texture, and weight in the Paper menu to match the paper loaded.
 	
Does the problem remain?
	Go to step 4.	The problem is solved.

Step 4 **a** Remove the toner cartridge and imaging unit. **b** Push either side of the transfer roller, located below the imaging unit, to check if it depresses and bounces back into place. **c** If the transfer roller does not depress and bounce back into place, then reinstall it by pulling up the blue gear and pulling it out from the right side to the left. **d** Firmly shake the imaging unit to redistribute the toner, and then reinstall it. **e** Reinstall the toner cartridge. **f** Turn off the printer, wait for 10 seconds, and then turn on the printer. Does the problem remain?	Go to step 5.	The problem is solved.
Step 5 **a** If the issue happens after installing a new maintenance kit, then check whether the transfer roller included with the kit is installed in the printer. **b** If necessary, replace the transfer roller. See **"Transfer roller removal" on page 488**. Does the problem remain?	Go to step 6.	The problem is solved.

Actions	Yes	No
Step 6 Check the shutter on the imaging unit for signs of damage. **Note:** The shutter opens to receive toner from the toner cartridge. Is the shutter on the imaging unit working properly?	Go to step 7.	Go to step 8.

Step 7
a Check the status of the imaging unit.
   1 From the home screen, select **Status/supplies**.
   2 Select **View Supplies**.
b Check the condition of the imaging unit.
 	
Is the imaging unit near end of life and/or showing signs of toner leakage?
	Go to step 8.	Go to step 9.

Step 8 Replace the imaging unit. Does the problem remain?	Go to step 9.	The problem is solved.
Step 9 Remove the right cover and verify if the red transfer cable on the lower right-hand side of the HVPS is properly installed. If necessary, reinstall the cable. Does the problem remain?	Go to step 10.	The problem is solved.
Step 10 Check if the HVPS contacts (A) are bent, damaged, or not in proper contact with the imaging unit. Are the contacts free from damage, not bent and in proper contact with the imaging unit?	Go to step 12.	Go to step 11.

Actions	Yes	No
Step 11 Repair or replace the HVPS contacts. See **"HVPS contacts removal" on page 591**. Does the problem remain?	Go to step 12.	The problem is solved.
Step 12 Check the red cable that connects the HVPS to the transfer roller for pinch or damage. Is the cable pinched or damaged?	Go to step 14.	Go to step 13.
Step 13 Remove the transfer roller and check if the bronze bushing in the transfer roller left arm is present. Is the bronze bushing missing?	Go to step 14.	Go to step 15.
Step 14 Replace the transfer roller left arm. See **"Transfer roller left arm with cable removal" on page 484**. Does the problem remain?	Go to step 15.	The problem is solved.

Actions	Yes	No
Step 15 Replace the transfer roller. See **"Transfer roller removal" on page 488**. Does the problem remain?	Go to step 16.	The problem is solved.
Step 16 Replace the HVPS. See **"HVPS removal" on page 590**. Does the problem remain?	Go to step 17.	The problem is solved.
Step 17 Check connection J48 on the controller board and the connection on the toner add motor for proper connection. Are the connections properly connected?	Go to step 19.	Go to step 18.
Step 18 Replace the connections. Does the problem remain?	Go to step 19.	The problem is solved.
Step 19 Replace the controller board. See **"Controller board removal" on page 568**. Does the problem remain?	Contact the next level of support.	The problem is solved.

Paper curl check

Actions	Yes	No
Step 1 Check if the printer is using a genuine and supported Lexmark toner cartridge. **Note:** If the printer is using a third-party cartridge, then refer the users to their cartridge supplier. Is the printer using a genuine and supported toner cartridge?	Go to step 3.	Go to step 2.
Step 2 Install a genuine and supported toner cartridge. Does the problem remain?	Go to step 3.	The problem is solved.
Step 3 Adjust the guides in the tray to the correct position for the paper loaded. Does the problem remain?	Go to step 4.	The problem is solved.
Step 4 From the control panel, set the paper size, type, and weight in the Paper menu to match the paper loaded. Does the problem remain?	Go to step 5.	The problem is solved.
Step 5 Depending on the operating system, specify the paper size from Printing Preferences or Print dialog. Does the problem remain?	Go to step 6.	The problem is solved.
Step 6 Remove paper from the tray, and then turn it over. Does the problem remain?	Go to step 7.	The problem is solved.
Step 7 Make sure that the paper loaded is from a fresh package. **Note:** Paper absorbs moisture due to high humidity. Store paper in its original wrapper until you use it. Does the problem remain?	Go to step 8.	The problem is solved.
Step 8 Make sure that the printer supports the paper loaded. Is the paper supported?	Contact the next level of support.	Go to step 9.

Actions	Yes	No
Step 9 Load a supported paper. Does the problem remain?	Contact the next level of support.	The problem is solved.

Folded or wrinkled paper check
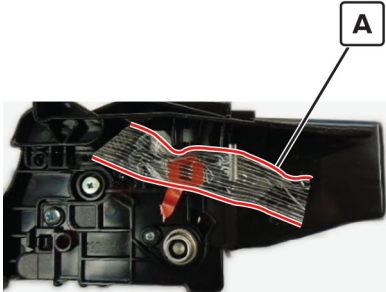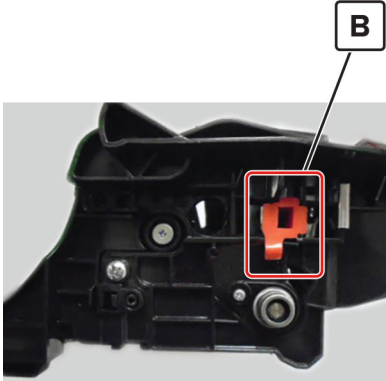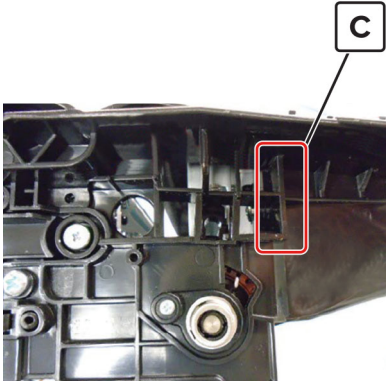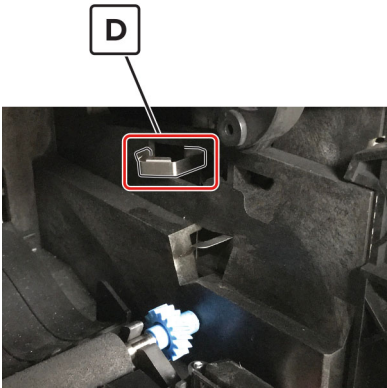
Actions	Yes	No
Step 1 **a** Check if the printer is using a non-Lexmark toner cartridge. **Note:** If the printer is using a third-party cartridge, then do not replace the imaging unit. Refer the users to their cartridge supplier. **b** Make sure that the toner cartridge is compatible with the imaging unit. Does the problem remain?	Go to step 2.	The problem is solved.
Step 2 **a** Check if the paper loaded is from a fresh package. **Note:** The amount of moisture in paper affects both print quality and printer ability to feed paper correctly. **b** Make sure that the printer supports the paper loaded. For a complete list of supported paper, see the printer *User's Guide*. Does the problem remain?	Go to step 3.	The problem is solved.
Step 3 Make sure that the fuser entry guide is free of waste toner and dust. **Warning—Potential Damage:** Clean the fuser entry guide with a toner vacuum and cloth. Do not use compressed air. Does the problem remain?	Go to step 4.	The problem is solved.
Step 4 If the fuser has reached end of life, then replace the maintenance kit. Does the problem remain?	Contact the next level of support.	The problem is solved.
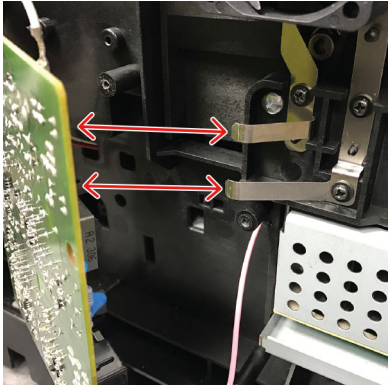
Printer is printing solid black pages check

Actions	Yes	No
Step 1 Check if the printer is using a genuine and supported Lexmark toner cartridge. **Note:** If the printer is using a third-party cartridge, then refer the users to their cartridge supplier. Is the printer using a genuine and supported toner cartridge?	Go to step 3.	Go to step 2.
Step 2 Install a genuine and supported toner cartridge. Does the problem remain?	Go to step 3.	The problem is solved.

Actions	Yes	No
Step 3 **a** Remove any packing material left on the imaging unit, including pieces of tape (A) on the side of the unit and the red separator plastic (B). **Note:** You may need a pair of pliers to remove a piece of broken plastic inside the imaging unit. **b** Check the charge roller contact on the right side of the imaging unit for damage and proper installation. **Note:** If the contact is missing (C), it may have been detached when removing the tape from the imaging unit. Is the charge roller contact damaged, contaminated, or missing?	Go to step 4.	The problem is solved.

Actions	Yes	No
Step 4 Reinstall, repair or replace the charge roller contact on the imaging unit. Does the problem remain?	Go to step 6.	Go to step 5.
Step 5 Replace the imaging unit. Does the problem remain?	Go to step 6.	The problem is solved.
Step 6 Check if the HVPS contact (D) is contaminated or bent out of proper position. Is the contact contaminated or bent out of proper position?	Go to step 7.	Go to step 8.
Step 7 Clean, repair or replace the HVPS contact. See **"HVPS contacts removal" on page 591**. Does the problem remain?	Go to step 8.	The problem is solved.
Step 8 Check the high voltage metal contacts on the imaging unit for damage. If necessary, replace the imaging unit. Does the problem remain?	Go to step 9.	The problem is solved.
Step 9 Check the cable connections between the HVPS and the controller board. If necessary, reseat the cables. Does the problem remain?	Go to step 10.	The problem is solved.

Actions	Yes	No
Step 10 **a** Remove the HVPS. See **"HVPS removal" on page 590**. **b** Check if the HVPS contacts are contaminated or bent out of proper position. Are the contacts contaminated or bent out of proper position?	Go to step 11.	Go to step 12.
Step 11 Clean, repair or replace the HVPS contacts. See **"HVPS contacts removal" on page 591**. Does the problem remain?	Go to step 12.	The problem is solved.
Step 12 Replace the HVPS. See **"HVPS removal" on page 590**. Does the problem remain?	Contact the next level of support.	The problem is solved.

Repeating defects appear on prints check

Actions	Yes	No

Step 1
a From the control panel, navigate to:
Menu > **Help** > **Print Defects Guide**
b Using the Print Defects Guide, check if the distance between defects is equal to any of the following:
   • 3.81 in. (96.8 mm)
   • 1.88 in. (47.8 mm)
   • 1.12 in. (28.5 mm)
Note: Make sure to measure the defect interval accurately.
 	
Does the distance measured match any of the items listed?
	Go to step 2.	Go to step 3.

Step 2 Replace the imaging unit. Does the problem remain?	Go to step 3.	The problem is solved.
Step 3 Measure the distance between repeating defects, and then check if it matches any of the following: • 3.71 in. (94.25 mm) • 3.75 in. (95.2 mm) Does the distance measured match any of the items listed?	Go to step 4.	Contact the next level of support.
Step 4 Replace the fuser. Does the problem remain?	Go to step 5.	The problem is solved.
Step 5 Replace the transfer roller. See **"Transfer roller removal" on page 488**. Does the problem remain?	Contact the next level of support.	The problem is solved.

Skewed print check

Actions	Yes	No
Step 1 Check the guides in the tray where the skewed prints are sourced from. **Note:** If paper is sourced from the MPF, then proceed to **step 9**. Does the position of the guides match the paper loaded?	Go to step 3.	Go to step 2.
Step 2 Adjust the guides to match the paper loaded. Does the problem remain?	Go to step 3.	The problem is solved.
Step 3 Check if the printer supports the paper loaded. **Note:** For a complete list of supported paper, see the printer *User's Guide*. Is the paper supported?	Go to step 5.	Go to step 4.
Step 4 Remove the paper, and then load a supported one. Does the problem remain?	Go to step 5.	The problem is solved.
Step 5 Check the tray pick roller for excess wear and contamination. Is the pick roller free from excess wear and contamination?	Go to step 7.	Go to step 6.
Step 6 Replace the pick roller. See **"Pick roller assembly removal" on page 559**. Does the problem remain?	Go to step 7.	The problem is solved.
Step 7 Perform a print test. From the Diagnostics menu, select **PRINT TESTS** > **Tray [x]**. **Note:** [x] refers to the tray where the skewed prints are sourced from. Does the problem remain?	Go to step 8.	The problem is solved.
Step 8 Adjust the margins. From the Diagnostic menu, select **REGISTRATION**. Does the problem remain?	Go to step 15.	The problem is solved.

Actions	Yes	No
Step 9 Check the guides in the MPF tray. Does the position of the guides match the paper loaded?	Go to step 11.	Go to step 10.
Step 10 Adjust the guides to match the paper loaded. Does the problem remain?	Go to step 11.	The problem is solved.
Step 11 Check if the printer supports the paper loaded. **Note:** For a complete list of supported paper, see the printer *User's Guide*. Is the paper supported?	Go to step 13.	Go to step 12.
Step 12 Remove the paper, and then load a supported one. Does the problem remain?	Go to step 13.	The problem is solved.
Step 13 Check the MPF pick roller for excess wear and contamination. Is the MPF pick roller free from excess wear and contamination?	Go to step 15.	Go to step 14.
Step 14 Replace the MPF pick roller. See **"MPF pick roller removal" on page 472**. Does the problem remain?	Go to step 15.	The problem is solved.
Step 15 Perform the paper skew adjustment. See **"Adjustments" on page 447**. Does the problem remain?	Contact the next level of support.	The problem is solved.

Streaked vertical lines appear on prints check

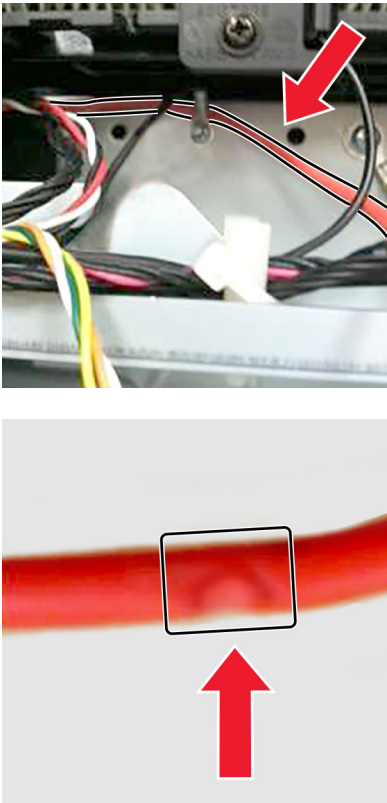| Actions	Yes	No
Step 1 Check if the printer is using a genuine and supported Lexmark toner cartridge. **Note:** If the printer is using a third-party cartridge, then refer the users to their cartridge supplier. Is the printer using a genuine and supported toner cartridge?	Go to step 3.	Go to step 2.
Step 2 Install a genuine and supported toner cartridge. Does the problem remain?	Go to step 3.	The problem is solved.
Step 3 Remove, and then reinstall the imaging unit. Does the problem remain?	Go to step 4.	The problem is solved.
Step 4 Replace the imaging unit. Does the problem remain?	Go to step 5.	The problem is solved.
Step 5 Remove the fuser, and then check the rollers and belts for damage or debris. Are the rollers and belts free of damage or debris?	Contact the next level of support.	Go to step 6.
Step 6 Replace the fuser. Does the problem remain?	Contact the next level of support.	The problem is solved.

Horizontal light bands check

Actions	Yes	No
Step 1 Check if the printer is using a genuine and supported Lexmark toner cartridge. **Note:** If the printer is using a third-party cartridge, then refer the users to their cartridge supplier. Is the printer using a genuine and supported toner cartridge?	Go to step 3.	Go to step 2.
Step 2 Install a genuine and supported toner cartridge. Does the problem remain?	Go to step 3.	The problem is solved.
Step 3 Turn off the printer, wait for 10 seconds, and then turn on the printer. Does the problem remain?	Go to step 4.	The problem is solved.
Step 4 **a** Remove the HVPS. See **"HVPS removal" on page 590**. **b** Check if the HVPS wire connectors are pinched or damaged. Are the wire connectors pinched or damaged?	Go to step 5.	Go to step 6.
Step 5 Repair or replace the wire connectors. Does the problem remain?	Go to step 6.	The problem is solved.
Step 6 Check the imaging unit contact block (A), including the white and red wires, for damage or improper installation. Is the imaging unit contact block free of damage and properly installed?	Go to step 8.	Go to step 7.

Actions	Yes	No
Step 7 Reinstall or replace the imaging unit contact block. Does the problem remain?	Go to step 8.	The problem is solved.
Step 8 Check connection J9 from the controller board to the HVPS, and then check all other connections on the HVPS. Are the connections properly connected?	Go to step 10.	Go to step 9.
Step 9 Replace the connections. Does the problem remain?	Go to step 10.	The problem is solved.
Step 10 Replace the HVPS. See **"HVPS removal" on page 590**. Does the problem remain?	Contact the next level of support.	The problem is solved.

Vertical light bands check

Actions	Yes	No
Step 1 Check if the printer is using a genuine and supported Lexmark toner cartridge. **Note:** If the printer is using a third-party cartridge, refer the users to their cartridge supplier. Is the printer using a genuine and supported toner cartridge?	Go to step 3.	Go to step 2.
Step 2 Install a genuine and supported toner cartridge. Does the problem remain?	Go to step 3.	The problem is solved.

Actions	Yes	No
Step 3 Clean the printhead mirror and glass. See **"Cleaning the printhead mirror and glass" on page 875**. Does the problem remain?	Go to step 4.	The problem is solved.
Step 4 Replace the printhead. See **"Laser printhead removal" on page 458**. Does the problem remain?	Go to step 5.	The problem is solved.
Step 5 Replace the imaging unit. Does the problem remain?	Contact the next level of support.	The problem is solved.

Vertical dark bands check

Actions	Yes	No
Step 1 Check if the printer is using a genuine and supported Lexmark toner cartridge. **Note:** If the printer is using a third-party cartridge, then refer the users to their cartridge supplier. Is the printer using a genuine and supported toner cartridge?	Go to step 3.	Go to step 2.
Step 2 Install a genuine and supported toner cartridge. Does the problem remain?	Go to step 3.	The problem is solved.
Step 3 Remove, and then reinstall the toner cartridge and imaging unit. Does the problem remain?	Go to step 4.	The problem is solved.

Actions	Yes	No
Step 4 If a bright light enters the right side of the printer, then move the printer to avoid the bright light. **Note:** In cases where the printer cannot be moved or relocated, add a cover to the fan inlet vent to block the light from entering the printer, or contact the next level of support. Does the problem remain?	Go to step 5.	The problem is solved.
Step 5 If a separator plastic (A) is stuck inside the imaging unit or if there are other obstructions between the charge roller and photoconductor drum, then remove them. B Does the problem remain?	Contact the next level of support.	The problem is solved.

Vertical dark streaks with print missing check

Actions	Yes	No
Step 1 Check if the printer is using a genuine and supported Lexmark toner cartridge. **Note:** If the printer is using a third-party cartridge, then refer the users to their cartridge supplier. Is the printer using a genuine and supported toner cartridge?	Go to step 3.	Go to step 2.
Step 2 Install a genuine and supported toner cartridge. Does the problem remain?	Go to step 3.	The problem is solved.

Actions	Yes	No
Step 3 **a** Remove any packing material left on the imaging unit, including pieces of tape (A) on the side of the unit and the red separator plastic (B). A B **Note:** You may need a pair of pliers to remove a piece of broken plastic inside the imaging unit. **b** Check the charge roller contact on the right side of the imaging unit for damage and proper installation. **Note:** If the contact is missing (C), it may have been detached when removing the tape from the imaging unit. C Is the charge roller contact damaged, contaminated, or missing?	Go to step 4.	Go to step 5.
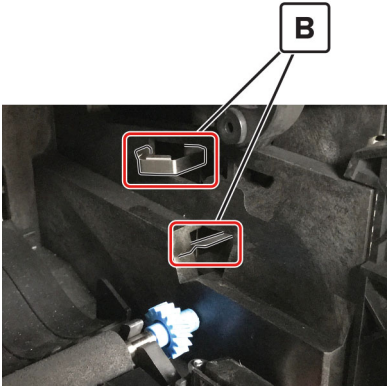
Actions	Yes	No
Step 4 Reinstall, repair or replace the charge roller contact on the imaging unit. Does the problem remain?	Go to step 5.	The problem is solved.
Step 5 Replace the imaging unit. Does the problem remain?	Go to step 6.	The problem is solved.
Step 6 Check if the HVPS contact (D) is bent, damaged, or not in proper contact with the imaging unit. Is the contact free from damage, not bent and in proper contact with the imaging unit?	Go to step 8.	Go to step 7.
Step 7 Clean, repair or replace the HVPS contact. See **"HVPS contacts removal" on page 591**. Does the problem remain?	Go to step 8.	The problem is solved.
Step 8 Check connection J9 from the controller board to the HVPS, and then check all other connections on the HVPS. Are the connections properly connected?	Go to step 10.	Go to step 9.
Step 9 Reconnect the cables. Does the problem remain?	Go to step 10.	The problem is solved.
Step 10 Replace the HVPS. See **"HVPS removal" on page 590**. Does the problem remain?	Contact the next level of support.	The problem is solved.

White streaks and voided areas check

Actions	Yes	No
Step 1 Check if the printer is using a genuine and supported Lexmark toner cartridge. **Note:** If the printer is using a third-party cartridge, do not replace the imaging unit. Refer the users to their cartridge supplier. Is the printer using a genuine and supported toner cartridge?	Go to step 3.	Go to step 2.
Step 2 Install a genuine and supported toner cartridge. Does the problem remain?	Go to step 3.	The problem is solved.
Step 3 Set the paper type and weight settings in the Paper menu to match the paper loaded. **Note:** Make sure that the printer supports the paper loaded. For a complete list of supported paper, see the printer *User's Guide*. Does the problem remain?	Go to step 4.	The problem is solved.
Step 4 **a** Update the firmware to the latest version available. **b** Enter the Diagnostics menu, and then change the EngSetting 14 value to 48. **Note:** You can also change the setting through a bundle file or NPA command. **c** Set Quite mode to Off. **d** Review the Event Log Summary sheets and check if either error code 31.46 or 31.66 events occurred for the imaging unit. If they did, check if they are occurring with the current toner cartridge. Do the errors occur with the current toner cartridge?	Go to step 6.	Go to step 5.

Actions	Yes	No
Step 5 Check the shutter tab (A) on the toner cartridge for signs of damage. Is the shutter tab damaged?	Go to step 6.	Go to step 7.
Step 6 Replace the imaging unit and the toner cartridge. Does the problem remain?	Go to step 7.	The problem is solved.
Step 7 Check the printhead lenses for contamination. Are the printhead lenses free from dust and debris?	Go to step 8.	Go to step 9.
Step 8 Clean the printhead mirror. See **"Cleaning the printhead mirror and glass" on page 875**. **Warning—Potential Damage:** When cleaning the printhead mirror, do not use compressed air. Does the problem remain?	Go to step 9.	The problem is solved.

Actions	Yes	No
Step 9 Check if the HVPS contacts (B) are bent, damaged, or not in proper contact with the imaging unit. Are the contacts free from damage, not bent and in proper contact with the imaging unit?	Go to step 11.	Go to step 10.
Step 10 Clean, repair or replace the HVPS contacts. See **"HVPS contacts removal" on page 591**. Does the problem remain?	Go to step 11.	The problem is solved.
Step 11 Check connection J9 from the controller board to the HVPS, and then check all other connections on the HVPS. Are the connections properly connected?	Go to step 13.	Go to step 12.
Step 12 Replace the connections. Does the problem remain?	Go to step 13.	The problem is solved.
Step 13 Replace the HVPS. See **"HVPS removal" on page 590**. Does the problem remain?	Go to step 14.	The problem is solved.
Step 14 Replace the laser printhead. See **"Laser printhead removal" on page 458**. Does the problem remain?	Contact the next level of support.	The problem is solved.
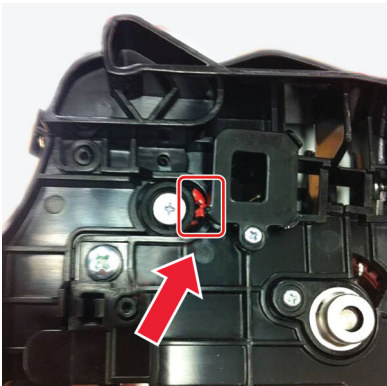
Fine lines are not printed correctly (specifically Chinese characters) check

Actions	Yes	No
Step 1 Check if the printer is using a genuine and supported Lexmark toner cartridge. **Note:** If the printer is using a third-party cartridge, then refer the users to their cartridge supplier. Is the printer using a genuine and supported toner cartridge?	Go to step 3.	Go to step 2.
Step 2 Install a genuine and supported toner cartridge. Does the problem remain?	Go to step 3.	The problem is solved.
Step 3 From the control panel, adjust the Toner Darkness setting to 7. a From the Settings menu, navigate to: **Print Settings** > **Quality menu** > **Pixel Boost** > **Fonts** > **Submit** b From the Quality menu, select **Toner Darkness**, and then adjust the setting to 7. c Submit the changes. **Note:** Adjusting the Toner Darkness setting to 7 results in a slightly lighter print. You may leave the Toner Darkness value at 8 in order to maintain the darkness that you have grown accustomed to, but this will result in reduced toner yield. Does the problem remain?	Contact the next level of support.	The problem is solved.

Clipped pages or images check
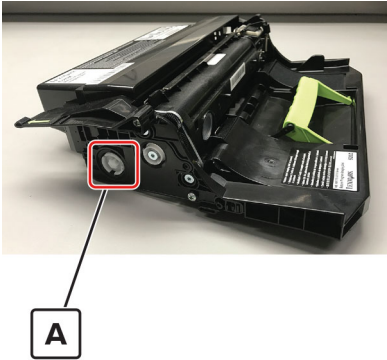
Actions	Yes	No
Step 1 Check if the printer is using a genuine and supported Lexmark toner cartridge. **Note:** If the printer is using a third-party cartridge, then refer the users to their cartridge supplier. Is the printer using a genuine and supported toner cartridge?	Go to step 3.	Go to step 2.
Step 2 Install a genuine and supported toner cartridge. Does the problem remain?	Go to step 3.	The problem is solved.
Step 3 Remove, and then reinstall the imaging unit. Does the problem remain?	Go to step 4.	The problem is solved.
Step 4 Check if a separator plastic, or a piece of it, is stuck inside the imaging unit or if there are any other obstructions between the charge roller and photoconductor drum. Is the imaging unit free from any separator plastic fragments or other obstructions?	Go to step 6.	Go to step 5.

Actions	Yes	No
Step 5 Using a pair of pliers, remove the separator plastic fragments and other obstructions. Does the problem remain?	Go to step 6.	The problem is solved.
Step 6 Replace the imaging unit. Does the problem remain?	Go to step 7.	The problem is solved.
Step 7 Check the imaging unit contact block (A) for damage or improper installation. Is the imaging unit contact block damaged or improperly installed?	Go to step 8.	Contact the next level of support.
Step 8 Reinstall or replace the imaging unit contact block. Does the problem remain?	Contact the next level of support.	The problem is solved.

Compressed images appear on prints check

Actions	Yes	No
Step 1 Remove the imaging unit, and then inspect the white photoconductor coupler (A). The coupler should be firmly connected to the imaging unit and should not freely rotate. Does the coupler move freely or appear damaged?	Go to step 2.	Go to step 3.
Step 2 Replace the imaging unit. Does the problem remain?	Go to step 3.	The problem is solved.
Step 3 Replace the main drive motor. See **"Main drive motor removal" on page 574**. Does the problem remain?	Contact the next level of support.	The problem is solved.

Incorrect margins on print check

Actions	Yes	No
Step 1 Adjust the guides in the tray to match the paper loaded. Does the problem remain?	Go to step 2.	The problem is solved.
Step 2 Do one of the following: • From the control panel, set the paper size in the Paper menu to match the paper loaded. • Change the paper loaded to match the paper size specified in the tray settings. Does the problem remain?	Go to step 3.	The problem is solved.
Step 3 Depending on the operating system, specify the paper size from Printing Preferences or Print dialog. Does the problem remain?	Go to step 4.	The problem is solved.
Step 4 **a** Enter the Diagnostics menu, and then select **REGISTRATION**. **b** Adjust the margins. Does the problem remain?	Contact the next level of support.	The problem is solved.

Toner rubs off check

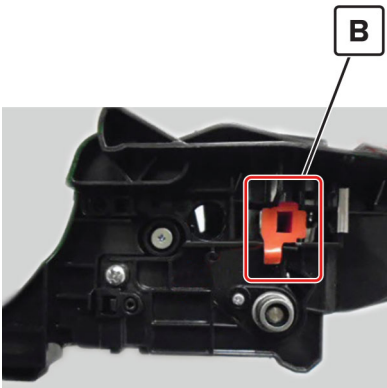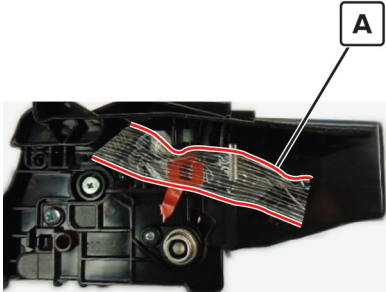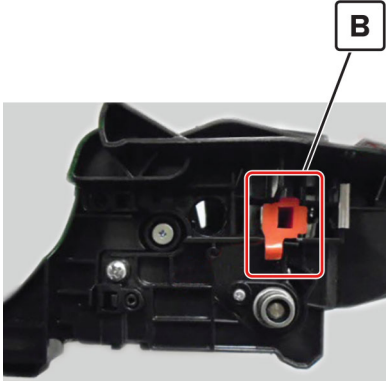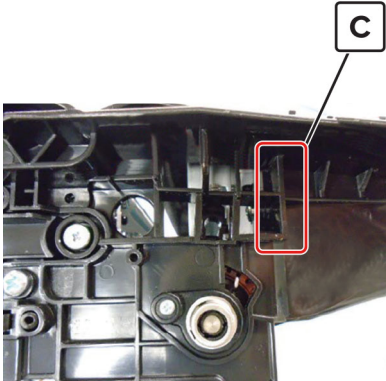| Actions	Yes	No
Step 1 Check if the printer is using a genuine and supported Lexmark toner cartridge. **Note:** If the printer is using a third-party cartridge, then refer the users to their cartridge supplier. Is the printer using a genuine and supported toner cartridge?	Go to step 3.	Go to step 2.
Step 2 Install a genuine and supported toner cartridge. Does the problem remain?	Go to step 3.	The problem is solved.
Step 3 From the control panel, set the paper type, texture, and weight in the Paper menu to match the paper loaded. Does the problem remain?	Go to step 4.	The problem is solved.
Step 4 Remove, and then reinstall the fuser. Does the problem remain?	Go to step 5.	The problem is solved.
Step 5 Replace the fuser. See **"Fuser removal" on page 538**. Does the problem remain?	Go to step 6.	The problem is solved.
Step 6 Reseat the connections on the LVPS. Does the problem remain?	Go to step 7.	The problem is solved.
Step 7 Replace the LVPS. See **"LVPS removal" on page 592**. Does the problem remain?	Contact the next level of support.	The problem is solved.

Paper jams

Avoiding jams

Load paper properly

- Make sure paper lies flat in the tray.

Correct loading of paper
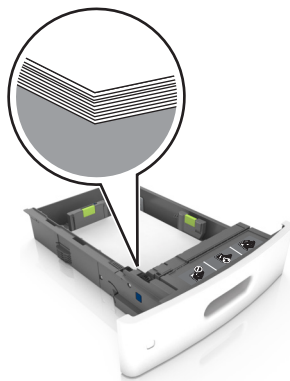
Incorrect loading of paper
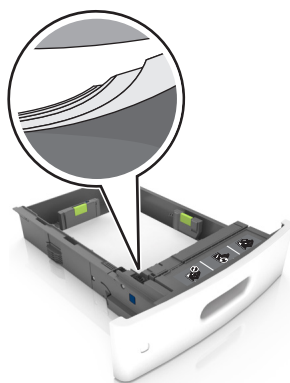
- Do not remove a tray while the printer is printing.
- Do not load a tray while the printer is printing. Load it before printing, or wait for a prompt to load it.
- Do not load too much paper. Make sure the stack height is below the maximum paper fill indicator.
- Do not slide the paper into the tray. Load paper as shown in the illustration.

Diagnostics and troubleshooting
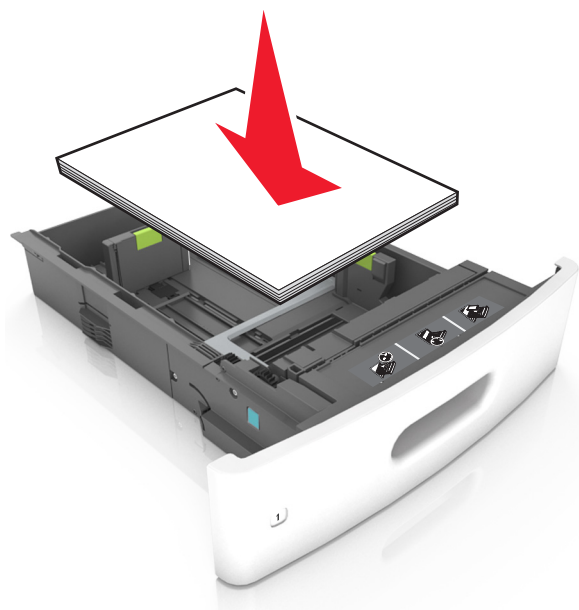
- Make sure the guides in the tray or the multipurpose feeder are properly positioned and are not pressing tightly against the paper or envelopes.
- Push the tray firmly into the printer after loading paper.
- If you are loading prepunched paper for use with the staple finisher, then make sure the holes on the long edge of the paper are on the right side of the tray. For more information, see the "Loading paper and specialty media" section of the *User's Guide*.

Allow the paper to enter the optional mailbox bins properly

- Make sure to adjust the bin extender so that the paper size indicators match the size of the paper used.
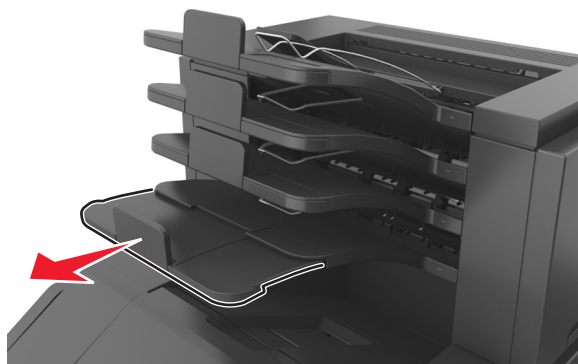
Notes:

- If the bin extender is shorter than the size of the paper you are printing on, then the paper causes a jam in the mailbox bin. For example, if you are printing on a legal-size paper and the bin extender is set to letter-size, then a jam occurs.
- If the bin extender is longer than the size of the paper you are printing on, then the edges become uneven and the paper is not stacked properly. For example, if you are printing on a letter-size paper and the bin extender is set to legal-size, then the paper does not stack properly.
- If paper needs to be returned to the mailbox bin, then insert the paper under the bin arm, and then push the paper all the way back.
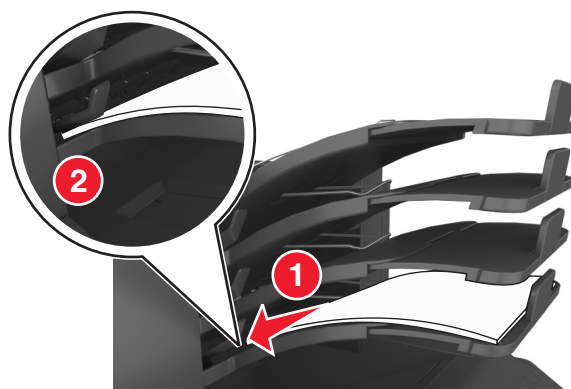
Note: If the paper is not under the bin arm, then a jam occurs due to an overfilled bin.

Use recommended paper

- Use only recommended paper or specialty media.
- Do not load wrinkled, creased, damp, bent, or curled paper.

- Flex, fan, and straighten paper or specialty media before loading it.
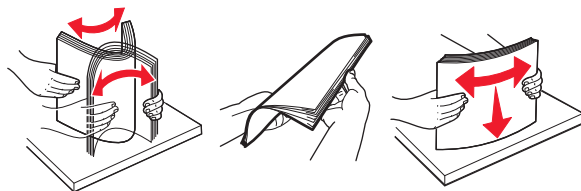
- Do not use paper that has been cut or trimmed by hand.
- Do not mix paper sizes, weights, or types in the same tray.
- Make sure the paper size and type are set correctly on the computer or printer control panel.
- Store paper per manufacturer recommendations.

Understanding jam messages and locations

When a jam occurs, a message indicating the jam location and information to clear the jam appears on the printer display. Open the doors, covers, and trays indicated on the display to remove the jam.

Notes:

- When Jam Assist is set to On, **Discarding pages** appears on the display and the printer flushes blank or pages with partial prints to the standard bin after a jammed page is cleared. Check your printed output for blank pages.
- When Jam Recovery is set to On or Auto, the printer reprints jammed pages. However, the Auto setting reprints jammed pages if adequate printer memory is available.
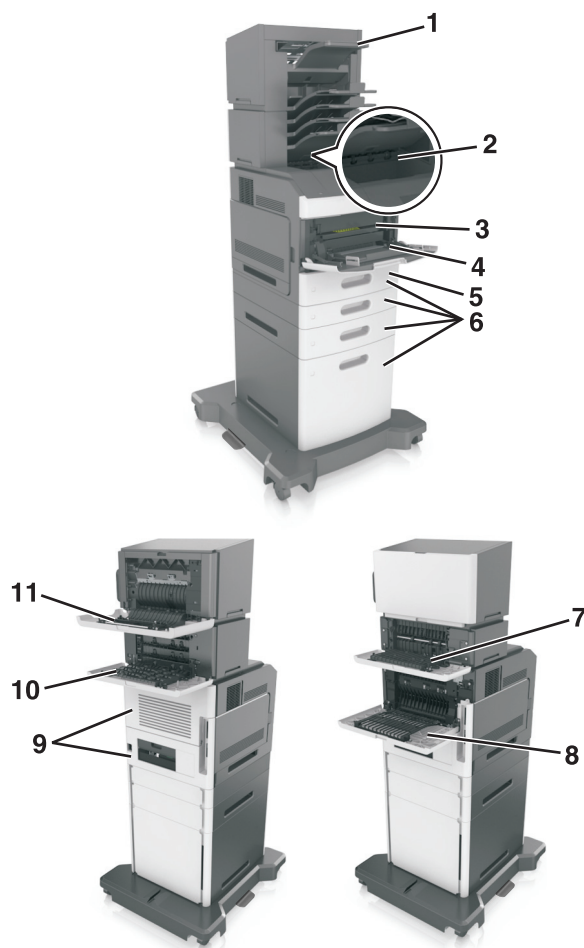
	Jam location	Printer message	What to do
1	Staple finisher	[x]-page jam, remove paper, open stapler door. Leave paper in bin. [455–457]	Remove paper from the stapler bin, open the stapler door, then remove the staple cartridge, and then remove the jammed staples.
2	Standard bin	[x]-page jam, remove standard bin jam. [203]	Remove jammed paper from the standard bin.
3	Inside the printer	[x]-page jam, lift front cover to remove cartridge. [200–201]	Open the front cover and the multipurpose feeder, then remove the toner cartridge and the imaging unit, and then remove the jammed paper.
4	Multipurpose feeder	[x]-page jam, clear manual feeder. [250]	Remove all paper from the multipurpose feeder, and then remove the jammed paper.
5	Duplex area	[x]-page jam, remove tray 1 to clear duplex. [235–239]	Pull out tray 1 completely, then push down the front duplex flap, and then remove the jammed paper.
6	Trays	[x]-page jam, open tray [x]. [24x]	Pull out the indicated tray, and then remove the jammed paper.
7	Output expander	[x]-page jam, remove paper, open expander rear door. Leave paper in bin. [41y.xx]	Open the rear door of the output expander, and then remove the jammed paper.

Diagnostics and troubleshooting

	Jam location	Printer message	What to do
8	Upper rear door	[x]-page jam, open upper rear door. [202]	Open the rear door of the printer, and then remove the jammed paper.
9	Upper door and rear duplex area	[x]-page jam, open upper and lower rear door. [231–234]	Open the rear door of the printer and the rear duplex area, and then remove the jammed paper.
10	Mailbox	[x]-page jam, remove paper, open mailbox rear door. Leave paper in bin. [43y.xx]	Open the rear door of the mailbox, and then remove the jammed paper.
11	Staple finisher rear door	[x]-page jam, remove paper, open finisher rear door. Leave paper in bin. [451]	Open the rear door of the staple finisher, and then remove the jammed paper.

[x]-page jam, lift front cover to remove cartridge. [200–201]

CAUTION—HOT SURFACE: The inside of the printer might be hot. To reduce the risk of injury from a hot component, allow the surface to cool before touching.

1 Lift the front cover, and then pull down the multipurpose feeder door.
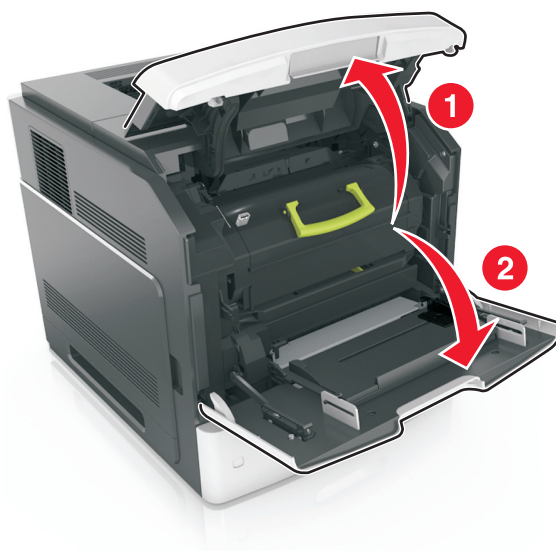
2 Lift the green handle, and then pull the toner cartridge out of the printer.
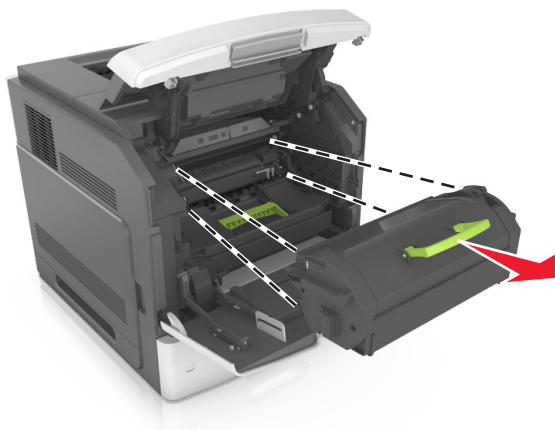
3 Place the cartridge aside.

4 Lift the green handle, and then pull the imaging unit out of the printer.
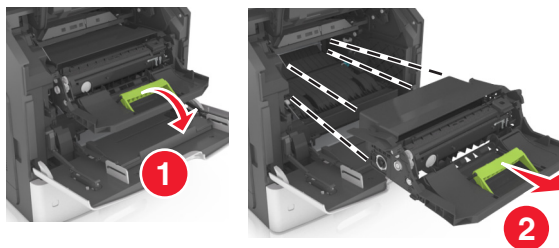
5 Place the imaging unit aside on a flat, smooth surface.

Warning—Potential Damage: Do not expose the imaging unit to direct light for more than 10 minutes. Extended exposure to light may cause print quality problems.

6 Pull the jammed paper gently to the right, and then remove it from the printer.

Note: Make sure all paper fragments are removed.
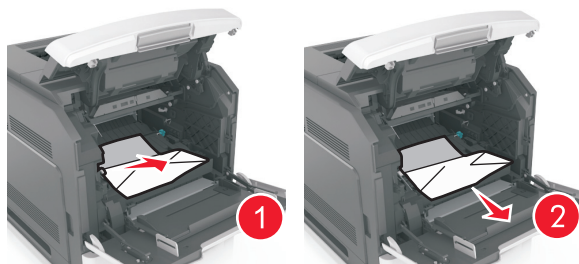
Warning—Potential Damage: The jammed paper may be covered with toner, which can stain garments and skin.

7 Install the imaging unit.
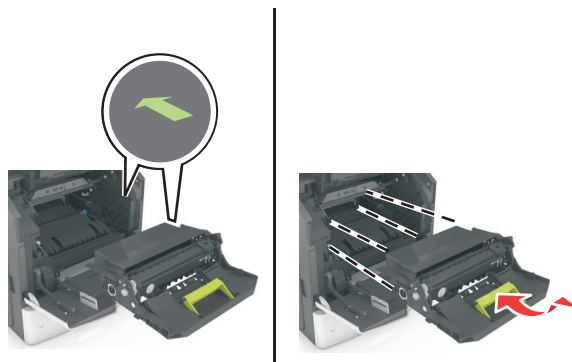
Note: Use the arrows on the side of the printer as a guide.

8 Insert the cartridge into the printer, and then push the green handle back into place.
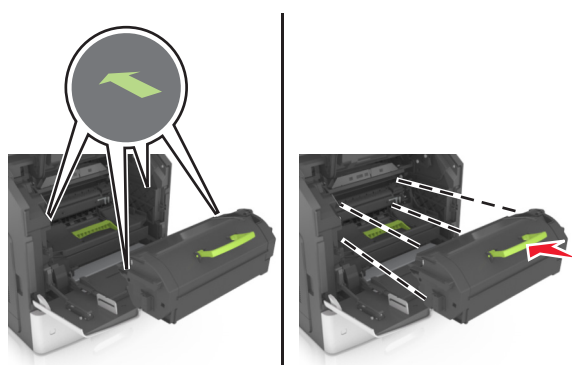
Notes:

- Align the arrows on the guides of the toner cartridge with the arrows in the printer.
- Make sure the cartridge is fully pushed in.

9 Close the multipurpose feeder door and the front cover.
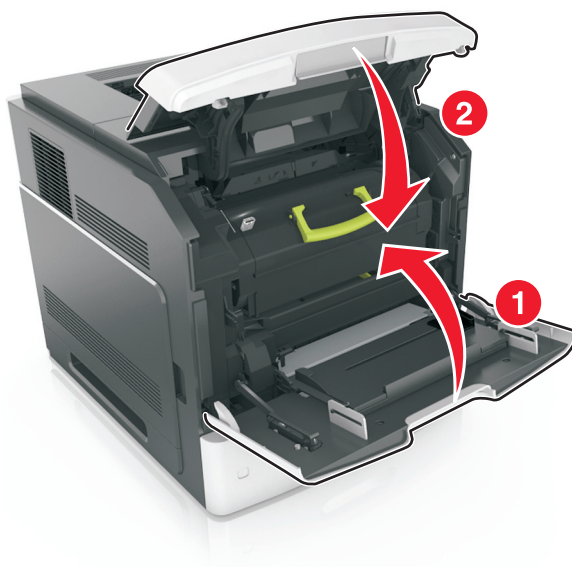
10 Do either of the following to clear the message and continue printing:

- For touch-screen printer models, touch ✔ or **Done**.

- For non-touch-screen printer models, select **Next** > Ⓥ > **Clear the jam, press OK** > Ⓥ .

[x]-page jam, open upper rear door. [202]

⚠ **CAUTION—HOT SURFACE:** The inside of the printer might be hot. To reduce the risk of injury from a hot component, allow the surface to cool before touching.

1 Pull down the rear door.

2 Firmly grasp the jammed paper on each side, and then gently pull it out.

Note: Make sure all paper fragments are removed.

3 Close the rear door.

Diagnostics and troubleshooting
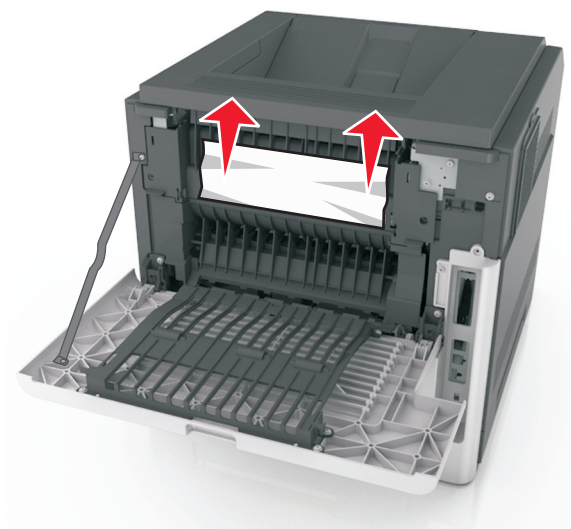
4 Do either of the following to clear the message and continue printing:

- For touch-screen printer models, touch ✔ or **Done**.

- For non-touch-screen printer models, select **Next** > ✔ > **Clear the jam, press OK** > ✔.

[x]-page jam, remove standard bin jam. [203]

1 Firmly grasp the jammed paper on each side, and then gently pull it out.

Note: Make sure all paper fragments are removed.

2 Do either of the following to clear the message and continue printing:

- For touch-screen printer models, touch ✔ or **Done**.

- For non-touch-screen printer models, select **Next** > ✔ > **Clear the jam, press OK** > ✔.

[x]-page jam, open upper and lower rear door. [231–234]

⚠ **CAUTION—HOT SURFACE:** The inside of the printer might be hot. To reduce the risk of injury from a hot component, allow the surface to cool before touching.

1 Pull down the rear door.

2 Firmly grasp the jammed paper on each side, and then gently pull it out.

Note: Make sure all paper fragments are removed.

Diagnostics and troubleshooting
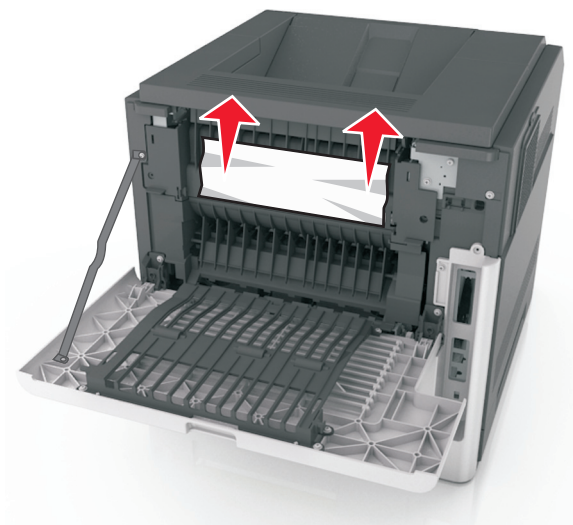
3 Close the rear door.

4 Push the back of the standard tray.

5 Press down the rear duplex flap, then firmly grasp the jammed paper, and then gently pull the paper out.

Note: Make sure all paper fragments are removed.

6 Insert the standard tray.

7 Do either of the following to clear the message and continue printing:

- For touch-screen printer models, touch ✔ or **Done**.

- For non-touch-screen printer models, select **Next** > ⓥ > **Clear the jam, press OK** > ⓥ.

[x]-page jam, remove tray 1 to clear duplex. [235–239]

1 Pull out the tray completely.

Note: Lift the tray slightly and pull it out.
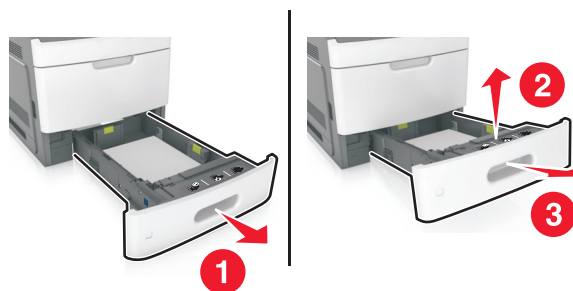
2 Push down the front duplex flap, then firmly grasp the jammed paper, and then gently pull the paper to the right and out of the printer.

Note: Make sure all paper fragments are removed.

3 Insert the tray.

4 Do either of the following to clear the message and continue printing:

- For touch-screen printer models, touch ✅ or **Done**.

- For non-touch-screen printer models, select **Next** > 🅥 > **Clear the jam, press OK** > 🅥.

[x]-page jam, open tray [x]. [24y]

1 Check which tray is indicated on the printer display, and then pull the tray.

2 Firmly grasp the jammed paper on each side, and then gently pull it out.

Note: Make sure all paper fragments are removed.

3 Insert the tray.

4 Do either of the following to clear the message and continue printing:

- For touch-screen printer models, touch ✔ or **Done**.

- For non-touch-screen printer models, select **Next** > ✔ > **Clear the jam, press OK** > ✔.

[x]‑page jam, open tray [x]. [24y]

1 Check which tray is indicated on the printer display, and then pull the tray.

2 Firmly grasp the jammed paper on each side, and then gently pull it out.

Diagnostics and troubleshooting

Note: Make sure all paper fragments are removed.

3 Insert the tray.

4 Do either of the following to clear the message and continue printing:

- For touch-screen printer models, touch ✔ or **Done**.

- For non-touch-screen printer models, select **Next** > ⓥ > **Clear the jam, press OK** > ⓥ.

[x]-page jam, clear manual feeder. [250]

1 From the multipurpose feeder, firmly grasp the jammed paper on each side, and then gently pull it out.

Note: Make sure all paper fragments are removed.

Diagnostics and troubleshooting
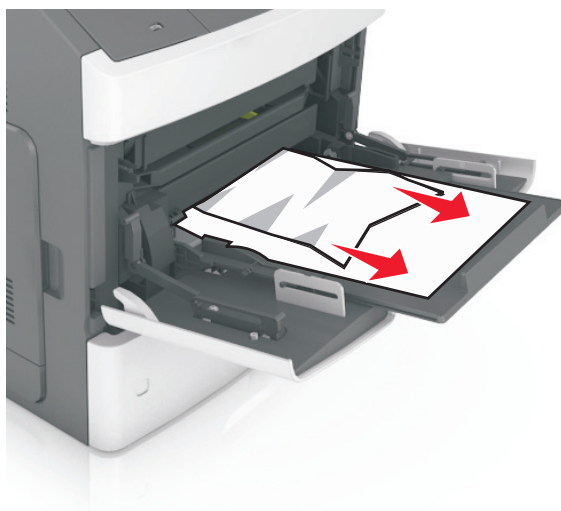
2 Flex the sheets of paper back and forth to loosen them. Do not fold or crease the paper. Straighten the edges on a level surface.

3 Reload paper into the multipurpose feeder.

4 Slide the paper guide until it lightly rests against the edge of the paper.
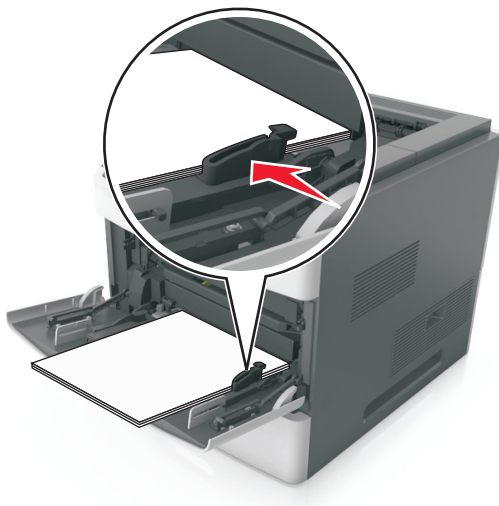
5 Do either of the following to clear the message and continue printing:

- For touch-screen printer models, touch ✔ or **Done**.

- For non-touch-screen printer models, select **Next** > ⓥ > **Clear the jam, press OK** > ⓥ.

[x]-page jam, remove paper, open expander rear door. Leave paper in bin. [41y.xx]

1 Open the rear output expander door.
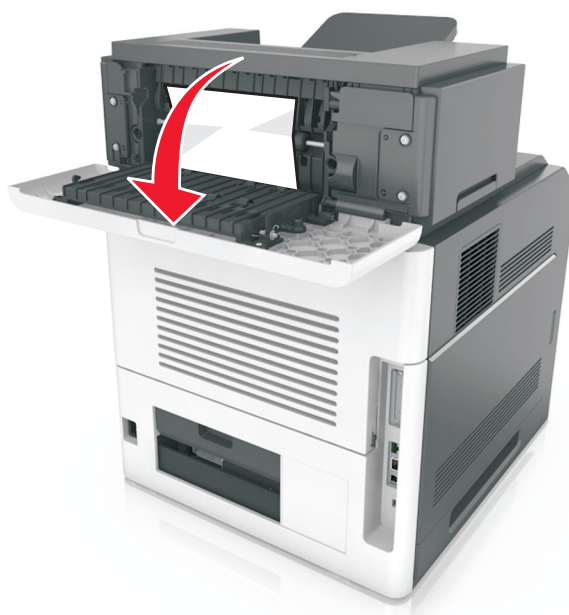
2 Firmly grasp the jammed paper on each side, and then gently pull it out.

   Note: Make sure all paper fragments are removed.
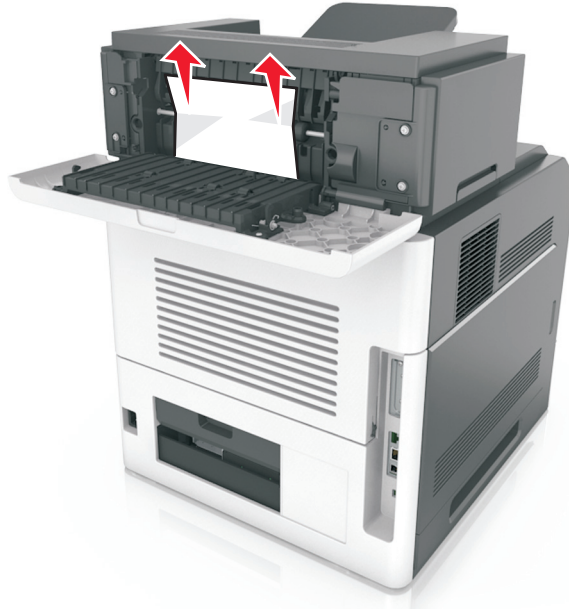
3 Close the rear output expander door.

4 Do either of the following to clear the message and continue printing:

- For touch-screen printer models, touch ✔ or **Done**.

- For non-touch-screen printer models, select **Next** > ⱱ > **Clear the jam, press OK** > ⱱ.

[x]-page jam, remove paper, open mailbox rear door. Leave paper in bin. [43y.xx]

1 Open the rear mailbox door.
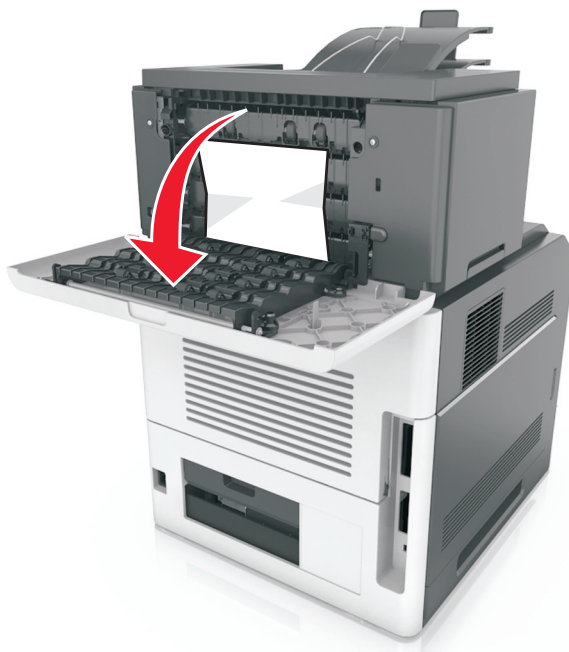
2 Firmly grasp the jammed paper on each side, and then gently pull it out.

Note: Make sure all paper fragments are removed.
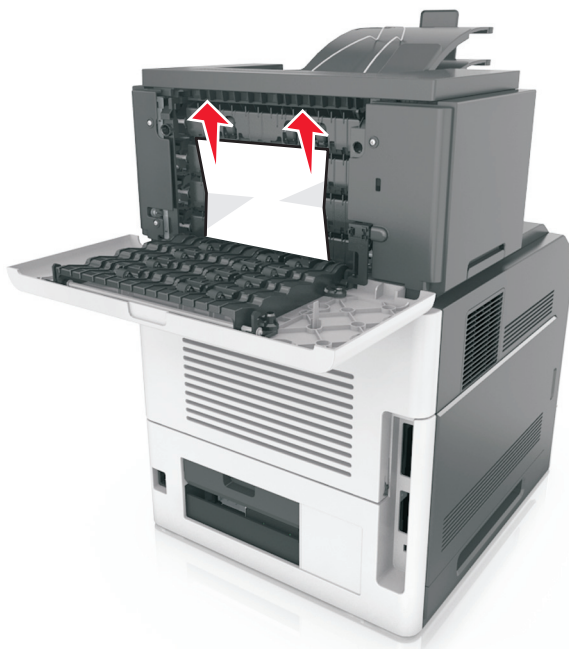
3 Close the rear mailbox door.

4 If the jam is in the mailbox bin, then firmly grasp the jammed paper, and then gently pull it out.

Note: Make sure all paper fragments are removed.
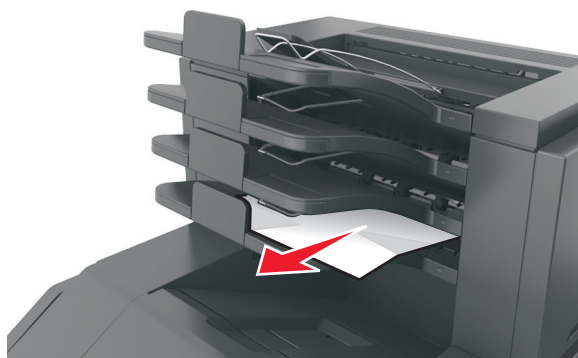
5 Do either of the following to clear the message and continue printing:

- For touch-screen printer models, touch [✓] or **Done**.

- For non-touch-screen printer models, select **Next** > [✓] > **Clear the jam, press OK** > [✓].

[x]-page jam, remove paper, open finisher rear door. Leave paper in bin. [451]

1 Open the rear staple finisher door.
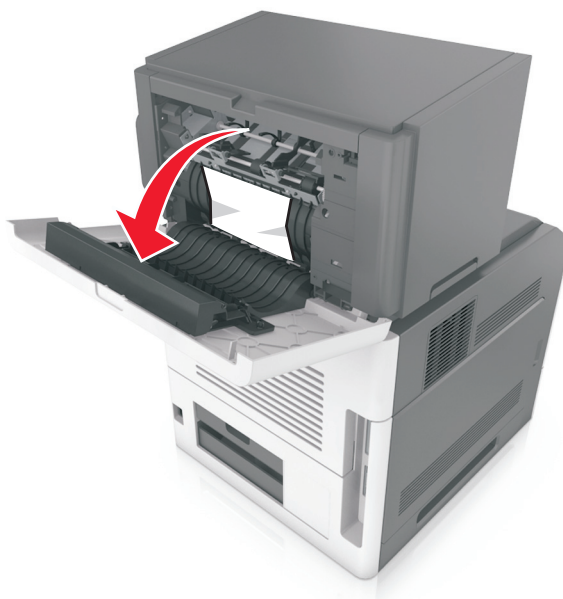
2 Firmly grasp the jammed paper on each side, and then gently pull it out.

Note: Make sure all paper fragments are removed.
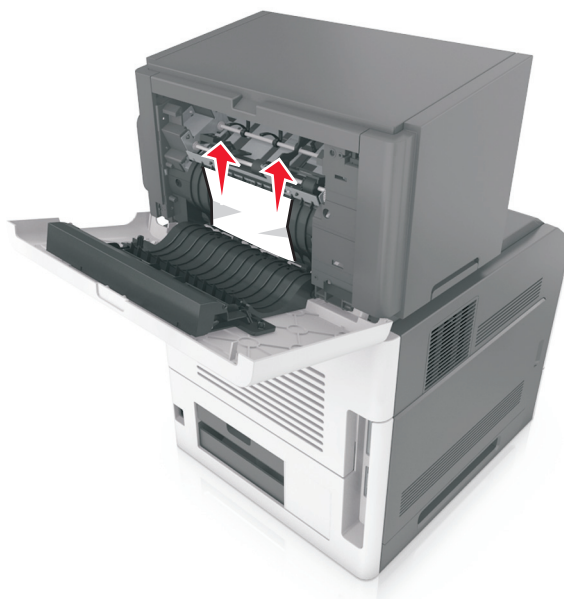
3 Close the staple finisher door.

4 Do either of the following to clear the message and continue printing:

- For touch-screen printer models, touch ✔ or **Done**.

- For non-touch-screen printer models, select **Next** > ⓥ > **Clear the jam, press OK** > ⓥ.

[x]-page jam, remove paper, open stapler door. Leave paper in bin. [455–457]

1 From the stapler bin, firmly grasp the jammed paper on each side, and then gently pull it out.

Note: Make sure all paper fragments are removed.
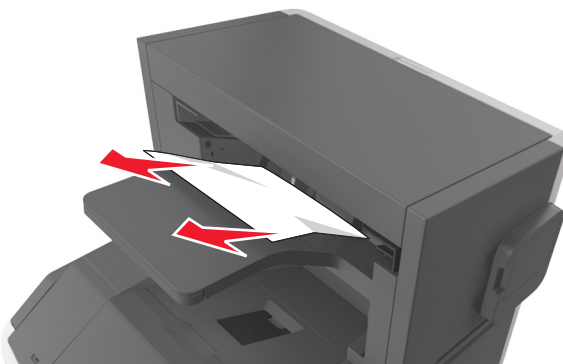
2 Open the stapler door.
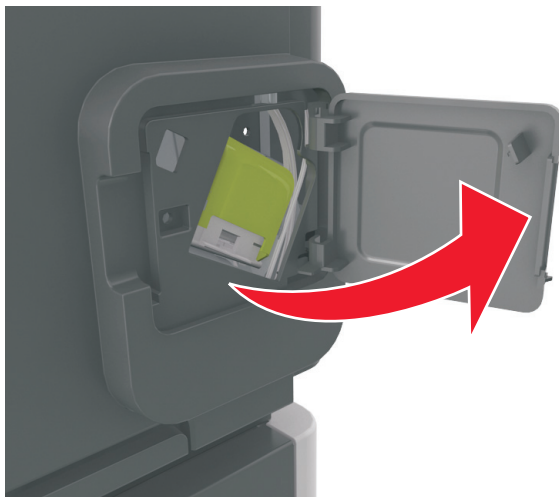
3 Pull down the latch of the staple cartridge holder, and then pull the holder out of the printer.
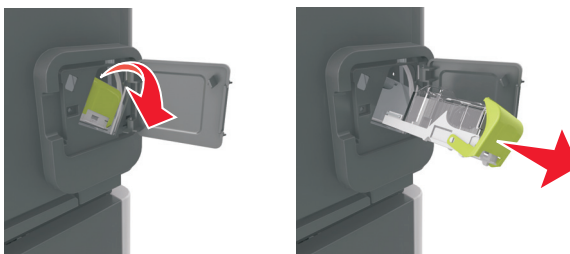
4 Use the metal tab to lift the staple guard, remove any loose staples, and then remove the partial slab of staples so only the full slabs remain.
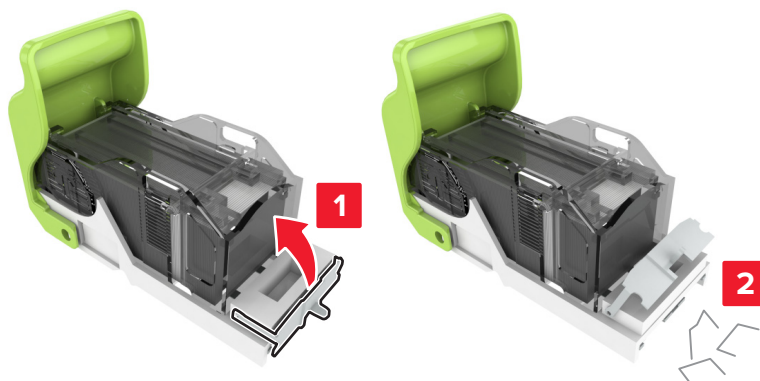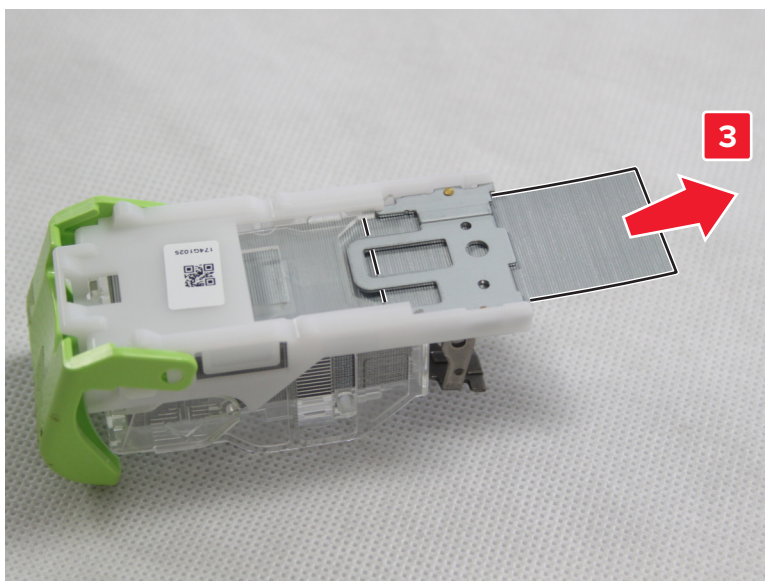
5 Press down the staple guard until it *clicks* into place.
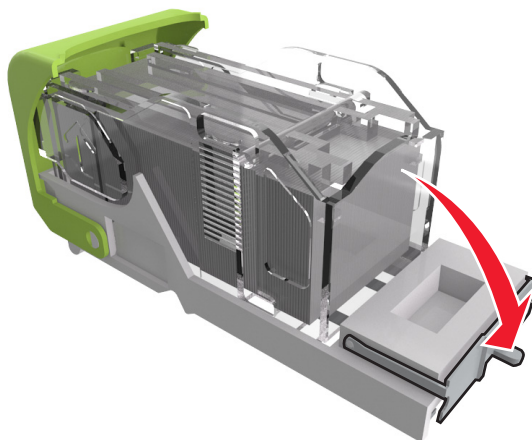
6 Push the cartridge holder firmly back into the stapler unit until the cartridge holder *clicks* into place.

7 Close the stapler door.

8 Do either of the following to clear the message and continue printing:

- For touch-screen printer models, touch ✓ or **Done**.

- For non-touch-screen printer models, select **Next** > ✓ > **Clear the jam, press OK** > ✓.

200–201 paper jams

200–201 paper jam messages

Error code	Description	Action
200.01	Media remains on the sensor (input) during the warm-up sequence.	Go to **"Sensor (input) static jam service check" on page 127**.
200.02	Media reached the sensor (input) sooner than the specified time. The wrong config ID causes the engine to assume a 550 paper path on a 250 model.	Go to **"Sensor (input) early arriving jam service check" on page 128**.
200.03	Media is late reaching the sensor (input) within the specified time.	Go to **"Sensor (input) never- or late-arriving jam service check" on page 129**.
200.05	Media reached the sensor (input) but did not clear it within the specified time. (Media source = MPF tray or Tray 1)	Go to **"Sensor (input) late-leaving or did-not-clear jam service check" on page 131**.
200.07	Media reached the sensor (input) but did not clear it within the specified time.	Go to **"Sensor (input) late-leaving or did-not-clear jam service check" on page 131**.
200.08	Media is late reaching the sensor (input) within the specified time.	Go to **"Sensor (input) never- or late-arriving jam service check" on page 129**.
200.09	The proper main motor feedback to start laser servo was not received.	Go to **"Main drive motor control jam service check" on page 133**.
200.10	Printhead motor was not locked when page reached the sensor (input).	Go to **"Printhead motor control jam service check" on page 133**.
200.11	Printhead motor fell out of lock after the page reached the sensor (input).	Go to **"Printhead motor control jam service check" on page 133**.
200.12	Printhead was not ready for the page when the sensor (input) was reached.	Go to **"Printhead motor control jam service check" on page 133**.
200.13	The page at the sensor (input) is not the next page to be imaged.	Go to **"Sensor (input) miscellaneous jam 1 service check" on page 135**.
200.14	Proper main motor feedback to start laser servo was not received.	Go to **"Main drive motor control jam service check" on page 133**.
200.15	Media reached the sensor (input) but did not clear it within the specified time. (Media source = Tray 1)	Go to **"Sensor (input) late-leaving or did-not-clear jam service check" on page 131**.
200.16	Main drive motor stalled.	Go to **"Main drive motor control jam service check" on page 133**.
200.17	Fuser motor stalled.	Go to **"Fuser drive motor control jam service check" on page 134**.
200.19	Paper never reached the sensor (input), but it was successfully picked from the source.	Go to **"Sensor (input) miscellaneous jam 1 service check" on page 135**.

Error code	Description	Action
200.25	Media reached the sensor (input) but did not clear it within the specified time. (Media source = Tray 2)	Go to **"Sensor (input) late-leaving or did-not-clear jam service check" on page 131**.
200.32	Detected sensor (control panel interlock) bounce.	Go to **"Sensor (input) miscellaneous jam 2 service check" on page 135**.
200.33	Printhead was not ready for page when sensor (input) was reached.	Go to **"Printhead motor control jam service check" on page 133**.
200.34	Short media detected.	Go to **"Sensor (input) miscellaneous jam 3 service check" on page 136**.
200.35	Media reached the sensor (input) but did not clear it within the specified time. (Media source = Tray 3)	Go to **"Sensor (input) late-leaving or did-not-clear jam service check" on page 131**.
200.45	Media reached the sensor (input), but did not clear it within the specified time. (Media source = Tray 4)	Go to **"Sensor (input) late-leaving or did-not-clear jam service check" on page 131**.
201.22	Toner add motor stalled.	Go to **"Toner dispense failure service check" on page 289**.

Sensor (input) static jam service check

Action	Yes	No
Step 1 Check the media path for partially fed or jammed media. Is the media path free from partially fed or jammed media?	Go to step 2.	Remove any pre-staged or jammed media.
Step 2 Check the sensor (input) for proper operation. a Enter the diagnostic mode. b Select **Base sensor test**. c Observe the line item **input**. Does the display on the operator panel change every time the sensing area of the sensor is interrupted or blocked?	Go to step 4.	Go to step 3.
Step 3 Check the sensor for proper connection. Is the sensor connected properly?	Replace the Sensor (input). See **"Sensor (input) removal" on page 481**. Go to step 4.	Reseat the connection. Go to step 4.
Step 4 Perform a print test. Does the problem remain?	Contact the next level of support.	The problem is solved.
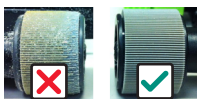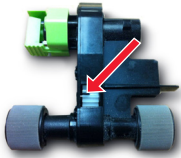
Sensor (input) early arriving jam service check

Action	Yes	No
Step 1 Check media origination. Did the media originate from the MPF?	Go to step 2.	Go to step 5.
Step 2 Check the MPF pick roller. Is the MPF pick roller free of excess wear and contamination?	Go to step 3.	Clean or replace the MPF pick roller. See **"MPF pick roller removal" on page 472**.
Step 3 Perform a MPF print test and check the MPF pick solenoid for proper operation. Does the component operate properly?	Go to step 4.	Replace the MPF pick solenoid.
Step 4 Check the MPF feeder lift plate assembly for damage. Is the component free from damage?	Go to step 5.	Replace the MPF feeder lift plate. See **"MPF feeder lift plate removal" on page 469**.
Step 5 Check all the media trays for proper media installation. Is the media properly installed in all the media trays?	Go to step 6.	Remove and properly reinstall the media.
Step 6 Check all of the media trays and the media path for partially fed media. Are the media trays and the media path free from any partially fed pieces of media?	Go to step 7.	Remove any pre-staged or jammed media.
Step 7 Check the sensor (input) for proper operation. a Enter the diagnostic mode. b Select **Base sensor test**. c Observe the line item **input**. Does the display on the operator panel change every time the sensing area of the sensor is interrupted or blocked?	Go to step 9.	Go to step 8.
Step 8 Check the sensor (input) for proper connection. Is the sensor connected properly?	Replace the Sensor (input). See **"Sensor (input) removal" on page 481**. Go to step 9.	Replace the connection. Go to step 9.

Action	Yes	No
Step 9 Perform a print test. Does the problem remain?	Contact the next level of support.	The problem is solved.

Sensor (input) never- or late-arriving jam service check

Action	Yes	No
Step 1 Were blank pages printed before the error occurred?	Go to step 12.	Go to step 2.
Step 2 Check the media size setup and tray guides for all media trays. Does the media size, in use, match the size set for all media trays?	Go to step 3.	Replace the media, or change the media size setup.
Step 3 Check the media trays for overfilling. Are any of the media trays overfilled?	Remove any excess new media.	Go to step 4.
Step 4 Check the media condition in all media trays. Is any of the media in any of the media trays crumpled or damaged or not laying flat?	Replace the damaged media.	Go to step 5.
Step 5 Check media origination. Did the media originate from the MPF?	Go to step 6.	Go to step 8.
Step 6 Check the MPF pick roll assembly. Is the component free of excess wear and contamination?	Go to step 7.	Clean or replace the MPF pick roller. See **"MPF pick roller removal" on page 472**.
Step 7 Perform a MPF print test, and check the MPF pick solenoid for proper operation. Does the component operate properly?	Go to step 10.	Replace the MPF pick solenoid.

Action	Yes	No
Step 8 Check the pick roller assembly in the media tray being picked from. Make sure it is clean and free of excess wear and contamination. **Note:** Check also the gears and remove any debris or toner. Is the pick roller assembly free of excess wear and contamination?	Go to step 9.	Clean or replace the pick roller assembly. See **"Pick roller assembly removal" on page 559**.
Step 9 Check the pick roller assembly for proper installation. Fully press the pick roller assembly toward the sensor to make sure the mounting latches are properly engaging the slot in the shaft. Does the problem remain?	Go to step 10.	The problem is solved.
Step 10 Check the aligner assembly for obstructions or damaged rollers. Is the component free from obstructions and damage?	Go to step 11.	Remove obstructions or replace the aligner assembly.
Step 11 Check the duplex exit diverter and spring. Is the spring properly attached and the diverter free of binding?	Go to step 12.	Replace the duplex exit diverter and spring.
Step 12 Check the sensor (input) for proper operation. a Enter the diagnostic mode. b Select **Base sensor test**. c Observe the line item **input**. Does the display on the operator panel change every time the sensing area of the sensor is interrupted or blocked?	Go to step 14.	Go to step 13.
Step 13 Check the sensor for proper connection. Is the sensor connected properly?	Replace the Sensor (input). See **"Sensor (input) removal" on page 481**.	Replace the connection.

Action	Yes	No
Step 14 Perform a print test, and check the appropriate media feeder. Is the media properly picked and advanced out of the appropriate media tray?	Go to step 15.	Replace the appropriate media feeder. See **"Media feeder removal" on page 575**.
Step 15 Perform a print test, and check the main motor assembly. Is the media properly transported and able to reach the sensor (input)?	Go to step 16.	Replace the main drive motor. See **"Main drive motor removal" on page 574**.
Step 16 Perform a print test. Does the problem remain?	Contact the next level of support.	The problem is solved.

Sensor (input) late-leaving or did-not-clear jam service check

Action	Yes	No
Step 1 Check the media size setup and tray guides for all media trays. Does the media size, in use, match the size set for all media trays?	Go to step 2.	Replace the media, or change the media size setup.
Step 2 Check the media trays for overfilling. Are any of the media trays overfilled?	Remove any excess new media.	Go to step 3.
Step 3 Check the media condition in all media trays. Is any of the media in any of the media trays crumpled or damaged?	Replace the damaged media.	Go to step 4.
Step 4 Check media origination. Did the media originate from the MPF?	Go to step 5.	Go to step 7.
Step 5 Check the MPF pick roll assembly. Is the component free of excess wear and contamination?	Go to step 6.	Clean or replace the MPF pick roller. See **"MPF pick roller removal" on page 472**.

Action	Yes	No
Step 6 Perform a MPF print test, and check the MPF pick solenoid for proper operation. Does the component operate properly?	Go to step 9.	Replace the MPF pick solenoid.
Step 7 Check the pick roller in the media tray being picked from. Is the pick roller free of excess wear and contamination?	Go to step 8.	Clean or replace the pick roller. See **"Pick roller assembly removal" on page 559**.
Step 8 Check the aligner assembly for obstructions. Is the component free from obstructions?	Go to step 9.	Remove obstructions.
Step 9 Check the sensor (input) for proper operation. a Enter the diagnostic mode. b Select **Base sensor test**. c Observe the line item **input**. Does the display on the control panel change every time the sensing area of the sensor is interrupted or blocked?	Go to step 11.	Go to step 10.
Step 10 Check the sensor for proper connection. Is the sensor connected properly?	Replace the Sensor (input). See **"Sensor (input) removal" on page 481**.	Replace the connection.
Step 11 Perform a print test, and check the appropriate media feeder. Is the media properly picked and advanced out of the appropriate media tray?	Go to step 12.	Replace the appropriate media feeder. See **"Media feeder removal" on page 575**.
Step 12 Perform a print test, and check the main motor assembly. Is the media properly transported and able to reach the sensor (input)?	Go to step 13.	Replace the main drive motor. See **"Main drive motor removal" on page 574**.
Step 13 Perform a print test. Does the problem remain?	Contact the next level of support.	The problem is solved.

Main drive motor control jam service check

Action	Yes	No
Step 1 Reseat the imaging unit, and then perform a print test. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Replace the imaging unit. Does the error remain?	Go to step 3.	The problem is solved.
Step 3 Make sure that the main drive motor and the socket TRANSPORT MTR on the controller board are properly connected. Does the error remain?	Replace the main drive motor. See **"Main drive motor removal" on page 574**.	The problem is solved.
Step 4 Reset the printer. Does the error remain?	Replace the controller board. See **"Controller board removal" on page 568**.	The problem is solved.

Printhead motor control jam service check

Action	Yes	No
Step 1 Ensure the cables for sockets "MIR MTR" and "VIDEO" on the controller card are properly connected and not damaged. Are the cables connected and undamaged?	Go to step 2.	Reseat the connections. Go to step 2.
Step 2 Reset the machine. Does the error continue?	Replace the printhead. See **"Laser printhead removal" on page 458**.	Problem solved.
Step 3 Reset the machine. Does the error continue?	Replace the controller board. See **"Controller board removal" on page 568**.	Problem solved.

Fuser drive motor control jam service check

Action	Yes	No
Step 1 Make sure that the paper is properly loaded to the tray. See **"Avoiding jams" on page 104**. **a** Make sure that the paper is properly loaded to the tray. See **"Avoiding jams" on page 104**. **b** Perform a print test. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Make sure that the firmware version is the latest, and update if necessary. Does the error remain?	Go to step 3.	The problem is solved.
Step 3 Check if the voltage value at the power source is acceptable (>95% of rated voltage when printer is in Ready State). The following are the acceptable values for specific geographies: • >109 VAC, US • >218 VAC, HV geographies • >95 VAC, Japan Does the error remain?	Go to step 4.	The problem is solved.
Step 4 Make sure that the fuser drive motor and the socket J24 on the controller board are properly connected. Does the error remain?	Replace the fuser drive motor. See **"Fuser drive motor removal" on page 571**. Go to step 5.	The problem is solved.
Step 5 Reset the printer. Does the error remain?	Contact the next level of support.	The problem is solved.

Sensor (input) miscellaneous jam 1 service check

Action	Yes	No
Step 1 Check the appropriate media tray sensor (pass through) in the appropriate input option for proper operation. **a** Enter the diagnostic mode. **b** Select **Input tray tests**. **c** Select **Sensor test**. **d** Select the appropriate input tray. Observe the line item "pass through" for the appropriate media tray. Does the display on the control panel change every time the sensing area of the sensor is interrupted or blocked?	Go to step 3.	Go to step 2.
Step 2 Check the sensor for proper connection. Is the sensor connected properly?	Replace the sensor (pass through). See **"Sensor (drawer pass through) removal " on page 608**.	Reseat the connection.
Step 3 Perform a print test using the appropriate input tray. Does the error continue?	Replace the input option.	The problem is solved.

Sensor (input) miscellaneous jam 2 service check

Action	Yes	No
Step 1 Check the sensor (control panel door interlock) for proper operation. **a** Enter the diagnostic mode. **b** Select **Base sensor test**. **c** Observe the line item **control panel door interlock**. Does the display on the control panel change every time the sensing area of the sensor is interrupted or blocked?	Go to step 3.	Go to step 2.
Step 2 Check the sensor (control panel door interlock) for proper connection. Is the sensor connected properly?	Replace the sensor (control panel door interlock). Go to step 3.	Replace the connection. Go to step 3.

Action	Yes	No
Step 3 Reset the machine. Does the error continue?	Replace the controller board. See **"Controller board removal" on page 568**.	The problem is solved.

Sensor (input) miscellaneous jam 3 service check

Action	Yes	No
Step 1 Check the media size setup and tray guides for all media trays. Does the media size in use match the size set for all media trays?	Go to step 2.	Replace the media, or change the media size setup.
Step 2 Check the media condition in all media trays. Is any of the media in any of the media trays crumpled or damaged?	Replace the damaged media.	Go to step 3.
Step 3 Reset the machine. Does the error continue?	Contact the next level of technical support.	Problem solved.

202 paper jams

202 paper jam messages

Error code	Description	Action
202.01	Media remains on the sensor (fuser exit) during the warm-up sequence	Go to **"Sensor (fuser exit) static jam service check" on page 137**.
202.03	The media is late reaching the sensor (fuser exit) within the specified time	Go to **"Sensor (fuser exit) late-arriving jam service check" on page 139**.
202.05	The media reached the sensor (fuser exit) but did not clear it within the specified time	Go to **"Sensor (fuser exit) late-leaving jam service check" on page 138**.
202.07	The media reached the sensor (fuser exit) but did not clear it within the specified time	Go to **"Sensor (fuser exit) late-leaving jam service check" on page 138**.
202.13	The media is late reaching the sensor (fuser exit) within the specified time	Go to **"Sensor (fuser exit) late-arriving jam service check" on page 139**.
202.14	Expected banner sheet (assumed wide) not detected by narrow media sensor—possible accordion jam, unsupported narrow banner media, or missing signal	Go to **"Sensor (narrow media) late arriving jam service check" on page 140**.

Error code	Description	Action
202.16	Page at fuser nip before fuser started ramping toward desired area. Indicates code may be receiving more hall interrupts than intended	Go to **"Fuser drive motor control jam service check" on page 134**.
202.17	Page at fuser nip before fuser reached acceptable operating temperature. Page arrived at fuser earlier than expected, so it was probably staged	Go to **"Fuser drive motor control jam service check" on page 134**.
202.22	Cartridge Motor—Motor under-speed error. Motor made it to closed loop at a steady state, but then detected speed was below threshold	Go to **"Fuser drive motor control jam service check" on page 134**.
202.28	The sensor (fuser exit) rebounded upon being released by the trailing edge of the media	Go to **"Sensor (fuser exit) miscellaneous jam service check" on page 141**.
202.31	Media remains on the sensor (narrow media) during the warm-up sequence	Go to **"Sensor (narrow media) static jam service check" on page 143**.
202.32	The media reached the sensor (fuser exit) but did not clear it within the specified time	Go to **"Sensor (fuser exit) late-leaving jam service check" on page 138**.
202.33	Expected wide page not detected by sensor (narrow media), possible accordion jam or missing signal	Go to **"Sensor (narrow media) late arriving jam service check" on page 140**.
202.43	The media is late reaching the sensor (fuser exit) within the specified time	Go to **"Sensor (fuser exit) late-arriving jam service check" on page 139**.
202.45	Media remains on the sensor (fuser exit) during the warm-up sequence	Go to **"Sensor (fuser exit) static jam service check" on page 137**.
202.49	Fuser info chip error	Go to **"Fuser ID chip control jam service check" on page 141**.

Sensor (fuser exit) static jam service check

Action	Yes	No
Step 1 Check the media size setup and tray guides for all media trays. Does the media size, in use, match the size set for all media trays?	Go to step 2.	Replace the media, or change the media size setup.
Step 2 Check the media condition in all media trays. Is any of the media in any of the media trays crumpled or damaged?	Replace the damaged media with new media.	Go to step 3.

Action	Yes	No
Step 3 Reset the machine. Does the error continue?	Contact the next highest level of technical support.	Problem solved.

Sensor (fuser exit) late-leaving jam service check

Action	Yes	No
Step 1 Check the rear door. Is the rear door free of damage and properly closed?	Go to step 2.	Close or replace the rear door. See **"Rear door removal" on page 534**.
Step 2 Check the fuser unit assembly for damage and life expiration. Is the component damaged or has it exceeded life?	Replace the fuser. See **"Fuser removal" on page 538**.	Go to step 3.
Step 3 Check the sensor (fuser output) for proper operation. a Enter the diagnostic mode. b Select **Base sensor tests**. c Observe the line item **fuser exit**. Does the display on the control panel change every time the sensing area of the sensor is interrupted or blocked?	Go to step 5.	Go to step 4.
Step 4 Check the sensor (fuser output) for proper connection. Is the sensor connected properly?	Replace the fuser. See **"Fuser removal" on page 538**.	Reseat the connection.
Step 5 Check the upper redrive for damage. Is the component free from damage?	Go to step 6.	Replace the upper redrive. See **"Upper redrive removal" on page 549**.
Step 6 Perform a print test, and check the upper redrive motor for proper operation. Does the component operate properly?	Go to step 7.	Replace the upper redrive motor. See **"Upper redrive motor removal" on page 547**.
Step 7 Perform a print test. Does the problem remain?	Contact the next level of support.	The problem is solved.

Sensor (fuser exit) late-arriving jam service check

Action	Yes	No
Step 1 Check the fuser unit assembly for damage and life expiration. Is the component damaged or has it exceeded life?	Replace the fuser. See **"Fuser removal" on page 538**.	Go to step 2.
Step 2 Check the fuser unit assembly for obstructions. Is the component free from obstructions?	Go to step 3.	Go to step 3.
Step 3 Check the sensor (fuser output) for proper operation. **a** Enter the diagnostic mode. **b** Select **Base sensor tests**. **c** Observe the line item **output**. Does the display on the control panel change every time the sensing area of the sensor is interrupted or blocked?	Go to step 5.	Go to step 4.
Step 4 Check the sensor (fuser output) for proper connection. Is the sensor connected properly?	Replace the fuser. See **"Fuser removal" on page 538**.	Reseat the connection.
Step 5 Check the transfer roller for damage. Is the component free from damage?	Go to step 6.	Replace the transfer roller. See **"Transfer roller removal" on page 488**.
Step 6 Check the media aligner roller for damage. Is the component free from damage?	Go to step 7.	Replace the media aligner roller. See **"Media aligner roller removal" on page 464**.
Step 7 Perform a print test, and check the main motor assembly for proper operation. Is the media properly transported and able to reach the sensor (fuser exit)?	Go to step 8.	Replace the upper fuser drive motor. See **"Fuser drive motor removal" on page 571**.
Step 8 Perform a print test. Does the problem remain?	Contact the next level of support.	The problem is solved.

Sensor (narrow media) late arriving jam service check

Action	Yes	No
Step 1 Check the media size setup and tray guides for all media trays. Does the media size, in use, match the size set for all media trays?	Go to step 2.	Replace the media, or change the media size setup.
Step 2 Check all the media trays for proper media installation. Is the media properly installed in all the media trays?	Go to step 3.	Remove and properly reinstall the media.
Step 3 Check the rear door. Is the rear door free of damage and properly closed?	Go to step 4.	Close or replace the rear door. See **"Rear door removal" on page 534**.
Step 4 Check the fuser unit assembly for damage and life expiration. Is the component damaged, or has it exceeded life?	Replace the fuser. See **"Fuser removal" on page 538**.	Go to step 5.
Step 5 Check the sensor (narrow media) for proper operation. a Enter the diagnostic mode. b Select **Base sensor test**. c Observe the line item **input**. Does the display on the operator panel change every time the sensing area of the sensor is interrupted or blocked?	Go to step 7.	Go to step 6.
Step 6 Check the sensor (narrow media) for proper connection. Is the sensor connected properly?	Replace the fuser. See **"Fuser removal" on page 538**.	Reseat the connection.
Step 7 Check the upper redrive for damage. Is the component free from damage?	Go to step 8.	Replace the upper redrive. See **"Upper redrive removal" on page 549**.
Step 8 Perform a print test, and check the upper redrive motor for proper operation. Does the component operate properly?	Go to step 9.	Replace the upper redrive motor. See **"Upper redrive motor removal" on page 547**.
Step 9 Perform a print test. Does the problem remain?	Contact the next level of support.	The problem is solved.

Sensor (fuser exit) miscellaneous jam service check

Action	Yes	No
Step 1 Check the sensor (fuser exit) for proper operation. **a** Enter the diagnostic mode. **b** Select **Base sensor test**. **c** Observe the line item **fuser exit**. Does the display on the control panel change every time the sensing area of the sensor is interrupted or blocked?	Go to step 3.	Go to step 2.
Step 2 Check the sensor (fuser exit) for proper connection. Is the sensor connected properly?	Replace the fuser. See **"Fuser removal" on page 538**.	Reseat the connection.
Step 3 Perform a print test. Does the problem remain?	Contact the next level of support.	The problem is solved.

Fuser ID chip control jam service check

Action	Yes	No
Step 1 Ensure the fuser is properly installed. Is the fuser properly installed?	Go to step 2.	Reinstall the fuser.
Step 2 Remove the existing fuser, and install a different fuser. Does the error remain?	Replace the fuser. See **"Fuser removal" on page 538**. Go to step 3.	Problem solved.
Step 3 Ensure the cable for socket J27 on the controller board is properly connected. Is the above connection properly connected?	Go to step 4.	Reseat the connection.
Step 4 Ensure the LVPS connections are properly connected. Are the above connections properly connected?	Go to step 5.	Reseat the connections.

Action	Yes	No
Step 5 Reset the machine. Does the error continue?	Replace the LVPS. Go to **"LVPS removal" on page 592**. Go to step 6.	Problem solved.
Step 6 Reset the machine. Does the error continue?	Replace the controller board. See **"Controller board removal" on page 568**.	Problem solved.

203 paper jams

203 paper jam messages

Error code	Description	Action
203.01	Media remains on the sensor (narrow media) during the warm-up sequence (MS71x)	Go to **"Sensor (narrow media) static jam service check" on page 143**.
203.20	Took too long to ramp up upper redrive motor	Go to **"Upper redrive motor control jam service check" on page 143**.
203.21	Upper redrive motor stopped after successful start up	Go to **"Upper redrive motor control jam service check" on page 143**.
203.22	Upper redrive motor under-speed error	Go to **"Upper redrive motor control jam service check" on page 143**.
203.30	Upper redrive motor failed to stop the sheet at the duplex reverse point within the specified time	Go to **"Upper redrive motor control jam service check" on page 143**.

Sensor (narrow media) static jam service check

Action	Yes	No
Step 1 Check the fuser for jammed media. Is the fuser path free from jammed media?	Go to step 2.	Remove any jammed media.
Step 2 Check the sensor (fuser exit) for proper operation. **a** Enter the diagnostic mode. **b** Select **Base sensor test**. **c** Observe the line item **fuser exit**. Does the display on the control panel change every time the sensing area of the sensor is interrupted or blocked?	Go to step 4.	Go to step 3.
Step 3 Check the sensor (fuser exit) for proper connection. Is the sensor connected properly?	Replace the fuser. See **"Fuser removal" on page 538**. Go to step 4.	Reseat the connection. Go to step 4.
Step 4 Perform a print test. Does the problem remain?	Contact the next level of support.	The problem is solved.

Upper redrive motor control jam service check

Action	Yes	No
Step 1 Ensure the upper redrive area is free of media jams. Is the upper redrive area free from media jams?	Go to step 2.	Remove media jams. Go to step 2.
Step 2 Check the upper redrive for damage. Is the upper redrive free from damage?	Go to step 3.	Replace the upper redrive. See **"Upper redrive removal" on page 549**.
Step 3 Ensure the upper redrive motor cable and the socket "REDRIVE" on the controller board is properly connected. Is the above cable properly connected?	Go to step 4.	Reseat the connection.

Action	Yes	No
Step 4 Reset the machine. Does the error continue?	Replace the upper redrive motor. See **"Upper redrive motor removal" on page 547**. Go to step 5.	Problem solved.
Step 5 Reset the machine. Does the error continue?	Replace the controller card. See **"Controller board removal" on page 568**.	Problem solved.

23y paper jams

23y paper jam messages

Error code	Description	Action
230.01	Media remains on the sensor (duplex path) during the warm up sequence	Go to **"Sensor (duplex path) static jam service check" on page 145**.
230.02	The media reached the sensor (duplex path) sooner than the specified time	Go to **"Sensor (duplex path) early arriving jam service check" on page 145**.
230.03	The media is late reaching the sensor (duplex path) within the specified time	Go to **"Sensor (duplex path) never- or late-arriving jam service check" on page 146**.
232.03	The media is late reaching the sensor (input) within the specified time when exiting the duplex	Go to **"Sensor (input) never-arriving jam (exiting duplex) service check" on page 149**.
230.05	The media reached the sensor (duplex path) but did not clear it within the specified time	Go to **"Sensor (duplex path) late leaving jam service check" on page 147**.
230.07	The media reached the sensor (duplex path) but did not clear it within the specified time	Go to **"Sensor (duplex path) late leaving jam service check" on page 147**.
230.20	Took too long to ramp up duplex motor	Go to **"Duplex control jam service check" on page 148**.
230.21	Duplex motor stopped after successful start up	Go to **"Duplex control jam service check" on page 148**.
230.22	Duplex motor under-speed error	Go to **"Duplex control jam service check" on page 148**.
230.28	The sensor (duplex path) rebounded upon being released by the trailing edge of the media	Go to **"Sensor (duplex path) miscellaneous jam service check" on page 149**.

Sensor (duplex path) static jam service check

Action	Yes	No
Step 1 Check the duplex path for jammed media. Is the duplex path free from jammed media?	Go to step 2.	Remove any jammed media.

Step 2
Check the sensor (duplex path) for proper operation.
  a Enter the diagnostic mode.
  b Select **duplex tests**.
  c Select **sensor test**.
  d Observe the line item **sensor**.
 	
Does the display on the control panel change every time the sensing area of the sensor is interrupted or blocked?
	Go to step 4.	Go to step 3.

Step 3 Check the sensor (duplex path) for proper connection. Is the sensor connected properly?	Replace the sensor (duplex path). See **"Sensor (duplex path) removal" on page 561**. Go to step 4.	Reseat the connection. Go to step 4.
Step 4 Perform a print test. Does the problem remain?	Contact the next level of support.	The problem is solved.

Sensor (duplex path) early arriving jam service check

Action	Yes	No
Step 1 Check the duplex path for jammed media and obstructions. Is the duplex path free from jammed media and obstructions?	Go to step 2.	Remove any jammed media or obstructions.

Step 2
Check the sensor (duplex path) for proper operation.
  a Enter the diagnostic mode.
  b Select **duplex tests**.
  c Select **sensor test**.
  d Observe the line item **sensor**.
 	
Does the display on the control panel change every time the sensing area of the above sensor is interrupted or blocked?
	Go to step 4.	Go to step 3.

Action	Yes	No
Step 3 Check the above sensor for proper connection. Is the above sensor connected properly?	Replace the sensor (duplex path). See **"Sensor (duplex path) removal" on page 561**.	Reseat the connection.
Step 4 Perform a print test. Does the problem remain?	Contact the next highest level of technical support.	Problem solved.

Sensor (duplex path) never- or late-arriving jam service check

Action	Yes	No
Step 1 Check the fuser access door area for media jams and obstructions. Is the fuser access door area free from jammed media and obstructions?	Go to step 2.	Remove any jammed media or obstructions.
Step 2 Check the diverter on the fuser access door. Is the diverter moving freely and not binding?	Go to step 3.	Replace the fuser access door. See **"Fuser access door removal" on page 539**.
Step 3 Check the duplex path for jammed media and obstructions. Is the duplex path free from jammed media and obstructions?	Go to step 4.	Remove any jammed media or obstructions.
Step 4 Check the sensor (duplex path) for proper operation. a Enter the diagnostic mode. b Select **duplex tests**. c Select **sensor test**. d Observe the line item **sensor**. Does the display on the control panel change every time the sensing area of the sensor is interrupted or blocked?	Go to step 6.	Go to step 5.
Step 5 Check the sensor (duplex path) for proper connection. Is the sensor connected properly?	Replace the sensor (duplex path). See **"Sensor (duplex path) removal" on page 561**.	Reseat the connection.

Action	Yes	No
Step 6 Ensure the duplex motor cable is properly connected. Is the cable properly connected?	Go to step 7.	Reseat the connection.
Step 7 Perform a print test. Does the error continue?	Replace the duplex motor. See **"Duplex motor removal" on page 535**.	The problem is solved.
Step 8 Perform a print test. Does the error continue?	Replace the controller card. See **"Controller board removal" on page 568**.	The problem is solved.

Sensor (duplex path) late leaving jam service check

Action	Yes	No
Step 1 Check the duplex path for media jams and obstructions. Is the duplex path free from media jams and obstructions?	Go to step 2.	Remove media jams and obstructions.
Step 2 Check the duplex front flap for damage. Is the duplex front flap free from damage?	Go to step 3.	Replace the duplex front flap. See **"Duplex front flap removal" on page 552**.
Step 3 Check the sensor (duplex path) for proper operation. a Enter the diagnostic mode. b Select **duplex tests**. c Select **sensor test**. d Observe the line item **sensor**. Does the display on the control panel change every time the sensing area of the sensor is interrupted or blocked?	Go to step 5.	Go to step 4.
Step 4 Check the sensor (duplex path) for proper connection. Is the sensor connected properly?	Replace the sensor (duplex path) See **"Sensor (duplex path) removal" on page 561**.	Reseat the connection
Step 5 Check the upper redrive for damage. Is the component free from damage?	Go to step 6.	Replace the upper redrive. See **"Upper redrive removal" on page 549**.

Action	Yes	No
Step 6 Perform a print test and check the upper redrive motor for proper operation. Does the component operate properly?	Go to step 7.	Replace the upper redrive motor. See **"Upper redrive motor removal" on page 547**.
Step 7 Perform a print test. Does the problem remain?	Contact the next level of technical support.	The problem is solved.

Duplex control jam service check

Action	Yes	No
Step 1 Check the duplex path for media jams and obstructions. Is the duplex path free from media jams and obstructions?	Go to step 2.	Remove media jams and obstructions.
Step 2 Ensure the duplex motor cable and the socket "DUPLEX MTR" on the controller board is properly connected. Is the above cable properly connected?	Go to step 3.	Reseat the connection.
Step 3 Reset the machine. Does the error continue?	Replace the duplex motor. See **"Duplex motor removal" on page 535**. Go to step 4.	Problem solved.
Step 4 Reset the machine. Does the error continue?	Replace the controller board. See **"Controller board removal" on page 568**.	Problem solved.

Sensor (duplex path) miscellaneous jam service check

Action	Yes	No
Step 1 Check the sensor (duplex path) for proper operation. **a** Enter the diagnostic mode. **b** Select **duplex tests**. **c** Select **sensor test**. **d** Observe the line item **sensor**. Does the display on the control panel change every time the sensing area of the above sensor is interrupted or blocked?	Go to step 3.	Go to step 2.
Step 2 Check the above sensor for proper connection. Is the above sensor connected properly?	Replace the sensor (duplex path) See **"Sensor (duplex path) removal" on page 561**.	Reseat the connection.
Step 3 Perform a print test. Does the problem remain?	Contact the next level of technical support.	Problem solved.

Sensor (input) never-arriving jam (exiting duplex) service check

Action	Yes	No
Step 1 Check the duplex path for media jams and obstructions. Is the duplex path free from media jams and obstructions?	Go to step 2.	Remove media jams and obstructions.
Step 2 Check the sensor (input) for proper operation. **a** Enter the diagnostic mode. **b** Select Base sensor test. **c** Observe the line item input. Does the display on the operator panel change every time the sensing area of the above sensor is interrupted or blocked?	Go to step 4.	Go to step 3.
Step 3 Check the above sensor for proper connection. Is the above sensor connected properly?	Replace the sensor (input). See **"Sensor (input) removal" on page 481**.	Replace the connection.

Action	Yes	No
Step 4 Ensure the duplex motor cable and the socket "DUPLEX MTR" on the controller board is properly connected. Is the above cable properly connected?	Go to step 5.	Reseat the connection.
Step 5 Perform a print test. Does the problem remain?	Replace the duplex motor. See **"Duplex motor removal" on page 535**.	Problem solved.
Step 6 Perform a print test. Does the problem remain?	Contact the next highest level of technical support.	Problem solved.

241 paper jams

241 paper jam messages

Error code	Description	Action
241.02	Sensor (input) early arriving jam	Go to **"Sensor (input) early arriving jam service check" on page 128**.
241.06	The media is late reaching the sensor (input) within the specified time from tray 1	Go to **"Sensor (input) never- or late-arriving jam service check" on page 129**.
241.08	A misfeed occurred due to shingling. The misfed media is flushed to the output bin.	Press **Continue** to print using the next available media.
241.10	The media is late reaching the sensor (input) within the specified time from tray 1	Go to **"Sensor (input) never- or late-arriving jam service check" on page 129**.
241.13	The media is late reaching the sensor (input) within the specified time from tray 1	
241.14	The media is late reaching the sensor (input) within the specified time from tray 1	
241.15	Media tray 1, tray pulled jam	Go to **"Media tray 1 pulled jam service check" on page 152**.
241.20	Took too long to ramp up media feeder motor in tray 1	Go to **"Media feeder motor control service check" on page 152**.
241.21	Media feeder motor stall in tray 1	
241.22	Media feeder motor pick motor under-speed in tray 1	
241.24	Media feeder motor stalled on the last pick attempt in tray 1	

Error code	Description	Action
241.29	Media feeder motor did not turn off when lifting the tray	Go to **"Media feeder motor tray lift error service check" on page 153**.
241.32	Media tray not ready	Go to **"Media tray 1 pulled jam service check" on page 152**.
241.33	The media tray was pulled during the media pick process	

Sensor (input) never-arriving jam from tray 1 service check

Action	Yes	No
Step 1 Check the media size setup and tray guides for media tray 1. Does the media size, in use, match the size set for media tray 1?	Go to step 2.	Replace the media, or change the media size setup in media tray 1.
Step 2 Check the media tray 1 for overfilling. Is media tray 1 overfilled?	Remove any excess new media.	Go to step 3.
Step 3 Check the media condition in media tray 1. Is any of the media in media tray 1 crumpled or damaged?	Replace the damaged media with new.	Go to step 4.
Step 4 Check the pick roller in the media tray being picked from. Is the pick roller free of excess wear and contamination?	Go to step 5.	Clean or replace the pick roller. See **"Pick roller assembly removal" on page 559**.
Step 5 Check the aligner assembly for obstructions. Is the above component free from obstructions?	Go to step 6.	Remove obstructions.

Step 6
 	
Check the sensor (input) for proper operation.
  a Enter the diagnostic mode.
  b Select **Base sensor test**.
  c Observe the line item **input**.
 	
Does the display on the operator panel, change every time the sensing area of the above sensor is interrupted or blocked?
	Go to step 8.	Go to step 7.

Step 7 Check the above sensor for proper connection. Is the above sensor connected properly?	Replace the Sensor (input). See **"Sensor (input) removal" on page 481**.	Replace the connection.

Action	Yes	No
Step 8 Perform a print test and check the tray 1 media feeder. Is the media properly picked and advanced out of the media tray?	Go to step 9.	Replace the media feeder. See **"Media feeder removal" on page 575**.
Step 9 Perform a print test and check the main motor assembly. Is the media properly transported and able to reach the sensor (input)?	Go to step 10.	Replace the main drive motor. See **"Main drive motor removal" on page 574**.
Step 10 Perform a print test. Does the problem remain?	Contact the next highest level of technical support.	Problem solved.

Media tray 1 pulled jam service check

Action	Yes	No
Step 1 Remove all media jams from the media tray and printer. Are all of the media jams removed?	Go to step 2.	Remove all media jams.
Step 2 Ensure the media tray is properly inserted into the printer. Is the media tray properly inserted?	Go to step 3.	Insert the media tray.
Step 3 Perform a print test. Does the problem remain?	Replace the media tray with a new media tray.	Problem solved.

Media feeder motor control service check

Action	Yes	No
Step 1 Check the media size setup and tray guides for media tray 1. Does the media size in use match the size set for media tray 1?	Go to step 2.	Replace the media, or change the media size setup in media tray 1.
Step 2 Check the media trays for overfilling. Are any of the media trays overfilled?	Remove any excess new media.	Go to step 3.

Action	Yes	No
Step 3 Check the media condition in media tray 1. Is any of the media in media tray 1 crumpled or damaged?	Replace the damaged media.	Go to step 4.
Step 4 Ensure the pick roller is properly installed. Is the pick roller properly installed?	Go to step 5.	Remove and reinstall the pick roller. See **"Pick roller assembly removal" on page 559**.
Step 5 Ensure the cable for socket "INDEX / PAP OUT/ PICK MTR" on the controller board is properly connected. Is the above connection properly connected?	Go to step 6.	Reseat the connection.
Step 6 Reset the machine. Does the error continue?	Replace the media feeder. See **"Media feeder removal" on page 575**. Go to step 7.	Problem solved.
Step 7 Reset the machine. Does the error continue?	Replace the controller board. See **"Controller board removal" on page 568**.	Problem solved.

Media feeder motor tray lift error service check

Action	Yes	No
Step 1 Ensure the pick roller is properly installed. Is the pick roller properly installed?	Go to step 2.	Remove and reinstall the pick roller. See **"Pick roller assembly removal" on page 559**.
Step 2 Ensure the cable for socket "INDEX / PAP OUT/ PICK MTR" on the controller board is properly connected. Is the above connection properly connected?	Go to step 3.	Reseat the connection.
Step 3 Reset the machine. Does the error continue?	Replace the media feeder. See **"Media feeder removal" on page 575**. Go to step 4.	Problem solved.

Action	Yes	No
Step 4 Reset the machine. Does the error continue?	Replace the controller board. See **"Controller board removal" on page 568**.	Problem solved.

242–245 paper jams

242 paper jam messages

Error code	Description	Action
242.01	250/550-sheet tray: Media remains detected by the tray 2 sensor (pass through) after power on.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
242.01	HCIT: Media remains detected by the tray 2 sensor (pass through) after power on.	Go to **"HCIT jam service check" on page 170**.
242.02	250/550-sheet tray: The media is late reaching the sensor (input) when feeding from tray 2.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
242.02	HCIT: The media is late reaching the sensor (input) when feeding from tray 2.	Go to **"HCIT jam service check" on page 170**.
242.03	250/550-sheet tray: The media fed from tray 3 did not reach the tray 2 sensor (pass through).	Go to **"250/550-sheet media tray option jam service check" on page 167**.
242.03	HCIT: The media fed from tray 3 did not reach the tray 2 sensor (pass through).	Go to **"HCIT jam service check" on page 170**.
242.06	250/550-sheet tray: Failure to feed from tray 2—media remains in tray 2	Go to **"250/550-sheet media tray option jam service check" on page 167**.
242.06	HCIT: Failure to feed from tray 2—media remains in tray 2	Go to **"HCIT jam service check" on page 170**.
242.07	250/550-sheet tray: The media while feeding from tray 3 remains detected by the tray 2 sensor (pass through).	Go to **"250/550-sheet media tray option jam service check" on page 167**.
242.07	HCIT: The media while feeding from tray 3 remains detected by the tray 2 sensor (pass through).	Go to **"HCIT jam service check" on page 170**.
242.08	250/550-sheet tray: A misfeed occurred due to shingling. The misfed media is flushed to the output bin. Press **Continue** to print using the next available media.	Go to **"250/550-sheet media tray option jam service check" on page 167**.

Error code	Description	Action
242.08	HCIT: A misfeed occurred due to shingling. The misfed media is flushed to the output bin. Press **Continue** to print using the next available media.	Go to **"HCIT jam service check" on page 170**.
242.09	250/550-sheet tray: Tray 2 pick motor lost encoder error	Go to **"250/550-sheet media tray option jam service check" on page 167**.
242.09	HCIT: Tray 2 pick motor lost encoder error	Go to **"HCIT jam service check" on page 170**.
242.10	250/550-sheet tray: Failure to feed from tray 2	Go to **"250/550-sheet media tray option jam service check" on page 167**.
242.10	HCIT: Failure to feed from tray 2	Go to **"HCIT source jam service check" on page 172**.
242.11	250/550-sheet tray: Pick/lift motor encoder not detected in tray 2.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
242.11	HCIT: Pick/lift motor encoder not detected in tray 2.	Go to **"HCIT jam service check" on page 170**.
242.12	250/550-sheet tray: Motor ramp up error in tray 2.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
242.12	HCIT: Motor ramp up error in tray 2.	Go to **"HCIT jam service check" on page 170**.
242.13	250/550-sheet tray: Page to be stapled failed to feed from tray 2.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
242.13	HCIT: Page to be stapled failed to feed from tray 2.	Go to **"HCIT jam service check" on page 170**.
242.14	250/550-sheet tray: Media flushed from media path either due to feed error or cartridge error	Go to **"250/550-sheet media tray option jam service check" on page 167**.
242.14	HCIT: Media flushed from media path either due to feed error or cartridge error	Go to **"HCIT jam service check" on page 170**.
242.15	250/550-sheet tray: One or more trays located above the source (tray 2) has been pulled.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
242.15	HCIT: One or more trays located above the source (tray 2) has been pulled.	Go to **"HCIT jam service check" on page 170**.
242.16	250/550-sheet tray: Tray 2 not ready	Go to **"250/550-sheet media tray option jam service check" on page 167**.
242.16	HCIT: Tray 2 not ready	Go to **"HCIT jam service check" on page 170**.
242.17	250/550-sheet tray: Media was not properly picked from tray 2. Tray did not exhaust all pick retry attempts because of media committed to the media path from the tray below.	Go to **"250/550-sheet media tray option jam service check" on page 167**.

Error code	Description	Action
242.17	HCIT: Media was not properly picked from tray 2. Tray did not exhaust all pick retry attempts because of media committed to the media path from the tray below.	Go to **"HCIT jam service check" on page 170**.
242.18	250/550-sheet tray: Failed to feed from tray 2—exhausted pick retries, media committed to paper path.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
242.18	HCIT: Failed to feed from tray 2—exhausted pick retries, media committed to paper path.	Go to **"HCIT jam service check" on page 170**.
242.19	250/550-sheet tray: Failed to feed from tray 2—the leading edge of the media was not detected.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
242.19	HCIT: Failed to feed from tray 2—the leading edge of the media was not detected.	Go to **"HCIT jam service check" on page 170**.
242.20	250/550-sheet tray: Took too long to ramp up media feeder motor in tray 2	Go to **"250/550-sheet media tray option jam service check" on page 167**.
242.20	HCIT: Took too long to ramp up media feeder motor in tray 2	Go to **"HCIT jam service check" on page 170**.
242.21	250/550-sheet tray: Media feeder motor stall in tray 2.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
242.21	HCIT: Media feeder motor stall in tray 2.	Go to **"HCIT jam service check" on page 170**.
242.22	250/550-sheet tray: Media feeder motor pick motor under-speed in tray 2.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
242.22	HCIT: Media feeder motor pick motor under-speed in tray 2.	Go to **"HCIT jam service check" on page 170**.
242.24	250/550-sheet tray: Media feeder motor stalled on the last pick attempt in tray 2.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
242.24	HCIT: Media feeder motor stalled on the last pick attempt in tray 2.	Go to **"HCIT jam service check" on page 170**.
242.29	Media feeder motor did not turn off when lifting the tray	Go to **"Media feeder motor tray lift error service check" on page 153**.
242.32	250/550-sheet tray: Tray 2 not ready	Go to **"250/550-sheet media tray option jam service check" on page 167**.
242.32	HCIT: Tray 2 not ready	Go to **"HCIT jam service check" on page 170**.
242.33	250/550-sheet tray: The media tray was pulled during the media pick process.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
242.33	HCIT: The media tray was pulled during the media pick process.	Go to **"HCIT jam service check" on page 170**.
242.41	250/550-sheet tray: Media feeder motor stall in tray 2	Go to **"250/550-sheet media tray option jam service check" on page 167**.

Diagnostics and troubleshooting

Error code	Description	Action
242.41	HCIT: Media feeder motor stall in tray 2	Go to **"HCIT jam service check" on page 170**.
242.42	250/550-sheet tray: Media feeder motor under-speed in tray 2	Go to **"250/550-sheet media tray option jam service check" on page 167**.
242.42	HCIT: Media feeder motor under-speed in tray 2	Go to **"HCIT jam service check" on page 170**.
242.43	250/550-sheet tray: Media feeder motor did not reach the required speed	Go to **"250/550-sheet media tray option jam service check" on page 167**.
242.43	HCIT: Media feeder motor did not reach the required speed	Go to **"HCIT jam service check" on page 170**.
242.44	250/550-sheet tray: Separator pass through motor stall in tray 2	Go to **"250/550-sheet media tray option jam service check" on page 167**.
242.44	HCIT: Separator pass through motor stall in tray 2	Go to **"HCIT jam service check" on page 170**.
242.45	250/550-sheet tray: Separator pass through motor under-speed in tray 2	Go to **"250/550-sheet media tray option jam service check" on page 167**.
242.45	HCIT: Separator pass through motor under-speed in tray 2	Go to **"HCIT jam service check" on page 170**.
242.46	250/550-sheet tray: Separator pass through motor did not reach the required speed.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
242.46	HCIT: Separator pass through motor did not reach the required speed.	Go to **"HCIT jam service check" on page 170**.

243 paper jam messages

Error code	Description	Action
243.01	250/550-sheet tray: Media remains detected by the tray 3 sensor (pass through) after power on.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
243.01	HCIT: Media remains detected by the tray 3 sensor (pass through) after power on.	Go to **"HCIT jam service check" on page 170**.
243.02	250/550-sheet tray: The media is late reaching the sensor (input) when feeding from tray 3.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
243.02	HCIT: The media is late reaching the sensor (input) when feeding from tray 3.	Go to **"HCIT jam service check" on page 170**.
243.03	250/550-sheet tray: The media fed from tray 4 did not reach the tray 3 sensor (pass through).	Go to **"250/550-sheet media tray option jam service check" on page 167**.
243.03	HCIT: The media fed from tray 4 did not reach the tray 3 sensor (pass through).	Go to **"HCIT jam service check" on page 170**.

Error code	Description	Action
243.06	250/550-sheet tray: Failure to feed from tray 3—media remains in tray 3	Go to **"250/550-sheet media tray option jam service check" on page 167**.
243.06	HCIT: Failure to feed from tray 3—media remains in tray 3	Go to **"HCIT jam service check" on page 170**.
243.07	250/550-sheet tray: The media while feeding from tray 4, remains detected by the tray 3 sensor (pass through).	Go to **"250/550-sheet media tray option jam service check" on page 167**.
243.07	HCIT: The media while feeding from tray 4, remains detected by the tray 3 sensor (pass through).	Go to **"HCIT jam service check" on page 170**.
243.08	250/550-sheet tray: A misfeed occurred due to shingling. The misfed media is flushed to the output bin. Press **Continue** to print using the next available media.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
243.08	HCIT: A misfeed occurred due to shingling. The misfed media is flushed to the output bin. Press **Continue** to print using the next available media.	Go to **"HCIT jam service check" on page 170**.
243.09	250/550-sheet tray: Tray 3 pick motor lost encoder error	Go to **"250/550-sheet media tray option jam service check" on page 167**.
243.09	HCIT: Tray 3 pick motor lost encoder error	Go to **"HCIT jam service check" on page 170**.
243.10	250/550-sheet tray: Failure to feed from tray 3	Go to **"250/550-sheet media tray option jam service check" on page 167**.
243.10	HCIT: Failure to feed from tray 3	Go to **"HCIT source jam service check" on page 172**.
243.11	250/550-sheet tray: Pick/lift motor encoder not detected in tray 3.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
243.11	HCIT: Pick/lift motor encoder not detected in tray 3.	Go to **"HCIT jam service check" on page 170**.
243.12	250/550-sheet tray: Motor ramp up error in tray 3.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
243.12	HCIT: Motor ramp up error in tray 3.	Go to **"HCIT jam service check" on page 170**.
243.13	250/550-sheet tray: Page to be stapled failed to feed from tray 3.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
243.13	HCIT: Page to be stapled failed to feed from tray 3.	Go to **"HCIT jam service check" on page 170**.
243.14	250/550-sheet tray: Media flushed from media path either due to feed error or cartridge error	Go to **"250/550-sheet media tray option jam service check" on page 167**.
243.14	HCIT: Media flushed from media path either due to feed error or cartridge error	Go to **"HCIT jam service check" on page 170**.

Error code	Description	Action
243.15	250/550-sheet tray: One or more trays located above the source (tray 3) has been pulled.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
243.15	HCIT: One or more trays located above the source (tray 3) has been pulled.	Go to **"HCIT jam service check" on page 170**.
243.16	250/550-sheet tray: Tray 3 not ready	Go to **"250/550-sheet media tray option jam service check" on page 167**.
243.16	HCIT: Tray 3 not ready	Go to **"HCIT jam service check" on page 170**.
243.17	250/550-sheet tray: Media was not properly picked from tray 3. Tray did not exhaust all pick retry attempts because of media committed to the media path from the tray below.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
243.17	HCIT: Media was not properly picked from tray 3. Tray did not exhaust all pick retry attempts because of media committed to the media path from the tray below.	Go to **"HCIT jam service check" on page 170**.
243.19	250/550-sheet tray: Failed to feed from tray 3—the leading edge of the media was not detected.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
243.19	HCIT: Failed to feed from tray 3—the leading edge of the media was not detected.	Go to **"HCIT jam service check" on page 170**.
243.20	250/550-sheet tray: Took too long to ramp up media feeder motor in tray 3	Go to **"250/550-sheet media tray option jam service check" on page 167**.
243.20	HCIT: Took too long to ramp up media feeder motor in tray 3	Go to **"HCIT jam service check" on page 170**.
243.21	250/550-sheet tray: Media feeder motor stall in tray 3.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
243.21	HCIT: Media feeder motor stall in tray 3.	Go to **"HCIT jam service check" on page 170**.
243.22	250/550-sheet tray: Media feeder motor pick motor under-speed in tray 3.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
243.22	HCIT: Media feeder motor pick motor under-speed in tray 3.	Go to **"HCIT jam service check" on page 170**.
243.24	250/550-sheet tray: Media feeder motor stalled on the last pick attempt in tray 3.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
243.24	HCIT: Media feeder motor stalled on the last pick attempt in tray 3.	Go to **"HCIT jam service check" on page 170**.
243.29	Media feeder motor did not turn off when lifting the tray	Go to **"Media feeder motor tray lift error service check" on page 153**.
243.32	250/550-sheet tray: Tray 3 not ready	Go to **"250/550-sheet media tray option jam service check" on page 167**.

Diagnostics and troubleshooting

Error code	Description	Action
243.32	HCIT: Tray 3 not ready	Go to **"HCIT jam service check" on page 170**.
243.33	250/550-sheet tray: The media tray was pulled during the media pick process.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
243.33	HCIT: The media tray was pulled during the media pick process.	Go to **"HCIT jam service check" on page 170**.
243.41	250/550-sheet tray: Media feeder motor stall in tray 3	Go to **"250/550-sheet media tray option jam service check" on page 167**.
243.41	HCIT: Media feeder motor stall in tray 3	Go to **"HCIT jam service check" on page 170**.
243.42	250/550-sheet tray: Media feeder motor under-speed in tray 3	Go to **"250/550-sheet media tray option jam service check" on page 167**.
243.42	HCIT: Media feeder motor under-speed in tray 3	Go to **"HCIT jam service check" on page 170**.
243.43	250/550-sheet tray: Media feeder motor did not reach the required speed	Go to **"250/550-sheet media tray option jam service check" on page 167**.
243.43	HCIT: Media feeder motor did not reach the required speed	Go to **"HCIT jam service check" on page 170**.
243.44	250/550-sheet tray: Separator pass through motor stall in tray 3	Go to **"250/550-sheet media tray option jam service check" on page 167**.
243.44	HCIT: Separator pass through motor stall in tray 3	Go to **"HCIT jam service check" on page 170**.
243.45	250/550-sheet tray: Separator pass through motor under-speed in tray 3	Go to **"250/550-sheet media tray option jam service check" on page 167**.
243.45	HCIT: Separator pass through motor under-speed in tray 3	Go to **"HCIT jam service check" on page 170**.
243.46	250/550-sheet tray: Separator pass through motor did not reach the required speed.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
243.46	HCIT: Separator pass through motor did not reach the required speed.	Go to **"HCIT jam service check" on page 170**.

244 paper jam messages

Error code	Description	Action
244.01	250/550-sheet tray: Media remains detected by the tray 4 sensor (pass through) after power on.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
244.01	HCIT: Media remains detected by the tray 4 sensor (pass through) after power on.	Go to **"HCIT jam service check" on page 170**.
244.02	250/550-sheet tray: The media is late reaching the sensor (input) when feeding from tray 4.	Go to **"250/550-sheet media tray option jam service check" on page 167**.

Error code	Description	Action
244.02	HCIT: The media is late reaching the sensor (input) when feeding from tray 4.	Go to **"HCIT jam service check" on page 170**.
244.03	250/550-sheet tray: The media fed from tray 5 did not reach the tray 4 sensor (pass through).	Go to **"250/550-sheet media tray option jam service check" on page 167**.
244.03	HCIT: The media fed from tray 5 did not reach the tray 4 sensor (pass through).	Go to **"HCIT jam service check" on page 170**.
244.06	250/550-sheet tray: Failure to feed from tray 4—media remains in tray 4	Go to **"250/550-sheet media tray option jam service check" on page 167**.
244.06	HCIT: Failure to feed from tray 4—media remains in tray 4	Go to **"HCIT jam service check" on page 170**.
244.07	250/550-sheet tray: The media while feeding from tray 5 remains detected by the tray 4 sensor (pass through).	Go to **"250/550-sheet media tray option jam service check" on page 167**.
244.07	HCIT: The media while feeding from tray 5 remains detected by the tray 4 sensor (pass through).	Go to **"HCIT jam service check" on page 170**.
244.08	250/550-sheet tray: A misfeed occurred due to shingling. The misfed media is flushed to the output bin. Press **Continue** to print using the next available media.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
244.08	HCIT: A misfeed occurred due to shingling. The misfed media is flushed to the output bin. Press **Continue** to print using the next available media.	Go to **"HCIT jam service check" on page 170**.
244.09	250/550-sheet tray: Tray 4 pick motor lost encoder error	Go to **"250/550-sheet media tray option jam service check" on page 167**.
244.09	HCIT: Tray 4 pick motor lost encoder error	Go to **"HCIT jam service check" on page 170**.
244.10	250/550-sheet tray: Failure to feed from tray 4	Go to **"250/550-sheet media tray option jam service check" on page 167**.
244.10	HCIT: Failure to feed from tray 4	Go to **"HCIT source jam service check" on page 172**.
244.11	250/550-sheet tray: Pick/lift motor encoder not detected in tray 4.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
244.11	HCIT: Pick/lift motor encoder not detected in tray 4.	Go to **"HCIT jam service check" on page 170**.
244.12	250/550-sheet tray: Motor ramp up error in tray 4.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
244.12	HCIT: Motor ramp up error in tray 4.	Go to **"HCIT jam service check" on page 170**.
244.13	250/550-sheet tray: Page to be stapled failed to feed from tray 4.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
244.13	HCIT: Page to be stapled failed to feed from tray 4.	Go to **"HCIT jam service check" on page 170**.

Error code	Description	Action
244.14	250/550-sheet tray: Media flushed from media path either due to feed error or cartridge error	Go to **"250/550-sheet media tray option jam service check" on page 167**.
244.14	HCIT: Media flushed from media path either due to feed error or cartridge error	Go to **"HCIT jam service check" on page 170**.
244.15	250/550-sheet tray: One or more trays located above the source (tray 4) has been pulled.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
244.15	HCIT: One or more trays located above the source (tray 4) has been pulled.	Go to **"HCIT jam service check" on page 170**.
244.16	250/550-sheet tray: Tray 4 not ready	Go to **"250/550-sheet media tray option jam service check" on page 167**.
244.16	HCIT: Tray 4 not ready	Go to **"HCIT jam service check" on page 170**.
244.17	250/550-sheet tray: Media was not properly picked from tray 4. Tray did not exhaust all pick retry attempts because of media committed to the media path from the tray below.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
244.17	HCIT: Media was not properly picked from tray 4. Tray did not exhaust all pick retry attempts because of media committed to the media path from the tray below.	Go to **"HCIT jam service check" on page 170**.
244.19	250/550-sheet tray: Failed to feed from tray 4—the leading edge of the media was not detected.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
244.19	HCIT: Failed to feed from tray 4—the leading edge of the media was not detected.	Go to **"HCIT jam service check" on page 170**.
244.20	250/550-sheet tray: Took too long to ramp up media feeder motor in tray 4	Go to **"250/550-sheet media tray option jam service check" on page 167**.
244.20	HCIT: Took too long to ramp up media feeder motor in tray 4	Go to **"HCIT jam service check" on page 170**.
244.21	250/550-sheet tray: Media feeder motor stall in tray 4.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
244.21	HCIT: Media feeder motor stall in tray 4.	Go to **"HCIT jam service check" on page 170**.
244.22	250/550-sheet tray: Media feeder motor pick motor under-speed in tray 4.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
244.22	HCIT: Media feeder motor pick motor under-speed in tray 4.	Go to **"HCIT jam service check" on page 170**.
244.24	250/550-sheet tray: Media feeder motor stalled on the last pick attempt in tray 4.	Go to **"250/550-sheet media tray option jam service check" on page 167**.

Diagnostics and troubleshooting

Error code	Description	Action
244.24	HCIT: Media feeder motor stalled on the last pick attempt in tray 4.	Go to **"HCIT jam service check" on page 170**.
244.29	Media feeder motor did not turn off when lifting the tray	Go to **"Media feeder motor tray lift error service check" on page 153**.
244.32	250/550-sheet tray: Tray 4 not ready	Go to **"250/550-sheet media tray option jam service check" on page 167**.
244.32	HCIT: Tray 4 not ready	Go to **"HCIT jam service check" on page 170**.
244.33	250/550-sheet tray: The media tray was pulled during the media pick process.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
244.33	HCIT: The media tray was pulled during the media pick process.	Go to **"HCIT jam service check" on page 170**.
244.41	250/550-sheet tray: Media feeder motor stall in tray 4	Go to **"250/550-sheet media tray option jam service check" on page 167**.
244.41	HCIT: Media feeder motor stall in tray 4	Go to **"HCIT jam service check" on page 170**.
244.42	250/550-sheet tray: Media feeder motor under-speed in tray 4	Go to **"250/550-sheet media tray option jam service check" on page 167**.
244.42	HCIT: Media feeder motor under-speed in tray 4	Go to **"HCIT jam service check" on page 170**.
244.43	250/550-sheet tray: Media feeder motor did not reach the required speed	Go to **"250/550-sheet media tray option jam service check" on page 167**.
244.43	HCIT: Media feeder motor did not reach the required speed	Go to **"HCIT jam service check" on page 170**.
244.44	250/550-sheet tray: Separator pass through motor stall in tray 4	Go to **"250/550-sheet media tray option jam service check" on page 167**.
244.44	HCIT: Separator pass through motor stall in tray 4	Go to **"HCIT jam service check" on page 170**.
244.45	250/550-sheet tray: Separator pass through motor under-speed in tray 4	Go to **"250/550-sheet media tray option jam service check" on page 167**.
244.45	HCIT: Separator pass through motor under-speed in tray 4	Go to **"HCIT jam service check" on page 170**.
244.46	250/550-sheet tray: Separator pass through motor did not reach the required speed.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
244.46	HCIT: Separator pass through motor did not reach the required speed.	Go to **"HCIT jam service check" on page 170**.

245 paper jam messages

Error code	Description	Action
245.01	250/550-sheet tray: Media remains detected by the tray 5 sensor (pass through) after power on.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
245.01	HCIT: Media remains detected by the tray 5 sensor (pass through) after power on.	Go to **"HCIT jam service check" on page 170**.
245.02	250/550-sheet tray: The media is late reaching the sensor (input) when feeding from tray 6.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
245.02	HCIT: The media is late reaching the sensor (input) when feeding from tray 6.	Go to **"HCIT jam service check" on page 170**.
245.03	250/550-sheet tray: The media fed from tray 6 did not reach the tray 5 sensor (pass through).	Go to **"250/550-sheet media tray option jam service check" on page 167**.
245.03	HCIT: The media fed from tray 6 did not reach the tray 5 sensor (pass through).	Go to **"HCIT jam service check" on page 170**.
245.06	250/550-sheet tray: Failure to feed from tray 5—media remains in tray 5	Go to **"250/550-sheet media tray option jam service check" on page 167**.
245.06	HCIT: Failure to feed from tray 5—media remains in tray 5	Go to **"HCIT jam service check" on page 170**.
245.07	250/550-sheet tray: The media while feeding from tray 6 remains detected by the tray 5 sensor (pass through).	Go to **"250/550-sheet media tray option jam service check" on page 167**.
245.07	HCIT: The media while feeding from tray 6 remains detected by the tray 5 sensor (pass through).	Go to **"HCIT jam service check" on page 170**.
245.08	250/550-sheet tray: A misfeed occurred due to shingling. The misfed media is flushed to the output bin. Press **Continue** to print using the next available media.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
245.08	HCIT: A misfeed occurred due to shingling. The misfed media is flushed to the output bin. Press **Continue** to print using the next available media.	Go to **"HCIT jam service check" on page 170**.
245.09	250/550-sheet tray: Tray 5 pick motor lost encoder error	Go to **"250/550-sheet media tray option jam service check" on page 167**.
245.09	HCIT: Tray 5 pick motor lost encoder error	Go to **"HCIT jam service check" on page 170**.
245.10	250/550-sheet tray: Failure to feed from tray 5	Go to **"250/550-sheet media tray option jam service check" on page 167**.
245.10	HCIT: Failure to feed from tray 5	Go to **"HCIT source jam service check" on page 172**.
245.11	250/550-sheet tray: Pick/lift motor encoder not detected in tray 5.	Go to **"250/550-sheet media tray option jam service check" on page 167**.

Error code	Description	Action
245.11	HCIT: Pick/lift motor encoder not detected in tray 5.	Go to **"HCIT jam service check" on page 170**.
245.12	250/550-sheet tray: Motor ramp up error in tray 5.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
245.12	HCIT: Motor ramp up error in tray 5.	Go to **"HCIT jam service check" on page 170**.
245.13	250/550-sheet tray: Page to be stapled failed to feed from tray 5.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
245.13	HCIT: Page to be stapled failed to feed from tray 5.	Go to **"HCIT jam service check" on page 170**.
245.14	250/550-sheet tray: Media flushed from media path either due to feed error or cartridge error	Go to **"250/550-sheet media tray option jam service check" on page 167**.
245.14	HCIT: Media flushed from media path either due to feed error or cartridge error	Go to **"HCIT jam service check" on page 170**.
245.15	250/550-sheet tray: One or more trays located above the source (tray 5) has been pulled.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
245.15	HCIT: One or more trays located above the source (tray 5) has been pulled.	Go to **"HCIT jam service check" on page 170**.
245.16	250/550-sheet tray: Tray 5 not ready	Go to **"250/550-sheet media tray option jam service check" on page 167**.
245.16	HCIT: Tray 5 not ready	Go to **"HCIT jam service check" on page 170**.
245.17	250/550-sheet tray: Media was not properly picked from tray 5. Tray did not exhaust all pick retry attempts because of media committed to the media path from the tray below.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
245.17	HCIT: Media was not properly picked from tray 5. Tray did not exhaust all pick retry attempts because of media committed to the media path from the tray below.	Go to **"HCIT jam service check" on page 170**.
245.19	250/550-sheet tray: Failed to feed from tray 5—the leading edge of the media was not detected.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
245.19	HCIT: Failed to feed from tray 5—the leading edge of the media was not detected.	Go to **"HCIT jam service check" on page 170**.
245.20	250/550-sheet tray: Took too long to ramp up media feeder motor in tray 5	Go to **"250/550-sheet media tray option jam service check" on page 167**.
245.20	HCIT: Took too long to ramp up media feeder motor in tray 5	Go to **"HCIT jam service check" on page 170**.

Error code	Description	Action
245.21	250/550-sheet tray: Media feeder motor stall in tray 5.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
245.21	HCIT: Media feeder motor stall in tray 5.	Go to **"HCIT jam service check" on page 170**.
245.22	250/550-sheet tray: Media feeder motor pick motor under-speed in tray 5.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
245.22	HCIT: Media feeder motor pick motor under-speed in tray 5.	Go to **"HCIT jam service check" on page 170**.
245.24	250/550-sheet tray: Media feeder motor stalled on the last pick attempt in tray 5.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
245.24	HCIT: Media feeder motor stalled on the last pick attempt in tray 5.	Go to **"HCIT jam service check" on page 170**.
245.29	Media feeder motor did not turn off when lifting the tray	Go to **"Media feeder motor tray lift error service check" on page 153**.
245.32	250/550-sheet tray: Tray 5 not ready	Go to **"250/550-sheet media tray option jam service check" on page 167**.
245.32	HCIT: Tray 5 not ready	Go to **"HCIT jam service check" on page 170**.
245.33	250/550-sheet tray: The media tray was pulled during the media pick process.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
245.33	HCIT: The media tray was pulled during the media pick process.	Go to **"HCIT jam service check" on page 170**.
245.41	250/550-sheet tray: Media feeder motor stall in tray 5	Go to **"250/550-sheet media tray option jam service check" on page 167**.
245.41	HCIT: Media feeder motor stall in tray 5	Go to **"HCIT jam service check" on page 170**.
245.42	250/550-sheet tray: Media feeder motor under-speed in tray 5	Go to **"250/550-sheet media tray option jam service check" on page 167**.
245.42	HCIT: Media feeder motor under-speed in tray 5	Go to **"HCIT jam service check" on page 170**.
245.43	250/550-sheet tray: Media feeder motor did not reach the required speed	Go to **"250/550-sheet media tray option jam service check" on page 167**.
245.43	HCIT: Media feeder motor did not reach the required speed	Go to **"HCIT jam service check" on page 170**.
245.44	250/550-sheet tray: Separator pass through motor stall in tray 5	Go to **"250/550-sheet media tray option jam service check" on page 167**.
245.44	HCIT: Separator pass through motor stall in tray 5	Go to **"HCIT jam service check" on page 170**.
245.45	250/550-sheet tray: Separator pass through motor under-speed in tray 5	Go to **"250/550-sheet media tray option jam service check" on page 167**.
245.45	HCIT: Separator pass through motor under-speed in tray 5	Go to **"HCIT jam service check" on page 170**.

Error code	Description	Action
245.46	250/550-sheet tray: Separator pass through motor did not reach the required speed.	Go to **"250/550-sheet media tray option jam service check" on page 167**.
245.46	HCIT: Separator pass through motor did not reach the required speed.	Go to **"HCIT jam service check" on page 170**.

250/550-sheet media tray option jam service check

Action	Yes	No
Step 1 **a** POR the printer. **b** Open the media trays and make sure there are no obstructions on the media path. **Note:** For 242.10, 243.10, 244.10, and 245.10 errors, perform also the following: **1** Remove the toner cartridge and the imaging unit. Make sure there are no obstructions on the media path. **2** Open the rear door, and make sure there are no obstructions on the media path. **3** Check all output bins. Make sure there are no obstructions on the media path **c** Check the following: • Make sure the size of the media loaded is within specifications. • Make sure the tray guides are not set too tight. • Make sure the tray is not overfilled. **d** If only one option is installed, reseat the option tray. If there are multiple options installed, swap the current option with another matching media tray to determine the source of the error. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Check the pick roller assembly for proper installation. Fully press the pick roller assembly toward the sensor to make sure the mounting latches are properly engaging the slot in the shaft. Does the problem remain?	Go to step 3.	The problem is solved.
Step 3 Check the pick roller assembly to make sure that the rollers are free from contamination and paper dust. Is the pick roller assembly free of wear or damage?	Go to step 4.	Replace the pick roller assembly. See **"Drawer pick roller removal" on page 597**.

Action	Yes	No
Step 4 Check the separator roller tires and gears: • Make sure that the rollers are free from contamination • Manually turn the gears and check if it causes the rollers to turn Is it free of wear or damage?	Go to step 5.	Replace the separator roller. See **"Media tray separation roller removal" on page 596**.
Step 5 Check the sensor (pass through) for proper operation. Enter Diagnostics Menu and navigate to: **INPUT TRAY TESTS** > **Sensor Test** > **Tray [x]** Does the display on the operator panel change every time the sensing area of the sensor is interrupted or blocked?	Go to step 7	Go to step 6.
Step 6 Check the sensor (pass through): • Make sure that the sensor is properly installed and seated • Check if the sensor is in good condition. If damaged, then replace the sensor (pass through). Go to **"Sensor (drawer pass through) removal " on page 608**. Reseat the connector J7 on the controller board. POR the machine. Does the error remain?	Go to step 7.	The problem is solved.
Step 7 Check the sensor (trailing edge): • Make sure that the sensor is properly installed and seated • Check if the sensor is in good condition. If damaged, then replace the sensor (trailing edge). See **"Sensor (trailing edge) removal" on page 606**. Reseat the connector J8 on the controller board. POR the machine. Does the error remain?	Go to step 8.	The problem is solved.
Step 8 Reseat the connectors J4, J8 and J7 on the controller board. Does the error remain?	Go to step 9.	The problem is solved.

Action	Yes	No
Step 9 Remove the media tray. Manually turn the lift plate drive gear and observe the lift plate. If the lift plate doesn't move upward, then replace the media tray. Go to **"Media tray assembly removal" on page 596**. With the printer turned on, insert the media tray into the drawer. Viewing from the rear side of the option, observe the lift plate if it moves up during the insertion. Does the lift plate automatically move up?	Go to step 11.	Go to step 10.
Step 10 Open the left cover. Do a feed test, enter Diagnostics Menu and navigate to: **INPUT TRAY TESTS** > **Feed Test** > **Tray [x]** Observe the pick/feed motor and the transport motor. Do the motors run?	Go to step 11.	If the pick motor doesn't run, then replace the media feeder. See **"Drawer media feeder removal " on page 603**. If the transport motor doesn't run, then replace the transport motor. See **"Drawer transport motor removal" on page 605**.
Step 11 Reseat all connectors on the controller board. Does the error remain?	Replace the controller board. See **"Drawer controller board removal" on page 600**. If the error persists, then replace the option tray. See **"250/550-sheet media tray and drawer assembly removal" on page 596**.	The problem is solved.

HCIT jam service check

Action	Yes	No

Step 1
a POR the printer.
b Open the media trays and make sure there are no obstructions on the media path.
c Check the following:
  • Make sure the size of the media loaded is within specifications.
  • Make sure the tray guides are not set too tight.
  • Make sure the tray is not overfilled.
d If only one option is installed, re-seat the option tray. If there are multiple options installed, swap the current option with another matching media tray to determine the source of the error.
 	
Does the error remain?
	Go to step 2.	The problem is solved.

Step 2 Check the following: • Push down on the lift plate and check if the spring works. • Open and close the tray, then check if the HCIT closes properly. Is the tray functioning properly?	Go to step 3.	Replace the HCIT. See **"High capacity input tray option removal" on page 611**.
Step 3 Check the interface cable of the printer or upper level option for damage. Check the separator roller tires and gears: • Make sure that the rollers are free from contamination • Manually turn the gears and check if it causes the rollers to turn. Does the error remain?	Go to step 4.	Replace the separator roller. See **"HCIT separator roller assembly removal" on page 613**.
Step 4 Check the sensor (trailing edge): • Make sure that the sensor is properly installed and seated. • Check if the sensor is in good condition. If damaged, then replace the sensor. See **"Sensor (HCIT pick) removal" on page 632**. Reseat the connector J8 on the controller board, then POR the machine. Does the error remain?	Go to step 5.	The problem is solved.

Action	Yes	No
Step 5 Check the pick roller assembly for proper installation. Fully press the pick roller assembly toward the sensor to make sure the mounting latches are properly engaging the slot in the shaft. Does the error remain?	Go to step 6.	The problem is solved.
Step 6 Check the pick roller assembly to make sure that the rollers are free from contamination and paper dust. Is the pick roller assembly free of wear or damage?	Go to step 7.	Replace the pick roller assembly. See **"Drawer pick roller removal " on page 597**.
Step 7 Reseat the connectors J4, J8 and J7 on the controller board. Does the error remain?	Go to step 8.	The problem is solved.
Step 8 Open the rear cover. Do a feed test, enter Diagnostics Menu and navigate to: **INPUT TRAY TESTS** > **Feed Test** > **Tray [x]** Viewing from the holes at the rear side, observe the pick/feed motor. Does the feed motor run?	Go to step 9.	Replace the media feeder. See **"HCIT media feeder removal" on page 633**.
Step 9 Check the sensor (HCIT roller position) and make sure that it is properly installed. If damaged, then replace the sensor. Go to **"Sensor (HCIT pick roller position) removal" on page 630**. Reseat the sensor connector on the controller board and reseat also on the other end of the sensor. POR the machine. Does the error remain?	Go to step 10.	The problem is solved.
Step 10 Open the right cover. Reseat the cable attached to the lift motor. Does the error remain?	Go to step 11.	The problem is solved.
Step 11 Open the right cover. Do a feed test, enter Diagnostics mode and navigate to: **INPUT TRAY TESTS** > **Feed Test** > **Tray [x]** Does the lift motor run?	Go to step 12.	Replace the lift motor. See **"HCIT lift drive motor removal" on page 626**.

Action	Yes	No
Step 12 Reseat all connectors on the controller board. Does the error remain?	Replace the controller board. See **"HCIT controller board removal" on page 623**.	The problem is solved.

HCIT source jam service check

Action	Yes	No

Step 1
a POR the printer.
b Check the media paths:
   1 Open the media trays and make sure there are no obstructions on the media path.
   2 Remove the toner cartridge and the imaging unit. Make sure there are no obstructions on the media path.
   3 Open the rear door, and make sure there are no obstructions on the media path.
   4 Check all output bins. Make sure there are no obstructions on the media path
c Check the following:
   • Make sure the size of the media loaded is within specifications.
   • Make sure the tray guides are not set too tight.
   • Make sure the tray is not overfilled.
d If only one option is installed, re-seat the option tray. If there are multiple options installed, swap the current option with another matching media tray to determine the source of the error.
 	
Does the error remain?
	Go to step 2.	The problem is solved.

Action	Yes	No
Step 2 Remove the media tray from the HCIT option and do the following: • Remove all media and check the paper guides for damage. Move the paper guide and verify if it can move freely from one position to another. • Check the media size finger flag for damage. • Check the elevator plate. Manually lower down the elevator plate and check if it springs back to its original position. • Check the elevator tension cables if there are problems. • Check the elevator gears for damage. • Manually turn the drive gear and check if the other gears engaged to it will also turn. • Check if the tray can be inserted properly into the HCIT option. Are the components functional and free of damage?	Go to step 3.	Replace the media tray. See **"HCIT removal" on page 612**.
Step 3 Open the media tray and do the following: • Make sure the separator roller is properly installed. • Manually turn the separator roller drive gears and check if the separator rollers would also turn. • Check the separator roller gears for damage and obstructions. Is the separator functional and free of damage?	Go to step 4.	Replace the separator roll. See **"HCIT separator roller assembly removal" on page 613**.
Step 4 Remove the left cover and do the following: • Lower down the media pick actuator and then release. Check if the actuator would spring back to its original position. • Manually move the media pick actuator, then check if the paper sensor flag moves along with it. Check also for damage. • Manually turn the media feeder motor encoders gently, and check if it causes the pick tires to turn. • Make sure the sensor connections on the media feeder sensors are secure. If there are problems with the above components, then replace the HCIT media feeder. See **"HCIT media feeder removal" on page 633**. Reseat the connector J11 on the controller board. Does the error remain?	Go to step 5.	The problem is solved.

Action	Yes	No
Step 5 Remove the media tray from the HCIT option and do the following: • Check if there is no problem moving the tray input guides. • Manually push the media size sensor flags and check if it would spring back to its original position. • Check the sensor (HCIT media guide) for damage. Make sure all obstructions are removed. Are the components functional and free of damage?	Go to step 6.	Replace the HCIT drawer assembly. See **"HCIT drawer assembly removal" on page 612**.
Step 6 Separate the HCIT from the printer. Remove also the remaining input options. Check the HCIT interface cable. If damaged, then replace the cable. See **"HCIT interface cable removal" on page 628**. Open the left cover, and reseat the connector J1 on the controller board. POR the machine. Does the error remain?	Go to step 7.	The problem is solved.
Step 7 Remove all other options and install only the HCIT option. Does the error remain?	Go to step 9.	Go to step 8.
Step 8 Check the interface cable of the printer or upper level option for damage. Is the cable free of damage?	Go to step 9.	Replace the interface cable of the printer or upper level option.
Step 9 Check the connectors on the controller board. If damaged, then replace the controller board. See **"HCIT controller board removal" on page 623**. Reseat all connectors on the controller board, then POR the machine. Does the error remain?	Replace the controller board. See **"HCIT controller board removal" on page 623**. If the error remains, then go to step 10.	The problem is solved.
Step 10 Replace the tray. Does the error remain?	Go to step 11.	The problem is solved.
Step 11 Replace the drawer. Does the error remain?	Contact the next level of support.	The problem is solved.

250 paper jams

250 paper jam messages

Error code	Description	Action
250.02	The input sensor detected a late feed during a pick retry from the MPF media tray	Go to **"Sensor (input) early arriving jam service check" on page 128**.
250.06	The media is late reaching the sensor (input) within the specified time from the MPF media tray	Go to **"Sensor (input) never-arriving jam from MPF media tray service check" on page 175**.
250.08	Multifeed detected from MPF, excess media flushed	Press **Continue** to print using the next available media.
250.10	The media is late reaching the sensor (input) within the specified time from the MPF media tray	Go to **"Sensor (input) never-arriving jam from MPF media tray service check" on page 175**.
250.13	The media is late reaching the sensor (input) within the specified time from the MPF media tray	Go to **"Sensor (input) never-arriving jam from MPF media tray service check" on page 175**.
250.14	The media is late reaching the sensor (input) within the specified time from the MPF media tray	Go to **"Sensor (input) never-arriving jam from MPF media tray service check" on page 175**.
250.17	The media is late reaching the sensor (input) within the specified time from the MPF media tray	Go to **"Sensor (input) never-arriving jam from MPF media tray service check" on page 175**.
250.18	The media is late reaching the sensor (input) within the specified time from the MPF media tray	Go to **"Sensor (input) never-arriving jam from MPF media tray service check" on page 175**.

Sensor (input) never-arriving jam from MPF media tray service check

Action	Yes	No
Step 1 Check the media size setup and tray guides for the MPF tray. Does the media size, in use, match the size set for the MPF tray?	Go to step 2.	Replace the media, or change the media size setup.
Step 2 Check the MPF tray for overfilling. Is the MPF tray overfilled?	Remove any excess new media.	Go to step 3.

Action	Yes	No
Step 3 Check the media condition in the MPF tray. Is any of the media in any of the MPF media tray crumpled or damaged?	Replace the damaged media with new.	Go to step 4.
Step 4 Check the MPF pick roll assembly. Is the above component free of excess wear and contamination?	Go to step 5.	Clean or replace the MPF pick roller. See **"MPF pick roller removal" on page 472**.
Step 5 Perform a MPF print test and check the MPF pick solenoid for proper operation. Does the above component operate properly?	Go to step 6.	Replace the MPF pick solenoid.
Step 6 Check the aligner assembly for obstructions. Is the above component free from obstructions?	Go to step 7.	Remove obstructions.
Step 7 Check the sensor (input) for proper operation: **a** Enter the diagnostic mode **b** Select **Base sensor test**. **c** Observe the line item "input". Does the display on the operator panel change every time the sensing area of the above sensor is interrupted or blocked?	Go to step 9.	Go to step 8.
Step 8 Check the above sensor for proper connection. Is the above sensor connected properly?	Replace the Sensor (input). See **"Sensor (input) removal" on page 481**.	Replace the connection.
Step 9 Perform a print test and check the MPF feeder lift plate. Is the media properly picked and advanced out of the MPF feeder lift plate?	Go to step 10.	Replace the MPF feeder lift plate. See **"MPF feeder lift plate removal" on page 469**.
Step 10 Perform a print test and check the main motor assembly. Is the media properly transported and able to reach the sensor (input)?	Go to step 11.	Replace the main drive motor. See **"Main drive motor removal" on page 574**.

Action	Yes	No
Step 11 Perform a print test. Does the problem remain?	Contact the next highest level of technical support.	Problem solved.

41y paper jams

411 paper jam messages

Error code	Description	Action
411.01	Media remains detected by the output option 1/output expander sensor (pass through) after power on.	Go to **"Sensor (OE pass through) jam service check" on page 179**.
411.03	The media fed did not reach the output option 1/output expander sensor (pass through).	Go to **"Output expander media entrance jam service check" on page 183**.
411.05	The media while feeding remains detected by the output option 1/output expander sensor (pass through).	Go to **"Sensor (OE pass through) jam service check" on page 179**.
411.09	Never received Page In Output from output option 1/output expander	Go to **"Output expander media entrance jam service check" on page 183**.
411.10	Invalid Page ID returned by output option 1/output expander	
411.41	Output option 1/output expander main/interface motor stalled	Go to **"Output expander main motor service check" on page 344**.
411.42	Output option 1/output expander main/interface motor did not reach the required speed.	
411.43	Took too long to ramp up main/interface motor in output option 1/output expander	
411.53	Output option 1/output expander main/interface motor did not reach the required speed.	
411.71	Diverter failed to leave its home position on the output option 1/output expander	Go to **"Output expander diverter jam service check" on page 186**.
411.72	Diverter failed to reach its home position on the output option 1/output expander	

414 paper jam messages

Error code	Description	Action
414.01	Media remains detected by the output option 2/output expander sensor (pass through) after power on.	Go to **"Sensor (OE pass through) jam service check" on page 179**.
414.03	The media fed did not reach the output option 2/output expander sensor (pass through).	Go to **"Output expander media entrance jam service check" on page 183**.

Error code	Description	Action
414.05	The media while feeding remains detected by the output option 2/output expander sensor (pass through).	Go to **"Sensor (OE pass through) jam service check" on page 179**.
414.09	Never received Page In Output from output option 2/output expander	Go to **"Output expander media entrance jam service check" on page 183**.
414.10	Invalid Page ID returned by output option 2/output expander	
414.41	Output option 2/output expander main/interface motor stalled	Go to **"Output expander main motor service check" on page 344**.
414.42	Output option 2/output expander main/interface motor did not reach the required speed.	
414.43	Took too long to ramp up main/interface motor in output option 2/output expander	
414.53	Output option 2/output expander main/interface motor did not reach the required speed.	
414.71	Diverter failed to leave its home position on the output option 2/output expander	Go to **"Output expander diverter jam service check" on page 186**.
414.72	Diverter failed to reach its home position on the output option 2/output expander	

417 paper jam messages

Error code	Description	Action
417.01	Media remains detected by the output option 3/output expander sensor (pass through) after power on.	Go to **"Sensor (OE pass through) jam service check" on page 179**.
417.03	The media fed did not reach the output option 3/output expander sensor (pass through).	Go to **"Output expander media entrance jam service check" on page 183**.
417.05	The media while feeding remains detected by the output option 3/output expander sensor (pass through).	Go to **"Sensor (OE pass through) jam service check" on page 179**.
417.09	Never received Page In Output from output option 3/output expander	Go to **"Output expander media entrance jam service check" on page 183**.
417.10	Invalid Page ID returned by output option 3/output expander	
417.41	Output option 3/output expander main/interface motor stalled	Go to **"Output expander main motor service check" on page 344**.
417.42	Output option 3/output expander main/interface motor did not reach the required speed.	
417.43	Took too long to ramp up main/interface motor in output option 3/output expander	
417.53	Output option 3/output expander main/interface motor did not reach the required speed.	

Error code	Description	Action
417.71	Diverter failed to leave its home position on the output option 3/output expander	Go to **"Output expander diverter jam service check" on page 186**.
417.72	Diverter failed to reach its home position on the output option 3/output expander	

Sensor (OE pass through) jam service check

Action	Yes	No
Step 1 **a** Reseat all the installed output options on the printer. **b** Open the rear door and clear obstructions along the paper path. **c** Make sure that the sensors (pass through) are free from obstructions. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Is the output expander the only output option installed?	Go to step 5.	Go to step 3.
Step 3 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Lower interface cable removal" on page 645**. Reseat the cable J1 on the controller board, then POR the machine. Does the error remain?	Go to step 4.	The problem is solved.
Step 4 Check the auto connector end of the option below the expander. Is it free of damage?	Go to step 5.	Replace the upper interface cable of the output option under the expander.
Step 5 Remove all output options and re-install only the expander. Enter Diagnostics Menu and navigate to: **OUTPUT BIN TESTS** > **Feed Tests** > **Output Bin 1** Select **Single**. Does the output option feed normally?	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 6.

Action	Yes	No
Step 6 Check the following: • Check the rear door for damage. Open the rear door, and then check if it closes properly. • Check the rear door rollers for damage. Turn the rear door rollers and check if they have no problem moving. Are the rear door components functional and free of damage?	Go to step 7.	Replace the output expander rear door. See **"Output expander rear door removal" on page 637**.
Step 7 Open the rear door and do the following: **a** Check the sensor (OE pass through) for damage. If damaged, then replace the sensor. See **"Sensor (OE pass through) removal" on page 662**. **b** Make sure the sensor (OE pass through) is aligned and properly seated. **c** Do a sensor test. Enter Diagnostics menu, and then navigate to: **FINISHER TESTS** > **Finisher Sensor Test** > **Pass and Media** Does the status on the operator panel change every time the sensing area of the sensor tested is interrupted or blocked?	Go to step 8.	Replace the sensor (OE pass through). See **"Sensor (OE pass through) removal" on page 662**.
Step 8 Check the output expander bin full flag: **a** Check the bin full flags for damage. Check if there is no problem moving the flag. **Note:** Lifting the right bin full flag causes the middle and left bin full flags to raise too. **b** Make sure the bin full flag is installed properly. Is the bin full flag functional and free of damage?	If the error persists, then go to step 9.	Replace the output expander bin full flag. See **"Output expander bin full flag removal" on page 639**.
Step 9 **a** Open the output expander sensor cover. Reseat the sensor (media bin full) connector. **b** Make sure the sensor (media bin full) is aligned and properly seated. **c** Remove all obstructions along the flag mechanism. Check if the sensor flag has no problem moving. **d** Check the sensor flag for damage. If damaged, then replace the sensor. See **"Sensor (media bin full) with flag removal" on page 639**. **e** Reseat the sensor cable J5 on the controller board. Does the error remain?	Go to step 10.	The problem is solved.

Action	Yes	No
Step 10 Open the rear door and check the output expander diverter: **a** Check the output expander diverter for damage. Check if there is no problem moving the diverter. **b** Make sure the diverter spring is properly installed. Is the diverter functional and free of damage?	If the error persists, then go to step 11.	Replace the output expander diverter. See **"Output expander diverter removal" on page 658**.
Step 11 Open the left cover. Reseat the main motor cable J4 on the controller board. Does the error remain?	Go to step 12.	The problem is solved.
Step 12 **Note:** The sensor (OE rear door interlock) should be disabled by blocking the sensor. Open the rear door. Do a feed test. Enter Diagnostics menu, and then navigate to: **OUTPUT BIN TESTS** > **Feed to All Bins** Check if the transport rollers rotate when the test is performed. Does the main motor make the transport rollers rotate?	Go to step 13.	Replace the output expander main motor. See **"Output expander main motor removal" on page 652**.
Step 13 **a** Open the left cover. Reseat the diverter motor cable J6 on the controller board. **b** Remove the two screws from the diverter motor. Pull away the motor, and then check the pinion gear for damage. **c** Do a feed test and check if the diverter motor runs. Enter Diagnostics menu, and then navigate to: **OUTPUT BIN TESTS** > **Feed Tests** Select the output bin assigned as the output expander option, and then select **Single**. Is the diverter motor functional and free of damage?	Go to step 14.	Replace the output expander diverter motor. See **"Output expander diverter motor removal" on page 649**.
Step 14 Check the diverter plunger assembly: • Check the plunger for damage. • Check the cam for damage. • Check if the plunger moves up or down when the cam is rotated. Is the diverter plunger assembly functional and free of damage?	If the error persists, then go to step 15.	Replace the output expander diverter plunger assembly. See **"Output expander diverter plunger assembly removal" on page 649**.

Action	Yes	No
Step 15 **a** Reseat the connector of the sensor (OE diverter plunger HP). To access the sensor, see **"Sensor (OE diverter plunger HP) removal" on page 656**. **b** Reseat the same sensor cable J14 on the controller board. **c** POR the machine. Does the error remain?	Replace the sensor (OE diverter plunger HP). See **"Sensor (OE diverter plunger HP) removal" on page 656**. If the error persists, then go to step 16.	The problem is solved.
Step 16 Check the drive gear for damage. Turn the gear and check if it has no problem moving. **Note:** To access the drive gear, see **"Output expander drive gear removal" on page 651**. Is the drive gear functional and free of damage?	Go to step 17.	Replace the output expander drive gear. See **"Output expander drive gear removal" on page 651**.
Step 17 Open the right cover, and then do the following: **a** Check the drive belt for damage. **b** Make sure the drive belt is aligned and properly seated. **c** Check if there is no problem with the tension of the drive belt. **d** Turn the gears. Check if the other gears engaged to the belt would also turn. Is the drive belt functional and free of damage?	If the error persists, then go to step 18.	Replace the output expander drive belt. See **"Output expander drive belt removal" on page 660**.
Step 18 **a** Check the belt tensioner for damage. **b** Make sure the tensioner spring is aligned and properly seated. **c** Check if there is no problem with the tension of the spring. Is the belt tensioner functional and free of damage?	If the error persists, then go to step 19.	Replace the output expander belt tensioner. See **"Output expander belt tensioner removal" on page 660**.
Step 19 Open the left cover, reseat all connectors on the controller board and then POR the machine. Does the error remain?	Replace the controller board. See **"Output expander controller board removal" on page 644**. If the error persists, then replace the output expander option. See **"Output expander controller board removal" on page 644**.	The problem is solved.

Output expander media entrance jam service check

Action	Yes	No
Step 1 **a** Reseat all the installed output options on the printer. **b** Open the rear door and clear obstructions along the paper path. **c** Make sure that the sensors (pass through) are free from obstructions. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Is the output expander the only output option installed?	Go to step 5.	Go to step 3.
Step 3 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Lower interface cable removal" on page 645**. Reseat the cable J1 on the controller board, then POR the machine. Does the error remain?	Go to step 4.	The problem is solved.
Step 4 Check the auto connector end of the option below the expander. Is it free of damage?	Go to step 5.	Replace the upper interface cable of the output option under the expander.
Step 5 Remove all output options and re-install only the expander. Enter Diagnostics Menu and navigate to: **OUTPUT BIN TESTS** > **Feed Tests** > **Output Bin 1** Select **Single**. Does the output option feed normally?	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 6.
Step 6 Check the following: • Check the rear door for damage. Open the rear door, and then check if it closes properly. • Check the rear door rollers for damage. Turn the rear door rollers and check if they have no problem moving. Are the rear door components functional and free of damage?	Go to step 7.	Replace the output expander rear door. See **"Output expander rear door removal" on page 637**.

Action	Yes	No
Step 7 **a** Reseat the connector of the sensor (OE rear door interlock). To access the sensor, see **"Sensor (OE rear door interlock) removal" on page 654**. **b** Reseat the same sensor cable J14 on the controller board. **c** POR the machine. Does the error remain?	Replace the sensor (OE rear door interlock). See **"Sensor (OE rear door interlock) removal" on page 654**. If the error persists, then go to step 8.	The problem is solved.
Step 8 **a** Open the left cover. Reseat the diverter motor cable J6 on the controller board. **b** Remove the two screws from the diverter motor. Pull away the motor, and then check the pinion gear for damage. **c** Do a feed test and check if the diverter motor runs. Enter Diagnostics menu, and then navigate to: **OUTPUT BIN TESTS** > **Feed Tests** Select the output bin assigned as the output expander option, and then select **Single**. Is the diverter motor functional and free of damage?	Go to step 9.	Replace the output expander diverter motor. See **"Output expander diverter motor removal" on page 649**.
Step 9 Open the left cover. Reseat the main motor cable J4 on the controller board. Does the error remain?	Go to step 10.	The problem is solved.
Step 10 **Note:** The sensor (OE rear door interlock) should be disabled by blocking the sensor. Open the rear door. Do a feed test. Enter Diagnostics menu, and then navigate to: **OUTPUT BIN TESTS** > **Feed to All Bins** Check if the transport rollers rotate when the test is performed. Does the main motor make the transport rollers rotate?	Go to step 11.	Replace the output expander main motor. See **"Output expander main motor removal" on page 652**.
Step 11 Check the diverter plunger assembly: • Check the plunger for damage. • Check the cam for damage. • Check if the plunger moves up or down when the cam is rotated. Is the diverter plunger assembly functional and free of damage?	If the error persists, then go to step 12.	Replace the output expander diverter plunger assembly. See **"Output expander diverter plunger assembly removal" on page 649**.

Action	Yes	No
Step 12 **a** Reseat the connector of the sensor (OE diverter plunger HP). To access the sensor, see **"Sensor (OE diverter plunger HP) removal" on page 656**. **b** Reseat the same sensor cable J14 on the controller board. **c** POR the machine. Does the error remain?	Replace the sensor (OE diverter plunger HP). See **"Sensor (OE diverter plunger HP) removal" on page 656**. If the error persists, then go to step 13.	The problem is solved.
Step 13 Check the drive gear for damage. Turn the gear and check if it has no problem moving. **Note:** To access the drive gear, see **"Output expander drive gear removal" on page 651**. Is the drive gear functional and free of damage?	Go to step 14.	Replace the output expander drive gear. See **"Output expander drive gear removal" on page 651**.
Step 14 Open the right cover, and then do the following: **a** Check the drive belt for damage. **b** Make sure the drive belt is aligned and properly seated. **c** Check if there is no problem with the tension of the drive belt. **d** Turn the gears. Check if the other gears engaged to the belt would also turn. Is the drive belt functional and free of damage?	If the error persists, then go to step 15.	Replace the output expander drive belt. See **"Output expander drive belt removal" on page 660**.
Step 15 **a** Check the belt tensioner for damage. **b** Make sure the tensioner spring is aligned and properly seated. **c** Check if there is no problem with the tension of the spring. Is the belt tensioner functional and free of damage?	If the error persists, then go to step 16.	Replace the output expander belt tensioner. See **"Output expander belt tensioner removal" on page 660**.
Step 16 Open the left cover, reseat all connectors on the controller board and then POR the machine. Does the error remain?	Replace the controller board. See **"Output expander controller board removal" on page 644**. If the error persists, then replace the output expander option. See **"Output expander controller board removal" on page 644**.	The problem is solved.

Output expander diverter jam service check

Action	Yes	No
Step 1 **a** Reseat all the installed output options on the printer. **b** Open the rear door and clear obstructions along the paper path. **c** Make sure that the sensors (pass through) are free from obstructions. Does the error remain?	Go to step 2.	The problem is resolved.
Step 2 Is the output expander the only output option installed?	Go to step 5.	Go to step 3.
Step 3 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Lower interface cable removal" on page 645**. Reseat the cable J1 on the controller board, then POR the machine. Does the error remain?	Go to step 4.	The problem is solved.
Step 4 Check the auto connector end of the option below the expander. Is it free of damage?	Go to step 5.	Replace the upper interface cable of the output option under the expander.
Step 5 Remove all output options and re-install only the expander. Enter Diagnostics Menu and navigate to: **OUTPUT BIN TESTS** > **Feed Tests** > **Output Bin 1** Select **Single**. Does the output option feed normally?	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 6.

Action	Yes	No
Step 6 **a** Open the left cover. Reseat the diverter motor cable J6 on the controller board. **b** Remove the two screws from the diverter motor. Pull away the motor, and then check the pinion gear for damage. **c** Do a feed test and check if the diverter motor runs. Enter Diagnostics menu, and then navigate to: **OUTPUT BIN TESTS** > **Feed Tests** Select the output bin assigned as the output expander option, and then select **Single**. Is the diverter motor functional and free of damage?	Go to step 7.	Replace the output expander diverter motor. See **"Output expander diverter motor removal" on page 649**.
Step 7 Check the diverter plunger assembly: • Check the plunger for damage. • Check the cam for damage. • Check if the plunger moves up or down when the cam is rotated. Is the diverter plunger assembly functional and free of damage?	If the error persists, then go to step 8.	Replace the output expander diverter plunger assembly. See **"Output expander diverter plunger assembly removal" on page 649**.
Step 8 **a** Reseat the connector of the sensor (OE diverter plunger HP). To access the sensor, see **"Sensor (OE diverter plunger HP) removal" on page 656**. **b** Reseat the same sensor cable J14 on the controller board. **c** POR the machine. Does the error remain?	Replace the sensor (OE diverter plunger HP). See **"Sensor (OE diverter plunger HP) removal" on page 656**. If the error persists, then go to step 9.	The problem is solved.
Step 9 Open the left cover, reseat all connectors on the controller board and then POR the machine. Does the error remain?	Replace the controller board. See **"Output expander controller board removal" on page 644**. If the error persists, then replace the output expander option. See **"Output expander controller board removal" on page 644**.	The problem is solved.

42y paper jams

424 paper jam messages

Error code	Description	Action
424.01	Media remains detected by the output option 1/high capacity output expander sensor (pass through) after power on.	Go to **"Sensor (HCOE pass through) jam service check" on page 189**.
424.03	The media fed did not reach the output option 1/high capacity output expander sensor (pass through).	Go to **"HCOE media entrance jam service check" on page 193**.
424.05	The media while feeding remains detected by the output option 1/high capacity output expander sensor (pass through).	Go to **"Sensor (HCOE pass through) jam service check" on page 189**.
424.09	Never received Page In Output from output option 1/high capacity output expander	Go to **"HCOE media entrance jam service check" on page 193**.
424.10	Invalid Page ID returned by output option 1/high capacity output expander	
424.41	Output option 1/high capacity output expander main/interface motor stalled	Go to **"HCOE main motor jam service check" on page 196**.
424.42	Output option 1/high capacity output expander main/interface motor did not reach the required speed.	
424.43	Took too long to ramp up main/interface motor in output option 1/high capacity output expander	
424.53	Output option 1/high capacity output expander main/interface motor did not reach the required speed.	
424.71	Diverter failed to leave its home position on the output option 1/high capacity output expander	Go to **"HCOE diverter jam service check" on page 198**.
424.72	Diverter failed to reach its home position on the output option 1/high capacity output expander	

427 paper jam messages

Error code	Description	Action
427.01	Media remains detected by the output option 2/high capacity output expander sensor (pass through) after power on.	Go to **"Sensor (HCOE pass through) jam service check" on page 189**.
427.03	The media fed did not reach the output option 2/high capacity output expander sensor (pass through).	Go to **"HCOE media entrance jam service check" on page 193**.
427.05	The media while feeding remains detected by the output option 2/high capacity output expander sensor (pass through).	Go to **"Sensor (HCOE pass through) jam service check" on page 189**.

Error code	Description	Action
427.09	Never received Page In Output from output option 2/high capacity output expander	Go to **"HCOE media entrance jam service check" on page 193**.
427.10	Invalid Page ID returned by output option 2/high capacity output expander	
427.41	Output option 2/high capacity output expander main/interface motor stalled	Go to **"HCOE main motor jam service check" on page 196**.
427.42	Output option 2/high capacity output expander main/interface motor did not reach the required speed.	
427.43	Took too long to ramp up main/interface motor in output option 2/high capacity output expander	
427.53	Output option 2/high capacity output expander main/interface motor did not reach the required speed.	
427.71	Diverter failed to leave its home position on the output option 2/high capacity output expander	Go to **"HCOE diverter jam service check" on page 198**.
427.72	Diverter failed to reach its home position on the output option 2/high capacity output expander	

Sensor (HCOE pass through) jam service check

Action	Yes	No
Step 1 a POR the printer. b Reseat all the installed output options on the printer. c Clear obstructions along the paper path. d Make sure that the sensors (pass through) are free from obstructions. e Close the rear door properly. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Is the high capacity output expander the only output option installed?	Go to step 4.	Go to step 3.

Action	Yes	No
Step 3 Remove all output options and re-install only the high capacity output expander. Enter Diagnostics Menu and navigate to: **Output bin tests** > **Feed to all bins** Does the output option feed to all bins normally?	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 4.
Step 4 Check the lower interface cable. If damaged, then replace the lower interface cable. Go to **"HCOE lower interface cable removal" on page 674**. Remove the left cover. Reseat the cable J1 on the controller board, then POR the machine. Does the error remain?	Go to step 5.	The problem is solved.
Step 5 Check the auto connector end of the printer underneath the option. Is it free of damage or obstructions?	Go to step 6.	Replace the upper interface cable of the base printer.
Step 6 Check the following: • Check the rear door for damage. Open the rear door, and then check if it closes properly. • Check the rear door rollers for damage. Turn the rear door rollers and check if they have no problem moving. Are the rear door components functional and free of damage?	Go to step 7.	Replace the HCOE rear door. See **"HCOE rear door removal" on page 666**.
Step 7 Open the rear door and do the following: a Check the sensor (HCOE pass through) for damage. If damaged, then replace the sensor. See **"Sensor (HCOE pass through) removal" on page 698**. b Make sure the sensor (HCOE pass through) is aligned and properly seated. c Do a sensor test. Enter Diagnostics menu, and then navigate to: **FINISHER TESTS** > **Finisher Sensor Test** > **Pass and Media** Does the status on the operator panel change every time the sensing area of the sensor tested is interrupted or blocked?	Go to step 8.	Replace the sensor (HCOE pass through). See **"Sensor (HCOE pass through) removal" on page 698**.

Action	Yes	No
Step 8 Check the HCOE bin full flag: **a** Check the bin full flags for damage. Check if there is no problem moving the flag. **Note:** Lifting the right bin full flag causes the middle and left bin full flags to raise too. **b** Make sure the bin full flag is installed properly. Is the bin full flag functional and free of damage?	If the error persists, then go to step 9.	Replace the HCOE bin full flag. See **"HCOE bin full flag removal" on page 668**.
Step 9 **a** Open the sensor cover. Reseat the sensor (HCOE media bin full) connector. **b** Make sure the sensor (HCOE media bin full) is aligned and properly seated. **c** Remove all obstructions along the flag mechanism. Check if the sensor flag has no problem moving. **d** Check the sensor flag for damage. If damaged, then replace the sensor. See **"Sensor (HCOE media bin full) with flag removal" on page 668**. **e** Reseat the sensor cable J5 on the controller board. Does the error remain?	Go to step 10.	The problem is solved.
Step 10 Open the rear door and check the HCOE top diverter: **a** Check the diverter for damage. Check if there is no problem moving the diverter. **b** Make sure the diverter spring is properly installed. Is the diverter functional and free of damage?	If the error persists, then go to step 11.	Replace the HCOE top diverter. See **"HCOE top diverter removal" on page 693**.
Step 11 Open the left cover. Reseat the main motor cable J4 on the controller board. Does the error remain?	Go to step 12.	The problem is solved.
Step 12 **Note:** The sensor (HCOE rear door interlock) should be disabled by blocking the sensor. Open the rear door. Do a feed test. Enter Diagnostics menu, and then navigate to: **OUTPUT BIN TESTS** > **Feed to All Bins** Check if the transport rollers rotate when the test is performed. Does the main motor make the transport rollers rotate?	Go to step 13.	Replace the HCOE main motor. See **"HCOE main motor removal" on page 688**.

Action	Yes	No
Step 13 Check the drive gear for damage. Turn the gear and check if it has no problem moving. **Note:** To access the drive gear, see **"HCOE main drive gear assembly removal" on page 686**. Is the drive gear functional and free of damage?	Go to step 14.	Replace the HCOE drive gear. See **"HCOE main drive gear assembly removal" on page 686**.
Step 14 Open the right cover, and then do the following: **a** Check the drive belt for damage. **b** Make sure the drive belt is aligned and properly seated. **c** Check if there is no problem with the tension of the drive belt. **d** Turn the gears. Check if the other gears engaged to the belt would also turn. Is the drive belt functional and free of damage?	If the error persists, then go to step 15.	Replace the HCOE drive belt. See **"HCOE main drive gear assembly removal" on page 686**.
Step 15 **a** Check the belt tensioner for damage. **b** Make sure the tensioner spring is aligned and properly seated. **c** Check if there is no problem with the tension of the spring. Is the belt tensioner functional and free of damage?	If the error persists, then go to step 16.	Replace the HCOE belt tensioner. See **"HCOE belt tensioner removal" on page 682**.
Step 16 Reseat all connectors on the controller board, then POR the machine. Does the error remain?	Replace the controller board. See **"HCOE controller board removal" on page 672**. If the error persists, then replace the HCOE. See **"High capacity output expander option removal" on page 665**.	The problem is solved.

HCOE media entrance jam service check

Action	Yes	No
Step 1 Is the high capacity output expander the only output option installed?	Go to step 3.	Go to step 2.
Step 2 Remove all output options and re-install only the high capacity output expander. Enter Diagnostics Menu and navigate to: **Output bin tests** > **Feed to all bins** Does the output option feed to all bins normally?	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 3.
Step 3 Check the lower interface cable. If damaged, then replace the lower interface cable. Go to **"HCOE lower interface cable removal" on page 674**. Remove the left cover. Reseat the cable J1 on the controller board, then POR the machine. Does the error remain?	Go to step 4.	The problem is solved.
Step 4 Check the auto connector end of the printer underneath the option. Is it free of damage or obstructions?	Go to step 5.	Replace the upper interface cable of the base printer.
Step 5 Check the following: • Check the rear door for damage. Open the rear door, and then check if it closes properly. • Check the rear door rollers for damage. Turn the rear door rollers and check if they have no problem moving. Are the rear door components functional and free of damage?	Go to step 6.	Replace the HCOE rear door. See **"HCOE rear door removal" on page 666**.

Action	Yes	No
Step 6 **a** Reseat the connector of the sensor (HCOE rear door interlock). To access the sensor, see **"Sensor (HCOE rear door interlock) removal" on page 680**. **b** Reseat the same sensor cable J14 on the controller board. **c** POR the machine. Does the error remain?	Replace the sensor (HCOE rear door interlock). See **"Sensor (HCOE rear door interlock) removal" on page 680**. If the error persists, then go to step 7.	The problem is solved.
Step 7 **a** Open the left cover. Reseat the diverter motor cable J6 on the controller board. **b** Remove the two screws from the diverter motor. Pull away the motor, and then check the pinion gear for damage. **c** Do a feed test and check if the diverter motor runs. Enter Diagnostics menu, and then navigate to: **OUTPUT BIN TESTS** > **Feed Tests** Select the output bin assigned as the HCOE option, and then select **Single**. Is the diverter motor functional and free of damage?	Go to step 8.	Replace the HCOE diverter motor. See **"HCOE diverter motor removal" on page 676**.
Step 8 Open the left cover. Reseat the main motor cable J4 on the controller board. Does the error remain?	Go to step 9.	The problem is solved.
Step 9 **Note:** The sensor (HCOE rear door interlock) should be disabled by blocking the sensor. Open the rear door. Do a feed test. Enter Diagnostics menu, and then navigate to: **OUTPUT BIN TESTS** > **Feed to All Bins** Check if the transport rollers rotate when the test is performed. Does the main motor make the transport rollers rotate?	Go to step 10.	Replace the HCOE main motor. See **"HCOE main motor removal" on page 688**.
Step 10 Check the diverter plunger assembly: • Check the plunger for damage. • Check the cam for damage. • Check if the plunger moves up or down when the cam is rotated. Is the diverter plunger assembly functional and free of damage?	If the error persists, then go to step 11.	Replace the HCOE diverter plunger assembly. See **"HCOE diverter plunger assembly removal" on page 685**.

Action	Yes	No
Step 11 **a** Reseat the connector of the sensor (HCOE diverter plunger HP). To access the sensor, see **"Sensor (HCOE diverter HP) removal" on page 690**. **b** Reseat the same sensor cable J14 on the controller board. **c** POR the machine. Does the error remain?	Replace the sensor (HCOE diverter plunger HP). See **"Sensor (HCOE diverter HP) removal" on page 690**. If the error persists, then go to step 12.	The problem is solved.
Step 12 Check the drive gear for damage. Turn the gear and check if it has no problem moving. **Note:** To access the drive gear, see **"HCOE main drive gear assembly removal" on page 686**. Is the drive gear functional and free of damage?	Go to step 13.	Replace the HCOE drive gear. See **"HCOE main drive gear assembly removal" on page 686**.
Step 13 Open the right cover, and then do the following: **a** Check the drive belt for damage. **b** Make sure the drive belt is aligned and properly seated. **c** Check if there is no problem with the tension of the drive belt. **d** Turn the gears. Check if the other gears engaged to the belt would also turn. Is the drive belt functional and free of damage?	If the error persists, then go to step 14.	Replace the HCOE drive belt. See **"HCOE main drive gear assembly removal" on page 686**.
Step 14 **a** Check the belt tensioner for damage. **b** Make sure the tensioner spring is aligned and properly seated. **c** Check if there is no problem with the tension of the spring. Is the belt tensioner functional and free of damage?	If the error persists, then go to step 15.	Replace the HCOE belt tensioner. See **"HCOE belt tensioner removal" on page 682**.
Step 15 Reseat all connectors on the controller board, then POR the machine. Does the error remain?	Replace the controller board. See **"HCOE controller board removal" on page 672**. If the error persists, then replace the HCOE. See **"High capacity output expander option removal" on page 665**.	The problem is solved.

HCOE main motor jam service check

Action	Yes	No
Step 1 **a** POR the machine. **b** Reseat the output option on the printer. **c** Clear obstructions along the paper path. **d** Make sure the sensors (pass through) are free from obstruction. **e** Close the rear door properly. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Is the high capacity output expander the only output option installed?	Go to step 4.	Go to step 3.
Step 3 Remove all output options and re-install only the high capacity output expander. Enter Diagnostics Menu and navigate to: **Output bin tests** > **Feed to all bins** Does the output option feed to all bins normally?	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 4.
Step 4 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"HCOE lower interface cable removal" on page 674**. Remove the left cover. Reseat the cable J1 on the controller board, then POR the machine. Does the error remain?	Go to step 5.	The problem is solved.
Step 5 Check the auto connector end of the printer underneath the option. Is it free of damage or obstructions?	Go to step 6.	Replace the upper interface cable of the base printer.
Step 6 Open the left cover. Reseat the main motor cable J4 on the controller board. Does the error remain?	Go to step 7.	The problem is solved.

Action	Yes	No
Step 7 **Note:** The sensor (HCOE rear door interlock) should be disabled by blocking the sensor. Open the rear door. Do a feed test. Enter Diagnostics menu, and then navigate to: **OUTPUT BIN TESTS** > **Feed to All Bins** Check if the transport rollers rotate when the test is performed. Does the main motor make the transport rollers rotate?	Go to step 8.	Replace the HCOE main motor. See **"HCOE main motor removal" on page 688**.
Step 8 Check the drive gear for damage. Turn the gear and check if it has no problem moving. **Note:** To access the drive gear, see **"HCOE main drive gear assembly removal" on page 686**. Is the drive gear functional and free of damage?	Go to step 9.	Replace the HCOE drive gear. See **"HCOE main drive gear assembly removal" on page 686**.
Step 9 Check the following: • Check the rear door for damage. Open the rear door, and then check if it closes properly. • Check the rear door rollers for damage. Turn the rear door rollers and check if they have no problem moving. Are the rear door components functional and free of damage?	Go to step 10.	Replace the HCOE rear door. See **"HCOE rear door removal" on page 666**.
Step 10 Open the right cover, and then do the following: **a** Check the drive belt for damage. **b** Make sure the drive belt is aligned and properly seated. **c** Check if there is no problem with the tension of the drive belt. **d** Turn the gears. Check if the other gears engaged to the belt would also turn. Is the drive belt functional and free of damage?	If the error persists, then go to step 11.	Replace the HCOE drive belt. See **"HCOE main drive gear assembly removal" on page 686**.
Step 11 **a** Check the belt tensioner for damage. **b** Make sure the tensioner spring is aligned and properly seated. **c** Check if there is no problem with the tension of the spring. Is the belt tensioner functional and free of damage?	If the error persists, then go to step 12.	Replace the HCOE belt tensioner. See **"HCOE belt tensioner removal" on page 682**.

Diagnostics and troubleshooting

Action	Yes	No
Step 12 Reseat all connectors on the controller board, then POR the machine. Does the error remain?	Replace the controller board. See **"HCOE controller board removal" on page 672**. If the error persists, then replace the HCOE. See **"High capacity output expander option removal" on page 665**.	The problem is solved.

HCOE diverter jam service check

Action	Yes	No
Step 1 a POR the printer. b Reseat all the installed output options on the printer. c Clear obstructions along the paper path. d Make sure that the sensors (pass through) are free from obstructions. e Close the rear door properly. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Is the high capacity output expander the only output option installed?	Go to step 4.	Go to step 3.
Step 3 Remove all output options and re-install only the high capacity output expander. Enter Diagnostics Menu and navigate to: **Output bin tests** > **Feed to all bins** Does the output option feed to all bins normally?	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 4.

Action	Yes	No
Step 4 Check the lower interface cable. If damaged, then replace the lower interface cable. Go to **"HCOE lower interface cable removal" on page 674**. Remove the left cover. Reseat the cable J1 on the controller board, then POR the machine. Does the error remain?	Go to step 5.	The problem is solved.
Step 5 Check the auto connector end of the printer underneath the option. Is it free of damage or obstructions?	Go to step 6.	Replace the upper interface cable of the base printer.
Step 6 **a** Open the left cover. Reseat the diverter motor cable J6 on the controller board. **b** Remove the two screws from the diverter motor. Pull away the motor, and then check the pinion gear for damage. **c** Do a feed test and check if the diverter motor runs. Enter Diagnostics menu, and then navigate to: **OUTPUT BIN TESTS** > **Feed Tests** Select the output bin assigned as the HCOE option, and then select **Single**. Is the diverter motor functional and free of damage?	Go to step 7.	Replace the HCOE diverter motor. See **"HCOE diverter motor removal" on page 676**.
Step 7 Check the diverter plunger assembly: • Check the plunger for damage. • Check the cam for damage. • Check if the plunger moves up or down when the cam is rotated. Is the diverter plunger assembly functional and free of damage?	If the error persists, then go to step 8.	Replace the HCOE diverter plunger assembly. See **"HCOE diverter plunger assembly removal" on page 685**.
Step 8 **a** Reseat the connector of the sensor (HCOE diverter plunger HP). To access the sensor, see **"Sensor (HCOE diverter HP) removal" on page 690**. **b** Reseat the same sensor cable J14 on the controller board. **c** POR the machine. Does the error remain?	Replace the sensor (HCOE diverter plunger HP). See **"Sensor (HCOE diverter HP) removal" on page 690**. If the error persists, then go to step 9.	The problem is solved.

Action	Yes	No
Step 9 Reseat all connectors on the controller board, then POR the machine. Does the error remain?	Replace the controller board. See **"HCOE controller board removal" on page 672**. If the error persists, then replace the HCOE. See **"High capacity output expander option removal" on page 665**.	The problem is solved.

431–441 paper jams

431 paper jam messages

Error code	Description	Action
431.01	Media remains detected by the output option 1/mailbox sensor (pass through) after power on.	Go to **"Sensor (mailbox pass through) jam service check" on page 202**.
431.03	The media fed did not reach the output option 1/mailbox sensor (pass through).	
431.05	The media while feeding remains detected by the output option 1/mailbox sensor (pass through).	
431.09	Never received Page In Output from output option 1/mailbox	
431.10	Invalid Page ID returned by output option 1/mailbox	
431.41	Output option 1/mailbox main/interface motor stalled	Go to **"Mailbox main motor jam service check" on page 204**.
431.42	Output option 1/mailbox main/interface motor did not reach the required speed.	
431.43	Took too long to ramp up main/interface motor in output option 1/mailbox	
431.53	Output option 1/mailbox main/interface motor did not reach the required speed.	
431.71	Diverter failed to leave its home position on the output option 1/mailbox	Go to **"Mailbox diverter jam service check" on page 206**.
431.72	Diverter failed to reach its home position on the output option 1/mailbox	

436 paper jam messages

Error code	Description	Action
436.01	Media remains detected by the output option 2/mailbox sensor (pass through) after power on.	Go to **"Sensor (mailbox pass through) jam service check" on page 202**.
436.03	The media fed did not reach the output option 2/mailbox sensor (pass through).	
436.05	The media while feeding remains detected by the output option 2/mailbox sensor (pass through).	
436.09	Never received Page In Output from output option 2/mailbox	
436.10	Invalid Page ID returned by output option 2/mailbox	
436.41	Output option 2/mailbox main/interface motor stalled	Go to **"Mailbox main motor jam service check" on page 204**.
436.42	Output option 2/mailbox main/interface motor did not reach the required speed.	
436.43	Took too long to ramp up main/interface motor in output option 2/mailbox	
436.53	Output option 2/mailbox main/interface motor did not reach the required speed.	
436.71	Diverter failed to leave its home position on the output option 2/mailbox	Go to **"Mailbox diverter plunger jam service check" on page 210**.
436.72	Diverter failed to reach its home position on the output option 2/mailbox	

441 paper jam messages

Error code	Description	Action
441.01	Media remains detected by the output option 3/mailbox sensor (pass through) after power on.	Go to **"Sensor (mailbox pass through) jam service check" on page 202**.
441.03	The media fed did not reach the output option 3/mailbox sensor (pass through).	
441.05	The media while feeding remains detected by the output option 3/mailbox sensor (pass through).	
441.09	Never received Page In Output from output option 3/mailbox	
441.10	Invalid Page ID returned by output option 3/mailbox	

Error code	Description	Action
441.41	Output option 3/mailbox main/interface motor stalled	Go to **"Mailbox main motor jam service check" on page 204**.
441.42	Output option 3/mailbox main/interface motor did not reach the required speed.	
441.43	Took too long to ramp up main/interface motor in output option 3/mailbox	
441.53	Output option 3/mailbox main/interface motor did not reach the required speed.	
441.71	Diverter failed to leave its home position on the output option 3/mailbox	Go to **"Mailbox diverter plunger jam service check" on page 210**.
441.72	Diverter failed to reach its home position on the output option 3/mailbox	

Sensor (mailbox pass through) jam service check

Action	Yes	No
Step 1 a POR the printer. b Reseat all the installed output options on the printer. c Clear obstructions along the paper path. d Close the rear door properly. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Is the mailbox the only output option installed?	Go to step 5.	Go to step 3.
Step 3 Remove all output options and reinstall only the mailbox. Enter Diagnostics Menu and navigate to: **Output bin tests** > **Feed to all bins** Does the output option feed to all bins normally?	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 4.
Step 4 Check the auto connector end of the option previously installed below the mailbox. Is it free of damage?	Go to step 5.	Replace the damaged upper interface cable of the output option previously installed under the mailbox.

Action	Yes	No
Step 5 Check the lower interface cable. If damaged, replace the lower interface cable. See **"Mailbox lower interface cable removal" on page 790**. Reseat the connector J1A on the controller board, then POR the machine. Does the error remain?	Go to step 6.	The problem is solved.
Step 6 Open the rear door and check the two sensors (pass through) for proper operation. Enter Diagnostics Menu and navigate to: **Output bin tests** > **Sensor test** Select the output bin assigned to the mailbox option. Does the display on the operator panel change every time the sensing area of the above sensors are interrupted or blocked?	Go to step 8.	Go to step 7.

Step 7
a Open the rear door and check the sensors (pass through):
  • Make sure the sensor is aligned and seated properly.
  • Check the sensor and sensor flag for damage. If damaged, then replace the sensor. See **"Sensor (mailbox pass through) removal" on page 813**.
b Reseat the sensor connections (J3T and J3B) on the controller board. POR the machine.
 	
Does the error remain?
	Go to step 8.	The problem is solved.

Step 8 Open the rear door and do the following: • check the rear door for damage • manually turn the rear door rollers and check if they are ok • check if the rear door opens and closes properly Is the rear door functional and free of damage?	Go to step 9.	Replace the mailbox rear door. See **"Mailbox rear door removal" on page 769**.
Step 9 Check the diverter plunger assembly: • Check the diverter plunger for damage. • Check the diverter cam for damage. • Check if the plunger moves up or down when the cam is rotated. Is the diverter plunger assembly functional and free of damage?	Go to step 10.	Replace the mailbox diverter plunger assembly. See **"Mailbox diverter plunger assembly removal" on page 778**.

Action	Yes	No
Step 10 **a** Reseat the divert motor connector J7 on the controller board. **b** Remove the two screws from the diverter motor. Pull away the motor, and then check it for damage. **c** Do a feed test and check if the diverter motor runs. Enter Diagnostics menu and navigate to: **OUTPUT BIN TESTS** > **Feed Tests** Select the output bin assigned as the mailbox option, and then select **Single**. Is the diverter motor functional and free of damage?	Go to step 11.	Replace the diverter motor. See **"Mailbox diverter motor removal" on page 792**.
Step 11 **a** Make sure the sensor (mailbox diverter plunger HP) is aligned and properly seated. **b** Reseat the sensor cable on the sensor side. Reseat also the sensor connector J8 on the controller board. POR the machine. Does the error remain?	Replace the sensor (mailbox diverter plunger HP). See **"Sensor (mailbox diverter plunger HP) removal" on page 788**. If the error persists, then go to step 12.	The problem is solved.
Step 12 Reseat all the connectors on the controller board. POR the machine. Does the error remain?	Replace the controller board. See **"Mailbox controller board removal" on page 787**. If the error persists, then replace the mailbox assembly. See **"Mailbox option removal" on page 768**.	The problem is solved.

Mailbox main motor jam service check

Action	Yes	No
Step 1 **a** POR the machine. **b** Reseat the output option on the printer. **c** Open the rear door and clear obstructions along the paper path. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Is the mailbox the only output option installed?	Go to step 5.	Go to step 3.

Action	Yes	No
Step 3 Remove all output options and re-install only the mailbox. Enter Diagnostics Menu and navigate to: **Output bin tests** > **Feed to all bins** Does the output option feed to all bins normally?	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 4.
Step 4 Check the auto connector end of the option previously installed below the mailbox. Is it free of damage?	Go to step 5.	Replace the damaged upper interface cable.
Step 5 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Mailbox lower interface cable removal" on page 790**. Reseat the connector J1 on the controller board, then POR the machine. Does the error remain?	Go to step 6.	The problem is solved.
Step 6 Open the left cover. Reseat the main motor cable J6 on the controller board, and then POR the machine. Does the error remain?	Go to step 7.	The problem is solved.
Step 7 **Note:** The sensor (mailbox rear door interlock) should be disabled by blocking the sensor. Open the mailbox rear door. Do a feed test. Enter Diagnostics menu and navigate to: **Output bin tests** > **Feed to all bins** Check if the mailbox transport rollers rotate when the test is performed. Does the main motor make the transport rollers rotate?	Go to step 8.	Replace the mailbox main motor. See **"Mailbox main motor removal" on page 786**.

Action	Yes	No
Step 8 Open the mailbox left cover. Check the main drive gear for damage and obstructions. **Note:** To access the main drive gear, see **"Mailbox main drive gear removal" on page 783**. Is the main drive gear free of damage?	Go to step 9.	Replace the mailbox main drive gear. See **"Mailbox main drive gear removal" on page 783**.
Step 9 Open the rear door and do the following: • check the rear door for damage • manually turn the rear door rollers and check if they are ok • check if the rear door opens and closes properly Is the rear door functional and free of damage?	Go to step 10.	Replace the mailbox rear door. See **"Mailbox rear door removal" on page 769**.
Step 10 Reseat all connectors on the controller board, then POR the machine. Does the error remain?	Replace the controller board. See **"Mailbox controller board removal" on page 787**. If the error persists, then replace the mailbox option. See **"Mailbox option removal" on page 768**.	The problem is solved.

Mailbox diverter jam service check

Action	Yes	No
Step 1 **a** POR the printer. **b** Reseat all the installed output options on the printer. **c** Clear obstructions along the paper path. **d** Make sure that the sensors (pass through) are free from obstructions. **e** Close the rear door properly. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Is the mailbox the only output option installed?	Go to step 5.	Go to step 3.

Action	Yes	No
Step 3 Remove all output options and reinstall only the mailbox. Enter Diagnostics Menu and navigate to: **Output bin tests** > **Feed to all bins** Does the output option feed to all bins normally?	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 4.
Step 4 Check the auto connector end of the option previously installed below the mailbox. Is it free of damage?	Go to step 5.	Replace the damaged upper interface cable of the output option previously installed under the mailbox.
Step 5 Check the lower interface cable. If damaged, replace the lower interface cable. See **"Mailbox lower interface cable removal" on page 790**. Reseat the connector J1A on the controller board, then POR the machine. Does the error remain?	Go to step 6.	The problem is solved.
Step 6 Open the rear door and do the following: • check the rear door for damage • manually turn the rear door rollers and check if they are ok • check if the rear door opens and closes properly Is the rear door functional and free of damage?	Go to step 7.	Replace the mailbox rear door. See **"Mailbox rear door removal" on page 769**.

Action	Yes	No

Step 7
a Open the rear door and check the three middle diverters:
  • Check the diverters for damage.
  • Move the diverters and check if the spring makes them retract to their default positions.
  • Make sure the diverter springs are aligned and properly installed.
b Do a feed test. Enter Diagnostics menu and navigate to:
Output bin tests > **Feed to all bins**
Check if the three bins connected to the three diverters are being fed.
 	
Are all the middle diverters functional and free of damage?
	Go to step 8.	Replace the defective mailbox middle diverter. See **"Mailbox middle diverter removal" on page 808**.

Step 8
a Check the top diverter:
  • Check the diverter for damage.
  • Move the diverter and check if the spring makes it retract to its default position.
  • Make sure the diverter springs are aligned and properly installed.
b Do a feed test. Enter Diagnostics menu and navigate to:
Output bin tests > **Feed to all bins**
Check if the uppermost bin is being fed.
 	
Is the top diverter functional and free of damage?
	Go to step 9.	Replace the defective mailbox top diverter. See **"Mailbox top diverter removal" on page 803**.

Step 9 Open the rear door and check the two sensors (pass through) for proper operation. Enter Diagnostics Menu and navigate to: **Output bin tests** > **Sensor test** Select the output bin assigned to the mailbox option. Does the display on the operator panel change every time the sensing area of the above sensors are interrupted or blocked?	Go to step 11.	Go to step 10.

Step 10
a Open the rear door and check the sensors (pass through):
  • Make sure the sensor is aligned and seated properly.
  • Check the sensor and sensor flag for damage. If damaged, then replace the sensor. See **"Sensor (mailbox pass through) removal" on page 813**.
b Reseat the sensor connections (J3T and J3B) on the controller board. POR the machine.
 	
Does the error remain?
	Go to step 11.	The problem is solved.

Action	Yes	No
Step 11 **a** Reseat the divert motor connector J7 on the controller board. **b** Remove the two screws from the diverter motor. Pull away the motor, and then check it for damage. **c** Do a feed test and check if the diverter motor runs. Enter Diagnostics menu and navigate to: **OUTPUT BIN TESTS** > **Feed Tests** Select the output bin assigned as the mailbox option, and then select **Single**. Is the diverter motor functional and free of damage?	Go to step 12.	Replace the diverter motor. See **"Mailbox diverter motor removal" on page 792**.
Step 12 Check the diverter plunger assembly: • Check the diverter plunger for damage. • Check the diverter cam for damage. • Check if the plunger moves up or down when the cam is rotated. Is the diverter plunger assembly functional and free of damage?	Go to step 13.	Replace the mailbox diverter plunger assembly. See **"Mailbox diverter plunger assembly removal" on page 778**.
Step 13 Open the mailbox left cover. Check the main drive gear for damage and obstructions. **Note:** To access the main drive gear, see **"Mailbox main drive gear removal" on page 783**. Is the main drive gear free of damage?	Go to step 14.	Replace the mailbox main drive gear. See **"Mailbox main drive gear removal" on page 783**.
Step 14 Reseat all the connectors on the controller board. POR the machine. Does the error remain?	Replace the controller board. See **"Mailbox controller board removal" on page 787**. If the error persists, then replace the mailbox assembly. See **"Mailbox option removal" on page 768**.	The problem is solved.

Mailbox diverter plunger jam service check

Action	Yes	No
Step 1 **a** POR the printer. **b** Reseat all the installed output options on the printer. **c** Clear obstructions along the paper path. **d** Make sure that the sensors (pass through) are free from obstructions. **e** Close the rear door properly. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Is the mailbox the only output option installed?	Go to step 5.	Go to step 3.
Step 3 Remove all output options and reinstall only the mailbox. Enter Diagnostics Menu and navigate to: **Output bin tests** > **Feed to all bins** Does the output option feed to all bins normally?	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 4.
Step 4 Check the auto connector end of the printer below the mailbox. Is it free of damage?	Go to step 5.	Replace the upper interface cable of the printer.
Step 5 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Mailbox lower interface cable removal" on page 790**. Reseat the connector J1A on the controller board, then POR the machine. Does the error remain?	Go to step 6.	The problem is solved.

Action	Yes	No
Step 6 **a** Reseat the divert motor connector J7 on the controller board. **b** Remove the two screws from the diverter motor. Pull away the motor, and then check it for damage. **c** Do a feed test and check if the diverter motor runs. Enter Diagnostics menu and navigate to: **OUTPUT BIN TESTS** > **Feed Tests** Select the output bin assigned as the mailbox option, and then select **Single**. Is the diverter motor functional and free of damage?	Go to step 7.	Replace the diverter motor. See **"Mailbox diverter motor removal" on page 792**.
Step 7 Check the diverter plunger assembly: • Check the diverter plunger for damage. • Check the diverter cam for damage. • Check if the plunger moves up or down when the cam is rotated. Is the diverter plunger assembly functional and free of damage?	Go to step 8.	Replace the mailbox diverter plunger assembly. See **"Mailbox diverter plunger assembly removal" on page 778**.
Step 8 **a** Make sure the sensor (mailbox diverter plunger HP) is aligned and properly seated. **b** Reseat the sensor cable on the sensor side. Reseat also the sensor connector J8 on the controller board. POR the machine. Does the error remain?	Replace the sensor (mailbox diverter plunger HP). See **"Sensor (mailbox diverter plunger HP) removal" on page 788**. If the error persists, then go to step 9.	The problem is solved.
Step 9 Reseat all the connectors on the controller board. POR the machine. Does the error remain?	Replace the controller board. See **"Mailbox controller board removal" on page 787**. If the error persists, then replace the mailbox assembly. See **"Mailbox option removal" on page 768**.	The problem is solved.

45y paper jams

451 paper jam messages

Error code	Description	Action
451.01	Finisher/offset stacker: Media remains detected by the sensor (pass through) after power on.	Go to **"Sensor (finisher pass through) jam service check" on page 218**.
451.01	Staple, hole punch finisher: Media remains detected by the sensor (pass through) after power on.	Go to **"Sensor (HPU finisher pass through) jam service check" on page 238**.
451.03	Finisher/offset stacker: The media fed did not reach the sensor (pass through).	Go to **"Sensor (finisher pass through) jam service check" on page 218**.
451.03	Staple, hole punch finisher: The media fed did not reach the sensor (pass through).	Go to **"Sensor (HPU finisher pass through) jam service check" on page 238**.
451.05	Finisher/offset stacker: The media while feeding remains detected by the sensor (pass through).	Go to **"Sensor (finisher pass through) jam service check" on page 218**.
451.05	Staple, hole punch finisher: The media while feeding remains detected by the sensor (pass through).	Go to **"Sensor (HPU finisher pass through) jam service check" on page 238**.
451.09	Never received Page In Output from the finisher/offset stacker	
451.10	Invalid Page ID returned by the finisher/offset stacker	
451.41	Finisher/offset stacker: Main/interface motor stalled	Go to **"Finisher main motor jam service check" on page 221**.
451.41	Staple, hole punch finisher: Main/interface motor stalled	Go to **"Finisher (HPU) main motor jam service check" on page 241**.
451.42	Finisher/offset stacker: Main/interface motor did not reach the required speed.	Go to **"Finisher main motor jam service check" on page 221**.
451.42	Staple, hole punch finisher: Main/interface motor did not reach the required speed.	Go to **"Finisher (HPU) main motor jam service check" on page 241**.
451.43	Finisher/offset stacker: Took too long to ramp up main/interface motor	Go to **"Finisher main motor jam service check" on page 221**.
451.43	Staple, hole punch finisher: Took too long to ramp up main/interface motor	Go to **"Finisher (HPU) main motor jam service check" on page 241**.

452 paper jam messages

Error code	Description	Action
452.73	Finisher/offset stacker: left tamper failed to leave its home position	Go to **"Finisher left tamper jam service check" on page 222**.
452.73	Staple, hole punch finisher: left tamper failed to leave its home position	Go to **"Finisher (HPU) left tamper jam service check" on page 242**.

Error code	Description	Action
452.74	Finisher/offset stacker: left tamper failed to reach its home position	Go to **"Finisher left tamper jam service check" on page 222**.
452.74	Staple, hole punch finisher: left tamper failed to reach its home position	Go to **"Finisher (HPU) left tamper jam service check" on page 242**.

453 paper jam messages

Error code	Description	Action
453.75	Finisher/offset stacker: right tamper failed to leave its home position	Go to **"Finisher right tamper jam service check" on page 224**.
453.75	Staple, hole punch finisher: right tamper failed to leave its home position	Go to **"Finisher (HPU) right tamper jam service check" on page 244**.
453.76	Finisher/offset stacker: right tamper failed to reach its home position	Go to **"Finisher right tamper jam service check" on page 224**.
453.76	Staple, hole punch finisher: right tamper failed to reach its home position	Go to **"Finisher (HPU) right tamper jam service check" on page 244**.

454 paper jam messages

Error code	Description	Action
454.41	Finisher/offset stacker: ejector motor stalled	Go to **"Finisher ejector jam service check" on page 226**.
454.41	Staple, hole punch finisher: ejector motor stalled	Go to **"Finisher (HPU) ejector jam service check" on page 246**.
454.42	Finisher/offset stacker: ejector motor did not reach the required speed.	Go to **"Finisher ejector jam service check" on page 226**.
454.42	Staple, hole punch finisher: ejector motor did not reach the required speed.	Go to **"Finisher (HPU) ejector jam service check" on page 246**.
454.43	Finisher/offset stacker: Took too long to ramp up ejector motor	Go to **"Finisher ejector jam service check" on page 226**.
454.43	Staple, hole punch finisher: Took too long to ramp up ejector motor	Go to **"Finisher (HPU) ejector jam service check" on page 246**.
454.53	Finisher/offset stacker ejector motor went over the normal speed.	Go to **"Finisher ejector jam service check" on page 226**.
454.53	Staple, hole punch finisher: ejector motor went over the normal speed.	Go to **"Finisher (HPU) ejector jam service check" on page 246**.
454.77	Finisher/offset stacker: ejector failed to leave its home position	Go to **"Finisher ejector jam service check" on page 226**.
454.77	Staple, hole punch finisher: ejector failed to leave its home position	Go to **"Finisher (HPU) ejector jam service check" on page 246**.
454.78	Finisher/offset stacker: ejector failed to reach its home position	Go to **"Finisher ejector jam service check" on page 226**.

Error code	Description	Action
454.78	Staple, hole punch finisher: ejector failed to reach its home position	Go to **"Finisher (HPU) ejector jam service check" on page 246**.

455 paper jam messages

Error code	Description	Action
455.71	Finisher/offset stacker: diverter failed to leave its home position	Go to **"Finisher diverter jam service check" on page 228**.
455.71	Staple, hole punch finisher: diverter failed to leave its home position	Go to **"Finisher (HPU) diverter jam service check" on page 247**.
455.72	Finisher/offset stacker diverter failed to reach its home position	Go to **"Finisher diverter jam service check" on page 228**.
455.72	Staple, hole punch finisher: diverter failed to reach its home position	Go to **"Finisher (HPU) diverter jam service check" on page 247**.
455.79	Finisher/offset stacker: paddle failed to leave its home position	Go to **"Finisher paddle jam service check" on page 230**.
455.79	Staple, hole punch finisher: paddle failed to leave its home position	Go to **"Finisher (HPU) paddle jam service check" on page 249**.
455.80	Finisher/offset stacker: paddle failed to reach its home position	Go to **"Finisher paddle jam service check" on page 230**.
455.80	Staple, hole punch finisher: paddle failed to reach its home position	Go to **"Finisher (HPU) paddle jam service check" on page 249**.
455.81	Finisher/offset stacker: tray holder failed to leave its home position	Go to **"Finisher tray holder jam service check" on page 232**.
455.81	Staple, hole punch finisher: tray holder failed to leave its home position	Go to **"Finisher (HPU) tray holder jam service check" on page 250**.
455.82	Finisher/offset stacker: tray holder failed to reach its home position	Go to **"Finisher tray holder jam service check" on page 232**.
455.82	Staple, hole punch finisher: tray holder failed to reach its home position	Go to **"Finisher (HPU) tray holder jam service check" on page 250**.

456 paper jam messages

Error code	Description	Action
456.03	Staple finisher: failed to staple—media did not reach the stapler throat	Go to **"Sensor (throat media present) jam service check" on page 233**.
456.03	Staple, hole punch finisher: failed to staple—media did not reach the stapler throat	Go to **"Sensor (HPU throat media present) jam service check" on page 251**.
456.07	Staple finisher: Paper Jam—media remains detected in the stapler throat	Go to **"Sensor (throat media present) jam service check" on page 233**.
456.07	Staple, hole punch finisher: Paper Jam—media remains detected in the stapler throat	Go to **"Sensor (HPU throat media present) jam service check" on page 251**.

Error code	Description	Action
456.31	Finisher/offset stacker: SOD command received while finishing operation not yet complete—media is detected at the finisher sensor (pass through) while the stapler is still processing	For staple finisher or offset stacker—go to **"Stapler carriage jam service check" on page 236**.
456.31	Staple, hole punch finisher: SOD command received while finishing operation not yet complete—media is detected at the finisher sensor (pass through) while the stapler is still processing	Go to **"Stapler carriage (HPU) jam service check" on page 254**.
456.32	Finisher/offset stacker: DOC handler timeout error—stapler did not staple within the required period	For staple finisher or offset stacker—go to **"Stapler carriage jam service check" on page 236**.
456.32	Staple, hole punch finisher: DOC handler timeout error—stapler did not staple within the required period	Go to **"Stapler carriage (HPU) jam service check" on page 254**.
456.33	Finisher/offset stacker: not ready to perform stapling operation	For staple finisher or offset stacker—go to **"Stapler carriage jam service check" on page 236**.
456.33	Staple, hole punch finisher: not ready to perform stapling operation	Go to **"Stapler carriage (HPU) jam service check" on page 254**.
456.34	Finisher/offset stacker: not ready to perform priming operation	For staple finisher or offset stacker—go to **"Stapler carriage jam service check" on page 236**.
456.34	Staple, hole punch finisher: not ready to perform priming operation	Go to **"Stapler carriage (HPU) jam service check" on page 254**.
456.35	Finisher/offset stacker: not ready to perform homing operation	For staple finisher or offset stacker—go to **"Stapler carriage jam service check" on page 236**.
456.35	Staple, hole punch finisher: not ready to perform homing operation	Go to **"Stapler carriage (HPU) jam service check" on page 254**.
456.83	Finisher/offset stacker: Stapler unit homing failure	Go to **"Stapler carriage jam service check" on page 236**.
456.83	Staple, hole punch finisher: Stapler unit homing failure	Go to **"Stapler carriage (HPU) jam service check" on page 254**.
456.84	Finisher/offset stacker: Stapler unit jam while stapling—media remains detected by the home position sensor	Go to **"Stapler carriage jam service check" on page 236**.
456.84	Staple, hole punch finisher: Stapler unit jam while stapling—media remains detected by the home position sensor	Go to **"Stapler carriage (HPU) jam service check" on page 254**.
456.85	Finisher/offset stacker: Stapler unit jam while stapling—unable to return to home position	Go to **"Stapler carriage jam service check" on page 236**.
456.85	Staple, hole punch finisher: Stapler unit jam while stapling—unable to return to home position	Go to **"Stapler carriage (HPU) jam service check" on page 254**.

Diagnostics and troubleshooting

Error code	Description	Action
456.86	Finisher/offset stacker: Stapler cartridge empty—unable to staple	Go to **"Stapler carriage jam service check" on page 236**.
456.86	Staple, hole punch finisher: Stapler cartridge empty—unable to staple	Go to **"Stapler carriage (HPU) jam service check" on page 254**.

457 paper jam messages

Error code	Description	Action
457.34	Finisher/offset stacker: Stapler not ready to perform priming operation	Go to **"Stapler carriage jam service check" on page 236**.
457.34	Staple, hole punch finisher: Stapler not ready to perform priming operation	Go to **"Stapler carriage (HPU) jam service check" on page 254**.
457.87	Finisher/offset stacker: Stapler failed to prime the staple wire after a stapling operation	Go to **"Stapler carriage jam service check" on page 236**.
457.87	Staple, hole punch finisher: Stapler failed to prime the staple wire after a stapling operation	Go to **"Stapler carriage (HPU) jam service check" on page 254**.
457.88	Finisher/offset stacker: Stapler failed to prime the staple wire after a homing operation	Go to **"Stapler carriage jam service check" on page 236**.
457.88	Staple, hole punch finisher: Stapler failed to prime the staple wire after a homing operation	Go to **"Stapler carriage (HPU) jam service check" on page 254**.
457.89	Finisher/offset stacker: Stapler failed to prime after a stapling operation	Go to **"Stapler carriage jam service check" on page 236**.
457.89	Staple, hole punch finisher: Stapler failed to prime after a stapling operation	Go to **"Stapler carriage (HPU) jam service check" on page 254**.
457.90	Finisher/offset stacker: Stapler failed to prime before a stapling operation	Go to **"Stapler carriage jam service check" on page 236**.
457.90	Staple, hole punch finisher: Stapler failed to prime before a stapling operation	Go to **"Stapler carriage (HPU) jam service check" on page 254**.

458 paper jam messages

Error code	Description	Action
458.41	HPU motor stalled.	Go to **"HPU motor jam service check" on page 256**.
458.42	HPU motor did not reach the required speed.	
458.43	Took too long to ramp up HPU motor.	
458.53	HPU motor went over the required speed.	

Diagnostics and troubleshooting

459 paper jam messages

Error code	Description	Action
459.42	HPU feed motor did not reach the required speed.	Go to **"HPU feed motor jam service check" on page 257**.
459.43	Took too long to ramp up HPU feed motor.	
459.53	HPU feed motor went over the required speed.	
459.71	HPU motor failed to return to its home position.	Go to **"HPU motor jam service check" on page 256**.
459.72	HPU home position sensor was not detected.	
459.75	A communication error occurred between the HPU and the stapler.	Go to **"HPU communication error jam service check" on page 258**.
459.81	HPU motor jammed.	Go to **"HPU motor jam service check" on page 256**.
459.84	Sensor (HPU media align) was blocked.	Go to **"Sensor (HPU media align) jam service check" on page 259**.
459.85	Media remains detected by the sensor (HPU trailing edge).	Go to **"Sensor (HPU trailing edge) jam service check" on page 260**.
459.86	Media remains detected by the sensor (HPU media align).	Go to **"Sensor (HPU media align) jam service check" on page 259**.
459.87	Media fed did not reach the sensor (HPU trailing edge) on time.	Go to **"Sensor (HPU trailing edge) jam service check" on page 260**.
459.89	The leading edge of the fed media did not reach the sensor (HPU media align) on time after DMID.	Go to **"HPU communication error jam service check" on page 258**.
459.90	The leading edge of the fed media did not reach the sensor (HPU media align) on time.	Go to **"Sensor (HPU media align) jam service check" on page 259**.
459.91	Media fed did not leave the sensor (HPU media align) on time.	Go to **"HPU communication error jam service check" on page 258**.
459.92	Media fed did not leave the sensor (HPU leading edge) on time.	
459.94	Media remains detected by the sensor (HPU leading edge).	
459.93	Media fed did not leave the sensor (HPU trailing edge) on time.	Go to **"Sensor (HPU trailing edge) jam service check" on page 260**.

Sensor (finisher pass through) jam service check

Action	Yes	No
Step 1 **a** POR the printer. **b** Reseat all the installed output options on the printer. **c** Clear obstructions along the paper path. **d** Make sure that the sensors (pass through) are free from obstructions. **e** Close the rear door properly. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Is the staple finisher the only output option installed?	Go to step 5.	Go to step 3.
Step 3 Remove all output options and re-install only the staple finisher. Enter Diagnostics Menu and navigate to: **Output bin tests** > **Feed to all bins** Does the output option feed to all bins normally?	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 4.
Step 4 Check the auto connector end of the option previously installed below the staple finisher. Is it free of damage?	Go to step 5.	Replace the upper interface cable of the output option previously installed under the staple finisher.
Step 5 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Stapler lower interface cable removal" on page 741**. Remove the left cover. Reseat the cable J15 on the controller board, then POR the machine. Does the error remain?	Go to step 6.	The problem is solved.

Action	Yes	No

Step 6
a Open the rear door and check the sensor (pass through):
  • Check the sensor flag for damage. If damaged, then replace the sensor. See **"Sensor (stapler pass through) removal" on page 757**.
  • Make sure the sensor is aligned and properly seated.
b Do a sensor test. Enter Diagnostics Menu and navigate to :
  FINISHER TESTS > **Finisher Sensor Test** > **Pass and Media**
 	
Does the display on the operator panel change every time the sensing area of the sensor tested is interrupted or blocked?
	Go to step 7.	Replace the sensor (pass through). See **"Sensor (stapler pass through) removal" on page 757**.

Step 7 Reseat the connector J13 on the controller board, and then POR the machine. Does the error remain?	Go to step 8.	The problem is solved.

Step 8
Open the rear door, and check:
  • if the rear door opens and closes properly
  • the rollers for damage
 	
Are the rear door components functional and free of damage?
	Go to step 9.	Replace the rear door. See **"Stapler rear door removal" on page 702**.

Step 9
Check the drive gear assembly mechanism:
  • Remove the finisher option from the printer. From the bottom of the option, turn the lowermost drive gear clockwise. Make sure the rollers engaged to the lowermost gear will also turn.
  • Check the drive gear assembly for damage.
 	
Is the drive gear assembly functional and free of damage?
	Go to step 10.	Replace the stapler drive gear assembly. See **"Stapler drive gear assembly removal" on page 748**.

Step 10 Check the main motor connections. Reseat the motor cable J3 on the controller board. Does the error remain?	Go to step 11.	The problem is solved.
Step 11 Remove the three screws securing the main motor. POR the machine and check if the main motor runs. Does the main motor run?	Go to step 13.	Go to step 12.

Action	Yes	No
Step 12 Do a feed test. Enter Diagnostics Menu and navigate to: **FINISHER TESTS** > **Feed test** Does the main motor run?	Go to step 13.	Replace the stapler main motor. See **"Stapler main motor removal" on page 744**.
Step 13 Open the top cover, check the left media stack flap: • for damage • if it is not dislodged from its original position • if it has no problem moving when manually actuated Is the above component ok?	Go to step 14.	Replace the left media stack flap. See **"Media stack flap (left) removal" on page 725**.
Step 14 Check the right media stack flap: • for damage • if it is not dislodged from its original position • if it has no problem moving when manually actuated Is the above component ok?	Go to step 15.	Replace the right media stack flap. See **"Media stack flap (right) removal" on page 723**.
Step 15 Open the left cover, reseat all connectors on the controller board and then POR the machine. Does the error remain?	Replace the controller board. See **"Stapler controller board removal" on page 743**. If the error persists, then replace the staple finisher option. See **"Staple finisher option removal" on page 701**.	The problem is solved.

Finisher main motor jam service check

Action	Yes	No
Step 1 Is the staple finisher the only output option installed?	Go to step 4.	Go to step 2.
Step 2 Remove all output options and re-install only the staple finisher. Enter Diagnostics Menu and navigate to: **Output bin tests** > **Feed to all bins** Does the output option feed to all bins normally?	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 3.
Step 3 Check the auto connector end of the option previously installed below the staple finisher. Is it free of damage?	Go to step 4.	Replace the upper interface cable of the output option previously installed under the staple finisher.
Step 4 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Stapler lower interface cable removal" on page 741**. Remove the left cover. Reseat the cable J15 on the controller board, then POR the machine. Does the error remain?	Go to step 5.	The problem is solved.
Step 5 Check the main motor connections. Reseat the motor cable J3 on the controller board. Does the error remain?	Go to step 6.	The problem is solved.
Step 6 Remove the three screws securing the main motor. **Note:** No need to disconnect the motor cable. Just pull away the motor to see its pinion gear. POR the machine and check if the main motor runs. Does the main motor run?	Go to step 8.	Go to step 7.

Action	Yes	No
Step 7 Do a feed test. Enter Diagnostics Menu and navigate to: **FINISHER TESTS** > **Feed test** Does the main motor run?	Go to step 8.	Replace the stapler main motor. See **"Stapler main motor removal" on page 744**.
Step 8 Check the drive gear assembly mechanism: • Remove the finisher option from the printer. From the bottom of the option, turn the lowermost drive gear clockwise. Make sure the rollers engaged to the lowermost gear will also turn. • Check the drive gear assembly for damage. Is the drive gear assembly functional and free of damage?	Go to step 9.	Replace the stapler drive gear assembly. See **"Stapler drive gear assembly removal" on page 748**.
Step 9 Reseat all connectors on the controller board and then POR the machine. Does the error remain?	Replace the controller board. See **"Stapler controller board removal" on page 743**. If the error persists, then replace the staple finisher. See **"Staple finisher option removal" on page 701**.	The problem is solved.

Finisher left tamper jam service check

Action	Yes	No
Step 1 a POR the printer. b Reseat all the installed output options on the printer. c Clear obstructions along the paper path. d Make sure that the sensors (pass through) are free from obstructions. e Close the rear door properly. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Is the staple finisher the only output option installed?	Go to step 5.	Go to step 3.

Action	Yes	No
Step 3 Remove all output options and re-install only the staple finisher. Enter Diagnostics Menu and navigate to: **Output bin tests** > **Feed to all bins** Does the output option feed to all bins normally?	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 4.
Step 4 Check the auto connector end of the option previously installed below the staple finisher. Is it free of damage?	Go to step 5.	Replace the upper interface cable of the output option previously installed under the staple finisher.
Step 5 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Stapler lower interface cable removal" on page 741**. Remove the left cover. Reseat the cable J15 on the controller board, then POR the machine. Does the error remain?	Go to step 6.	The problem is solved.

Step 6
a Make sure the following components are properly installed:
   • sensor (right tamper motor HP)
   • sensor (left tamper motor HP)
   • tamper motor (right)
   • tamper motor (left)
b Check the tamper assembly components:
   • Check if the tampers can be adjusted. Move the right and left tampers to the middle, and then back to its original position.
   • Check the tamper assembly mechanism and home position sensor flags for damage.
c Reseat the tamper assembly connectors on the stapler controller board.
 	
Are the tamper assembly components functional and free of damage?
	Go to step 7.	Replace the tamper assembly. See **"Tamper assembly removal" on page 734**.

Action	Yes	No
Step 7 Check the tamper drive belt. Is it free of damage?	Go to step 8.	Replace the tamper drive belt. See **"Tamper drive belt removal" on page 737**.
Step 8 **a** Reseat the cable J11 on the controller board. Reseat the same cable on the sensor (right tamper motor HP) and sensor (left tamper motor HP) end. **b** Swap the sensor (left tamper motor HP) and sensor (right tamper motor HP). Does the same error occur?	Go to step 9.	If a 453.75 or 453.76 error occurs, then replace the sensor (right tamper motor HP). See **"Sensor (right tamper motor HP) removal" on page 727**.
Step 9 **a** Reseat the cable J4 on the controller board, then reseat the same cable on the tamper motor end. **b** Swap the left and right tamper motors and take note of the error code. Does the same error occur?	Go to step 10.	If a 453.75 or 453.76 error occurs, then replace the right tamper motor. See **"Tamper motor (right) removal" on page 736**.
Step 10 Open the left cover, reseat all connectors on the controller board and then POR the machine. Does the error remain?	Replace the controller board. See **"Stapler controller board removal" on page 743**. If the error persists, then replace the staple finisher option. See **"Staple finisher option removal" on page 701**.	The problem is solved.

Finisher right tamper jam service check

Action	Yes	No
Step 1 **a** POR the printer. **b** Reseat all the installed output options on the printer. **c** Clear obstructions along the paper path. **d** Make sure that the sensors (pass through) are free from obstructions. **e** Close the rear door properly. Does the error remain?	Go to step 2.	The problem is solved.

Action	Yes	No
Step 2 Is the staple finisher the only output option installed?	Go to step 5.	Go to step 3.
Step 3 Remove all output options and re-install only the staple finisher. Enter Diagnostics Menu and navigate to: **Output bin tests** > **Feed to all bins** Does the output option feed to all bins normally?	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 4.
Step 4 Check the auto connector end of the option previously installed below the staple finisher. Is it free of damage?	Go to step 5.	Replace the upper interface cable of the output option previously installed under the staple finisher.
Step 5 Check the lower interface cable. If damaged, then replace the lower interface cable. Go to **"Stapler lower interface cable removal" on page 741**. Remove the left cover. Reseat the cable J15 on the controller board, then POR the machine. Does the error remain?	Go to step 6.	The problem is solved.

Step 6
a Make sure the following components are properly installed:
  • sensor (right tamper motor HP)
  • sensor (left tamper motor HP)
  • tamper motor (right)
  • tamper motor (left)
b Check the tamper assembly components:
  • Check if the tampers can be adjusted. Move the right and left tampers to the middle, and then back to its original position.
  • Check the tamper assembly mechanism and home position sensor flags for damage.
 	
Are the tamper assembly components functional and free of damage?
	Go to step 7.	Replace the tamper assembly. See **"Tamper assembly removal" on page 734**.

Action	Yes	No
Step 7 Check the tamper drive belt. Is it free of damage?	Go to step 8.	Replace the tamper drive belt. See **"Tamper drive belt removal" on page 737**.
Step 8 **a** Reseat the cable J11 on the controller board. Reseat the same cable on the sensor (right tamper motor HP) and sensor (left tamper motor HP) end. **b** Swap the sensor (right tamper motor HP) and sensor (left tamper motor HP). Does the same error occur?	Go to step 9.	If a 452.73 or 452.74 error occurs, then replace the sensor (left tamper HP). See **"Sensor (left tamper motor HP) removal" on page 729**.
Step 9 **a** Reseat the cable J6 on the controller board, then reseat the same cable on the tamper motor end. **b** Swap the left and right tamper motors and take note of the error code. Does the same error occur?	Go to step 10.	If a 452.73 or 452.74 error occurs, then replace the left tamper motor. See **"Tamper motor (left) removal" on page 736**.
Step 10 Open the left cover, reseat all connectors on the controller board and then POR the machine. Does the error remain?	Replace the controller board. See **"Stapler controller board removal" on page 743**. If the error persists, then replace the staple finisher option. See **"Staple finisher option removal" on page 701**.	The problem is solved.

Finisher ejector jam service check

Action	Yes	No
Step 1 **a** POR the printer. **b** Reseat all the installed output options on the printer. **c** Clear obstructions along the paper path. **d** Make sure that the sensors (pass through) are free from obstructions. **e** Close the rear door properly. Does the error remain?	Go to step 2.	The problem is solved.

Action	Yes	No
Step 2 Is the staple finisher the only output option installed?	Go to step 5.	Go to step 3.
Step 3 Remove all output options and re-install only the staple finisher. Enter Diagnostics Menu and navigate to: **Output bin tests** > **Feed to all bins** Does the output option feed to all bins normally?	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 4.
Step 4 Check the auto connector end of the option previously installed below the staple finisher. Is it free of damage?	Go to step 5.	Replace the upper interface cable of the output option previously installed under the staple finisher.
Step 5 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Stapler lower interface cable removal" on page 741**. Remove the left cover. Reseat the cable J15 on the controller board, then POR the machine. Does the error remain?	Go to step 6.	The problem is solved.
Step 6 **a** Make sure the three ejector belt paddles align and fit properly. **Note:** The paddles are located behind the output bin. **b** Reseat the ejector motor assembly cables J2, J8, J22, and J24 on the controller board. POR the machine. Does the ejector belt and output bin initialize during startup?	Go to step 7.	Go to step 7.
Step 7 Replace the controller board. See **"Stapler controller board removal" on page 743**. Does the error remain?	Replace the sensor (stapler ejector HP). See **"Sensor (stapler ejector HP) removal" on page 761**.	The problem is solved.

Action	Yes	No
Step 8 Replace the controller board. See **"Stapler controller board removal" on page 743**. Does the error remain?	Replace the stapler ejector motor assembly. See **"Stapler ejector motor assembly removal" on page 758**.	The problem is solved.

Finisher diverter jam service check

Action	Yes	No
Step 1 **a** POR the printer. **b** Reseat all the installed output options on the printer. **c** Clear obstructions along the paper path. **d** Make sure that the sensors (pass through) are free from obstructions. **e** Close the rear door properly. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Is the staple finisher the only output option installed?	Go to step 5.	Go to step 3.
Step 3 Remove all output options and re-install only the staple finisher. Enter Diagnostics Menu and navigate to: **Output bin tests** > **Feed to all bins** Does the output option feed to all bins normally?	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 4.
Step 4 Check the auto connector end of the option previously installed below the staple finisher. Is it free of damage?	Go to step 5.	Replace the upper interface cable of the output option previously installed under the staple finisher.

Action	Yes	No
Step 5 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Stapler lower interface cable removal" on page 741**. Remove the left cover. Reseat the cable J15 on the controller board, then POR the machine. Does the error remain?	Go to step 6.	The problem is solved.
Step 6 **a** Reseat the cable J14 on the controller board, then reseat the same cable on the motor end. **b** Remove the two screws securing the stapler diverter motor to the option. Pull away the motor to view its rotation later during the feed test. **c** Do a feed test. Enter Diagnostics Menu and navigate to : **FINISHER TESTS** > **Feed Test** Does the diverter motor run?	Go to step 7.	Replace the diverter motor. See **"Stapler diverter motor removal" on page 746**.
Step 7 Check the diverter plunger assembly: • Rotate the diverter cam and check if the diverter plunger moves up and down. • Check the diverter plunger and cam for damage. See **"Stapler diverter plunger assembly removal" on page 747**. Reseat the cable J8 on the controller board, then POR the machine. Are the diverter plunger assembly components functional and free of damage?	Go to step 8.	Replace the diverter plunger assembly. See **"Stapler diverter plunger assembly removal" on page 747**.
Step 8 **a** Make sure the sensor (stapler diverter plunger HP) is properly seated. **b** Reseat the cable J8 on the controller board. Reseat the same cable on the sensor (stapler diverter plunger HP) end. POR the machine. Does the error remain?	Replace the sensor (stapler diverter plunger HP). See **"Sensor (stapler diverter plunger HP) removal" on page 766**. If the error persists, then go to step 9.	The problem is solved.

Action	Yes	No
Step 9 Open the left cover, reseat all connectors on the controller board and then POR the machine. Does the error remain?	Replace the controller board. See **"Stapler controller board removal" on page 743**. If the error persists, then replace the staple finisher. See **"Staple finisher option removal" on page 701**.	The problem is solved.

Finisher paddle jam service check

Action	Yes	No
Step 1 **a** POR the printer. **b** Reseat all the installed output options on the printer. **c** Clear obstructions along the paper path. **d** Make sure that the sensors (pass through) are free from obstructions. **e** Close the rear door properly. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Is the staple finisher the only output option installed?	Go to step 5.	Go to step 3.
Step 3 Remove all output options and re-install only the staple finisher. Enter Diagnostics Menu and navigate to: **Output bin tests** > **Feed to all bins** Does the output option feed to all bins normally?	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 4.
Step 4 Check the auto connector end of the option previously installed below the staple finisher. Is it free of damage?	Go to step 5.	Replace the upper interface cable of the output option previously installed under the staple finisher.

Action	Yes	No
Step 5 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Stapler lower interface cable removal" on page 741**. Remove the left cover. Reseat the cable J15 on the controller board, then POR the machine. Does the error remain?	Go to step 6.	The problem is solved.
Step 6 Remove the left cover. Reseat the cable J11 on the controller board, then reseat the same cable on the sensor (paddle motor HP) end. POR the machine. Does the error remain?	Replace the sensor (paddle motor HP). See **"Sensor (paddle motor HP) removal" on page 723**. If the error persists, then go to step 7.	The problem is solved.
Step 7 Reseat the cable J5 on the controller board, then reseat the same cable on the motor end. POR the machine. Does the error remain?	Go to step 8.	The problem is solved.
Step 8 Check the paddle motor. If damaged, then replace the paddle motor. See **"Paddle drive motor removal" on page 740**. Does the error remain?	Go to step 9.	The problem is solved.
Step 9 Check the paddle assembly gear box: • Check the gears for damage • Check the sensor flag for damage Is the paddle assembly gear box functional and free of damage?	Go to step 10.	Replace the staple finisher option. See **"Staple finisher option removal" on page 701**.
Step 10 Open the left cover, reseat all connectors on the controller board and then POR the machine. Does the error remain?	Replace the controller board. See **"Stapler controller board removal" on page 743**. If the error persists, then replace the staple finisher. See **"Staple finisher option removal" on page 701**.	The problem is solved.

Finisher tray holder jam service check

Action	Yes	No
Step 1 **a** POR the printer. **b** Reseat all the installed output options on the printer. **c** Clear obstructions along the paper path. **d** Make sure that the sensors (pass through) are free from obstructions. **e** Close the rear door properly. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Is the staple finisher the only output option installed?	Go to step 5.	Go to step 3.
Step 3 Remove all output options and re-install only the staple finisher. Enter Diagnostics Menu and navigate to: **Output bin tests** > **Feed to all bins** Does the output option feed to all bins normally?	Perform step 3 again using the other remaining output bins. The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 4.
Step 4 Check the auto connector end of the option previously installed below the staple finisher. Is it free of damage?	Go to step 5.	Replace the upper interface cable of the output option previously installed under the staple finisher.
Step 5 Check the lower interface cable. If damaged, then replace the lower interface cable. Go to **"Stapler lower interface cable removal" on page 741**. Remove the left cover. Reseat the cable J15 on the controller board, then POR the machine. Does the error remain?	Go to step 6.	The problem is solved.

Action	Yes	No
Step 6 **a** Make sure the three ejector belt paddles align and fit properly. **Note:** The paddles are located behind the output bin. **b** Reseat the ejector motor assembly cables J2, J8, J22, and J24 on the controller board. POR the machine. Does the ejector initialize during startup?	Go to step 7.	Go to step 8.
Step 7 Replace the controller board. See **"Stapler controller board removal" on page 743**. Does the error remain?	Replace the sensor (stapler ejector HP). See **"Sensor (stapler ejector HP) removal" on page 761**.	The problem is solved.
Step 8 Replace the controller board. See **"Stapler controller board removal" on page 743**. Does the error remain?	Replace the stapler ejector motor assembly. See **"Stapler ejector motor assembly removal" on page 758**.	The problem is solved.

Sensor (throat media present) jam service check

Action	Yes	No
Step 1 **a** POR the printer. **b** Reseat all the installed output options on the printer. **c** Clear obstructions along the paper path. **d** Make sure that the sensors (pass through) are free from obstructions. **e** Close the rear door properly. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Is the staple finisher the only output option installed?	Go to step 5.	Go to step 3.

Action	Yes	No
Step 3 Remove all output options and re-install only the staple finisher. Enter Diagnostics Menu and navigate to: **Output bin tests** > **Feed to all bins** Does the output option feed to all bins normally?	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 4.
Step 4 Check the auto connector end of the option previously installed below the staple finisher. Is it free of damage?	Go to step 5.	Replace the upper interface cable of the output option under the staple finisher.
Step 5 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Stapler lower interface cable removal" on page 741**. Remove the left cover. Reseat the cable J15 on the controller board, then POR the machine. Does the error remain?	Go to step 6.	The problem is solved.
Step 6 Check the stapler rear door: • Open the rear door, and check if it closes properly. • Check the rear door rollers and locking mechanism for damage. Is the stapler rear door functional and free of damage?	Go to step 7.	Replace the stapler rear door assembly. See **"Stapler rear door removal" on page 702**.
Step 7 Open the stapler rear door. Remove all obstructions along the paper path and roller assembly. Does the error remain?	Go to step 8.	The problem is solved.
Step 8 Open the left and right cover, then do the following: **a** Check the sensor flag (throat media present) for damage. Toggle the sensor flag and check if it has no problem moving. **b** Reseat the cable J8 on the controller board. Do a staple test. Enter Diagnostics menu, and then navigate to: **FINISHER TESTS** > **Staple Test** Does the error remain?	Replace the sensor (throat media present). See **"Sensor (throat media present) removal" on page 712**. If the error persists, then go to step 9.	The problem is solved.

Action	Yes	No
Step 9 Check the media pusher assembly mechanism: • Check the media pusher assembly, media pusher arm, and sensor flag for damage. • Pull the media pusher and check if it retracts • Make sure that obstructions to the media pusher arm are removed. • Check if the media pusher sensor flag engages properly with the sensor (media pusher HP). Open the left cover, reseat all connectors on the controller board and then POR the machine. Is the media pusher assembly functional and free of damage?	Go to step 10.	Replace the media pusher assembly. See **"Media pusher assembly removal" on page 752**.
Step 10 **a** Make sure the following components are properly installed: • sensor (right tamper motor HP) • sensor (left tamper motor HP) • tamper motor (right) • tamper motor (left) **b** Check the tamper assembly components: • Check if the tampers can be adjusted. Move the right and left tampers to the middle, and then back to its original position. • Check the tamper assembly mechanism and home position sensor flags for damage. Are the tamper assembly components functional and free of damage?	Go to step 11.	Replace the tamper assembly. See **"Tamper assembly removal" on page 734**.
Step 11 Check the tamper drive belt. Is it free of damage?	Go to step 12.	Replace the tamper drive belt. See **"Tamper drive belt removal" on page 737**.
Step 12 Check the drive gear assembly mechanism: • Remove the finisher option from the printer. From the bottom of the option, turn the lowermost drive gear clockwise. Make sure the rollers engaged to the lowermost gear will also turn. • Check the drive gear assembly for damage. Is the drive gear assembly functional and free of damage?	Go to step 13.	Replace the stapler drive gear assembly. See **"Stapler drive gear assembly removal" on page 748**.

Action	Yes	No
Step 13 Check the main motor connections. Reseat the motor cable J3 on the controller board. Does the error remain?	Go to step 14.	The problem is solved.
Step 14 Remove the three screws securing the main motor. **Note:** No need to disconnect the motor cable. Just pull away the motor to see its pinion gear. POR the machine and check if the main motor runs. Does the main motor run?	Go to step 16.	Go to step 15.
Step 15 Do a feed test. Enter Diagnostics Menu and navigate to: **FINISHER TESTS** > **Feed test** Does the main motor run?	Go to step 16.	Replace the stapler main motor. See **"Stapler main motor removal" on page 744**.
Step 16 Open the left cover, reseat all connectors on the controller board and then POR the machine. Does the error remain?	Replace the controller board. See **"Stapler controller board removal" on page 743**. If the error persists, then replace the staple finisher assembly. See **"Staple finisher option removal" on page 701**.	The problem is solved.

Stapler carriage jam service check

Action	Yes	No
Step 1 **a** POR the printer. **b** Reseat all the installed output options on the printer. **c** Clear obstructions along the paper path. **d** Make sure that the sensors (pass through) are free from obstructions. **e** Close the rear door properly. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Is the staple finisher the only output option installed?	Go to step 5.	Go to step 3.

Action	Yes	No
Step 3 Remove all output options and re-install only the staple finisher. Enter Diagnostics Menu and navigate to: **Output bin tests** > **Feed to all bins** Does the output option feed to all bins normally?	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 4.
Step 4 Check the auto connector end of the option previously installed below the staple finisher. Is it free of damage?	Go to step 5.	Replace the upper interface cable of the output option previously installed under the staple finisher.
Step 5 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Stapler lower interface cable removal" on page 741**. Remove the left cover. Reseat the cable J15 on the controller board, then POR the machine. Does the error remain?	Go to step 6.	The problem is solved.
Step 6 Remove the left cover. Reseat the cable J7 on the controller board then POR the machine. Does the error remain?	Go to step 7.	The problem is solved.
Step 7 Remove the right cover. Reseat the two cables on the stapler carriage, then POR the machine. Does the error remain?	Go to step 8.	The problem is solved.

Action	Yes	No
Step 8 Check the stapler carriage cable J7 from the controller board to the stapler end. Is it free of damage?	Go to step 9.	Replace the door limit switch with cable. Go to **"Stapler door close limit switch removal" on page 706**. If the error persists, then replace the stapler carriage. See **"Stapler carriage assembly removal" on page 708**.
Step 9 Remove the stapler carriage. Manually turn the gears to open the stapling mechanism. While open, check the area inside the stapling mechanism and make sure it is free from obstructions. Is it free of damage?	Go to step 10.	Replace the stapler carriage. See **"Stapler carriage assembly removal" on page 708**.
Step 10 Open the left cover, reseat all connectors on the controller board and then POR the machine. Does the error remain?	Replace the controller board. See **"Stapler controller board removal" on page 743**. If the error persists, then replace the staple finisher. See **"Staple finisher option removal" on page 701**.	The problem is solved.

Sensor (HPU finisher pass through) jam service check

Action	Yes	No
Step 1 a POR the printer. b Reseat the installed output option on the printer. c Clear obstructions along the paper path. d Make sure that the sensors (pass through) are free from obstructions. e Close the rear door properly. Does the error remain?	Go to step 2.	The problem is solved.

Action	Yes	No
Step 2 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Staple, hole punch lower interface cable removal" on page 839**. Remove the left cover. Reseat the cable J15 on the controller board, then POR the machine. Does the error remain?	Go to step 3.	The problem is solved.
Step 3 Check the auto connector end of the machine below the finisher. Is it free of damage?	Go to step 4.	Replace the upper interface cable of the machine under the finisher.
Step 4 **a** Open the rear door and check the sensor (trailing edge) and sensor (leading edge): • Check the sensor flag for damage. If damaged, then replace the finisher. See **"Staple, hole punch finisher option removal" on page 818**. • Make sure the sensor is aligned and properly seated. **b** Do a sensor test. Enter Diagnostics Menu and navigate to : **FINISHER TESTS** > **Finisher Sensor Test** > **Pass and Media** Does the display on the operator panel change every time the sensing area of the sensor tested is interrupted or blocked?	Go to step 5.	Replace the finisher. See **"Staple, hole punch finisher option removal" on page 818**.
Step 5 Open the rear door, and check: • if the rear door opens and closes properly • the rollers for damage Are the rear door components functional and free of damage?	Go to step 6.	Replace the finisher. See **"Staple, hole punch finisher option removal" on page 818**.
Step 6 **a** Open the rear door. Check the upper and lower rollers on the finisher side for damage. **b** Open the left cover. Reseat the cable J22 on the HPU controller board. **c** Check the paper path gears for damage. **Note:** To access the gears, remove the four screws from the HPU controller board (no need to remove the board, just move it out of the way), and then remove the screws securing the grounding plate. The gears are found under the grounding plate. Are the paper path components free of damage?	If the error persists, then go to step 6.	Replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**.

Action	Yes	No
Step 7 Check the drive gear assembly mechanism: • Remove the finisher option from the printer. From the bottom of the option, turn the lowermost drive gear clockwise. Make sure the rollers engaged to the lowermost gear will also turn. • Check the drive gear assembly for damage. Is the drive gear assembly functional and free of damage?	Go to step 8.	Replace the stapler drive gear assembly. See **"Stapler drive gear assembly removal" on page 835**.
Step 8 Check the main motor connections. Reseat the motor cable J3 on the controller board. Does the error remain?	Go to step 9.	The problem is solved.
Step 9 Remove the three screws securing the main motor. POR the machine and check if the main motor runs. Does the main motor run?	Go to step 13.	Go to step 10.
Step 10 Do a feed test. Enter Diagnostics Menu and navigate to: **FINISHER TESTS** > **Feed test** Does the main motor run?	Go to step 11.	Replace the stapler main motor. See **"Stapler main motor removal" on page 830**.
Step 11 Open the top cover and do the following: **a** Check the left media stack flap for damage. **b** Make sure the left media stack flap is properly seated and aligned. **c** Check if the left media stack flap has no problem moving. Is the left media stack flap functional and free of damage?	Go to step 12.	Replace the finisher. See **"Staple, hole punch finisher option removal" on page 818**.
Step 12 Open the top cover and do the following: **a** Check the right media stack flap for damage. **b** Make sure the right media stack flap is properly seated and aligned. **c** Check if the right media stack flap has no problem moving. Is the right media stack flap functional and free of damage?	Go to step 13.	Replace the finisher. See **"Staple, hole punch finisher option removal" on page 818**.

Action	Yes	No
Step 13 Open the left cover, reseat all connectors on the stapler controller board and then POR the machine. Does the error remain?	Replace the stapler controller board. See **"Stapler controller board removal" on page 829**. If the error persists, then go to step 14.	The problem is solved.
Step 14 Open the left cover, reseat all connectors on the HPU controller board, and then POR the machine. Does the error remain?	Replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**.	The problem is solved.

Finisher (HPU) main motor jam service check

Action	Yes	No
Step 1 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Staple, hole punch lower interface cable removal" on page 839**. Remove the left cover. Reseat the cable J15 on the controller board, then POR the machine. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Check the auto connector end of the machine below the finisher. Is it free of damage?	Go to step 3.	Replace the upper interface cable of the machine under the finisher.
Step 3 Check the main motor connections. Reseat the motor cable J3 on the controller board. Does the error remain?	Go to step 4.	The problem is solved.
Step 4 Remove the three screws securing the main motor. **Note:** No need to disconnect the motor cable. Just pull away the motor to see its pinion gear. POR the machine and check if the main motor runs. Does the main motor run?	Go to step 6.	Go to step 5.

Action	Yes	No
Step 5 Do a feed test. Enter Diagnostics Menu and navigate to: **FINISHER TESTS** > **Feed test** Does the main motor run?	Go to step 6.	Replace the stapler main motor. See **"Stapler main motor removal" on page 830**.
Step 6 Check the drive gear assembly mechanism: • Remove the finisher option from the printer. From the bottom of the option, turn the lowermost drive gear clockwise. Make sure the rollers engaged to the lowermost gear will also turn. • Check the drive gear assembly for damage. Is the drive gear assembly functional and free of damage?	Go to step 7.	Replace the stapler drive gear assembly. See **"Stapler drive gear assembly removal" on page 835**.
Step 7 Reseat all connectors on the stapler controller board and then POR the machine. Does the error remain?	Replace the stapler controller board. See **"Stapler controller board removal" on page 829**. If the error persists, then replace the finisher. See **"Staple, hole punch finisher option removal" on page 818**.	The problem is solved.

Finisher (HPU) left tamper jam service check

Action	Yes	No
Step 1 a POR the printer. b Reseat all the installed output options on the printer. c Clear obstructions along the paper path. d Make sure that the sensors (pass through) are free from obstructions. e Close the rear door properly. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Staple, hole punch lower interface cable removal" on page 839**. Remove the left cover. Reseat the cable J15 on the controller board, then POR the machine. Does the error remain?	Go to step 3.	The problem is solved.

Action	Yes	No
Step 3 Check the auto connector end of the machine below the finisher. Is it free of damage?	Go to step 4.	Replace the upper interface cable of the machine under the finisher.

Step 4
a Make sure the following components are properly installed:
    • sensor (right tamper motor HP)
    • sensor (left tamper motor HP)
    • tamper motor (right)
    • tamper motor (left)
b Check the tamper assembly components:
    • Check if the tampers can be adjusted. Move the right and left tampers to the middle, and then back to its original position.
    • Check the tamper assembly mechanism and home position sensor flags for damage.
c Reseat the tamper assembly connectors on the stapler controller board.
 	
Are the tamper assembly components functional and free of damage?
	Go to step 5.	Replace the tamper assembly. See **"Stapler tamper assembly removal" on page 847**.

Step 5 Check the tamper drive belt. Is it free of damage?	Go to step 6.	Replace the tamper drive belt. See **"Tamper drive belt removal" on page 851**.
Step 6 **a** Reseat the cable J11 on the controller board. Reseat the same cable on the sensor (right tamper motor HP) and sensor (left tamper motor HP) end. **b** Swap the sensor (left tamper motor HP) and sensor (right tamper motor HP). Does the same error occur?	Go to step 7.	If a 453.75 or 453.76 error occurs, then replace the sensor (right tamper motor HP). See **"Sensor (right tamper motor HP) removal" on page 727**.
Step 7 **a** Reseat the cable J4 on the stapler controller board, then reseat the same cable on the tamper motor end. **b** Swap the left and right tamper motors and take note of the error code. Does the same error occur?	Go to step 8.	If a 453.75 or 453.76 error occurs, then replace the right tamper motor. See **"Tamper motor (right) removal" on page 849**.

Action	Yes	No
Step 8 Reseat all connectors on the stapler controller board and then POR the machine. Does the error remain?	Replace the stapler controller board. See **"Stapler controller board removal" on page 829**. If the error persists, then replace the finisher. See **"Staple, hole punch finisher option removal" on page 818**.	The problem is solved.

Finisher (HPU) right tamper jam service check

Action	Yes	No
Step 1 **a** POR the printer. **b** Reseat all the installed output options on the printer. **c** Clear obstructions along the paper path. **d** Make sure that the sensors (pass through) are free from obstructions. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Staple, hole punch lower interface cable removal" on page 839**. Remove the left cover. Reseat the cable J15 on the controller board, then POR the machine. Does the error remain?	Go to step 3.	The problem is solved.
Step 3 Check the auto connector end of the machine below the finisher. Is it free of damage?	Go to step 4.	Replace the upper interface cable of the machine under the finisher.

Action	Yes	No

Step 4
a Make sure the following components are properly installed:
   • sensor (right tamper motor HP)
   • sensor (left tamper motor HP)
   • tamper motor (right)
   • tamper motor (left)
b Check the tamper assembly components:
   • Check if the tampers can be adjusted. Move the right and left tampers to the middle, and then back to its original position.
   • Check the tamper assembly mechanism and home position sensor flags for damage.
c Reseat the tamper assembly connectors on the stapler controller board.
 	
Are the tamper assembly components functional and free of damage?
	Go to step 5.	Replace the tamper assembly. See **"Stapler tamper assembly removal" on page 847**.

Step 5 Check the tamper drive belt. Is it free of damage?	Go to step 6.	Replace the tamper drive belt. See **"Tamper drive belt removal" on page 851**.
Step 6 **a** Reseat the cable J11 on the controller board. Reseat the same cable on the sensor (right tamper motor HP) and sensor (left tamper motor HP) end. **b** Swap the sensor (right tamper motor HP) and sensor (left tamper motor HP). Does the same error occur?	Go to step 7.	If a 452.73 or 452.74 error occurs, then replace the sensor (left tamper HP). See **"Sensor (left tamper motor HP) removal" on page 845**.
Step 7 **a** Reseat the cable J6 on the stapler controller board, then reseat the same cable on the tamper motor end. **b** Swap the left and right tamper motors and take note of the error code. Does the same error occur?	Go to step 8.	If a 452.73 or 452.74 error occurs, then replace the left tamper motor. See **"Tamper motor (left) removal" on page 850**.

Action	Yes	No
Step 8 Reseat all connectors on the stapler controller board and then POR the machine. Does the error remain?	Replace the stapler controller board. See **"Stapler controller board removal" on page 829**. If the error persists, then replace the finisher. See **"Staple, hole punch finisher option removal" on page 818**.	The problem is solved.

Finisher (HPU) ejector jam service check

Action	Yes	No
Step 1 a POR the printer. b Reseat the installed output option on the printer. c Clear obstructions along the paper path. d Make sure that the sensors (pass through) are free from obstructions. e Close the rear door properly. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Staple, hole punch lower interface cable removal" on page 839**. Remove the left cover. Reseat the cable J15 on the controller board, then POR the machine. Does the error remain?	Go to step 3.	The problem is solved.
Step 3 Check the auto connector end of the machine below the finisher. Is it free of damage?	Go to step 4.	Replace the upper interface cable of the machine under the finisher.

Action	Yes	No
Step 4 **a** Make sure the three ejector belt paddles align and fit properly. **Note:** The paddles are located behind the output bin. **b** Check the ejector belts. If damaged, then replace the finisher. See **"Staple, hole punch finisher option removal" on page 818**. **c** Reseat the ejector motor assembly cables J2, J8, J22 and J24 on the stapler controller board. POR the machine. Does the ejector belt and output bin initialize during startup?	Go to step 5.	Replace the finisher. See **"Staple, hole punch finisher option removal" on page 818**.
Step 5 Reseat all connectors on the stapler controller board and then POR the machine. Does the error remain?	Replace the controller board. See **"Stapler controller board removal" on page 829**. If the error persists, then replace the finisher. See **"Staple, hole punch finisher option removal" on page 818**.	The problem is solved.

Finisher (HPU) diverter jam service check

Action	Yes	No
Step 1 **a** POR the printer. **b** Reseat the installed output option on the printer. **c** Clear obstructions along the paper path. **d** Make sure that the sensors (pass through) are free from obstructions. **e** Close the rear door properly. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Staple, hole punch lower interface cable removal" on page 839**. Remove the left cover. Reseat the cable J15 on the stapler controller board, then POR the machine. Does the error remain?	Go to step 3.	The problem is solved.

Action	Yes	No
Step 3 Check the auto connector end of the machine below the finisher. Is it free of damage?	Go to step 4.	Replace the upper interface cable of the machine under the finisher.
Step 4 **a** Reseat the cable J14 on the stapler controller board, then reseat the same cable on the motor end. **b** Remove the two screws securing the stapler diverter motor to the option. Pull away the motor to view its rotation later during the feed test. **c** Do a feed test. Enter Diagnostics Menu and navigate to : **FINISHER TESTS** > **Feed Test** Does the diverter motor run?	Go to step 5.	Replace the diverter motor. See **"Stapler diverter motor removal" on page 833**.
Step 5 Check the diverter plunger assembly: • Rotate the diverter cam and check if the diverter plunger moves up and down. • Check the diverter plunger and cam for damage. See **"Stapler diverter plunger assembly removal" on page 834**. Reseat the cable J8 on the stapler controller board, and then POR the machine. Are the diverter plunger assembly components functional and free of damage?	Go to step 6.	Replace the diverter plunger assembly. See **"Stapler diverter plunger assembly removal" on page 834**.
Step 6 **a** Make sure the sensor (stapler diverter plunger HP) is properly seated. **b** Reseat the cable J8 on the controller board. Reseat the same cable on the sensor (stapler diverter plunger HP) end. POR the machine. Does the error remain?	Go to step 7.	The problem is solved.
Step 7 Reseat all connectors on the stapler controller board and then POR the machine. Does the error remain?	Replace the stapler controller board. See **"Stapler controller board removal" on page 829**. If the error persists, then replace the finisher. See **"Staple, hole punch finisher option removal" on page 818**.	The problem is solved.

Finisher (HPU) paddle jam service check

Action	Yes	No
Step 1 **a** POR the printer. **b** Reseat the installed output option on the printer. **c** Clear obstructions along the paper path. **d** Make sure that the sensors (pass through) are free from obstructions. **e** Close the rear door properly. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Staple, hole punch lower interface cable removal" on page 839**. Remove the left cover. Reseat the cable J15 on the controller board, then POR the machine. Does the error remain?	Go to step 3.	The problem is solved.
Step 3 Check the auto connector end of the machine below the finisher. Is it free of damage?	Go to step 4.	Replace the upper interface cable of the machine under the finisher.
Step 4 Remove the left cover. Reseat the cable J11 on the controller board, then reseat the same cable on the sensor (paddle motor HP) end. POR the machine. Does the error remain?	Replace the sensor (paddle motor HP). See **"Sensor (paddle motor HP) removal" on page 832**. If the error persists, then go to step 5.	The problem is solved.
Step 5 Reseat the cable J5 on the controller board, then reseat the same cable on the motor end. POR the machine. Does the error remain?	Go to step 6.	The problem is solved.
Step 6 Check the paddle motor. If damaged, then replace the paddle motor. See **"Stapler paddle motor removal" on page 831**. Does the error remain?	Go to step 7.	The problem is solved.

Action	Yes	No
Step 7 Check the paddle assembly gear box: • Check the gears for damage • Check the sensor flag for damage Is the paddle assembly gear box functional and free of damage?	Go to step 8.	Replace the finisher. See **"Staple, hole punch finisher option removal" on page 818**.
Step 8 Reseat all connectors on the stapler controller board and then POR the machine. Does the error remain?	Replace the stapler controller board. See **"Stapler controller board removal" on page 829**. If the error persists, then replace the finisher. See **"Staple, hole punch finisher option removal" on page 818**.	The problem is solved.

Finisher (HPU) tray holder jam service check

Action	Yes	No
Step 1 **a** POR the printer. **b** Reseat the installed output option on the printer. **c** Clear obstructions along the paper path. **d** Make sure that the sensors (pass through) are free from obstructions. **e** Close the rear door properly. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Staple, hole punch lower interface cable removal" on page 839**. Remove the left cover. Reseat the cable J15 on the controller board, then POR the machine. Does the error remain?	Go to step 3.	The problem is solved.
Step 3 Check the auto connector end of the machine below the finisher. Is it free of damage?	Go to step 4.	Replace the upper interface cable of the machine under the finisher.

Action	Yes	No
Step 4 **a** Make sure the three ejector belt paddles align and fit properly. **Note:** The paddles are located behind the output bin. **b** Reseat the ejector motor assembly cables J2, J8, J22, and J24 on the controller board. POR the machine. Does the ejector belt initialize during startup?	Go to step 5.	Go to step 5.
Step 5 Is the ejector free of damage?	If the error persists, then go to step 6.	Replace the finisher. See **"Staple, hole punch finisher option removal" on page 818**.
Step 6 Reseat all connectors on the stapler controller board and then POR the machine. Does the error remain?	Replace the stapler controller board. See **"Stapler controller board removal" on page 829**. If the error persists, then replace the finisher. See **"Staple, hole punch finisher option removal" on page 818**.	The problem is solved.

Sensor (HPU throat media present) jam service check

Action	Yes	No
Step 1 **a** POR the printer. **b** Reseat the installed output option on the printer. **c** Clear obstructions along the paper path. **d** Make sure that the sensors (pass through) are free from obstructions. **e** Close the rear door properly. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Staple, hole punch lower interface cable removal" on page 839**. Remove the left cover. Reseat the cable J15 on the controller board, then POR the machine. Does the error remain?	Go to step 3.	The problem is solved.

Action	Yes	No
Step 3 Check the auto connector end of the machine below the finisher. Is it free of damage?	Go to step 4.	Replace the upper interface cable of the machine under the finisher.
Step 4 Check the rear door: • Open the rear door, and check if it closes properly. • Check the rear door rollers and locking mechanism for damage. Is the rear door functional and free of damage?	Go to step 5.	Replace the finisher. See **"Staple, hole punch finisher option removal" on page 818**.
Step 5 **a** Open the rear door. Check the upper and lower rollers on the finisher side for damage. **b** Open the left cover. Reseat the cable J22 on the HPU controller board. **c** Check the paper path gears for damage. **Note:** To access the gears, remove the four screws from the HPU controller board (no need to remove the board, just move it out of the way), and then remove the screws securing the grounding plate. The gears are found under the grounding plate. Are the paper path components free of damage?	If the error persists, then go to step 6.	Replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**.
Step 6 Open the left and right cover, then do the following: **a** Check the sensor flag (throat media present) for damage. Toggle the sensor flag and check if it has no problem moving. **b** Reseat the cable J8 on the stapler controller board. Do a staple test. Enter Diagnostics menu, and then navigate to: **FINISHER TESTS** > **Staple Test** Does the error remain?	Replace the sensor (throat media present). See **"Sensor (throat media present) removal" on page 827**. If the error persists, then go to step 7.	The problem is solved.
Step 7 Open the top cover and do the following: **a** Check the left media stack flap for damage. **b** Make sure the left media stack flap is properly seated and aligned. **c** Check if the left media stack flap has no problem moving. Is the left media stack flap functional and free of damage?	Go to step 8.	Replace the finisher. See **"Staple, hole punch finisher option removal" on page 818**.

Action	Yes	No
Step 8 Open the top cover and do the following: **a** Check the right media stack flap for damage. **b** Make sure the right media stack flap is properly seated and aligned. **c** Check if the right media stack flap has no problem moving. Is the right media stack flap functional and free of damage?	Go to step 9.	Replace the finisher. See **"Staple, hole punch finisher option removal" on page 818**.
Step 9 **a** Make sure the following components are properly installed: • sensor (right tamper motor HP) • sensor (left tamper motor HP) • tamper motor (right) • tamper motor (left) **b** Check the tamper assembly components: • Check if the tampers can be adjusted. Move the right and left tampers to the middle, and then back to its original position. • Check the tamper assembly mechanism and home position sensor flags for damage. **c** Reseat the tamper assembly connectors on the stapler controller board. Are the tamper assembly components functional and free of damage?	Go to step 10.	Replace the tamper assembly. See **"Stapler tamper assembly removal" on page 847**.
Step 10 Check the drive gear assembly mechanism: • Remove the finisher option from the printer. From the bottom of the option, turn the lowermost drive gear clockwise. Make sure the rollers engaged to the lowermost gear will also turn. • Check the drive gear assembly for damage. Is the drive gear assembly functional and free of damage?	Go to step 11.	Replace the stapler drive gear assembly. See **"Stapler drive gear assembly removal" on page 835**.
Step 11 Check the main motor connections. Reseat the motor cable J3 on the controller board. Does the error remain?	Go to step 12.	The problem is solved.

Action	Yes	No
Step 12 Remove the three screws securing the main motor. **Note:** No need to disconnect the motor cable. Just pull away the motor to see its pinion gear. POR the machine and check if the main motor runs. Does the main motor run?	Go to step 14.	Go to step 13.
Step 13 Do a feed test. Enter Diagnostics Menu and navigate to: **FINISHER TESTS** > **Feed test** Does the main motor run?	Go to step 14.	Replace the stapler main motor. See **"Stapler main motor removal" on page 830**.
Step 14 Open the left cover, reseat all connectors on the stapler controller board and then POR the machine. Does the error remain?	Replace the stapler controller board. See **"Stapler controller board removal" on page 829**. If the error persists, then replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**.	The problem is solved.

Stapler carriage (HPU) jam service check

Action	Yes	No
Step 1 a POR the printer. b Reseat the installed output option on the printer. c Clear obstructions along the paper path. d Make sure that the sensors (pass through) are free from obstructions. e Close the rear door properly. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Staple, hole punch lower interface cable removal" on page 839**. Remove the left cover. Reseat the cable J15 on the controller board, then POR the machine. Does the error remain?	Go to step 3.	The problem is solved.

Action	Yes	No
Step 3 Check the auto connector end of the machine below the finisher. Is it free of damage?	Go to step 4.	Replace the upper interface cable of the machine under the finisher.
Step 4 Remove the left cover. Reseat the cable J7 on the stapler controller board, and then POR the machine. Does the error remain?	Go to step 5.	The problem is solved.
Step 5 Remove the right cover. Reseat the two cables on the stapler carriage, then POR the machine. Does the error remain?	Go to step 6.	The problem is solved.
Step 6 Check the stapler carriage cable J7 from the controller board to the stapler end. Is it free of damage?	Go to step 7.	Replace the door limit switch with cable. See **"Stapler door close limit switch removal" on page 823**. If the error persists, then replace the stapler carriage. See **"Stapler carriage assembly removal" on page 826**.
Step 7 Remove the stapler carriage. Manually turn the gears to open the stapling mechanism. While open, check the area inside the stapling mechanism and make sure it is free from obstructions. Is it free of damage?	Go to step 8.	Replace the stapler carriage. See **"Stapler carriage assembly removal" on page 826**.
Step 8 Reseat all connectors on the stapler controller board and then POR the machine. Does the error remain?	Replace the stapler controller board. See **"Stapler controller board removal" on page 829**. If the error persists, then replace the finisher. See **"Staple, hole punch finisher option removal" on page 818**.	The problem is solved.

HPU motor jam service check

Action	Yes	No
Step 1 **a** Reseat the finisher option on the printer. **b** Clear obstructions along the paper path. **c** Make sure that the sensors (pass through) are free from obstructions. **d** Close the rear door properly. **e** POR the printer. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Staple, hole punch lower interface cable removal" on page 839**. Remove the left cover. Reseat the cable J15 on the controller board, then POR the machine. Does the error remain?	Go to step 3.	The problem is solved.
Step 3 **a** Open the rear door. Clear all obstructions on the hole punching area. Rotate the gear engaged to the hole puncher to release stuck media fragments. **b** Open the left and right cover. Reseat the cables J23, J19, and J17 on the HPU controller board. Reseat the same cables on their sensor and motor end. **c** Do a Hole punch test. Enter Diagnostics menu, and navigate to: **FINISHER TESTS** > **Hole Punch Test** Is the hole puncher functional?	If the error persists, then go to step 4.	Replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**.
Step 4 **a** Reseat all cables on the HPU controller board. **b** Reseat the cables J27, J19, and J13 on the stapler controller board. Does the error remain?	Replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**. If the error persists, then go to step 5.	The problem is solved.

Action	Yes	No
Step 5 Open the left cover, reseat all connectors on the stapler controller board and then POR the machine. Does the error remain?	Replace the stapler controller board. See **"Stapler controller board removal" on page 829**. If the error persists, then replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**.	The problem is solved.

HPU feed motor jam service check

Action	Yes	No
Step 1 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Staple, hole punch lower interface cable removal" on page 839**. Remove the left cover. Reseat the cable J15 on the controller board, then POR the machine. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 **a** Open the rear door. Check the upper and lower rollers on the finisher side for damage. **b** Open the left cover. Reseat the cable J22 on the HPU controller board. **c** Check the paper path gears for damage. **Note:** To access the gears, remove the four screws from the HPU controller board (no need to remove the board, just move it out of the way), and then remove the screws securing the grounding plate. The gears are found under the grounding plate. Are the paper path components free of damage?	If the error persists, then go to step 3.	Replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**.
Step 3 **a** Reseat all cables on the HPU controller board. **b** Reseat the cables J27, J19, and J13 on the stapler controller board. Does the error remain?	Replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**. If the error persists, then go to step 4.	The problem is solved.

Action	Yes	No
Step 4 Open the left cover, reseat all connectors on the stapler controller board and then POR the machine. Does the error remain?	Replace the stapler controller board. See **"Stapler controller board removal" on page 829**. If the error persists, then replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**.	The problem is solved.

HPU communication error jam service check

Action	Yes	No
Step 1 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Staple, hole punch lower interface cable removal" on page 839**. Remove the left cover. Reseat the cable J15 on the controller board, then POR the machine. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 **a** Reseat all cables on the HPU controller board. **b** Reseat the cables J27, J19, and J13 on the stapler controller board. Does the error remain?	Replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**. If the error persists, then go to step 3.	The problem is solved.
Step 3 Open the left cover, reseat all connectors on the stapler controller board and then POR the machine. Does the error remain?	Replace the stapler controller board. See **"Stapler controller board removal" on page 829**. If the error persists, then replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**.	The problem is solved.

Sensor (HPU media align) jam service check

Action	Yes	No
Step 1 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Staple, hole punch lower interface cable removal" on page 839**. Remove the left cover. Reseat the cable J15 on the controller board, then POR the machine. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Do the following: - Open, and then close the rear door. Check if the rear door closes properly. - Check the rear door rollers for damage. - Remove all obstructions along the paper path. Is the rear door functional and free of damage?	If the error persists, then go to step 3.	Replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**.
Step 3 **a** Open the rear door. Remove all obstructions and media fragments on the sensor (HPU media align). **b** Open the left cover, and then reseat the sensor cables J3 and J18 on the HPU controller board. Does the error remain?	Go to step 4.	The problem is solved.
Step 4 **a** Open the rear door. Check the upper and lower rollers on the finisher side for damage. **b** Open the left cover. Reseat the cable J22 on the HPU controller board. **c** Check the paper path gears for damage. **Note:** To access the gears, remove the four screws from the HPU controller board (no need to remove the board, just move it out of the way), and then remove the screws securing the grounding plate. The gears are found under the grounding plate. Are the paper path components free of damage?	If the error persists, then go to step 5.	Replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**.
Step 5 **a** Reseat all cables on the HPU controller board. **b** Reseat the cables J27, J19, and J13 on the stapler controller board. Does the error remain?	Replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**. If the error persists, then go to step 6.	The problem is solved.

Action	Yes	No
Step 6 Open the left cover, reseat all connectors on the stapler controller board and then POR the machine. Does the error remain?	Replace the stapler controller board. See **"Stapler controller board removal" on page 829**. If the error persists, then replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**.	The problem is solved.

Sensor (HPU trailing edge) jam service check

Action	Yes	No
Step 1 **a** Reseat the finisher option on the printer. **b** Clear obstructions along the paper path. **c** Make sure that the sensors (pass through) are free from obstructions. **d** Close the rear door properly. **e** POR the printer. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Staple, hole punch lower interface cable removal" on page 839**. Remove the left cover. Reseat the cable J15 on the controller board, then POR the machine. Does the error remain?	Go to step 3.	The problem is solved.
Step 3 Open the rear door and do the following: **a** Remove all obstructions along the hole punch area and paper path. **b** Reseat the sensor cable J16 on the HPU controller board. **c** Do a sensor test. Enter Diagnostics menu, and then navigate to: **FINISHER TESTS** > **Finisher Sensor Test** > **Pass and Media** Check if the sensor status on the control panel changes when the sensor flag (HPU trailing edge) is toggled. Is the sensor (HPU trailing edge) functional and free of damage?	If the error persists, then go to step 4.	Replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**.

Action	Yes	No
Step 4 Do the following: • Open, and then close the rear door. Check if the rear door closes properly. • Check the rear door rollers for damage. • Remove all obstructions along the paper path. Is the rear door functional and free of damage?	If the error persists, then go to step 5.	Replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**.
Step 5 **a** Open the rear door. Check the upper and lower rollers on the finisher side for damage. **b** Open the left cover. Reseat the cable J22 on the HPU controller board. **c** Check the paper path gears for damage. **Note:** To access the gears, remove the four screws from the HPU controller board (no need to remove the board, just move it out of the way), and then remove the screws securing the grounding plate. The gears are found under the grounding plate. Are the paper path components free of damage?	If the error persists, then go to step 6.	Replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**.
Step 6 **a** Reseat all cables on the HPU controller board. **b** Reseat the cables J27, J19, and J13 on the stapler controller board. Does the error remain?	Replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**. If the error persists, then go to step 7.	The problem is solved.
Step 7 Open the left cover, reseat all connectors on the stapler controller board and then POR the machine. Does the error remain?	Replace the stapler controller board. See **"Stapler controller board removal" on page 829**. If the error persists, then replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**.	The problem is solved.

Sensor (HPU leading edge) jam service check

Action	Yes	No
Step 1 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Staple, hole punch lower interface cable removal" on page 839**. Remove the left cover. Reseat the cable J15 on the controller board, then POR the machine. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Do the following: • Open, and then close the rear door. Check if the rear door closes properly. • Check the rear door rollers for damage. • Remove all obstructions along the paper path. Is the rear door functional and free of damage?	If the error persists, then go to step 3.	Replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**.
Step 3 **a** Open the rear door. Check the sensor (HPU leading edge) for damage. Move the sensor flag and check if the sensor toggles properly. **b** Open the left cover. Reseat the cable J15 on the HPU controller board. Is the sensor functional and free of damage?	If the error persists, then go to step 4.	Replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**.
Step 4 **a** Open the rear door. Check the upper and lower rollers on the finisher side for damage. **b** Open the left cover. Reseat the cable J22 on the HPU controller board. **c** Check the paper path gears for damage. **Note:** To access the gears, remove the four screws from the HPU controller board (no need to remove the board, just move it out of the way), and then remove the screws securing the grounding plate. The gears are found under the grounding plate. Are the paper path components free of damage?	If the error persists, then go to step 5.	Replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**.
Step 5 **a** Reseat all cables on the HPU controller board. **b** Reseat the cables J27, J19, and J13 on the stapler controller board. Does the error remain?	Replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**. If the error persists, then go to step 6.	The problem is solved.

Action	Yes	No
Step 6 Open the left cover, reseat all connectors on the stapler controller board and then POR the machine. Does the error remain?	Replace the stapler controller board. See **"Stapler controller board removal" on page 829**. If the error persists, then replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**.	The problem is solved.

Understanding the printer messages

Cartridge, imaging unit mismatch [41.xy]

1 Check if both the toner cartridge and imaging unit are *MICR* (Magnetic Ink Character Recognition) or non-MICR supplies.

   Note: For a list of supported supplies, see the "Ordering supplies" section of the *User's Guide* or visit **www.lexmark.com**.

2 Change the toner cartridge or imaging unit so that both are MICR or non-MICR supplies.

Notes:

- Use a MICR toner cartridge and imaging unit for printing checks and other similar documents.
- Use a non-MICR toner cartridge and imaging unit for regular print jobs.

Cartridge low [88.xy]

You may need to order a toner cartridge. If necessary, select **Continue** on the printer control panel to clear the message and continue printing. For non-touch-screen printer models, press ✓ to confirm.

Cartridge nearly low [88.xy]

If necessary, select **Continue** on the printer control panel to clear the message and continue printing. For non-touch-screen printer models, press ✓ to confirm.

Cartridge very low, [x] estimated pages remain [88.xy]

You may need to replace the toner cartridge very soon. For more information, see the "Replacing supplies" section of the *User's Guide*.

If necessary, select **Continue** on the printer control panel to clear the message and continue printing. For non-touch-screen printer models, press ✓ to confirm.

Change [paper source] to [custom string] load [orientation]

Try one or more of the following:
- Load the correct paper size and type in the tray, verify the paper size and type settings are specified in the Paper menu on the printer control panel, and then select **Finished changing paper**. For

  non-touch-screen printer models, press ✓ to confirm.
- Touch **Cancel job** to cancel the print job.

Change [paper source] to [custom type name] load [orientation]

Try one or more of the following
- Load the correct paper size and type in the tray, verify the paper size and type settings are specified in the Paper menu on the printer control panel, and then select **Finished changing paper**. For

  non-touch-screen printer models, press ✓ to confirm.
- Cancel the print job.

Change [paper source] to [paper size] load [orientation]

Try one or more of the following:
- Load the correct paper size and type in the tray, verify the paper size and type settings are specified in the Paper menu on the printer control panel, and then select **Finished changing paper**. For

  non-touch-screen printer models, press ✓ to confirm.
- Cancel the print job.

Change [paper source] to [paper type] [paper size] load [orientation]

Try one or more of the following:
- Load the correct paper size and type in the tray, verify the paper size and type settings are specified in the Paper menu on the printer control panel, and then select **Finished changing paper**. For

  non-touch-screen printer models, press ✓ to confirm.
- Cancel the print job.

Check tray [x] connection

Try one or more of the following:
- Turn off the printer, and then turn it back on.

  If the error occurs a second time, then:

  1 Turn off the printer.

  2 Unplug the power cord from the electrical outlet.

3 Remove the specified tray.

4 Reattach the tray.

5 Connect the power cord to a properly grounded electrical outlet.

6 Turn the printer back on.

If the error occurs again, then:

1 Turn off the printer.

2 Unplug the power cord from the electrical outlet.

3 Remove the tray.

4 Contact customer support.

- To clear the message and resume the job, select **Continue** on the printer control panel. For non-touch-screen printer models, press ✓ to confirm.

Close door or insert cartridge

The toner cartridge is missing or not installed properly. Insert the cartridge, and then close all doors and covers.

Close rear door

Close the rear door of the printer.

Complex page, some data may not have printed [39]

Try one or more of the following:

- From the printer control panel, select **Continue** to ignore the message and continue printing. For non-touch-screen printer models, press ✓ to confirm.

- Cancel the current print job. For non-touch-screen printer models, press ✓ to confirm.
- Install additional printer memory.

Configuration change, some held jobs were not restored [57]

Held jobs are invalidated because of any of the following possible changes in the printer:

- The printer firmware has been updated.
- The tray for the print job is removed.
- The print job is sent from a flash drive that is no longer attached to the USB port.
- The printer hard disk contains print jobs that were stored when the hard disk was installed in a different printer model.

From the printer control panel, select **Continue** to clear the message. For non-touch-screen printer models, press ✓ to confirm.

Defective flash detected [51]

Try one or more of the following:
- Replace the defective flash memory card.
- From the printer control panel, select **Continue** to ignore the message and continue printing. For non-touch-screen printer models, press ✅ to confirm.
- Cancel the current print job.

Disk must be formatted for use in this device

From the printer control panel, select **Format disk** to format the printer hard disk and clear the message.

Note: Formatting deletes all the files stored in the printer hard disk.

Disk near full. Securely clearing disk space.

Try one or more of the following:

- Select **Continue** to clear the message. For non-touch-screen printer models, press ✅ to confirm.
- Delete fonts, macros, and other data stored in the printer hard disk.
- Install a hard disk with higher capacity.

Empty the hole punch box

Try one or more of the following:
- Empty the hole punch box.
- Select **Continue** on the printer control panel to clear the message and continue printing.
- Cancel the print job.

Error reading USB drive. Remove USB.

An unsupported USB device is inserted. Remove the USB device, and then insert a supported one.

Error reading USB hub. Remove hub.

An unsupported USB hub has been inserted. Remove the USB hub, and then install a supported one.

Imaging unit low [84.xy]

You may need to order an imaging unit. If necessary, select **Continue** on the printer control panel to clear the message and continue printing. For non-touch-screen printer models, press ✅ to confirm.

Imaging unit nearly low [84.xy]

If necessary, select **Continue** on the printer control panel to clear the message and continue printing. For non-touch-screen printer models, press ✅ to confirm.

Imaging unit very low, [x] estimated pages remain [84.xy]

You may need to replace the imaging unit very soon. For more information, see the "Replacing supplies" section of the *User's Guide*.

If necessary, select **Continue** on the printer control panel to clear the message and continue printing. For non-touch-screen printer models, press ✅ to confirm.

Incompatible output bin [x] [59]

Try one or more of the following:

- Remove the indicated bin.
- Select **Continue** on the printer control panel to clear the message and continue printing without using the specified bin. For non-touch-screen printer models, press ✅ to confirm.

Incompatible tray [x] [59]

Try one or more of the following:

- Remove the specified tray.
- From the printer control panel, select **Continue** to clear the message and continue printing without using the specified tray. For non-touch-screen printer models, press ✅ to confirm.

Incorrect paper size, open [paper source] [34]

Note: The paper source can be a tray or a feeder.

Try one or more of the following:

- Load the correct size of paper in the paper source.
- From the printer control panel, select **Continue** to clear the message and print using a different paper source. For non-touch-screen printer models, press ✅ to confirm.
- Check the length and width guides of the paper source and make sure the paper is loaded properly.
- Make sure the correct paper size and type are specified in the Printing Preferences or in the Print dialog.
- Make sure the paper size and type are specified in the Paper menu on the printer control panel.
- Make sure that the paper size is correctly set. For example, if Multipurpose Feeder Size or MP Feeder Size is set to Universal, then make sure the paper is large enough for the data being printed.
- Cancel the print job.

Insert hole punch box

Insert the hole punch box into the finisher, and then select **Continue** on the printer control panel to clear the message. For non-touch-screen printer models, press ⊘ to confirm.

Insert staple cartridge

Try one or more of the following:
- Insert a staple cartridge. For more information, see the instruction sheet that came with the supply.
- Select **Continue** to clear the message and print without using the staple finisher. For non-touch-screen printer models, press ⊘ to confirm.

Insert Tray [x]

Try one or more of the following:
- Insert the specified tray into the printer.
- Cancel the print job.
- Reset the active bin for a linked set of bins by selecting **Reset active bin** on the printer control panel.

Install bin [x]

Try one or more of the following:
- Install the specified bin:
  1 Turn off the printer.
  2 Unplug the power cord from the electrical outlet.
  3 Install the specified bin.
  4 Connect the power cord to a properly grounded electrical outlet.
  5 Turn the printer back on.
- Cancel the print job.
- Reset active bin

Install Tray [x]

Try one or more of the following:
- Install the specified tray:
  1 Turn off the printer.
  2 Unplug the power cord from the electrical outlet.
  3 Install the specified tray.
  4 Connect the power cord to a properly grounded electrical outlet.
  5 Turn the printer back on.
- Cancel the print job.
- Reset the active bin.

Insufficient memory for Flash Memory Defragment operation [37]

Try one or more of the following:

- From the printer control panel, select **Continue** to stop the defragmentation and continue printing. For non-touch-screen printer models, press ✓ to confirm.
- Delete fonts, macros, and other data from the printer memory.
- Install additional printer memory.

Insufficient memory, some Held Jobs were deleted [37]

The printer deleted some held jobs in order to process current jobs.

Select **Continue** to clear the message. For non-touch-screen printer models, press ✓ to confirm.

Insufficient memory, some held jobs will not be restored [37]

Try one or more of the following:

- From the printer control panel, select **Continue** to clear the message. For non-touch-screen printer models, press ✓ to confirm.
- Delete other held jobs to free up additional printer memory.

Insufficient memory to collate job [37]

Try one or more of the following:

- From the printer control panel, select **Continue** to print the part of the job already stored and begin collating the rest of the print job. For non-touch-screen printer models, press ✓ to confirm.
- Cancel the current print job.

Insufficient memory to support Resource Save feature [35]

Install additional printer memory or select **Continue** on the printer control panel to disable Resource Save, clear the message, and continue printing. For non-touch-screen printer models, press ✓ to confirm.

Load staples

Try one or more of the following:

- Replace or insert the specified staple cartridge in the finisher.
- Select **Continue** to clear the message and continue printing.
- Cancel the print job.

Load [paper source] with [custom string] [paper orientation]

Try one or more of the following:

- Load the tray or feeder with the correct size and type of paper.
- To use the tray that has the correct size or type of paper, select **Finished loading paper** on the printer

  control panel. For non-touch-screen printer models, press ✓ to confirm.

  Note: If the printer finds a tray that has the correct size and type of paper, then it feeds from that tray. If the printer cannot find a tray that has the correct size and type of paper, then it prints from the default paper source.

- Cancel the current job.
- See **"False paper tray empty message service check" on page 353**.

Load [paper source] with [custom type name] [paper orientation]

Try one or more of the following:

- Load the tray or feeder with the correct size and type of paper.
- To use the tray that has the correct size or type of paper, select **Finished loading paper** on the printer

  control panel. For non-touch-screen printer models, press ✓ to confirm.

  Note: If the printer finds a tray that has the correct size and type of paper, then it feeds from that tray. If the printer cannot find a tray that has the correct size and type of paper, then it prints from the default paper source.

- Cancel the current job.
- See **"False paper tray empty message service check" on page 353**.

Load [paper source] with [paper size] [paper orientation]

Try one or more of the following:

- Load the tray or feeder with the correct size of paper.
- To use the tray or feeder that has the correct size of paper, select **Finished loading paper** on the printer

  control panel. For non-touch-screen printer models, press ✓ to confirm.

  Note: If the printer finds a tray that has the correct size and type of paper, then it feeds from that tray. If the printer cannot find a tray that has the correct size and type of paper, then it prints from the default paper source.

- Cancel the current job.
- See **"False paper tray empty message service check" on page 353**.

Load [paper source] with [paper type] [paper size] [paper orientation]

Try one or more of the following:

- Load the tray or feeder with the correct size and type of paper.
- To use the tray or feeder that has the correct size and type of paper, select **Finished loading paper** on

  the printer control panel. For non-touch-screen printer models, press ✓ to confirm.

  Note: If the printer finds a tray that has the correct size and type of paper, then it feeds from that tray. If the printer cannot find a tray that has the correct size and type of paper, then it prints from the default paper source.

- Cancel the current job.
- See **"False paper tray empty message service check" on page 353**.

Load manual feeder with [custom string] [paper orientation]

Try one or more of the following:

- Load the feeder with the correct size and type of paper.

- Depending on your printer model, touch **Continue** or press ✓ to clear the message and continue printing.

  Note: If no paper is loaded in the feeder when **Continue** or ✓ is selected, then the printer automatically overrides the request, and then prints from an automatically selected tray.

- Cancel the current job.

Load manual feeder with [custom type name] [paper orientation]

Try one or more of the following:

- Load the multipurpose feeder with the correct size and type of paper.

- Depending on your printer model, touch **Continue** or press ✓ to clear the message and continue printing.

  Note: If no paper is loaded in the feeder when **Continue** or ✓ is selected, then the printer manually overrides the request, and then prints from an automatically selected tray.

- Cancel the current job.

Load manual feeder with [paper size] [paper orientation]

Try one or more of the following:

- Load the multipurpose feeder with the correct size of paper.

- Depending on your printer model, touch **Continue** or press ✓ to clear the message and continue printing.

  Note: If no paper is loaded in the feeder when **Continue** or ✓ is selected, then the printer manually overrides the request, and then prints from an automatically selected tray.

• Cancel the current job.

Load manual feeder with [paper type] [paper size] [paper orientation]

Try one or more of the following:

• Load the multipurpose feeder with the correct size and type of paper.

• Depending on your printer model, touch **Continue** or press ✓ to clear the message and continue printing.

Note: If no paper is loaded in the feeder when **Continue** or ✓ is selected, then the printer manually overrides the request, and then prints from an automatically selected tray.

• Cancel the current job.

Maintenance kit low [80.xy]

You may need to order a maintenance kit. For more information, visit the Lexmark support Web site at **http://support.lexmark.com** or contact customer support, and then report the message.

If necessary, select **Continue** to clear the message and continue printing. For non‑touch‑screen printer models, press ✓ to confirm.

Maintenance kit nearly low [80.xy]

For more information, visit the Lexmark support Web site at **http://support.lexmark.com** or contact customer support, and then report the message.

If necessary, select **Continue** to clear the message and continue printing. For non‑touch‑screen printer models, press ✓ to confirm.

Maintenance kit very low, [x] estimated pages remain [80.xy]

You may need to replace the maintenance kit very soon. For more information, visit the Lexmark support Web site at **http://support.lexmark.com** or contact customer support, and then report the message.

If necessary, select **Continue** on the printer control panel to clear the message and continue printing. For non‑touch‑screen printer models, press ✓ to confirm.

Memory full [38]

Try one or more of the following:

• From the printer control panel, select **Cancel job** to clear the message. For non‑touch‑screen printer models, press ✓ to confirm.

• Install additional printer memory.

Network [x] software error [54]

Try one or more of the following:

- From the printer control panel, select **Continue** to continue printing. For non-touch-screen printer models, press ✓ to confirm.
- Turn off the printer, wait for about 10 seconds, and then turn the printer back on.
- Update the network firmware in the printer or print server. For more information, visit the Lexmark support Web site at **http://support.lexmark.com**.

Non-Lexmark [supply type], see User's Guide [33.xy]

Note: The supply type can be toner cartridge or imaging unit.

The printer has detected a non-Lexmark supply or part installed in the printer.

Your Lexmark printer is designed to function best with genuine Lexmark supplies and parts. Use of third-party supplies or parts may affect the performance, reliability, or life of the printer and its imaging components.

All life indicators are designed to function with Lexmark supplies and parts and may deliver unpredictable results if third-party supplies or parts are used. Imaging component usage beyond the intended life may damage your Lexmark printer or associated components.

Warning—Potential Damage: Use of third-party supplies or parts can affect warranty coverage. Damage caused by the use of third-party supplies or parts may not be covered by the warranty.

To accept any and all of these risks and to proceed with the use of non-genuine supplies or parts in your printer, press and hold ✗ and the **#** button on the printer control panel simultaneously for 15 seconds.

For non-touch-screen printer models, press ✓ and ✗ on the printer control panel simultaneously for 15 seconds to clear the message and continue printing.

If you do not wish to accept these risks, then remove the third-party supply or part from your printer, and then install a genuine Lexmark supply or part.

Note: For a list of supported supplies, see the "Ordering supplies" section of the *User's Guide* or visit **www.lexmark.com**.

Not enough free space in flash memory for resources [52]

Try one or more of the following:

- From the printer control panel, select **Continue** to clear the message and continue printing. For non-touch-screen printer models, press ✓ to confirm.
- Delete fonts, macros, and other data stored in the flash memory.
- Upgrade to a larger capacity flash memory card.

Note: Downloaded fonts and macros that are not previously stored in the flash memory are deleted.

PPDS font error [50]

Try one or more of the following:

- From the printer control panel, select **Continue** to clear the message and continue printing. For
  non‑touch‑screen printer models, press ✓ to confirm.
- If the printer cannot find the requested font, then from the printer control panel, navigate to:

  PPDS menu > **Best Fit** > **On**

  The printer will find a similar font and reformat the affected text.
- Cancel the current print job.

Paper changes needed

Try one or more of the following:

- Select **Use current supplies** on the printer control panel to clear the message and continue printing.
  For non‑touch‑screen printer models, press ✓ to confirm.
- Cancel the current print job.

Parallel port [x] disabled [56]

Try one or more of the following:

- Select **Continue** to clear the message. For non‑touch‑screen printer models, press ✓ to confirm.
  The printer discards any data received through the parallel port.
- Select **Reset active bin** to reset the bin for a linked set of bins.

Reattach bin [x]

Try one or more of the following:

- Turn off the printer, and then turn it back on.
- Reattach the specified bin.
  1 Turn off the printer.
  2 Unplug the power cord from the electrical outlet.
  3 Remove the specified bin.
  4 Reattach the bin.
  5 Connect the power cord to a properly grounded electrical outlet.
  6 Turn the printer back on.
- Remove the specified bin:
  1 Turn off the printer.
  2 Unplug the power cord from the electrical outlet.

3 Remove the specified bin.

4 Contact customer support.

- Select **Continue** on the printer control panel to clear the message and print without using the specified bin. For non-touch-screen printer models, press Ⓥ to confirm.

Reattach bins [x] – [y]

Try one or more of the following:

- Turn off the printer, and then turn it back on.
- Reattach the specified bins:

  1 Turn off the printer.

  2 Unplug the power cord from the electrical outlet.

  3 Remove the specified bins.

  4 Reattach the bins.

  5 Connect the power cord to a properly grounded electrical outlet.

  6 Turn the printer back on.

- Remove the specified bins:

  1 Turn off the printer.

  2 Unplug the power cord from the electrical outlet.

  3 Remove the specified bins.

  4 Contact customer support.

  Select **Continue** on the printer control panel to clear the message and print without using the specified bins. For non-touch-screen printer models, press Ⓥ to confirm.

Reinstall missing or unresponsive cartridge [31.xy]

Try one or more of the following:

- Check if the toner cartridge is missing. If missing, install the toner cartridge.

  For information on installing the cartridge, see the "Replacing supplies" section of the *User's Guide*.

- If the toner cartridge is installed, then remove the unresponsive toner cartridge, and then reinstall it.

  Note: If the message appears after reinstalling the supply, then the cartridge is defective. Replace the toner cartridge.

Reinstall missing or unresponsive fuser [31.xy]

Try one or more of the following:

- Remove the unresponsive fuser, and then reinstall it.

  Note: If the message appears after reinstalling the supply, then the fuser is defective. Replace the fuser.

- Install the missing fuser.

  For more information on installing the fuser, see the instruction sheet that came with the part.

Reinstall missing or unresponsive imaging unit [31.xy]

Try one or more of the following:

- Check if the imaging unit is missing. If missing, install the imaging unit.

  For information on installing the imaging unit, see the "Replacing supplies" section of the *User's Guide*.

- If the imaging unit is installed, then remove the unresponsive imaging unit, and then reinstall it.

  Note: If the message appears after reinstalling the supply, then the imaging unit is defective. Replace the imaging unit.

Remove defective disk [61]

Remove and replace the defective printer hard disk.

Remove packaging material, [area name]

1 Remove any remaining packaging material from the specified location.

2 Select **Continue** to clear the message and continue printing. For non-touch-screen printer models, press ✅ to confirm.

Remove paper from all bins

Bins have reached their capacity. Remove paper from all bins to clear the message and continue printing. If removing the paper does not clear the message, then select **Continue** on the printer control panel. For non-touch-screen printer models, press ✅ to confirm.

Remove paper from bin [x]

Remove paper from the specified bin. The printer automatically detects paper removal and resumes printing. If removing the paper does not clear the message, then select **Continue** on the printer control panel. For non-touch-screen printer models, press ✅ to confirm.

Remove paper from [linked set bin name]

Remove paper from the specified bin. The printer automatically detects paper removal and resumes printing.

If removing the paper does not clear the message, then select **Continue** on the printer control panel. For non-touch-screen printer models, press ⊘ to confirm.

Remove paper from standard output bin

Remove the paper stack from the standard bin. The printer automatically detects paper removal and resumes printing.

If removing the paper does not clear the message, then select **Continue** on the printer control panel. For non-touch-screen printer models, press ⊘ to confirm.

Replace cartridge, 0 estimated pages remain [88.xy]

Replace the toner cartridge to clear the message and continue printing. For more information, see the instruction sheet that came with the supply or see the "Replacing supplies" section of the *User's Guide*.

Note: If you do not have a replacement cartridge, then see the "Ordering supplies" section of the *User's Guide* or visit **www.lexmark.com**.

Replace cartridge, printer region mismatch [42.xy]

Install a toner cartridge that matches the region number of the printer. *x* indicates the value of the printer region. *y* indicates the value of the cartridge region. x and y can have the following values:

List of printer and toner cartridge regions

Region number	Region
0	Global
1	United States, Canada
2	European Economic Area (EEA), Switzerland
3	Asia Pacific, Australia, New Zealand
4	Latin America
5	Africa, Middle East, rest of Europe
9	Invalid

Notes:

- The x and y values are the .xy of the error code shown on the printer control panel.
- The x and y values must match for printing to continue.

Replace imaging unit, 0 estimated pages remain [84.xy]

Replace the imaging unit to clear the message and continue printing. For more information, see the instruction sheet that came with the supply or see the "Replacing supplies" section of the *User's Guide*.

Note: If you do not have a replacement imaging unit, then see the "Ordering supplies" section of the *User's Guide* or visit **www.lexmark.com**.

Replace maintenance kit, 0 estimated pages remain [80.xy]

The printer is scheduled for maintenance. For more information, visit the Lexmark support Web site at **http://support.lexmark.com** or contact your service representative, and then report the message.

Replace roller kit [81.xx]

1 Replace the roller kit. For more information, see the instruction sheet that came with the part.

2 Press ✓ to clear the message and continue printing.

Replace unsupported cartridge [32.xy]

Remove the toner cartridge, and then install a supported one to clear the message and continue printing. For more information, see the instruction sheet that came with the supply or see the "Replacing supplies" section of the *User's Guide*.

Note: If you do not have a replacement cartridge, then see the "Ordering supplies" section of the *User's Guide* or visit **www.lexmark.com**.

Replace unsupported fuser [32.xy]

Remove the fuser, and then install a supported one. For more information, see the instruction sheet that came with the part.

Replace unsupported imaging unit [32.xy]

Remove the imaging unit, and then install a supported one to clear the message and continue printing. For more information, see the instruction sheet that came with the supply or see the "Replacing supplies" section of the *User's Guide*.

Note: If you do not have a replacement imaging unit, then see the "Ordering supplies" section of the *User's Guide* or visit **www.lexmark.com**.

Restore held jobs?

Try one or more of the following:

- Select **Restore** on the printer control panel to restore all held jobs stored in the printer hard disk. For non-touch-screen printer models, press ✓ to confirm.
- Select **Do not restore** if you do not want any print jobs to be restored. For non-touch-screen printer models, press ✓ to confirm.

Serial port [x] disabled [56]

Try one or more of the following:

- Select **Continue** to clear the message. For non-touch-screen printer models, press ✓ to confirm. The printer discards any data received through the specified serial port.
- Select **Reset active bin** to reset the active bin for a linked set of bins.
- Make sure the Serial Buffer menu is set to Enabled.

Some held jobs were not restored

Select **Continue** to clear the message. For non-touch-screen printer models, press ✓ to confirm.

Note: Held jobs that are not restored remain in the printer hard disk and are inaccessible.

Standard network software error [54]

Try one or more of the following:

- From the printer control panel, select **Continue** to continue printing. For non-touch-screen printer models, press ✓ to confirm.
- Turn off the printer and then turn it back on.
- Update the network firmware in the printer or print server. For more information, visit the Lexmark support Web site at **http://support.lexmark.com**.

Standard USB port disabled [56]

From the printer control panel, select **Continue** to clear the message. For non-touch-screen printer models, press ✓ to confirm.

Notes:

- The printer discards any data received through the USB port.
- Make sure the USB Buffer menu is not set to Disabled.

Supply needed to complete job

A supply needed to complete the job is missing. Cancel the current job.

Too many bins attached [58]

1 Turn off the printer.

2 Unplug the power cord from the electrical outlet.

3 Remove the extra bins.

4 Connect the power cord to a properly grounded electrical outlet.

5 Turn the printer back on.

Too many disks installed [58]

1 Turn off the printer.

2 Unplug the power cord from the electrical outlet.

3 Remove the extra printer hard disks.

4 Connect the power cord to a properly grounded electrical outlet.

5 Turn the printer back on.

Too many flash options installed [58]

1 Turn off the printer.

2 Unplug the power cord from the electrical outlet.

3 Remove the extra flash memory.

4 Connect the power cord to a properly grounded electrical outlet.

5 Turn the printer back on.

Too many trays attached [58]

1 Turn off the printer.

2 Unplug the power cord from the electrical outlet.

3 Remove the extra trays.

4 Connect the power cord to a properly grounded electrical outlet.

5 Turn the printer back on.

Tray [x] paper size unsupported

The paper size in the specified tray is unsupported. Replace it with a supported paper size.

Unformatted flash detected [53]

Try one or more of the following:

- From the printer control, select **Continue** to stop the defragmentation and continue printing. For

  non-touch-screen printer models, press ✓ to confirm.
- Format the flash memory.

Note: If the error message remains, then the flash memory may be defective and need to be replaced.

Unsupported disk

1 Remove the unsupported disk, and then install a supported one.

2 Select **Continue** to clear the message and continue printing. For non-touch screen printer models,

  press ✓ to confirm.

Unsupported option in slot [x] [55]

1 Turn off the printer.

2 Unplug the power cord from the wall outlet.

3 Remove the unsupported option card from the printer controller board, and then replace it with a supported card.

4 Connect the power cord to a properly grounded electrical outlet.

5 Turn the printer back on.

USB port [x] disabled [56]

Try one or more of the following:

- Select **Continue** to clear the message. For non-touch-screen printer models, press ✓ to confirm. The printer discards any data received through the specified serial port.
- Select **Reset active bin** to reset the active bin for a linked set of bins.
- Make sure the USB Buffer menu is enabled.

User attendance messages

User attendance messages (0-99.99)

Error code	Description	Action
10.xx	Too many vinyl labels printed successively.	Reduce the vinyl labels printed. Print less than 50 vinyl labels in a row, or print at least one vinyl label per six plain paper pages.
30.xx	Toner cartridge missing	Make sure all cartridges are installed properly.
31.21	Toner level sensing reading out of range	Go to **"Toner level sensing error service check" on page 287**.
31.25	Toner level sensing calibration capacitor reading too low	Go to **"Missing or unresponsive imaging unit service check" on page 288**.
31.40	Toner cartridge smart chip communication error	Go to **"Toner cartridge smart chip error service check" on page 288**.
31.41	Toner cartridge smart chip communication error	
31.42	Toner cartridge smart chip communication error	
31.43	Toner cartridge smart chip communication error	
31.44	Toner cartridge smart chip communication error	
31.45	Toner cartridge smart chip communication error	
31.46	Insufficient amount of toner dispensed by the toner cartridge	Go to **"Toner dispense failure service check" on page 289**.
31.60	Imaging unit smart chip communication error	Go to **"Imaging unit smart chip error service check" on page 291**.
31.61	Imaging unit smart chip communication error	
31.62	Imaging unit smart chip communication error	
31.63	Imaging unit smart chip communication error	
31.64	Imaging unit smart chip communication error	
31.65	Imaging unit smart chip communication error	
31.66	Insufficient amount of toner received by the imaging unit	Go to **"Toner dispense failure service check" on page 289**.
31.80	Fuser smart chip communication error	Go to **"Fuser unit smart chip error service check" on page 292**.
31.81	Fuser smart chip communication error	
31.82	Fuser smart chip communication error	
31.83	Fuser smart chip communication error	
31.84	Fuser smart chip communication error	
31.85	Fuser smart chip communication error	
32.01	The toner cartridge or imaging unit used is not compatible with the printer model.	Go to **"Incompatible Lexmark supply service check" on page 294**.

Error code	Description	Action
32.05	The OEM supply (toner cartridge, imaging unit, or fuser) used is unsupported.	Go to **"Incorrect OEM supply service check" on page 294**.
32.08	The MICR designations between the toner cartridge/imaging unit supplies and printer do not match.	Go to **"Supply MICR mismatch service check" on page 295**.
32.10	The Lexmark toner cartridge is not compatible with the printer model.	Go to **"Incompatible Lexmark supply service check" on page 294**.
32.11	The Lexmark imaging unit is not compatible with the printer model.	
32.12	The Lexmark fuser is not compatible with the printer model.	
32.13	The third party toner cartridge is not supported.	Go to **"Unsupported third party supply service check" on page 294**.
32.14	The third party imaging unit is not supported.	
32.15	The third party fuser is not supported.	
32.16	The third party toner cartridge is not supported.	
32.17	The third party imaging unit is not supported.	
32.18	The third party fuser is not supported.	
32.19	The third party toner cartridge is not supported.	Go to **"Unsupported third party supply service check" on page 294**.
32.20	The third party imaging unit is not supported.	
32.21	The third party fuser is not supported.	
32.22	The third party toner cartridge is not supported.	
32.23	The third party imaging unit is not supported.	
32.24	The third party fuser is not supported.	
32.25	The third party toner cartridge is not supported.	
32.26	The third party imaging unit is not supported.	
32.27	The third party fuser is not supported.	

Error code	Description	Action
32.28	The third party toner cartridge is not supported.	Go to **"Unsupported third party supply service check" on page 294**.
32.29	The third party imaging unit is not supported.	
32.30	The third party fuser is not supported.	
32.31	The third party toner cartridge is not supported.	
32.32	The third party imaging unit is not supported.	
32.33	The third party fuser is not supported.	
32.34	The third party toner cartridge is not supported.	
32.35	The third party imaging unit is not supported.	
32.36	The third party fuser is not supported.	
32.37	The third party toner cartridge is not supported.	
32.38	The third party imaging unit is not supported.	
32.39	The third party fuser is not supported.	
33.01	The non-Lexmark toner cartridge is not supported.	Go to **"Non-Lexmark[supply type], see User's Guide[33.xy]" on page 273**.
33.02	The non-Lexmark imaging unit is not supported.	
33.03	The non-Lexmark fuser is not supported.	
34.xx	Media size mismatch—the printer detects the media as too short or too narrow	Do the following: • Make sure that the media loaded is in the proper size. The print job settings must also coincide with the size of the media being printed on. • Make sure that the media tray guides are properly set.
35.xx	Res save off deficient memory—the printer lacks sufficient memory to enable Resource Save	Try one or more of the following: • From the printer control panel, press **Continue** to disable Resource Save, clear the message, and continue printing. • Install additional memory.
37.xx	Insufficient collation area	Try one or more of the following: • From the printer control panel, select **Continue** to stop the defragmentation and continue printing. For non-touch-screen printer models, press **OK** to confirm. • Delete fonts, macros, and other data from the printer memory. • Install additional printer memory.

Diagnostics and troubleshooting

Error code	Description	Action
38.xx	Memory full	Try one or more of the following: • From the printer control panel, press **Continue** to disable Resource Save, clear the message, and continue printing. • Install additional memory.
39	Complex page—the page is too complex to print	Try one or more of the following: • From the printer control panel, press **Continue** to clear the message. • Decrease the resolution setting. • Install additional printer memory.
41.01	An MICR imaging unit is installed with a non-MICR toner cartridge.	Go to **"Supply MICR mismatch service check" on page 295**.
41.10	An MICR toner cartridge is installed with a non-MICR imaging unit.	
42.xy	Printer/cartridge region mismatch	Go to **"Region mismatch service check" on page 296**.
50	The PPDS interpreter has encountered a font error	Press **Continue** to clear the message and continue processing the job.
51	Defective flash—this error may occur at power on, or during flash format and write operations	Try one or more of the following: • Replace the defective flash memory card. • From the printer control panel, press **Continue** to ignore the message and continue printing. • Cancel the current print job.
52	Flash full	Try one or more of the following: • From the printer control panel, touch **Continue** to ignore the message and continue printing. • Delete fonts, macros, and other data stored in the flash memory. • Install a flash memory card with larger capacity. **Note:** Downloaded fonts and macros not previously stored in the flash memory are deleted.

Error code	Description	Action
53	Unformatted flash	Try one or more of the following: • From the printer control panel, press **Continue** to stop the defragmentation and continue printing. • Format the flash memory device. **Note:** If the error message remains, then the flash memory device may be defective and need to be replaced.
54	Network error—communication failure between the controller board and the network port	Try one or more of the following: • From the printer control panel, press **Continue** to confirm. • Unplug the router, then wait for 30 seconds, and then plug it back again. • POR the machine. • Update the network firmware in the printer or print server.
55	Unsupported option card detected	1 Turn off the printer. 2 Unplug the power cord from the electrical outlet. 3 Remove the unsupported option card from the printer controller board, and then replace it with a supported card. 4 Re-connect the power cord, and then turn the machine on.
56	USB port disabled	Do either of the following: • From the printer control panel, select **Continue** to clear the message and continue printing without using the specified bin/tray. • Select **Reset active bin** to reset the bin for a linked set of bins.
59	Incompatible output bin/tray	Do either of the following: • Remove the specified bin. • From the printer control panel, press **Continue** to clear the message and continue printing without using the specified bin/tray.
80	Maintenance kit—end of life	Install maintenance kit.
80	Maintenance kit—late warning	Install maintenance kit.
80	Maintenance kit—low	Install maintenance kit.
80	Maintenance kit—nearly low	Maintenance kit is near the end of its life.
81	Roller kit—end of life	Install a roller kit.

Error code	Description	Action
84	Imaging unit—nearly low	
84	Imaging unit—middle warning	
84	Imaging unit—late warning	
84	Imaging unit—end of life	Replace the imaging unit.
88	Toner cartridge low	Replace the toner cartridge.

Toner level sensing error service check

Action	Yes	No
Step 1 Ensure that the toner cartridge is installed properly. Is the toner cartridge properly installed?	Go to step 2.	Reinstall the toner cartridge properly.
Step 2 Remove the existing toner cartridge and install a different cartridge. Does the error continue?	Go to step 3.	Problem resolved.
Step 3 Ensure the cable for socket JCTLS on the controller board is properly connected. Is the above connection properly connected?	Go to step 4.	Reseat the connection or replace the cable. Go to step 4.
Step 4 Ensure the toner level/imaging unit high voltage contact is free from damage. Is the toner level/imaging unit high voltage contact free from damage?	Go to step 5.	Replace the toner level/imaging unit high voltage contact.
Step 5 Reset the machine. Does the error continue?	Replace the controller board. See **"Controller board removal" on page 568**.	Problem resolved.

Missing or unresponsive imaging unit service check

Action	Yes	No
Step 1 POR the printer. Does the problem remain?	Go to step 2.	The problem is solved.
Step 2 Replace the controller board. See **"Controller board removal" on page 568**.	Contact the next level of support.	The problem is solved.

Toner cartridge smart chip error service check

Action	Yes	No
Step 1 Check whether the toner cartridge installed is genuine. Is the cartridge a genuine and supported Lexmark unit?	Go to step 3.	Go to step 2.
Step 2 Install a genuine Lexmark toner cartridge. Does the problem remain?	Go to step 3.	The problem is solved.
Step 3 Check the toner cartridge for proper installation. Is the cartridge properly installed?	Go to step 5.	Go to step 4.
Step 4 Reinstall the toner cartridge. Does the problem remain?	Go to step 5.	The problem is solved.
Step 5 Remove the toner cartridge, and then install a different unit. Does the problem remain?	Go to step 6.	The problem is solved.
Step 6 Check the socket (labeled TONER UNIT) on the controller board for proper connection. Is the cable properly connected?	Go to step 8.	Go to step 7.
Step 7 Reseat the cable. Does the problem remain?	Go to step 8.	The problem is solved.

Action	Yes	No
Step 8 Check the toner cartridge smart chip contact and its cable for damage. Is the contact and its cable free of damage?	Go to step 10.	Go to step 9.
Step 9 Replace the toner cartridge smart chip contact. See **"Toner cartridge smart chip contact removal" on page 582**. Does the problem remain?	Go to step 10.	The problem is solved.
Step 10 Check the RIP firmware version. Does the RIP firmware have the latest version?	Go to step 12.	Go to step 11.
Step 11 Update the RIP firmware. Does the problem remain?	Go to step 12.	The problem is solved.
Step 12 Reset the printer. Does the problem remain?	Go to step 13.	The problem is solved.
Step 13 Check the printer firmware version. Does the printer firmware have the latest version?	Contact the next level of support.	Go to step 14.
Step 14 Update the printer firmware. Does the problem remain?	Contact the next level of support.	The problem is solved.

Toner dispense failure service check

Action	Yes	No
Step 1 Check whether the toner cartridge installed is genuine. Is the cartridge a genuine and supported Lexmark unit?	Go to step 3.	Go to step 2.
Step 2 Install a genuine Lexmark toner cartridge. Does the problem remain?	Go to step 3.	The problem is solved.

Action	Yes	No
Step 3 Check the toner cartridge for proper installation. Is the cartridge properly installed?	Go to step 5.	Go to step 4.
Step 4 Reinstall the toner cartridge. Does the problem remain?	Go to step 5.	The problem is solved.
Step 5 Check the shutter of the toner cartridge. **Note:** The shutter opens to supply toner to the imaging unit. Is the toner cartridge filled and is its shutter properly working?	Go to step 7.	Go to step 6.
Step 6 Replace the toner cartridge or repair its shutter. Does the problem remain?	Go to step 7.	The problem is solved.
Step 7 Check the shutter of the imaging unit. **Note:** The shutter opens to receive toner from the toner cartridge. Is the imaging unit shutter properly working?	Go to step 9.	Go to step 8.
Step 8 Replace the imaging unit or repair its shutter. Does the problem remain?	Go to step 9.	The problem is solved.
Step 9 Replace the toner cartridge. Does the problem remain?	Contact the next level of support.	The problem is solved.

Imaging unit smart chip error service check

Action	Yes	No
Step 1 Check whether the imaging unit installed is genuine. Is the imaging unit a genuine and supported Lexmark unit?	Go to step 3.	Go to step 2.
Step 2 Install a genuine Lexmark imaging unit. Does the problem remain?	Go to step 3.	The problem is solved.
Step 3 Check the imaging unit for proper installation. Is the imaging unit properly installed?	Go to step 5.	Go to step 4.
Step 4 Reinstall the imaging unit. Does the problem remain?	Go to step 5.	The problem is solved.
Step 5 Remove the toner cartridge, and then install a different unit. Does the problem remain?	Go to step 6.	The problem is solved.
Step 6 Check the imaging unit smart chip contact cable for proper connection. Is the cable properly connected?	Go to step 8.	Go to step 7.
Step 7 Reseat the cable. Does the problem remain?	Go to step 8.	The problem is solved.
Step 8 Check the imaging unit smart chip contact and its cable for damage. Is the smart chip contact and its cable free of damage?	Go to step 10.	Go to step 9.
Step 9 Replace the imaging unit smart chip contact or repair its cable. See **"Imaging unit smart chip contact removal" on page 581**. Does the problem remain?	Go to step 10.	The problem is solved.

Action	Yes	No
Step 10 Check the RIP firmware version. Does the RIP firmware have the latest version?	Go to step 12.	Go to step 11.
Step 11 Update the RIP firmware. Does the problem remain?	Go to step 12.	The problem is solved.
Step 12 Reset the printer. Does the problem remain?	Go to step 13.	The problem is solved.
Step 13 Check the printer firmware version. Does the printer firmware have the latest version?	Contact the next level of support.	Go to step 14.
Step 14 Update the printer firmware. Does the problem remain?	Contact the next level of support.	The problem is solved.

Fuser unit smart chip error service check

Action	Yes	No
Step 1 Check whether the fuser installed is genuine. Is the fuser a genuine and supported Lexmark unit?	Go to step 3.	Go to step 2.
Step 2 Install a genuine Lexmark fuser. Does the problem remain?	Go to step 3.	The problem is solved.
Step 3 Check the fuser for proper installation. Is the fuser properly installed?	Go to step 5.	Go to step 4.
Step 4 Reinstall the fuser. Does the problem remain?	Go to step 5.	The problem is solved.

Action	Yes	No
Step 5 Remove the fuser, and then install a different unit. Does the problem remain?	Go to step 6.	The problem is solved.
Step 6 Check the socket J27 on the controller board for proper connection. Is the cable properly connected?	Go to step 8.	Go to step 7.
Step 7 Reseat the cable. Does the problem remain?	Go to step 8.	The problem is solved.
Step 8 Check the fuser data cable for damage. Is the cable free of damage?	Go to step 10.	Go to step 9.
Step 9 Repair or replace the fuser data cable. Does the problem remain?	Go to step 10.	The problem is solved.
Step 10 Check the RIP firmware version. Does the RIP firmware have the latest version?	Go to step 12.	Go to step 11.
Step 11 Update the RIP firmware. Does the problem remain?	Go to step 12.	The problem is solved.
Step 12 Reset the printer. Does the problem remain?	Go to step 13.	The problem is solved.
Step 13 Check the printer firmware version. Does the printer firmware have the latest version?	Contact the next level of support.	Go to step 14.
Step 14 Update the printer firmware. Does the problem remain?	Contact the next level of support.	The problem is solved.

Incorrect OEM supply service check

Action	Yes	No
Step 1 Check whether the OEM supplies used are correct. • toner cartridge • imaging unit • fuser Are the correct OEM supplies used?	Contact the next level of support.	Go to step 2.
Step 2 Replace the incorrect OEM supply (toner cartridge, imaging unit, or fuser). Does the problem remain?	Contact the next level of support.	The problem is solved.

Incompatible Lexmark supply service check

Action	Yes	No
Step 1 Check whether the Lexmark supplies used are genuine and compatible with the printer model. • toner cartridge • imaging unit • fuser Are the Lexmark supplies used genuine and compatible?	Contact the next level of support.	Go to step 2.
Step 2 Replace the incorrect Lexmark supply (toner cartridge, imaging unit, or fuser). Does the problem remain?	Contact the next level of support.	The problem is solved.

Unsupported third party supply service check

Action	Yes	No
Step 1 Check whether third party supplies are used. • toner cartridge • imaging unit • fuser Are third party supplies used?	Go to step 2.	Contact the next level of support.

Action	Yes	No
Step 2 Replace the third party supply (toner cartridge, imaging unit, or fuser) with a genuine Lexmark part. Does the problem remain?	Contact the next level of support.	The problem is solved.

Supply MICR mismatch service check

Action	Yes	No
Step 1 Compare the MICR designation of the cartridge, imaging unit, and printer. The following examples have a MICR mismatch: • MICR toner cartridge and imaging unit, installed on non-MICR printer • non-MICR toner cartridge and imaging unit, installed on MICR-only printer • MICR toner cartridge on non-MICR imaging unit • non-MICR toner cartridge on MICR imaging unit Do the MICR designations differ?	Go to step 2.	Contact the next level of support.
Step 2 Replace the incorrect toner cartridge or imaging unit to match the MICR designation of the printer. Does the problem remain?	Contact the next level of support.	The problem is solved.

Region mismatch service check

Action	Yes	No
Step 1 Install a toner cartridge that matches the region number of the printer. The *xy* error code value represents the required region number, where *x* indicates the printer's region number and *y* for the cartridge's region number: • 0—Global • 1—United States, Canada • 2—European Economic Area (EEA), Switzerland • 3—Asia Pacific, Australia, New Zealand • 4—Latin America • 5—Africa, Middle East, rest of Europe • 9—Invalid **Note:** As an example, use NA region (1—United States, Canada) cartridge on a NA region printer. Do the regions match?	Contact the next level of support.	Go to step 2.
Step 2 Replace the mismatched toner cartridge with the correction region. Does the problem remain?	Contact the next level of support.	The problem is solved.

Printer hardware errors

111 errors

111 error messages

Error code	Description	Action
111.30	Printhead ID error	Go to **"Printhead ID service check" on page 298**.
111.31	Printhead no first HSYNC error	
111.32	Printhead loss of HSYNC error	
111.33	Printhead loss of HSYNC during servo	
111.34	Printhead mirror motor loss of lock	
111.35	Printhead mirror motor initial lock	
111.36	Printhead mirror motor stabilization error	
111.37	Page reached input sensor but the mirror motor was not locked.	
111.38	Page reached input sensor but the printhead startup was not complete.	
111.90	Printhead video cable not plugged in.	

Printhead service check

Action	Yes	No
Step 1 Ensure the cables for sockets "MIR MTR" and "VIDEO" on the controller card are properly connected and not damaged. Are the above cables properly connected and undamaged?	Go to step 2.	Reseat the connections. Go to the next step.
Step 2 Reset the machine. Does the error continue?	Go to step 3.	Problem resolved.
Step 3 Reset the machine. Does the error continue?	Replace the controller board. See **"Controller board removal" on page 568**.	Problem resolved.

Printhead ID service check

Action	Yes	No
Step 1 Ensure the correct laser printhead is installed. Is the proper laser printhead installed?	Go to step 2.	Install the correct laser printhead. Go to step 2.
Step 2 Ensure the cables for sockets "MIR MTR" and "VIDEO" on the controller card are properly connected and not damaged. Are the above cables properly connected and undamaged?	Go to step 3.	Reseat the connections. Go to step 3.
Step 3 Reset the machine. Does the error continue?	Replace the controller board. See **"Controller board removal" on page 568**.	Problem resolved.

120 errors

120 error messages

Error code	Description	Action
120.10	Fuser drive Motor Halls detection error	Go to **"Fuser drive motor service check" on page 299**.
120.20	Fuser drive Motor took too long to stop	
120.30	Fuser drive Motor Unable To Lock (before motor ID)	
120.40	Fuser drive motor over-speed error	
120.60	Fuser drive motor unable to lock (after motor ID)	
120.70	Fuser drive motor out of lock	
120.80	Fuser drive motor excessive PWM / over temperature	

Fuser drive motor service check

Action	Yes	No
Step 1 Ensure the cable for socket J24 on the controller board is properly connected. Is the connection properly connected?	Go to step 2.	Reseat the connections. Go to step 2.
Step 2 Reset the machine. Does the error continue?	Replace the fuser drive motor. See **"Fuser drive motor removal" on page 571**. Go to step 3.	The problem is resolved.
Step 3 Reset the machine. Does the error continue?	Replace the controller board. See **"Controller board removal" on page 568**.	The problem is resolved.

121 errors

121 error messages

Error code	Description	Action
121.07	Fuser has been on for more than allowed after a gap blowout, and the temperature is still too cold	Go to **"Fuser service check" on page 301**.
121.08	Fuser was under temperature when page was in fuser	
121.20	Fuser did not reach the required temperature during steady state control	
121.22	Fuser did not warm enough to start line voltage detection	
121.23	Fuser took too long to heat to line detection temperature	
121.24	Fuser never reached fuser detection temperature	
121.25	After line voltage detection, control did not roll over to steady state control in time If the problem remains, replace the controller board.	Go to **"Controller board removal" on page 568**.

Error code	Description	Action
121.26	Fuser failed to reach temperature during warm up	Go to **"Fuser service check" on page 301**.
121.28	Fuser failed to reach EP warm-up temperature in time	
121.29	Fuser failed to reach preheat temperature for motor start during warm up	
121.30	Fuser failed to reach printing temperature by the time a page got to the fuser	
121.31	Fuser has gotten too hot	
121.35	Attempting to reset the printer after receiving a 121.34 If the problem remains, replace the controller board.	Go to **"Controller board removal" on page 568**.
121.36	Fuser did not heat to allow compression jog	Go to **"Fuser service check" on page 301**.
121.32	Open fuser main thermistor If the problem remains, replace the fuser.	Go to **"Fuser removal" on page 538**.
121.33	Open fuser edge thermistor If the problem remains, replace the fuser.	
121.34	Open fuser backup roll thermistor If the problem remains, replace the fuser.	
121.37	Fuser heated faster than allowed during line voltage detection (115V fuser in 220V machine) If the problem remains, replace the fuser.	
121.48	Fuser Hardware type does not match fuser driver loaded (for example, lamp hardware or belt firmware) If the problem remains, replace the fuser.	
121.49	Fuser backup roll too hot while printing non-wide media If the problem remains, replace the fuser.	

Fuser service check

Action	Yes	No
Step 1 Ensure the fuser is properly installed. Is the fuser properly installed?	Go to step 2.	Reseat the connections. Go to step 2.
Step 2 Remove the existing fuser and install a different fuser. Does the error remain?	Replace the fuser. See **"Fuser removal" on page 538**. Go to step 3.	Problem resolved.
Step 3 Ensure the cable for socket "J27" on the controller board is properly connected. Is the above connection properly connected?	Go to step 4.	Reseat the connection.
Step 4 Ensure the LVPS connections are properly connected. Are the above connections properly connected?	Go to step 5.	Reseat the connections.
Step 5 Reset the machine. Does the error remain?	Replace the LVPS. See **"LVPS removal" on page 592**. Go to step 6.	Problem resolved.
Step 6 Reset the machine. Does the error remain?	Replace the controller board. See **"Controller board removal" on page 568**.	Problem resolved.

126 errors

126 error messages

Error code	Description	Action
126.01	Line Frequency outside operating range of device	Go to **"LVPS failure service check" on page 302**.
126.02	No line frequency detected	
126.06	LVPS error	
126.24	LVPS error	

LVPS failure service check

Action	Yes	No
Step 1 POR the printer. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Make sure that the printer is not plugged into a power strip or UPS. Does the error remain?	Go to step 3.	The problem is solved.
Step 3 **a** Remove, and then reinstall the imaging unit. **b** POR the printer. Does the error remain?	Go to step 4.	The problem is solved.
Step 4 Make sure that all of the LVPS cables are properly connected. Does the error remain?	Go to step 5.	The problem is solved.
Step 5 **a** Remove, and then reinstall the fuser. **b** POR the printer. Does the error remain?	Go to step 6.	The problem is solved.
Step 6 Replace the imaging unit. Does the error remain?	Go to step 7.	The problem is solved.
Step 7 Replace the fuser. See **"Fuser removal" on page 538**. Does the error remain?	Go to step 8.	The problem is solved.
Step 8 Check the pins on the edge of the LVPS for damage. Are the pins damaged?	Go to step 9.	Go to step 10.
Step 9 Replace the LVPS. See **"LVPS removal" on page 592**. Does the error remain?	Go to step 10.	The problem is solved.

Action	Yes	No
Step 10 Replace the controller board. See **"Controller board removal" on page 568**. Does the error remain?	Go to step 11.	The problem is solved.
Step 11 Check the imaging unit smart chip contact with cable for proper connection or damage, and then replace if necessary. See **"Imaging unit smart chip contact removal" on page 581**. Does the error remain?	Go to step 12.	The problem is solved.
Step 12 Check the fuser data cable for proper connection or damage, and then replace if necessary. Does the error remain?	Contact the next level of support.	The problem is solved.

13y errors

13y error messages

Error code	Description	Action
130.01	Transfer servo error	Reset the machine. If the error remains, replace the imaging unit.
133.05	Toner Level Sensing reading above maximum expected value	Go to **"Toner level sensing service check" on page 304**.
133.06	Toner Level Sensing reading below minimum expected value	
133.07	Toner failed to replenish into the Imaging Unit	
133.08	Excessive toner level sensing noise	

Toner level sensing service check

Action	Yes	No
Step 1 Ensure that the toner cartridge is installed properly. Is the toner cartridge properly installed?	Go to step 2.	Reinstall the toner cartridge properly.
Step 2 Remove the existing toner cartridge and install a different cartridge. Does the error remain?	Go to step 3.	Problem resolved.
Step 3 Ensure the cable for socket "JCTLS" on the controller board is properly connected. Is the above connection properly connected?	Go to step 4.	Reseat the connection or replace the cable. Go to the next step.
Step 4 Ensure the toner low / imaging unit high voltage contact is free from damage. Is the toner low / imaging unit high voltage contact free from damage?	Go to step 5.	Replace the toner low / imaging unit high voltage contact. Go to step 5.
Step 5 Reset the machine. Does the error continue?	Replace the controller board. See **"Controller board removal" on page 568**.	Problem resolved.

14y errors

14y error messages

Error code	Description	Action
140.10	Main drive motor halls not detected	Go to **"Main drive motor service check" on page 305**.
140.20	Main drive motor took too long to stop	
140.30	Main drive motor unable To lock (before motor ID)	
140.40	Main drive motor over speed detected	
140.60	Main drive motor unable to lock (after motor ID)	
140.70	Main drive motor out of lock Detected	
140.80	Main drive motor excessive PWM / temperature	

Error code	Description	Action
146.00	Media feeder encoder never detected in tray 1	Go to **"Media feeder service check" on page 305**.
149.00	Redrive motor encoder never detected	Go to **"Redrive motor service check" on page 306**.

Main drive motor service check

Action	Yes	No
Step 1 Ensure the cable for socket "TRANSPORT MTR" on the controller board is properly connected. Is the above connection properly connected?	Go to step 2.	Reseat the connections. Go to step 2.
Step 2 Reset the machine. Does the error continue?	Replace the main drive motor. See **"Main drive motor removal" on page 574**. Go to step 3.	Problem resolved.
Step 3 Reset the machine. Does the error continue?	Replace the controller board. See **"Controller board removal" on page 568**.	Problem resolved.

Media feeder service check

Action	Yes	No
Step 1 Ensure the pick roller is properly installed. Is the pick roller properly installed?	Go to step 2.	Remove and reinstall the pick roller. See **"Pick roller assembly removal" on page 559**.
Step 2 Ensure the cable for socket "INDEX / PAP OUT/ PICK MTR" on the controller board is properly connected. Is the above connection properly connected?	Go to step 3.	Reseat the connection.
Step 3 Reset the machine. Does the error continue?	Replace the media feeder. See **"Media feeder removal" on page 575**. Go to step 4.	Problem resolved.

Action	Yes	No
Step 4 Reset the machine. Does the error continue?	Replace the controller board. See **"Controller board removal" on page 568**.	Problem resolved.

Redrive motor service check

Action	Yes	No
Step 1 Ensure the cable for socket "REDRIVE" on the controller board is properly connected. Is the above connection properly connected?	Go to step 2.	Reseat the connection.
Step 2 Reset the machine. Does the error continue?	Replace the upper redrive. See **"Upper redrive removal" on page 549**. Go to step 3.	Problem resolved.
Step 3 Reset the machine. Does the error continue?	Replace the controller board. See **"Controller board removal" on page 568**.	Problem resolved.

15y errors

15y error messages

Error code	Description	Action
150.00	Duplex motor encoder never detected	Go to **"Duplex motor service check" on page 307**.
155.00	Toner add motor encoder never detected	Go to **"Toner add motor service check" on page 307**.

Duplex motor service check

Action	Yes	No
Step 1 Ensure the cable for socket "DUPLEX MTR" on the controller board is properly connected. Is the above connection properly connected?	Go to step 2.	Reseat the connection.
Step 2 Reset the machine. Does the error continue?	Replace the duplex motor. See **"Duplex motor removal" on page 535**. Go to step 3.	The problem is resolved.
Step 3 Reset the machine. Does the error continue?	Replace the controller board. See **"Controller board removal" on page 568**.	The problem is resolved.

Toner add motor service check

Action	Yes	No
Step 1 Ensure the cable for socket J48 on the controller board is properly connected. Is the above connection properly connected?	Go to step 2.	Reseat the connection.
Step 2 Reset the machine. Does the error continue?	Replace the toner add motor. See **"Toner add motor removal" on page 580**. Go to step 3.	Problem resolved.
Step 3 Reset the machine. Does the error continue?	Replace the controller board. See **"Controller board removal" on page 568**.	Problem resolved.

17y errors

17y error messages

Error code	Description	Action
171.03	Main cooling fan error; error took too long to ramp up	Go to **"Main cooling fan service check" on page 309**.
171.04	Main cooling fan error; error under speed or stalled during speed adjustment state	
171.05	Main cooling fan error; error over speed during speed adjustment state	
171.06	Main cooling fan error; error capture data is invalid and speed control is at maximum in fan control idle state	
171.07	Main cooling fan error; error capture data is invalid and speed control is at maximum in fan control adjustment state	
172.03	Cartridge cooling fan took too long to ramp up	Go to **"Cartridge cooling fan service check" on page 309**.
172.04	Cartridge cooling fan under speed or stalled during speed adjustment state	
172.05	Cartridge cooling fan over speed during speed adjustment state	
172.06	Cartridge cooling fan capture data is invalid and speed control is at maximum in fan control idle state	
172.07	Cartridge cooling fan capture data is invalid and speed control is at maximum in fan control adjustment state	
175.03	Miscellaneous cooling fan took too long to ramp up	Go to **"Fuser cooling fan service check" on page 310**.
175.04	Miscellaneous cooling fan under speed or stalled during speed adjustment state	
175.05	Miscellaneous cooling fan over speed during speed adjustment state	
175.06	Miscellaneous cooling fan capture data is invalid and speed control is at maximum in fan control idle state	
175.07	Miscellaneous cooling fan capture data is invalid and speed control is at maximum in fan control adjustment state	

Main cooling fan service check

Action	Yes	No
Step 1 Ensure the cable for socket "M FAN" on the controller board is properly connected. Is the above connection properly connected?	Go to step 2.	Reseat the connection.
Step 2 Reset the machine. Does the error continue?	Replace the duplex motor. See **"Duplex motor removal" on page 535**.	Problem resolved.
Step 3 Reset the machine. Does the error continue?	Replace the controller board. See **"Controller board removal" on page 568**.	Problem resolved.

Cartridge cooling fan service check

Action	Yes	No
Step 1 Ensure the cable for socket "HVPS" on the controller board is properly connected. Is the above connection properly connected?	Go to step 2.	Reseat the connection.
Step 2 Reset the machine. Does the error continue?	Replace the cartridge cooling fan with cable. See **"Cartridge cooling fan removal" on page 586**. Go to step 3.	Problem resolved.
Step 3 Reset the machine. Does the error continue?	Replace the controller board. See **"Controller board removal" on page 568**.	Problem resolved.

Fuser cooling fan service check

Action	Yes	No
Step 1 Ensure the fuser cooling fan cable is properly connected. Is the above connection properly connected?	Go to step 2.	Reseat the connection.
Step 2 Reset the machine. Does the error continue?	Replace the fuser fan. Go to step 3.	Problem resolved.
Step 3 Reset the machine. Does the error continue?	Replace the controller board. See **"Controller board removal" on page 568**.	Problem resolved.

Procedure before starting the 9yy service checks

You will need to retrieve certain information. This information will aid your next level of support in diagnosing the problem before replacing the controller board.

Warning—Potential Damage: Do not replace the controller board unless directed by your next level of support.

1 Collect the history information and firmware logs (Fwdebug and logs.tar.gz) from the SE menu.

2 Collect the settings from the menu settings page.

3 Collect information from the user.

Note: Not all of the items are retrievable from the printer you are working on.

A. Collecting the history information from the SE menu

Note: Make sure that your printer is connected to a network or to a print server.

1 Open a Web browser, type **http://printer_IP_address/se**, and then press **Enter**.

   Notes:

   - **printer_IP_address** is the TCP/IP address of the printer
   - **se** is required to access the printer diagnostic information

2 Click **History Information**, copy all information, and then save it as a text file.

3 E-mail the text file to your next level of support.

B. Collecting the firmware logs (Fwdebug and logs.tar.gz) from the SE menu

Notes:

   - Make sure that your printer is connected to a network or to a print server.

- Some printers are designed to restart automatically after a 9yy error. On these printers, you can retrieve the secondary crash code information using the SE menu.

- Fwedebugs can also be referred to as LBtrace. If FWEdebugs does not appear in the list, then look for LBtrace. Multiple LBtrace logs can appear in the list of links referred to in step 2.

1 Open a Web browser, type **http://printer_IP_address/se**, and then press **Enter**.

2 Click **List Fwedebugs captured during reboots**.

Note: A list of the secondary crash codes retrieved from previous reboots will be generated. If there are Fwedebugs listed, then click **Dump Fwedebug log0**, **Dump Fwedebug log1**, and **Dump Fwedebug log2**. Clicking these links will dump the debug logs to the computer. Take note of the destination folder where the logs are saved.

3 E-mail the logs to your next level of support.

Note: Some printer SE menus give you the option of clicking **Logs Gzip Compressed**. If this option is shown in the menu, then click it and retrieve the compressed log file. Take note of the destination folder where the log file is saved.

C. Collecting the settings from the menu settings page

Note: The menu settings page is different for each printer. For more information see the *User's Guide*. Your next level of support will tell you which page they want to see.

Copying the menu settings page from the Embedded Web Server (EWS)

Note: Make sure that your printer is connected to a network or to a print server.

1 Open a Web browser, type **http://printer_IP_address**, and then press **Enter**.

2 Click Settings, and then select one of the settings pages from the links shown on the page.

3 Copy all the information, and then save it as a text file.

4 E-mail the text file to your next level of support.

Printing the menu settings page

1 From the home screen, navigate to:

   Reports > **Menu Settings Page**

2 Print the menu settings page, and then use Scan to E-mail to send it to your next level of support.

D. Collecting information from the user

Ask the user for information about the following:
- Print job being run
- Operating system being used
- Print driver being used
- Other information on what was happening when the 9yy error occurred

900 errors

900 error messages

Error code	Description	Action
900.xx	RIP firmware errors	Go to **"System software error service check" on page 312**.

System software error service check

There are different types of 900.xx errors that can occur. There may be a communication problem (bad cable, network connection, and so on) software issue, or a hardware problem with the controller board, or ISP (internal solutions port). The communication and software aspects should be checked first. Determine if the problem is constant or intermittent. Use the troubleshooting procedure below to isolate the issue. Take any notes as instructed. You will need that information in the event you need to contact your next level of support.

Before troubleshooting:

1 Perform the **"Procedure before starting the 9yy service checks" on page 310**.

2 Determine the operating system used when the error occurred. If possible determine whether a PostScript or PCL file was sent to the device when the error occurred. Ask the customer which Lexmark Solutions applications are installed on the device.

Action	Yes	No
Step 1 POR the printer. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 a Write down the exact 900.xx error code displayed on the device. b Turn off the printer. c Clear the print queues. d Disconnect all communication cables, and remove all memory options. e Remove any installed ISP. f POR the printer into the Diagnostics menu. Does the error remain during startup?	Go to step 3.	Go to step 6.
Step 3 Check all the cables connected to the controller board for proper connectivity. Are the cables properly connected?	Go to step 5.	Go to step 4.

Action	Yes	No
Step 4 **a** Properly connect the cables to the controller board. **b** POR the printer into the Diagnostics menu. Does the error remain during startup?	Go to step 5.	Go to step 6.
Step 5 **a** Replace the controller board. **b** POR the printer. Does the error remain during startup? **Note:** If an error different from the original 900.xx is displayed, consult the service check for that error.	Go to step 31.	The problem is solved.
Step 6 Print the following: • Error log • Menu settings page • Network settings page Does the error remain while these pages were printing?	Go to step 31.	Go to step 7.
Step 7 **Note:** Before performing this step, write down the following information about the file being sent to the printer: • Application used • Operating system • Driver type • File type (PCL, PostScript, XPS, etc.) **a** Reattach the communications cable. **b** POR the printer. **c** Send the printer a print job. Does the error remain?	Go to step 8.	Go to step 10.
Step 8 **a** POR the printer. **b** Send a different print job to the printer. Does the error remain?	Go to step 9.	Go to step 10.

Action	Yes	No
Step 9 **a** Upgrade the firmware. **Note:** Contact your next level of support for the correct firmware level to use. **b** POR the printer. **c** Send the printer a print job. Does the error remain?	Go to step 31.	Go to step 10.
Step 10 Is the device an MFP?	Go to step 11.	Go to step 13.
Step 11 Run a copy job. Does the error remain?	Go to step 31.	Go to step 12.
Step 12 Run a scan to PC job. Does the error remain?	Go to step 31.	Go to step 13.
Step 13 Is there optional memory installed?	Go to step 14.	Go to step 16.
Step 14 **a** Reinstall the memory. **b** Send a print job to the printer. Does the error remain?	Go to step 15.	Go to step 16.
Step 15 **a** Install a Lexmark recommended memory option. **b** Send a print job to the printer. Does the error remain?	Go to step 31.	The problem is solved.
Step 16 Is there a modem installed?	Go to step 17.	Go to step 21.
Step 17 **a** Reinstall the modem. **b** POR the printer. Does the error remain?	Go to step 18.	Go to step 20.

Diagnostics and troubleshooting

Action	Yes	No
Step 18 **a** Upgrade the firmware if it was not upgraded in a previous step. **Note:** Contact your next level of support for the correct firmware level to use. **b** POR the printer. **c** Send the printer a print job. Does the error remain?	Go to step 19.	The problem is solved.
Step 19 **a** Replace the modem. **b** POR the printer. Does the error remain?	Go to step 31.	The problem is solved.
Step 20 Run a fax job. Does the error remain?	Go to step 31.	Go to step 21.
Step 21 Is there an ISP option installed?	Go to step 22.	The problem is solved.
Step 22 **a** Reinstall the first ISP option. **b** POR the printer. Does the error remain?	Go to step 24.	Go to step 23.
Step 23 Run a job to test the option. Does the error remain?	Go to step 24.	Go to step 26.
Step 24 **a** Upgrade the firmware if it was not upgraded in a previous step. **Note:** Contact your next level of support for the correct firmware level to use. **b** POR the printer. **c** Send the printer a print job. Does the error remain?	Go to step 25.	The problem is solved.
Step 25 **a** Replace the faulty ISP option. **b** POR the printer. Does the error remain?	Go to step 31.	Go to step 26.

Action	Yes	No
Step 26 Are there any more ISP options to install?	Go to step 27.	The problem is solved.
Step 27 **a** Install the next ISP option. **b** POR the printer. Does the error remain?	Go to step 29.	Go to step 28.
Step 28 Run a job to test the option. Does the error remain?	Go to step 29.	Go to step 26.
Step 29 **a** Upgrade the firmware if it was not upgraded in a previous step. 　**Note:** Contact your next level of support for the correct firmware level to use. **b** POR the printer. **c** Send the printer a print job. Does the error remain?	Go to step 30.	Go to step 26.
Step 30 **a** Replace the faulty ISP option. **b** POR the printer. Does the error remain?	Go to step 31.	Go to step 26.
Step 31 Contact your next level of support. You will need the following information: • Exact 900.xx error digits and complete error message • Printed menu settings page • Printed network settings page • Device error log • A sample print file if the error appears to be isolated to a single file • File/Application used if the error is related to specific print file • Device operating system • Driver used (PCL/PS) • Frequency of the occurrence of the error		

912 errors

912 error messages

Error code	Description	Action
912.xx	Unrecoverable Engine firmware error POR the machine. If the error re-occurs, then update the firmware. If the error continues occurring, then replace the controller board.	Go to **"Controller board removal" on page 568**.

94y errors

94y error messages

Error code	Description	Action
940.xx	RIP to engine communication failure—the zero crossing signal used for fuser control in the low voltage (LV) power supply has failed, or the wrong low voltage power supply has been installed.	Go to **"LVPS failure service check" on page 302**.
948.xx	Failed engine card—pel clock check failed. Replace the controller board.	Go to **"Controller board removal" on page 568**.
949.xx	Failed engine card—delay line calibration failure. Replace the controller board.	

950–958 errors

950–958 error messages

Error code	Description	Action
950.xx	NVRAM mismatch failure—mismatch between controller board EEPROM and control panel mirror. ".xx" codes: • 00-29—mismatch between system and mirror • 30-60—mismatch between secure and system	Go to **"NVRAM mismatch failure service check" on page 318**.
952.xx	A recoverable NVRAM Cyclic Redundancy Check (CRC) error occurred—n is the offset at which the error occurred. POR the printer.	POR the printer.
953.xx	NVRAM chip failure with mirror part Replace the controller board.	Go to **"NVRAM mirror failure service check" on page 319**.

Error code	Description	Action
954.xx	NVRAM chip failure with system part Replace the controller board.	Go to **"Controller board removal" on page 568**.
955.xx	The Code ROM or NAND flash failed the Cyclic Redundancy Check (CRC) or the NAND experienced an uncorrectable multi-bit failure. Replace the controller board.	
956.xx	RIP card failure—processor failure Replace the controller board.	
956.01	Processor Overtemp Replace the controller board.	
957.xx	RIP card failure—ASIC failure Replace the controller board.	
958.xx	Controller Board NAND Failure—printer has performed more than 100 shift and reflash operations as a result of ECC bit corrections. Replace the controller board.	

NVRAM mismatch failure service check

Warning—Potential Damage: When replacing any of the following components:

- Control panel assembly
- Controller board assembly

Replace only one component at a time. Replace the required component and perform a POR before replacing a second component listed above. If this procedure is not followed, the printer will be rendered inoperable. Never replace two or more of the components listed above without a POR after installing each one or the printer will be rendered inoperable.

Warning—Potential Damage: These components can be used as a method of troubleshooting as long as the machine is booted into diagnostic mode or is operating in diagnostic mode. Once a component has been installed in a machine and powered up into user mode, it cannot be used in another machine. It must be returned to the manufacturer.

Action	Yes	No
Step 1 Check the control panel assembly. Was the control panel assembly recently replaced?	Go to step 3.	Go to step 2.
Step 2 Check the controller board assembly. Was the controller board assembly recently replaced?	Go to step 4.	Contact next level of support.

Action	Yes	No
Step 3 Replace the current control panel assembly with the control panel assembly. Does the error remain?	Go to step 5.	The problem is solved.
Step 4 Replace the current controller board assembly with the original controller board assembly. See **"Controller board removal" on page 568**. Does the problem continue?	Go to step 6.	The problem is solved.
Step 5 Replace the original control panel assembly with a new and not previously installed control panel assembly. Does the error continue?	Contact the next level of support.	The problem is solved.
Step 6 Replace the original control panel assembly with a new and not previously installed control panel door assembly. Does the error continue?	Contact the next level of support.	The problem is solved.

NVRAM mirror failure service check

Warning—Potential Damage: When replacing any of the following components:

- Control panel assembly
- Controller board assembly

Replace only one component at a time. Replace the required component and perform a POR before replacing a second component listed above. If this procedure is not followed, then the printer will be rendered inoperable. Never replace two or more of the components listed above without a POR after installing each one, or the printer will be rendered inoperable.

Warning—Potential Damage: These components can be used as a method of troubleshooting as long as the machine is booted into diagnostic mode or is operating in diagnostic mode. Once a component has been installed in a machine and powered up into user mode, it cannot be used in another machine. It must be returned to the manufacturer.

Action	Yes	No
Step 1 POR the printer. Does the problem remain?	Go to step 2.	The problem is solved.
Step 2 Replace the control panel assembly. Does the problem remain?	Go to step 3.	The problem is solved.
Step 3 POR the printer. Does the problem remain?	Go to step 4.	The problem is solved.
Step 4 Replace the controller board. See **"Controller board removal" on page 568**. Does the problem remain?	Contact the next level of support.	The problem is solved.

959 errors

959 error messages

Error code	Description	Action
959.01	Controller verification failure of smart chip boot code Upgrade firmware. If that fails, replace the controller board.	Go to **"Controller board removal" on page 568**.
959.02	Failure to authenticate Signature Verification Code Upgrade firmware. If that fails, replace the controller board.	
959.03	Signature Verification Code failed to authenticate a code partition	
959.04	Jump to unverified address Upgrade firmware. If that fails, replace the controller board.	
959.05	Unknown Boot Failure Upgrade firmware. If that fails, replace the controller board.	
959.20	Smart chip hardware failure Replace the controller board.	
959.21	Smart chip did not respond to command request Replace the controller board.	
959.22	Challenge Secret Failure Replace the controller board.	
959.23	Smart chip self test failed during initialization Replace the controller board.	
959.24	EEPROM Retention Error (Write failure) Replace the controller board.	
959.25	Insufficient device space during HW prog Replace the controller board.	
959.26	Incremental counter reset exceeds maximum value Replace the controller board.	
959.27	Increment count failed due to maximum value limit Replace the controller board.	
959.28	Invalid SP Memory Configuration Replace the controller board.	

Error code	Description	Action
959.30	Smart chip library flagged an invalid argument(s) Replace the controller board.	Go to **"Controller board removal" on page 568**.
959.31	Smart chip library flagged an invalid device address Replace the controller board.	
959.32	Failure to initialize physical interface Replace the controller board.	
959.33	Unknown/unexpected Error Replace the controller board.	
959.34	System smart chip Bus Busy Error Replace the controller board.	
959.35	Transmission Error Replace the controller board.	
959.36	Smart chip command is invalid due to unlocked device status Replace the controller board.	
959.37	Smart chip command is invalid due to locked device status Replace the controller board.	
959.38	Incremental counter id(s) are invalid Replace the controller board.	
959.39	Invalid NV address Replace the controller board.	
959.40	Invalid smart chip command Replace the controller board.	

96y errors

96y error messages

Error code	Description	Action
960.xx	RAM Memory Error—RAM soldered on the card is bad Replace the controller board.	Go to **"Controller board removal" on page 568**.
961.xx	RAM Memory Error—optional DRAM is bad	Go to **"RAM memory error service check" on page 323**.
964.xx	Download Emulation Cyclic Redundancy Check (CRC) Error—checksum failure detected in the emulation header or emulation file.	Go to **"Download emulation cyclic redundancy service check" on page 323**.

RAM memory error service check

Action	Yes	No
Replace the bad memory card. Does the error remain?	Contact the next level of support.	The problem is solved.

Download emulation cyclic redundancy service check

Action	Yes	No
Step 1 Disable the download emulation, and then program the download emulation into the firmware card again. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Replace the firmware card and download the emulation to the new card. Does the error remain?	Contact the next level of support.	The problem is solved.

97y errors

97y error messages

Error code	Description	Action
975.xx	Network Error—unrecognizable network port	Call the next level of support.
976.xx	Network Error—unrecoverable software error in network port	
978.xx	Network Error—bad checksum while programming network port	
979.xx	Network Error—flash parts failed while programming network port	

98y errors

98y error messages

Error code	Description	Action
980.xx	Engine experiencing unreliable communication with the specified device	Call the next level of support.
981.xx	Engine protocol violation detected by the specified device	
982.xx	Communications error detected by the specified device—device can be: • Engine, Duplex, Tray x, Envelope Feeder • Output Bin x (Note: Used for single bin devices) • Bins x to y (Note: Used for multiple bin devices)	
983.xx	Invalid command received by the specified device	
984.xx	Invalid command parameter received by the specified device	

99y errors

99y error messages

Error code	Description	Action
990.xx	An equipment check condition has occurred in the specified device, but the device is unable to identify the exact component failure—device can be: • Engine, Duplex, Tray x, Envelope Feeder • Output Bin x (Note: Used for single bin devices) • Bins x to y (Note: Used for multiple bin devices)	Call the next level of support.
991.xx	The specified device has detected an equipment check in its controller board—device can be: • Engine, Duplex, Tray x, Envelope Feeder • Output Bin x (Note: Used for single bin devices) • Bins x to y (Note: Used for multiple bin devices)	

Input/output option hardware errors

321–345 errors

321 error messages

Error code	Description	Action
321.51	No encoder feedback detected from the tray 2 pick/lift motor.	Go to **"250/550-sheet media feeder failure service check" on page 329**.
321.52	Motor stop error—the tray 2 pick/lift motor kept on running some time after the motor was commanded to stop.	
321.53	The tray 2 pick/lift motor went over the normal speed	

322 error messages

Error code	Description	Action
322.54	250/550-sheet trays: No encoder feedback detected from the tray 2 transport motor.	Go to **"250/550-sheet transport motor failure service check" on page 331**.
322.54	HCIT: No encoder feedback detected from the tray 2 transport motor.	Go to **"HCIT transport motor failure service check" on page 334**.
322.55	250/550-sheet trays: Motor stop error—the tray 2 transport motor kept on running some time after the motor was commanded to stop.	Go to **"250/550-sheet transport motor failure service check" on page 331**.
322.55	HCIT: Motor stop error—the tray 2 transport motor kept on running some time after the motor was commanded to stop.	Go to **"HCIT transport motor failure service check" on page 334**.
322.56	250/550-sheet trays: The tray 2 transport motor went over the normal speed	Go to **"250/550-sheet transport motor failure service check" on page 331**.
322.56	HCIT: The tray 2 transport motor went over the normal speed	Go to **"HCIT transport motor failure service check" on page 334**.

324 error messages

Error code	Description	Action
324.57	No encoder feedback detected from the tray 2 (HCIT) lift motor.	Go to **"HCIT lift drive motor failure service check" on page 336**.
324.58	Motor stop error—the tray 2 (HCIT) lift motor kept on running some time after the motor was commanded to stop.	
324.59	The tray 2 (HCIT) lift motor went over the normal speed	

325 error messages

Error code	Description	Action
325.60	Hardware Error—tray 2 board ID unknown	Go to **"250/550-sheet controller board failure service check" on page 333**.
325.61	Hardware Error—tray 2 option type unknown	
325.62	Hardware Error—tray 2 product ID unknown)	
325.63	Hardware Error—tray 2 sensors are not plugged on the board	
325.64	Hardware Error—tray 2 lift plate failed to reach its home position	Go to **"250/550-sheet media feeder failure service check" on page 329**.

331 error messages

Error code	Description	Action
331.51	No encoder feedback detected from the tray 3 pick/lift motor.	Go to **"250/550-sheet media feeder failure service check" on page 329**.
331.52	Motor stop error—the tray 3 pick/lift motor kept on running some time after the motor was commanded to stop.	
331.53	The tray 3 pick/lift motor went over the normal speed	

332 error messages

Error code	Description	Action
332.54	250/550-sheet trays: No encoder feedback detected from the tray 3 transport motor.	Go to **"250/550-sheet transport motor failure service check" on page 331**.
332.54	HCIT: No encoder feedback detected from the tray 3 transport motor.	Go to **"HCIT transport motor failure service check" on page 334**.
332.55	250/550-sheet trays: Motor stop error—the tray 3 transport motor kept on running some time after the motor was commanded to stop.	Go to **"250/550-sheet transport motor failure service check" on page 331**.
332.55	HCIT: Motor stop error—the tray 3 transport motor kept on running some time after the motor was commanded to stop.	Go to **"HCIT transport motor failure service check" on page 334**.
332.56	250/550-sheet trays: The tray 3 transport motor went over the normal speed.	Go to **"250/550-sheet transport motor failure service check" on page 331**.
332.56	HCIT: The tray 3 transport motor went over the normal speed.	Go to **"HCIT transport motor failure service check" on page 334**.

334 error messages

Error code	Description	Action
334.57	No encoder feedback detected from the tray 3 (HCIT) lift motor.	Go to **"HCIT lift drive motor failure service check" on page 336**.
334.58	Motor stop error—the tray 3 (HCIT) lift motor kept on running some time after the motor was commanded to stop.	
334.59	The tray 3 (HCIT) lift motor went over the normal speed	

335 error messages

Error code	Description	Action
335.60	Hardware Error—tray 3 board ID unknown	Go to **"250/550-sheet controller board failure service check" on page 333**.
335.61	Hardware Error—tray 3 option type unknown	
335.62	Hardware Error—tray 3 product ID unknown	
335.63	Hardware Error—tray 3 sensors are not plugged on the board	
335.64	Hardware Error—tray 3 lift plate failed to reach its home position	Go to **"HCIT lift plate failure service check" on page 338**.

341 error messages

Error code	Description	Action
341.51	No encoder feedback detected from the tray 4 pick/lift motor.	Go to **"250/550-sheet media feeder failure service check" on page 329**.
341.52	Motor stop error—the tray 4 pick/lift motor kept on running some time after the motor was commanded to stop.	
341.53	The tray 4 pick/lift motor went over the normal speed	

342 error messages

Error code	Description	Action
342.54	250/550-sheet trays: No encoder feedback detected from the tray 4 transport motor.	Go to **"250/550-sheet transport motor failure service check" on page 331**.
342.54	HCIT: No encoder feedback detected from the tray 4 transport motor.	Go to **"HCIT transport motor failure service check" on page 334**.
342.55	250/550-sheet trays: Motor stop error—the tray 4 transport motor kept on running some time after the motor was commanded to stop.	Go to **"250/550-sheet transport motor failure service check" on page 331**.

Error code	Description	Action
342.55	HCIT: Motor stop error—the tray 4 transport motor kept on running some time after the motor was commanded to stop.	Go to **"HCIT transport motor failure service check" on page 334**.
342.56	250/550-sheet trays: The tray 4 transport motor went over the normal speed.	Go to **"250/550-sheet transport motor failure service check" on page 331**.
342.56	HCIT: The tray 4 transport motor went over the normal speed.	Go to **"HCIT transport motor failure service check" on page 334**.

344 error messages

Error code	Description	Action
344.57	No encoder feedback detected from the tray 4 (HCIT) lift motor.	Go to **"HCIT lift drive motor failure service check" on page 336**.
344.58	Motor stop error—the tray 4 (HCIT) lift motor kept on running some time after the motor was commanded to stop.	
344.59	The tray 4 (HCIT) lift motor went over the normal speed	

345 error messages

Error code	Description	Action
345.60	Hardware Error—tray 4 board ID unknown	Go to **"250/550-sheet controller board failure service check" on page 333**.
345.61	Hardware Error—tray 4 option type unknown	
345.62	Hardware Error—tray 4 product ID unknown	
345.63	Hardware Error—tray 4 sensors are not plugged on the board	
345.64	Hardware Error—tray 4 lift plate failed to reach its home position	Go to **"HCIT lift plate failure service check" on page 338**.

250/550-sheet media feeder failure service check

Action	Yes	No
Step 1 Remove the tray from the drawer and do the following: • Check the paper guides for damage. Move the paper guide and verify if it can move freely from one position to another. • Check the media size finger flag for damage. • Check the lift plate gear for damage. Manually turn the lift plate gear and check if it causes the lift plate to move upward. • Check the separator gears for damage. Manually turn the gear and check if the gears function properly. Are the above components ok?	Go to step 2.	Replace the media tray. Go to **"Media tray assembly removal" on page 596**.
Step 2 Remove the tray from the drawer and do the following: • Check the pick roller's position. The pick roller should not hang vertically; it should lean horizontally underneath the top cover of the drawer. • Make sure the pick roller is installed correctly. If not, then reinstall the pick roller. • Lower down the pick roller and then release. Check if the pick roller would spring back to its original position. • Check the pick roller for damage. Check for wear on the pick tires. Are the above components ok?	Go to step 3.	Replace the pick roller. Go to **"Drawer pick roller removal " on page 597**.
Step 3 Open the left cover and do the following: • Reseat the connector J10 on the controller board. • Check the motor cables. If damaged, then replace the transport motor. See **"Drawer transport motor removal" on page 605**. • Remove the media tray. Manually turn the transport motor encoders, and check if it causes the transport and separator gears to turn. If there is a problem with the gears, then replace the input option. See **"250/550-sheet media tray and drawer assembly removal" on page 596**. • Replace the transport motor. See **"Drawer transport motor removal" on page 605**. Does the error remain?	Replace the input option. Go to **"250/550-sheet media tray and drawer assembly removal" on page 596**. If the error persists, then go to step 4.	The problem is solved.

Action	Yes	No
Step 4 Open the media tray and do the following: • Make sure the separator roller is properly installed. • Manually turn the separator roller drive gears and check if the separator rollers would also turn. • Check the separator roller gears for damage and obstructions. Is the separator roll still ok?	Go to step 5.	Replace the separator roll.
Step 5 Remove the input option from the printer. Check the upper interface cable. If damaged, then replace the upper interface cable. See **"Drawer upper interface cable removal" on page 601**. Open the left cover and reseat the connector J1 on the controller board. POR the machine. Does the error remain?	Go to step 6.	The problem is solved.
Step 6 Check the interface cable of the printer or upper level option for damage. Is the above component in good condition?	Go to step 7.	Replace the interface cable of the printer or upper level option.
Step 7 Check the connectors on the controller board. If damaged, then replace the controller board. See **"Drawer controller board removal" on page 600**. Reseat all connectors on the controller board, then POR the machine. Does the error remain?	Replace the controller board. Go to **"Drawer controller board removal" on page 600**. If the error remains, then go to step 8.	The problem is solved.
Step 8 If the 250/550-sheet tray option is the only input option installed, then replace the 250/550-sheet tray option. See **"250/550-sheet media tray and drawer assembly removal" on page 596**. If there are multiple input options, then remove the suspected input option and install it as Tray 2. Run a print test, navigate to: **Reports** > **Device Statistics** Does the error remain?	Replace the input tray option. Go to **"250/550-sheet media tray and drawer assembly removal" on page 596**.	The problem is solved.

250/550-sheet transport motor failure service check

Action	Yes	No
Step 1 Open the media tray, and make sure to remove all obstructions. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Remove all input options and reinstall only the suspected 250/550-sheet tray option. POR into diagnostics mode and navigate to: **INPUT TRAY TESTS** > **Feed tests** > **Tray 2** Does the input option feed normally?	The problem may not be on this option tray. Reinstall the remaining input options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the input option being tested.	Go to step 3.
Step 3 Remove the tray from the drawer and do the following: • Check the paper guides for damage. Move the paper guide and verify if it can move freely from one position to another. • Check the media size finger flag for damage. • Check the lift plate gear for damage. Manually turn the lift plate gear and check if it causes the lift plate to move upward. • Check the separator gears for damage. Manually turn the gear and check if the gears function properly. Are the components functional and free of damage?	Go to step 4.	Replace the media tray. See **"Media tray assembly removal" on page 596**.
Step 4 Open the left cover and do the following: • Reseat the connector J10 on the controller board. • Check the motor cables. If damaged, then replace the transport motor. See **"Drawer transport motor removal" on page 605**. • Remove the media tray. Manually turn the transport motor encoders, and check if it causes the transport and separator gears to turn. If there is a problem with the gears, then replace the input option. See **"250/550-sheet media tray and drawer assembly removal" on page 596**. Replace the transport motor. See **"Drawer transport motor removal" on page 605**. Does the error remain?	Replace the input option. See **"250/550-sheet media tray and drawer assembly removal" on page 596**. If the error persists, then go to step 5.	The problem is solved.

Action	Yes	No
Step 5 Remove the 250/550-sheet input option and check the upper interface cable. If damaged, then replace the upper interface cable. Reseat the connector J1 on the controller board, then POR the machine. Does the error remain?	Go to step 6.	The problem is solved.
Step 6 Check the interface cable of the printer or upper level option for damage. Is the above component still ok?	Go to step 7.	Replace the interface cable of the printer or upper level option.
Step 7 Check the connectors on the controller board. If damaged, then replace the controller board. See **"Drawer controller board removal" on page 600**. Reseat all connectors on the controller board, then POR the machine. Does the error remain?	Replace the controller board. See **"Drawer controller board removal" on page 600**. If the error remains, then go to step 8.	The problem is solved.
Step 8 If the 250/550-sheet tray option is the only input option installed, then replace the 250/550-sheet tray option. See **"250/550-sheet media tray and drawer assembly removal" on page 596**. If there are multiple input options, then remove the suspected input option and install it as Tray 2. Run a print test, navigate to: **Reports** > **Device Statistics** Does the error remain?	Replace the input tray option. See **"250/550-sheet media tray and drawer assembly removal" on page 596**.	The problem is solved.

250/550-sheet controller board failure service check

Action	Yes	No
Step 1 Remove all input options and reinstall only the suspected 250/550-sheet tray option. POR into diagnostics mode and navigate to: **INPUT TRAY TESTS** > **Feed tests** > **Tray 2** Does the input option feed normally?	The problem may not be on this option tray. Reinstall the remaining input options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the input option being tested.	Go to step 2.
Step 2 Remove the input option from the printer. Check the upper interface cable. If damaged, then replace the upper interface cable. See **"Drawer upper interface cable removal" on page 601**. Open the left cover and reseat the connector J1 on the controller board. POR the machine. Does the error remain?	Go to step 3.	The problem is solved.
Step 3 Check the interface cable of the printer or upper level option for damage. Is the above component in good condition?	Go to step 4.	Replace the interface cable of the printer or upper level option.
Step 4 Check the connectors on the controller board. If damaged, then replace the controller board. See **"Drawer controller board removal" on page 600**. Reseat all connectors on the controller board, then POR the machine. Does the error remain?	Replace the controller board. Go to **"Drawer controller board removal" on page 600**. If the error remains, then go to step 5.	The problem is solved.
Step 5 If the 250/550-sheet tray option is the only input option installed, then replace the 250/550-sheet tray option. See **"250/550-sheet media tray and drawer assembly removal" on page 596**. If there are multiple input options, then remove the suspected input option and install it as Tray 2. Run a print test, navigate to: **Reports** > **Device Statistics** Does the error remain?	Replace the input tray option. Go to **"250/550-sheet media tray and drawer assembly removal" on page 596**.	The problem is solved.

HCIT transport motor failure service check

Action	Yes	No
Step 1 Open the media tray, and make sure to remove all obstructions. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Remove all input options and reinstall only the HCIT option. POR into diagnostics mode and navigate to: **INPUT TRAY TESTS** > **Feed tests** > **Tray 2** Does the input option feed normally?	The problem may not be on this option tray. Reinstall the remaining input options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the input option being tested.	Go to step 3.
Step 3 Open the media tray and do the following: • Make sure the separator roller is properly installed. • Manually turn the separator roller drive gears and check if the separator rollers would also turn. • Check the separator roller gears for damage and obstructions. Is the separator roll functional and free of damage?	Go to step 4.	Replace the separator roll.
Step 4 Remove the media tray and check the transport drive gears for damage. Manually turn the gears, and check if it causes the transport rollers to turn. If there is a problem, then replace the HCIT drawer. See **"HCIT drawer assembly removal" on page 612**. Remove the left cover, and reseat the connector J1 on the controller board. POR the machine. Does the error remain?	Go to step 5.	The problem is solved.
Step 5 Separate the HCIT from the printer. Remove also the remaining input options. Check the HCIT interface cable. If damaged, then replace the cable. See **"HCIT interface cable removal" on page 628**. Open the left cover, and reseat the connector J1 on the controller board. POR the machine. Does the error remain?	Go to step 6.	The problem is solved.

Action	Yes	No
Step 6 Remove all other options and install only the HCIT option. Does the error remain?	Go to step 8.	Go to step 7.
Step 7 Check the interface cable of the printer or upper level option for damage. Is the cable free of damage?	Go to step 8.	Replace the interface cable of the printer or upper level option.
Step 8 Check the connectors on the controller board. If damaged, then replace the controller board. See **"HCIT controller board removal" on page 623**. Reseat all connectors on the controller board, then POR the machine. Does the error remain?	Replace the controller board. See **"HCIT controller board removal" on page 623**. If the error remains, then go to step 9.	The problem is solved.
Step 9 Remove the media tray from the HCIT option and do the following: • Check if there is no problem moving the tray input guides. • Manually push the media size sensor flags and check if it would spring back to its original position. • Check the sensor (HCIT media guide) for damage. Make sure all obstructions are removed. Are the components functional and free of damage?	Go to step 10.	Replace the HCIT drawer assembly. See **"HCIT drawer assembly removal" on page 612**.
Step 10 Replace the tray. Does the error remain?	Go to step 11.	The problem is solved.
Step 11 Replace the drawer. Does the error remain?	Contact the next level of support.	The problem is solved.

HCIT lift drive motor failure service check

Action	Yes	No
Step 1 Remove the media tray from the HCIT option and do the following: • Remove all media and check the paper guides for damage. Move the paper guide and verify if it can move freely from one position to another. • Check the media size finger flag for damage. • Check the elevator plate. Manually lower down the elevator plate and check if it springs back to its original position. • Check the elevator tension cables if there are problems. • Check the elevator gears for damage. • Manually turn the drive gear and check if the other gears engaged to it will also turn. • Check if the tray can be inserted properly into the HCIT option. Are the above components ok?	Go to step 2.	Replace the media tray. Go to **"HCIT removal" on page 612**.
Step 2 Remove the media tray and do the following: • Check the lift drive gears for damage. Manually turn the gears, and check if it causes the lift drive motor encoder to turn. • Open the right cover and check the motor connections. Check the motor cables for damage. If there is a problem with the lift drive motor, then replace it. See **"HCIT lift drive motor removal" on page 626**. Remove the left cover, and reseat the connector J1 on the controller board. POR the machine. Does the error remain?	Go to step 3.	The problem is solved.
Step 3 Separate the HCIT from the printer. Remove also the remaining input options. Check the HCIT interface cable. If damaged, then replace the cable. See **"HCIT interface cable removal" on page 628**. Open the left cover, and reseat the connector J1 on the controller board. POR the machine. Does the error remain?	Go to step 4.	The problem is solved.
Step 4 Remove all other options and install only the HCIT option. Does the error remain?	Go to step 6.	Go to step 5.

Action	Yes	No
Step 5 Check the interface cable of the printer or upper level option for damage. Is the above component still ok?	Go to step 6.	Replace the interface cable of the printer or upper level option.
Step 6 Check the connectors on the controller board. If damaged, then replace the controller board. See **"HCIT controller board removal" on page 623**. Reseat all connectors on the controller board, then POR the machine. Does the error remain?	Replace the controller board. Go to **"HCIT controller board removal" on page 623**. If the error remains, then go to step 7.	The problem is solved.
Step 7 Remove the media tray from the HCIT option and do the following: - Check if there is no problem moving the tray input guides. - Manually push the media size sensor flags and check if it would spring back to its original position. - Check the sensor (HCIT media guide) for damage. Make sure all obstructions are removed. Are the above components ok?	Go to step 8.	Replace the HCIT drawer assembly. Go to **"HCIT drawer assembly removal" on page 612**.
Step 8 Replace the tray. Does the error remain?	Go to step 9.	The problem is solved.
Step 9 Replace the drawer. Does the error remain?	Contact the next level of support.	The problem is solved.

HCIT lift plate failure service check

Action	Yes	No
Step 1 Remove the media tray from the HCIT option and do the following: • Remove all media and check the paper guides for damage. Move the paper guide and verify if it can move freely from one position to another. • Check the media size finger flag for damage. • Check the elevator plate. Manually lower down the elevator plate and check if it springs back to its original position. • Check the elevator tension cables if there are problems. • Check the elevator gears for damage. • Manually turn the drive gear and check if the other gears engaged to it will also turn. • Check if the tray can be inserted properly into the HCIT option. Are the components functional and free of damage?	Go to step 2.	Replace the media tray. Go to **"HCIT removal" on page 612**.
Step 2 Remove the media tray and do the following: • Check the lift drive gears for damage. Manually turn the gears, and check if it causes the lift drive motor encoder to turn. • Open the right cover and check the motor connections. Check the motor cables for damage. If there is a problem with the lift drive motor, then replace it. See **"HCIT lift drive motor removal" on page 626**. Remove the left cover, and reseat the connector J1 on the controller board. POR the machine. Does the error remain?	Go to step 3.	The problem is solved.
Step 3 Remove the media tray from the HCIT option and do the following: • Check if there is no problem moving the tray input guides. • Manually push the media size sensor flags and check if it would spring back to its original position. • Check the sensor (HCIT media guide) for damage. Make sure all obstructions are removed. Are the above components ok?	Go to step 4.	Replace the HCIT drawer assembly. Go to **"HCIT drawer assembly removal" on page 612**.

Action	Yes	No
Step 4 Separate the HCIT from the printer. Remove also the remaining input options. Check the HCIT interface cable. If damaged, then replace the cable. See **"HCIT interface cable removal" on page 628**. Open the left cover, and reseat the connector J1 on the controller board. POR the machine. Does the error remain?	Go to step 5.	The problem is solved.
Step 5 Remove all other options and install only the HCIT option. Does the error remain?	Go to step 7.	Go to step 6.
Step 6 Check the interface cable of the printer or upper level option for damage. Is the above component still ok?	Go to step 7.	Replace the interface cable of the printer or upper level option.
Step 7 Check the connectors on the controller board. If damaged, then replace the controller board. See **"HCIT controller board removal" on page 623**. Reseat all connectors on the controller board, then POR the machine. Does the error remain?	Replace the controller board. Go to **"HCIT controller board removal" on page 623**. If the error remains, then go to step 8.	The problem is solved.
Step 8 Replace the tray. Does the error remain?	Go to step 9.	The problem is solved.
Step 9 Replace the drawer. Does the error remain?	Contact the next level of support.	The problem is solved.

371–383 errors

371–373 error messages

Error code	Description	Action
371.51	No encoder feedback detected from the output option 1/output expander main/interface motor.	Go to **"Output expander main motor service check" on page 344**.
371.52	Motor stop error—the output option 1/output expander main/interface motor kept on running some time after the motor was commanded to stop.	
372.51	No encoder feedback detected from the output option 2/output expander main/interface motor.	
372.52	Motor stop error—the output option 2/output expander main/interface motor kept on running some time after the motor was commanded to stop.	
373.51	No encoder feedback detected from the output option 3/output expander main/interface motor.	
373.52	Motor stop error—the output option 3/output expander main/interface motor kept on running some time after the motor was commanded to stop.	

375–376 error messages

Error code	Description	Action
375.51	No encoder feedback detected from the output option 1/high capacity output expander main/interface motor.	Go to **"HCOE main motor jam service check" on page 196**.
375.52	Motor stop error—the output option 1/high capacity output expander main/interface motor kept on running some time after the motor was commanded to stop.	
376.51	No encoder feedback detected from the output option 2/high capacity output expander main/interface motor.	
376.52	Motor stop error—the output option 3/output expander main/interface motor kept on running some time after the motor was commanded to stop.	

377–379 error messages

Error code	Description	Action
377.51	No encoder feedback detected from the output option 1/mailbox main/interface motor.	Go to **"Mailbox failure service check" on page 346**.
377.52	Motor stop error—the output option 1/mailbox main/interface motor kept on running some time after the motor was commanded to stop.	
378.51	No encoder feedback detected from the output option 2/mailbox main/interface motor.	
378.52	Motor stop error—the output option 2/mailbox main/interface motor kept on running some time after the motor was commanded to stop.	
379.51	No encoder feedback detected from the output option 3/mailbox main/interface motor.	
379.52	Motor stop error—the output option 3/mailbox main/interface motor kept on running some time after the motor was commanded to stop.	

381 error messages

Error code	Description	Action
381.51	Staple finisher/offset stacker: No encoder feedback detected from the output option 1/finisher/offset stacker ejector motor.	Go to **"Finisher ejector jam service check" on page 226**.
381.51	Staple, hole punch finisher: No encoder feedback detected from the output option 1/finisher/offset stacker ejector motor.	Go to **"Finisher (HPU) ejector jam service check" on page 246**.
381.52	Staple finisher/offset stacker: Motor stop error—the output option 1/finisher/offset stacker ejector motor kept on running some time after the motor was commanded to stop.	Go to **"Finisher ejector jam service check" on page 226**.
381.52	Staple, hole punch finisher: Motor stop error—the output option 1/finisher/offset stacker ejector motor kept on running some time after the motor was commanded to stop.	Go to **"Finisher (HPU) ejector jam service check" on page 246**.
381.54	Staple finisher/offset stacker: No encoder feedback detected from the output option 1/finisher/offset stacker main/interface motor.	Go to **"Finisher main motor jam service check" on page 221**.
381.54	Staple, hole punch finisher: No encoder feedback detected from the output option 1/finisher/offset stacker main/interface motor.	Go to **"Finisher (HPU) main motor jam service check" on page 241**.
381.55	Staple finisher/offset stacker: Motor stop error—the output option 1/finisher/offset stacker main/interface motor kept on running some time after the motor was commanded to stop.	Go to **"Finisher main motor jam service check" on page 221**.

Error code	Description	Action
381.55	Staple, hole punch finisher: Motor stop error—the output option 1/finisher/offset stacker main/interface motor kept on running some time after the motor was commanded to stop.	Go to **"Finisher (HPU) main motor jam service check" on page 241**.
381.56	Staple finisher/offset stacker: The output option 1/finisher/offset stacker main/interface motor went over the normal speed	Go to **"Finisher main motor jam service check" on page 221**.
381.56	Staple, hole punch finisher: The output option 1/finisher/offset stacker main/interface motor went over the normal speed	Go to **"Finisher (HPU) main motor jam service check" on page 241**.

382 error messages

Error code	Description	Action
382.51	Staple finisher/offset stacker: No encoder feedback detected from the output option 2/finisher/offset stacker ejector motor.	Go to **"Finisher ejector jam service check" on page 226**.
382.51	Staple, hole punch finisher: No encoder feedback detected from the output option 2/finisher/offset stacker ejector motor.	Go to **"Finisher (HPU) ejector jam service check" on page 246**.
382.52	Staple finisher/offset stacker: Motor stop error—the output option 2/finisher/offset stacker ejector motor kept on running some time after the motor was commanded to stop.	Go to **"Finisher ejector jam service check" on page 226**.
382.52	Staple, hole punch finisher: Motor stop error—the output option 2/finisher/offset stacker ejector motor kept on running some time after the motor was commanded to stop.	Go to **"Finisher (HPU) ejector jam service check" on page 246**.
382.54	Staple finisher/offset stacker: No encoder feedback detected from the output option 2/finisher/offset stacker main/interface motor.	Go to **"Finisher main motor jam service check" on page 221**.
382.54	Staple, hole punch finisher: No encoder feedback detected from the output option 2/finisher/offset stacker main/interface motor.	Go to **"Finisher (HPU) main motor jam service check" on page 241**.
382.55	Staple finisher/offset stacker: Motor stop error—the output option 2/finisher/offset stacker main/interface motor kept on running some time after the motor was commanded to stop.	Go to **"Finisher main motor jam service check" on page 221**.
382.55	Staple, hole punch finisher: Motor stop error—the output option 2/finisher/offset stacker main/interface motor kept on running some time after the motor was commanded to stop.	Go to **"Finisher (HPU) main motor jam service check" on page 241**.
382.56	Staple finisher/offset stacker: The output option 2/finisher/offset stacker main/interface motor went over the normal speed	Go to **"Finisher main motor jam service check" on page 221**.

Error code	Description	Action
382.56	Staple, hole punch finisher: The output option 2/finisher/offset stacker main/interface motor went over the normal speed	Go to **"Finisher (HPU) main motor jam service check" on page 241**.

383 error messages

Error code	Description	Action
383.51	Staple finisher/offset stacker: No encoder feedback detected from the output option 3/finisher/offset stacker ejector motor.	Go to **"Finisher ejector jam service check" on page 226**.
383.51	Staple, hole punch finisher: No encoder feedback detected from the output option 3/finisher/offset stacker ejector motor.	Go to **"Finisher (HPU) ejector jam service check" on page 246**.
383.52	Staple finisher/offset stacker: Motor stop error—the output option 3/finisher/offset stacker ejector motor kept on running some time after the motor was commanded to stop.	Go to **"Finisher ejector jam service check" on page 226**.
383.52	Staple, hole punch finisher: Motor stop error—the output option 3/finisher/offset stacker ejector motor kept on running some time after the motor was commanded to stop.	Go to **"Finisher (HPU) ejector jam service check" on page 246**.
383.54	Staple finisher/offset stacker: No encoder feedback detected from the output option 3/finisher/offset stacker main/interface motor.	Go to **"Finisher main motor jam service check" on page 221**.
383.54	Staple, hole punch finisher: No encoder feedback detected from the output option 3/finisher/offset stacker main/interface motor.	Go to **"Finisher (HPU) main motor jam service check" on page 241**.
383.55	Staple finisher/offset stacker: Motor stop error—the output option 3/finisher/offset stacker main/interface motor kept on running some time after the motor was commanded to stop.	Go to **"Finisher main motor jam service check" on page 221**.
383.55	Staple, hole punch finisher: Motor stop error—the output option 3/finisher/offset stacker main/interface motor kept on running some time after the motor was commanded to stop.	Go to **"Finisher (HPU) main motor jam service check" on page 241**.
383.56	Staple finisher/offset stacker: The output option 3/finisher/offset stacker main/interface motor went over the normal speed	Go to **"Finisher main motor jam service check" on page 221**.
383.56	Staple, hole punch finisher: The output option 3/finisher/offset stacker main/interface motor went over the normal speed	Go to **"Finisher (HPU) main motor jam service check" on page 241**.

Output expander main motor service check

Action	Yes	No
Step 1 **a** POR the machine. **b** Reseat the output option on the printer. **c** Open the rear door and clear obstructions along the paper path. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Is the output expander the only output option installed?	Go to step 5.	Go to step 3.
Step 3 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Lower interface cable removal" on page 645**. Reseat the cable J1 on the controller board, then POR the machine. Does the error remain?	Go to step 4.	The problem is solved.
Step 4 Check the auto connector end of the option below the expander. Is it free of damage?	Go to step 5.	Replace the upper interface cable of the output option under the expander.
Step 5 Remove all output options and re-install only the expander. Enter Diagnostics Menu and navigate to: **OUTPUT BIN TESTS** > **Feed Tests** > **Output Bin 1** Select **Single**. Does the output option feed normally?	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 6.
Step 6 Open the left cover. Reseat the main motor cable J4 on the controller board. Does the error remain?	Go to step 7.	The problem is solved.

Action	Yes	No
Step 7 **Note:** The sensor (OE rear door interlock) should be disabled by blocking the sensor. Open the rear door. Do a feed test. Enter Diagnostics menu, and then navigate to: **OUTPUT BIN TESTS** > **Feed to All Bins** Check if the transport rollers rotate when the test is performed. Does the main motor make the transport rollers rotate?	Go to step 8.	Replace the output expander main motor. See **"Output expander main motor removal" on page 652**.
Step 8 Check the drive gear for damage. Turn the gear and check if it has no problem moving. **Note:** To access the drive gear, see **"Output expander drive gear removal" on page 651**. Is the drive gear functional and free of damage?	Go to step 9.	Replace the output expander drive gear. See **"Output expander drive gear removal" on page 651**.
Step 9 Check the following: • Check the rear door for damage. Open the rear door, and then check if it closes properly. • Check the rear door rollers for damage. Turn the rear door rollers and check if they have no problem moving. Are the rear door components functional and free of damage?	Go to step 10.	Replace the output expander rear door. See **"Output expander rear door removal" on page 637**.
Step 10 Open the right cover, and then do the following: **a** Check the drive belt for damage. **b** Make sure the drive belt is aligned and properly seated. **c** Check if there is no problem with the tension of the drive belt. **d** Turn the gears. Check if the other gears engaged to the belt would also turn. Is the drive belt functional and free of damage?	If the error persists, then go to step 11.	Replace the output expander drive belt. See **"Output expander drive belt removal" on page 660**.
Step 11 **a** Check the belt tensioner for damage. **b** Make sure the tensioner spring is aligned and properly seated. **c** Check if there is no problem with the tension of the spring. Is the belt tensioner functional and free of damage?	If the error persists, then go to step 12.	Replace the output expander belt tensioner. See **"Output expander belt tensioner removal" on page 660**.

Action	Yes	No
Step 12 Open the left cover, reseat all connectors on the controller board and then POR the machine. Does the error remain?	Replace the controller board. See **"Output expander controller board removal" on page 644**. If the error persists, then replace the output expander option. See **"Output expander controller board removal" on page 644**.	The problem is solved.

Mailbox failure service check

Action	Yes	No
Step 1 **a** POR the machine. **b** Reseat the output option on the printer. **c** Open the rear door and clear obstructions along the paper path. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Is the mailbox the only output option installed?	Go to step 5.	Go to step 3.
Step 3 Remove all output options and re-install only the mailbox. Enter Diagnostics Menu and navigate to: **Output bin tests** > **Feed to all bins** Does the output option feed to all bins normally?	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 4.
Step 4 Check the auto connector end of the option previously installed below the mailbox. Is it free of damage?	Go to step 5.	Replace the damaged upper interface cable.

Action	Yes	No
Step 5 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Mailbox lower interface cable removal" on page 790**. Reseat the connector J1 on the controller board, then POR the machine. Does the error remain?	Go to step 6.	The problem is solved.
Step 6 Open the left cover. Reseat the main motor cable J6 on the controller board, and then POR the machine. Does the error remain?	Go to step 7.	The problem is solved.
Step 7 **Note:** The sensor (mailbox rear door interlock) should be disabled by blocking the sensor. Open the mailbox rear door. Do a feed test. Enter Diagnostics menu and navigate to: **Output bin tests** > **Feed to all bins** Check if the mailbox transport rollers rotate when the test is performed. Does the main motor make the transport rollers rotate?	Go to step 8.	Replace the mailbox main motor. See **"Mailbox main motor removal" on page 786**.
Step 8 Open the mailbox left cover. Check the main drive gear for damage and obstructions. **Note:** To access the main drive gear, see **"Mailbox main drive gear removal" on page 783**. Is the main drive gear free of damage?	Go to step 9.	Replace the mailbox main drive gear. See **"Mailbox main drive gear removal" on page 783**.
Step 9 Reseat all connectors on the controller board, then POR the machine. Does the error remain?	Replace the controller board. Go to **"Mailbox controller board removal" on page 787**. If the error persists, then replace the mailbox option. See **"Mailbox option removal" on page 768**.	The problem is solved.

Other symptoms

Base printer symptoms

Base printer symptoms

Symptom	Action
Messy output stack	Go to **"Messy output stack service check" on page 348**.
Network issues	Go to **"Network service check" on page 349**.
Dead machine	Go to **"Dead machine service check" on page 351**.
Blank display	Go to **"Blank display, five beeps service check" on page 352**.
Noise (five beeps) during power-on.	
False paper tray empty message	Go to **"False paper tray empty message service check" on page 353**.

Messy output stack service check

Action	Yes	No
Step 1 Raise the paper stop in the output bin to prevent paper from sliding out as it stacks. Does the problem remain?	Go to step 2.	The problem is solved.
Step 2 **a** Make sure that the printer supports the paper that you are using. **b** If you are using card stock or labels, make sure that all recommendations in the *Card Stock & Label Guide* are met. The document is available at **http://support.lexmark.com**. Does the problem remain?	Go to step 3.	The problem is solved.
Step 3 **a** Check if the paper was stored properly in a low-humidity environment. **b** If the paper stack has been seated in the tray for some time, remove and then flex, fan, and align paper edges. Does the problem remain?	Go to step 4.	The problem is solved.

Action	Yes	No
Step 4 Make sure that the printer is used in a supported environment. Do not operate the printer where it can be exposed to higher than normal levels of humidity. For more information, see the *User's Guide*. Does the problem remain?	Contact the next level of support.	The problem is solved.

Network service check

Note: Before starting this service check, print out the network setup page. This page is found under **Menu>Reports>Network Settings**. Consult the network administrator to verify that the physical and wireless network settings displayed on the network settings page for the device are properly configured. If a wireless network is used, then verify that the printer is in range of the host computer or wireless access point, and there is no electronic interference. Have the network administrator verify that the device is using the correct SSID, and wireless security protocols. For more network troubleshooting information, consult the Lexmark Network Setup Guide.

Actions	Yes	No
Step 1 If the device is physically connected to the network, verify that the Ethernet cable is properly connected on both ends. Is the cable properly connected?	Go to step 3. If the network is wireless, then go to step 3.	Go to step 2.
Step 2 Connect the Ethernet cable. Does this fix the problem?	Problem solved.	Go to step 3.
Step 3 Check the printer's online status under Printers and Faxes on the host computer. Delete all print jobs in the print queue. Is the printer online and in a Ready state?	Go to step 5.	Go to step 4.
Step 4 Change the printer status to online. Did this fix the issue?	Problem resolved.	Go to step 5.
Step 5 Does the IP address displayed on the network settings page match the IP address in the port of the drivers using the printer?	Go to step 10.	Go to step 6.
Step 6 Does the LAN use DHCP? **Note:** A printer should use a static IP address on a network.	Go to step 7.	Go to step 9.

Actions	Yes	No
Step 7 Are the first two segments of the IP address 169.254?	Go to step 8.	Go to step 9.
Step 8 POR the printer. Did this resolve the issue?	Problem resolved.	Go to step 10.
Step 9 Reset the address on the printer to match the IP address on the driver. Did this resolve the issue?	Problem fixed.	Go to step 10.
Step 10 Have the network administrator verify that the printer and PC's IP address have identical subnet addresses. Are the subnet addresses the same?	Go to step 12.	Go to step 11.
Step 11 Using the subnet address supplied by the network administrator, assign a unique IP address to the printer. **Note:** The printer IP address should match the IP address on the printer driver. Did this fix the problem?	Problem resolved.	Go to step 12.
Step 12 Is the device physically connected (Ethernet cable) to the network?	Go to step 13.	Go to step 15.
Step 13 Try using a different Ethernet cable. Did this fix the problem?	Problem solved.	Go to step 14.
Step 14 Have the network administrator check the network drop for activity. Is the network drop functioning properly?	Replace the controller board. See **"Controller board removal" on page 568**.	Contact the network administrator.
Step 15 Is the printer on the same wireless network as the other devices?	Go to step 17.	Go to step 16.
Step 16 Assign the correct wireless network to the printer. Did this fix the problem?	Problem resolved.	Go to step 17.
Step 17 Are the other devices on the wireless network communicating properly?	Go to step 18.	Contact the network administrator.

Actions	Yes	No
Step 18 Verify that the wireless card is properly seated on the controller board. Is the wireless card seated correctly?	Go to step 20.	Go to step 19.
Step 19 Properly reseat the wireless card. Did this fix the problem?	Problem resolved.	Go to step 20.
Step 20 If there is an attached antenna, is the antenna damaged?	Go to step 22.	Go to step 21.
Step 21 Replace the antenna. Did this fix the problem?	Problem resolved.	Go to step 22.
Step 22 Verify that the antenna is properly connected to the wireless card. Is it connected correctly?	Problem resolved.	Go to step 24.
Step 23 Properly connect the antenna. Did this fix the problem?	Problem resolved.	Go to step 24.
Step 24 Replace the wireless card. Did this fix the problem?	Problem resolved.	Go to step 25.
Step 25 Replace the controller board. See **"Controller board removal" on page 568**. Did this fix the problem?	Problem resolved.	Contact your next level of support.

Dead machine service check

Action	Yes	No
Step 1 Is the machine plugged in?	Go to step 3.	Go to step 2.
Step 2 Plug the machine in. Did this fix the problem?	The problem is solved.	Go to step 3.

Action	Yes	No
Step 3 Check the power cord for continuity. Is there continuity?	Go to step 4.	Replace the power cord.
Step 4 Check the AC line voltage to the machine. The voltage should be within the following limits: • for 110 machines—100 to 127 V AC • for 220 V machines—200 to 240 V AC Is the voltage within the limits?	Go to step 5.	Try a different outlet.
Step 5 Check the voltages on the LVPS card. • +5V at pins 17 and 19 • +24V at pins 11, 13, and 15 Are the voltages correct?	Contact the next highest level of support.	Replace the LVPS. Go to **"LVPS removal" on page 592**.

Blank display, five beeps service check

Action	Yes	No
Step 1 POR the printer. Does the problem remain?	Go to step 2.	The problem is solved.
Step 2 Make sure that the control panel flat flexible cable is properly connected to the controller board. Does the problem remain?	Go to step 3.	The problem is solved.
Step 3 Make sure that the control panel flat flexible cable is properly connected to the control panel board. Does the problem remain?	Go to step 4.	The problem is solved.
Step 4 Replace the control panel. Does the problem remain?	Contact the next level of support.	The problem is solved.

False paper tray empty message service check

Action	Yes	No
Step 1 Check the pick roller of the affected tray for damage. Does the pick roller drive train rotate freely?	Go to step 2.	Replace the pick roller.
Step 2 Check connector J50 on the controller board. Is the connector properly connected?	Go to step 3.	Replace the connection.
Step 3 **a** Remove the paper tray. **b** From the bottom of the media feeder, gently pull the pick roller down, and then check the media empty actuator for damage and binding. Is the actuator damaged or not falling under its own weight?	Go to step 4.	Contact the next level of support.
Step 4 Replace the media feeder. See **"Media feeder removal" on page 575**. Does the problem remain?	Contact the next level of support.	The problem is solved.

Input/output option symptoms

Option tray symptoms

Symptom	Action
Recurring media type error detected on the 250/550-sheet tray option.	Go to **"250/550-sheet media type error service check" on page 355**.
The 250/550-sheet tray is not detected or recognized.	Go to **"250/550-sheet tray undetected service check" on page 357**.
The 250/550-sheet option is not detected or recognized.	Go to **"250/550-sheet option undetected service check" on page 358**.
Recurring media type error detected on the HCIT option.	Go to **"HCIT media type error service check" on page 360**.
The HCIT does not detect when the media level is low.	Go to **"HCIT media low undetected service check" on page 364**.
The HCIT is not detected or recognized.	Go to **"HCIT undetected service check" on page 363**.
Incorrect media is detected on the HCIT.	Go to **"HCIT incorrect media error service check" on page 359**.

Symptom	Action
The finisher detects the side door as open even when it is closed.	Go to **"Finisher side door error service check" on page 370**.
Media doesn't exit at the assigned mailbox bin.	Go to **"Mailbox incorrect bin exit service check" on page 366**.
The stapler unit does not detect the staple cartridge.	Go to **"Finisher cartridge error service check " on page 372**
The staple finisher option is not detected or recognized.	Go to **"Finisher undetected service check" on page 373**.
The staple finisher detects media even when the bin is cleared.	Go to **"Finisher bin error service check " on page 374**.
The finisher detects the rear door as open even when it is closed.	Go to **"Finisher door undetected service check " on page 376**.
The stapler unit won't staple.	Go to **"Stapler carriage failure service check" on page 377**.
The stapler bin LED doesn't light up, media isn't detected on the output bin.	Go to **"Finisher bin media present error service check" on page 379**.
The HPU finisher does not detect the hole punch box.	Go to **"Hole punch box undetected service check" on page 383**.
The HPU finisher detects the rear door as open even when it is closed.	Go to **"Finisher door (HPU) undetected service check" on page 384**.
Holes punched are missing or misaligned.	Go to **"Missing or misaligned hole punch service check" on page 381**.
Media is stuck on the hole puncher.	Go to **"Stuck media on hole puncher service check" on page 380**.
The output expander detects the rear door as open even when it is closed.	Go to **"Output expander rear door undetected service check" on page 386**.
The output expander option is not detected or recognized.	Go to **"Output expander undetected service check" on page 387**.
The output expander detects the bin as full even when it is not.	Go to **"Output expander bin error service check" on page 388**.
The HCOE detects the bin as full even when it is not.	Go to **"HCOE bin error service check" on page 390**.
The HCOE bin can't move up or down.	Go to **"HCOE bin error service check" on page 390**.
The HCOE is not detected or recognized.	Go to **"HCOE undetected service check" on page 390**.
The HCOE detects the rear door as open even when it is closed.	Go to **"HCOE rear door undetected service check" on page 391**.

250/550-sheet media type error service check

Action	Yes	No
Step 1 Remove all input options and reinstall only the suspected 250/550-sheet tray option. POR into diagnostics mode and navigate to: **INPUT TRAY TESTS** > **Feed tests** > **Tray 2** Does the input option feed normally?	The problem may not be on this option tray. Reinstall the remaining input options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the input option being tested.	Go to step 2.
Step 2 Remove the tray from the drawer and do the following: • Check the paper guides for damage. Move the paper guide and verify if it can move freely from one position to another. • Check the media size finger flag for damage. • Check the lift plate gear for damage. Manually turn the lift plate gear and check if it causes the lift plate to move upward. • Check the separator gears for damage. Manually turn the gear and check if the gears function properly. Are the above components ok?	Go to step 3.	Replace the media tray. Go to **"250/550-sheet media tray and drawer assembly removal" on page 596**.
Step 3 Remove the tray from the drawer and do the following: • Check the pick roller's position. The pick roller should not hang vertically; it should lean horizontally underneath the top cover of the drawer. • Make sure the pick roller is installed correctly. If not, then reinstall the pick roller. • Lower down the pick roller and then release. Check if the pick roller would spring back to its original position. • Check the pick roller for damage. Check for wear on the pick tires. Are the above components ok?	Go to step 4.	Replace the pick roller. Go to **"Drawer pick roller removal " on page 597**.

Action	Yes	No
Step 4 Remove the left cover and do the following: • Lower down the media pick actuator and then release. Check if the actuator would spring back to its original position. • Manually move the media pick actuator, then check if the paper sensor flag moves along with it. Check also for damage. • On the left side of the option, manually turn the media feeder motor encoders, and check if it causes the pick tires to turn. • Make sure the sensor connections on the media feeder sensors are secure. • Check the media level sensor on the left side of the option including the sensor flag for damage. If there problems with the above components, then replace the media feeder. See **"Drawer media feeder removal " on page 603**. Reseat the connector J11 on the controller board, then POR the machine. Does the error remain?	Go to step 5.	The problem is solved.
Step 5 Remove the input option from the printer. Check the upper interface cable. If damaged, then replace the upper interface cable. See **"Drawer upper interface cable removal" on page 601**. Open the left cover and reseat the connector J1 on the controller board. POR the machine. Does the error remain?	Go to step 6.	The problem is solved.
Step 6 Check the interface cable of the printer or upper level option for damage. Is the above component in good condition?	Go to step 7.	Replace the interface cable of the printer or upper level option.
Step 7 Check the connectors on the controller board. If damaged, then replace the controller board. See **"Drawer controller board removal" on page 600**. Reseat all connectors on the controller board, then POR the machine. Does the error remain?	Replace the controller board. Go to **"Drawer controller board removal" on page 600**. If the error remains, then go to step 8.	The problem is solved.

Action	Yes	No
Step 8 If the 250/550-sheet tray option is the only input option installed, then replace the 250/550-sheet tray option. See **"250/550-sheet media tray and drawer assembly removal" on page 596**. If there are multiple input options, then remove the suspected input option and install it as Tray 2. Run a print test, navigate to: **Reports** > **Device Statistics** Does the error remain?	Replace the input tray option. Go to **"250/550-sheet media tray and drawer assembly removal" on page 596**.	The problem is solved.

250/550-sheet tray undetected service check

Action	Yes	No
Step 1 Remove the tray from the drawer and do the following: • Check the paper guides for damage. Move the paper guide and verify if it can move freely from one position to another. • Check the media size finger flag for damage. • Check the lift plate gear for damage. Manually turn the lift plate gear and check if it causes the lift plate to move upward. • Check the separator gears for damage. Manually turn the gear and check if the gears function properly. Are the above components ok?	Go to step 2.	Replace the media tray. Go to **"Media tray assembly removal" on page 596**.
Step 2 Manually push the media size sensor flags and check if it would spring back to its original position. If problems are found with the media size sensor, then replace the input option. See **"250/550-sheet media tray and drawer assembly removal" on page 596**. Open the left cover, and reseat the connector J3 on the controller board. POR the machine. Does the error remain?	Go to step 3.	The problem is solved.
Step 3 Remove the input option from the printer. Check the upper interface cable. If damaged, then replace the upper interface cable. See **"Drawer upper interface cable removal" on page 601**. Open the left cover and reseat the connector J1 on the controller board. POR the machine. Does the error remain?	Go to step 4.	The problem is solved.

Action	Yes	No
Step 4 Check the interface cable of the printer or upper level option for damage. Is the above component still ok?	Go to step 5.	Replace the interface cable of the printer or upper level option.
Step 5 Check the connectors on the controller board. If damaged, then replace the controller board. See **"Drawer controller board removal" on page 600**. Reseat all connectors on the controller board, then POR the machine. Does the error remain?	Replace the controller board. Go to **"Drawer controller board removal" on page 600**. If the error remains, then go to step 6.	The problem is solved.
Step 6 If the 250/550-sheet tray option is the only input option installed, then replace the 250/550-sheet tray option. See **"250/550-sheet media tray and drawer assembly removal" on page 596**. If there are multiple input options, then remove the suspected input option and install it as Tray 2. Run a print test, navigate to: **Reports** > **Device Statistics** Does the error remain?	Replace the input tray option. Go to **"250/550-sheet media tray and drawer assembly removal" on page 596**.	The problem is solved.

250/550-sheet option undetected service check

Action	Yes	No
a POR the machine. **b** Reseat the input options. **c** Check the upper interface cable and lower interface cable for damage. Are the interface cables free of damage?	If the error remains, then contact the next level of support.	Replace the damaged interface cable. See **"Drawer upper interface cable removal" on page 601** or **"Drawer lower interface cable removal" on page 602**.

HCIT incorrect media error service check

Action	Yes	No
Step 1 Remove the media tray from the HCIT option and do the following: • Remove all media and check the paper guides for damage. Move the paper guide and verify if it can move freely from one position to another. • Check the media size finger flag for damage. • Check the elevator plate. Manually lower down the elevator plate and check if it springs back to its original position. • Check the elevator tension cables if there are problems. • Check the elevator gears for damage. • Manually turn the drive gear and check if the other gears engaged to it will also turn. • Check if the tray can be inserted properly into the HCIT option. Are the above components ok?	Go to step 2.	Replace the media tray. Go to **"HCIT removal" on page 612**.
Step 2 Remove the media tray from the HCIT option and do the following: • Check if there is no problem moving the tray input guides. • Manually push the media size sensor flags and check if it would spring back to its original position. • Check the sensor (HCIT media guide) for damage. Make sure all obstructions are removed. Are the above components ok?	Go to step 3.	Replace the HCIT drawer assembly. Go to **"HCIT drawer assembly removal" on page 612**.
Step 3 Check the HCIT media guide for damage. Check if the spring of the media guide functions properly when the guide is released. Is the above component ok?	Go to step 4.	Replace the HCIT media guide. Go to **"HCIT media guide removal" on page 614**.
Step 4 Separate the HCIT from the printer. Remove also the remaining input options. Check the HCIT interface cable. If damaged, then replace the cable. See **"HCIT interface cable removal" on page 628**. Open the left cover, and reseat the connector J1 on the controller board. POR the machine. Does the error remain?	Go to step 5.	The problem is solved.
Step 5 Remove all other options and install only the HCIT option. Does the error remain?	Go to step 7.	Go to step 6.

Action	Yes	No
Step 6 Check the interface cable of the printer or upper level option for damage. Is the above component still ok?	Go to step 7.	Replace the interface cable of the printer or upper level option.
Step 7 Check the connectors on the controller board. If damaged, then replace the controller board. See **"HCIT controller board removal" on page 623**. Reseat all connectors on the controller board, then POR the machine. Does the error remain?	Replace the controller board. Go to **"HCIT controller board removal" on page 623**. If the error remains, then go to step 8.	The problem is solved.
Step 8 Replace the tray. Does the error remain?	Go to step 9.	The problem is solved.
Step 9 Replace the drawer. Does the error remain?	Contact the next level of support.	The problem is solved.

HCIT media type error service check

Action	Yes	No
Step 1 Remove the media tray from the HCIT option and do the following: • Remove all media and check the paper guides for damage. Move the paper guide and verify if it can move freely from one position to another. • Check the media size finger flag for damage. • Check the elevator plate. Manually lower down the elevator plate and check if it springs back to its original position. • Check the elevator tension cables if there are problems. • Check the elevator gears for damage. • Manually turn the drive gear and check if the other gears engaged to it will also turn. • Check if the tray can be inserted properly into the HCIT option. Are the above components ok?	Go to step 2.	Replace the media tray. Go to **"HCIT removal" on page 612**.

Action	Yes	No
Step 2 Remove the media tray from the HCIT option and do the following: • Check the pick roller's position. The pick roller should not hang vertically; it should lean horizontally underneath the top cover of the drawer. • Make sure the pick roller is installed correctly. If not, then re-install the pick roller. • Lower down the pick roller and then release. Check if the pick roller would spring back to its original position. • Check the pick roller for damage. Check for wear on the pick tires. Are the above components ok?	Go to step 3.	Replace the pick roller. Go to **"HCIT pick roller assembly removal" on page 617**.
Step 3 Remove the left cover and do the following: • Lower down the media pick actuator and then release. Check if the actuator would spring back to its original position. • Manually move the media pick actuator, then check if the paper sensor flag moves along with it. Check also for damage. • Manually turn the media feeder motor encoders gently, and check if it causes the pick tires to turn. • Make sure the sensor connections on the media feeder sensors are secure. If there problems with the above components, then replace the HCIT media feeder. See **"HCIT media feeder removal" on page 633**. Reseat the connector J11 on the controller board. Does the error remain?	Go to step 4.	The problem is solved.
Step 4 Remove the media tray from the HCIT option and do the following: • Check if there is no problem moving the tray input guides. • Manually push the media size sensor flags and check if it would spring back to its original position. • Check the sensor (HCIT media guide) for damage. Make sure all obstructions are removed. Are the above components ok?	Go to step 5.	Replace the HCIT drawer assembly. Go to **"HCIT drawer assembly removal" on page 612**.

Action	Yes	No
Step 5 Separate the HCIT from the printer. Remove also the remaining input options. Check the HCIT interface cable. If damaged, then replace the cable. See **"HCIT interface cable removal" on page 628**. Open the left cover, and reseat the connector J1 on the controller board. POR the machine. Does the error remain?	Go to step 6.	The problem is solved.
Step 6 Remove all other options and install only the HCIT option. Does the error remain?	Go to step 8.	Go to step 7.
Step 7 Check the interface cable of the printer or upper level option for damage. Is the above component still ok?	Go to step 8.	Replace the interface cable of the printer or upper level option.
Step 8 Check the connectors on the controller board. If damaged, then replace the controller board. See **"HCIT controller board removal" on page 623**. Reseat all connectors on the controller board, then POR the machine. Does the error remain?	Replace the controller board. Go to **"HCIT controller board removal" on page 623**. If the error remains, then go to step 9.	The problem is solved.
Step 9 Replace the tray. Does the error remain?	Go to step 10.	The problem is solved.
Step 10 Replace the drawer. Does the error remain?	Contact the next level of support.	The problem is solved.

HCIT undetected service check

Action	Yes	No
Step 1 Remove the media tray from the HCIT option and do the following: • Remove all media and check the paper guides for damage. Move the paper guide and verify if it can move freely from one position to another. • Check the media size finger flag for damage. • Check the elevator plate. Manually lower down the elevator plate and check if it springs back to its original position. • Check the elevator tension cables if there are problems. • Check the elevator gears for damage. • Manually turn the drive gear and check if the other gears engaged to it will also turn. • Check if the tray can be inserted properly into the HCIT option. Are the above components ok?	Go to step 2.	Replace the media tray. Go to **"HCIT removal" on page 612**.
Step 2 Remove the media tray from the HCIT option and do the following: • Check if there is no problem moving the tray input guides. • Manually push the media size sensor flags and check if it would spring back to its original position. • Check the sensor (HCIT media guide) for damage. Make sure all obstructions are removed. Are the above components ok?	Go to step 3.	Replace the HCIT drawer assembly. Go to **"HCIT drawer assembly removal" on page 612**.
Step 3 Separate the HCIT from the printer. Remove also the remaining input options. Check the HCIT interface cable. If damaged, then replace the cable. See **"HCIT interface cable removal" on page 628**. Open the left cover, and reseat the connector J1 on the controller board. POR the machine. Does the error remain?	Go to step 4.	The problem is solved.
Step 4 Remove all other options and install only the HCIT option. Does the error remain?	Go to step 6.	Go to step 5.
Step 5 Check the interface cable of the printer or upper level option for damage. Is the above component still ok?	Go to step 6.	Replace the interface cable of the printer or upper level option.

Action	Yes	No
Step 6 Check the connectors on the controller board. If damaged, then replace the controller board. See **"HCIT controller board removal" on page 623**. Reseat all connectors on the controller board, then POR the machine. Does the error remain?	Replace the controller board. Go to **"HCIT controller board removal" on page 623**. If the error remains, then go to step 7.	The problem is solved.
Step 7 Replace the tray. Does the error remain?	Go to step 8.	The problem is solved.
Step 8 Replace the drawer. Does the error remain?	Contact the next level of support.	The problem is solved.

HCIT media low undetected service check

Action	Yes	No
Step 1 Remove the media tray from the HCIT option and do the following: • Remove all media and check the paper guides for damage. Move the paper guide and verify if it can move freely from one position to another. • Check the media size finger flag for damage. • Check the elevator plate. Manually lower down the elevator plate and check if it springs back to its original position. • Check the elevator tension cables if there are problems. • Check the elevator gears for damage. • Manually turn the drive gear and check if the other gears engaged to it will also turn. • Check if the tray can be inserted properly into the HCIT option. Are the above components ok?	Go to step 2.	Replace the media tray. Go to **"HCIT removal" on page 612**.

Action	Yes	No
Step 2 Remove the media tray from the HCIT option and do the following: • Check the sensor (HCIT media low) for damage. Make sure the sensor is properly installed. • Check also the sensor flag for damage. Manually trigger the flag and check if it springs back to its original position. If there are problems with the sensor, then replace it. Go to **"Sensor (HCIT media low) with flag removal" on page 629**. Open the left cover, and reseat the connector J1 on the controller board. POR the machine. Does the error remain?	Go to step 3.	The problem is solved.
Step 3 Separate the HCIT from the printer. Remove also the remaining input options. Check the HCIT interface cable. If damaged, then replace the cable. See **"HCIT interface cable removal" on page 628**. Open the left cover, and reseat the connector J1 on the controller board. POR the machine. Does the error remain?	Go to step 4.	The problem is solved.
Step 4 Remove the media tray from the HCIT option and do the following: • Check if there is no problem moving the tray input guides. • Manually push the media size sensor flags and check if it would spring back to its original position. • Check the sensor (HCIT media guide) for damage. Make sure all obstructions are removed. Are the above components ok?	Go to step 5.	Replace the HCIT drawer assembly. Go to **"HCIT drawer assembly removal" on page 612**.
Step 5 Remove all other options and install only the HCIT option. Does the error remain?	Go to step 7.	Go to step 6.
Step 6 Check the interface cable of the printer or upper level option for damage. Is the above component still ok?	Go to step 7.	Replace the interface cable of the printer or upper level option.

Action	Yes	No
Step 7 Check the connectors on the controller board. If damaged, then replace the controller board. See **"HCIT controller board removal" on page 623**. Reseat all connectors on the controller board, then POR the machine. Does the error remain?	Replace the controller board. Go to **"HCIT controller board removal" on page 623**. If the error remains, then go to step 8.	The problem is solved.
Step 8 Replace the tray. Does the error remain?	Go to step 9.	The problem is solved.
Step 9 Replace the drawer. Does the error remain?	Contact the next level of support.	The problem is solved.

Mailbox incorrect bin exit service check

Action	Yes	No
Step 1 Is the mailbox the only output option installed?	Go to step 4.	Go to step 2.
Step 2 Remove all output options and reinstall only the mailbox. Enter Diagnostics Menu and navigate to: **Output bin tests** > **Feed to all bins**. Does the output option feed to all bins normally?	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 3.
Step 3 Check the auto connector end of the option previously installed below the mailbox. Is it free of damage?	Go to step 4.	Replace the upper interface cable of the output option previously installed under the mailbox.

Action	Yes	No
Step 4 Check the lower interface cable. If damaged, replace the lower interface cable. See **"Mailbox lower interface cable removal" on page 790**. Reseat the connector J1A on the controller board, then POR the machine. Does the error remain?	Go to step 5.	The problem is solved.

Step 5
a Open the rear door and check the three middle diverters:
   • Check the diverters for damage.
   • Move the diverters and check if the spring makes them retract to their default positions.
   • Make sure the diverter springs are aligned and properly installed.
b Do a feed test. Enter Diagnostics menu and navigate to:
Output bin tests > **Feed to all bins**
Check if the three bins connected to the three diverters are being fed.
 	
Are all the middle diverters functional and free of damage?
	Go to step 6.	Replace the defective mailbox middle diverter. See **"Mailbox middle diverter removal" on page 808**.

Step 6
a Check the top diverter:
   • Check the diverter for damage.
   • Move the diverter and check if the spring makes it retract to its default position.
   • Make sure the diverter springs are aligned and properly installed.
b Do a feed test. Enter Diagnostics menu and navigate to:
Output bin tests > **Feed to all bins**
Check if the uppermost bin is being fed.
 	
Is the top diverter functional and free of damage?
	Go to step 7.	Replace the defective mailbox top diverter. See **"Mailbox top diverter removal" on page 803**.

Step 7 Open the rear door and do the following: • Check the rear door for damage. • Manually turn the rear door rollers and check if they are ok. • Check if the rear door opens and closes properly. Is the rear door functional and free of damage?	Go to step 8.	Replace the mailbox rear door. See **"Mailbox rear door removal" on page 769**.

Action	Yes	No
Step 8 Open the rear door and check the two sensors (pass through) for proper operation. Enter Diagnostics Menu and navigate to: **Output bin tests** > **Sensor test** Select the output bin assigned to the mailbox option. Does the display on the operator panel change every time the sensing area of the above sensors are interrupted or blocked?	Go to step 10.	Go to step 9.
Step 9 **a** Open the rear door and check the sensors (pass through): • Make sure the sensor is aligned and seated properly. • Check the sensor and sensor flag for damage. If damaged, then replace the sensor. See **"Sensor (mailbox pass through) removal" on page 813**. **b** Reseat the sensor connections (J3T and J3B) on the controller board. POR the machine. Does the error remain?	Go to step 10.	The problem is solved.
Step 10 Reseat all the connectors on the controller board, then POR the machine. Does the error remain?	Replace the controller board. See **"Mailbox controller board removal" on page 787**. If the error persists, then replace the mailbox. See **"Mailbox option removal" on page 768**.	The problem is solved.

Mailbox undetected service check

Action	Yes	No
Step 1 Is the mailbox the only output option installed?	Go to step 4.	Go to step 2.
Step 2 Remove all output options and reinstall only the mailbox. Enter Diagnostics Menu and navigate to: **Output bin tests** > **Feed to all bins**. Does the output option feed to all bins normally?	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 3.
Step 3 Check the auto connector end of the option previously installed below the mailbox. Is it free of damage?	Go to step 4.	Replace the upper interface cable of the output option previously installed under the mailbox.
Step 4 Check the lower interface cable. If damaged, replace the lower interface cable. See **"Mailbox lower interface cable removal" on page 790**. Reseat the connector J1A on the controller board, then POR the machine. Does the error remain?	Go to step 5.	The problem is solved.
Step 5 Reseat all the connectors on the controller board, then POR the machine. Does the error remain?	Replace the controller board. See **"Mailbox controller board removal" on page 787**. If the error persists, then replace the mailbox. See **"Mailbox option removal" on page 768**.	The problem is solved.

Finisher side door error service check

Action	Yes	No
Step 1 Is the staple finisher the only output option installed?	Go to step 4.	Go to step 2.
Step 2 Remove all output options and re-install only the staple finisher. Enter Diagnostics Menu and navigate to: **Output bin tests** > **Feed to all bins** Does the output option feed to all bins normally?	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 3.
Step 3 Check the auto connector end of the option previously installed below the staple finisher. Is it free of damage?	Go to step 4.	Replace the upper interface cable of the output option previously installed under the staple finisher.
Step 4 Check the lower interface cable. If damaged, then replace the lower interface cable. Go to **"Stapler lower interface cable removal" on page 741**. Remove the left cover. Reseat the cable J15 on the controller board, then POR the machine. Does the error remain?	Go to step 5.	The problem is solved.
Step 5 Check if the stapler cartridge access door closes properly. Make sure that obstructions are cleared and that the access door is correctly installed. Is the above component functioning properly?	Go to step 6.	Replace the stapler cartridge access door. Go to **"Stapler cartridge access door removal" on page 712**.
Step 6 Check the sensor (cartridge door interlock). Enter Diagnostics Menu and navigate to: **FINISHER TESTS** > **Sensor Test** > **Cover and Door** Does the display on the operator panel change every time the sensing area of the above sensor is interrupted or blocked?	Go to step 8.	Go to step 7.

Action	Yes	No
Step 7 Remove the left cover. Reseat the cable J20 on the controller board then POR the machine. Does the error remain?	Go to step 8.	The problem is solved.
Step 8 Check the sensor (cartridge door interlock). Make sure the sensor is stable and properly installed. Swap the sensor with another common sensor. Reseat the cable on the sensor side, then POR the machine. Does the error remain?	If the same error occurs, then go to step 9. If another error occurs, then the sensor needs to be replaced. Go to **"Sensor (cartridge door interlock) removal" on page 707**.	The problem is solved.
Step 9 Check the limit switch (door close). Make sure the switch is stable and properly installed. Do the following: • check if the switch toggles properly • check for damage Is the above component ok?	Go to step 10.	Replace the limit switch. Go to **"Stapler door close limit switch removal" on page 706**.
Step 10 Open the left cover, reseat all connectors on the controller board and then POR the machine. Does the error remain?	Replace the controller board. Go to **"Stapler controller board removal" on page 743**. If the error persists, then replace the staple finisher. Go to **"Staple finisher option removal" on page 701**.	The problem is solved.

Finisher cartridge error service check

Action	Yes	No
Step 1 Is the staple finisher the only output option installed?	Go to step 4.	Go to step 2.
Step 2 Remove all output options and re-install only the staple finisher. Enter Diagnostics Menu and navigate to: **Output bin tests** > **Feed to all bins** Does the output option feed to all bins normally?	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 3.
Step 3 Check the auto connector end of the option previously installed below the staple finisher. Is it free of damage?	Go to step 4.	Replace the upper interface cable of the output option previously installed under the staple finisher.
Step 4 Check the lower interface cable. If damaged, then replace the lower interface cable. Go to **"Stapler lower interface cable removal" on page 741**. Remove the left cover. Reseat the cable J15 on the controller board, then POR the machine. Does the error remain?	Go to step 5.	The problem is solved.
Step 5 Remove the stapler cartridge. Check the stapler cartridge and make sure obstructions are removed. Is it free of damage?	Go to step 6.	Replace the stapler cartridge.
Step 6 Remove the left cover. Reseat the cable J7 on the controller board, then POR the machine. Does the error remain?	Go to step 7.	The problem is solved.
Step 7 Remove the right cover. Reseat the two cables on the stapler cartridge end, then POR the machine. Does the error remain?	Go to step 8.	The problem is solved.

Action	Yes	No
Step 8 Remove the stapler cartridge. Using a flashlight, check the sensor (cartridge present) inside the stapler cartridge assembly. Manually actuate the sensor flag, and check if it toggles properly. Is the sensor functioning properly?	Go to step 9.	Replace the staple finisher assembly. Go to **"Staple finisher option removal" on page 701**.
Step 9 Open the left cover, reseat all connectors on the controller board and then POR the machine. Does the error remain?	Replace the controller board. Go to **"Stapler controller board removal" on page 743**. If the error persists, then replace the staple finisher assembly. Go to **"Staple finisher option removal" on page 701**.	The problem is solved.

Finisher undetected service check

Action	Yes	No
Step 1 Is the staple finisher the only output option installed?	Go to step 4.	Go to step 2.
Step 2 Remove all output options and re-install only the staple finisher. Enter Diagnostics Menu and navigate to: **Output bin tests** > **Feed to all bins** Does the output option feed to all bins normally?	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 3.
Step 3 Check the auto connector end of the option previously installed below the staple finisher. Is it free of damage?	Go to step 4.	Replace the upper interface cable of the output option previously installed under the staple finisher.

Action	Yes	No
Step 4 Check the lower interface cable. If damaged, then replace the lower interface cable. Go to **"Stapler lower interface cable removal" on page 741**. Remove the left cover. Reseat the cable J15 on the controller board, then POR the machine. Does the error remain?	Go to step 5.	The problem is solved.
Step 5 Open the left cover. Reseat the cables (J18 and J15) on the controller board, then POR the machine. Does the error remain?	Go to step 6.	The problem is solved.
Step 6 Open the left cover, reseat all connectors on the controller board and then POR the machine. Does the error remain?	Replace the controller board. Go to **"Staple finisher option removal" on page 701**. If the error persists, then replace the staple finisher. Go to **"Staple finisher option removal" on page 701**.	The problem is solved.

Finisher bin error service check

Action	Yes	No
Step 1 Is the staple finisher the only output option installed?	Go to step 4.	Go to step 2.
Step 2 Remove all output options and reinstall only the staple finisher. Enter Diagnostics Menu and navigate to: **Output bin tests** > **Feed to all bins** Does the output option feed to all bins normally?	Perform step 2 again using the other remaining output bins.	Go to step 3.
Step 3 Check the auto connector end of the option previously installed below the staple finisher. Is it free of damage?	Go to step 4.	Replace the upper interface cable of the output option previously installed under the staple finisher.

Action	Yes	No
Step 4 Check the lower interface cable. If damaged, then replace the lower interface cable. Go to **"Stapler lower interface cable removal" on page 741**. Remove the left cover. Reseat the cable (J15) on the controller board, then POR the machine. Does the error remain?	Go to step 5.	The problem is solved.
Step 5 Check the path between the sensor (bin full receive) and the sensor (bin full send). Is it free of obstructions?	Go to step 6.	Clear the obstructions between the two sensors. Remove dirt on the sensor covers. Make sure the sensor covers are stable and properly installed; both sensors should be visible when viewed through the sensor covers.
Step 6 Open the left cover. Without disconnecting the cables, remove the controller board to access the sensor underneath. Reseat the cable (J9) on the controller board and reseat the connector on the sensor end. POR the machine. Does the error remain?	Go to step 7.	The problem is solved.
Step 7 Check the sensor (bin full receive) and sensor (bin full send). Reinstall the sensors and make sure they are correctly aligned. Are the sensors free of damage?	Go to step 8.	Replace the sensor (bin full receive) and the sensor (bin full send). Go to **"Sensor (bin full receive) removal" on page 750** and **"Sensor (bin full send) removal" on page 749**.
Step 8 Check the output bin elevator: • manually push the elevator down and check if it goes back to its home position when released • check the elevator springs if they are not dislodged or misaligned Is the above component ok?	Go to step 9.	Replace the staple finisher assembly. Go to **"Staple finisher option removal" on page 701**.

Action	Yes	No
Step 9 Open the left cover, reseat all connectors on the controller board and then POR the machine. Does the error remain?	Replace the controller board. Go to **"Stapler controller board removal" on page 743**. If the error persists, then replace the staple finisher. Go to **"Staple finisher option removal" on page 701**.	The problem is solved.

Finisher door undetected service check

Action	Yes	No
Step 1 Is the staple finisher the only output option installed?	Go to step 4.	Go to step 2.
Step 2 Remove all output options and reinstall only the staple finisher. Enter Diagnostics Menu and navigate to: **Output bin tests** > **Feed to all bins** Does the output option feed to all bins normally?	Perform step 2 again using the other remaining output bins.	Go to step 3.
Step 3 Check the auto connector end of the option previously installed below the staple finisher. Is it free of damage?	Go to step 4.	Replace the upper interface cable of the output option previously installed under the staple finisher.
Step 4 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Stapler lower interface cable removal" on page 741**. Remove the left cover. Reseat the cable (J15) on the controller board, then POR the machine. Does the error remain?	Go to step 5.	The problem is solved.

Action	Yes	No
Step 5 Open the rear door and do the following: • check if the rear door closes properly • check the rear door rollers for damage • check the locking mechanism for damage • check the rear door for damage Are the above components ok?	Go to step 6.	Replace the rear door. See **"Stapler rear door removal" on page 702**.
Step 6 Open the left cover, and check the sensor (rear door interlock) including its cable. If damaged, then replace the sensor. See **"Sensor (stapler rear door interlock) removal" on page 722**. Reseat the cable J26 on the controller board and reseat the connector on the sensor end. POR the machine. Does the error remain?	Go to step 7.	The problem is solved.
Step 7 Open the left cover, reseat all connectors on the controller board and then POR the machine. Does the error remain?	Replace the controller board. See **"Stapler controller board removal" on page 743**. If the error persists, then replace the finisher. See **"Staple finisher option removal" on page 701**.	The problem is solved.

Stapler carriage failure service check

Action	Yes	No
Step 1 Is the staple finisher the only output option installed?	Go to step 4.	Go to step 2.
Step 2 Remove all output options and re-install only the staple finisher. Enter Diagnostics Menu and navigate to: **Output bin tests** > **Feed to all bins** Does the output option feed to all bins normally?	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 3.

Action	Yes	No
Step 3 Check the auto connector end of the option previously installed below the staple finisher. Is it free of damage?	Go to step 4.	Replace the upper interface cable of the output option previously installed under the staple finisher.
Step 4 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Stapler lower interface cable removal" on page 741**. Reseat the connector J15 on the controller board, then POR the machine. Does the error remain?	Go to step 5.	The problem is solved.
Step 5 Open the staple cartridge access cover. Remove the staple cartridge, and then do the following: • Check the cartridge for damage. • Make sure the stapler carriage mechanism is free from obstruction. Remove excess staple wire and media fragments. Does the error remain?	Replace the stapler cartridge. If the error persists, then go to step 6.	The problem is solved.
Step 6 Open the left cover. Reseat the cables (J17 and J11) on the controller board, then POR the machine. Does the error remain?	Go to step 7.	The problem is solved.
Step 7 Remove the stapler carriage. Manually turn the gears to open the stapling mechanism. While open, check the area under the stapling mechanism and make sure it is free from obstructions. Is it free of damage?	Go to step 8.	Replace the stapler carriage assembly. Go to **"Stapler carriage assembly removal" on page 708**.
Step 8 Reseat all connectors on the controller board. Does the error remain?	Replace the controller board. See **"Stapler controller board removal" on page 743**. If the error persists, then replace the staple finisher. See **"Staple finisher option removal" on page 701**.	The problem is solved.

Finisher bin media present error service check

Action	Yes	No
Step 1 Is the staple finisher the only output option installed?	Go to step 4.	Go to step 2.
Step 2 Remove all output options and re-install only the staple finisher. Enter Diagnostics Menu and navigate to: **Output bin tests** > **Feed to all bins** Does the output option feed to all bins normally?	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 3.
Step 3 Check the auto connector end of the option previously installed below the staple finisher. Is it free of damage?	Go to step 4.	Replace the upper interface cable of the output option previously installed under the staple finisher.
Step 4 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Stapler lower interface cable removal" on page 741**. Reseat the cable J15 on the controller board, then POR the machine. Does the error remain?	Go to step 5.	The problem is solved.
Step 5 Open the left and top covers. Check the stapler output bin LED. If damaged, then replace the bin LED. See **"Stapler output bin LED removal" on page 738**. Reseat the cable J21 on the controller board and reseat the connector on the bin LED end. POR the machine. Does the error remain?	Go to step 6.	The problem is solved.
Step 6 Reseat the cable J12 on the controller board, then POR the machine. Does the error remain?	Go to step 7.	The problem is solved.

Action	Yes	No
Step 7 Check the sensor (finisher bin media present) and do the following: • Check for damage. • Move the sensor flag and check if it toggles properly. Is the sensor functional and free of damage?	Go to step 8.	Replace the sensor (finisher bin media present). See **"Sensor (finisher bin media present) removal" on page 733**.
Step 8 Reseat all connectors on the controller board. Does the error remain?	Replace the controller board. See **"Stapler controller board removal" on page 743**. If the error persists, then replace the staple finisher. See **"Staple finisher option removal" on page 701**.	The problem is solved.

Stuck media on hole puncher service check

Action	Yes	No
Step 1 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Staple, hole punch lower interface cable removal" on page 839**. Remove the left cover. Reseat the cable J15 on the controller board, then POR the machine. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 a Open the rear door. Clear all obstructions on the hole punching area. Rotate the gear engaged to the hole puncher to release stuck media fragments. b Open the left and right cover. Reseat the cables J23, J19, and J17 on the HPU controller board. Reseat the same cables on their sensor and motor end. c Do a Hole punch test. Enter Diagnostics menu, and navigate to: **FINISHER TESTS** > **Hole Punch Test** Is the hole puncher functional?	If the error persists, then go to step 3.	Replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**.
Step 3 POR the machine. Does the error remain?	Replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**.	The problem is solved.

Missing or misaligned hole punch service check

Action	Yes	No
Step 1 **a** Open the rear door, and then remove all obstructions along the paper path. **b** POR the machine. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Staple, hole punch lower interface cable removal" on page 839**. Remove the left cover. Reseat the cable J15 on the controller board, then POR the machine. Does the error remain?	Go to step 3.	The problem is solved.
Step 3 Do the following: • Open, and then close the rear door. Check if the rear door closes properly. • Check the rear door rollers for damage. • Remove all obstructions along the paper path. Is the rear door functional and free of damage?	If the error persists, then go to step 4.	Replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**.
Step 4 **a** Open the rear door. Clear all obstructions on the hole punching area. Rotate the gear engaged to the hole puncher to release stuck media fragments. **b** Open the left and right cover. Reseat the cables J23, J19, and J17 on the HPU controller board. Reseat the same cables on their sensor and motor end. **c** Do a Hole punch test. Enter Diagnostics menu, and navigate to: **FINISHER TESTS** > **Hole Punch Test** Is the hole puncher functional?	If the error persists, then go to step 5.	Replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**.

Action	Yes	No
Step 5 **a** Open the rear door. Check the upper and lower rollers on the finisher side for damage. **b** Open the left cover. Reseat the cable J22 on the HPU controller board. **c** Check the paper path gears for damage. **Note:** To access the gears, remove the four screws from the HPU controller board (no need to remove the board, just move it out of the way), and then remove the screws securing the grounding plate. The gears are found under the grounding plate. Are the paper path components free of damage?	If the error persists, then go to step 6.	Replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**.
Step 6 **a** Open the rear door. Remove all obstructions and media fragments on the sensor (HPU media align). **b** Open the left cover, and then reseat the sensor cables J3 and J18 on the HPU controller board. Does the error remain?	Go to step 7.	The problem is solved.
Step 7 **a** Reseat all cables on the HPU controller board. **b** Reseat the cables J27, J19, and J13 on the stapler controller board. Does the error remain?	Replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**. If the error persists, then go to step 8.	The problem is solved.
Step 8 Open the left cover, reseat all connectors on the stapler controller board and then POR the machine. Does the error remain?	Replace the stapler controller board. See **"Stapler controller board removal" on page 829**. If the error persists, then replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**.	The problem is solved.

Hole punch box undetected service check

Action	Yes	No
Step 1 **a** Empty the hole punch box. **b** Properly re-insert the hole punch box to the finisher. **c** POR the machine. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Staple, hole punch lower interface cable removal" on page 839**. Remove the left cover. Reseat the cable J15 on the controller board, then POR the machine. Does the error remain?	Go to step 3.	The problem is solved.
Step 3 **a** Remove the hole punch box. Make sure the sensor (hole punch box present) is aligned and seated properly. **b** Open the left cover. Reseat the sensor cable J1 on the HPU controller board. Does the error remain?	Replace the sensor (hole punch box present). See **"Sensor (hole punch box present) removal" on page 855**. If the error persists, then go to step 4.	The problem is solved.
Step 4 **a** Reseat all cables on the HPU controller board. **b** Reseat the cables J27, J19, and J13 on the stapler controller board. Does the error remain?	Replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**. If the error persists, then go to step 5.	The problem is solved.
Step 5 Open the left cover, reseat all connectors on the stapler controller board and then POR the machine. Does the error remain?	Replace the stapler controller board. See **"Stapler controller board removal" on page 829**. If the error persists, then replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**.	The problem is solved.

Finisher door (HPU) undetected service check

Action	Yes	No
Step 1 **a** POR the machine. **b** Open the rear door, and then remove all obstructions along the paper path. **c** Properly close the rear door. Does the error remain?	Go to step 2.	The problem is solved.
Step 2 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Staple, hole punch lower interface cable removal" on page 839**. Remove the left cover. Reseat the cable J15 on the controller board, then POR the machine. Does the error remain?	Go to step 3.	The problem is solved.
Step 3 Do the following: • Open, and then close the rear door. Check if the rear door closes properly. • Check the rear door rollers for damage. • Remove all obstructions along the paper path. Is the rear door functional and free of damage?	If the error persists, then go to step 4.	Replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**.
Step 4 **a** Open the rear door and the left cover. Make sure the sensor (HPU rear door interlock) is properly aligned and seated. **b** Reseat the sensor cable J4 on the HPU controller board. Reseat the same cable on its sensor end. Does the error remain?	Replace the sensor (HPU rear door interlock). See **"Sensor (HPU rear door interlock) removal" on page 856**. If the error persists, then go to step 5.	The problem is solved.
Step 5 **a** Reseat all cables on the HPU controller board. **b** Reseat the cables J27, J19, and J13 on the stapler controller board. Does the error remain?	Replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**. If the error persists, then go to step 6.	The problem is solved.

Action	Yes	No
Step 6 Open the left cover, reseat all connectors on the stapler controller board and then POR the machine. Does the error remain?	Replace the stapler controller board. See **"Stapler controller board removal" on page 829**. If the error persists, then replace the finisher option. See **"Staple, hole punch finisher option removal" on page 818**.	The problem is solved.

Output expander error service check

Action	Yes	No
Step 1 Is the output expander the only output option installed?	Go to step 4.	Go to step 2.
Step 2 Remove all output options and re-install only the expander. Enter Diagnostics Menu and navigate to: **Output bin tests** > **Feed Tests** > **Output Bin 1** Select **Single**. Does the output option feed normally?	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 3.
Step 3 Check the auto connector end of the option previously installed below the expander. Is it free of damage?	Go to step 4.	Replace the upper interface cable of the output option previously installed under the expander.
Step 4 Check the upper interface cable. If damaged, then replace the upper interface cable. Go to **"Upper interface cable removal" on page 645**. Remove the left cover. Reseat the upper interface cable on the controller board, then POR the machine. Does the error remain?	Go to step 5.	The problem is solved.

Action	Yes	No
Step 5 Open the left cover, reseat all connectors on the controller board. POR the machine and perform a Print test. Does the error remain?	Replace the controller board. Go to **"Output expander controller board removal" on page 644**. If the error persists, then replace the output expander. Go to **"Output expander option removal" on page 636**.	The problem is solved.

Output expander rear door undetected service check

Action	Yes	No
Step 1 Is the output expander the only output option installed?	Go to step 4.	Go to step 2.
Step 2 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Lower interface cable removal" on page 645**. Reseat the cable J1 on the controller board, then POR the machine. Does the error remain?	Go to step 3.	The problem is solved.
Step 3 Check the auto connector end of the option below the expander. Is it free of damage?	Go to step 4.	Replace the upper interface cable of the output option under the expander.
Step 4 Remove all output options and re-install only the expander. Enter Diagnostics Menu and navigate to: **OUTPUT BIN TESTS** > **Feed Tests** > **Output Bin 1** Select **Single**. Does the output option feed normally?	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 5.

Action	Yes	No
Step 5 Check the following: • Check the rear door for damage. Open the rear door, and then check if it closes properly. • Check the rear door rollers for damage. Turn the rear door rollers and check if they have no problem moving. Are the rear door components functional and free of damage?	Go to step 6.	Replace the output expander rear door. See **"Output expander rear door removal" on page 637**.
Step 6 **a** Reseat the connector of the sensor (OE rear door interlock). To access the sensor, see **"Sensor (OE rear door interlock) removal" on page 654**. **b** Reseat the same sensor cable J14 on the controller board. **c** POR the machine. Does the error remain?	Replace the sensor (OE rear door interlock). See **"Sensor (OE rear door interlock) removal" on page 654**. If the error persists, then go to step 7.	The problem is solved.
Step 7 Open the left cover, reseat all connectors on the controller board and then POR the machine. Does the error remain?	Replace the controller board. See **"Output expander controller board removal" on page 644**. If the error persists, then replace the output expander option. See **"Output expander controller board removal" on page 644**.	The problem is solved.

Output expander undetected service check

Action	Yes	No
Step 1 Is the output expander the only output option installed?	Go to step 4.	Go to step 2.
Step 2 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Lower interface cable removal" on page 645**. Reseat the cable J1 on the controller board, then POR the machine. Does the error remain?	Go to step 3.	The problem is solved.

Action	Yes	No
Step 3 Check the auto connector end of the option below the expander. Is it free of damage?	Go to step 4.	Replace the upper interface cable of the output option under the expander.
Step 4 Remove all output options and re-install only the expander. Enter Diagnostics Menu and navigate to: **OUTPUT BIN TESTS** > **Feed Tests** > **Output Bin 1** Select **Single**. Does the output option feed normally?	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 5.
Step 5 Open the left cover, reseat all connectors on the controller board and then POR the machine. Does the error remain?	Replace the controller board. See **"Output expander controller board removal" on page 644**. If the error persists, then replace the output expander option. See **"Output expander controller board removal" on page 644**.	The problem is solved.

Output expander bin error service check

Action	Yes	No
Step 1 Is the output expander the only output option installed?	Go to step 4.	Go to step 2.
Step 2 Check the lower interface cable. If damaged, then replace the lower interface cable. See **"Lower interface cable removal" on page 645**. Reseat the cable J1 on the controller board, then POR the machine. Does the error remain?	Go to step 3.	The problem is solved.
Step 3 Check the auto connector end of the option below the expander. Is it free of damage?	Go to step 4.	Replace the upper interface cable of the output option under the expander.

Action	Yes	No
Step 4 Remove all output options and re-install only the expander. Enter Diagnostics Menu and navigate to: **OUTPUT BIN TESTS** > **Feed Tests** > **Output Bin 1** Select **Single**. Does the output option feed normally?	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 5.
Step 5 **a** Open the output expander sensor cover. Reseat the sensor (media bin full) connector. **b** Make sure the sensor (media bin full) is aligned and properly seated. **c** Remove all obstructions along the flag mechanism. Check if the sensor flag has no problem moving. **d** Check the sensor flag for damage. If damaged, then replace the sensor. See **"Sensor (media bin full) with flag removal" on page 639**. **e** Reseat the sensor cable J5 on the controller board. Does the error remain?	Go to step 6.	The problem is solved.
Step 6 Check the output expander bin full flag: **a** Check the bin full flags for damage. Check if there is no problem moving the flag. **Note:** Lifting the right bin full flag causes the middle and left bin full flags to raise too. **b** Make sure the bin full flag is installed properly. Is the bin full flag functional and free of damage?	If the error persists, then go to step 7.	Replace the output expander bin full flag. See **"Output expander bin full flag removal" on page 639**.
Step 7 Open the left cover, reseat all connectors on the controller board and then POR the machine. Does the error remain?	Replace the controller board. See **"Output expander controller board removal" on page 644**. If the error persists, then replace the output expander option. See **"Output expander controller board removal" on page 644**.	The problem is solved.

HCOE bin error service check

Action	Yes	No
Step 1 **a** Remove the left and right covers. Temporarily remove the HCOE tray springs. See **"HCOE tray spring removal" on page 678**. Push the bin all the way down, and then pull it all the way up. Check if the bin is horizontally balanced and aligned. **b** Check the home position sensor flag for damage. Is the bin damaged or skewed?	Replace the HCOE bin. See **"HCOE bin removal" on page 695**.	Re-install the HCOE tray springs. Go to step 2.
Step 2 **a** Make sure the sensor (HCOE bin HP) is properly seated and aligned with the home position sensor flag. **b** Reseat the sensor cable J8 on the HCOE controller board. Does the error remain?	Go to step 3.	The problem is solved.
Step 3 Push the bin all the way down, and then release. Does the bin automatically return to its original position?	If the error persists, then go to step 4.	Replace the HCOE tray spring. See **"HCOE tray spring removal" on page 678**.
Step 4 **a** Check the tray pinion for damage. **b** Remove all obstructions along the paper path. Is the tray pinion free of damage?	Replace the HCOE. See **"High capacity output expander option removal" on page 665**.	Replace the HCOE tray pinion. See **"HCOE tray pinion removal" on page 679**.

HCOE undetected service check

Action	Yes	No
Step 1 Is the high capacity output expander the only output option installed?	Go to step 3.	Go to step 2.
Step 2 Remove all output options and re-install only the high capacity output expander. Enter Diagnostics Menu and navigate to: **Output bin tests** > **Feed to all bins** Does the output option feed to all bins normally?	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 3.

Action	Yes	No
Step 3 Check the lower interface cable. If damaged, then replace the lower interface cable. Go to **"HCOE lower interface cable removal" on page 674**. Remove the left cover. Reseat the cable J1 on the controller board, then POR the machine. Does the error remain?	Go to step 4.	The problem is solved.
Step 4 Check the auto connector end of the printer underneath the option. Is it free of damage or obstructions?	Go to step 5.	Replace the upper interface cable of the base printer.
Step 5 Reseat all connectors on the controller board, then POR the machine. Does the error remain?	Replace the controller board. See **"HCOE controller board removal" on page 672**. If the error persists, then replace the HCOE. See **"High capacity output expander option removal" on page 665**.	The problem is solved.

HCOE rear door undetected service check

Action	Yes	No
Step 1 Is the high capacity output expander the only output option installed?	Go to step 3.	Go to step 2.
Step 2 Remove all output options and re-install only the high capacity output expander. Enter Diagnostics Menu and navigate to: **Output bin tests** > **Feed to all bins** Does the output option feed to all bins normally?	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 3.

Action	Yes	No
Step 3 Check the lower interface cable. If damaged, then replace the lower interface cable. Go to **"HCOE lower interface cable removal" on page 674**. Remove the left cover. Reseat the cable J1 on the controller board, then POR the machine. Does the error remain?	Go to step 4.	The problem is solved.
Step 4 Check the auto connector end of the printer underneath the option. Is it free of damage or obstructions?	Go to step 5.	Replace the upper interface cable of the base printer.
Step 5 Check the following: • Check the rear door for damage. Open the rear door, and then check if it closes properly. • Check the rear door rollers for damage. Turn the rear door rollers and check if they have no problem moving. Are the rear door components functional and free of damage?	Go to step 6.	Replace the HCOE rear door. See **"HCOE rear door removal" on page 666**.
Step 6 **a** Reseat the connector of the sensor (HCOE rear door interlock). To access the sensor, see **"Sensor (HCOE rear door interlock) removal" on page 680**. **b** Reseat the same sensor cable J14 on the controller board. **c** POR the machine. Does the error remain?	Replace the sensor (HCOE rear door interlock). See **"Sensor (HCOE rear door interlock) removal" on page 680**. If the error persists, then go to step 7.	The problem is solved.
Step 7 Reseat all connectors on the controller board, then POR the machine. Does the error remain?	Replace the controller board. See **"HCOE controller board removal" on page 672**. If the error persists, then replace the HCOE. See **"High capacity output expander option removal" on page 665**.	The problem is solved.

Service menus

Understanding the printer control panel

Using the printer control panel

#	Use the	To
1	Display	• View the printer status. • Set up and operate the printer.
2	Select button	Submit changes made in the printer settings.
3	Arrow buttons	Scroll up and down or left and right.
4	Keypad	Enter numbers, letters, or symbols.
5	Sleep button	Enable Sleep mode or Hibernate mode. Do the following to wake the printer from Sleep mode: • Press any hard button. • Pull out Tray 1 or load paper in the multipurpose feeder. • Open a door or cover. • Send a print job from the computer. • Perform a power-on reset with the main power switch. • Attach a device to the USB port on the printer.
6	Stop or Cancel button	Stop all printer activity.
7	Back button	Return to the previous screen.
8	Home button	Go to the home screen.
9	Indicator light	Check the status of the printer.
10	USB port	Connect a flash drive to the printer. **Note:** Only the front USB port supports flash drives.

Understanding the colors of the Sleep button and indicator lights

The colors of the Sleep button and indicator lights on the printer control panel signify a certain printer status or condition.

Indicator light	Printer status
Off	The printer is off or in Hibernate mode.
Blinking green	The printer is warming up, processing data, or printing.
Solid green	The printer is on, but idle.
Blinking red	The printer requires user intervention.

Sleep button light	Printer status
Off	The printer is off, idle or in Ready state.
Solid amber	The printer is in Sleep mode.
Blinking amber	The printer is entering or waking from Hibernate mode.
Blinking amber for 0.1 second, then goes completely off for 1.9 seconds in a slow, pulsing pattern	The printer is in Hibernate mode.

Menus list

Paper Menu	Reports	Network/Ports
Default Source	Menu Settings Page	Active NIC
Paper Size/Type	Device Statistics	Standard Network [2]
Configure MP	Stapler Test	Standard USB
Substitute Size	Network Setup Page [1]	Parallel [x]
Paper Texture	Profiles List	Serial [x]
Paper Weight	Print Fonts	SMTP Setup
Paper Loading	Print Directory	
Custom Types	Asset Report	
Universal Setup		
Bin Setup		

Service menus

Security	Settings	Help
Confidential Print	General Settings	Print All Guides
Disk Wiping	Flash Drive Menu	Print Quality
Security Audit Log	Print Settings	Printing Guide
Set Date and Time		Media Guide
		Print Defects Guide
		Menu Map
		Information Guide
		Connection Guide
		Moving Guide
		Supplies Guide

[1] Depending on the printer setup, this menu item appears as Network Setup Page or Network [x] Setup Page.

[2] Depending on the printer setup, this menu item appears as Standard Network or Network [x].

Diagnostics menu

Entering the Diagnostics menu

1 Turn off the printer.

2 Press and hold **3** and **6** while turning on the printer.

Release the buttons when the splash screen appears.

REGISTRATION

These settings adjust the margins of the black plane.

To set the Registration:

1 Print a Quick test page.

  a From the Diagnostics menu, navigate to:
    REGISTRATION > **Quick Test**

  b Retain this page to determine the changes you need to make to the margin settings. The alignment diamonds in the margins should touch the margins of the page.

    The Quick test page contains the following information:
- Printer registration settings
- Code levels
- Alignment diamonds at the top, bottom, and each side
- Horizontal lines for skew adjustment
- General printer information, including current page count, installed memory, processor speed, serial number, engine ID, and controller board ID

2 Change the value of any of the margin settings.

Top Margin	-25 to +25	Increasing the value moves the image down the page. Always adjust the top before the bottom margin.
Bottom Margin	-20 to +20	Increasing the value moves the image toward the top of the page.
Left Margin	-25 to +25	Increasing the value moves the image toward the right margin. Always adjust the left before the right margin.
Right Margin	-15 to +15	Increasing the value moves the image toward the right of the page.

PRINT TESTS

This test determines if the printer can print on paper from any of the input trays. Each installed tray is available within the Print Tests menu.

The content of the test page varies depending on the paper in the selected input tray.

- If the selected tray contains paper, then a page similar to the Quick Test page is printed but without the print registration diamonds information.
- If the selected tray contains envelopes, then an envelope print test pattern is printed. If Continuous is selected, then the envelope print test pattern is printed on the first envelope and the rest of the envelopes are blank.

The Print Test page always prints one-sided, regardless of the duplex setting or the presence of the duplex option.

1 Enter the Diagnostics menu, and then select **PRINT TESTS**.

2 Select the paper source.

3 Select any of the following:

- **Single**—This option prints a single Print Test page (no buttons are active while the test page is printing).
- **Continuous**—This option continuously prints the Print Test page until **X** is pressed.

Print Quality Pages

This setting lets you view the values of a broad range of the printer settings and test the printer ability to generate an acceptable printed output.

Enter the Diagnostics menu, and then navigate to:

PRINT TESTS > **Print Quality Pages**

HARDWARE TESTS

If the hardware test fails, replace the failing part.

Panel Test

This test verifies the function of the control panel display.

1 Enter the Diagnostics menu, and then navigate to:

Hardware Tests > **Panel Test**

2 Exit the test.

Button Test

This test verifies the function of each button on the control panel.

To run the test for non-touchscreen models:

1 Enter the Diagnostics Menu, and then navigate to:

HARDWARE TESTS > **Button Test**

2 **Press** appears on the panel and an icon matching one of the control panel buttons. Press the physical button that matches the icon to start testing for its function.

3 Exit the test.

To run the test for the touch screen models:

1 Enter the Diagnostics Menu, and then navigate to:

HARDWARE TESTS > **Button Test**

A pattern matching the control panel buttons appear on the display.

2 Press the control panel button to highlight the represented button on the display.

3 Release the button to remove the highlight.

4 Exit the test.

DRAM Test

This test checks the validity of the standard and optional dynamic random access memory (DRAM). The test repeatedly writes patterns of data to the DRAM to verify that each bit in the memory can be set and read correctly.

1 Enter the Diagnostics menu, and then navigate to:

HARDWARE TESTS > **DRAM Test**

2 Testing and resetting the printer messages appear on the display.

3 After the printer resets, the results of the test appear: **DRAM Test [x] P:###### F:######**.

- **[x]** represents the size of the installed DRAM.
- **P:######** represents the number of times the memory test passed and finished successfully. The maximum pass count is 999,999.
- **F:#####** represents the number of times the memory test failed and finished with errors. The maximum pass count is 999,999.

4 After the maximum pass or fail count is reached or when all the DRAM has been tested, the test stops and the final results appear.

Serial Wrap Test

Use this test to check the operation of the Serial Port Hardware using a wrap plug. Each signal is tested. If the test fails, replace the controller board.

To run the Serial Wrap Test:

1 Disconnect the serial interface cable, and install the wrap plug.

2 From the Diagnostics menu, navigate to HARDWARE TESTS > Serial Wrap Test.

3 Select the appropriate **Serial Wrap Test** from the list. Values may include **Serial Wrap**, **Serial 1 Wrap**, **Serial 2 Wrap,** or **Serial 3 Wrap**. Each time the test finishes, the screen updates with the result. P and F represent the same numbers for DRAM. If the test passes, the Pass Count increases by 1. However, if the test fails, one of the following failure messages appears for approximately three seconds, and the Fail Count increases by 1:

```
Receive Status Interrupt Error
Status Error
Receive Data Interrupt Error
Transmit Data Interrupt Error
Transmit Empty Error
Threshold Error
Receive Data Ready Error
Break Interrupt Error
Framing Error
Parity Error
Overrun Error
Data Error
Data 232 Error
Data 422 Error
FIFO Error
DSR Error
DSR PIO Error
DSR Interrupt Error
CTS Error
CTS PIO Error
CTS Interrupt Error
```

After the maximum count is reached or a failure occurs, the test stops.

4 Press **Stop** to cancel the test.

USB HS Test Mode

1 From the Diagnostics menu, navigate to:

Hardware Tests > **USB HS Test Mode**

2 Choose the desired port, and then choose the desired test.

Ports	Tests
Port 0	Test J
Port 1	Test K
Port 2	Test SEO NAK
Port 3	Test Packet
	Test Force Enable
Single Step Get Device	
Single Step Set Feature	

3 To exit the test, POR the printer.

4 If the test fails, replace the failing USB cable.

DUPLEX TESTS

Quick Test

The Duplex quick test determines if the top margin at the back of a duplexed page is set correctly. This test prints a duplexed version of the Quick test page that can be used to adjust the duplex top margin. Use either Letter or A4 paper.

To run the Duplex quick test:

1 From the Diagnostics menu, navigate to:

Duplex Tests > **Quick Test**

2 Choose any of the following:

- Single—Prints a single Quick test page.
- Continuous—Continuously prints the Quick test pages until **X** is pressed.

The printer attempts to print the Quick test page from the default paper source. If the default paper source supports only envelopes, then the page is printed from Tray 1.

The Quick test page contains the following information:

- Printer registration settings
- Code levels
- Alignment diamonds at the top, bottom, and each side
- Horizontal lines for skew adjustment
- General printer information, including current page count, installed memory, processor speed, serial number, engine ID, and controller board ID

3 Check the Quick test page for the correct offset between the placement of the first scan line on the front and back side of a duplexed sheet.

4 If adjustment is necessary, the top margin in the Registration menu must be adjusted first. The duplex top margin offset may be adjusted next. A positive offset moves the text down the page and widens the top margin, while a negative offset moves the text up the page and narrows the top margin.

Top Margin

This setting controls the offset between the placement of the first scan line on the front and back side of a duplex sheet.

Note: If adjustment is necessary, the top margin in the Registration menu must be adjusted first. The duplex top margin may be adjusted next.

To adjust this setting:

1 From the Diagnostics menu, navigate to:

Duplex tests > **Top Margin**

2 Change the margin values.

Changing the value by 1 unit moves the margin by 1/100 in. A positive value moves the text down the page and widens the top margin. A negative value moves the text up the page and narrows the top margin.

3 Depending on the printer model, press **OK** or touch ✅ to save the desired margin value.

Sensor Test

Use this test to determine if the duplex sensor and switches are working properly.

To run this test:

1 From the Diagnostics menu, navigate to:

Duplex Tests > **Sensor Test**

2 `Testing…` appears while the printer is verifying the state of the sensor.

The control panel displays the current state of the sensor.

3 Manually actuate the sensor to make it toggle between `Open` and `Closed`. If the sensor does not toggle, then it is malfunctioning.

4 Press **X** to exit the test.

Motor Test

Use this test to test the duplex option paper feed drive system and verify that the power and velocity values are acceptable. The duplex runs the DC motor at high speed and low speed, taking an average of the power (PWM) required for each speed and calculating the KE value.

To run this test:

1 From the Diagnostics menu, navigate to:

Duplex Tests > **Motor Test**

2 When the motor stops and has passed the test, the following message appears:

`Motor Test`

`Test Passed`

3 Press **X** or **Back** to exit the test.

Duplex Feed 1

This test feeds a blank sheet of paper from Tray 1 to the duplex paper stop position 1. This test can be run using any of the supported paper sizes.

To run this test:

1 From the Diagnostics menu, navigate to:

Duplex Tests > **Duplex Feed 1**

The power indicator blinks while the paper is feeding, and **Duplex Feed 1 Feeding…** appears. This test cannot be canceled. The panel displays **Duplex Feed 1 Clear Paper** when the paper reaches the duplex paper stop position 1.

2 Remove the sheet of paper from the duplex unit, and shut the duplex door.

3 Press **X** to clear the message.

Duplex Feed 2

This test feeds a blank sheet of paper to the duplex paper stop position 2. This test can be run using any of the supported paper sizes.

To run this test:

1 From the Diagnostics menu, navigate to:

Duplex Tests > **Duplex Feed 2**

The power indicator blinks while the paper is feeding, and **Duplex Feed 2 Feeding…** appears. This test cannot be canceled.

The panel displays **Duplex Feed 2 Clear Paper** when the paper reaches the duplex paper stop position 2.

2 Remove the sheet of paper from the duplex unit, and shut the duplex door.

3 Press **X** to clear the message.

INPUT TRAY TESTS

Feed Tests

This test feeds blank pages through the paper path. It can run using any of the paper or envelope sizes supported by the printer.

To run the Feed test:

1 From the Diagnostics menu, navigate to:

Input Tray Tests > **Feed Tests**

2 Choose the input source. All installed sources appear.

3 Choose any of the following:

- **Single**—Feeds a single page.
- **Continuous**—Continuously feeds pages until **X** is pressed.

Sensor Tests

Use this test to determine if the input tray sensors are working correctly.

1 From the Diagnostics menu, navigate to:

INPUT TRAY TESTS > **Sensor Tests**

2 Select the input source. All installed sources appear.

Not all sensors appear for all trays. The following table indicates which tray sensors are available for each input source:

Input source	Empty (Input tray empty sensor)	Low (Input tray paper low sensor)	Pass through sensor
Tray 1	✓	✓	
Tray 2	✓	✓	✓
Tray 4	✓	✓	✓
Tray 5	✓	✓	✓
Multi-purpose feeder	✓		
Envelope feeder	✓		✓

3 Manually actuate each sensor. The tray empty sensor can be actuated by hand; however, a sheet of paper can be used to cover the pass through sensor.

4 Press **X** to exit the test.

OUTPUT BIN TESTS

Feed Tests

This test verifies that media can be fed to a specific output bin. No information is printed on the media.

To run the feed tests:

1 From the Diagnostics menu, navigate to:

OUTPUT BIN TESTS > **Feed Tests**

2 Select the output bin into which you want the paper to exit. All installed output bins appear.

3 Select one of the following:

- **Single**—Feeds a single page
- **Continuous**—Continuously feeds pages until **X** is pressed

Feed To All Bins

This test verifies that media can be fed to the standard bin or any installed output options. No information is printed on the media.

To run the Feed To All Bins test:

1 From the Diagnostics menu, navigate to: **OUTPUT BIN TESTS** > **Feed to All Bins**.

The printer feeds a separate piece of media to the standard bin first, then it feeds a separate piece of media to each output bin installed in order.

The test continuously prints the Print test pages until **X** is pressed.

2 Press **Back** to return to the OUTPUT BIN TESTS menu.

Sensor Test

This test verifies that the output bin sensors are working correctly.

To run the Output Bin Sensor Test:

1 From the Diagnostics menu, navigate to:

Output Bin Tests > **Sensor Test** > **Standard Bin** or **Output Bin Tests** > **Sensor Test** > [**Output bin #**]

`Testing...` appears while the printer is verifying the state of the sensor.

The control panel displays the current state of the sensor.

2 Manually actuate the sensor to make it toggle between `empty` and `full` or between `open` and `closed`, depending on the sensor. If the sensor does not toggle, then the sensor is malfunctioning.

3 Press **X** to exit the test.

Diverter Test

This test verifies that the mailbox option's output media diverters are working correctly. If more than one mailbox option is installed, then this test exercises the diverters on all installed mailbox devices.

To run the Diverter Test:

1 From the Diagnostics menu, navigate to:

OUTPUT BIN TESTS > **Diverter Test**.

`Diverter Test Testing...` appears while the printer is verifying the state of the diverter.

2 Press **X** to exit the test.

FINISHER TESTS

Staple Test

This test verifies the operation of the staple mechanism in the finisher. The printer feeds eight pieces of media to the finisher and accumulates all eight pieces in the finisher. After the last sheets are accumulated, the pack is stapled.

1 Enter Diagnostics menu, and then select **FINISHER TESTS**.

2 Select **Staple Test**.

`Staple Test Running...` appears while the test is running.

Hole Punch Test

This test verifies that media can be fed to the finisher output bin and then hole punched. The printer feeds eight pieces of blank media to the finisher and then the pages are hole-punched with a 2-hole, 3-hole, or 4-hole pattern, depending on the selected punch test.

To run this test:

1 From the Diagnostics menu, navigate to:

Finisher Tests > **Hole Punch Test**

2 Select one of the following:

- **2 Punch Test**
- **3 Punch Test**
- **4 Punch Test**

`Hole Punch Test Running...` appears while the test is running.

Feed Test

This test verifies that media can be fed from the default source to a finisher bin. Any paper size that is supported can be used. The printer feeds one blank sheet of media from the default paper source to the finisher bin.

1 Enter Diagnostics menu, and then select **FINISHER TESTS**.

2 Select **Feed Test**.

`Feed Tests Running...` appears while the test is running.

Finisher Sensor Test

This test determines if the finisher sensors are working correctly. The sensors that are tested include the following:

- **Bin Level**
  - Finisher Bin Empty
  - Bin Full sensor
  - Bin Near Full
- **Cover and Door**
  - Side Door sensor
- **Pass and Media**
  - Finisher Passthru
  - Media sensor
- **Staple Sensors**
  - Cartridge Presence sensor
  - Staple Low sensor
  - Self-priming sensor
  - Home Signal sensor

Service menus

From the Diagnostics menu, navigate to: **FINISHER TESTS** > **Finisher Sensor Test**.

- When you select a Sensor group such as **Bin Level** from the menu, `Bin Level Testing...` appears, and the sensors in that group are polled.
- After the sensors are polled, you can manually actuate each of the sensors. When the sensor is closed, `Closed` appears; when the sensor is open, `Open` appears.
- To exit the sensor test, press **Stop** (X) or touch **Back**.

BASE SENSOR TEST

Use the Base Sensor Test to determine that the sensors located inside the printer are operating correctly.

The following sensors can be checked using this test:

- Input
- Fuser exit
- Narrow media
- Control panel interlock
- Rear door interlock
- Rear lower door interlock

⚠ **CAUTION—SHOCK HAZARD:** Do not use your hand to toggle these switches. Use a nonconducting item.

To run the Base Sensor Test.

1 From the Diagnostics menu, navigate to **BASE SENSOR TEST**.

2 Choose a sensor.

3 Manually actuate the sensor to verify that it toggles. If the sensor does not toggle, then it is malfunctioning.

Sensor	Values
Input	Open
Fuser Exit	Closed
Narrow Media	
Control Panel Interlock	
Rear Door Interlock	
Rear Lower Door Interlock	

DEVICE TESTS

Quick Disk Test

This test performs a non-destructive read/write test on one block per track on the disk. If the block is good, then the saved data is written back to the disk.

1 Enter the Diagnostics menu, and then navigate to:

DEVICE TESTS > **Quick Disk Test**

2 Exit the test.

Disk Test/Clean

Warning—Potential Damage: This test destroys all data on the printer hard disk.

This test may run for approximately 1.5 hours depending on the disk size.

1 Enter the Diagnostics menu, and then navigate to:

DEVICE TESTS > **Disk Test/Clean**

You cannot cancel the test once it has started.

2 Exit the test.

Flash Test

This test verifies the condition of the flash device by writing data to it and then reading data from it.

Warning—Potential Damage: This test destroys all data on the flash device.

Note: After this test is executed, reformat the flash using the Flash Format setting in the Utilities menu.

1 From the Diagnostics menu, navigate to:

Device Tests > **Flash Test**

`Files will be lost. Go/Stop?` appears.

2 Do one of the following:

- Depending on the printer model, press **OK** or touch ✓ to continue.
- Press **X** to cancel.

   Note: When the test starts, it cannot be stopped or canceled.

3 After the test is complete, a message appears indicating a pass or fail result.

4 Press **X** to return to the Device tests menu.

5 Reformat the flash device using the Flash format setting in the Utilities menu.

PRINTER SETUP

Defaults

Warning—Potential Damage: Modification of the printer setting Defaults causes the NVRAM space to be restored to the printer factory settings.

This setting is used by the printer to determine whether U.S. or non-U.S. factory default values should be used. The following printer settings have different U.S. and non-U.S. values:

Printer default values	U.S. value	Non-U.S. value
Paper Sizes setting in the General Settings menu	U.S.	Metric
Default Paper Size (paper feeding sources which do not have hardware size sensing capabilities)	Letter	A4
Default Envelope Size (envelope feeding sources which do not have hardware size sensing capability)	10 Envelope	DL Envelope

Printer default values	U.S. value	Non-U.S. value
Fax media size	Letter	A4
PCL Symbol Set	PC-8	PC-850
PPDS Code Page	437	850
Universal Units of Measure	Inches	Millimeters

To change this setting:

1 From the Diagnostics menu, navigate to:

Printer Setup > **Defaults**

2 Choose U.S. or Non-U.S.

3 Do one of the following:

- Depending on the printer model, press **OK** or touch ✅ to save any changes.
- Press **X** to return to the Printer setup menu.

Printed Page Count

This setting gauges the amount of usage on the printer. The value of the Printed Page Count setting equals the value of the Picked Sides meter. After all print tests are completed, the value resets to zero.

Enter the Diagnostics menu, and then navigate to:

PRINTER SETUP > **Printed Page Count**

Note: The value of the setting cannot be changed manually.

Permanent Page Count (Perm page count)

This setting indicates the number of pages that are printed. After all print tests are completed, the value resets to zero.

Enter the Diagnostics menu, and then navigate to:

PRINTER SETUP > **Perm Page Count**

Note: The Permanent Page Count value cannot be reset.

Processor ID

This setting indicates the ID of the processor on the controller board.

Enter the Diagnostics menu, and then navigate to:

PRINTER SETUP > **Processor ID**

Engine Setting [x]

These settings are used by the Engine code to further customize the behavior of the printer to applications. The value of [x] is any value from 1 to 16.

Edge to Edge

When set to On, this shifts all four margins (top, bottom, left, and right) to the physical edge of the page (printable area of a supported paper size). This feature does not work in PPDS emulation.

To change this setting:

From the Diagnostics menu, navigate to **PRINTER SETUP** > **Edge to Edge**.

Parallel Strobe Adjustment (Par 1 Strobe Adj)

This setting adjusts the factory setting for the amount of time the strobe is sampled to determine that valid data is available on the parallel port.

Each time the value is increased by one, the strobe is sampled 50 nanoseconds longer. Each time the value is decreased by one, the strobe is sampled 50 nanoseconds less than the default value. The range of values is between -4 and +6, in increments of one. A value of zero indicates no change is made from the factory setting.

To change this setting:

From the Diagnostics menu, navigate to **PRINTER SETUP** > **Par 1 Strobe Adj**.

EP SETUP

EP Defaults

This setting restores each printer setting listed in EP SETUP to its factory default value. Sometimes this is used to help correct print quality problems.

To restore the EP defaults:

1 From the Diagnostics menu, navigate to:

EP Setup > **EP Defaults**

2 Select **Restore** to restore the default values, or press **X** to exit without changing the settings.

Fuser Temperature (Fuser Temp)

This setting adjusts the fuser temperature to solve problems with paper curl on low-grade paper and/or melting of letterheads on some papers.

To adjust this setting:

1 From the Diagnostics menu, navigate to:

EP Setup > **Fuser Temp**

2 Press **OK** or touch ✔ to save any changes.

Fuser Page Count

The value of this setting indicates the total number of pages that have been printed by the fuser in the space below the header.

To view the fuser page count:

From the Diagnostics menu, navigate to **EP Setup** > **Fuser Page Count**.

Note: The value of the setting cannot be changed manually.

Warm Up Time

This setting controls the amount of time the printer warms up before allowing pages to print. The range of values is between 0 and 5, where 0 is no warm-up time and 5 is up to 90 seconds of warm-up time.

To change this setting:

From the Diagnostics menu, navigate to **EP Setup** > **Warm Up Time**.

Transfer

This setting controls the transfer roll algorithm.

To adjust this setting:

1 From the Diagnostics menu, navigate to:

EP Setup > **Transfer**

2 Press **Back**.

Print Contrast

This setting controls the developer voltage offset.

To adjust this setting:

1 From the Diagnostics menu, navigate to:

EP Setup > **Print Contrast**

2 Press **OK** or touch ✔ to save any changes.

Charge Roll

This setting controls the charge roll voltage.

To adjust this setting:

1 From the Diagnostics menu, navigate to:

EP Setup > **Charge Roll**

2 Press **OK** or touch ✔ to save any changes.

Gap Adjust

The setting adjusts the minimum gap between sheets. Increasing this value may reduce curl of some printed media and eliminate some output bin stacking problems. However, increasing this value also results in slower overall performance, measured in pages per minute.

The range of values is 0 to 255, and the default value is 0.

To adjust this setting:

1 From the Diagnostics menu, navigate to:

EP Setup > **Gap Adjust**

2 Press **OK** or touch ✔ to save any changes.

Automatic Darkness Adjust (Auto Dark Adj)

When activated, this setting attempts to optimize the amount of toner used when printing with a specific operating point.

Each time this setting executes, the printer performs the following:

- Calibrates its toner density sensor
- Measures the reflectivity of its bare drum
- Prints patches on the drum and measures the reflectivity of the drum through the patches
- Cleans the transfer roll
- Calculates reflectivity ratios and operating points to attain the darkness target of each operating point
- Modifies the EP mechanism as necessary to adjust toner darkness

The cartridge smart chip controls how often this process executes.

Note: No messages are displayed on the control panel to give any indication that this test is running. The device stores the results of its most recent process in the Auto dark Adj field on the Menu settings page report.

When deactivated, the printer disables and never executes this process.

To adjust this setting:

1 From the Diagnostics menu, navigate to:

EP Setup > **Auto Dark Adj**

2 Choose **Enable** or **Disable**.

3 Press **OK** to save any changes.

REPORTS

Menu Settings Page

This setting prints the Menu Settings Page. The report prints the Diagnostics Menu settings and their current values.

To print the menu settings page:

From the Diagnostics menu, navigate to **EP Setup** > **Gap Adjust**.

Installed Licenses

This setting prints a report that lists the currently installed licenses and the feature data of each license.

To print the menu settings page:

From the Diagnostics menu, navigate to **EP Setup** > **Installed Licenses**.

EVENT LOG

Display Log

This version of the Event log displays the panel text that appeared when the event occurred.

To view the Event log:

1 From the Diagnostics menu, navigate to:

Event Log > **Display Log**

2 Press ◀ or ▶ to view the entries.

Print Log

Additional diagnostic information is available when the event log is printed. The first page of the report shows the general device information.

The specific events that appear in the report vary depending on the operational history of the printer. Logs may be printed from the following events:

- Job accounting log failures
- NV reset failures
- NV mirror entries
- 9yy and 1yy (print engine) service error entries
- Programming error entries
- Maintenance count reset entries
- Clear log entries
- Paper jam entries
- Firmware update entries
- JFFS2 partition format entries
- USB setup pkt info entries
- Supply event entries

To print the Event log:

From the Diagnostics menu, navigate to **Event Log** > **Print Log**.

Clear Log

Use this to remove all the current information in the Event log. This affects both the viewed log and the printed log information.

To clear the event log:

1 From the Diagnostics menu, navigate to:

   Event Log > **Clear Log**

2 Choose any of the following:

   • Yes—To clear the Event log

   • No—To exit the Clear log menu

Exit Diags

Select this option to exit the Diagnostics menu. The printer performs a POR and restarts in normal mode.

This menu appears as a soft button at the bottom right corner of the panel. This is always accessible to the user from the main Diagnostics menu.

Configuration menu

The Configuration menu group consists of menus, settings, and operations that are used to configure a printer for operation.

Entering the Configuration menu

The Configuration Menu group contains a set of menus, settings, and operations which are infrequently required by a user. Generally, the options made available in this menu group are used to configure a printer for operation.

1 Turn off the printer.

2 Press and hold the **2** and **6** buttons simultaneously.

3 Turn on the printer.

4 Release the buttons after 10 seconds.

Roller Kit Counter Value

When this setting is selected, the printer displays the current value for the Roller Kit counter. A print job containing a single page increments the counter by one and a duplex page by two. When the value has reached the rated life of the Roller Kit, it reminds the customer that scheduled maintenance is required. Reset this counter after an `81 Replace Roller Kit` message displays and a Roller Kit is installed. See **"Reset Roller Kit Counter" on page 413**.

To view the maintenance kit count:

1 From the Configuration menu, navigate to **Roller Kit Counter Value**.

   The value is displayed and cannot be changed.

2 Press **Back** or **X** to return to the Configuration menu.

Reset Roller Kit Counter

After scheduled maintenance, the roller count value must be reset to zero.

To reset the maintenance count value to zero:

1 From the Configuration menu, navigate to **Reset Roller Kit Counter**.

2 Depending on the printer model, press **OK** or touch ✔ to reset the counter, or press **X** to exit without resetting the counter.

Once initiated, the reset operation cannot be canceled. When the operation is complete, the menu returns to the main Configuration Menu.

Print Quality Pages

This option is a limited version of the Print quality pages setting that appears in the Diagnostics menu. See **"Print Quality Pages" on page 396**. This setting reports the values of a broad range of printer settings and tests the ability of the printer to generate acceptable printed output.

To print the report:

1 From the Configuration menu, navigate to **Print Quality Pages**.

2 Depending on the printer model, press **OK** or touch ✔ to print the pages, or press **X** to exit without printing the pages.

 `Printing Quality Test Pages` appears on the display. Once started, the printing cannot be canceled and no buttons are active until the printing completes.

Reports

Menu Settings Page

This report generates a list of the Configuration menu settings and the value of each setting.

To print the Menu settings page from the Configuration menu:

1 From the Configuration menu, navigate to:

 Reports > **Menu Settings Page**

2 Depending on the printer model, press **OK** or touch ✔ to print the page, or press **X** to return to the Configuration menu.

Event Log

This generates a printed report of the events detailed in the Print log. See **"Print Log" on page 411**.

To print the Event log from the Configuration menu:

1 From the Configuration menu, navigate to:

 Reports > **Event Log**

2 Press **X** to return to the Configuration menu.

Size sensing

This setting controls whether the printer automatically registers the size of paper installed in an input source with size sourcing.

Paper source	Size sensing
250-sheet Tray	X
500-sheet Tray	X
2100-sheet Tray	X
MP Feeder	
Duplex	

When set to Auto, a size-sensing input option automatically reports the size of media that it contains to the device. When Off, the printer ignores the size reported by the size sensing hardware. The media size can be set by the control panel or the data stream.

To change the size sensing setting:

1 From the Configuration menu, navigate to **Size sensing**.

2 Select **Auto** or **Off**, and depending on the printer model, press **OK** or touch ✓.

3 Press **Back** or **X** to return to the Configuration menu.

Tray Linking

This setting enables the printer to link automatically the trays that contain the same paper type and size.

1 Enter the Configuration menu, and then select **Tray Linking**.

2 Select a setting.

3 Apply the changes.

Panel Menus

The value of this option determines whether the control panel menus are locked or available.

To run the Feed test:

1 From the Configuration menu, navigate to **Panel Menus**.

2 Choose one of the following:

- **On**—Enables control panel menus
- **Off**—Disables control panel menus

PPDS Emulation

The value of this option determines if a printer can recognize and use the PPDS data stream.

Available options:

- Deactivate
- Activate

Download Emuls

This appears only if at least one download emulator (DLE) is installed. The default setting is Disable. All download emulators (DLEs) are reenabled automatically after two PORs.

Safe Mode

The settings for this menu item are On and Off (default). When enabled, Safe Mode lets the printer operate in a special limited mode in which it attempts to continue offering as much functionality as possible despite known issues. For more information about Safe Mode and the Safe Mode print behavior for this model, see **"Using Safe Mode" on page 62**.

To change the setting:

1 From the Configuration menu, navigate to **Safe Mode**.

2 Select **On** or **Off** to change the setting.

3 Select **Submit**.

4 POR the printer.

Factory Defaults

Warning—Potential Damage: This operation cannot be undone.

This setting enables a user to restore all of the printer settings to either the network settings (on network models only) or to the base printer settings.

To restore Factory Default settings:

1 From the Configuration menu, navigate to **Factory Defaults**.

2 Select from the available options:

- Restore Base—restores all non-critical base printer NVRAM settings.
- Restore STD Net—restores all network NVRAM settings.
- Restore LES (available on touchscreen model only)—restores the factory default values for all framework, standard applications and eSF configuration by removing all non-standard applications; and clears the SE logs.

After this setting is changed, the device automatically performs a POR, and restores the appropriate settings to their factory default values.

Energy Conserve

This setting controls which values appear on the Power Saver menu.

To change the setting:

1 From the Configuration menu, navigate to **Energy Conserve**.

2 Select **On** or **Off**.

If On (default), then the Sleep Mode cannot be turned off. If Off, then `Disabled` appears on the Sleep Mode menu, and it can be turned off.

Paper Prompts

This controls which tray a change prompt is directed to when paper is sensed to be the wrong size.

Note: The value of may override the value of this setting.

To change this setting:

1 From the Configuration menu, navigate to **Paper Prompts**.

2 Select from the available options:
- Auto (default)
- Multi-purpose Feeder
- Manual Paper

3 Depending on the printer model, press **OK** or touch ✅ to save the setting, or press **X** to return to the Configuration menu without saving any changes.

When it is set to **Auto**, the emulator selected to print the job determines which of the installed input sources will receive the change prompt. When set to a value other than Auto, the selected source always receives this type of prompt.

Envelope Prompts

This controls which tray a change prompt is directed to when the envelopes are sensed to be the wrong size.

Note: The value of may override the value of this setting.

To change this setting:

1 From the Configuration menu, navigate to **Envelope Prompts**.

2 Select from the available options:
- Auto (default)
- Multi-purpose Feeder
- Manual Envelope

3 Depending on the printer model, press **OK** or touch ✅ to save the setting, or press **X** to return to the Configuration menu without saving any changes.

When it is set to **Auto**, the emulator selected to print the job determines which of the installed input sources will receive the change prompt. When set to a value other than Auto, the selected source always receives this type of prompt.

Action for Prompts

This setting enables a user to determine which input source would receive paper-related or envelope-related change prompts when they occur. Regardless of the target source, the printer always requires some type of user assistance to resolve the change prompt (examples: pushing a button to ignore the prompt and changing the source's installed media). However, this setting gives a user the option of having the printer resolve change prompt situations without requiring any user assistance.

To change this setting:

1 From the Configuration menu, navigate to **Action for Prompts**.

2 Select from the available options to change the setting.

- Prompt User (default)
- Continue
- Use Current

3 Depending on the printer model, press **OK** or touch ✓ to save the setting, or press **X** to return to the Configuration menu without saving any changes.

When set to **Prompt user**, the printer behaves like the past implementation. When a change prompt occurs, the printer stops printing, posts the change prompt to the target source, and waits for the user to select an action before continuing.

When set to **Continue**, the printer automatically assumes that the user selects **Continue** every time a change prompt is encountered. Likewise, when the device is set to **Use Current**, all change prompts will perform as if **Use Current** was selected by the user.

Jobs on Disk

This setting appears only if a hard disk is installed. It allows buffered jobs to be deleted from the disk. This does not affect Print and Hold or parked jobs.

To change the setting:

1 From the Configuration menu, navigate to **Jobs on Disk**.

2 Select from the available options to change the setting:

- Delete
- Do Not Delete (default)

3 Press **X** to return to the Configuration menu.

Disk Encryption

Warning—Potential Damage: If the settings are changed, then the printer completely formats the hard disk. All information on the disk will be unrecoverable.

This setting appears only if a hard disk is installed. It controls whether the printer encrypts the information that it writes to the hard disk.

To change the setting:

1 From the Configuration menu, navigate to **Disk Encryption**.

2 Select from the available options to change the setting.

- Enable—enables encryption of hard disk.
- Disable (default)—enables formatting of hard disk.

3 `Contents will be lost. Continue?` appears. Select **Yes** to proceed with the encryption or formatting of the disk, or **No** to cancel the operation. If Yes is selected, then a progress bar appears on the display that indicates the overall completion of the selected operation. After completion, the display returns to Disk Encryption.

Wipe All Settings

This makes any sensitive information that may exist on the volatile or non-volatile storage of the device completely indecipherable. When selected, the printer performs a non-critical NVRAM reset and then reboots.

Font Sharpening

This setting allows a user to set a text point-size value below which the high-frequency screens will be used when printing font data.

To change the setting:

1 From the Configuration Menu, navigate to **Font Sharpening**.

2 To change the value, depending on the model, enter the numerical value or press the arrows, and then press **Submit**.

3 Press **Back** or **X** to return to the Configuration menu.

Require Standby

Note: This setting is available on the touch screen models only.

This setting determines whether Standby Mode is On or Off. The default is On.

To change the setting:

1 From the Configuration Menu, navigate to **Require Standby**.

2 Select **On** or **Off** to change the setting.

3 Depending on the printer model, press **OK** or touch ✅ to save the setting, or press **X** to return to the Configuration Menu without saving any changes.

If Standby Mode is On, the printer begins functioning in Standby Mode when it remains idle for an amount of time.

The Standby Mode enables the printer:

- To consume less energy than when operating in normal mode but not as little as when operating in Power Saver.
- To return to the Ready state more quickly than when operating in Power Saver. If set to Off, this setting disables Standby Mode in the General Settings Menu.

A5 Loading

This determines the orientation used when printing on A5 paper.

Available options:

- Long Edge—The printer will print A5-size paper in the long-edge feed orientation from all trays.
- Short Edge—The printer will print A5-size paper in the short-edge feed orientation from all trays.

UI Automation

When enabled, this setting creates an **ENABLE_UI_AUTOMATION** file in the /var/fs/shared/ directory. As long as this file exists, the printer permits external developers to test the stability of their applications against the printer to make sure that their applications have an appropriate level of stability. Disabling this setting deletes the file and prohibits automated testing.

To change the setting:

1 From the Configuration Menu, navigate to **UI Automation**.

2 Select from the available options to change the setting.
- Enable
- Disable (default)

3 Depending on the printer model, press **OK** or touch ✔ to save the setting, or press **X** to return to the Configuration Menu without saving any changes.

LES Applications

This setting enables or disables all installed Lexmark Embedded Solution applications. This setting does not affect built-in applications.

To change this setting:

1 From the Configuration Menu, navigate to **LES Applications**.

2 Select from the available options to change the setting.
- Enable (Default)
- Disable

3 Depending on the printer model, press **OK** or touch **Back** to save the setting, or press **X** to return to the Configuration Menu without saving any changes.

Key Repeat Initial Delay

Note: This setting is available on the touch screen model only.

This setting determines the length of delay before a repeating key starts repeating. The range is 0.25–5 seconds, with increments of 0.25. The default setting is one second.

To adjust this setting:

1 From the Configuration Menu, navigate to **Key Repeat Initial Delay**.

2 Touch the arrow keys to adjust the setting.

3 Touch ✓ to save the setting, or press **X** to return to the Configuration Menu without saving any changes.

Key Repeat Rate

Note: This setting is available on the touch screen model only.

This setting indicates the number of presses per second for repeating keys. The range is 0.5–100, with increments of 0.5. The default setting is 15 presses per second.

To adjust this setting:

1 From the Configuration Menu, navigate to **Key Repeat Rate**.

2 Touch the arrow keys to adjust the setting.

3 Touch ✓ to save the setting, or press **X** to return to the Configuration Menu without saving any changes.

Wiper Message

This setting determines whether the printer posts the Replace Wiper message.

To change the setting:

1 From the Configuration Menu, navigate to **Wiper Message**.

2 Select **On** or **Off** to change the setting.

3 Depending on the printer model, press **OK** or touch ✓ to save the setting, or press **X** to return to the Configuration Menu without saving any changes.

Clear Supply Usage History

This setting reverts the supply usage history (number of pages and days remaining) to the factory shipped level.

To clear the supply usage history:

1 From the Configuration menu, navigate to **Clear Supply Usage History**.

2 Depending on the printer model, press **OK** or touch **Clear Supply Usage History** to proceed.

Clear Custom Status

Executing this operation erases any strings that have been defined by the user for the default or alternate custom messages.

To clear the custom status:

1 From the Configuration menu, navigate to **Clear Custom Status**.

2 Depending on the printer model, press **OK** or touch **Clear Custom Status** to proceed.

USB Speed

This setting is used to set the throughput of the USB port on the printer.

Available options:

- Auto
- Full—Forces the USB port to run at full speed and also disables its high-speed capabilities.

Automatically Display Error Screens

If On, the panel automatically displays any existing printer-related message after the printer remains inactive on the home screen for a length of time equal to the Screen Timeout setting in the Timeouts section of the General Settings Menu. Any message that appears on the display gives the option of returning to the home screen without clearing it. From the home screen, any other workflow or feature can be initiated as usual. When the printer returns to the home screen, any existing message will again appear after the printer remains inactive for a length of time equal to the Screen Timeout setting.

To change this setting:

1 From the Configuration Menu, navigate to **Automatically Display Error Screens**.

2 Select from the available options:

- On (default)
- Off

3 Depending on the printer model, press **OK** or touch ✅ to save the setting, or press **X** to return to the Configuration Menu without saving any changes.

USB PnP

In some cases, the USB port at the back of the printer may be incompatible with the chipset in a user's PC. This setting lets the user change the USB driver mode to improve its compatibility with these PCs.

Available options:

- 1
- 2

Restore factory defaults

Restore Settings

This setting enables a user to restore all of the printer settings to either the network settings (on network models only) or to the base printer settings.

To restore the settings:

1 From the Configuration menu, navigate to **Restore Factory Defaults** > **Restore Settings**.

2 Select from the available options:

- Restore Printer Settings—restores all non-critical base printer NVRAM settings.
- Restore Network Settings—restores all network NVRAM settings.
- Restore Apps—restores the factory default eSF configuration.

Erase Printer Memory

This makes any sensitive information that may exist on the volatile or non-volatile storage of the device completely indecipherable. When selected, the printer performs a non-critical NVRAM reset and then reboots.

Erase Hard Disk

This setting performs a wipe of the printer hard disk, erasing all data.

Warning—Potential Damage: This deletes all data on the printer hard disk, including downloaded fonts, macros, and held jobs. Do not initiate a disk wipe if you have information on the printer that you want to save.

Available options:

- Single Pass Erase—overwrites all data and the file system. This wipe is faster but less secure since it is possible to retrieve the deleted data with forensic data-retrieval techniques.
- Multi Pass Erase—overwrites all data without rewriting the file system. This wipe is DoD 5220.22-M compliant since the deleted data is irretrievable.

Note: If the printer is reset while a disk wipe operation is executing, then `Corrupt Disk` appears upon regaining power.

Entering invalid engine mode

This mode is used if the machine has invalid code and needs the correct code loaded. After entering this mode, the firmware code can be updated.

1 Turn off the printer.

2 Press and hold the **3**, **4**, and **6** buttons simultaneously.

3 Turn on the printer.

4 Release the buttons after 10 seconds.

Entering recovery mode

This mode will allow the printer to boot from a secondary set of instructions to allow a code flash to the printer. Code can be flashed from a PC by USB.

1 Turn off the printer.

2 Press and hold the **7**, **2**, and **8** buttons simultaneously.

3 Turn on the printer.

4 Release the buttons after 10 seconds.

Accessing the Network SE menu

This menu contains settings for fine tuning the communication settings for the network interfaces and protocols.

1 Navigate to:

Networks/Ports > **Standard Network** > **Std Network Setup**.

2 Press and hold the **6**, **7**, and **9** simultaneously.

Service Engineer menu

Accessing the service engineer (SE) menu

From a Web browser on a host PC, add **/se** to the printer IP address.

Service engineer (SE) menu

This menu should be used as directed by the next level of support.

Top-level menu	Intermediate menu
Print SE Menus	
General	Copyright — Displays copyright information
Code	- Network code level — Displays network code level - Network Compile Info — Displays network compile information - Printer Code Level — Displays printer code information - Printer Compile Info — Displays compile information
History	- Print History - Mark History - History Mode
MAC	- Set Card Speed - Set LAA - Keep Alive

Service menus

Top-level menu	Intermediate menu	
NVRAM	• Dump NVRAM • Reinit NVRAM	
NPAP	Print Alerts	
TCP/IP	• netstat-r • arp-a • Allow SNMP Set • MTU • Meditech Mode • RAW LPR Mode • Gather Debug • Enable Debug	

Service menus

Parts removal

Removal precautions

⚠ **CAUTION—SHOCK HAZARD:** For personal safety and to prevent damage to the printer, remove the power cord from the electrical outlet before you connect or disconnect any cable, electronic board, or assembly. Disconnect any connections between the printer and the PCs/peripherals.

⚠ **CAUTION—POTENTIAL INJURY:** The printer weight is greater than 18 kg (40 lb) and requires two or more trained personnel to lift it safely

Data security notice

1 This printer contains various types of memory that are capable of storing device and network settings, information from embedded solutions, and user data. The types of memory, along with the types of data stored by each, are described below.

- **Volatile memory**—This device utilizes standard Random Access Memory (RAM) to temporarily buffer user data during simple print and copy jobs.
- **Non-volatile memory**—This device may utilize two forms of non-volatile memory: EEPROM and NAND (flash memory). Both types are used to store the operating system, device settings, network information, scanner and bookmark settings, and embedded solutions.
- **Hard disk memory**—Some devices have a hard disk drive installed. The printer hard disk is designed for device-specific functionality and cannot be used for long term storage for data that is not print-related. The hard disk does not provide the capability for users to extract information, create folders, create disk or network file shares, or transfer FTP information directly from a client device. The hard disk can retain buffered user data from complex print jobs, as well as form data and font data.

To erase volatile memory, turn off the printer.

To erase non-volatile memory, see the menu item under pertaining to this.

To erase the printer hard disk, see the menu item under pertaining to this.

The following parts are capable of storing memory:

- printer control panel
- UICC (User Interface Controller Card)
- controller board
- optional hard drives

Note: The printer control panel and controller board contain NVRAM.

2 After removing the old part, it must be returned to your next level of support.

Handling ESD-sensitive parts

Many electronic products use parts that are known to be sensitive to electrostatic discharge (ESD). To prevent damage to ESD-sensitive parts, use the following instructions in addition to all the usual precautions, such as turning off power before removing logic boards:

- Keep the ESD-sensitive part in its original shipping container (a special "ESD bag") until you are ready to install the part into the machine.
- Make the least-possible movements with your body to prevent an increase of static electricity from clothing fibers, carpets, and furniture.
- Put the ESD wrist strap on your wrist. Connect the wrist band to the system ground point. This discharges any static electricity in your body to the machine.
- Hold the ESD-sensitive part by its edge connector shroud (cover); do not touch its pins. If you are removing a pluggable module, use the correct tool.
- Do not place the ESD-sensitive part on the machine cover or on a metal table; if you need to put down the ESD-sensitive part for any reason, first put it into its special bag.
- Machine covers and metal tables are electrical grounds. They increase the risk of damage, because they make a discharge path from your body through the ESD-sensitive part. (Large metal objects can be discharge paths without being grounded.)
- Prevent ESD-sensitive parts from being accidentally touched by other personnel. Install machine covers when you are not working on the machine, and do not put unprotected ESD-sensitive parts on a table.
- If possible, keep all ESD-sensitive parts in a grounded metal cabinet (case).
- Be extra careful while working with ESD-sensitive parts when cold-weather heating is used, because low humidity increases static electricity.

Controller board/control panel replacement

This procedure should be followed only if both the controller board and the control panel fail. If you need to replace only one of the FRUs, follow the startup procedure described in the FRU's removal procedure.

CAUTION—POTENTIAL INJURY: The lithium battery in this product is not intended to be replaced. There is a danger of explosion if a lithium battery is incorrectly replaced. Do not recharge, disassemble, or incinerate a lithium battery. Discard used lithium batteries according to the manufacturer's instructions and local regulations.

Warning—Potential Damage: If the control panel and the controller board are being replaced at the same time, replace the parts in this order to avoid damage to the machine.

1 Replace the controller board first.

   Note: Do not replace the new control panel and controller board in the machine at the same time.

2 After installing the new controller board, and before installing the new control panel, start the printer into diagnostics mode.

3 After the printer has completed startup, turn off the printer and replace the control panel.

   Note: If the control panel display has failed, the printers' startup cycle is complete when the driver motor and fans shut down, and the machine is quiet.

4 After installing the new control panel, start the printer into diagnostics mode, and allow the printer to go through a complete startup cycle and the display to go to Ready.

5 If the problems persist, leave the new control panel in the machine, place the old controller board back in the machine, and start it up. After the machine startup, shut down the machine, and install the new controller board. After installing the new controller board, restart the machine, and let it go through the startup cycle.

After this procedure is completed successfully, there is no need to adjust any settings.

If the above procedure fails, you must contact the technical support center for further instructions.
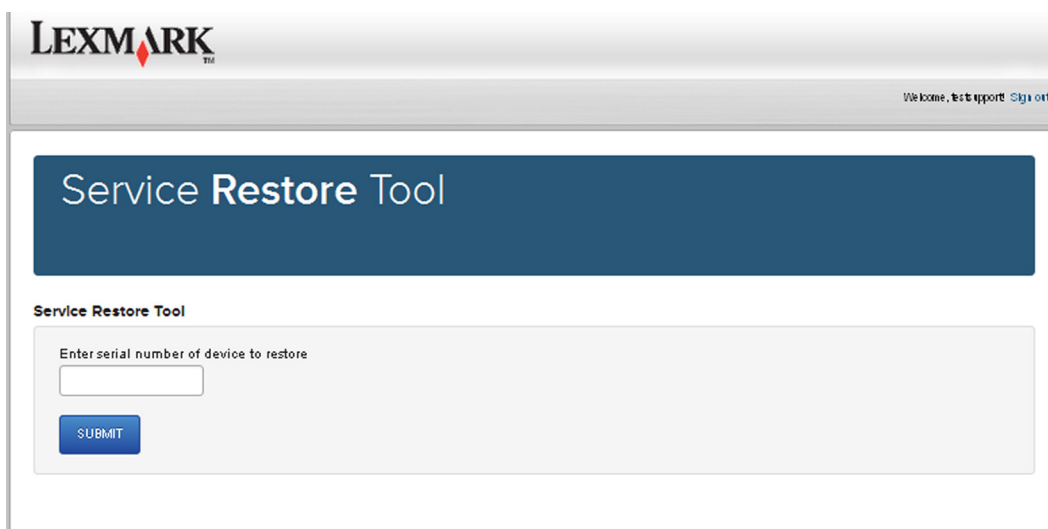
Restoring the printer configuration after replacing the controller board

Restore the printer to its correct configuration to complete the replacement service. Use the Service Restore Tool to download the software bundle, and then flash the printer settings and embedded solutions.

Note: The software bundle contains the latest version of the firmware, applications, and software licenses from the Lexmark Virtual Solutions Center (VSC). The printer firmware may be at a different level from what was used before replacing the controller board.

Using the Service Restore Tool

1 Go to **https://cdp.lexmark.com/service-restore-tool/** to access the tool.

2 Log in using your Lexmark or partner login.

   If your login fails, then contact your next level of support.

3 Enter the printer serial number, and then submit the information.

Note: Make sure that the serial number that appears on the verification screen is correct.
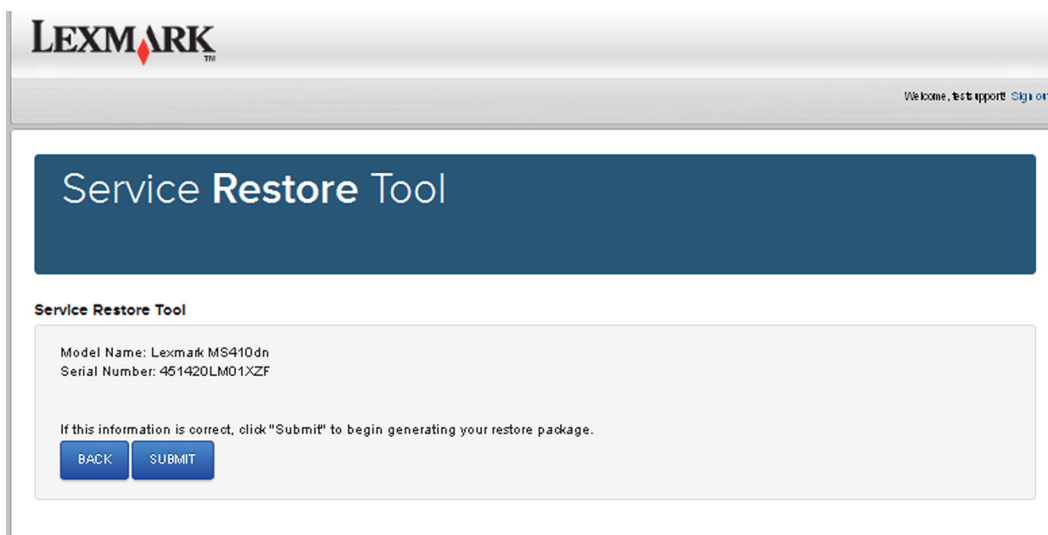
4 Save the zip file.
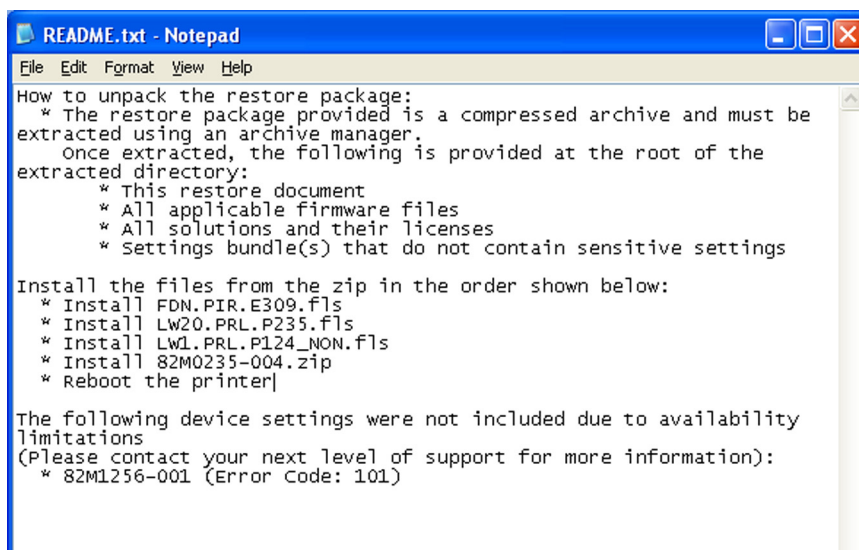
Note: Make sure that the serial number in the zip file matches the serial number of the printer being restored.
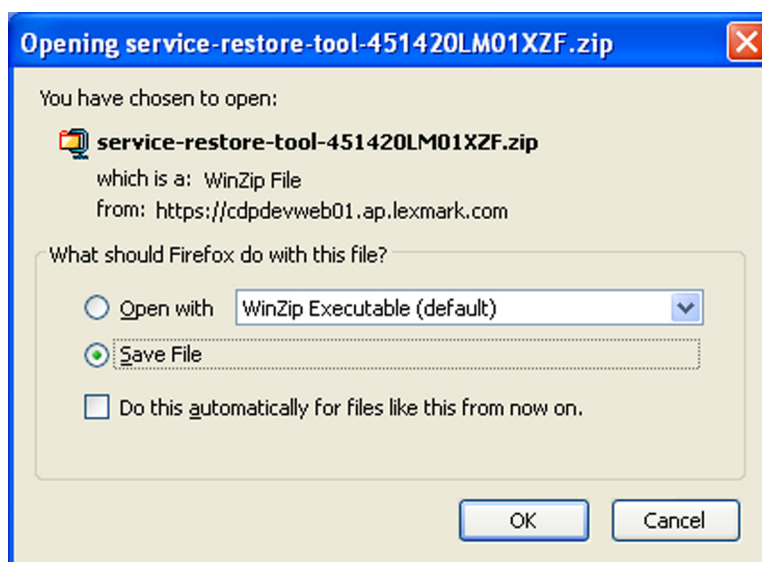
5 Extract the contents of the zip file, open the *Readme* file, and then follow the instructions in the file.

Notes:

- Perform the install instructions on the *Readme* file in the exact order shown. Only restart the printer when instructed to in the file.
- For more information on how to flash the downloaded files, see **"Updating the printer firmware " on page 431**.
- To load the zip files that are extracted from the Service Restore Tool, see **"Restoring solutions, licenses, and configuration settings" on page 430**.

Parts removal

6 After performing the installation instructions in the *Readme* file, confirm from the customer if all the eSF apps have been installed.

Notes:

- If you are unable to access the administrative menus to verify that the printer is restored, then ask the customer for access rights.
- If a 10.00 error is displayed after you restart the printer, then contact the next level of support.

Restoring solutions, licenses, and configuration settings

To load the zip files that are extracted from the Service Restore Tool, do the following:

1 Open a Web browser, and then type the printer IP address.

2 Navigate to **Settings** > **Configuration Files**.
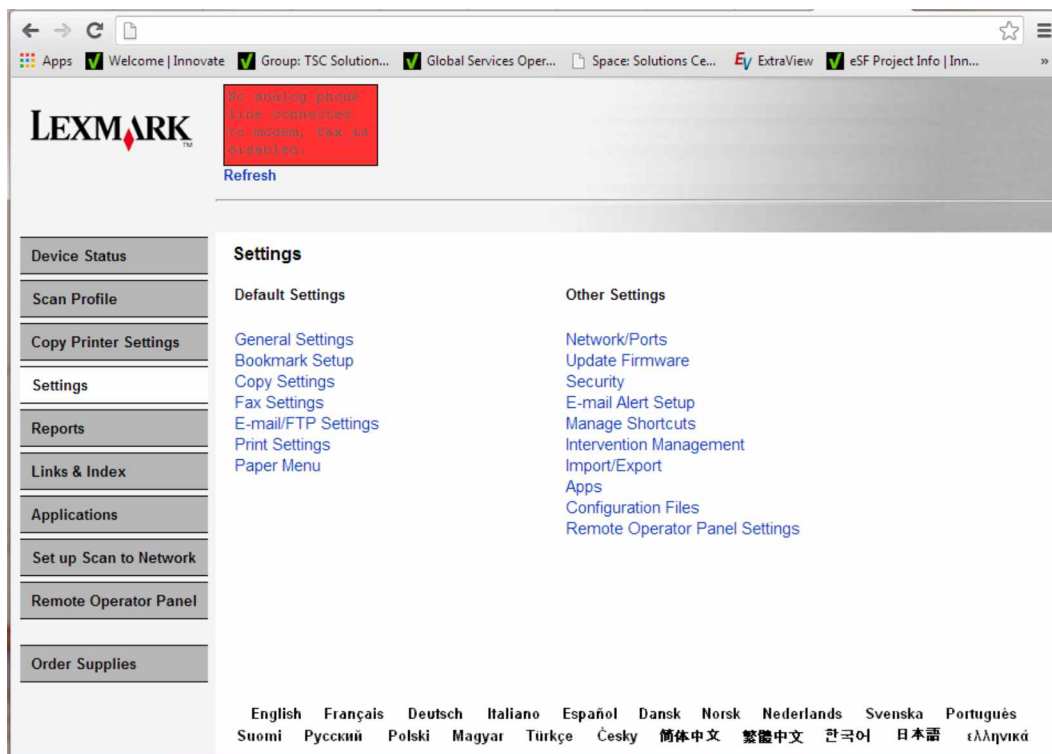
3 From the Configuration File History tab, navigate to **Import** > **Choose File**.

4 Select the zip file from the expanded Service Restore Tool package.

5 Click **Import**.
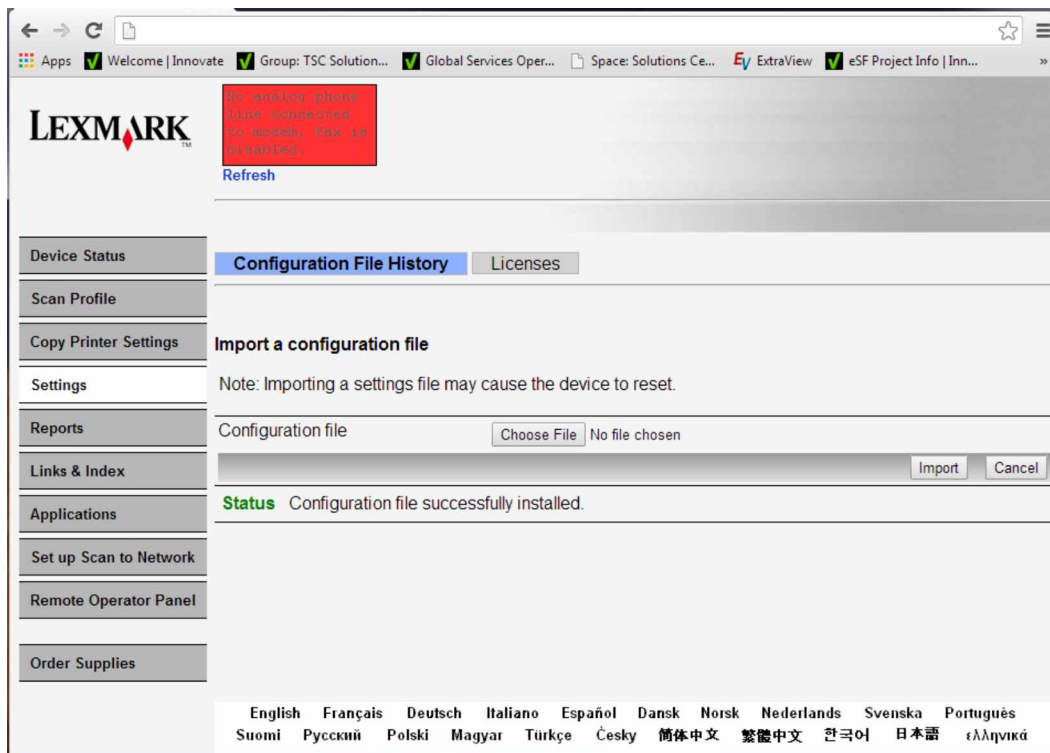
6 Repeat steps 3 through 5 for the other zip files that are included in the expanded zip file.

Updating the printer firmware

Warning—Potential Damage: Before updating the printer firmware, ask the next level of support for the correct code. Using an incorrect code level may damage the printer.

The printer must be in ready state in order to update the firmware.

Using a flash drive

This option is available only in printer models with front USB port.

Make sure to enable the Enable Drive and Update Code settings. You can find the settings in the Flash drive menu under the Settings menu.

1 Insert the flash drive into the USB port.

2 From the home screen, navigate to **USB Menu: Print from USB** > **Accept** or **OK**.

3 Select the file that you need to flash.

Note: Do not turn off the printer while the update is going on.

Parts removal

431

Using a network computer

Using the File Transfer Protocol (FTP)

Make sure that the printer is in ready state before flashing the printer.

1 Turn on the printer.

2 Obtain the IP address:
- From the home screen
- From the TCP/IP section of the Network/Ports menu

3 From the command prompt of a network computer, open an FTP session to the printer IP address.

4 Use a PUT command to place the firmware file on the printer.

The printer performs a POR sequence and terminates the FTP session.

5 Repeat steps 2 through 4 for the other files.

Using the Embedded Web Server

Make sure that the printer is in ready state before flashing the printer.

1 Open a Web browser, and then type the printer IP address.

2 From the home page, navigate to **Configuration** > **Update Firmware**.

3 Select the file to use.

The printer performs a POR sequence and terminates the FTP session.

4 Repeat steps 2 through 4 for the other files.

Backing up eSF solutions and settings

Note: Export the eSF solutions and settings from the printer before replacing the controller board.

Exporting eSF solutions and settings file

1 Reset the printer into Invalid engine mode. See **"Entering invalid engine mode" on page 422**.

2 Open a Web browser, and then type the printer IP address.

Note: If the Web page cannot be accessed or an error occurs when starting the printer into Invalid engine mode, then data backup is not an option. Inform the customer that the data cannot be saved.

3 Navigate to **Settings** > **Solutions** > **Embedded Solutions**.

4 From the Embedded Solutions page, select the applications that you want to export.

5 Click **Export**.

Note: The size limit of the export file is 128 KB.

Importing eSF solutions and settings file

After replacing the controller board, import back to the printer the eSF solutions and settings that were exported.

1 Reset the printer into Invalid engine mode. See .

2 Open a Web browser, and then type the printer IP address.

  Note: If the Web page cannot be accessed or an error occurs when starting the printer into Invalid engine mode, then data backup is not an option. Inform the customer that the data cannot be saved.

3 Navigate to **Settings** > **Solutions** > **Embedded Solutions**.

4 From the Embedded Solutions page, select the applications that you want to import.

5 Click **Import**.

Ribbon cable connectors

Zero Insertion Force (ZIF) connectors

Zero Insertion Force (ZIF) connectors are used on the boards and cards used in this printer. Before inserting or removing a cable from these connectors, read this entire section. Great care must be taken to avoid damaging the connector or cable when inserting or removing the cable.

Warning—Potential Damage: Do not insert the cable so that the contacts are facing the locking actuator. The contacts always face away from the actuator.

Warning—Potential Damage: Do not insert the cable diagonally into the ZIF socket. This can cause damage to the contacts on the cable.

Warning—Potential Damage: Avoid using a fingernail, or sharp object to open the locking mechanism. This could damage the cable.

Warning—Potential Damage: Avoid pressing against the cable when opening the locking mechanism. This can also damage the cable.

These are the types of ZIF connectors used in this printer:
- Horizontal top contact connector
- Horizontal bottom contact connector
- Vertical mount contact connector
- Horizontal sliding connector

Horizontal top contact connector

This FRU contains a horizontal top contact cable connector. Read the instructions before proceeding.

The horizontal top contact connector uses a back flip locking actuator to lock the ribbon cable into the Zero Insertion Force (ZIF) connector. The cable is inserted horizontally into the connector.

Warning—Potential Damage: When opening or closing this type of actuator, gently lift or close the two tabs located on each end of the actuator. The two tabs should be moved simultaneously. Do not close the actuator from the center of the actuator.

Removing a cable from the horizontal top contact connector

1 Place a finger at each end of the locking actuator, and then gently lift the actuator to the unlocked position.

2 Slide the cable out of the connector.

Inserting a cable into the horizontal top contact connector

1 When installing the cable, check the locking actuator to ensure it is in the unlocked position. The tabs on the ends of the actuator are vertical when the actuator is unlocked.

2 Insert the cable with the contacts on the cable facing up. Insert the cable on top of the actuator.

Note: Verify that the cable is installed squarely into the connector. If the cable is not squarely installed, then intermittent failures could occur.

Parts removal

435

3 Rotate the locking actuator to the locked position. The cable should not move while this step is performed. If the cable moves, open the actuator, reposition the cable, and then close the actuator to the down position.
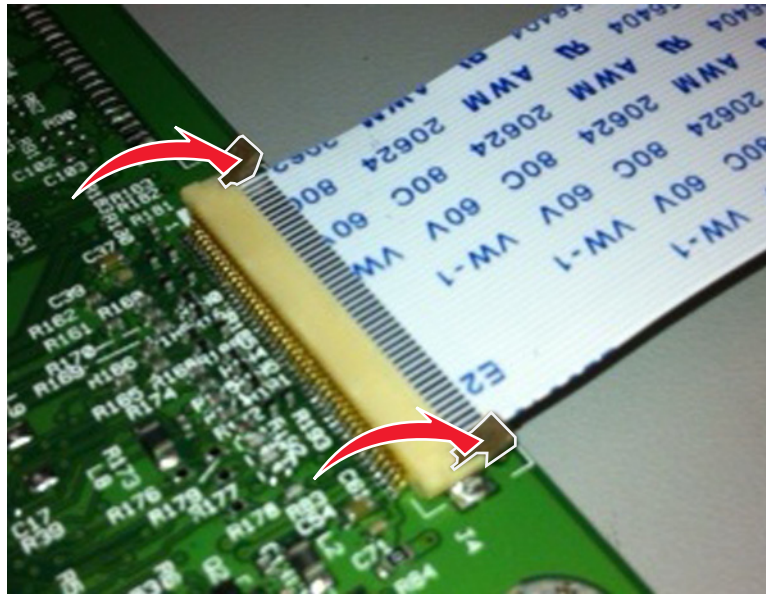
Horizontal bottom contact connector

This FRU contains a horizontal bottom contact cable connector. Read the instructions before proceeding.

The horizontal bottom contact connector uses a flip locking actuator to lock the ribbon cable into the Zero Insertion Force (ZIF) connector. The cable is inserted horizontally into the connector.

Warning—Potential Damage: When opening or closing this type of actuator, gently lift the center of the actuator using your finger. Do not use a fingernail or screwdriver to open the actuator. This could damage the ribbon cable. Do not close the actuator from the ends of the actuator.

Removing a cable from the horizontal bottom contact connector

1 Place two fingers towards each end of the locking actuator, and then gently lift the actuator to the unlocked position.
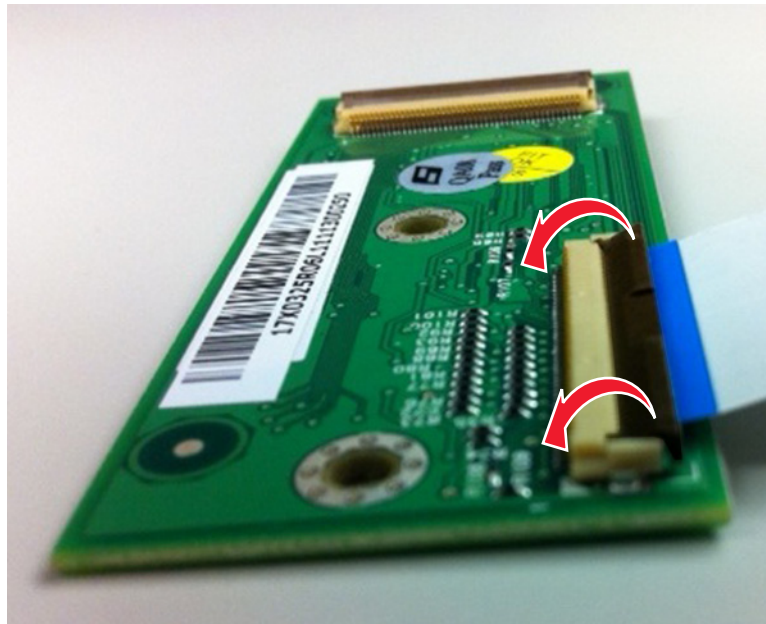
2 Slide the cable out of the connector.

Inserting a cable into the horizontal bottom contact connector

1 Check the actuator to verify it is in the open position.

2 Insert the cable into the ZIF connector with the contacts facing downward and away from the locking actuator. The cable needs to be inserted below the actuator.

Note: Verify that the cable is installed squarely into the connector. If the cable is not squarely installed, then intermittent failures could occur.

3 Place your finger in the middle of the actuator, and then rotate the locking actuator to the locked position.
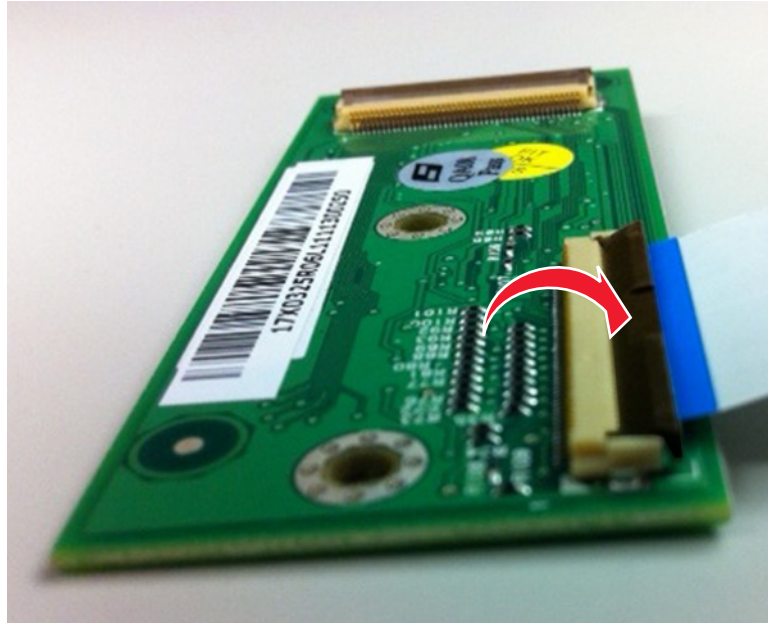
Vertical mount contact connector

This FRU contains a vertical mount contact connector. Read the instructions before proceeding.

The vertical mount contact connector uses a back flip locking actuator to lock the ribbon cable into the Zero Insertion Force (ZIF) connector. The cable is inserted vertically into the connector.

Warning—Potential Damage: When opening or closing this type of actuator, gently lift the center of the actuator using your finger. Do not use a fingernail or screwdriver to open the actuator. This could damage the ribbon cable. Do not close the actuator from the ends of the actuator.

Removing a cable from the vertical mount contact connector

1 Gently rotate the locking actuator from the center of the actuator to the unlocked position.
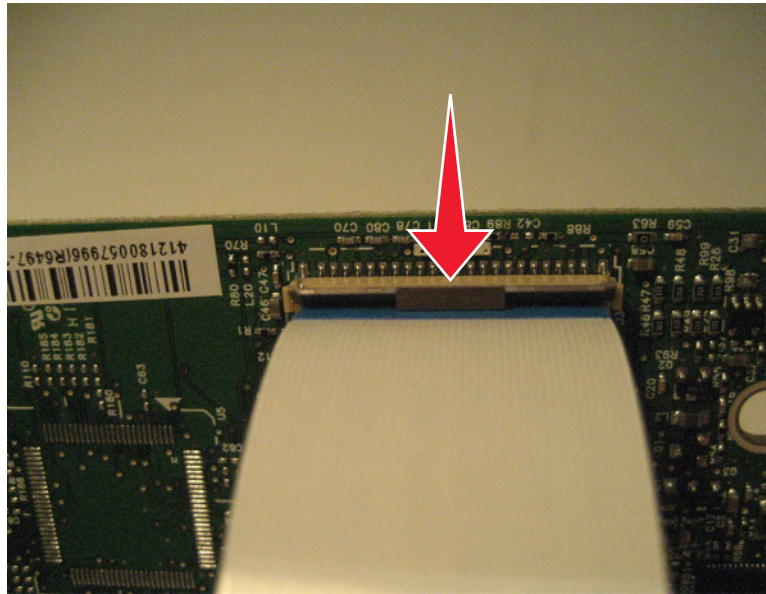
2 Slide the cable out of the connector.

Inserting a cable into the vertical mount contact connector

1 When installing the cable, check the locking actuator to verify it is in the open position.

2 Insert the cable with the contacts on the cable away from the locking actuator. Insert the cable on top of the actuator.

Note: Verify that the cable is installed squarely into the connector. If the cable is not squarely installed, then intermittent failures could occur.

Parts removal

3 Rotate the locking actuator to the locked position by pressing down on both ends of the actuator. The cable should not move when this step is performed. If the cable moves, open the actuator, reposition the cable, and then close the actuator to the down position.
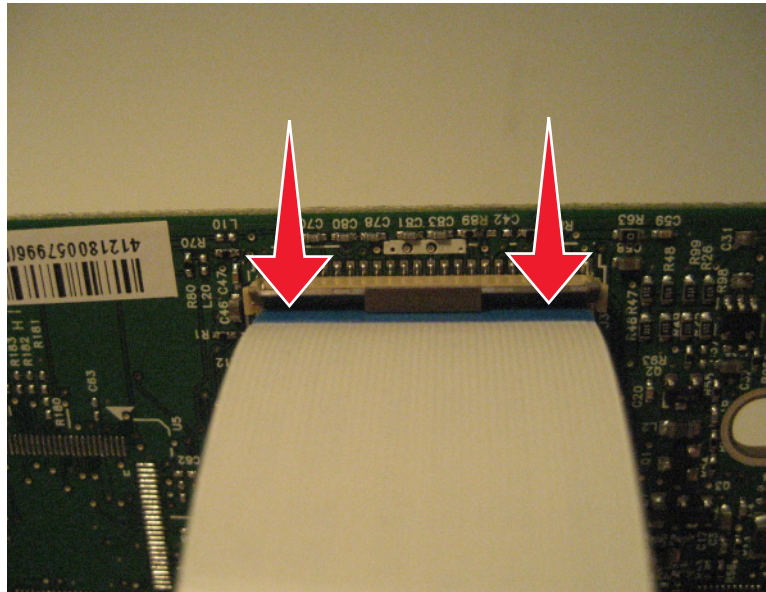
Horizontal sliding contact connector

This FRU contains a horizontal sliding contact connector. Read the instructions before proceeding.

The horizontal sliding contact connector uses a slide locking actuator to lock the ribbon cable into the Zero Insertion Force (ZIF) connector. The cable is inserted horizontally into the connector.

Warning—Potential Damage: When opening or closing this type of actuator, gently push or pull the two tabs located on each end of the actuator. Do not close the actuator from the center of the actuator. Do not use a screwdriver to open or close the actuator. Damage to the cable or connector could occur.

Removing a cable from the horizontal sliding contact connector

1 Simultaneously slide the two tabs located on the ends of the locking actuator away from the connector.
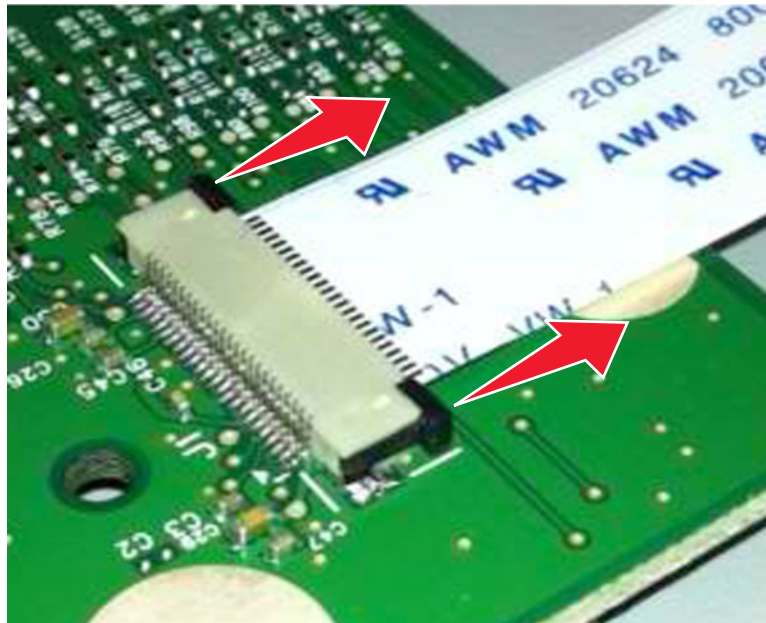
2 Slide the cable out of the connector.

Inserting a cable into the horizontal sliding contact connector

1 When installing the cable, check the locking actuator to verify it is in the open position. If you are opening the connector, pull back on both end tabs using equal force to avoid breaking the connector.
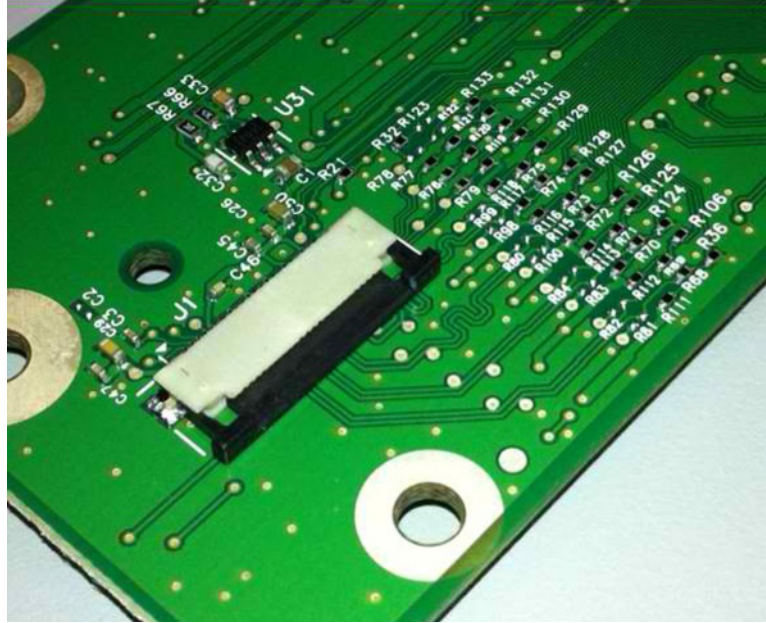
2 Insert the cable with the contacts on the cable facing away from the locking actuator. Insert the cable on top of the actuator.

3 Slide the locking actuator towards the connector, locking the cable into place. The cable should not move when this step is performed. If the cable moves, open the actuator, reposition the cable, and then close the actuator to the down position.
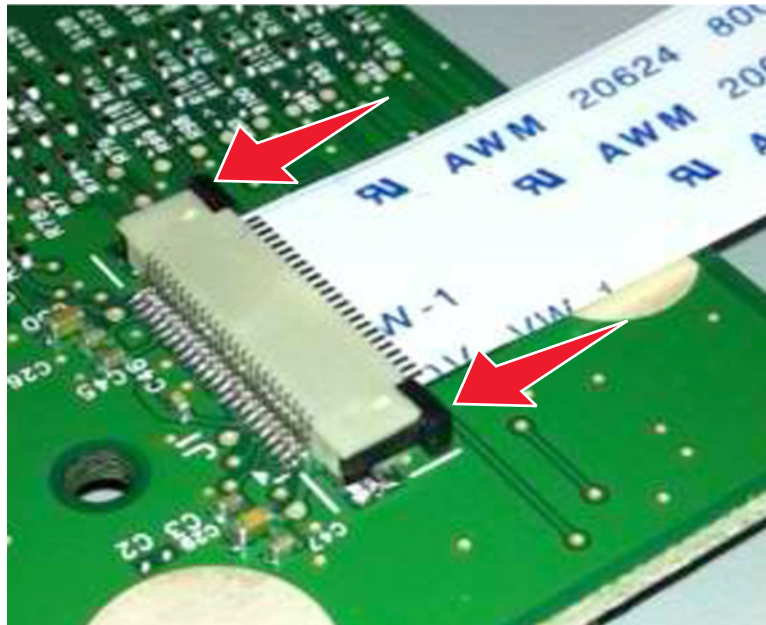
Low Insertion Force (LIF) connector

This FRU contains a Low Insertion Force (LIF) connector. Read the instructions before proceeding.

Warning—Potential Damage: When installing a cable into an LIF connector, care must be taken to avoid bending the edges of the cables and damaging the contacts on the cables.

Inserting a cable into the LIF connector

1 Looking at the connector, take note on which side the contacts are located. Many boards will have the word "contacts" stamped on them to indicate which side of the LIF has the contacts. When looking at the board, take note that the contacts from the board to the connector are located on the side of the connector with the contacts.
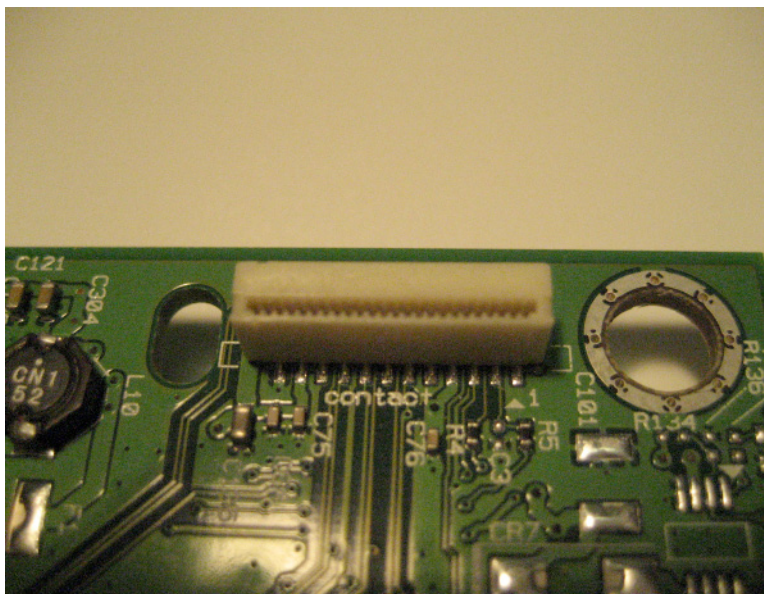
2 Insert the cable squarely into the connector.

   Note: Verify that the cable is installed straight into the connector. If the cable is not installed properly, then intermittent failures could occur.
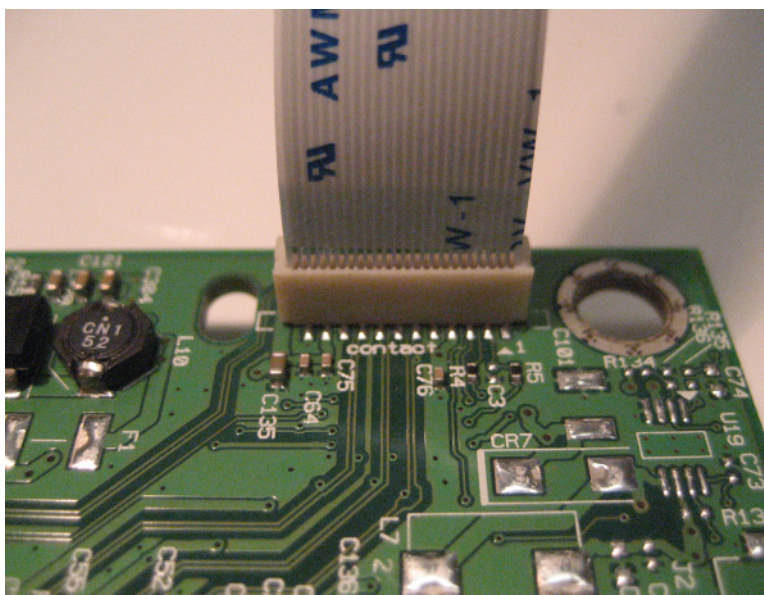
Adjustments

The printer skew specification calls for image skew on the registration sheet to be one dot (0.5mm) or less delta between the left and right alignment indicators for the top and bottom margins. Some variation occurs from sheet to sheet, so a few sheets can be printed to get an improved feel for the skew. Also, top and bottom margin registration adjustments may be required before or after making skew adjustments. Use the diagrams below to help choose which adjustment is appropriate.

The margin registration page is used to evaluate skew. The Quick Test Page can be obtained by following these steps.

1 Turn the printer off.

2 Press and hold **3** and **6** to enter the diagnostic mode.

3 Turn the printer on, and release the buttons when the progress bar appears (after about 20 seconds).

4 Select **Registration** from the menu.

5 Select **Quick Test Page**. The test page should only be printed on letter or A4 paper from Tray 1. The Quick Test Page consists of alignment diamonds and horizontal lines that can be used for mechanical registration adjustment. The following image shows an example of the Quick Test Page:

Alignment
indicator
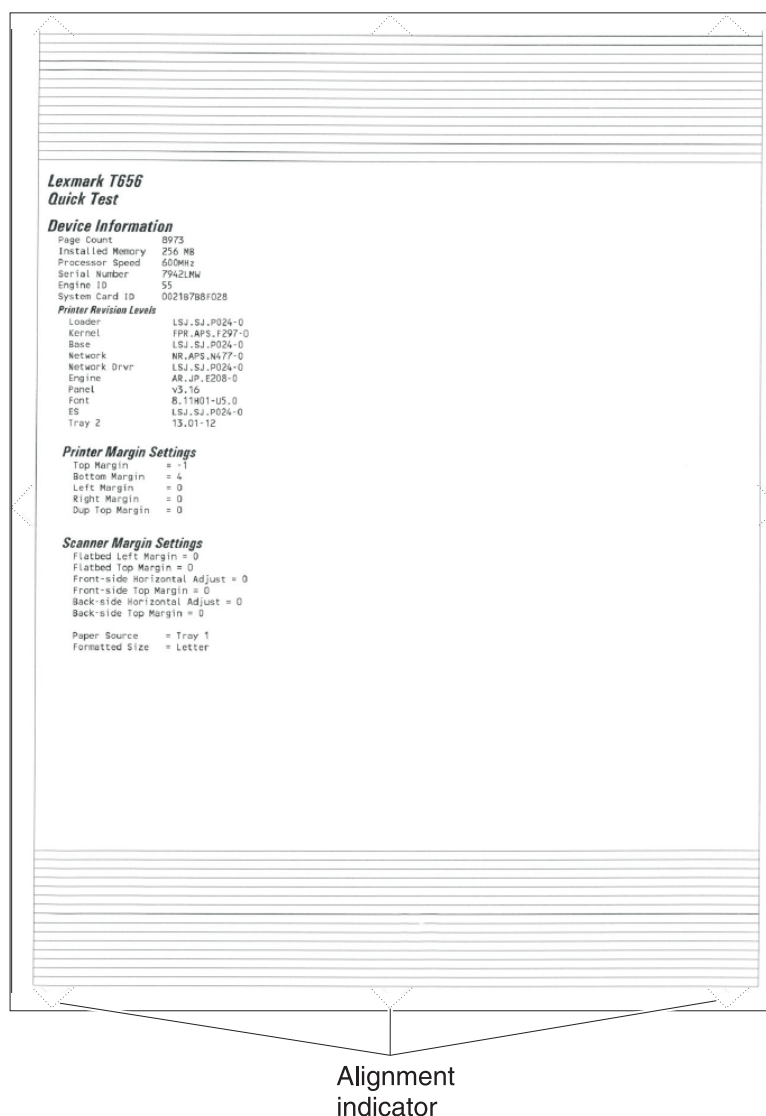
6 Review the page to determine which type of skew is present.

> **Note:** Make sure that the side guide and rear guide are properly set in the paper tray before printing test pages or making adjustments. Out-of-position guides can contribute to print skew.

For top margin skew (or after the media aligner rollers are replaced), go to **"Media aligner roller adjustment" on page 449**.

For skew on both the top and bottom margins, or mainly the bottom margin, it is recommended that the **"Media aligner roller adjustment" on page 449** be made to set the leading edge parallel to the trailing edge, and then make the **"Polygon printhead mechanical registration adjustment" on page 450** to bring both margins into alignment. A final media aligner roller adjustment might be required at the end of the process, after the bottom skew is adjusted out.

Media aligner roller adjustment

Complete the media aligner roller adjustment procedure when you replace the media aligner roller. Always print a copy of the Quick Test Page before making any adjustments to the media aligner roller reference adjustment screw.

Note: When replacing the media aligner roller, back the reference adjustment screw out far enough to remove the old media aligner roller and install the new one. It is not necessary to remove the screw.

- If you have just replaced the media aligner roller, go to **"Step A" on page 449**.
- If you are only correcting the top margin skew, go to **"Step B" on page 449**.
- If you are correcting the bottom margin skew or both top and bottom margin skew, go to **"Step C" on page 450**.

Step A

Set the initial position of the media aligner roller plate using a 3mm hex wrench at the access hole indicated in the following image (left), to give a position roughly 20.5mm as shown in the image below (right). This is the nominal point and should minimize the amount of adjustment needed.
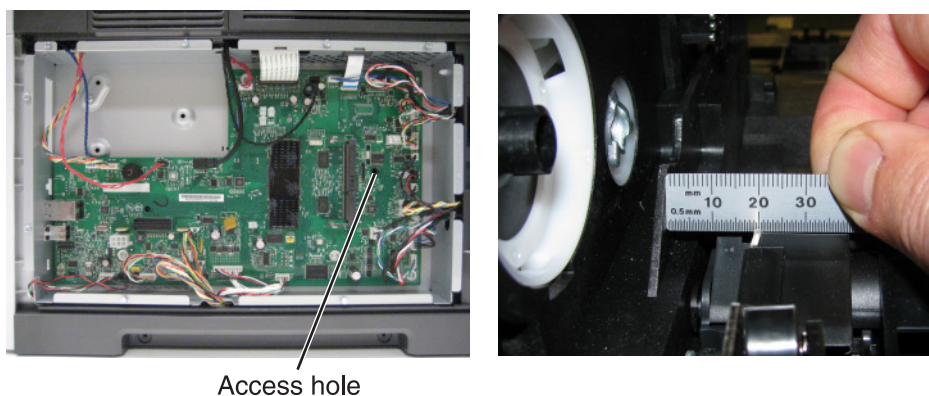
Access hole

Continue to **"Step B" on page 449**.

Step B

Print a copy of the Quick Test Page, and check the top alignment indicators printed on the test page. The difference in the print location to the top edge of the paper between the left and right alignment indicators should be 0.5mm (one dot) or less. Depending on the skew, turn the screw either clockwise or counterclockwise using a 3mm hex wrench, and print a copy of the Quick Test Page to check the diamonds on the top and bottom margin. Continue adjusting the screw as you check the results of each adjustment on a new test page until the top image skew is below 0.5mm. One full 360-degree turn of the aligner screw will change the top edge skew by roughly 1mm (2 alignment indicator dots).

Adjustment is typically 0-2 rotations. More than 3-4 turns, in either direction from the 20.5mm nominal spot, should not be necessary and may indicate other issues with the tray (such as problems with the back and side restraints), pick tires, or transfer roll mounting. If the top and bottom skew are below 0.5mm, the alignment process is complete.
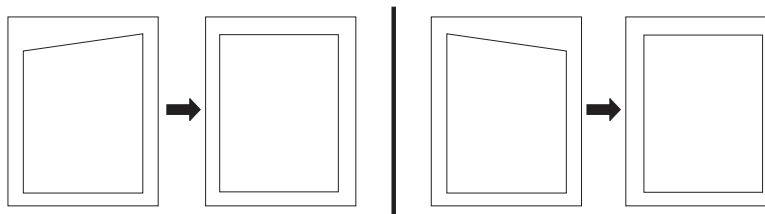
Step C

Print a copy of the Quick Test Page, and check the top and bottom alignment indicators printed on the test page. The goal is to make the skew at the top and bottom of the page parallel. Depending on the skew, turn the screw either clockwise or counterclockwise using a 3mm hex wrench, and print a copy of the Quick Test Page to check the diamonds on the top and bottom margin. Continue adjusting the screw as you check the results of each adjustment on a new test page until you obtain the results you want. One full 360-degree turn of the aligner screw will change the leading edge skew by roughly 1mm (2 alignment indicator dots).
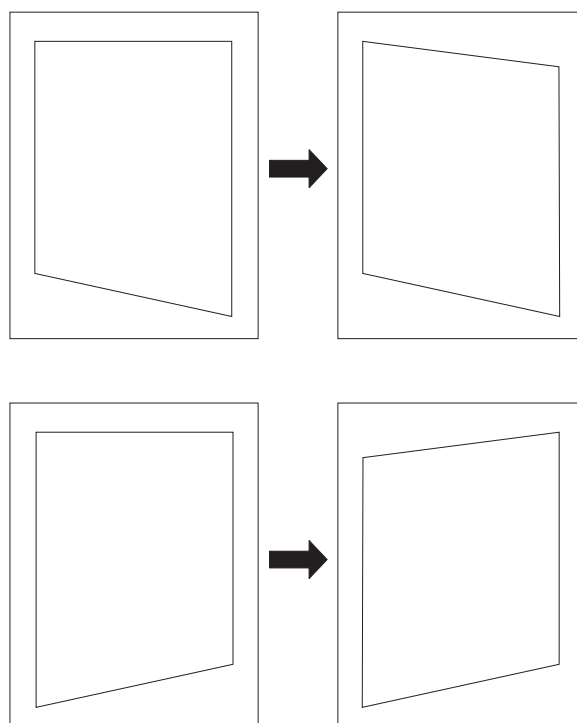
Go to the polygon printhead mechanical registration adjustment procedure when this step is complete. See **"Polygon printhead mechanical registration adjustment" on page 450**.

Polygon printhead mechanical registration adjustment

Complete the printhead mechanical registration adjustment procedure when you remove or replace the printhead, or loosen the mounting screws.

Install the new printhead with the mounting screws lightly tightened before printing the registration Quick Test Page to see if adjustment is needed. Before adjustment of the printhead, loosen each of the three mounting screws by a half turn. This will leave the screws loose enough to allow the printhead to move within its slots as the adjustment screw is rotated. If the adjustment plate was left alone during the laser printhead replacement, it will retain its position and should minimize the amount of printhead mechanical registration adjustment needed. When the registration is set, the three mounting screws should be tightened.

To perform the printhead mechanical registration adjustment:

1 Print a Quick Test Page. From the Diagnostics menu, navigate to :

REGISTRATION > **Quick Test**

If the skew between the bottom left and bottom right alignment indicators is greater than 0.5mm (1 dot), then proceed with adjustment. Otherwise, no polygon printhead adjustment is needed.

2 Raise the paper support located in the top of the standard bin to its upright position to locate the three access holes as shown in the illustration below.
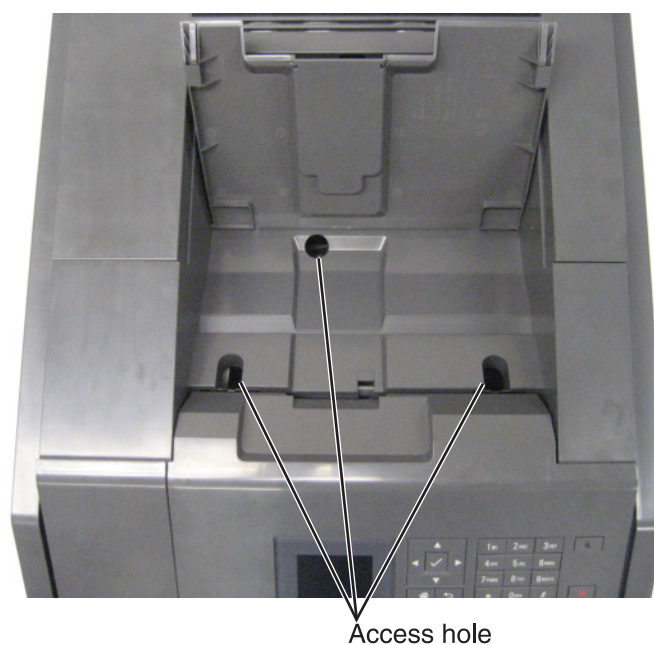
Access hole

3 Loosen, by a half turn, each of the three printhead mounting screws securing the printhead to the printer frame. This will require a 5.5mm hex-socket screwdriver.

4 Locate the printhead adjustment screw access hole in the front of the printhead access cover. This will require a 3mm hex wrench to adjust. A ballhead hex wrench is suggested to make it easier to find the screw head.

Access hole

5 Check the Quick Test Page for any sign of misalignment by checking the diamonds at the bottom left and bottom right of the test page for equal distance from the bottom of the page. If necessary, rotate the printhead adjusting screw with a 3mm hex wrench either clockwise (to rotate the image clockwise) or counterclockwise (to rotate the image counterclockwise), and run another Quick Test Page. One full 360-degree turn of the printhead screw will change the skew on both edges by roughly 0.5mm (1 alignment indicator dot). You may need to repeat this step two or three times before you get satisfactory bottom skew results.

Paper feed
skew
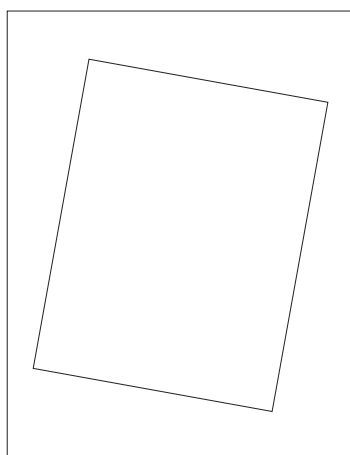
Printhead
misalignment

Parts removal
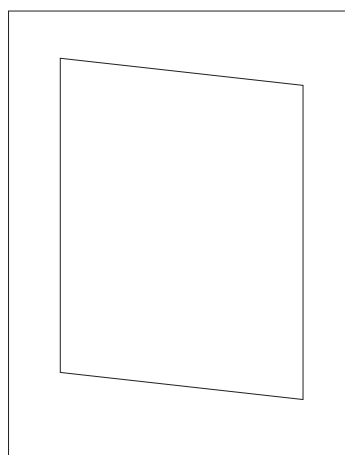
1	To correct, turn the printhead screw clockwise to rotate both edges clockwise.
2	To correct, turn the printhead screw counterclockwise to rotate both edges counterclockwise.
Note: One full 360-degree turn of the printhead screw will change the skew on both edges by roughly 0.5 mm (one alignment indicator dot).	

Warning—Potential Damage: Caution should be taken to not turn the printhead adjustment mechanism more than a few turns counterclockwise, for the screw will fully back out and will become disassembled. Stop turning the screw when you stop feeling resistance, you may need to turn it clockwise to reengage the screw into the adjustment plate. Turning more than a few turns clockwise will bottom out the screw. If the adjustment screw is difficult to turn, make sure that the printhead mounting screws are loose.

Warning—Potential Damage: In some cases the adjustment process may take several tightening and loosening cycles of the printhead mounting screws. Care should be taken to avoid stripping the mounting screw bosses. Use only a manual hex head screwdriver, for this reason.

6 When you have the correct adjustment, ensure that the printhead mounting screws are properly tightened, and print a final Quick Test Page for verification.

7 Check the top edge skew and perform the media aligner roller adjustment, if required. See **"Media aligner roller adjustment" on page 449**.

Removal procedures

Keep the following tips in mind as you replace parts:

- Some removal procedures require removing cable ties. You must replace cable ties during reassembly to avoid pinching wires, obstructing the paper path, or restricting mechanical movement.
- Remove the toner cartridges, imaging unit, and media tray before removing other printer parts. The imaging unit should be carefully set on a clean, smooth, and flat surface. It should also be protected from light while out of the device.
- Disconnect all external cables from the printer to prevent possible damage during service.
- Unless otherwise stated, reinstall the parts in reverse order of removal.
- When reinstalling a part held with several screws, start all screws before the final tightening.

Front side removals

Duplex exit diverter removal

1 Remove the left cover. See **"Left cover removal" on page 565**.

2 Remove the controller board access shield. See **"Controller board access shield removal" on page 570**.

3 Remove the media tray. See **"Media tray removal" on page 556**.

4 Remove the MPF tray. See **"MPF tray removal" on page 476**.

5 Remove the front door. See **"Front door removal" on page 455**.

6 Remove the toner cartridge.

7 Remove the imaging unit.

8 Remove the MPF feeder lift plate. See **"MPF feeder lift plate removal" on page 469**.

9 Remove the media turn guide. See **"Media turn guide removal" on page 466**.

10 Remove the media vertical guide. See **"Media vertical guide removal" on page 467**.

11 Remove the spring (A).
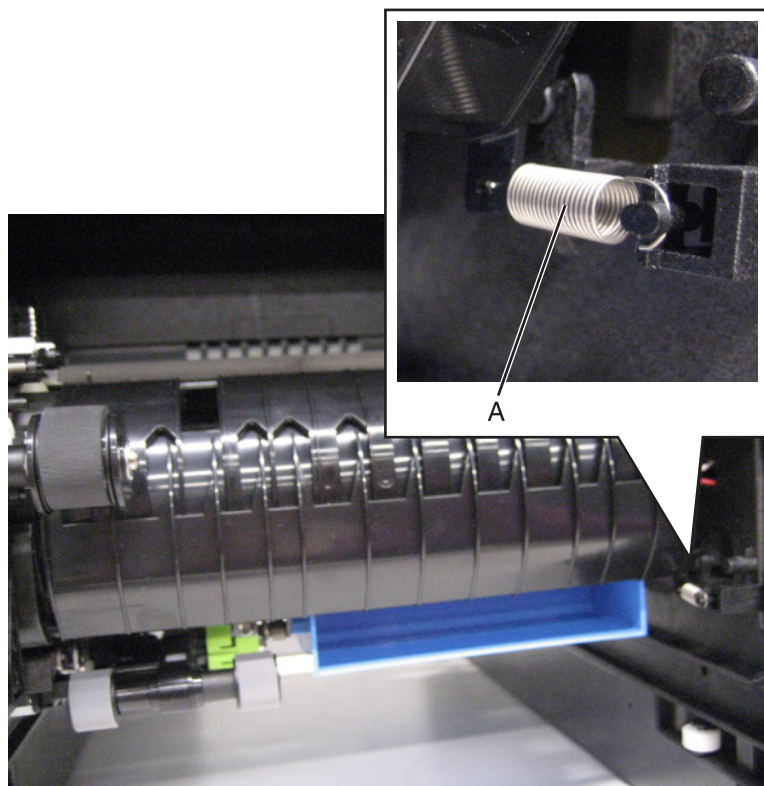
12 Move the duplex exit diverter to the right, and detach the left hinge point.
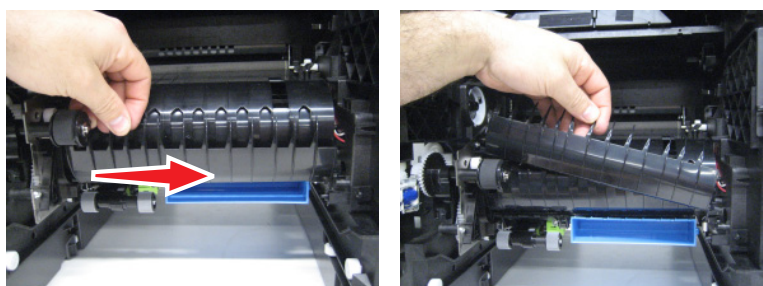
13 Lift the right hinge point, and remove the duplex exit diverter.
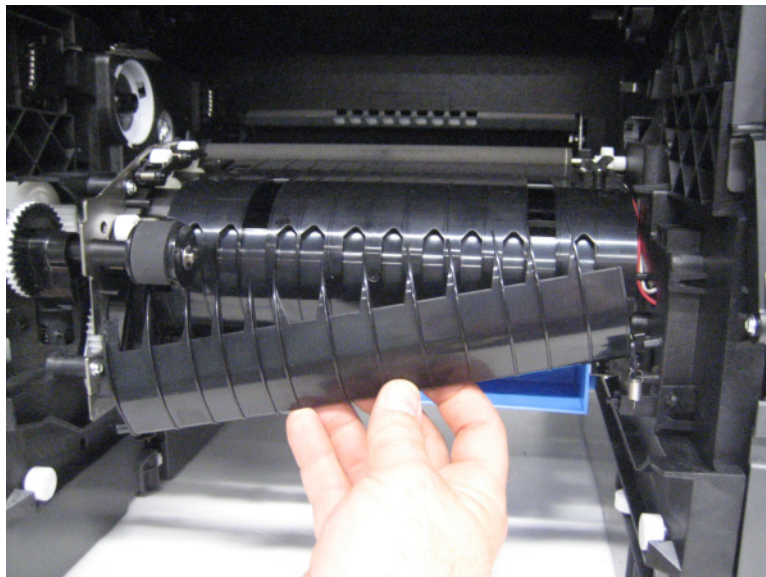
Front door removal

1 Remove the MPF tray. See **"MPF tray removal" on page 476**.

2 Raise the front door to a forty-five degree angle.

3 Gently flex the left bracket and release the tab on the MPF support link, as shown in the following image.
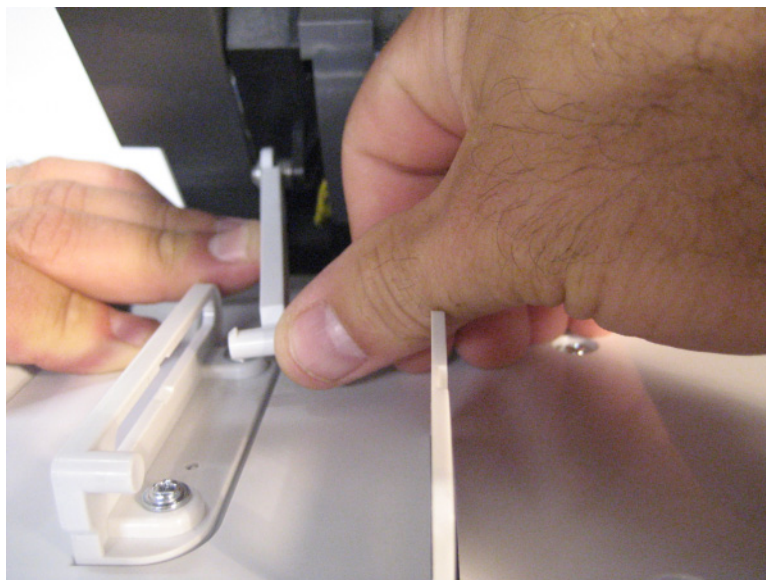
4 Gently flex the right bracket and release the tab on the MPF support link, as shown in the following image.
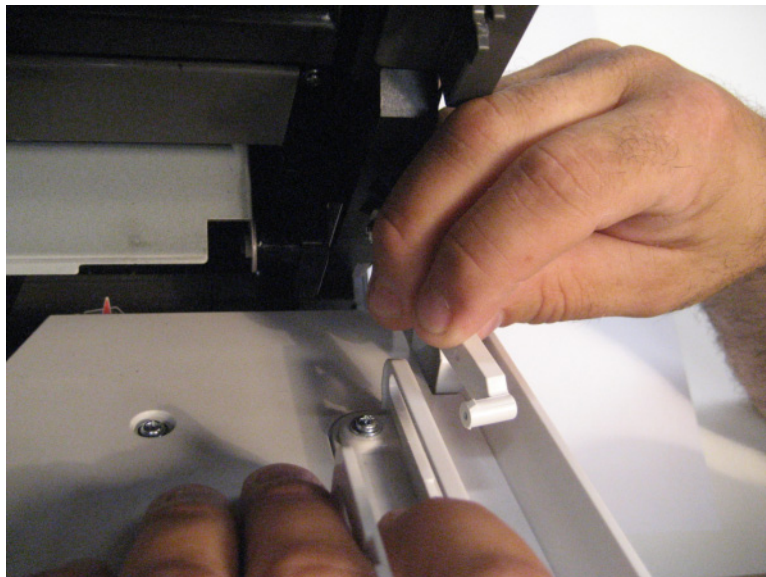
5 Slide the front door to the left, and detach it from the machine.

Inner guide deflector removal

1 Remove the left cover. See **"Left cover removal" on page 565**.

2 Remove the controller board access shield. See **"Controller board access shield removal" on page 570**.

3 Remove the media tray. See **"Media tray removal" on page 556**.

4 Remove the MPF tray. See **"MPF tray removal" on page 476**.

5 Remove the front door. See **"Front door removal" on page 455**.

6 Remove the toner cartridge.

7 Remove the imaging unit.

8 Remove the MPF feeder lift plate. See **"MPF feeder lift plate removal" on page 469**.

9 Remove the media turn guide. See **"Media turn guide removal" on page 466**.

10 Remove the media vertical guide. See **"Media vertical guide removal" on page 467**.

11 Remove the duplex exit diverter. See **"Duplex exit diverter removal" on page 453**.

12 Gently press the mounting loops inward to free them from the bosses on the frame.

13 Release the upper hooks on the inner guide deflector.
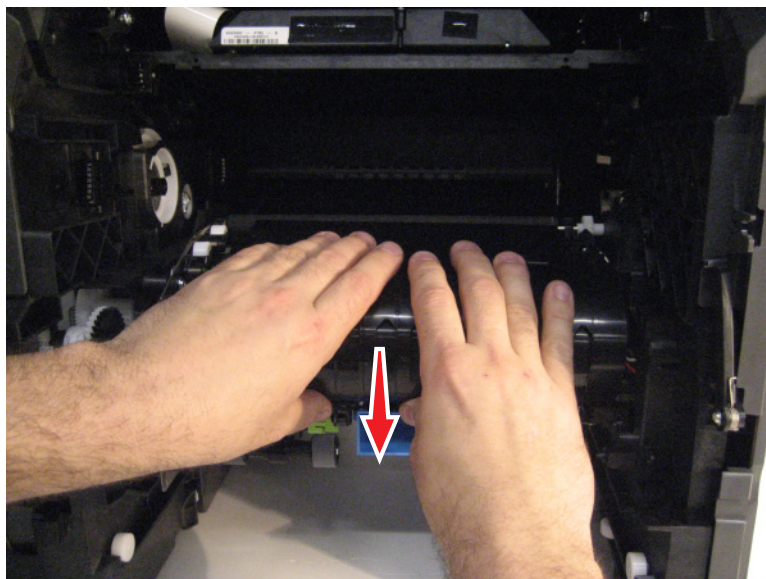
14 Remove the inner guide deflector.
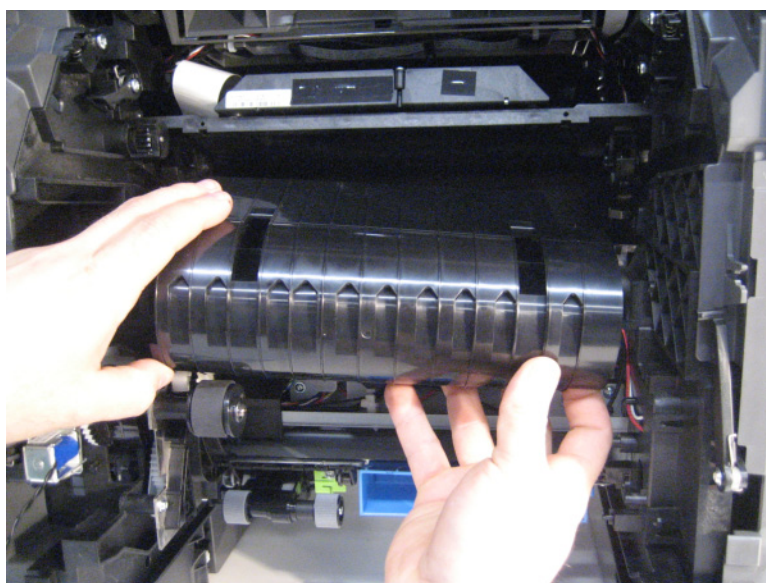
Installation warning: Ensure that the four retention hooks (A) on the inner guide deflector are properly reattached.
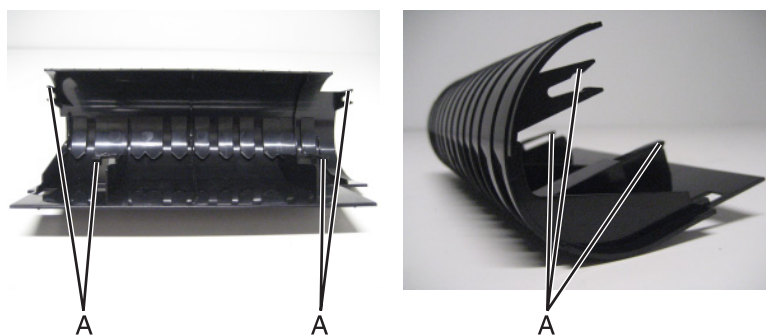
Parts removal

Laser printhead removal

Installation note: When replacing the laser printhead, ensure that the proper adjustments are made. For more information, go to **"Polygon printhead mechanical registration adjustment" on page 450**.

1 Open the control panel door.

2 Remove the toner cartridge.

3 Remove the two screws (A) securing the printhead access cover to the machine.
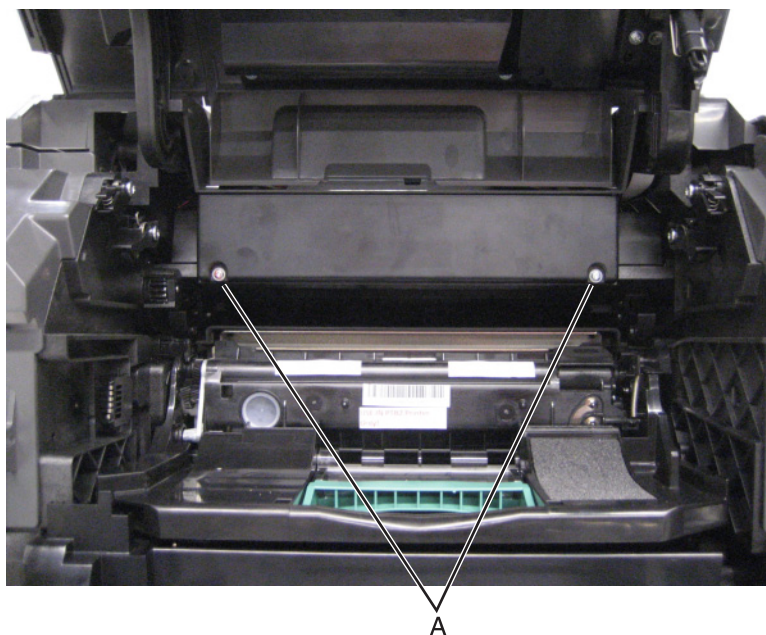
Warning—Potential Damage: When removing the printhead access cover, ensure that the cartridge cooling fan cable does not become disconnected.

4 Remove the printhead access cover.

Parts removal
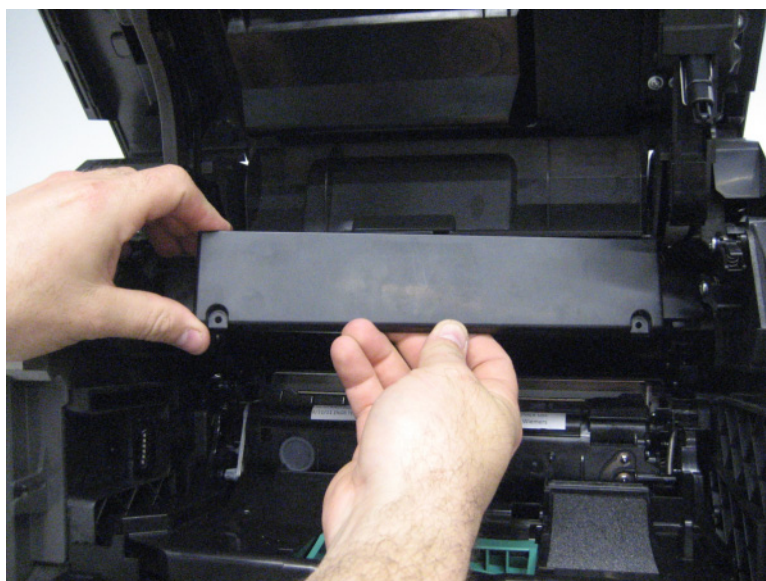
5 Remove all of the harnesses from the back side of the printhead access cover.
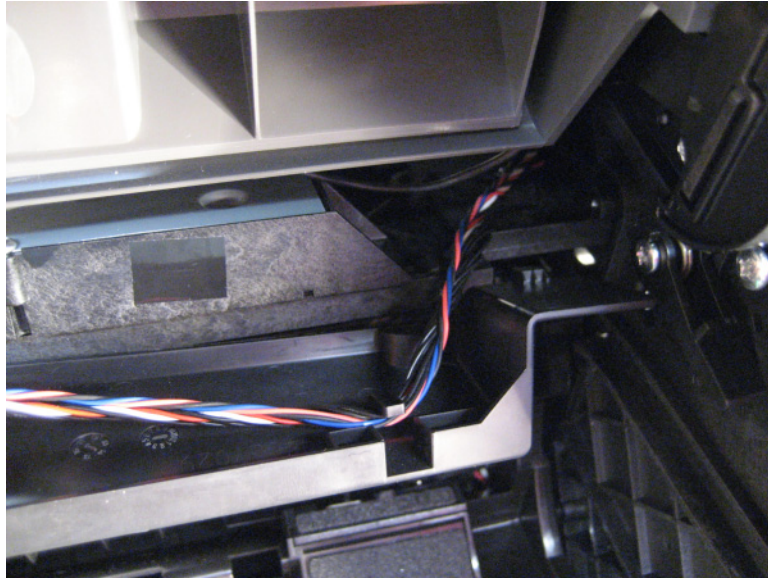
6 Raise the paper support on top of the printer to provide access to the printhead mounting screws.

7 Remove the three 5.5mm hex screws (B) securing the laser printhead to the machine.

Note: For MX71x, the printhead mounting screws are located under the paper support which is located under the flatbed scanner.

Note: Ensure the screws do not fall inside the machine.
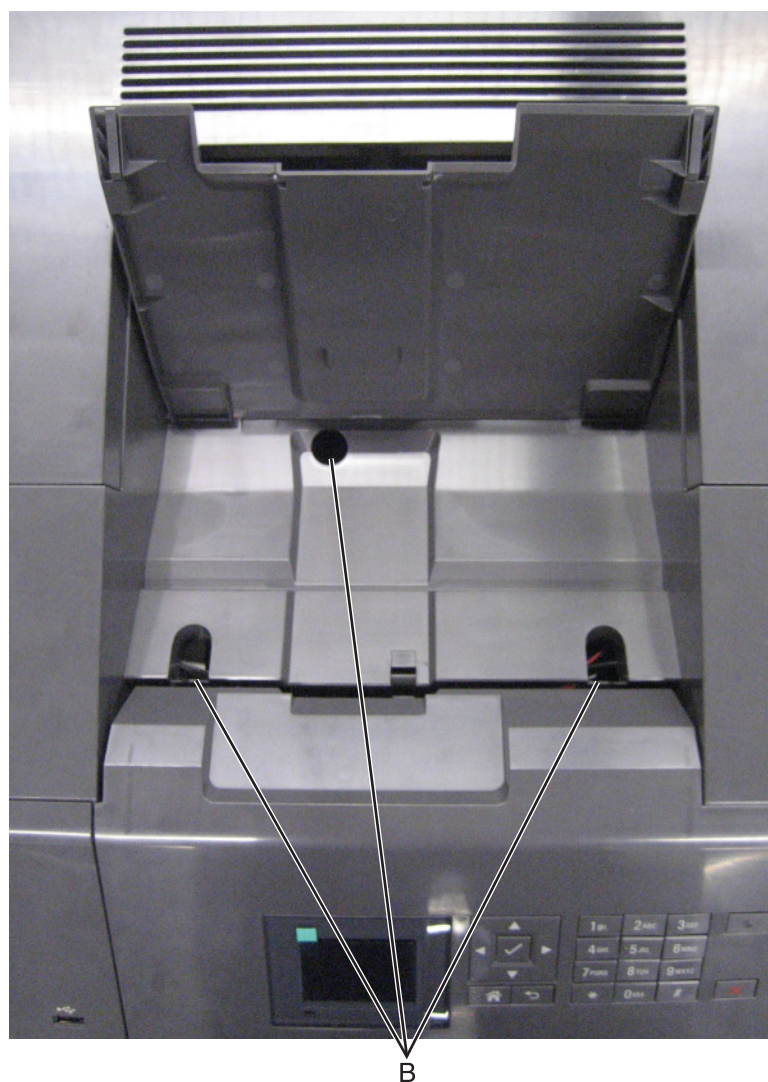
Note: When removing the laser printhead, do not adjust the printhead adjuster screw until the new printhead has been installed.

8 Gently lift and then remove the laser printhead from the machine.
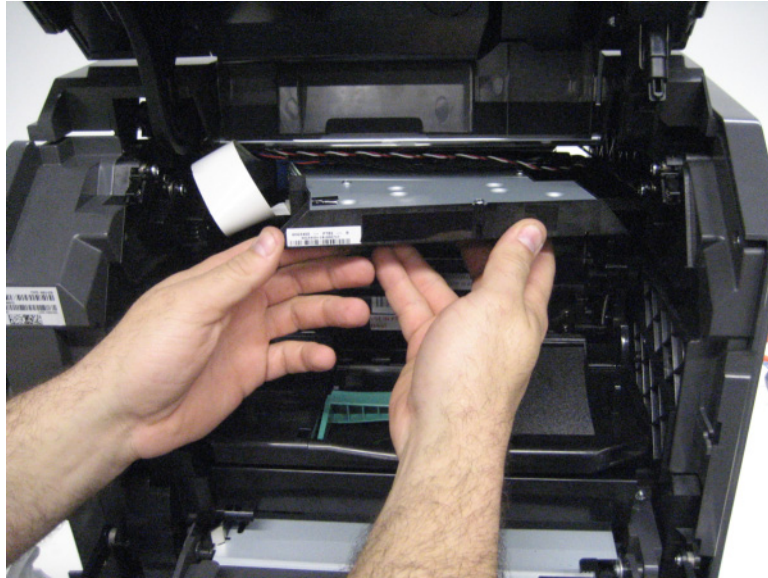
9 Disconnect the two cables from the laser printhead.
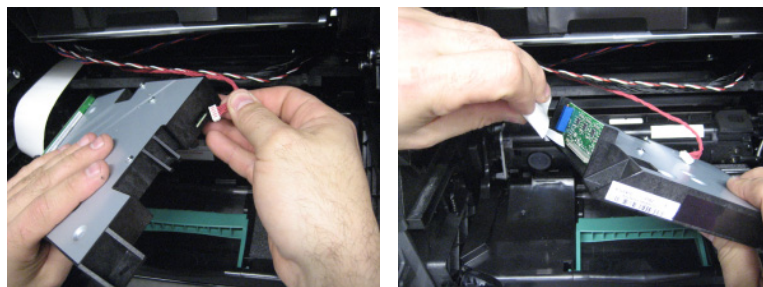
Installation note: When the new laser printhead has been installed, complete the polygon printhead mechanical registration adjustment procedure, as needed. See **"Polygon printhead mechanical registration adjustment" on page 450**.

Left inner cover removal

1 Open the front door.

2 Pull the media tray from the machine.

3 Raise the control panel to its uppermost position.

4 Remove the rear door. See **"Rear door removal" on page 534**.

5 Detach the controller board access cover.
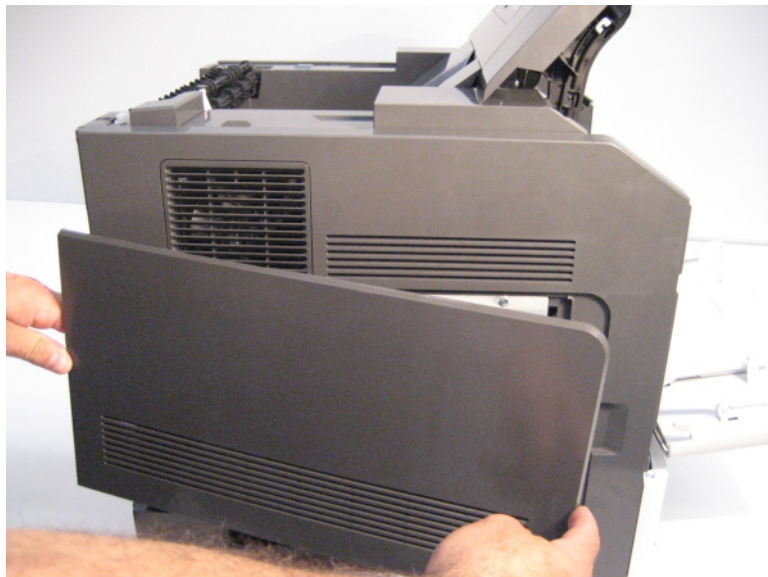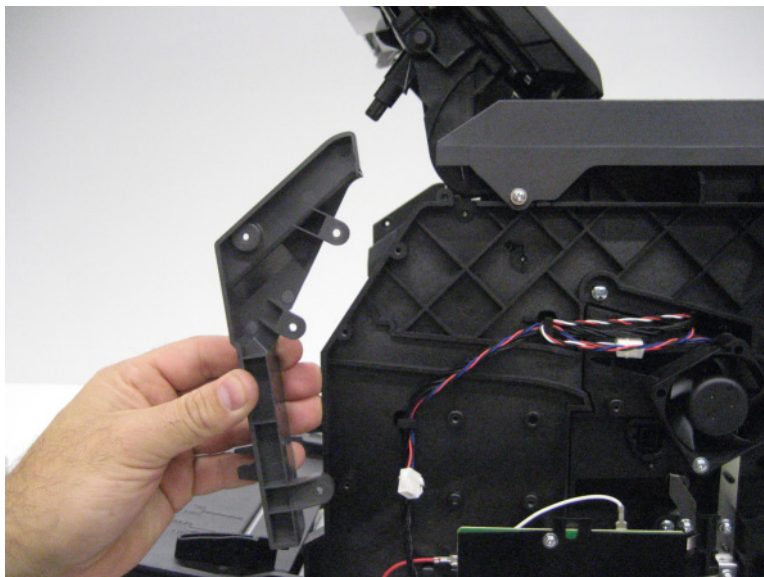
6 Remove the rear lower cover. See **"Rear lower cover removal" on page 532**.

7 Remove the top cover. See **"Top cover removal" on page 544**.

8 Remove the three screws (A) securing the left inner cover to the machine.
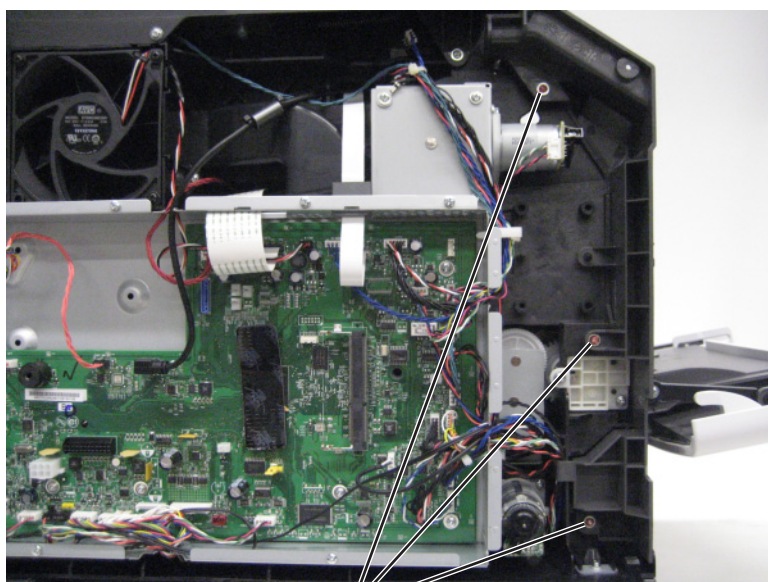
A

9 Remove the left inner cover.

Media aligner roller removal

Installation warning: When you reinstall the media aligner roller, you will have to adjust the media alignment. See **"Media aligner roller adjustment" on page 449**.

Warning—Potential Damage: When removing the media aligner, ensure that you retain the attached spring.

1 Remove the left cover. See **"Left cover removal" on page 565**.

2 Remove the media tray. See **"Media tray removal" on page 556**.

3 Remove the MPF tray. See **"MPF tray removal" on page 476**.

4 Remove the front door. See **"Front door removal" on page 455**.

5 Remove the toner cartridge.

6 Remove the imaging unit.

7 Remove the media turn guide. See **"Media turn guide removal" on page 466**.

8 Remove the MPF pick roller. See **"MPF pick roller removal" on page 472**.

9 Remove the MPF feeder lift plate. See **"MPF feeder lift plate removal" on page 469**.

10 Remove the media vertical guide. See **"Media vertical guide removal" on page 467**.

11 Remove the duplex exit diverter. See **"Duplex exit diverter removal" on page 453**.

12 Remove the inner guide deflector. See **"Inner guide deflector removal" on page 456**.

13 Remove the three screws (A) securing the media aligner roller to the machine.

14 Remove the screw (B) securing the grounding wire to the media aligner roller.

A
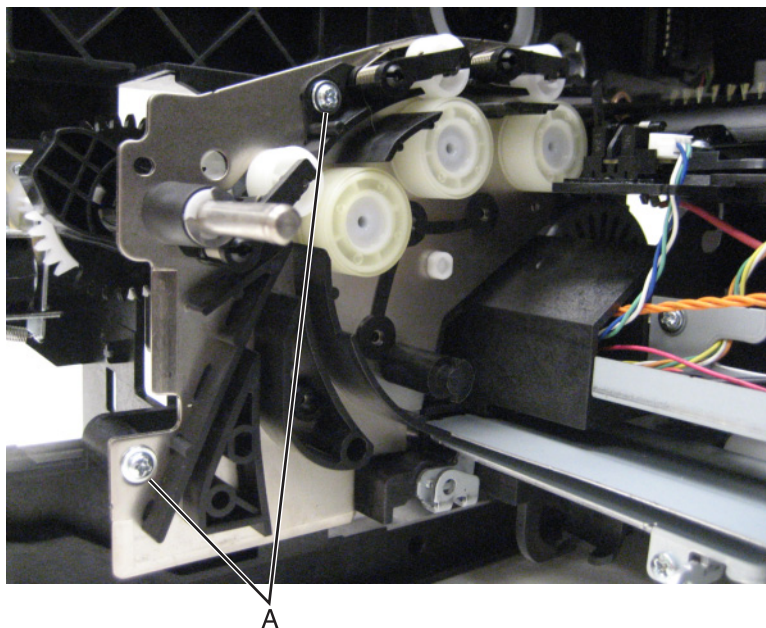
15 Locate the adjuster screw access hole in the controller board shield.

Note: The adjuster screw is contained between the left frame and the drive plate; it will stay in place during media aligner roller replacement. If the adjuster screw needs to be replaced, then the controller board and the main drive motor will also have to be removed to access the adjuster screw.

16 Using a 3mm hex wrench, completely loosen the adjuster screw (C) counterclockwise, as shown in the following image.

B
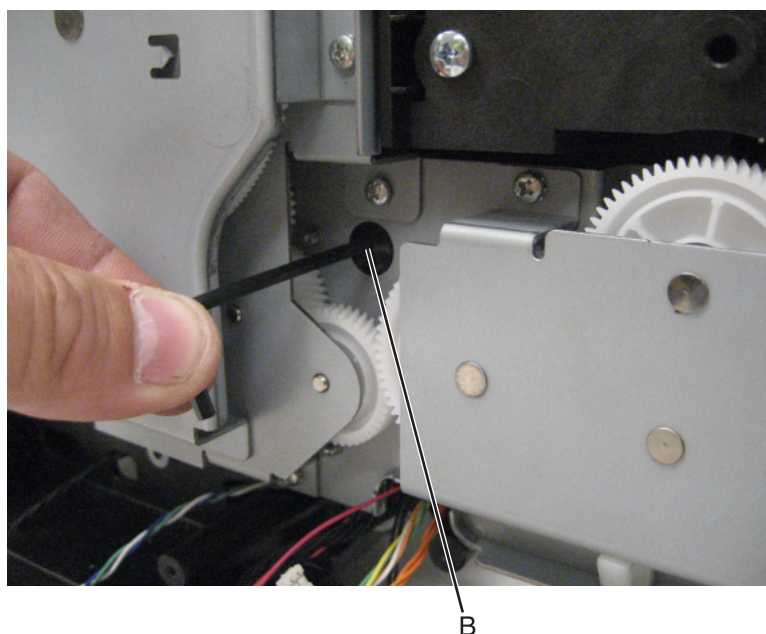
Installation warning: Make sure to reattach the grounding strap to the correct screw, and make sure the grounding strap is out of the paper path.

17 Gently detach the media aligner roller.
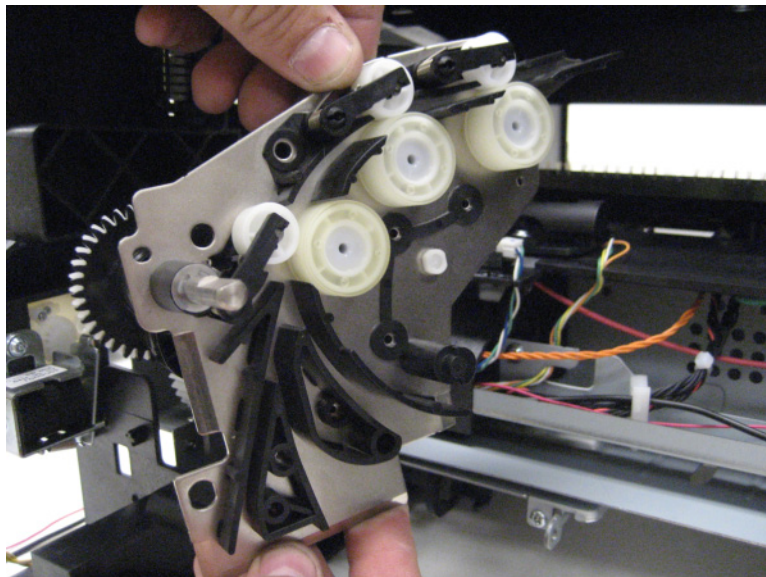
Warning—Potential Damage: When removing the media aligner, ensure that you retain the attached spring.
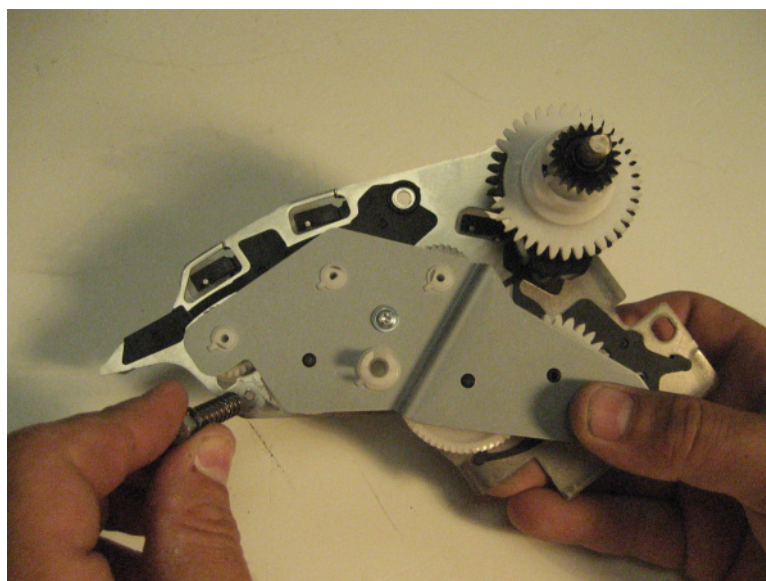
Media turn guide removal

1 Remove the left cover. See **"Left cover removal" on page 565**.

2 Remove the controller board access shield. See **"Controller board access shield removal" on page 570**.

3 Remove the media tray. See **"Media tray removal" on page 556**.

4 Open the control panel door.

5 Remove the toner cartridge.

6 Remove the imaging unit.

7 Remove the MPF feeder lift plate. See **"MPF feeder lift plate removal" on page 469**.

8 Gently slide the media turn guide to the right to detach it from the machine.
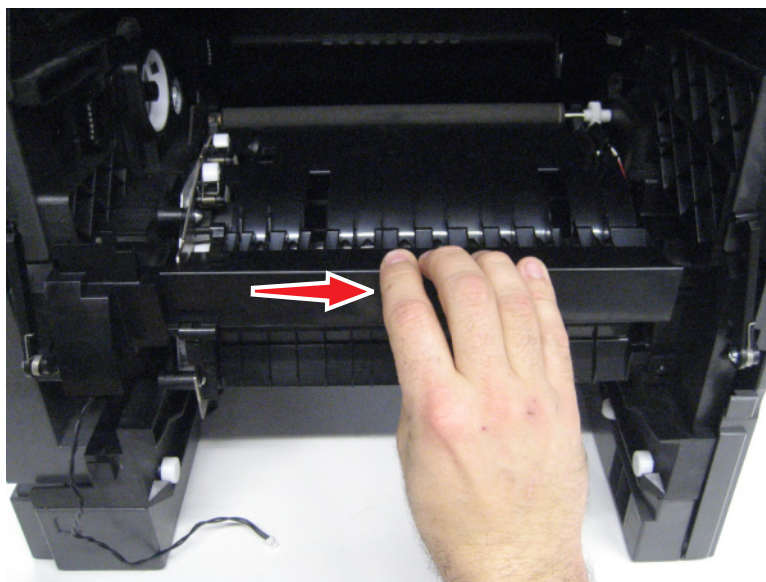
9 Remove the media turn guide.
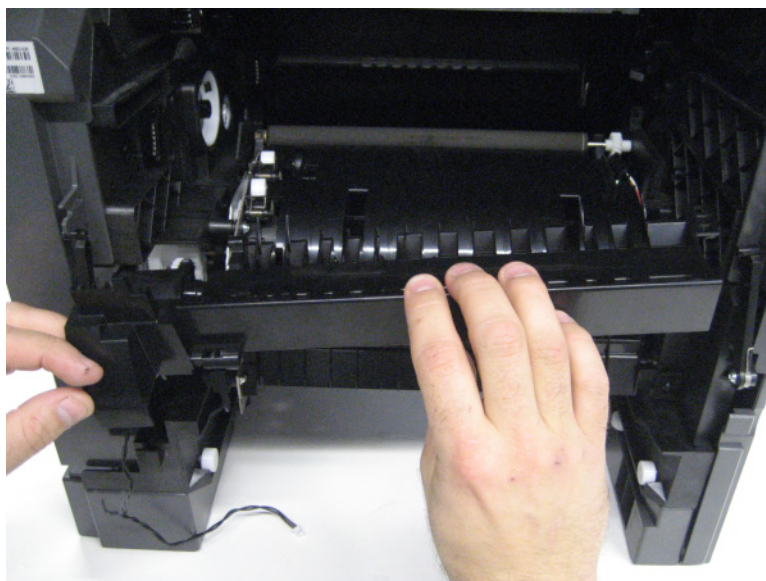
Installation note: When replacing the media turn guide, ensure that the alignment pin properly engages the media turn guide and that the alignment hooks properly engage the slots in the frame. If these parts are not properly engaged, paper jams will occur.

Media vertical guide removal

1 Remove the left cover. See **"Left cover removal" on page 565**.

2 Remove the controller board access shield. See **"Controller board access shield removal" on page 570**.

3 Remove the media tray. See **"Media tray removal" on page 556**.

4 Open the control panel door.

5 Remove the toner cartridge.

6 Remove the imaging unit.

7 Remove the MPF feeder lift plate. See **"MPF feeder lift plate removal" on page 469**.

8 Remove the media turn guide. See **"Media turn guide removal" on page 466**.

9 Detach the right side of the media vertical guide.
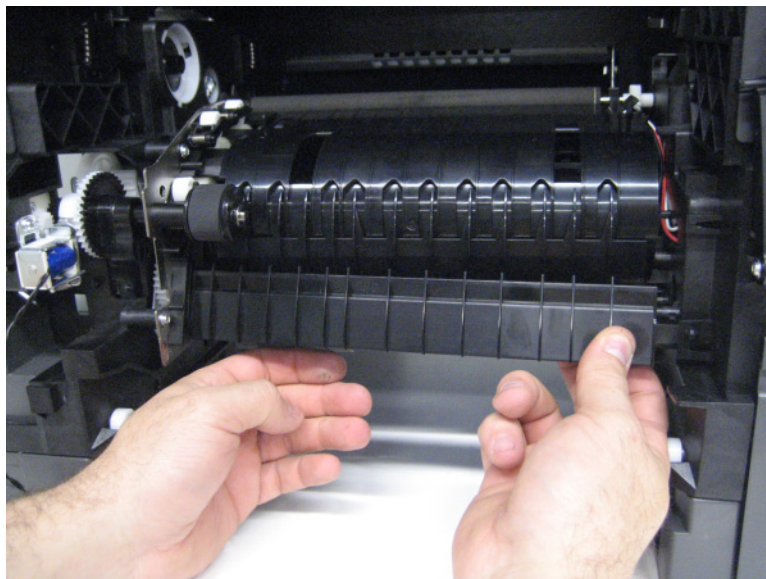
10 Remove the media vertical guide.
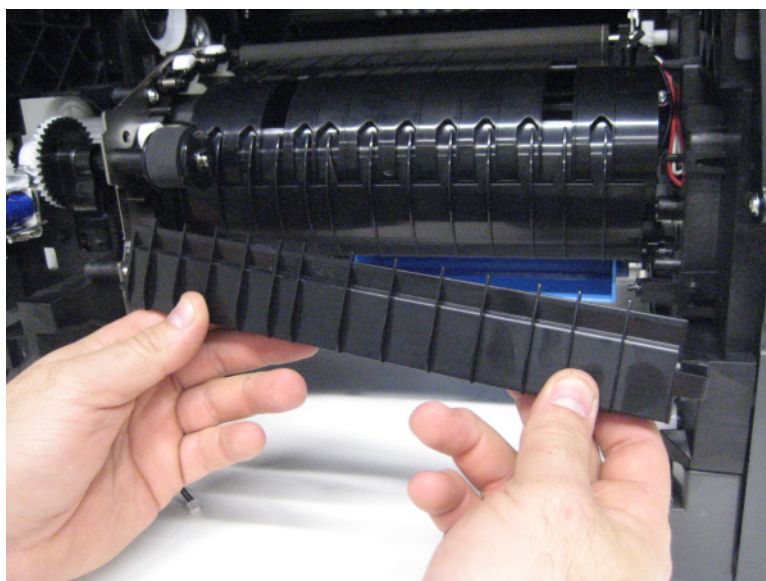
MPF feeder lift plate removal

1 Remove the left cover. See **"Left cover removal" on page 565**.

2 Remove the controller board access shield. See **"Controller board access shield removal" on page 570**.

3 Remove the media tray. See **"Media tray removal" on page 556**.

4 Open the control panel door.

5 Remove the toner cartridge.

6 Remove the imaging unit.

7 Remove the four screws (A) securing the MPF feeder lift plate to the machine.
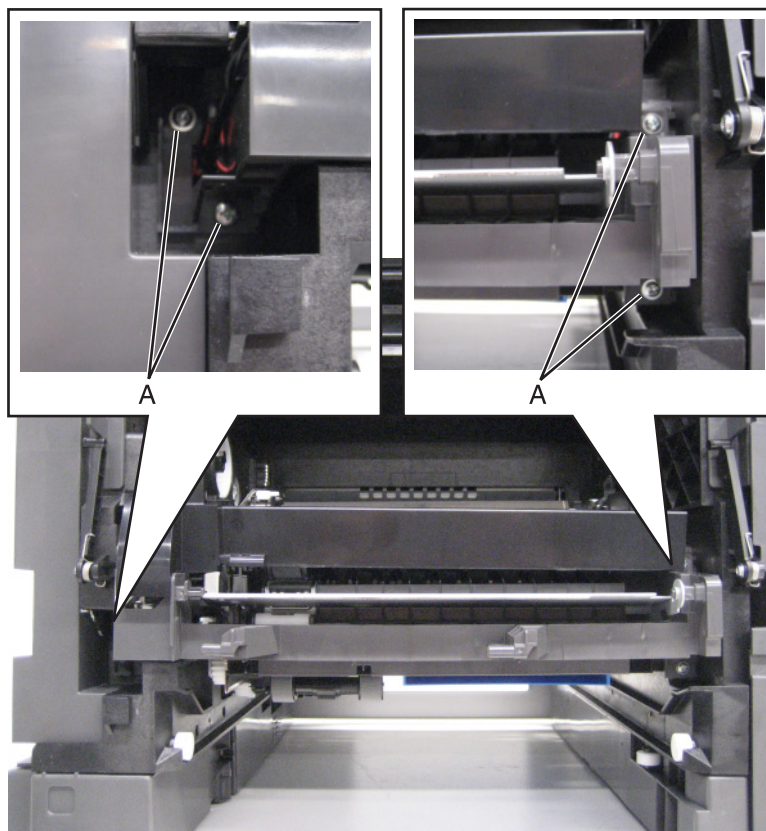
8 Press down the plate, as shown in the following image, and remove the MPF feeder lift plate.
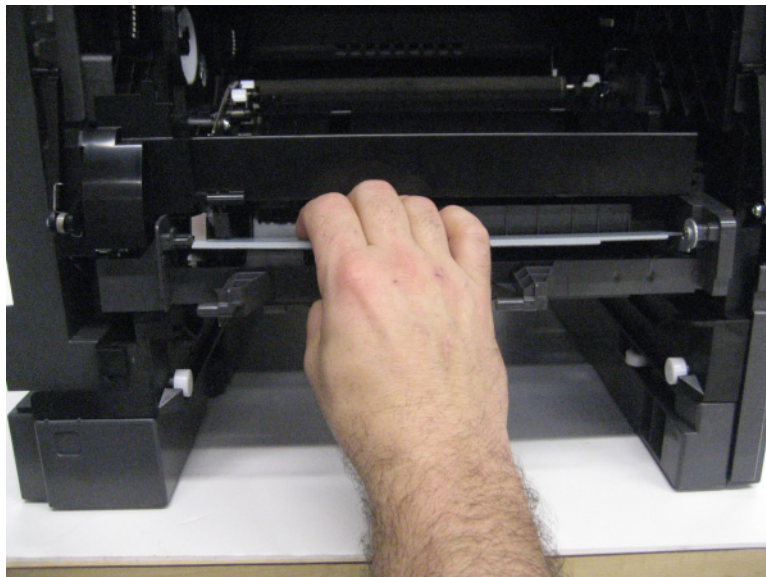
Warning—Potential Damage: When you press down the plate, you are lowering the pick pad (B) away from the MPF feed roller to prevent damage. If you do not do this, the pick pad will likely become damaged.

C   B
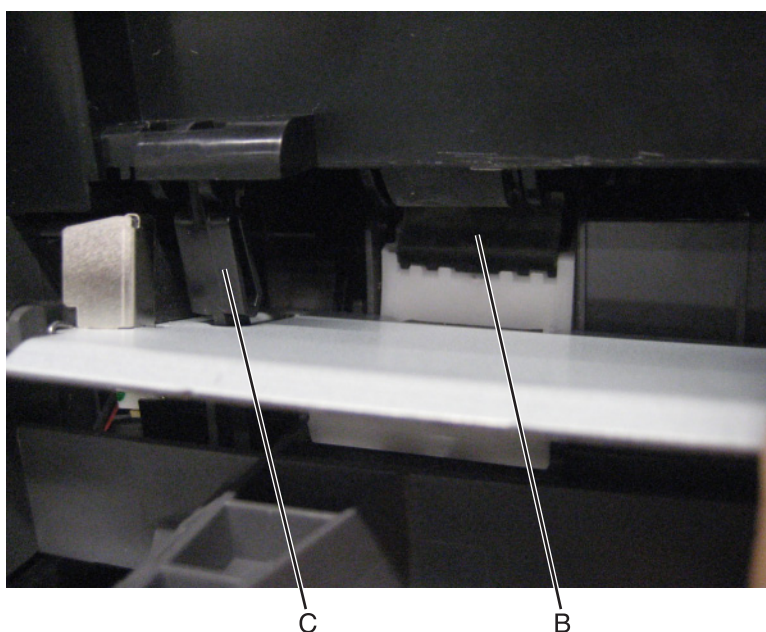
Installation warning: When replacing the MPF feeder lift plate ensure that the pick pad (B) is placed properly behind the MPF feed roller.

Installation warning: When replacing the MPF feeder lift plate ensure that the actuator flag (C) is placed in the slot, as shown in the following image.
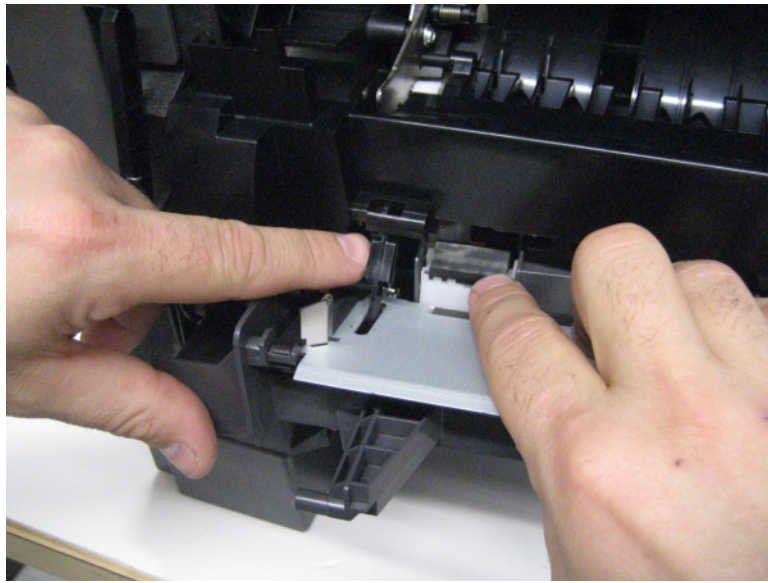
9 Disconnect the MPF pick solenoid cable - J3 (D).

10 Disconnect the MPF feeder lift plate cable - J38 (E).
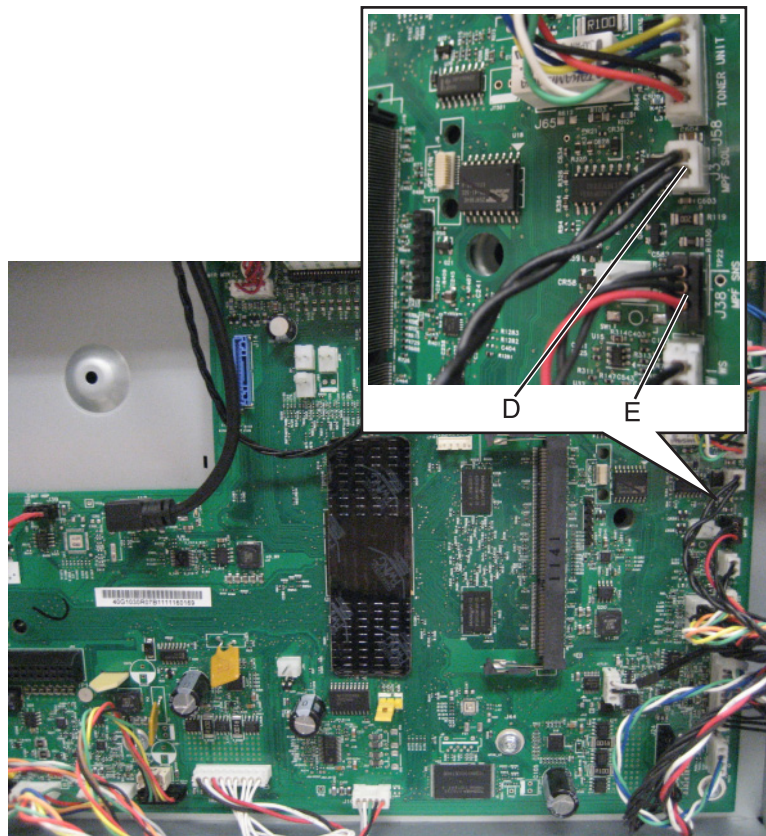
11 Remove the MPF feeder lift plate.
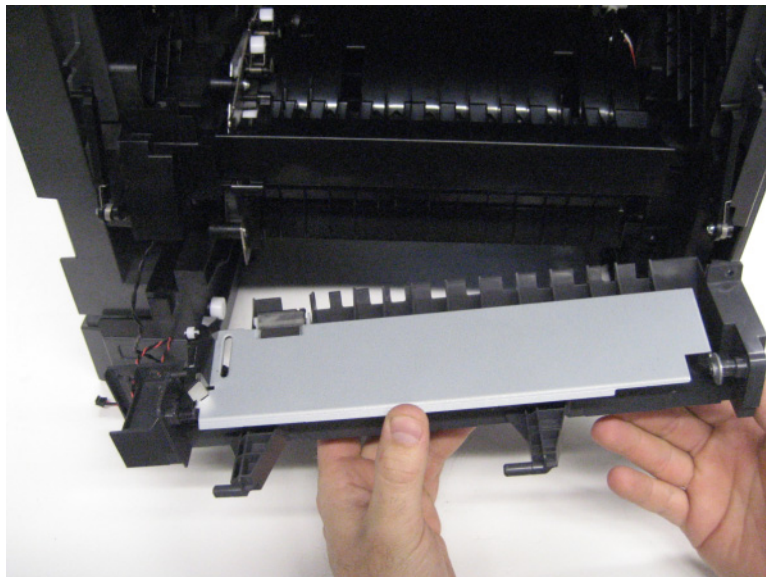
Installation warning: When replacing the MPF feeder lift plate, ensure that the MPF feeder lift plate cable and solenoid cable are properly rerouted and that all cables are properly reconnected. Make sure that these cables are not pinched between the MPF feeder lift plate and the frame before replacing the screws.

MPF pick roller removal

1 Remove the left cover. See **"Left cover removal" on page 565**.

2 Remove the controller board access shield. See **"Controller board access shield removal" on page 570**.

3 Remove the media tray. See **"Media tray removal" on page 556**.

4 Open the control panel door.

5 Remove the toner cartridge.

6 Remove the imaging unit.

7 Remove the media turn guide. See **"Media turn guide removal" on page 466**.

8 Remove the E-clip securing the MPF pick roller to the machine.
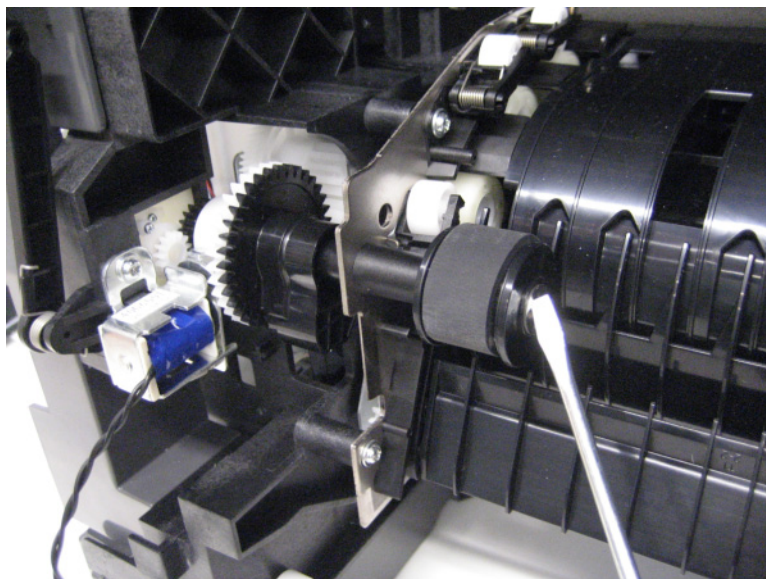
9 Remove the flange.
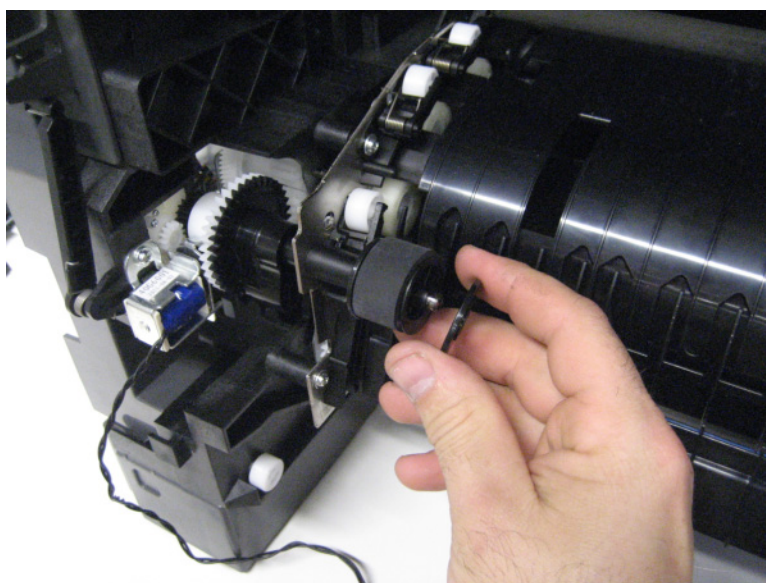
10 Remove the MPF pick roller.
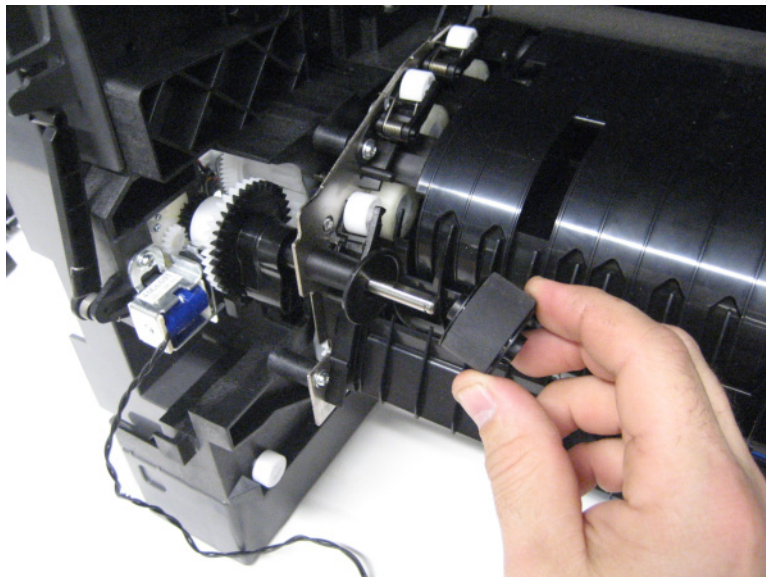
11 Remove the second flange.
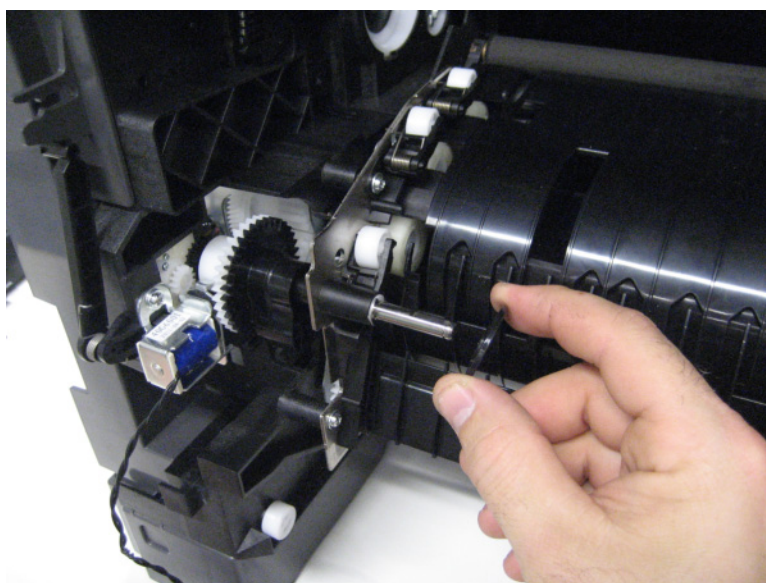
MPF solenoid removal

1 Remove the left cover. See **"Left cover removal" on page 565**.

2 Remove the controller board access shield. See **"Controller board access shield removal" on page 570**.

3 Disconnect the cable (A).
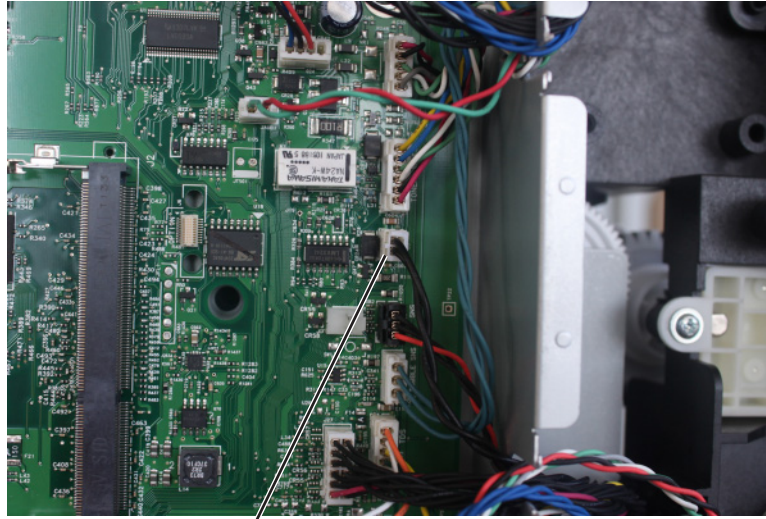
A

4 Remove the media tray. See **"Media tray removal" on page 556**.

5 Open the control panel door.

6 Remove the toner cartridge.

7 Remove the imaging unit.

8 Remove the MPF feeder lift plate. See **"MPF feeder lift plate removal" on page 469**.

Note: Leave the MPF feeder lift plate hanging. (Do not disconnect the MPF feeder lift plate cable.)

9 Remove the media turn guide. See **"Media turn guide removal" on page 466**.

10 Remove the screw (B).

B
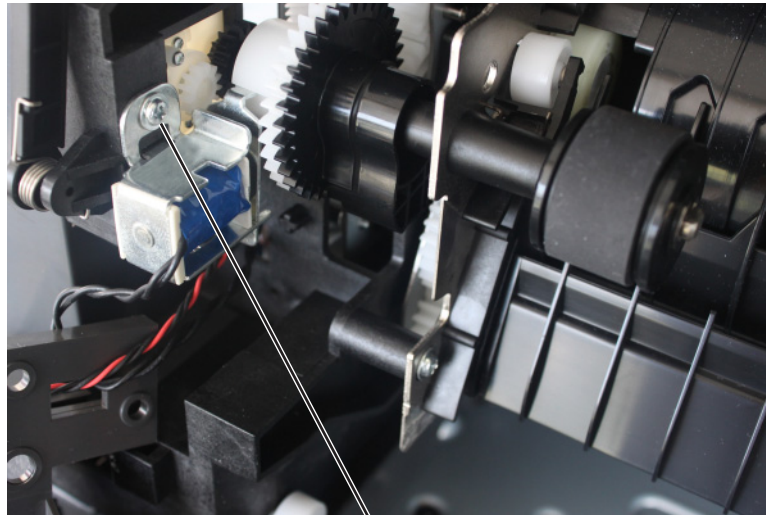
Installation note: Make sure the MPF solenoid latch is properly seated in the groove.
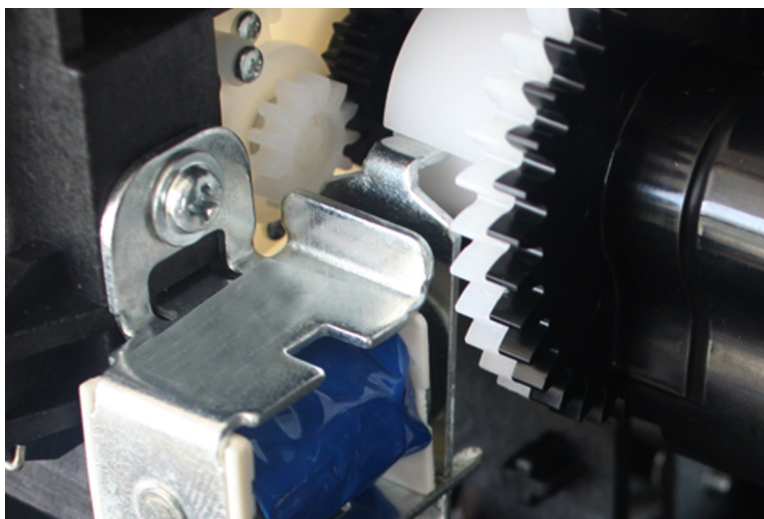
MPF tray removal

1 Lower the front door to a 45-degree angle, as shown in the following image.

2 Gently flex the left bracket (A) and detach the left side of the MPF tray.

A
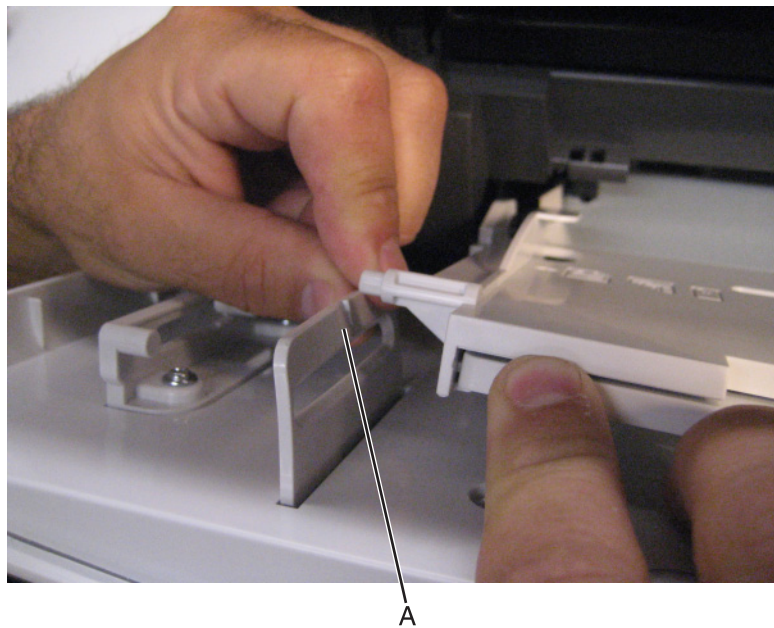
3 Gently flex the right bracket (B) and detach the right side of the MPF tray.

B
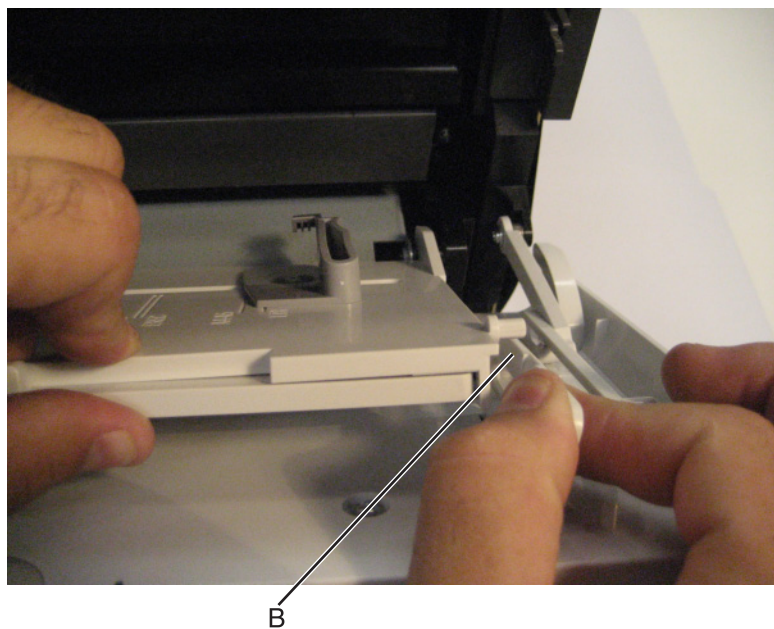
4 Raise the MPF tray to a vertical position, and detach it from the machine.

Right inner cover removal

1 Open the front door.

2 Raise the control panel to its uppermost position.

3 Remove the right cover. See **"Right cover removal" on page 584**.

4 Remove the three screws (A) securing the right inner cover to the machine.

A

Parts removal
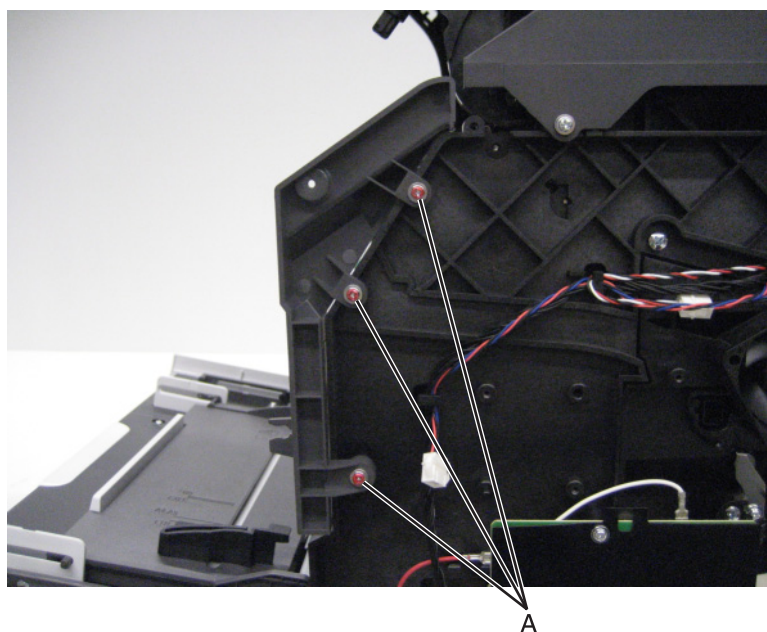
5 Remove the right inner cover.

CTLS cable removal

1 Open the front door.

2 Remove the toner cartridge.

3 Remove the imaging unit.

4 Remove the paper tray.

5 Remove the left cover. See **"Left cover removal" on page 565**.

6 Remove the right cover. See **"Right cover removal" on page 584**.

7 Remove the front door. See **"Front door removal" on page 455**.

8 Remove the MPF tray. See **"MPF tray removal" on page 476**.

9 Remove the media turn guide. See **"Media turn guide removal" on page 466**.

10 Remove the MPF feeder lift plate. See **"MPF feeder lift plate removal" on page 469**.

11 Remove the media vertical guide. See **"Media vertical guide removal" on page 467**.

12 Remove the duplex exit diverter. See **"Duplex exit diverter removal" on page 453**.

13 Remove the inner guide deflector. See **"Inner guide deflector removal" on page 456**.

14 Remove the controller board access shield. See **"Controller board access shield removal" on page 570**.

15 Disconnect all cables from the controller board.

16 Remove the board housing. See **"Board housing removal" on page 577**.

17 Disconnect the two wires from the HVPS.
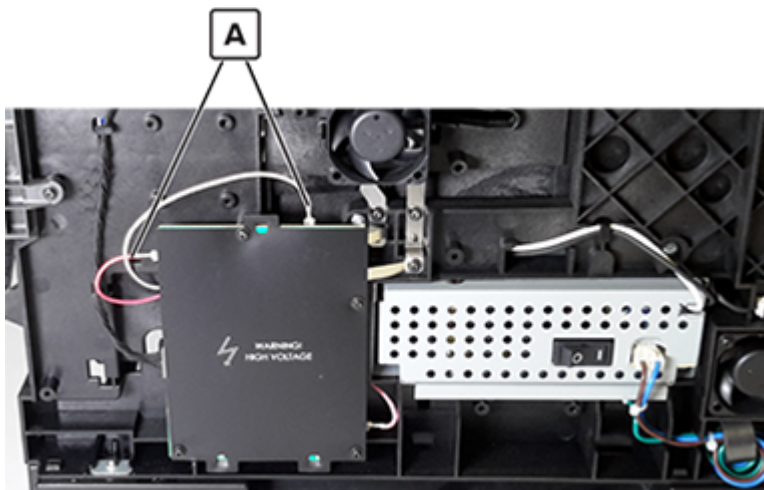
18 Remove the two screws (B), and then detach the CTLS socket (C) from the frame.

19 Cut the existing CTLS cable (D).
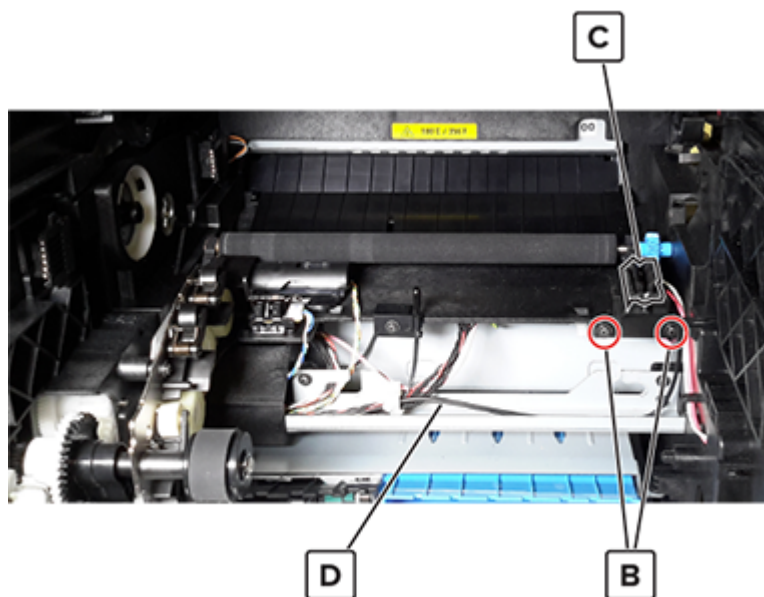
20 Carefully remove the existing wire pieces from the printer.

Note: Pay attention to the cable routes.
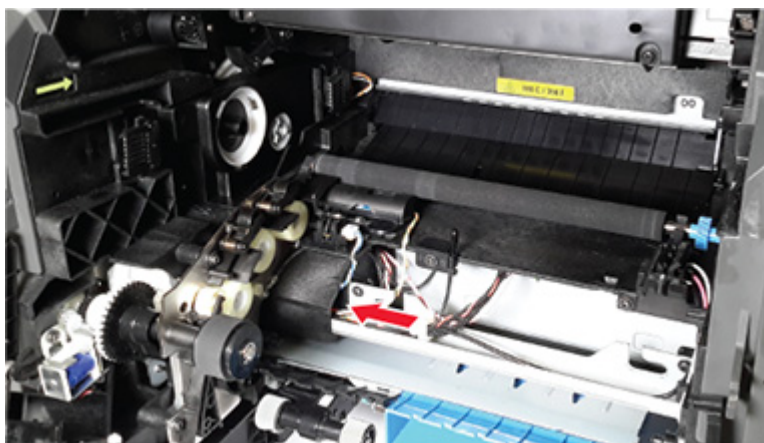
21 Remove the torroid from the existing cable, and then install the new cable if necessary.

Installation notes:

a When replacing the CTLS cable, make sure that the black wire is correctly routed through the printer.

b If necessary, use a screwdriver or a spring hook to assist in carefully routing the cable.

Sensor (input) removal

1 Remove the left cover. See **"Left cover removal" on page 565**.

2 Remove the controller board access shield. See **"Controller board access shield removal" on page 570**.

3 Remove the media tray. See **"Media tray removal" on page 556**.

4 Remove the front door. See **"Front door removal" on page 455**.

5 Remove the toner cartridge.

6 Remove the imaging unit.

7 Remove the MPF feeder lift plate. See **"MPF feeder lift plate removal" on page 469**.

8 Remove the media turn guide. See **"Media turn guide removal" on page 466**.

9 Remove the media vertical guide. See **"Media vertical guide removal" on page 467**.

10 Remove the duplex exit diverter. See **"Duplex exit diverter removal" on page 453**.

11 Remove the inner guide deflector. See **"Inner guide deflector removal" on page 456**.

12 Disconnect the cable from the sensor (input).

13 Release the hooks (A) securing the sensor (input) to the machine.
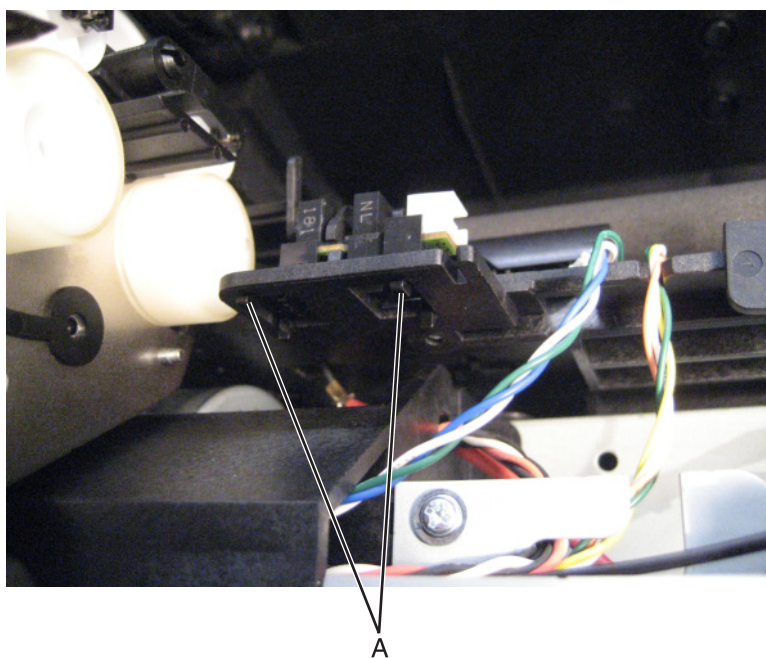
14 Remove the sensor (input).

Sensor (toner density) removal

1 Remove the left cover. See **"Left cover removal" on page 565**.

2 Remove the controller board access shield. See **"Controller board access shield removal" on page 570**.

3 Remove the media tray. See **"Media tray removal" on page 556**.

4 Remove the front door. See **"Front door removal" on page 455**.

Parts removal

5 Remove the toner cartridge.

6 Remove the imaging unit.

7 Remove the MPF feeder lift plate. See **"MPF feeder lift plate removal" on page 469**.

8 Remove the media turn guide. See **"Media turn guide removal" on page 466**.

9 Remove the media vertical guide. See **"Media vertical guide removal" on page 467**.

10 Remove the duplex exit diverter. See **"Duplex exit diverter removal" on page 453**.

11 Remove the inner guide deflector. See **"Inner guide deflector removal" on page 456**.

12 Remove the media aligner roller. See **"Media aligner roller removal" on page 464**.

13 Remove the screw (A) securing the sensor (toner density) to the machine.

A

14 Gently lift and remove the sensor (toner density).

15 Disconnect the cable (B).

B

Transfer roller left arm with cable removal

1 Remove the left cover. See **"Left cover removal" on page 565**.

2 Remove the controller board access shield. See **"Controller board access shield removal" on page 570**.

3 Remove the media tray. See **"Media tray removal" on page 556**.

4 Remove the front door. See **"Front door removal" on page 455**.

5 Remove the toner cartridge.

6 Remove the imaging unit.

7 Remove the media turn guide. See **"Media turn guide removal" on page 466**.

8 Remove the MPF pick roller. See **"MPF pick roller removal" on page 472**.

9 Remove the MPF feeder lift plate. See **"MPF feeder lift plate removal" on page 469**.

10 Remove the media vertical guide. See **"Media vertical guide removal" on page 467**.

11 Remove the duplex exit diverter. See **"Duplex exit diverter removal" on page 453**.

12 Remove the inner guide deflector. See **"Inner guide deflector removal" on page 456**.

13 Remove the transfer roller. See **"Transfer roller removal" on page 488**.

14 Remove the media aligner roller. See **"Media aligner roller removal" on page 464**.

15 Remove the sensor (toner density). See **"Sensor (toner density) removal" on page 482**.

16 Remove the right cover. See **"Right cover removal" on page 584**.

17 Remove the screw (A) securing the part to the machine.

A
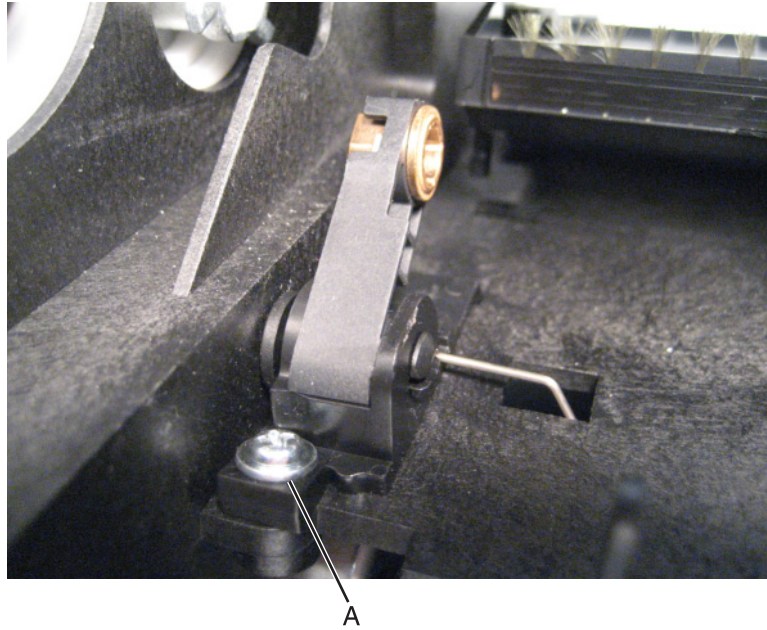
18 Remove the transfer roller left arm with cable.

19 Disconnect the cable (B) from the HVPS.

B
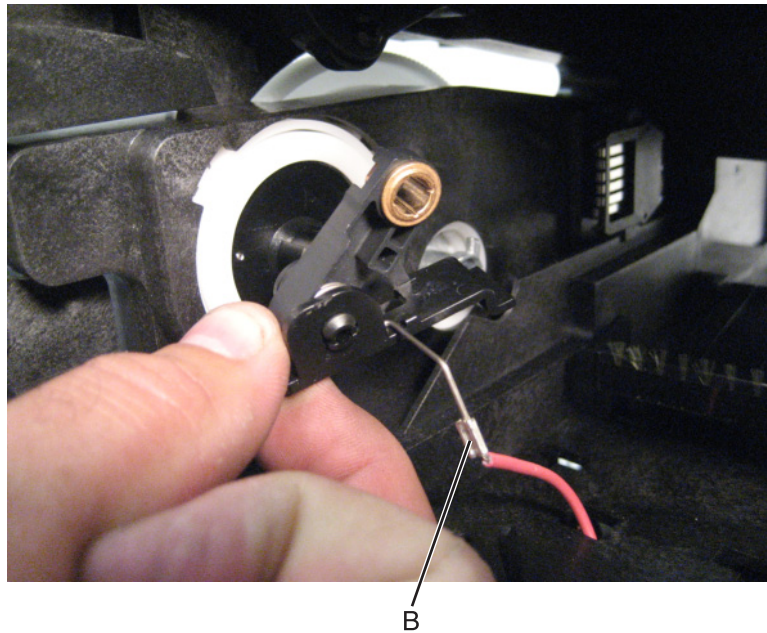
Transfer roller right arm removal

1 Remove the left cover. See **"Left cover removal" on page 565**.

2 Remove the controller board access shield. See **"Controller board access shield removal" on page 570**.

3 Remove the media tray. See **"Media tray removal" on page 556**.

4 Remove the front door. See **"Front door removal" on page 455**.

5 Remove the toner cartridge.

6 Remove the imaging unit.

7 Remove the MPF feeder lift plate. See **"MPF feeder lift plate removal" on page 469**.

8 Remove the media turn guide. See **"Media turn guide removal" on page 466**.

9 Remove the media vertical guide. See **"Media vertical guide removal" on page 467**.

10 Remove the duplex exit diverter. See **"Duplex exit diverter removal" on page 453**.

11 Remove the inner guide deflector. See **"Inner guide deflector removal" on page 456**.

12 Remove the two screws (A) securing the toner level contact to the machine.

A
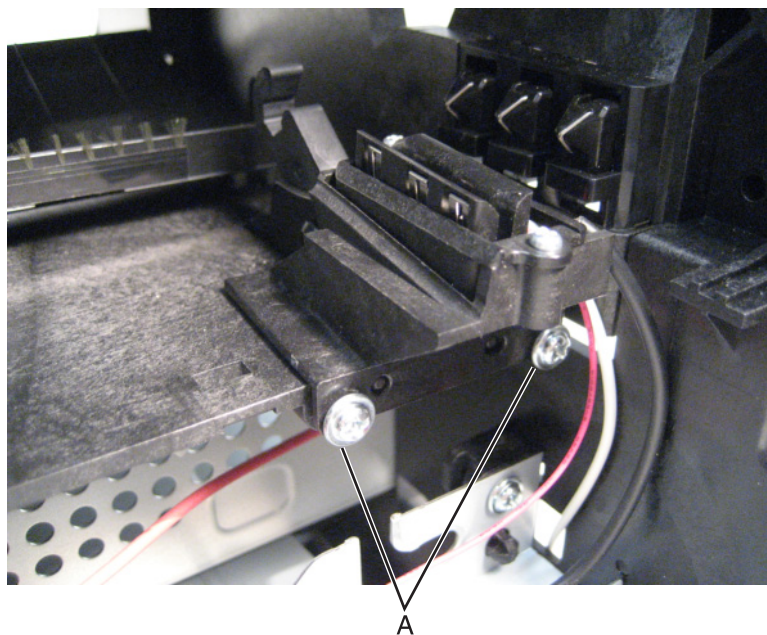
13 Remove the toner level contact.
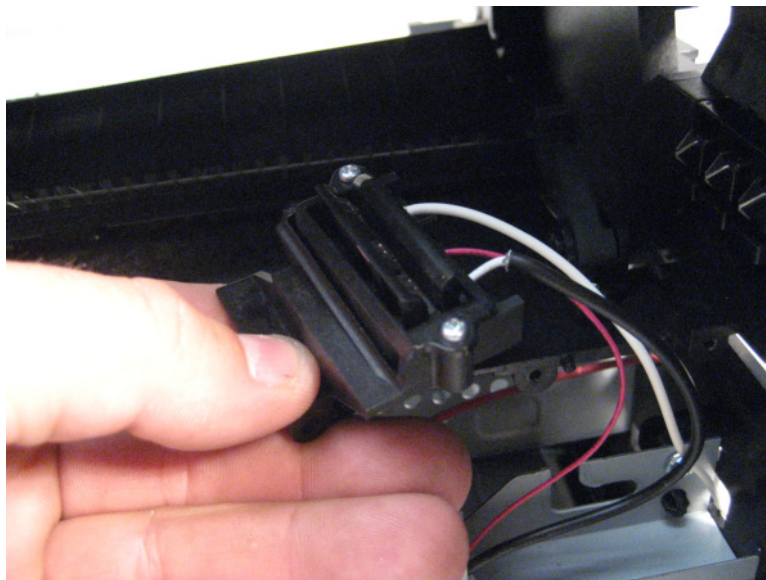
14 Remove the screw (B) securing the transfer roller right arm to the machine.

B
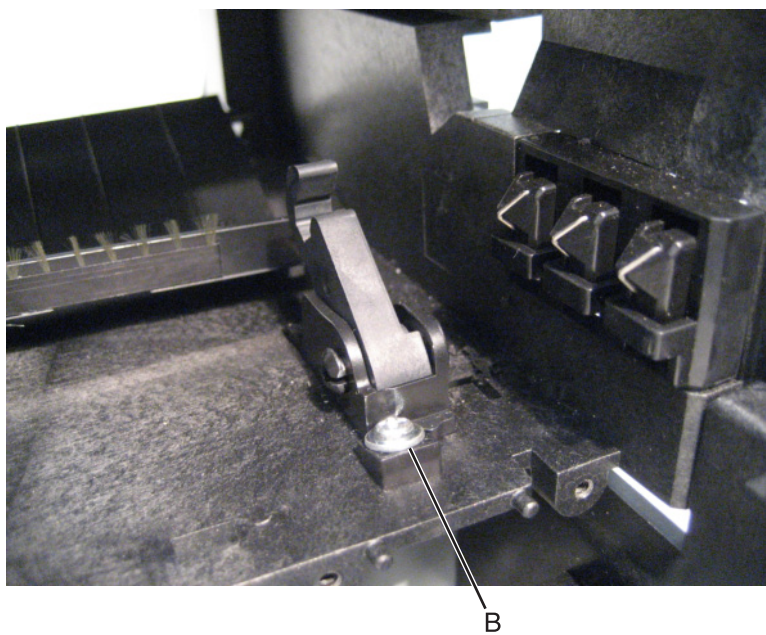
15 Remove the transfer roller right arm.
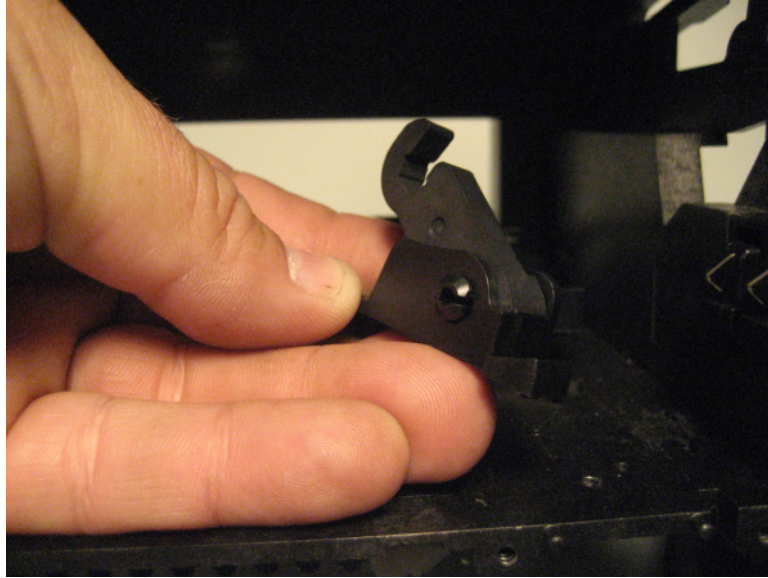
Transfer roller removal

1 Open the control panel cover.

2 Open the front door.

3 Remove the toner supply.
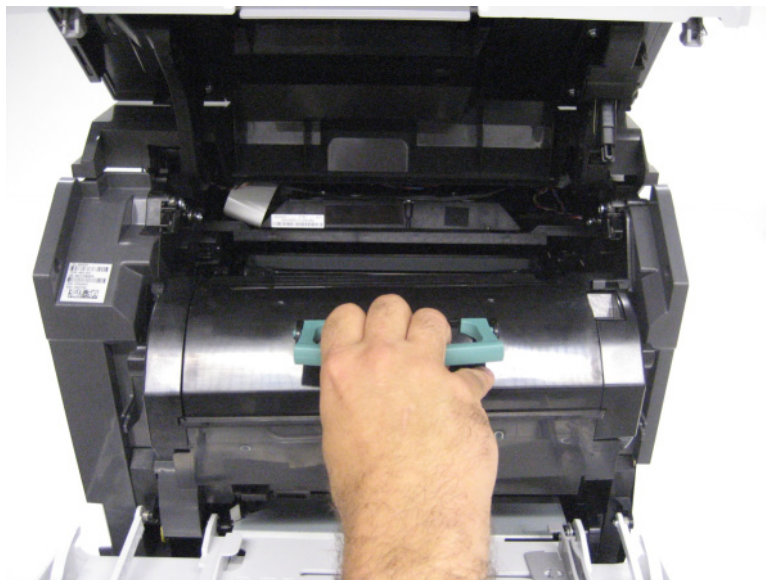
4 Remove the imaging unit.
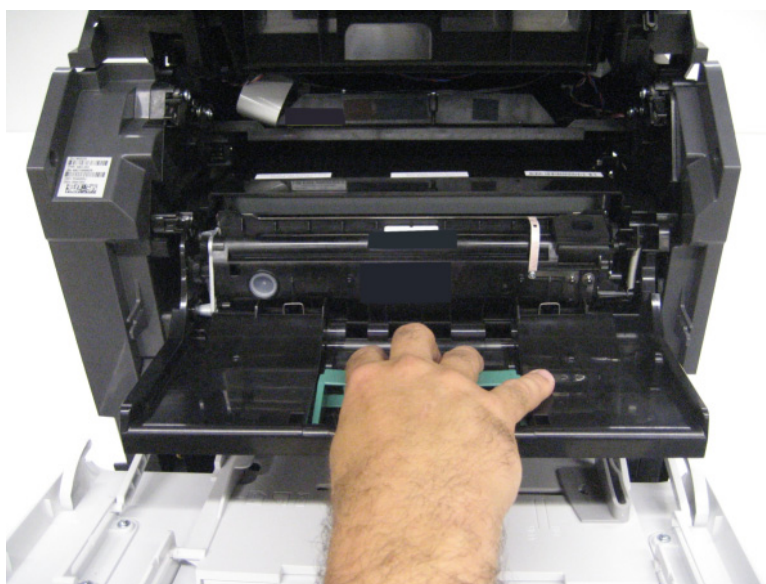
5 Release the transfer roller from the transfer roller right arm.
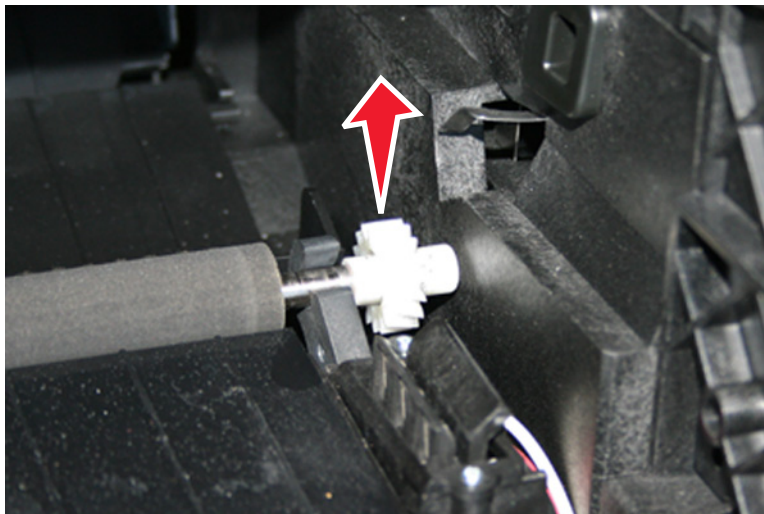
6 Slowly raise the transfer roller until the smooth part of the gear clears the printer edge. Move the transfer roller to the right to disengage it from the transfer roller left arm.

Warning—Potential Damage: Do not raise the right side of the transfer roller too far up. This can break the transfer roller left arm.

Warning—Potential Damage: Do not touch the foam surface when removing or reinstalling the transfer roller. Print quality issues can occur.

Parts removal
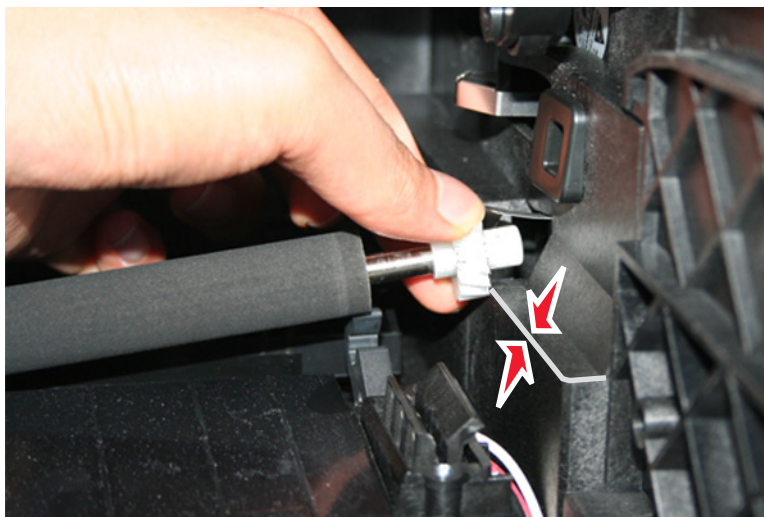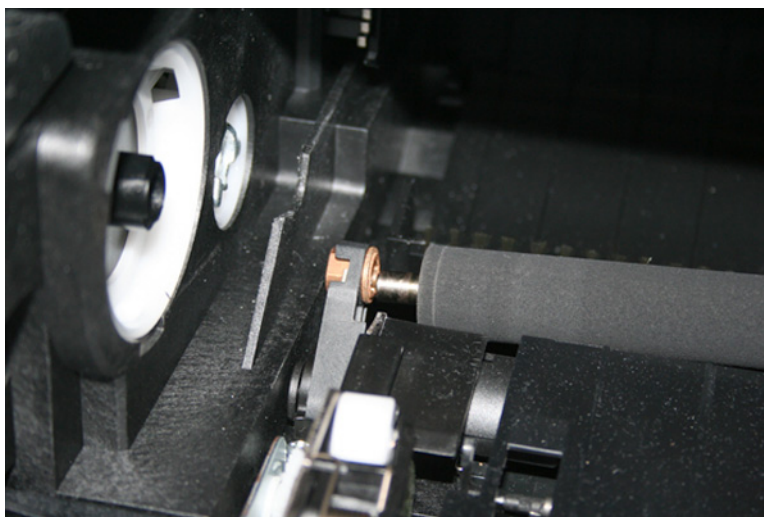
Toner level contact removal

1 Remove the right cover. See **"Right cover removal" on page 584**.

2 Remove the rear lower cover. See **"Rear lower cover removal" on page 532**.

3 Remove the LVPS. See **"LVPS removal" on page 592**.

4 Remove the left cover. See **"Left cover removal" on page 565**.

5 If the printer is equipped with a hard drive, then remove it.

6 Disconnect all the cables from the controller board.

7 Remove the five screws (A).
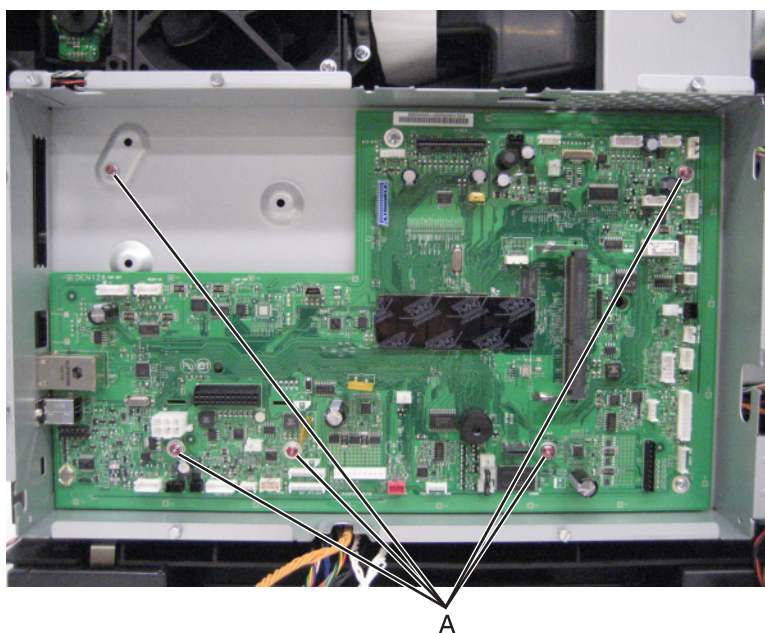
8 Remove the board housing.
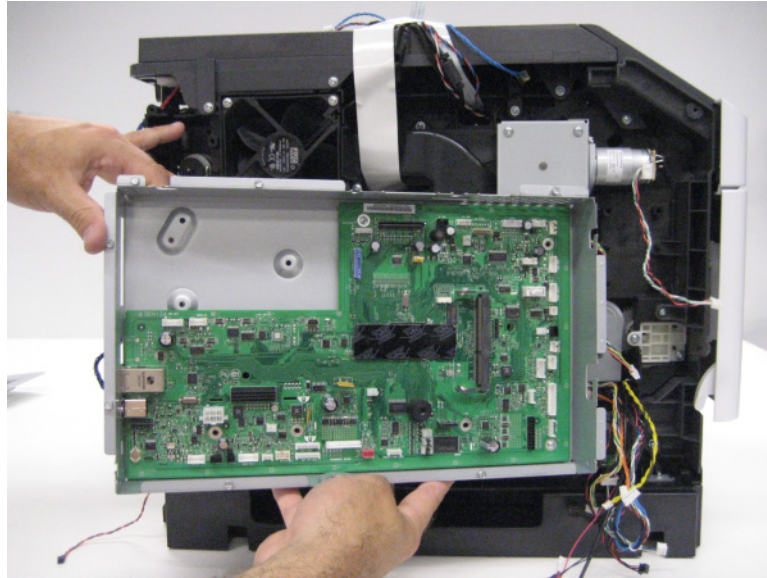
9 Remove the front door. See **"Front door removal" on page 455**.

10 Remove the toner cartridge.

11 Remove the imaging unit.

12 Remove the MPF feeder lift plate. See **"MPF feeder lift plate removal" on page 469**.

13 Remove the media turn guide. See **"Media turn guide removal" on page 466**.

14 Remove the media vertical guide. See **"Media vertical guide removal" on page 467**.

15 Remove the inner guide reflector. See **"Inner guide deflector removal" on page 456**.

16 Remove the two screws (B) securing the toner level contact to the machine.

B
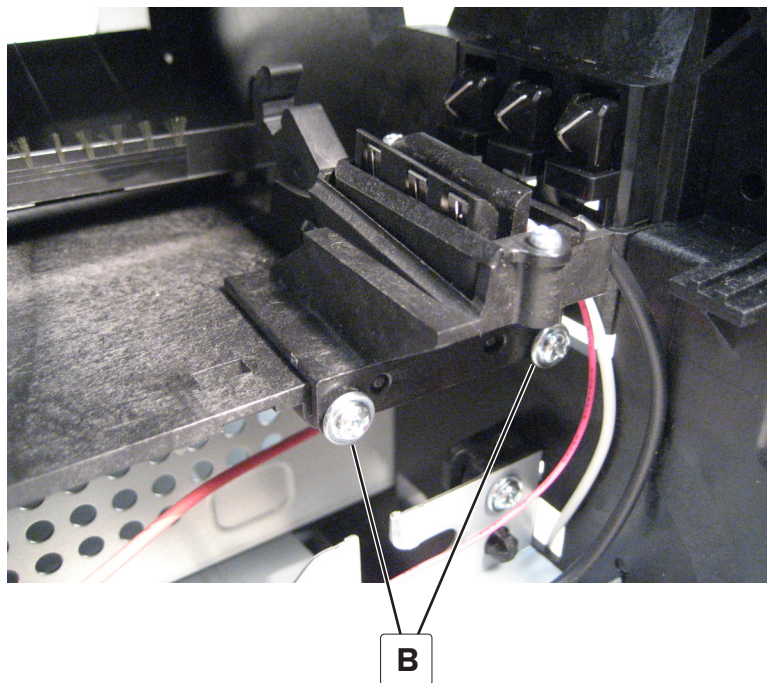
17 Remove the toner level contact.
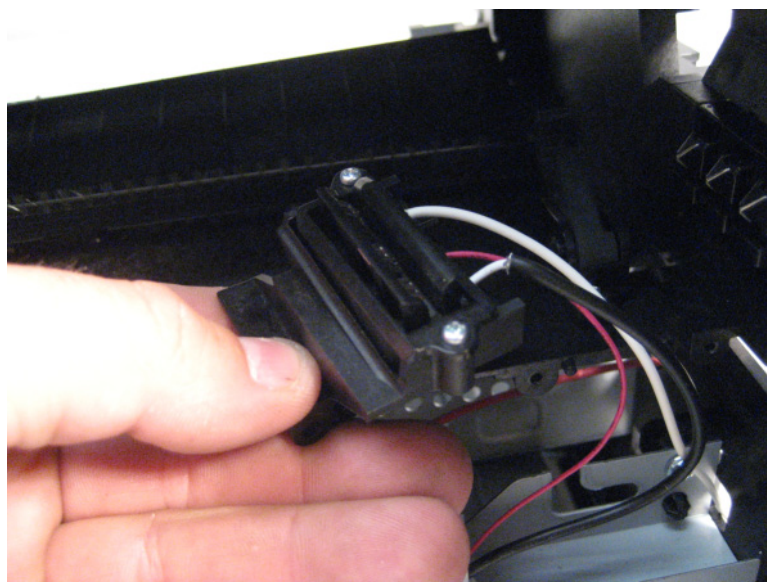
18 Disconnect the cables (C) from the HVPS.
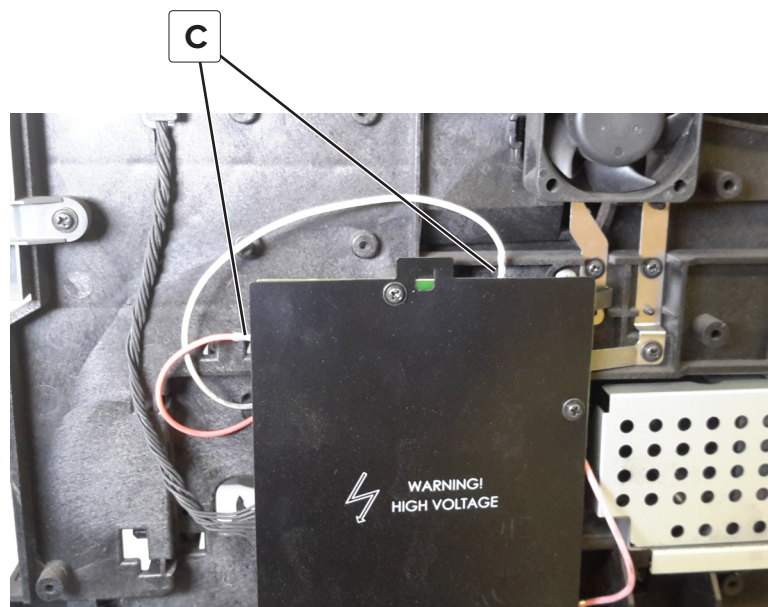
19 Release the black cable (D) from the clamps (E) and through the routing hole (F) in the frame.
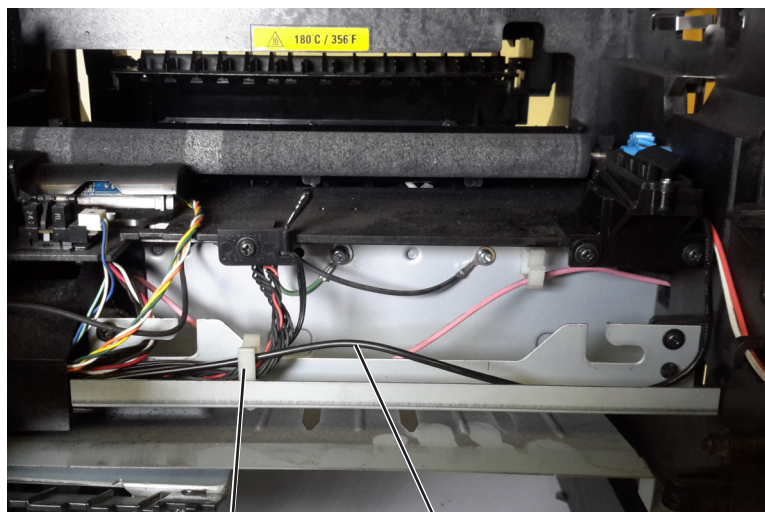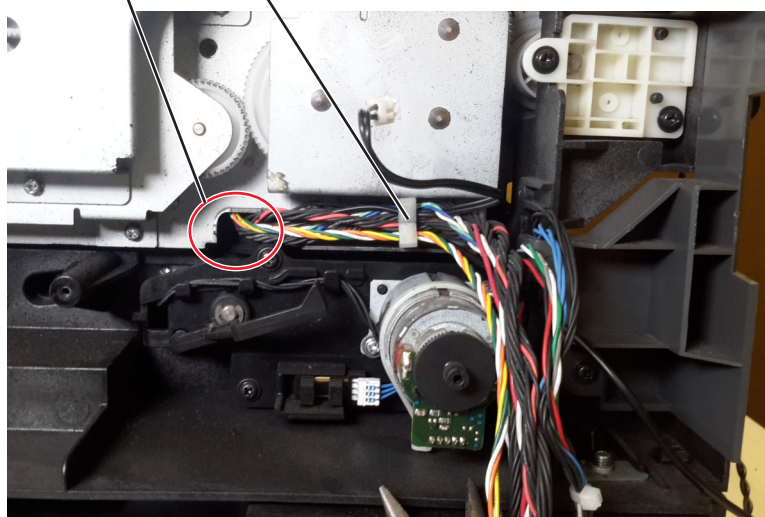
Installation note: Make sure that there is no gap between the toner level contact and frame to avoid print quality issues.

4.3-inch tilting display removal

1 Remove the control panel left bezel. See **"Control panel left bezel removal" on page 525**.

2 Remove the control panel. See **"Control panel removal (4.3-inch screen, 7-inch screen)" on page 507**.

3 Remove the control panel latch. See **"Control panel latch removal" on page 524**.

4 Remove the control panel front cover. See **"Control panel front cover removal" on page 522**.

5 Remove the six screws (A) securing the cover to the control panel.

6 Detach the cover.

7 Disconnect the display ribbon cable from the control panel board.

8 Remove the four screws (B) securing the 4.3" tilting display to the control panel.

B
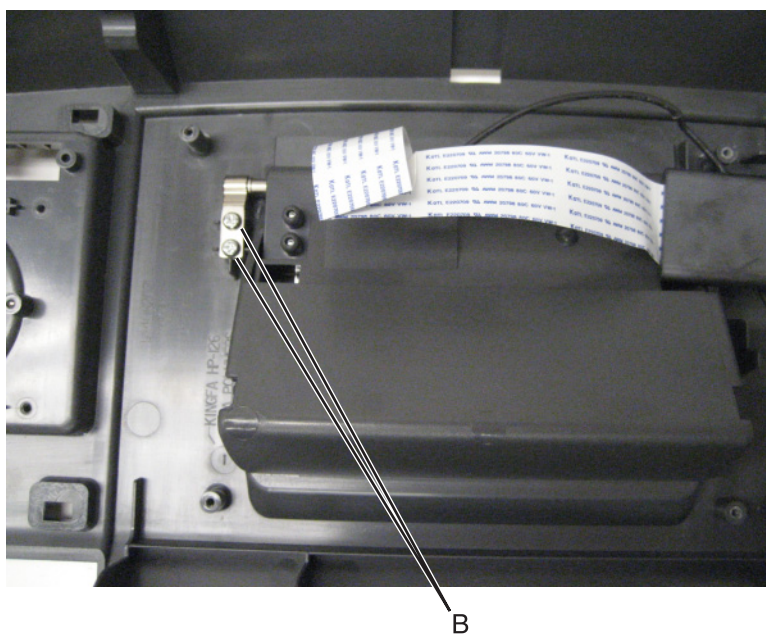
9 Remove the 4.3" tilting display from the control panel.
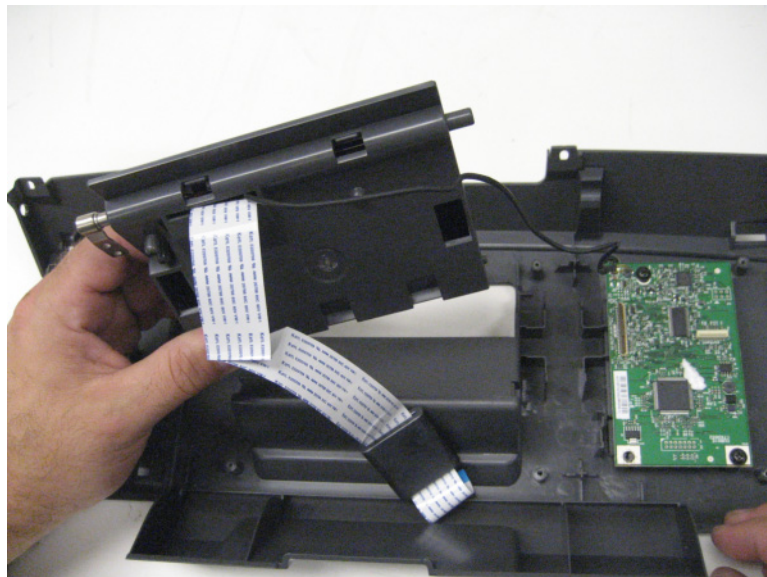
7-inch tilting display removal

1 Remove the control panel left bezel. See **"Control panel left bezel removal" on page 525**.

2 Remove the control panel. See **"Control panel removal (4.3-inch screen, 7-inch screen)" on page 507**.

3 Remove the control panel latch. See **"Control panel latch removal" on page 524**.

4 Remove the control panel front cover. See **"Control panel front cover removal" on page 522**.

5 Remove the five screws (A) securing the cover to the control panel.

A

6 Detach the cover.

7 Disconnect the display ribbon cable from the control panel board.

8 Remove the four screws (B) securing the 7" tilting display to the control panel.

B
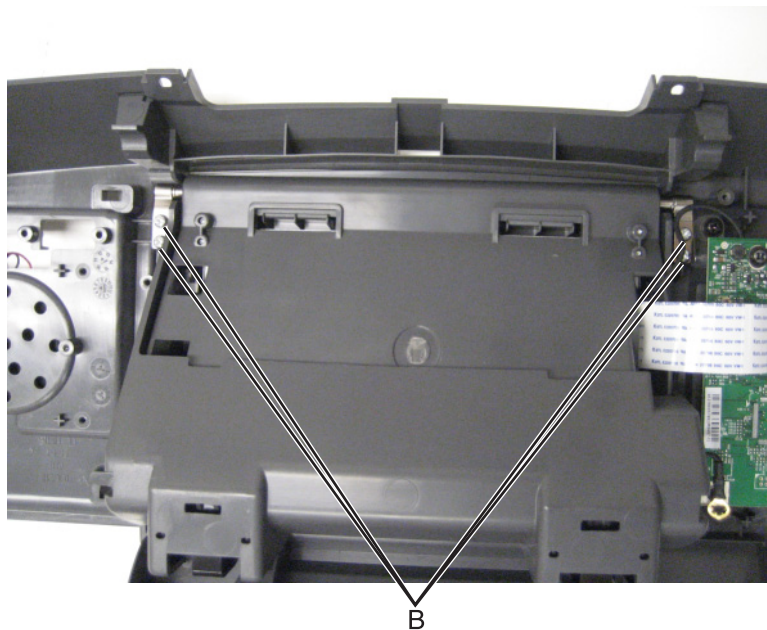
9 Remove the 7" tilting display from the control panel.

Control panel removal (2.4-inch screen)

Warning—Potential Damage: When replacing the control panel, control panel board, or controller board, replace only one component at a time. Replace the required component and perform a POR before replacing a second component. If this procedure is not followed, the printer will be rendered inoperable. Never replace both the control panel and the controller board without a POR after installing each one or the printer will be rendered inoperable. Never install or remove these components as a method of troubleshooting while operating in normal user mode. See **"Controller board/control panel replacement" on page 426**.

Warning—Potential Damage: When a component has been installed in a machine and has been powered up in normal user mode, it cannot be used in another machine; it must be returned to the manufacturer. The machine must be powered up in Diagnostic mode or the controller board, control panel boards, or control panel will become locked.

1 Raise the control panel to its uppermost position.

2 Remove the control panel left bezel. See the **"Control panel left bezel removal" on page 525**.

3 Remove the two screws (A) securing the USB cable to the control panel.

A

4 Release the USB cable from the control panel and pull it out and slightly away.

5 Remove the two screws (B) securing the left control panel hinge to the control panel.

B

6 Disconnect the left control panel hinge, and remove the USB cable from the control panel.

7 Remove the screw (C) securing the grounding cable to the machine.

C
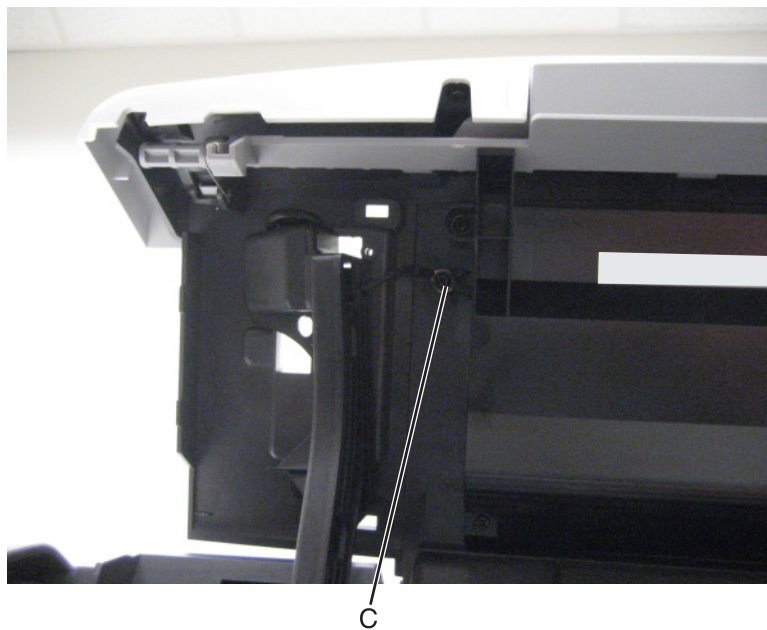
8 Disconnect the left control panel hinge, and remove the USB cable from the control panel.
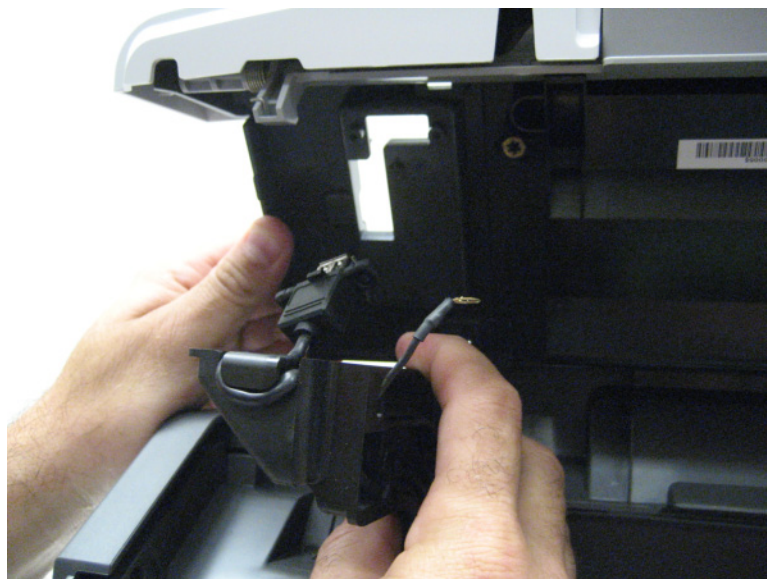
9 Remove the screw (D) securing the plastic cap to the machine.

D
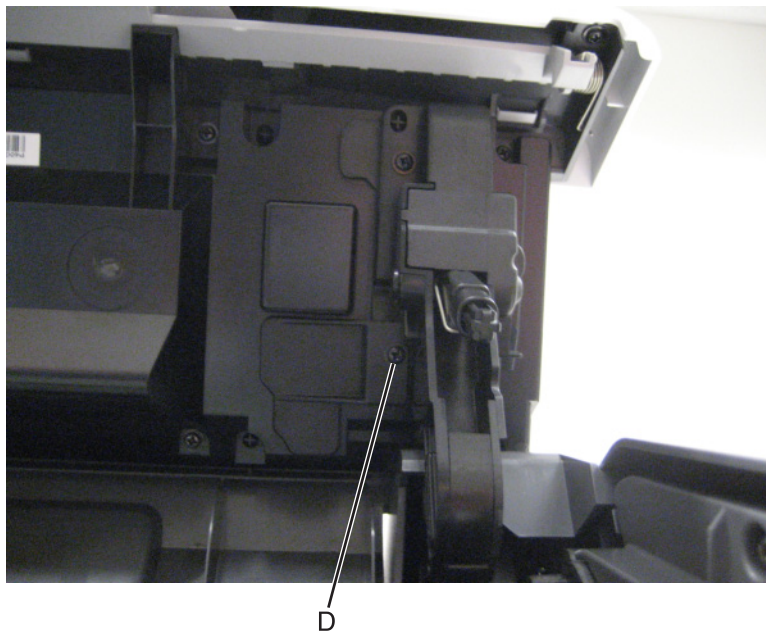
10 Remove the plastic cap
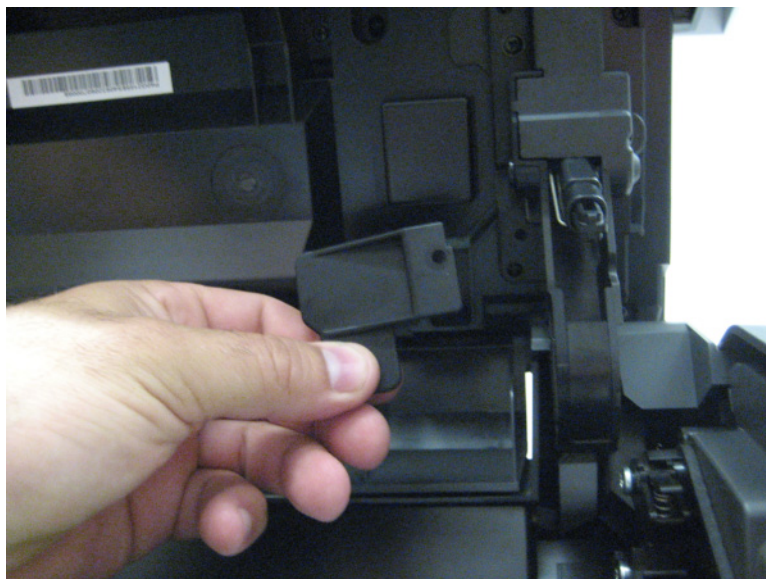
11 Remove the two screws (E) securing the right control panel hinge to the control panel.

E
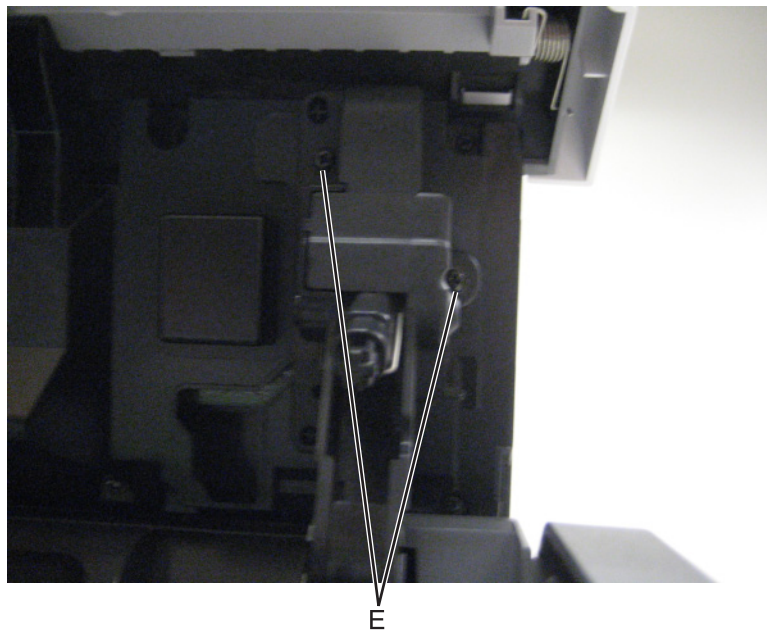
12 Remove the right control panel hinge.

13 Remove the screw (F) securing the ground cables to the machine.

14 Disconnect the control panel ribbon cable (G) from the control panel.

G   F
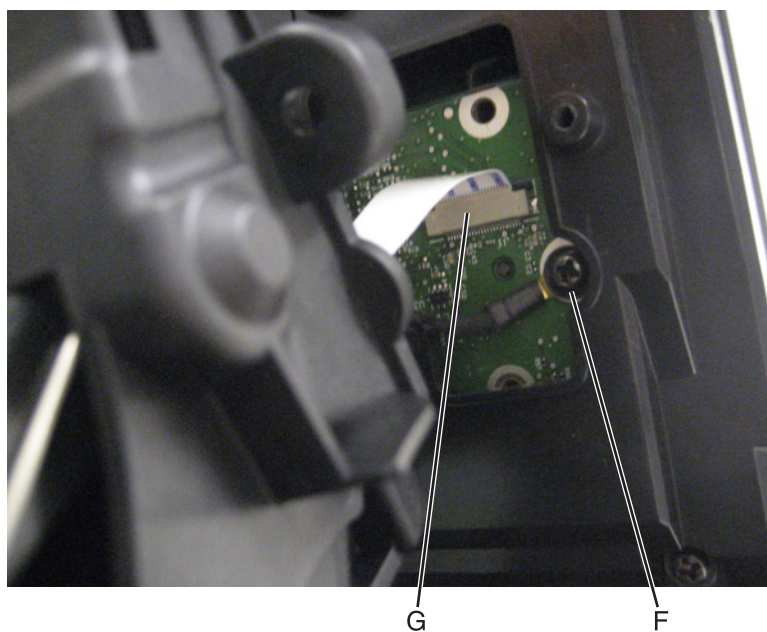
15 Remove the control panel.

16 Remove the control panel front cover. See **"Control panel front cover removal" on page 522**.

Control panel removal (4.3-inch screen, 7-inch screen)

Warning—Potential Damage: When replacing the control panel, control panel board, or controller board, replace only one component at a time. Replace the required component and perform a POR before replacing a second component. If this procedure is not followed, the printer will be rendered inoperable. Never replace both the control panel and the controller board without a POR after installing each one or the printer will be rendered inoperable. Never install or remove these components as a method of troubleshooting while operating in normal user mode. See **"Controller board/control panel replacement" on page 426**.

Warning—Potential Damage: When a component has been installed in a machine and has been powered up in normal user mode, it cannot be used in another machine; it must be returned to the manufacturer. The machine must be powered up in Diagnostic mode or the controller board, control panel boards, or control panel will become locked.

1 Raise the control panel to its uppermost position.

2 Remove the control panel left bezel. See the **"Control panel left bezel removal" on page 525**.

3 Remove the two screws (A) securing the USB cable to the control panel.

4 Release the USB cable from the control panel and pull it out and slightly away.

5 Remove the two screws (B) securing the left control panel hinge to the control panel.

B
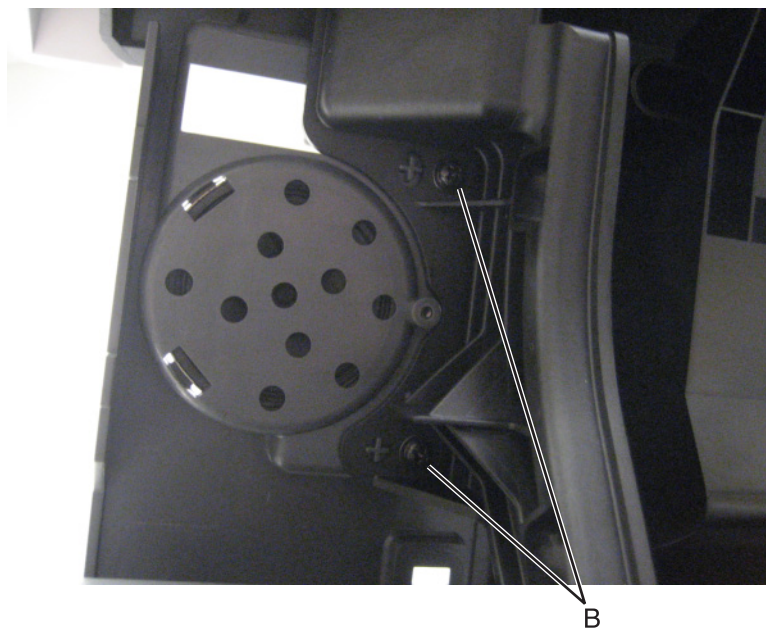
6 Disconnect the speaker cable.
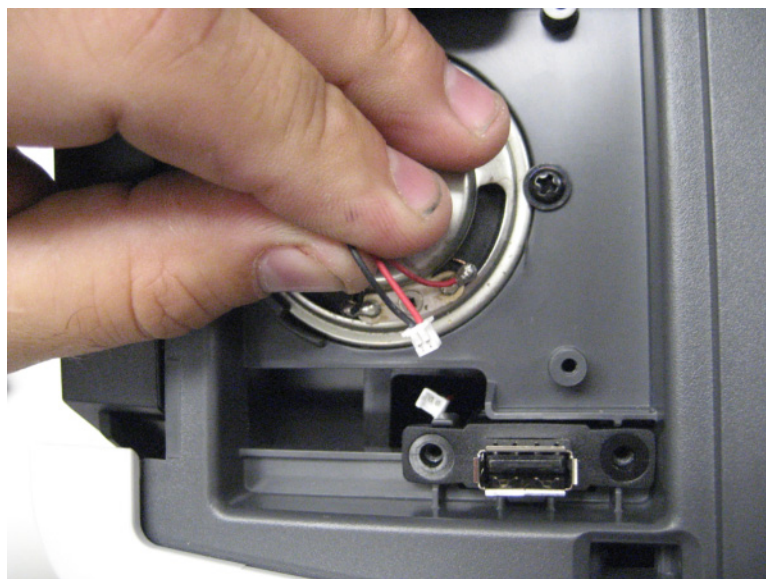
7 Disconnect the left control panel hinge, and remove the USB cable from the control panel.
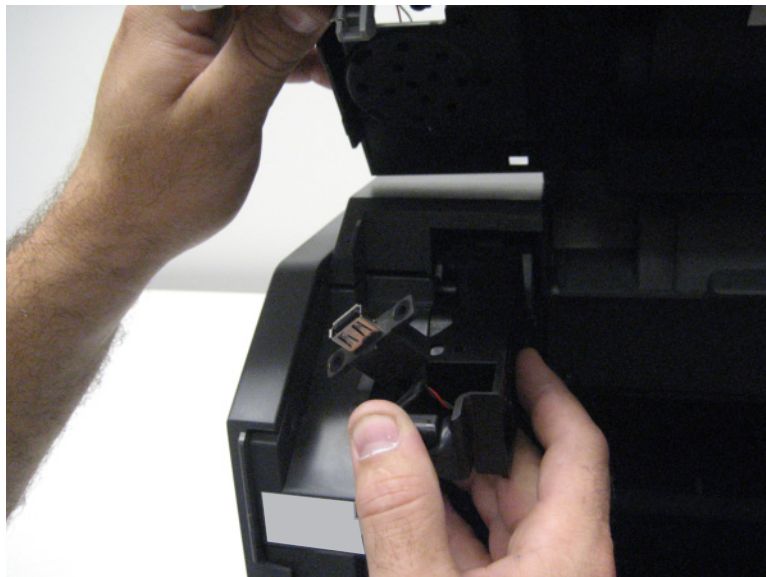
8 Disconnect any remaining grounding cables in the area of the left control panel hinge.

9 Remove the screw (C) securing the plastic cap to the machine.
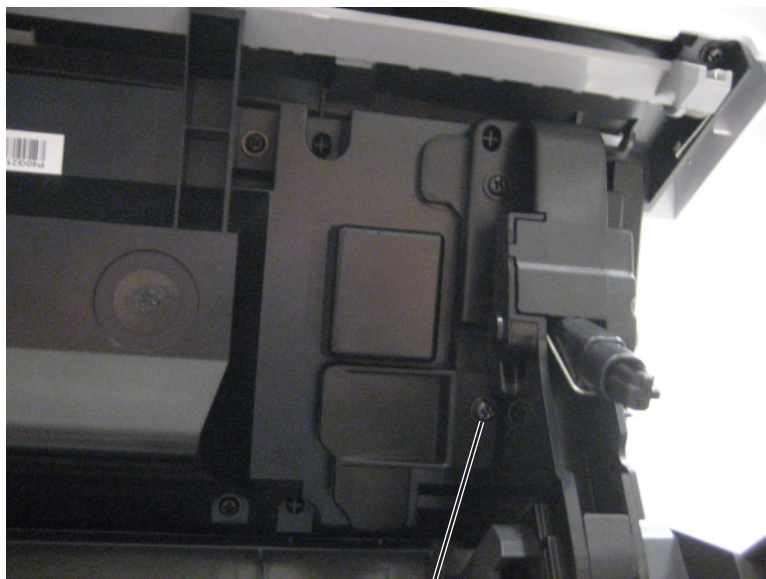
C

10 Remove the plastic cap.
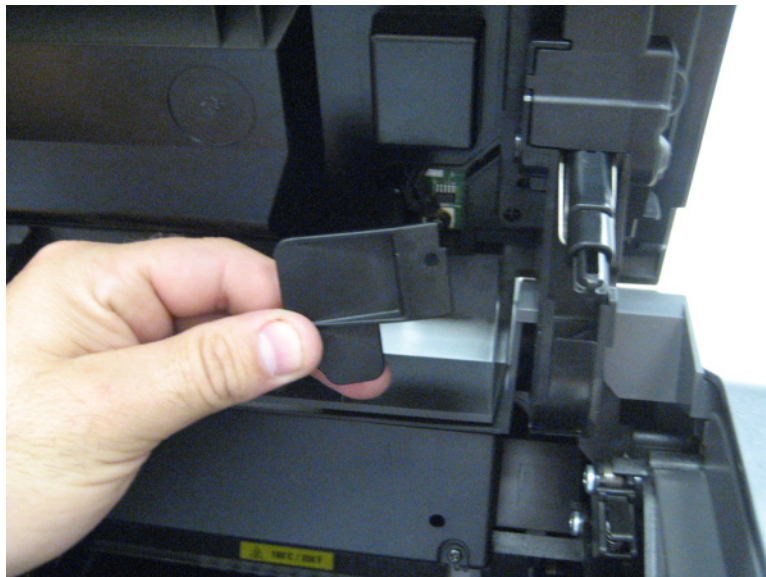
11 Remove the two screws (D) securing the right control panel hinge to the control panel.

D
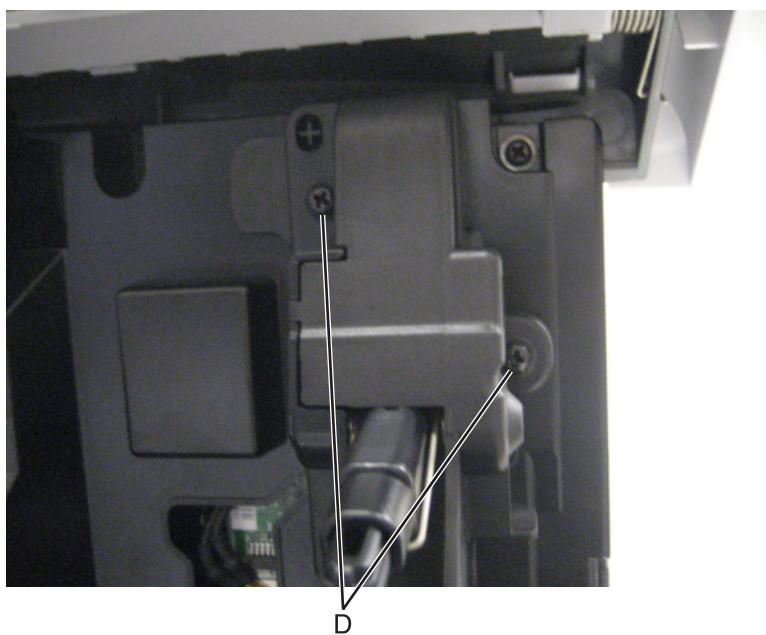
12 Remove the right control panel hinge.
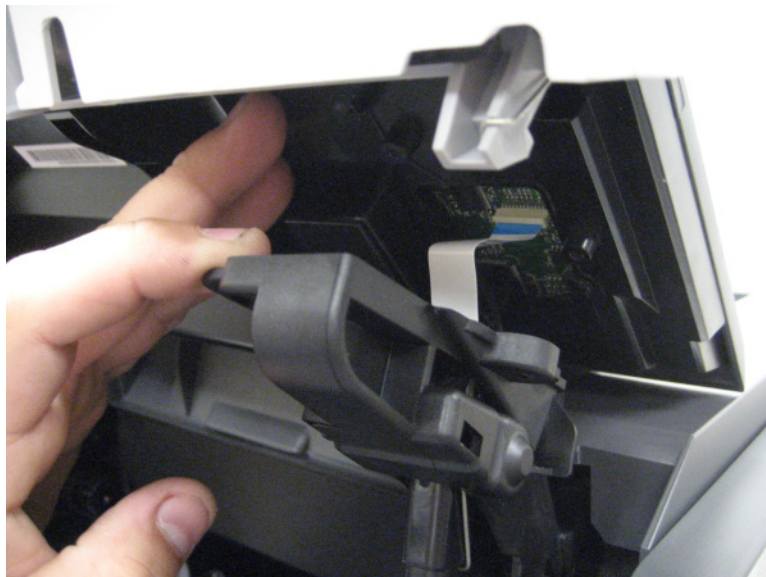
13 Remove the screw (E) securing the ground cables to the machine.
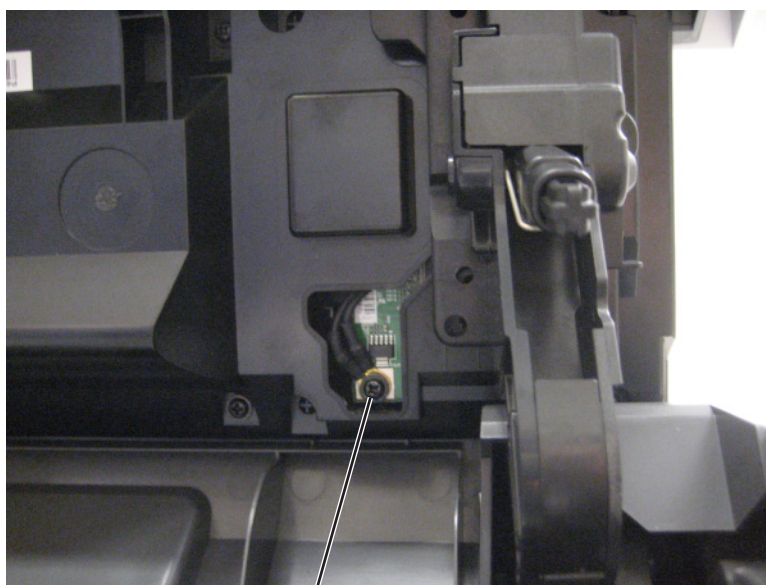
E

14 Remove the grounding cables.

15 Disconnect the control panel ribbon cable from the control panel.

16 Remove the control panel.
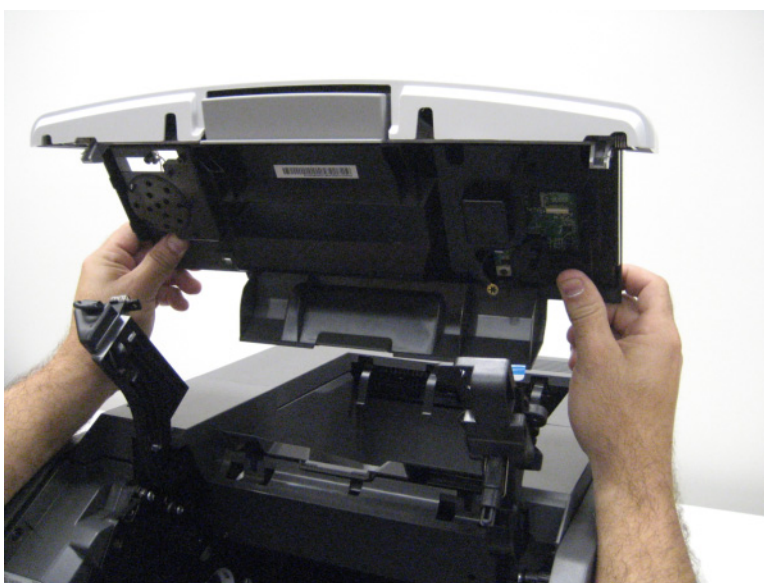
Installation warning: When replacing the control panel, ensure that all cables are properly reconnected.

Control panel board (2.4-inch tilting display) removal

Warning—Potential Damage: When replacing the control panel, control panel board, or controller board, replace only one component at a time. Replace the required component and perform a POR before replacing a second component. If this procedure is not followed, the printer will be rendered inoperable. Never replace both the control panel and the controller board without a POR after installing each one or the printer will be rendered inoperable. Never install or remove these components as a method of troubleshooting while operating in normal user mode. See .

Warning—Potential Damage: When a component has been installed in a machine and has been powered up in normal user mode, it cannot be used in another machine; it must be returned to the manufacturer. The machine must be powered up in Diagnostic mode or the controller board, control panel boards, or control panel will become locked.

1 Remove the control panel left bezel. See **"Control panel left bezel removal" on page 525**.

2 Remove the control panel. See **"Control panel removal (2.4-inch screen)" on page 501**.

3 Remove the control panel latch. See **"Control panel latch removal" on page 524**.

4 Remove the control panel front cover. See **"Control panel front cover removal" on page 522**.

5 Remove the six screws (A) securing the cover to the control panel.

6 Detach the cover.

Parts removal
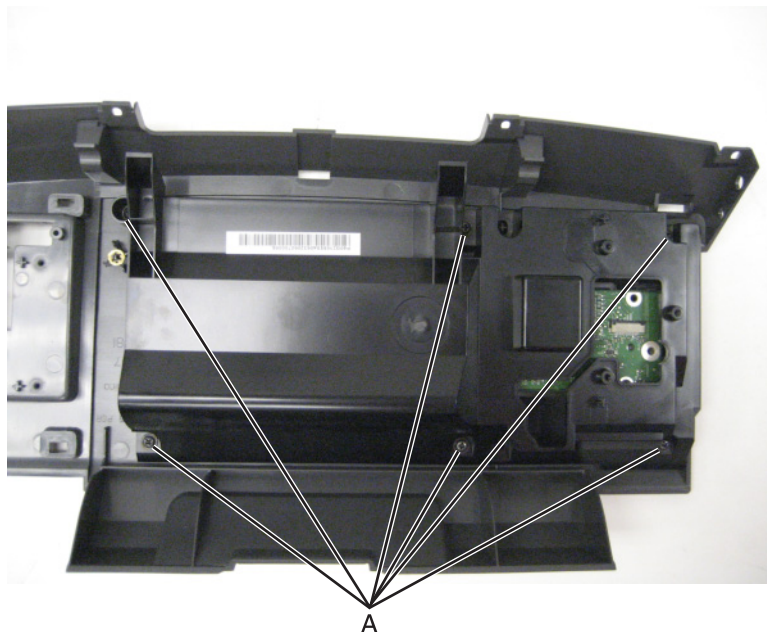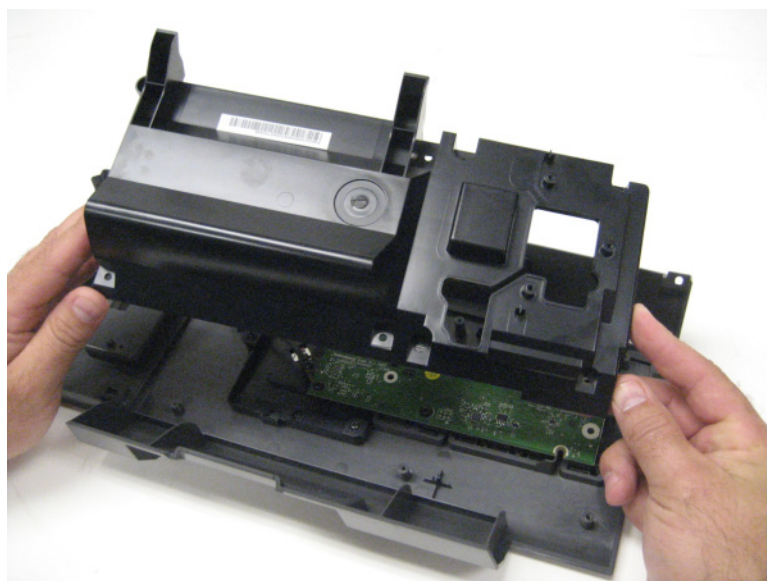
7 Remove the three screws (B) securing the control panel board (7" tilting display) to the control panel.
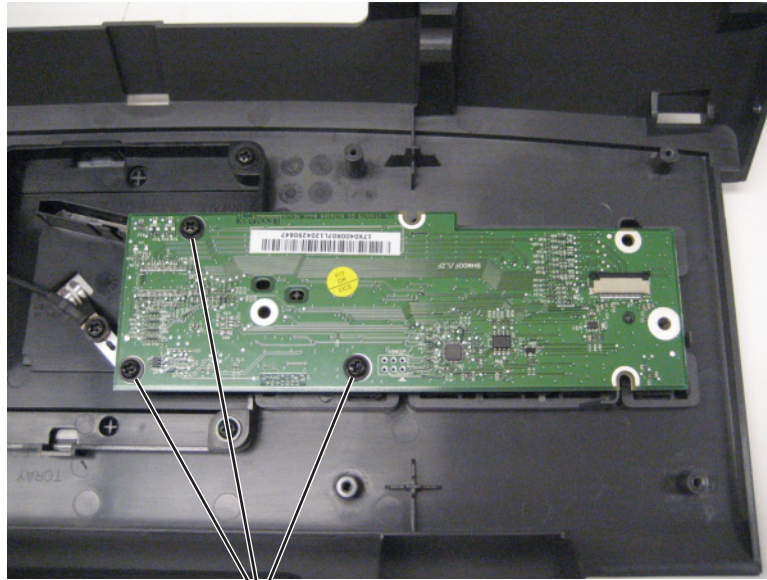
B

8 Gently detach the control panel board.

9 Disconnect the display ribbon cable (C) from the control panel board.

C

10 Remove the control panel board.

Control panel board (4.3-inch tilting display) removal

Warning—Potential Damage: When replacing the control panel, control panel board, or controller board, replace only one component at a time. Replace the required component and perform a POR before replacing a second component. If this procedure is not followed, the printer will be rendered inoperable. Never replace both the control panel and the controller board without a POR after installing each one or the printer will be rendered inoperable. Never install or remove these components as a method of troubleshooting while operating in normal user mode. See **"Controller board/control panel replacement" on page 426**.

Warning—Potential Damage: When a component has been installed in a machine and has been powered up in normal user mode, it cannot be used in another machine; it must be returned to the manufacturer. The machine must be powered up in Diagnostic mode or the controller board, control panel boards, or control panel will become locked.

1 Remove the control panel left bezel. See **"Control panel left bezel removal" on page 525**.

2 Remove the control panel. See **"Control panel removal (4.3-inch screen, 7-inch screen)" on page 507**.

3 Remove the control panel latch. See **"Control panel latch removal" on page 524**.

4 Remove the control panel front cover. See **"Control panel front cover removal" on page 522**.

5 Remove the six screws (A) securing the cover to the control panel.

6 Detach the cover.

7 Disconnect the display ribbon cable from the control panel board.

8 Remove the four screws (B) securing the control panel board (7" tilting display) to the control panel.

B

Parts removal

9 Remove the control panel board.

Control panel board (7-inch tilting display) removal (MS812de)

Warning—Potential Damage: When replacing the control panel, control panel board, or controller board, replace only one component at a time. Replace the required component and perform a POR before replacing a second component. If this procedure is not followed, the printer will be rendered inoperable. Never replace both the control panel and the controller board without a POR after installing each one or the printer will be rendered inoperable. Never install or remove these components as a method of troubleshooting while operating in normal user mode. See **"Controller board/control panel replacement" on page 426**.

Warning—Potential Damage: When a component has been installed in a machine and has been powered up in normal user mode, it cannot be used in another machine; it must be returned to the manufacturer. The machine must be powered up in Diagnostic mode or the controller board, control panel boards, or control panel will become locked.

1 Remove the control panel left bezel. See **"Control panel left bezel removal" on page 525**.

2 Remove the control panel. See **"Control panel removal (4.3-inch screen, 7-inch screen)" on page 507**.

3 Remove the control panel latch. See **"Control panel latch removal" on page 524**.

4 Remove the control panel front cover. See **"Control panel front cover removal" on page 522**.

5 Remove the five screws (A) securing the cover to the control panel.

A

6 Detach the cover.

7 Disconnect the display ribbon cable from the control panel board.

8 Remove the four screws (B) securing the control panel board (7" tilting display) to the control panel.

B

9 Remove the control panel board.

Control panel front cover removal

1 Raise the control panel to its uppermost position.

2 Remove the four screws (A) securing the control panel front cover to the machine.
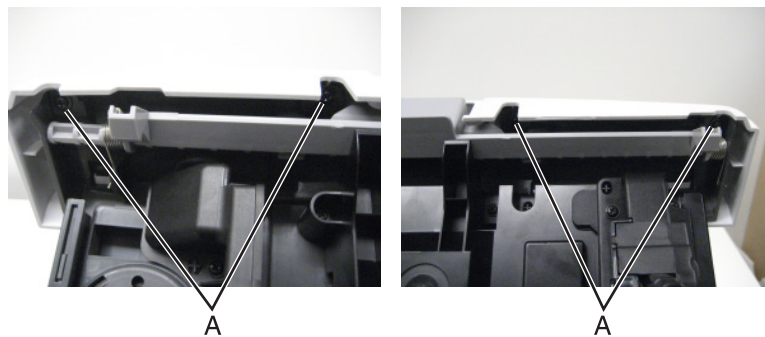
3 Remove the control panel front cover.

Control panel latch removal

1 Raise the control panel to its uppermost position.

2 Remove the control panel front cover. See **"Control panel front cover removal" on page 522**.

3 Release the two springs from the control panel frame.
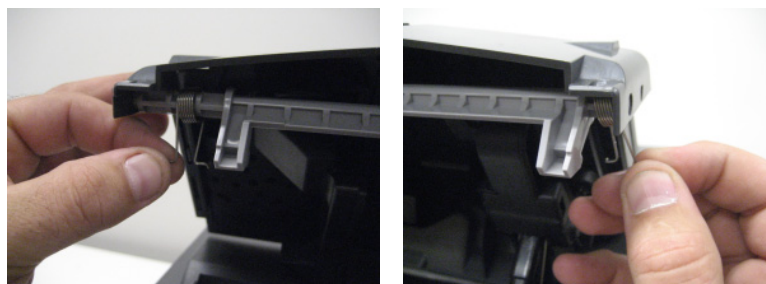
4 Carefully flex the corner of the control panel frame as shown in the following image.

Note: Force is needed to properly remove the part.
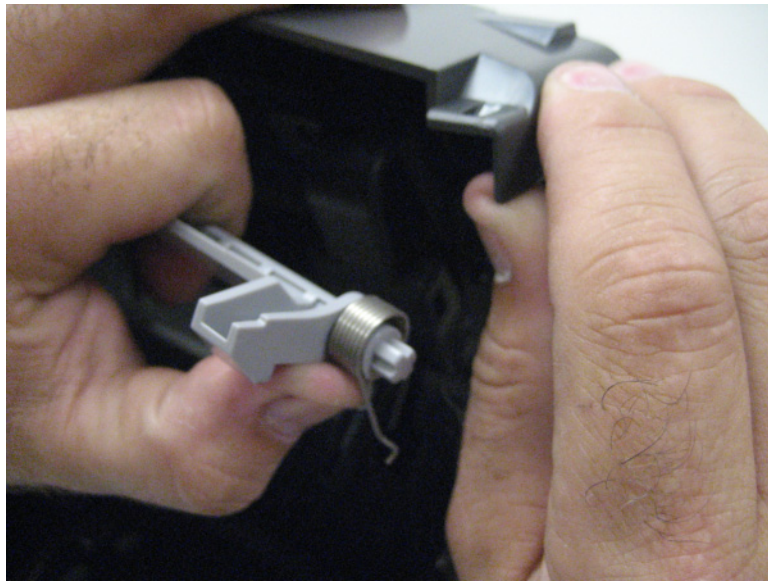
5 Carefully remove the control panel latch.
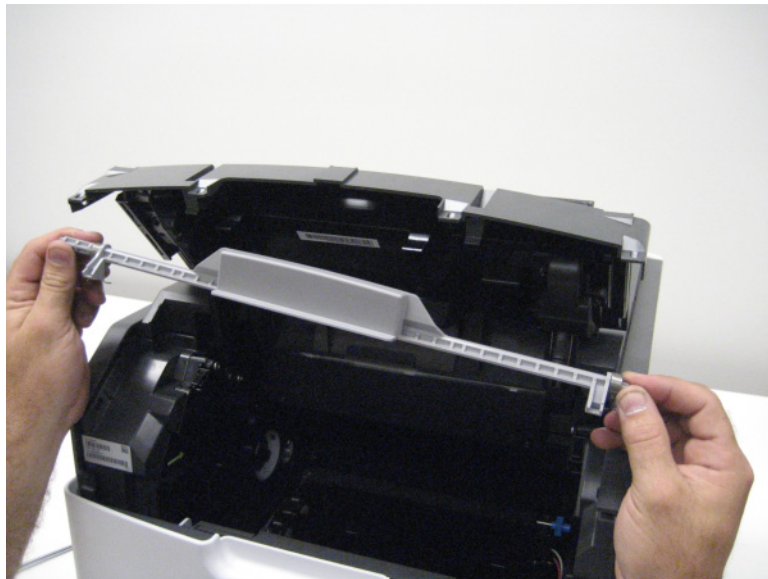
Control panel left bezel removal

1 Remove the toner supply cartridge.

2 Remove the imaging unit.

3 Raise the control panel to its uppermost position.

4 Release the two hooks (A) securing the control panel left bezel to the machine.

A
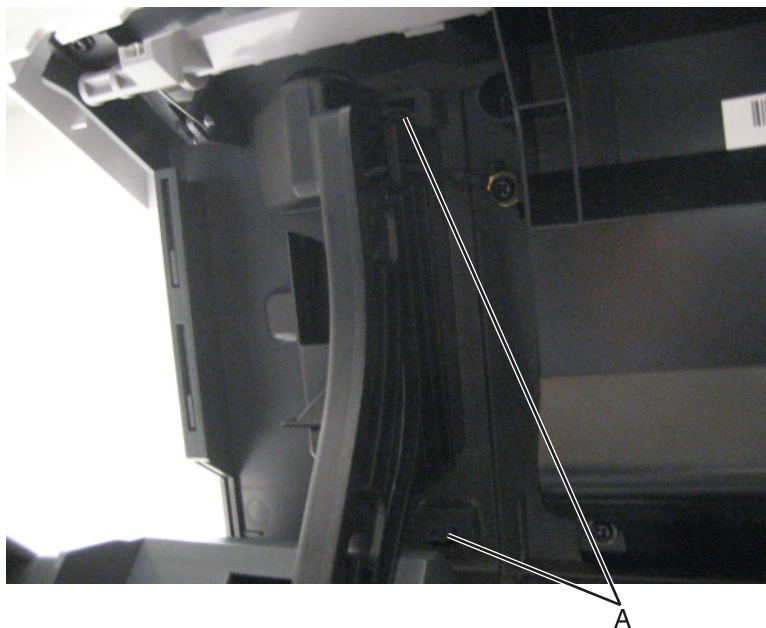
5 Remove the control panel left bezel.

Left control panel hinge removal

1 Remove the left cover. See **"Left cover removal" on page 565**.

2 Remove the right cover. See **"Right cover removal" on page 584**.

3 Open the rear door.

4 Remove the top cover. See **"Top cover removal" on page 544**.

5 Remove the upper redrive. See **"Upper redrive removal" on page 549**.

6 Remove the output bin sensor cover. See **"Output bin sensor cover removal" on page 541**.

7 Remove the sensor (standard bin full) with actuator. See **"Sensor (standard bin full) removal" on page 544**.

8 Remove the standard bin cover. See **"Standard bin cover removal" on page 545**.

9 Remove the control panel. See **"Control panel removal (2.4-inch screen)" on page 501**or **"Control panel removal (4.3-inch screen, 7-inch screen)" on page 507**.

10 Disconnect the left recoil spring.
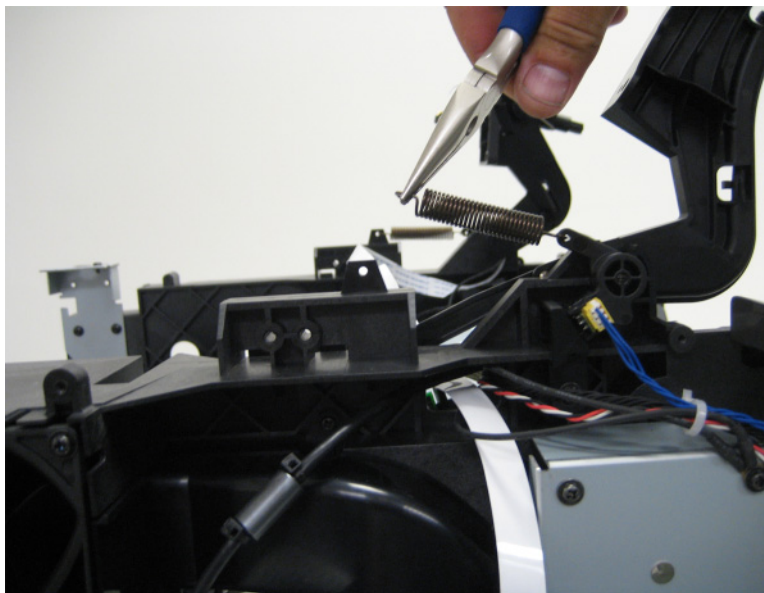
11 Remove the e-clip (A) securing the pin to the left control panel hinge.

12 Remove the pin (B).
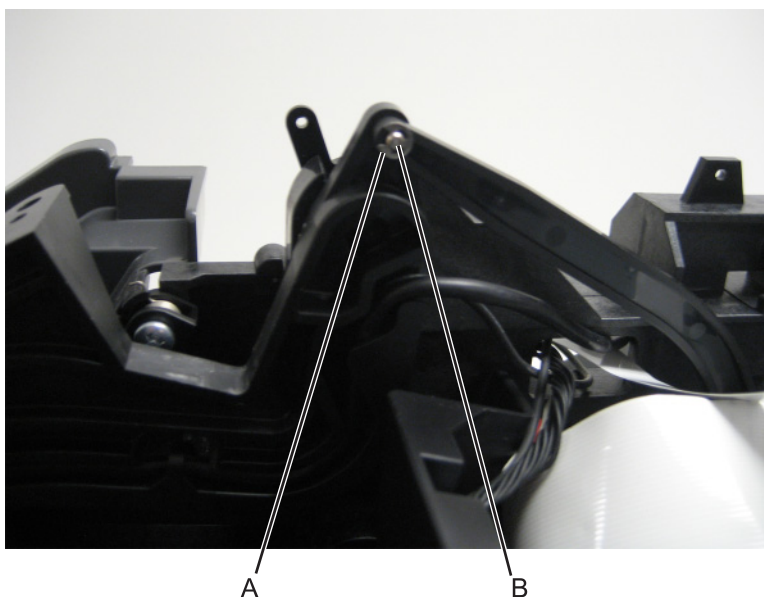
A   B

13 Remove the controller board access shield. See **"Controller board access shield removal" on page 570**.

Parts removal

527

14 Disconnect the USB cable (C) from the controller board.

C
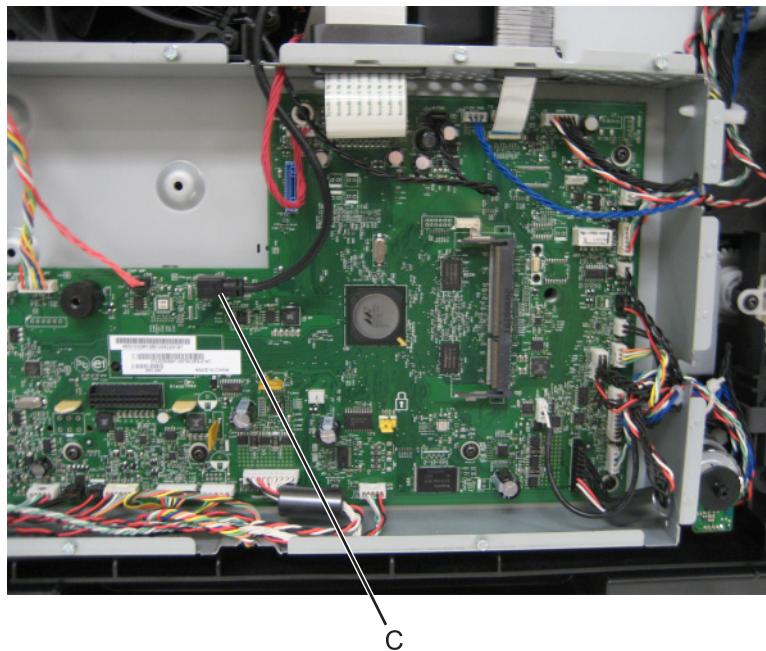
15 Remove the screw (D) securing the ground wire.

D
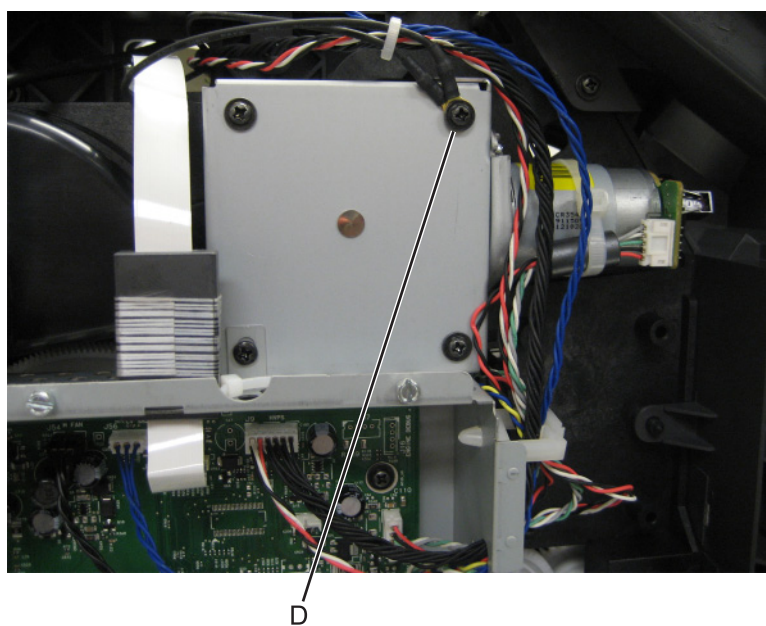
16 Position the left control panel hinge as shown in the following image.
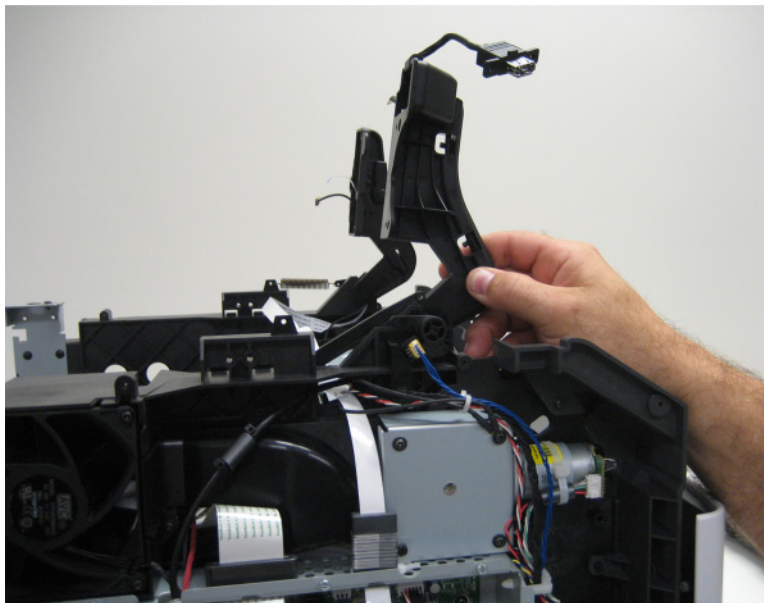
17 Remove the left control panel hinge.

Right control panel hinge removal

1 Remove the left cover. See **"Left cover removal" on page 565**.

2 Remove the right cover. See **"Right cover removal" on page 584**.

3 Open the rear door.

4 Remove the top cover. See **"Top cover removal" on page 544**.

5 Remove the upper redrive. See **"Upper redrive removal" on page 549**.

6 Remove the output bin sensor cover. See **"Output bin sensor cover removal" on page 541**.

7 Remove the sensor (standard bin full) with actuator. See **"Sensor (standard bin full) removal" on page 544**.

8 Remove the standard bin cover. See **"Standard bin cover removal" on page 545**.

9 Remove the control panel. See **"Control panel removal (2.4-inch screen)" on page 501**or **"Control panel removal (4.3-inch screen, 7-inch screen)" on page 507**.

10 Disconnect the right recoil spring.

11 Remove the controller board access shield. See **"Controller board access shield removal" on page 570**.

12 Disconnect the control panel ribbon cable (A) from the controller board.

Parts removal
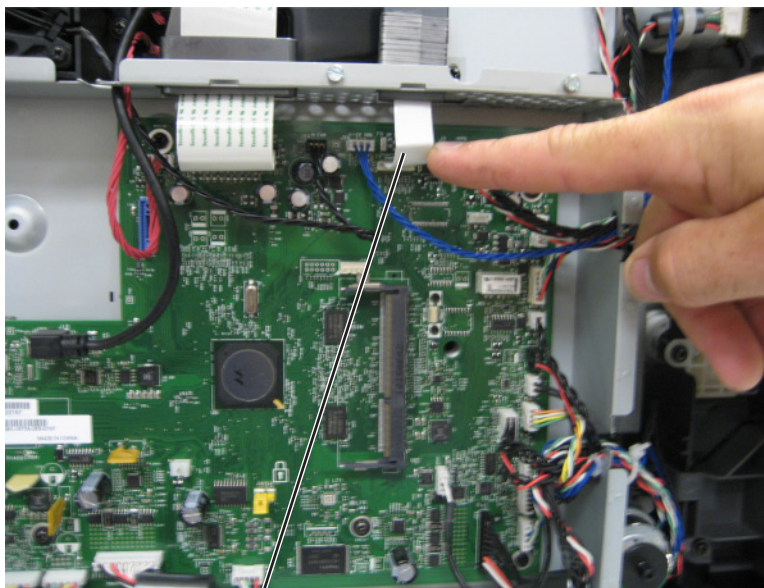
13 Remove the screw (B) securing the ground wire.
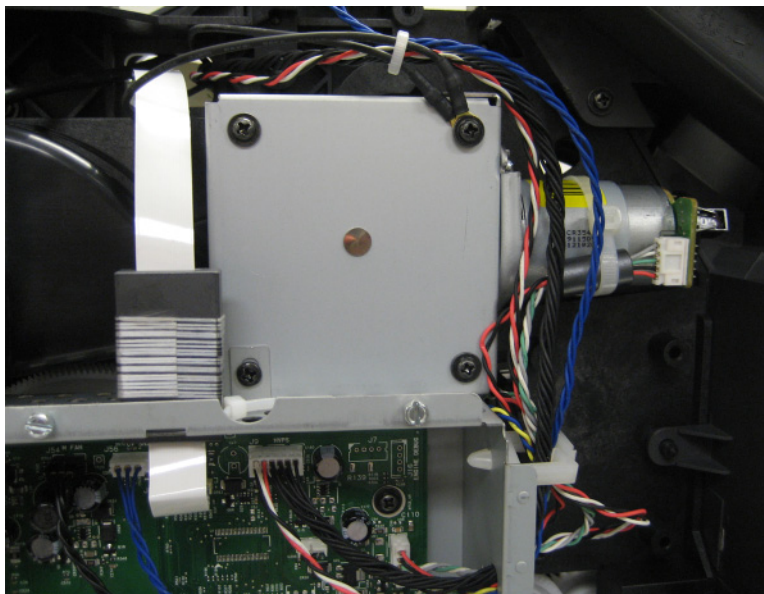
14 Position the right control panel hinge as shown in the following image.
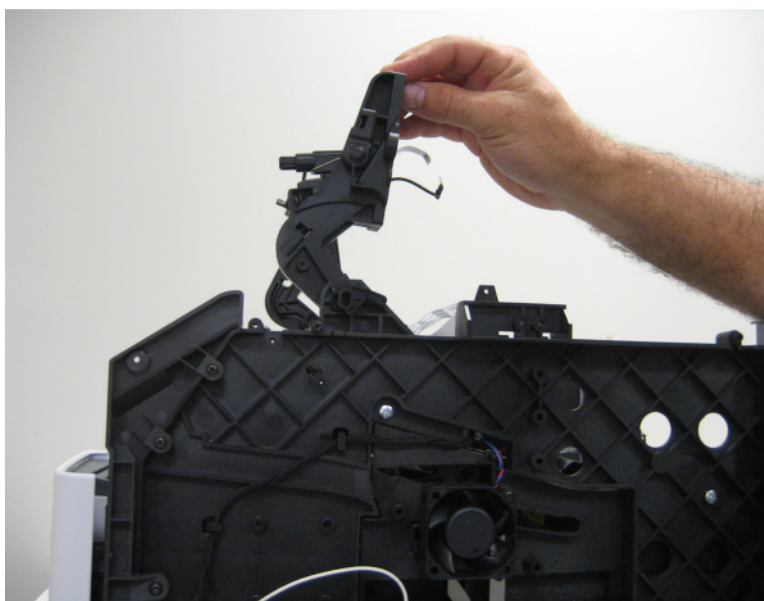
15 Remove the right control panel hinge.
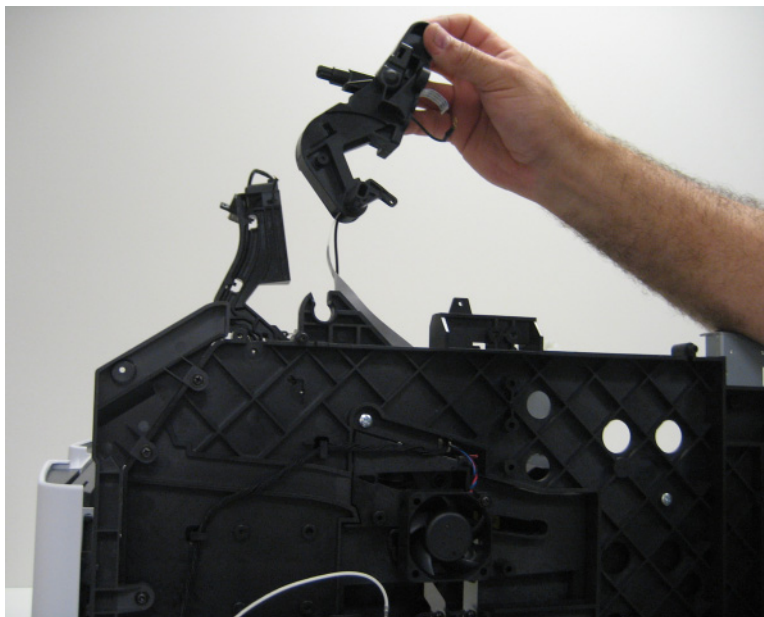
Rear side removals

Rear lower cover removal

1 Remove the rear door. See .

2 Remove the two screws (A) securing the left frame pivot to the machine.

3 Remove the left frame pivot.
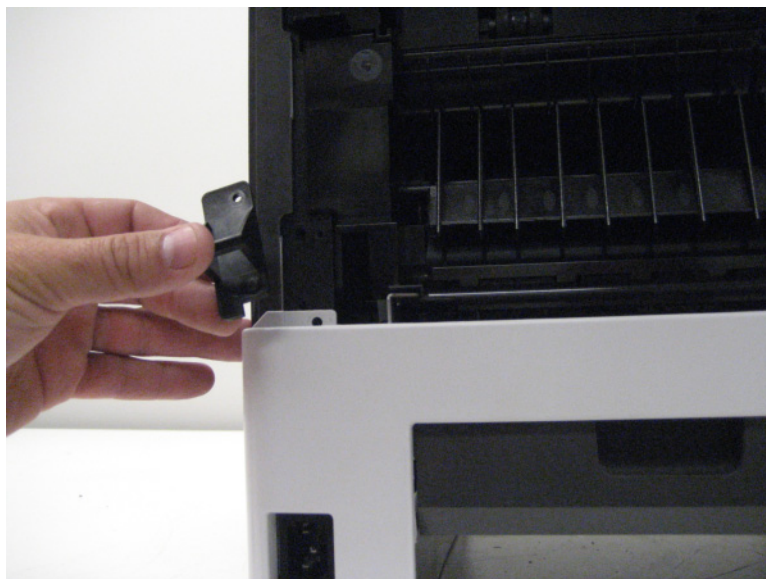
4 Remove the two screws (B) securing the rear lower cover.

B
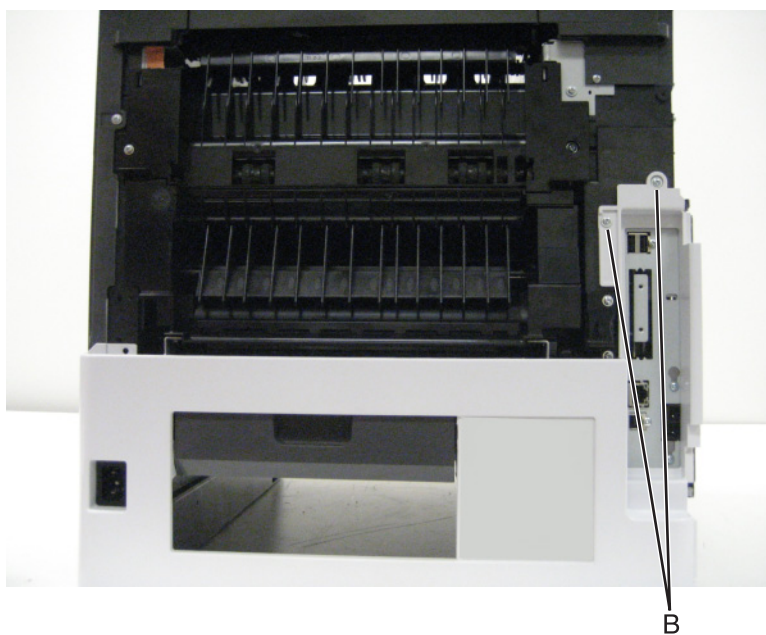
5 Gently pull the rear lower cover up and out to remove it.
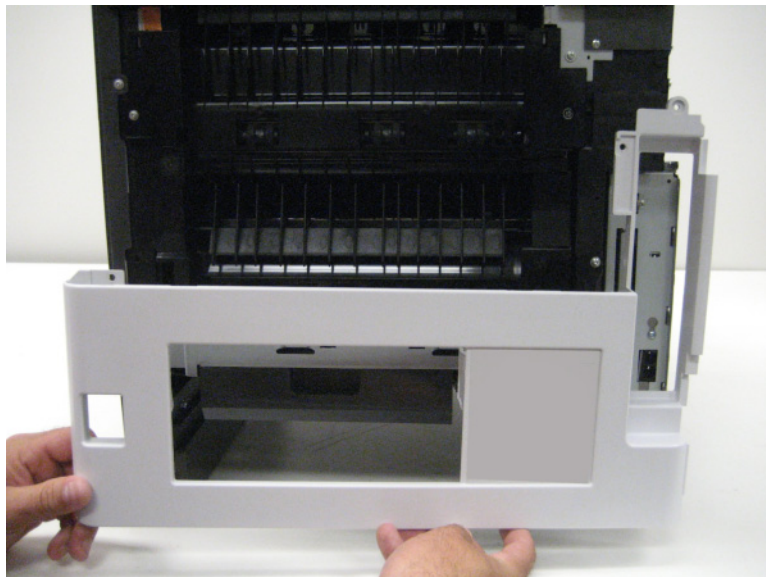
Rear door removal

1 Open the rear door.

2 Remove the screw (A) securing the rear door support strap to the machine.

A

3 Remove the support strap.
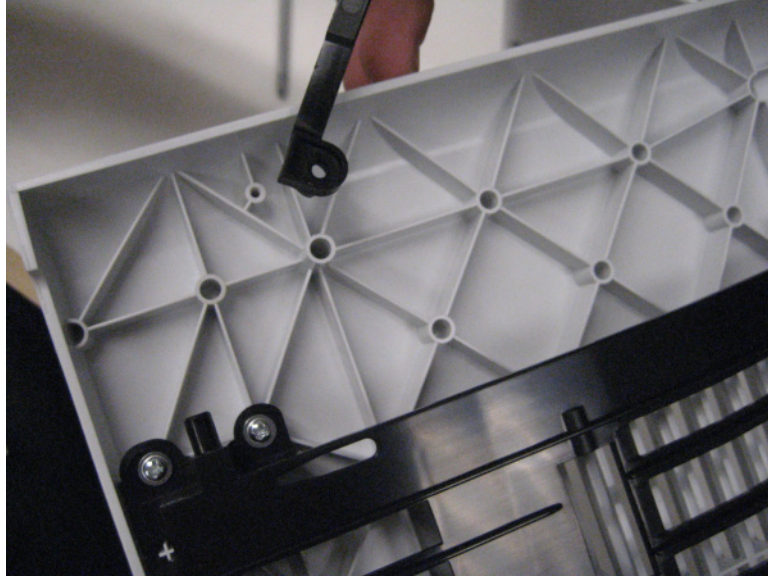
4 Slide the rear door away from the machine, and remove it.

Duplex motor removal

1 Remove the paper tray from the machine.

2 Remove the rear door. See **"Rear door removal" on page 534**.

3 Remove the rear lower cover. See **"Rear lower cover removal" on page 532**.

4 Remove the fuser access door. See **"Fuser access door removal" on page 539**.

5 Remove the three screws (A) securing the duplex motor to the machine.

A
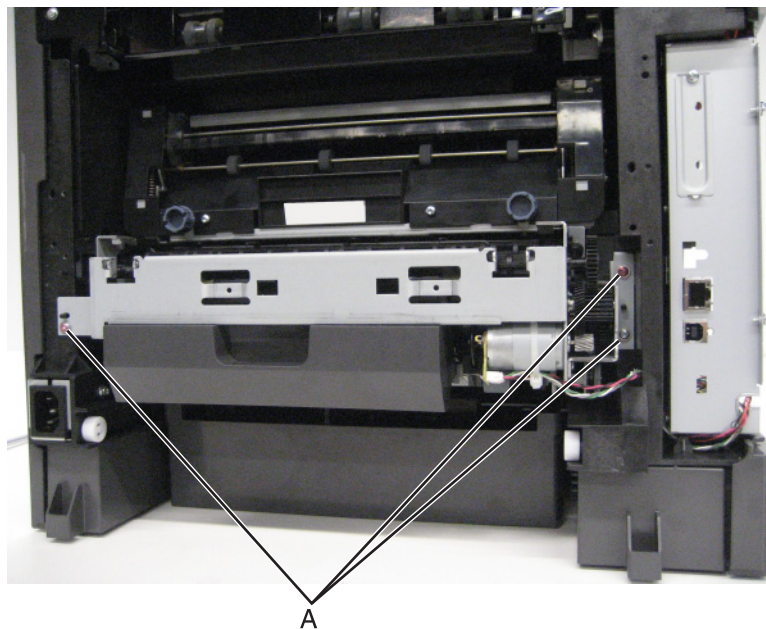
6 Position the printer so that you can access the bottom of the machine, as shown in the following image.
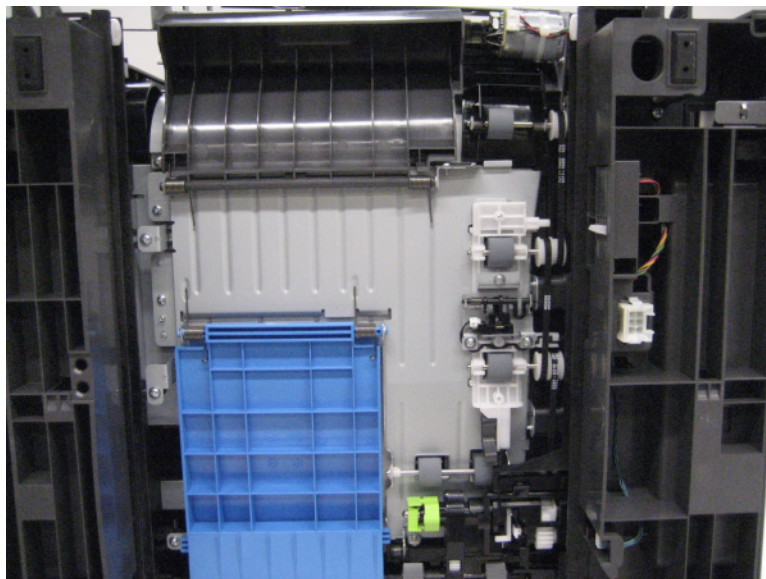
7 Detach the drive belt from the pulley.
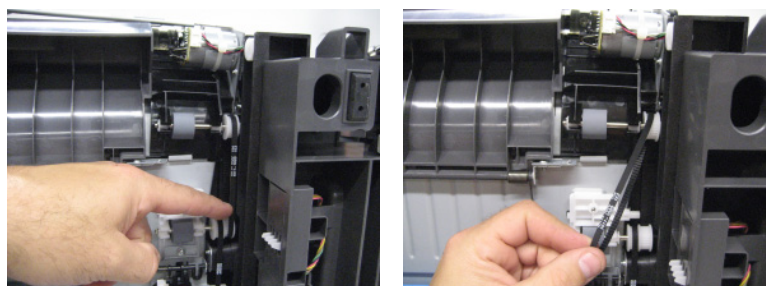
Parts removal

8 Return the printer to the normal position, and remove the duplex motor.
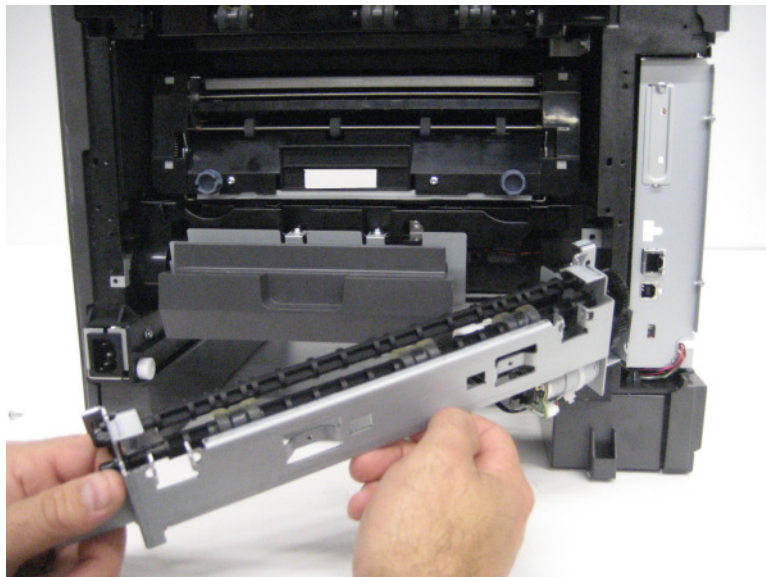
9 Disconnect the cable (B) from the control board.

B
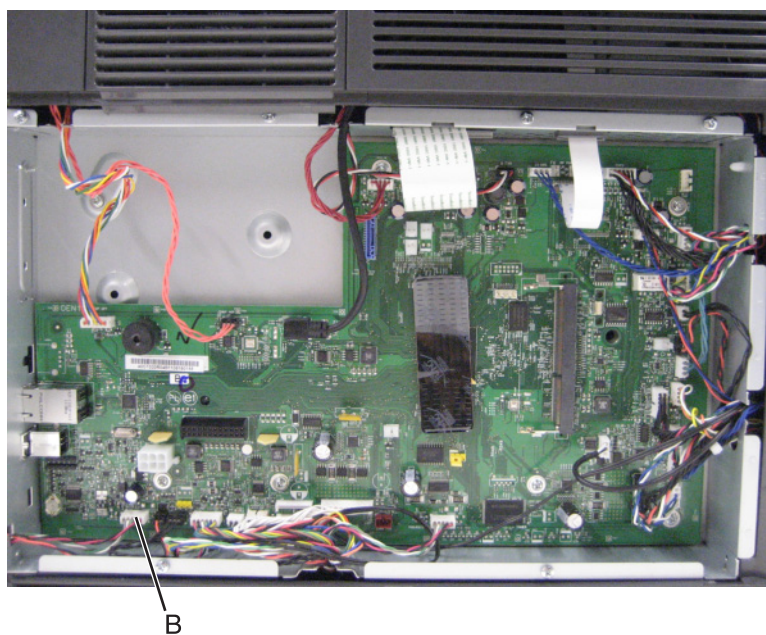
Installation note: When replacing the duplex motor, make sure the drive belt connected to the duplex is properly reattached.

Fuser removal

Warning—Potential Damage: Turn off the printer before removing the fuser to avoid overwriting the new fuser data with the old fuser data.

⚠ **CAUTION—HOT SURFACE:** The inside of the printer might be hot. To reduce the risk of injury from a hot component, allow the surface to cool before touching.

1 Remove the rear door. See **"Rear door removal" on page 534**.

2 Open and lower the fuser access door.

3 Loosen the two fuser thumbscrews (A).

A
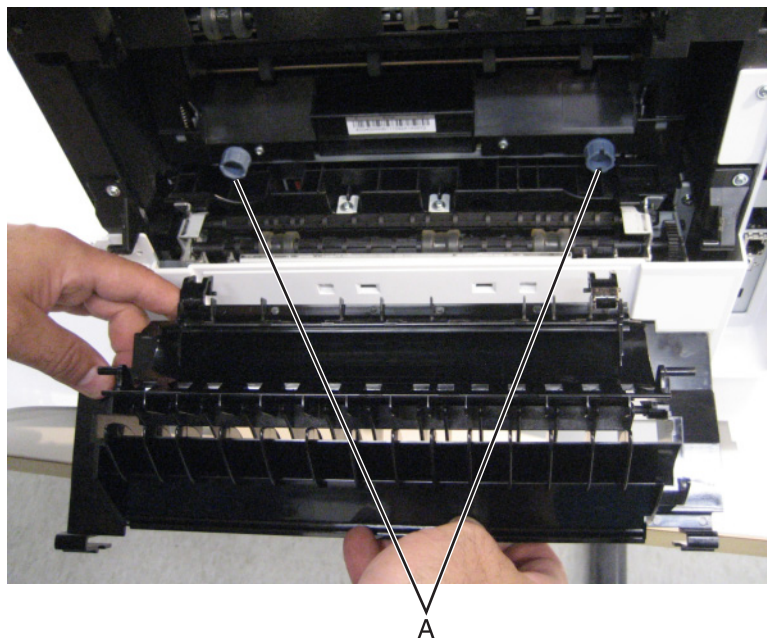
4 If the printer is equipped with a hot roll fuser, remove the fuser wiper cover.

5 Gently pull the fuser, and remove it from the machine.

Parts removal
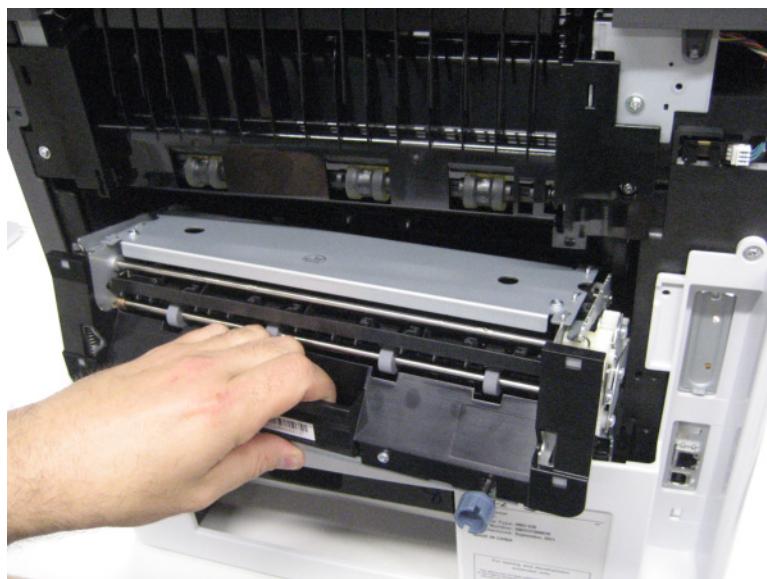
Fuser access door removal

1 Remove the rear door. See **"Rear door removal" on page 534**.

2 Gently flex the fuser access door hinges.
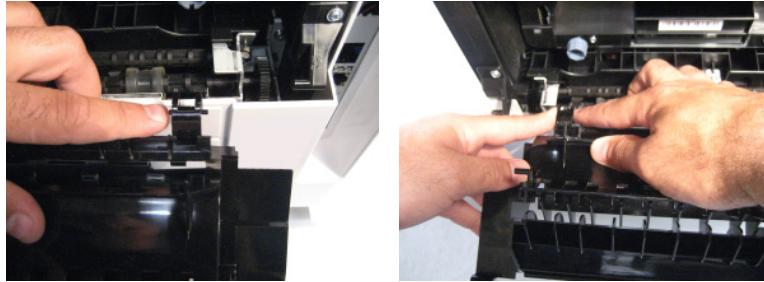
3 Pull the fuser access door away from the machine to remove it.
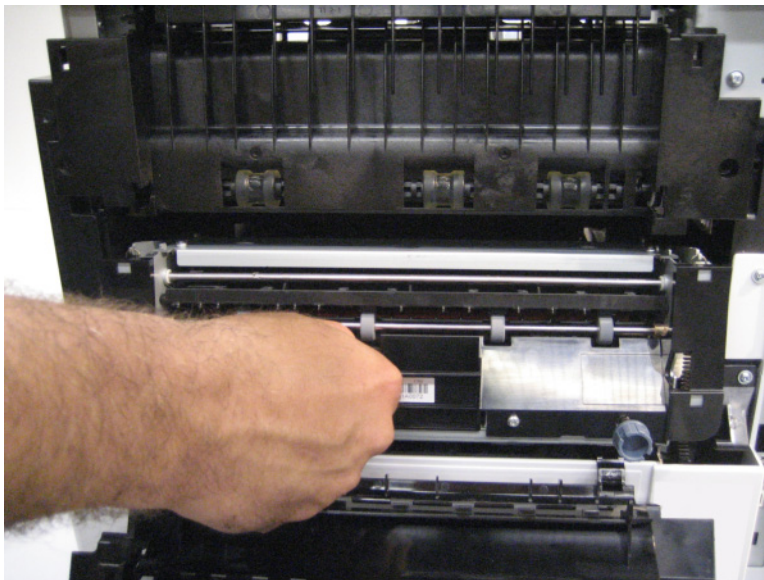
Left frame pivot removal

1 Remove the rear door. See **"Rear door removal" on page 534**.

2 Remove the two screws (A) securing the left frame pivot to the machine.
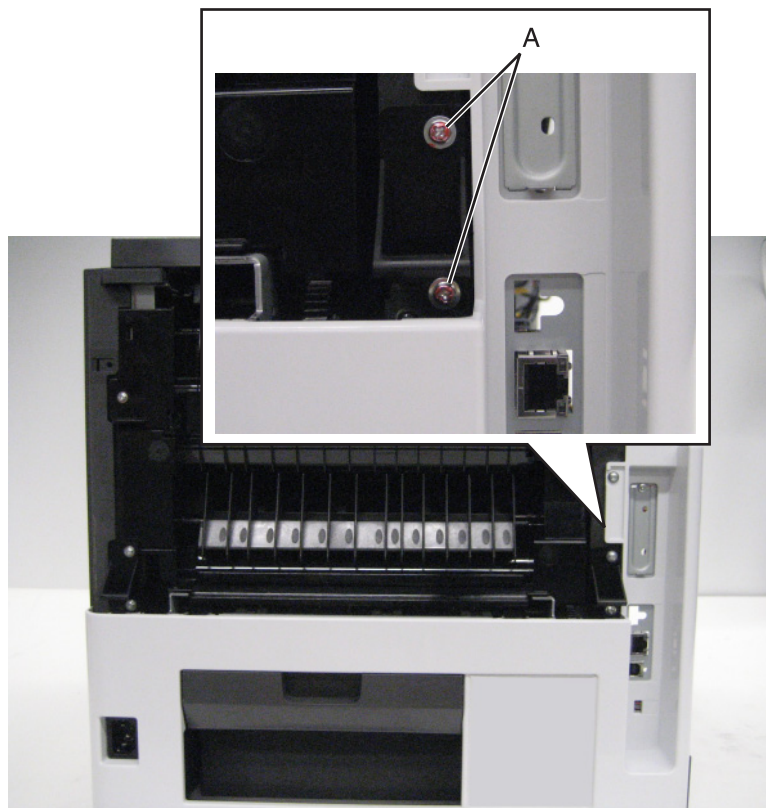
3 Remove the left frame pivot.

Output bin sensor cover removal

1 Open the rear door.

2 Remove the screw (A).

A
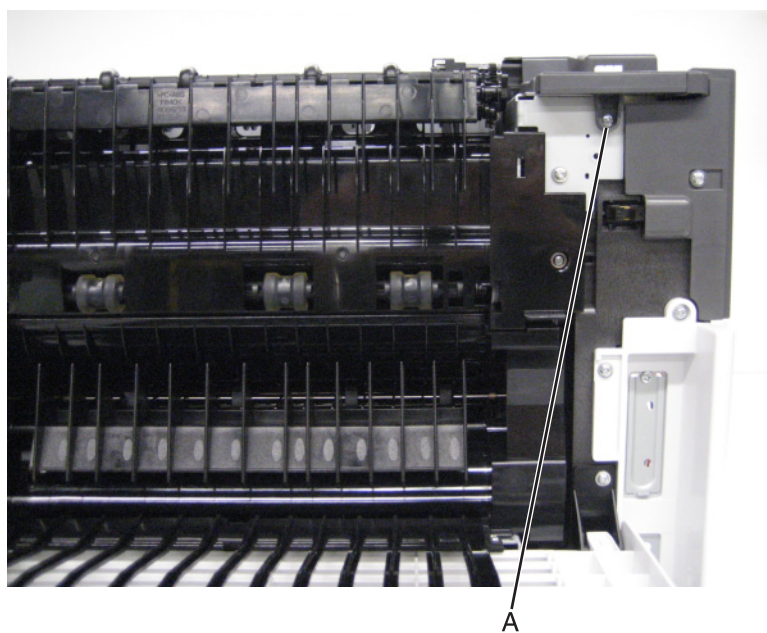
3 Remove the output bin sensor cover.
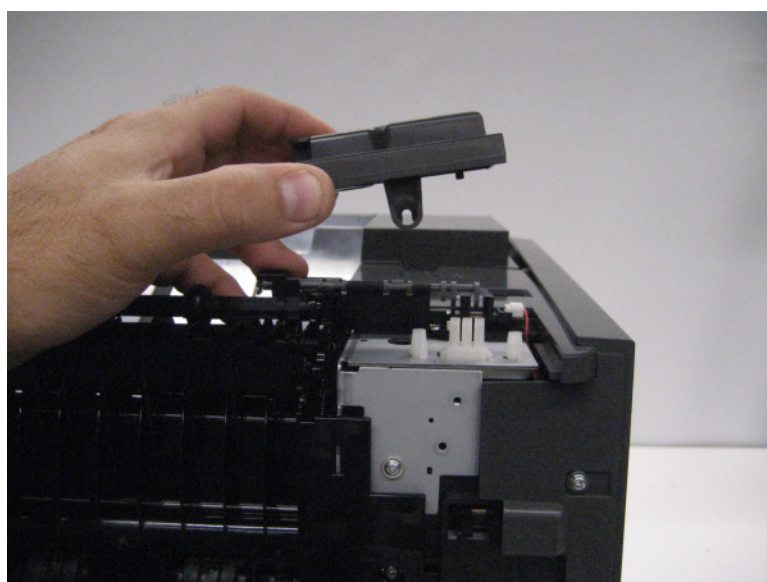
Right frame pivot removal

1 Remove the rear door. See **"Rear door removal" on page 534**.

2 Remove the two screws (A) securing the right frame pivot to the machine.
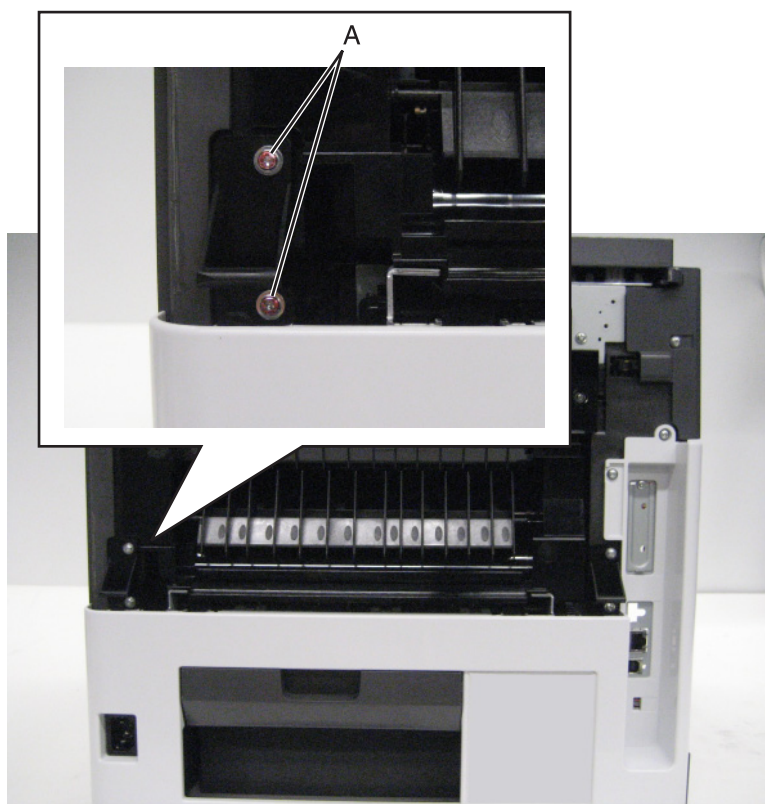
3 Remove the right frame pivot.
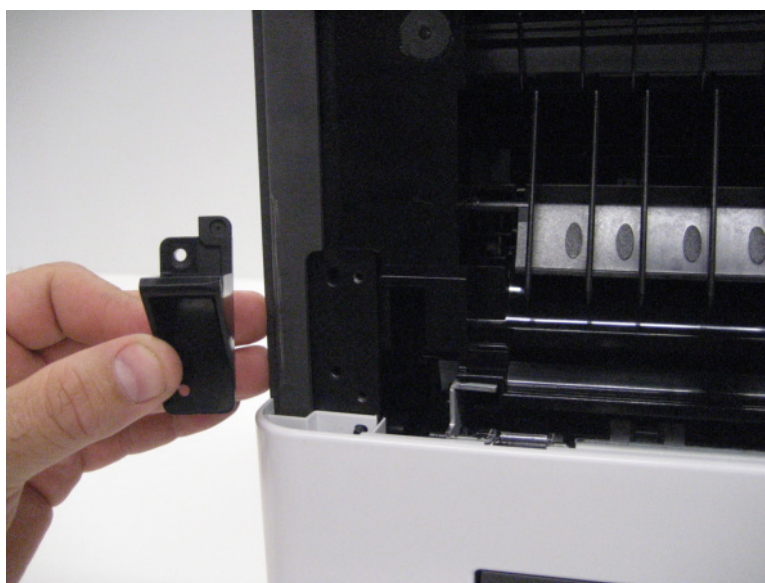
Sensor (rear door interlock) removal

1 Open the printer rear door.

2 Remove the left cover. See **"Left cover removal" on page 565**.

3 Using a flat-tip screwdriver, pry the sensor (rear door interlock) away from the machine.
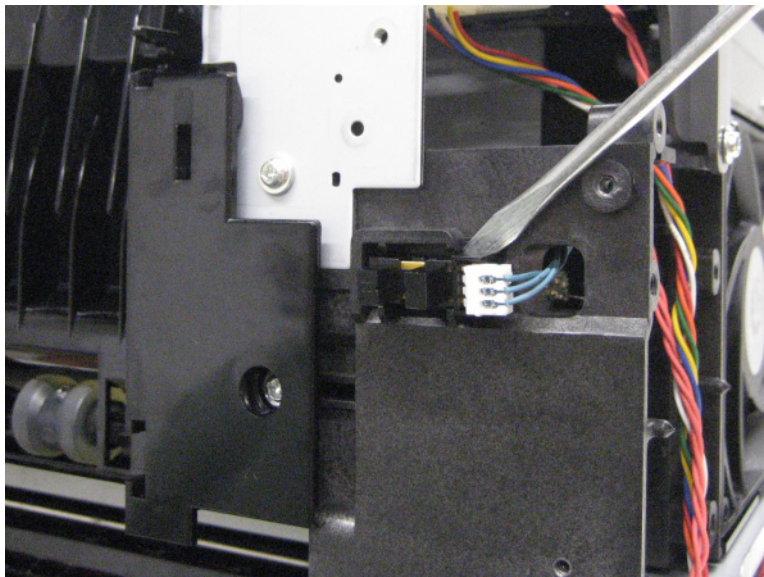
Note: It might take a small amount of force to remove the sensor (rear door interlock).

4 Disconnect the cable (A) from the sensor (rear door interlock).
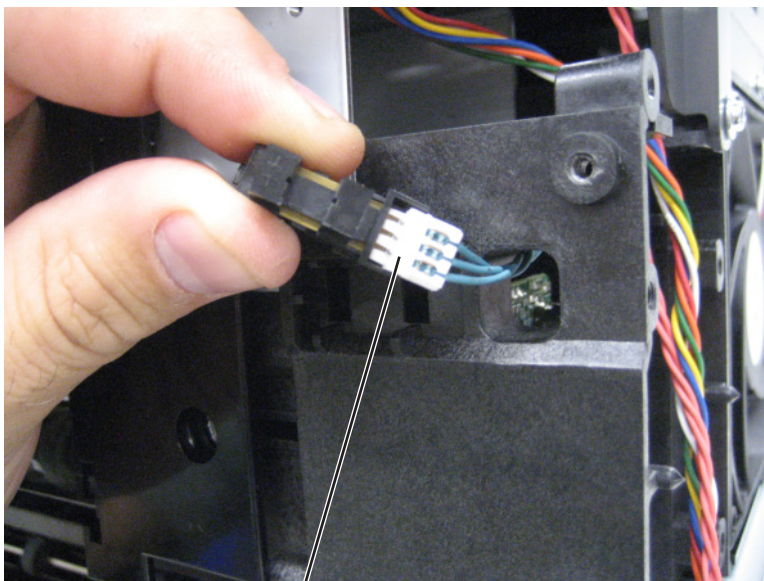
A

Top side removals

Top cover removal

1 Gently lift the top cover from the machine.

2 Remove the top cover.

Sensor (standard bin full) removal

1 Open the control panel door.

2 Open the rear door.

3 Remove the sensor cover.

4 Remove the screw (A) securing the sensor (standard bin full) to the machine.

A
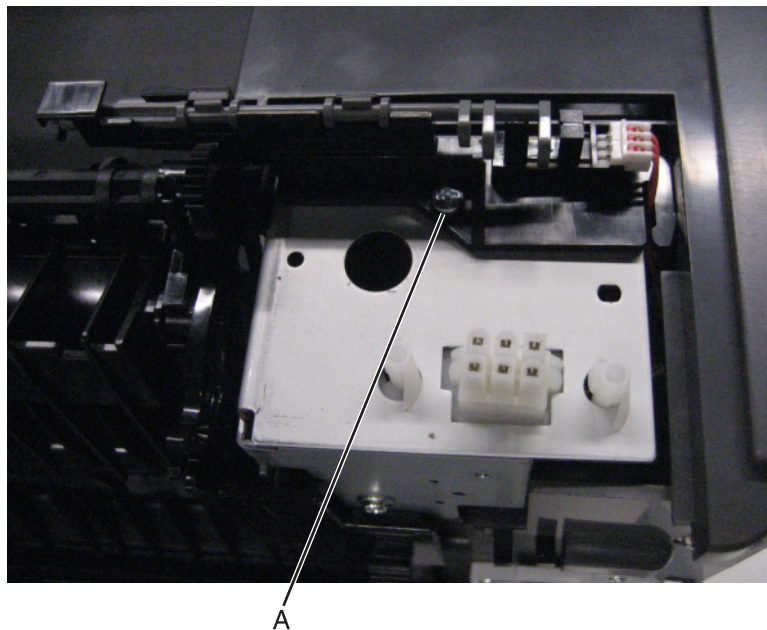
5 Remove the sensor (standard bin full).

6 Disconnect the cable (B).

B
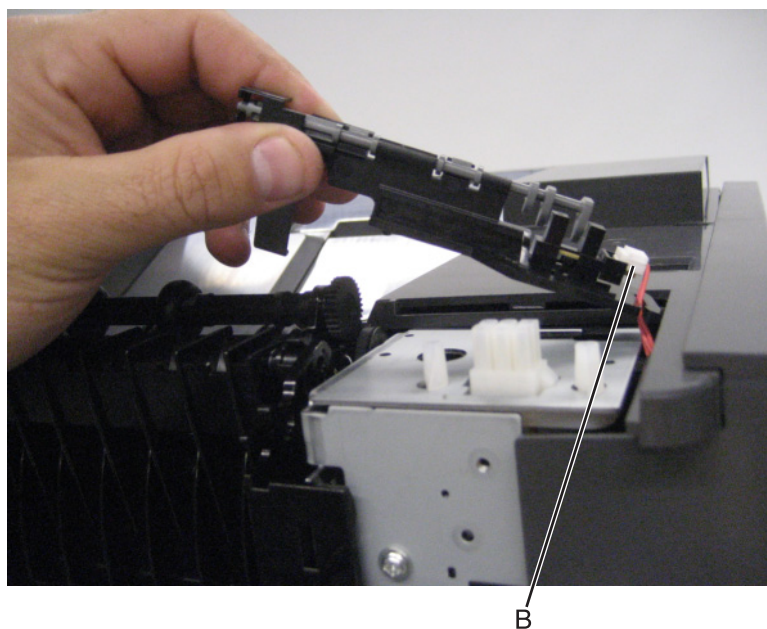
Standard bin cover removal

1 Remove the left cover. See **"Left cover removal" on page 565**.

2 Remove the right cover. See **"Right cover removal" on page 584**.

3 Open the rear door.

4 Remove the top cover. See **"Top cover removal" on page 544**.

Parts removal

5 Remove the upper redrive. See **"Upper redrive removal" on page 549**.

6 Remove the output bin sensor cover. See **"Output bin sensor cover removal" on page 541**.

7 Remove the sensor (standard bin full) with actuator. See **"Sensor (standard bin full) removal" on page 544**.

8 Remove the four screws (A).
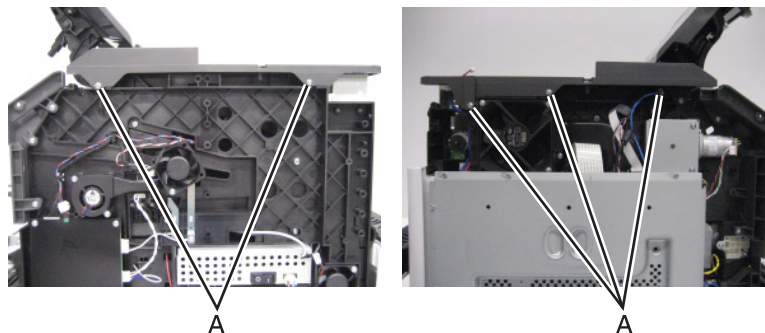
9 Carefully detach the control panel ribbon cable from the standard bin cover.
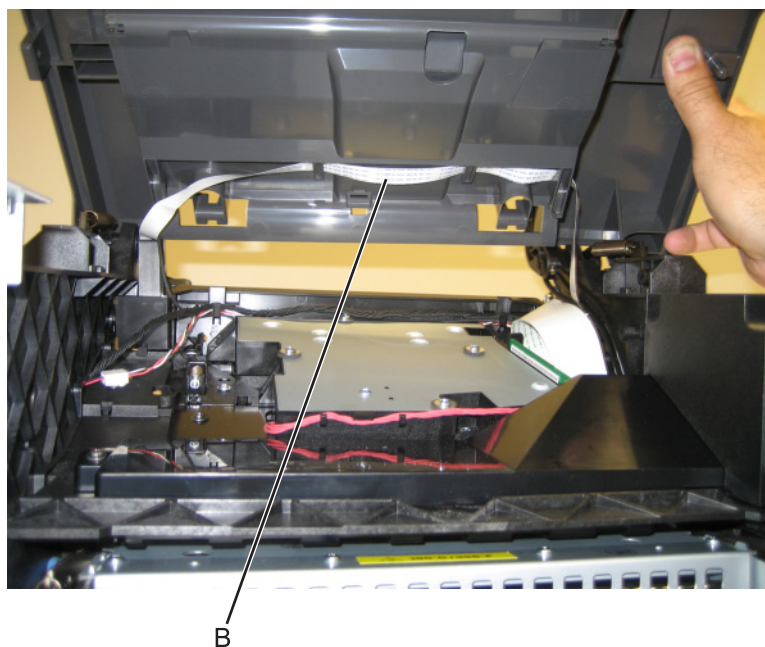
10 Remove the standard bin cover.

Upper redrive motor removal

1 Remove the rear door. See **"Rear door removal" on page 534**.

2 Remove the rear lower cover. See **"Rear lower cover removal" on page 532**.

3 Remove the fuser access door. See **"Fuser access door removal" on page 539**.

4 Remove the standard bin cover. See **"Standard bin cover removal" on page 545**.

5 Remove the standard bin full sensor. See **"Sensor (standard bin full) removal" on page 544**.

6 Remove the rear door interlock sensor. See **"Sensor (rear door interlock) removal" on page 543**.

7 Remove the auto connector cable from the upper redrive motor bracket.
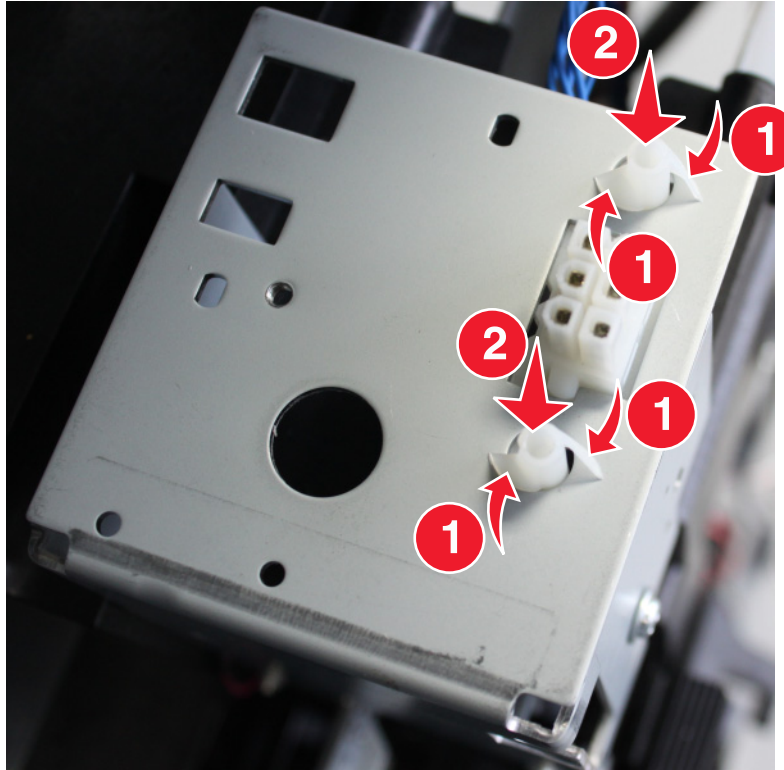
8 Remove the seven screws (A) securing the upper redrive motor bracket.
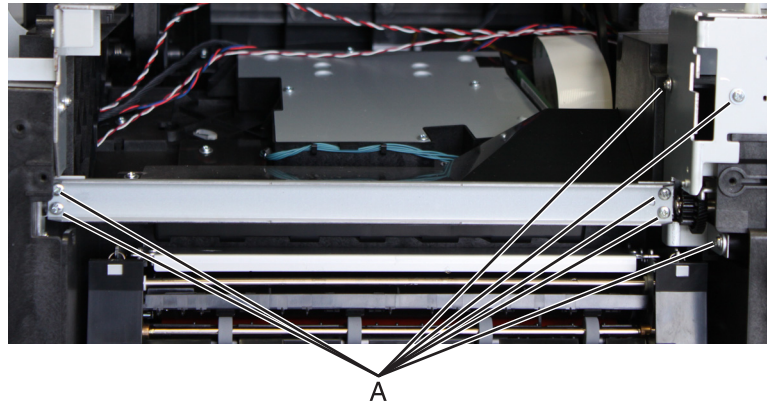
9 Disconnect the REDRIVE J104 cable from the controller board.

10 Remove the upper redrive motor with cable.
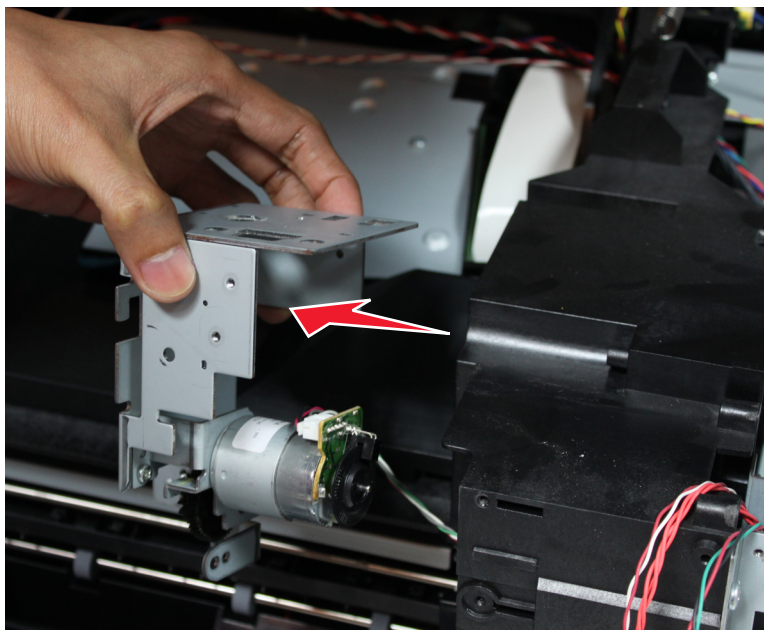
Upper redrive removal

1 Open the rear door.

2 For MX81x, remove the top cover. See **"Top cover removal" on page 544**.

3 Open the fuser access door.
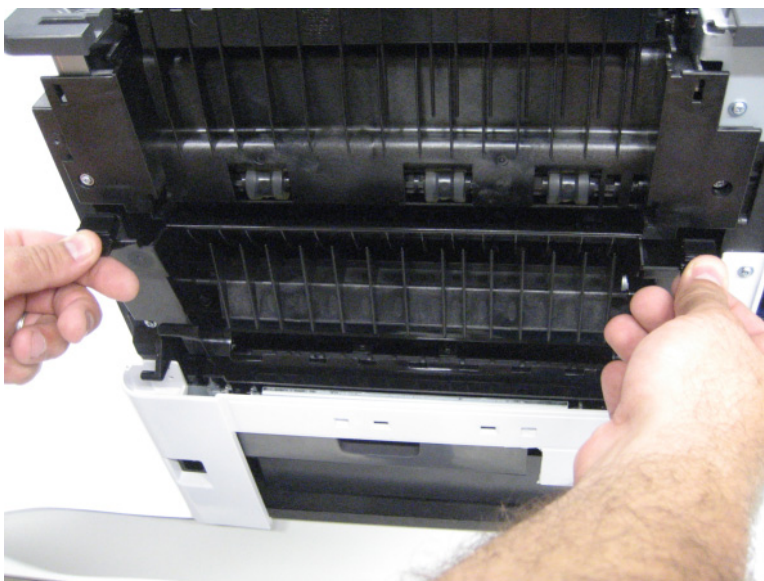
4 Remove the two screws (A).
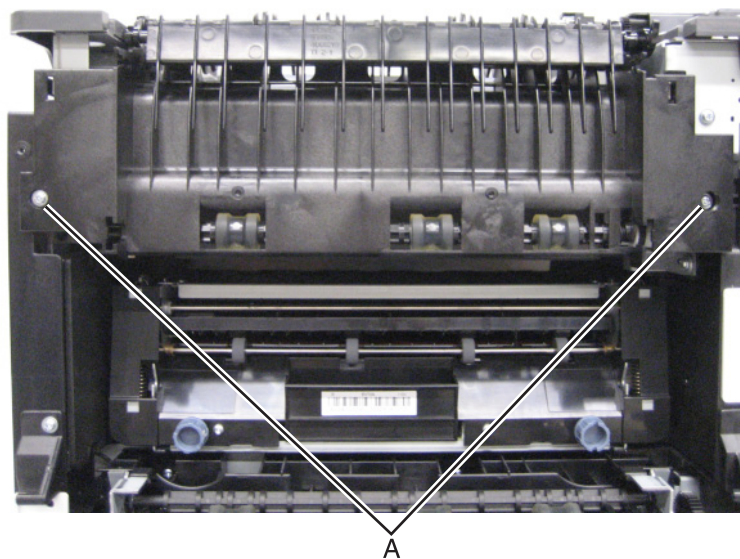
5 Move the upper redrive down and away from the machine to remove it.
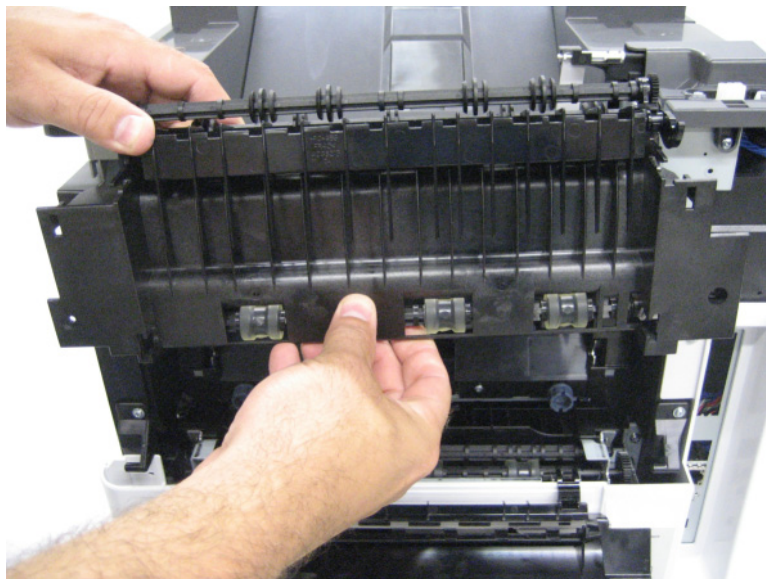
Bottom side removals

Duplex removal

1 Remove the top cover. See **"Top cover removal" on page 544**.

2 Remove the left cover. See **"Left cover removal" on page 565**.

3 Remove the rear door. See **"Rear door removal" on page 534**.

4 Remove the rear lower cover. See **"Rear lower cover removal" on page 532**.

5 Remove the board housing. See **"Board housing removal" on page 577**.

6 Remove the fuser access door. See **"Fuser access door removal" on page 539**.

7 Remove the duplex motor. See **"Duplex motor removal" on page 535**.

8 Remove the media tray. See **"Media tray removal" on page 556**.

9 Remove the pick roller assembly. See **"Pick roller assembly removal" on page 559**.

10 Remove the media feeder. See **"Media feeder removal" on page 575**.

11 Remove the four screws (A) securing the duplex to the machine.
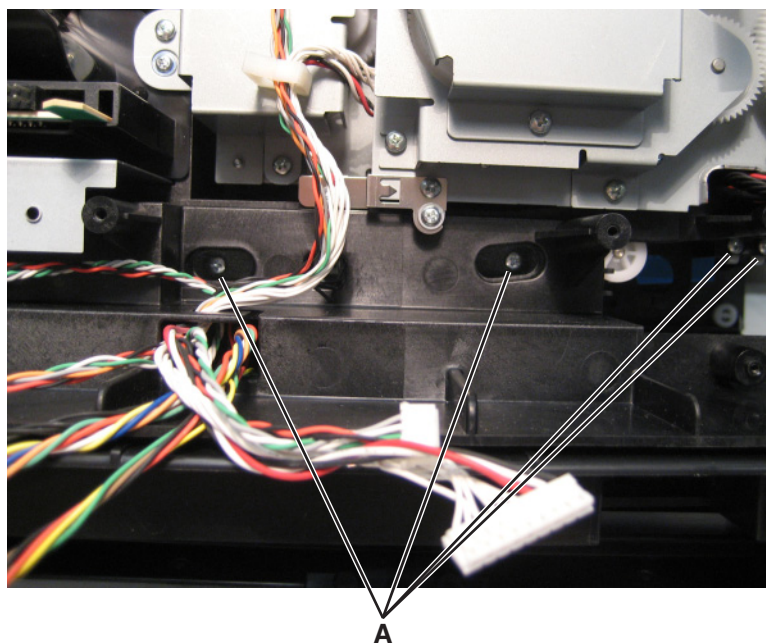
12 Gently lay the printer on its side.

13 Remove the three screws (B) securing the duplex to the machine.
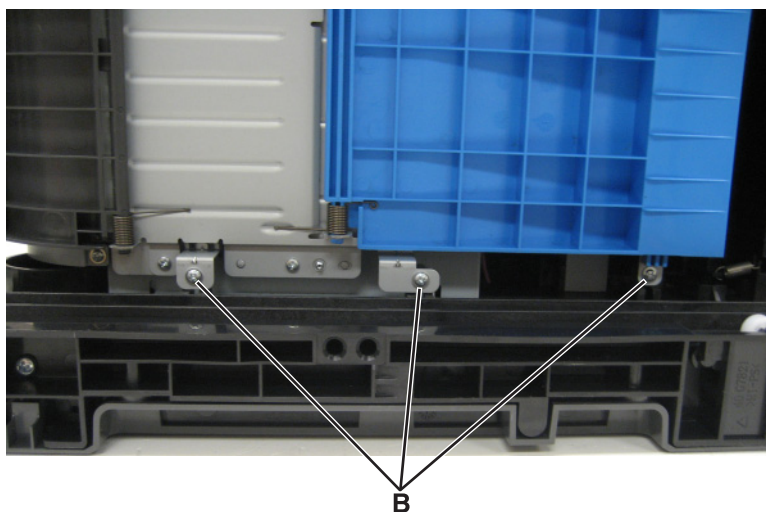
Parts removal

14 Gently remove the duplex from the machine.
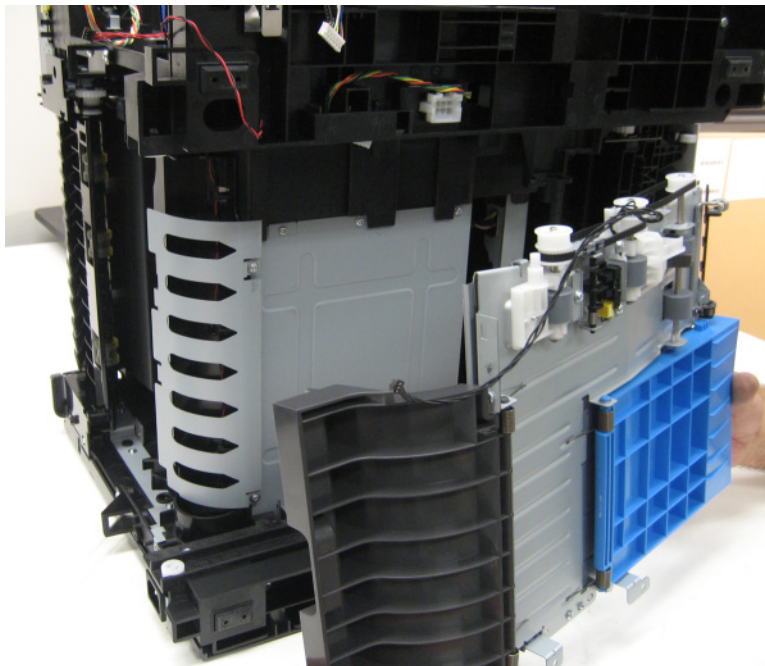
Duplex front flap removal

Warning—Potential Damage: When removing the duplex front flap, ensure that you retain the attached spring.

1 Disconnect the machine from any input options.

2 Carefully place the machine on its rear side so that the bottom of the machine is exposed, as shown in the following image.
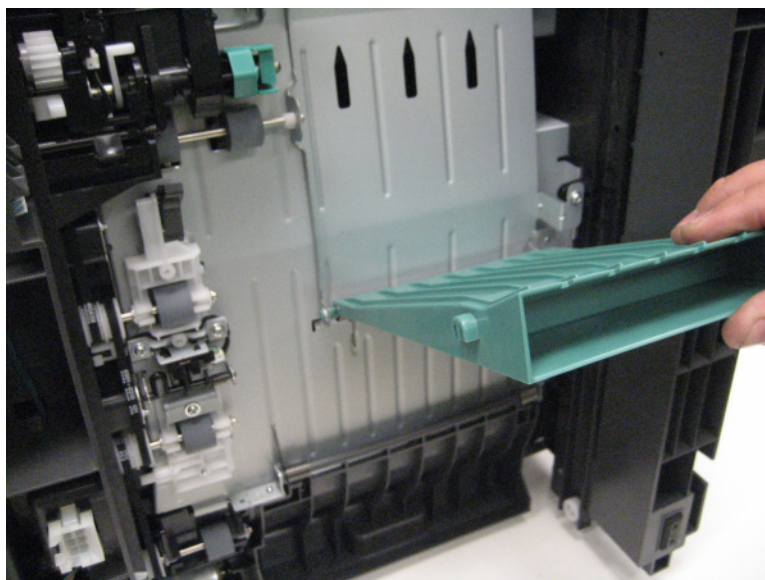
⚠ **CAUTION—POTENTIAL INJURY:** Remove all data cables and the power cord from the back of the printer before you place it on its rear side. Otherwise, the weight of the printer will be on these cables.

3 Lower the duplex front flap to the angle shown in the following image, and gently detach it from the machine.
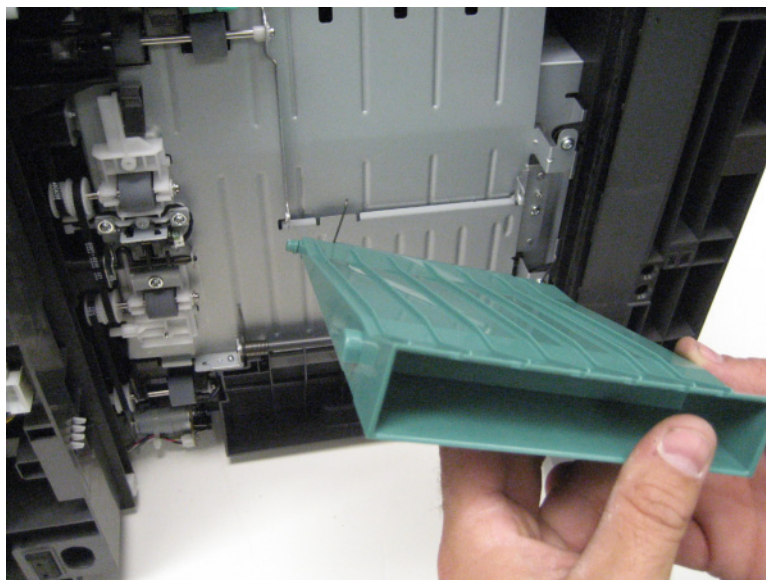
Duplex rear flap removal

Warning—Potential Damage: When removing the duplex rear flap, ensure that you retain the attached springs.

1 Press down on the duplex rear flap, and remove the screw (A) securing the bracket to the machine.

Parts removal
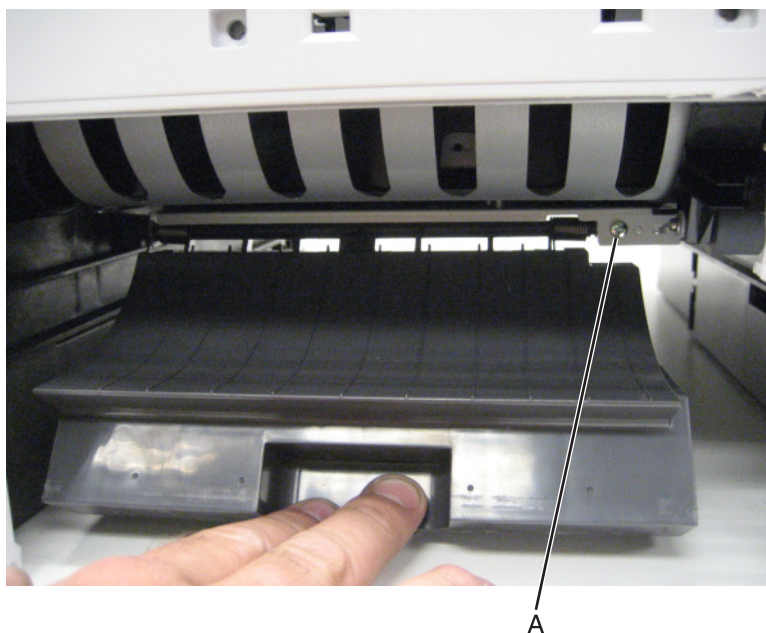
2 Remove the bracket from the machine.
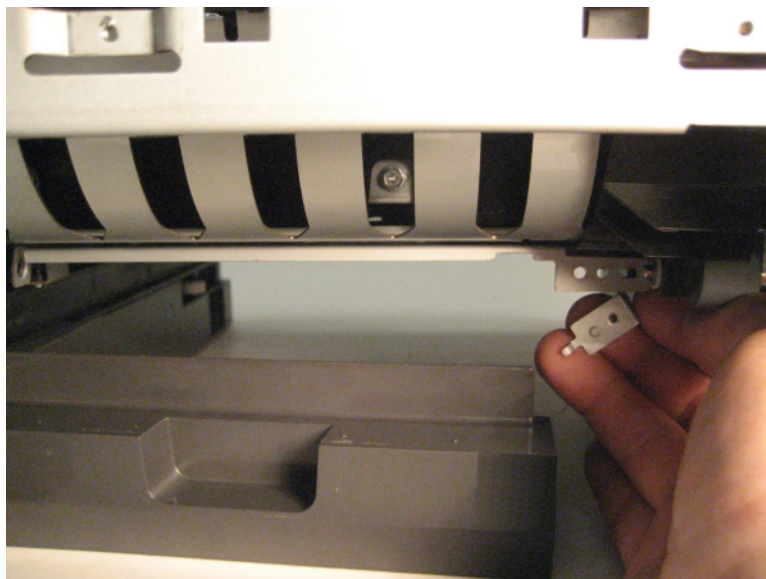
3 Gently remove the duplex rear flap.
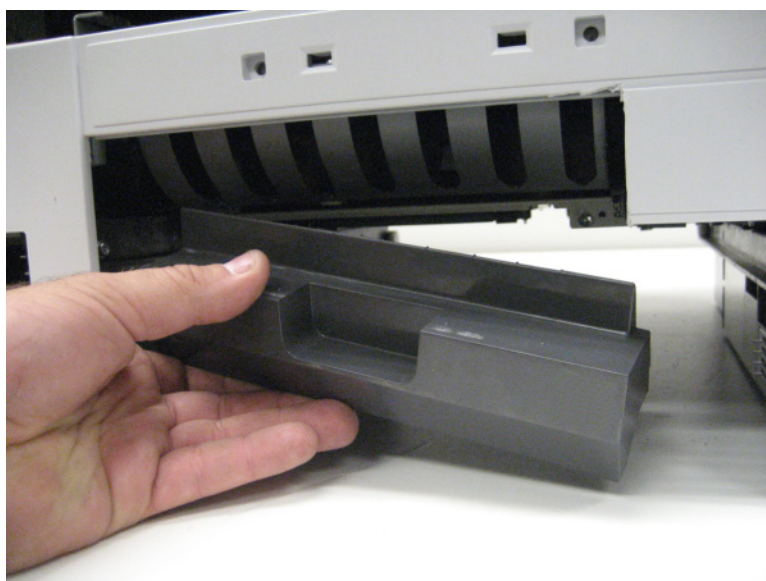
Left frame extension removal

1 Remove the rear door. See **"Rear door removal" on page 534**.

2 Remove the controller board access cover. See **"Controller board access cover removal" on page 570**.

3 Remove the rear lower cover. See **"Rear lower cover removal" on page 532**.

4 Remove the top cover. See **"Top cover removal" on page 544**.

5 Remove the left cover. See **"Left cover removal" on page 565**.

6 Gently place the printer on its right side.

7 Remove the two screws (A) securing the left frame extension to the machine.
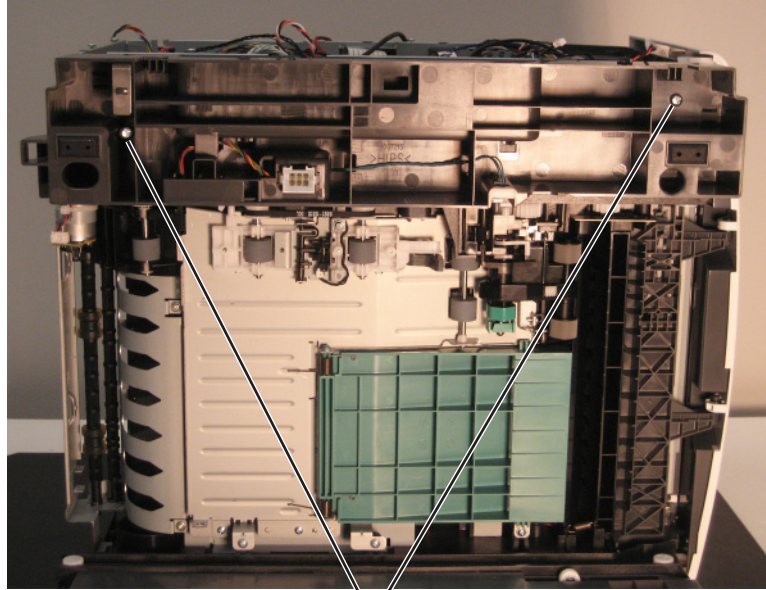
A

8 Release the two hooks (B).

B
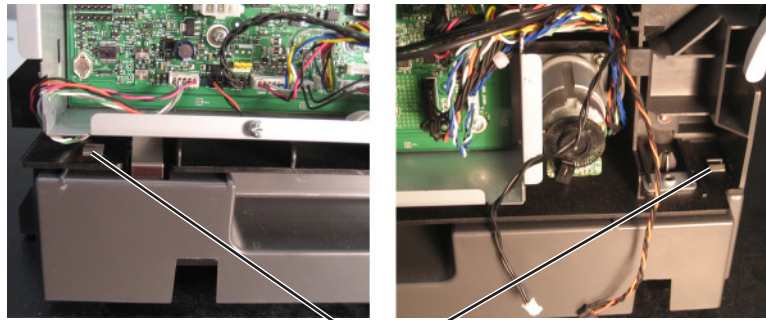
9 Remove the left frame extension.
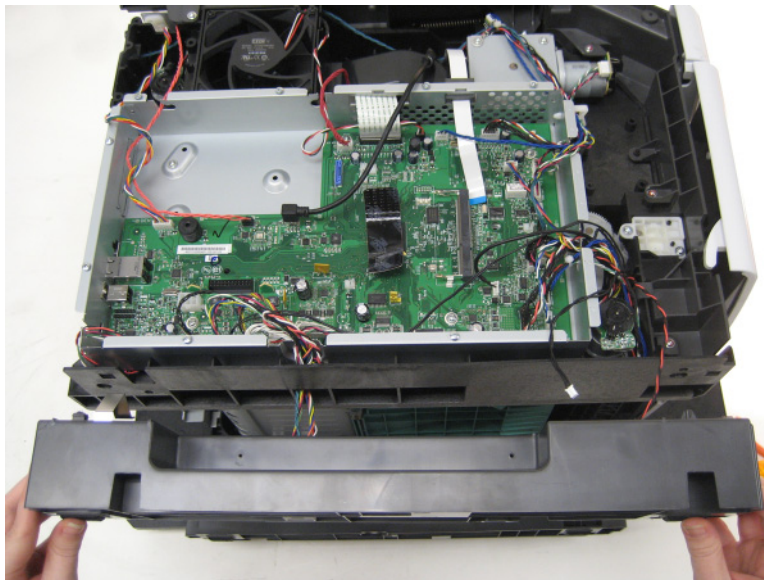
10 Disconnect the three cables from the controller board.

Media tray removal

1 Pull the media tray out from the machine until you meet resistance.

2 Lift the media tray, as shown in the following image, and remove it from the machine.

Media size actuator removal

1 Remove the media tray. See .

2 Pry the free end, and then swing the actuator.
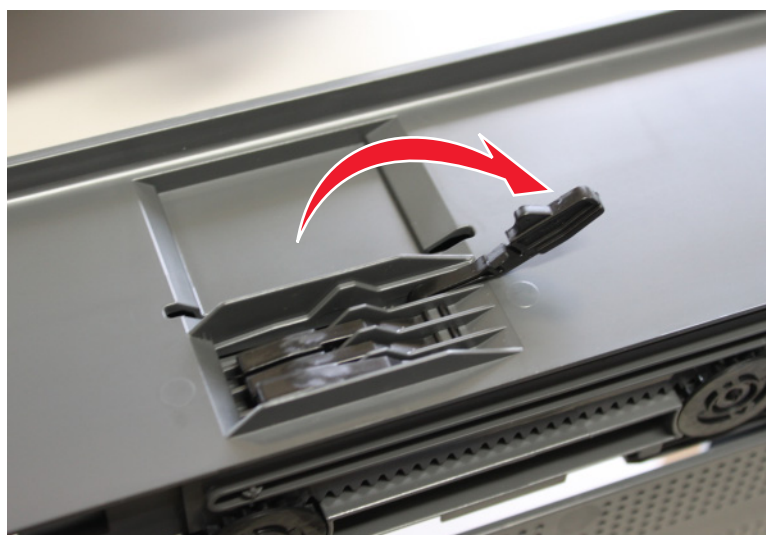
3 Press the free end to remove the actuator.
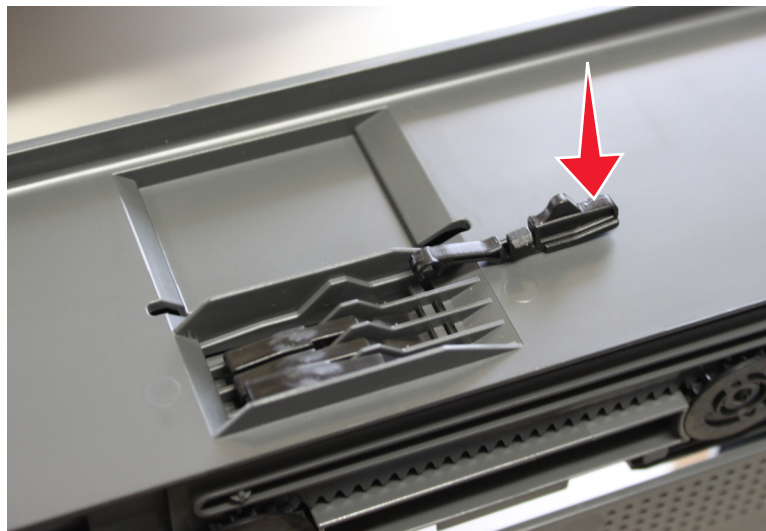
Installation notes:

a Press the actuator into the square bar to attach it.
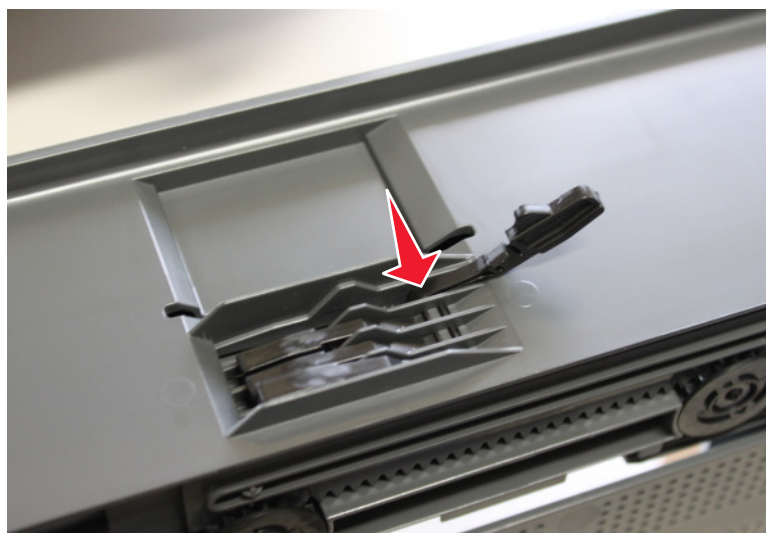
b Swing the actuator, and then press the free end to lock it in place.
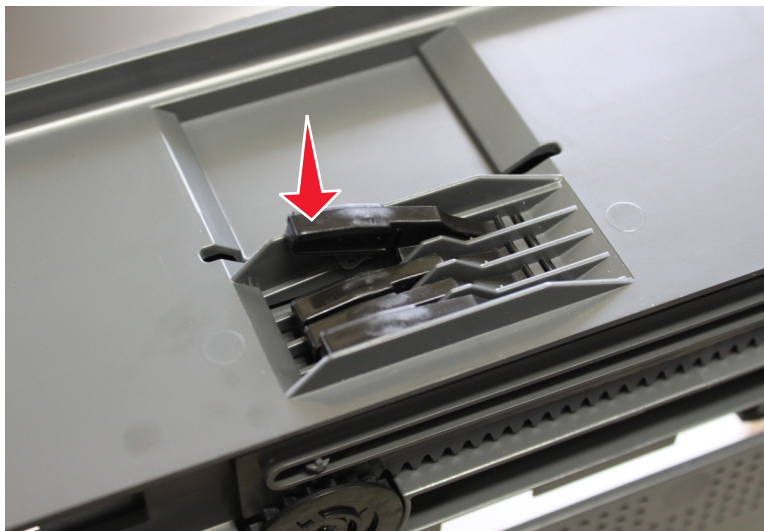
Pick roller assembly removal

1 Remove the media tray. See **"Media tray removal" on page 556**.

2 Lower the front duplex flap to gain access to the pick roller assembly.
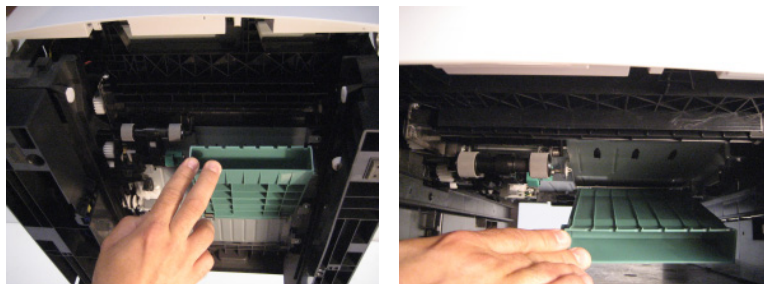
Note: When removing the pick roller assembly, avoid all contact with the roller surfaces, or paper jams might occur.

3 Squeeze both sides of the pick roller latch, and move the pick roller assembly to the right to remove it.
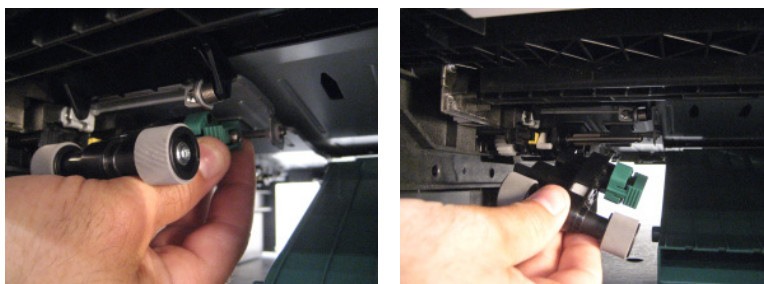
Note: When replacing the pick rollers, do not touch the roller surfaces, or paper jams might occur.

Parts removal

Right frame extension

1 Remove the base machine from any input options.

2 Remove the media tray.

3 Carefully lay the machine safely on its left side.

4 Remove the two screws (A) securing the right frame extension to the machine.
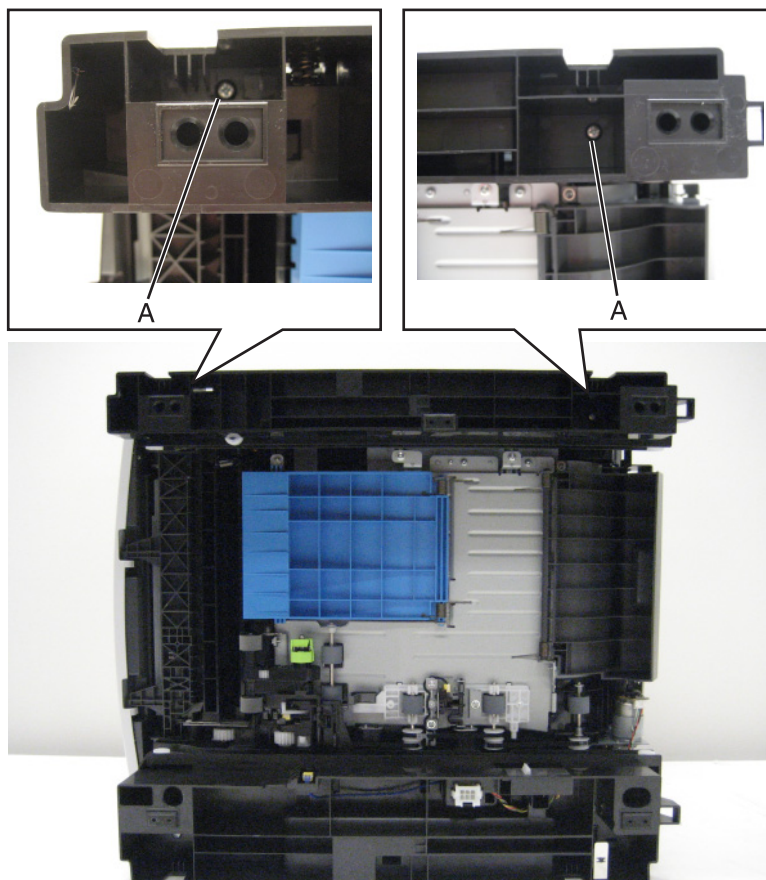
5 Release the two hooks (B) securing the right frame extension to the machine.
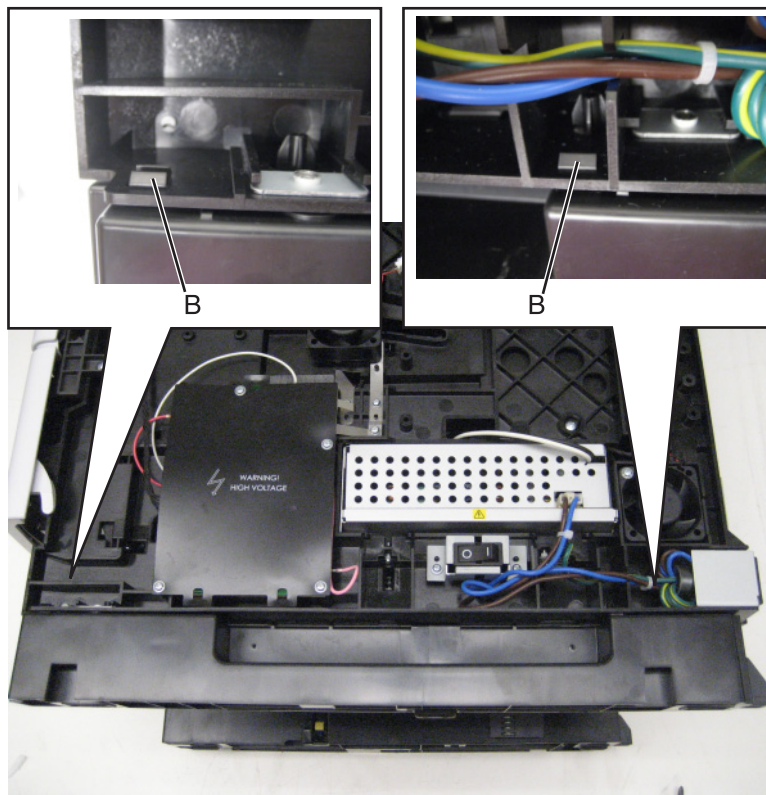
6 Remove the right frame extension.
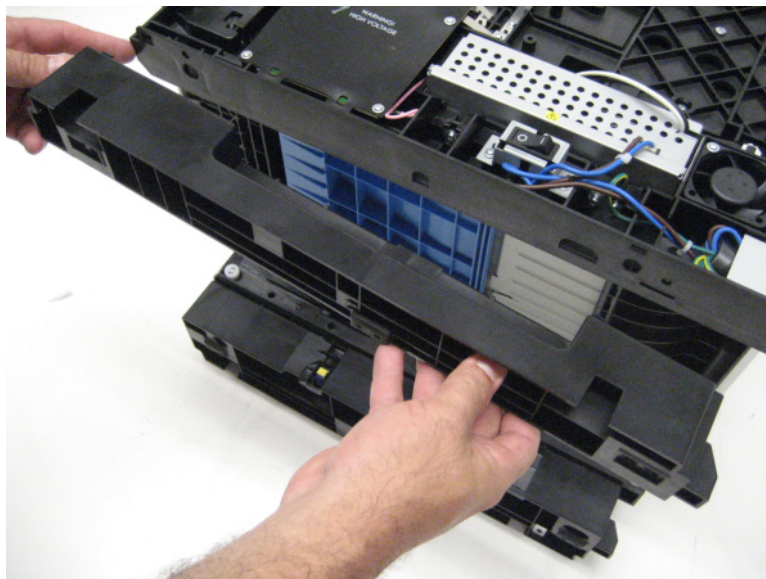
Sensor (duplex path) removal

1 Disconnect the machine from any input options.

2 Carefully place the machine on its rear side so that the bottom of the machine is exposed.

3 Remove the three screws (A) securing the sensor (duplex path) to the machine.

A
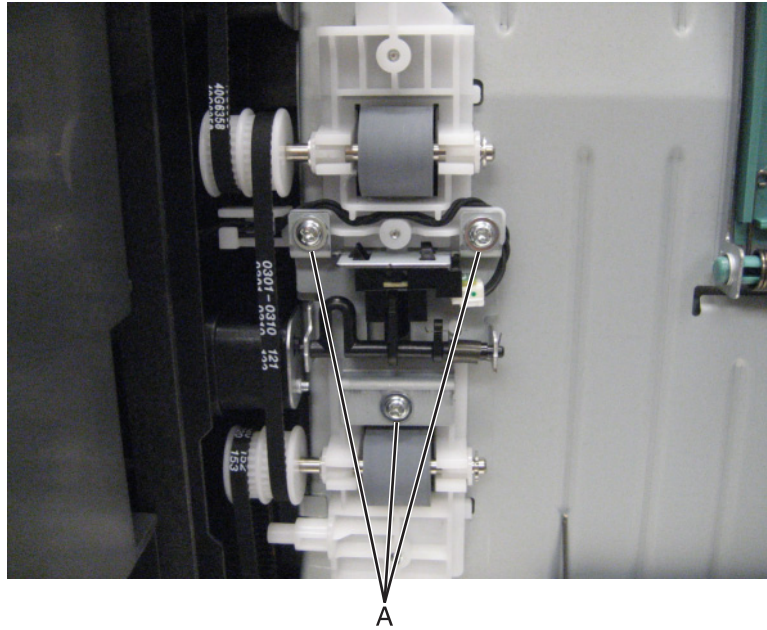
4 Remove the sensor (duplex path).

5 Disconnect the cable (B) from the sensor (duplex path).

B
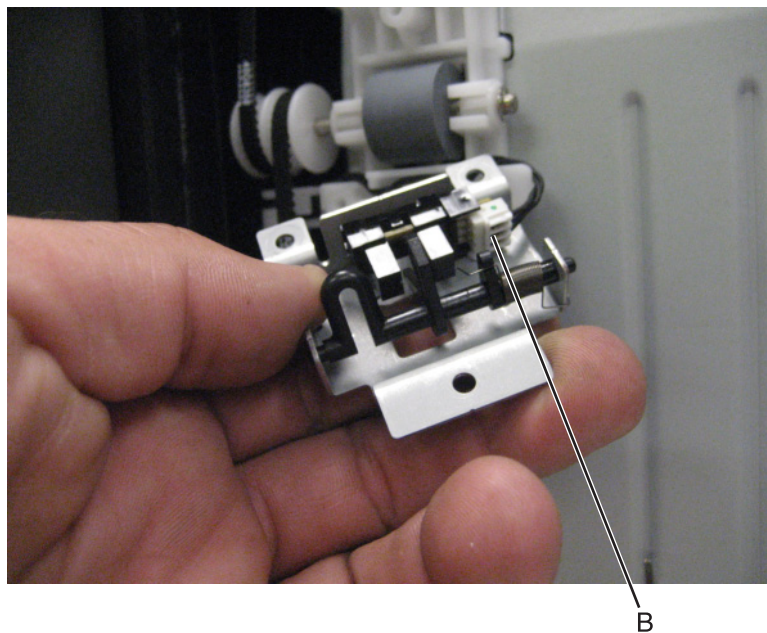
Sensor (tray 1 media out) removal

1 Remove the right cover. **"Right cover removal" on page 584**.

2 Remove the rear lower door. See **"Rear lower cover removal" on page 532**.

3 Remove the LVPS. See **"LVPS removal" on page 592**.

Parts removal

4 Remove the left cover. See **"Left cover removal" on page 565**.

5 Remove the board housing. See **"Board housing removal" on page 577**.

6 Remove the media tray. See **"Media tray removal" on page 556**.

7 Remove the pick roller assembly. See **"Pick roller assembly removal" on page 559**.

8 Remove the media feeder. See **"Media feeder removal" on page 575**.

9 Disconnect the cable (A) from the sensor (tray 1 media out).
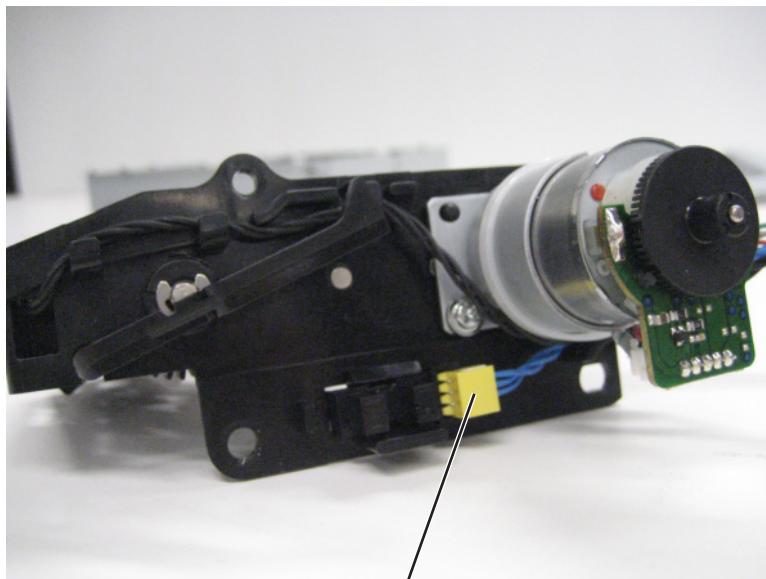
A

10 Release the hooks (B) securing the sensor (tray 1 media out) to the media feeder.

B

Parts removal
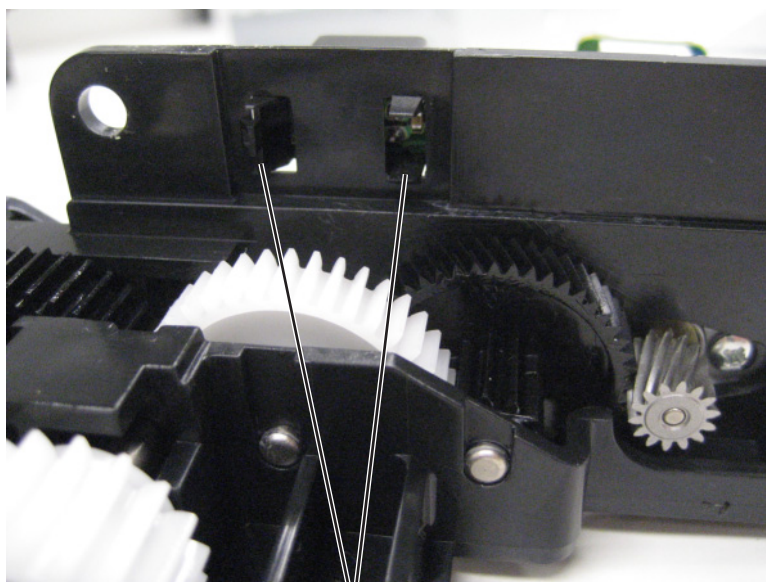
11 Remove the sensor (tray 1 media out).
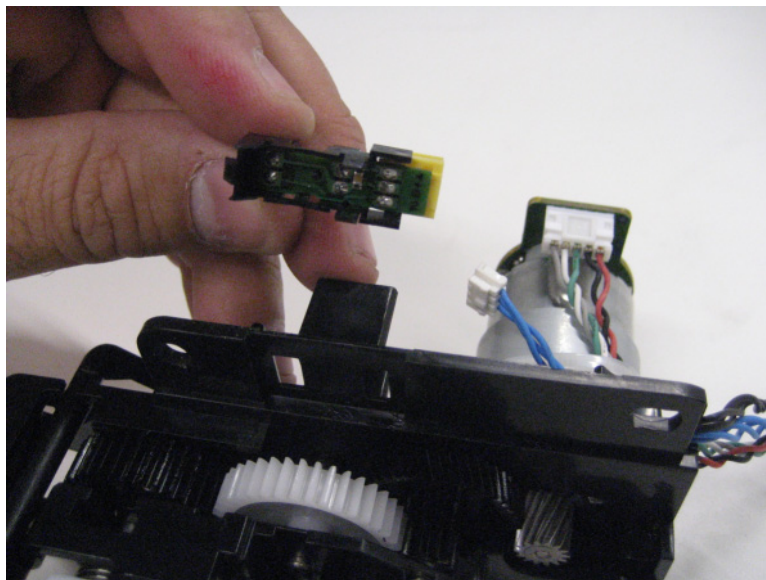
Separator roller assembly removal

1 Remove the media tray from the machine.

2 Press the button to release the separator roller assembly from the media tray.
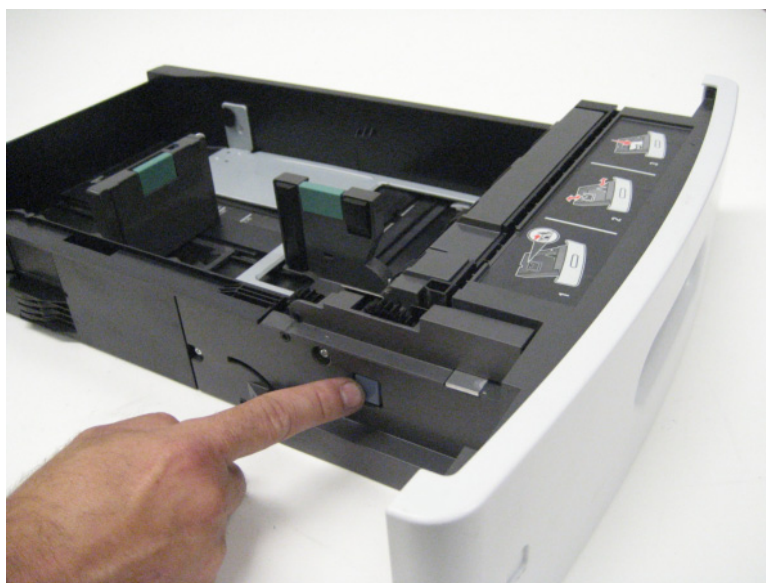
3 Remove the separator roller assembly.

Left side removals

Left cover removal

1 Open the front door.

2 Pull the media tray from the machine.

3 Raise the control panel to its uppermost position.
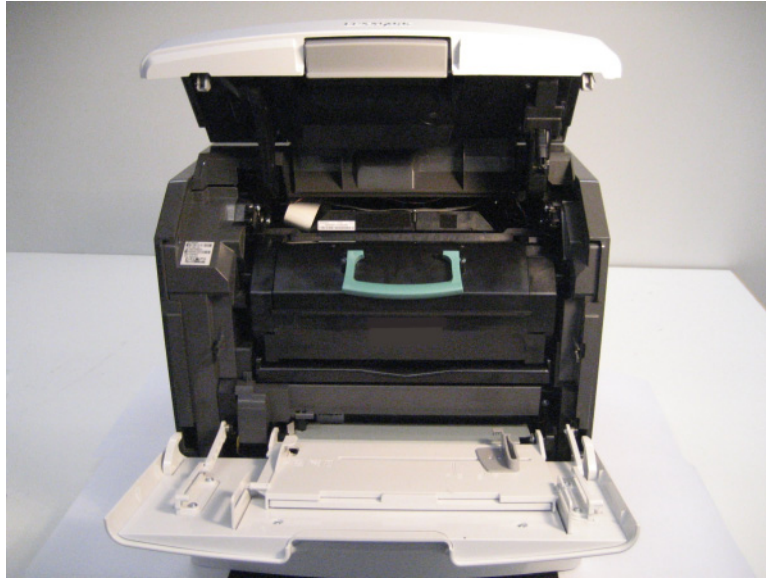
4 Remove the rear door. See **"Rear door removal" on page 534**.

5 Detach the controller board access cover.
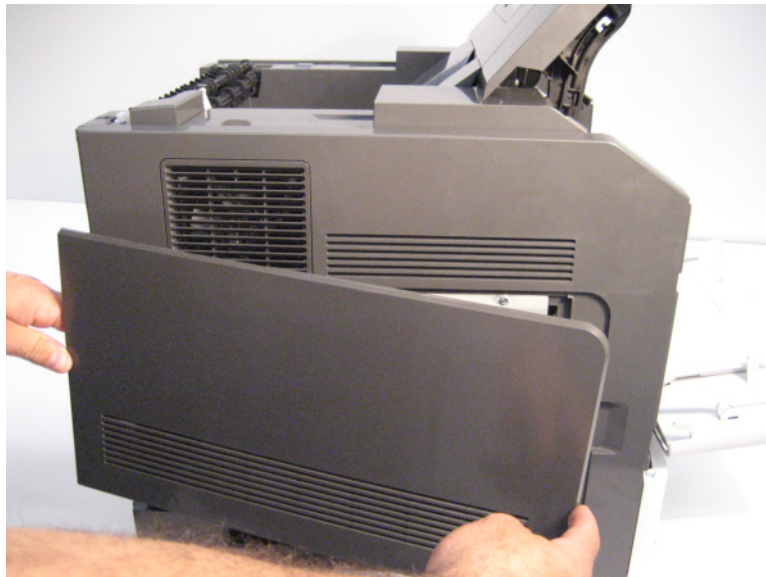
6 Remove the rear lower cover. See **"Rear lower cover removal" on page 532**.

7 Remove the top cover. See **"Top cover removal" on page 544**.

8 Remove the six screws (A) securing the left cover to the machine.

A
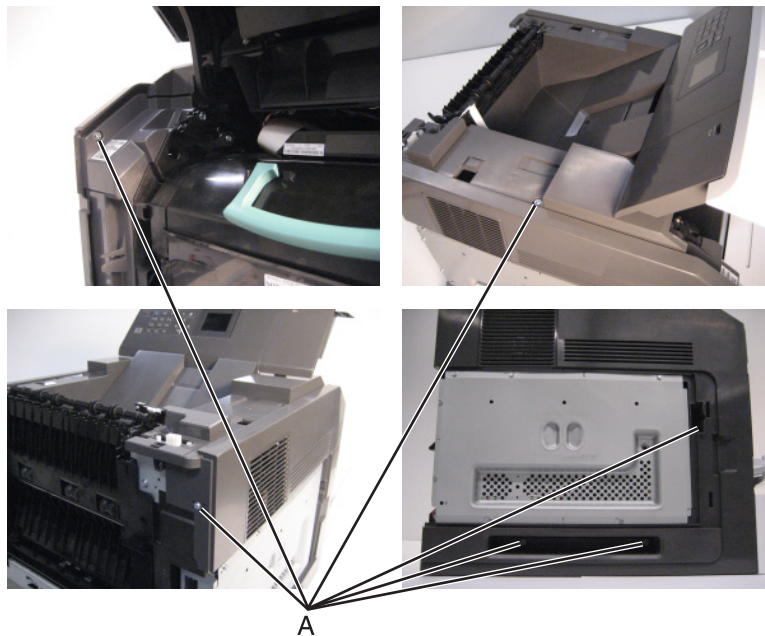
9 Remove the left cover.
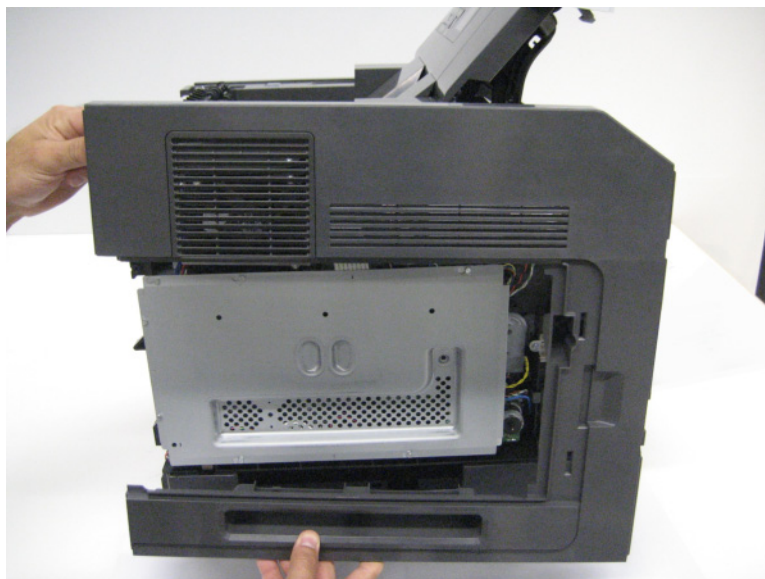
Note: When removing the left cover, the charcoal filter might become detached.

Installation note: When replacing the left cover, ensure that the charcoal filter is properly installed.

Controller board removal

Notes:

- Back up the eSF solutions and settings before replacing the controller board. For more information, see **"Backing up eSF solutions and settings" on page 432**.

-

Note: If you are replacing the controller board, retain the flash card from the original controller board so that you can use it with the replacement controller board.

Warning—Potential Damage: When replacing the control panel, control panel board, or controller board, replace only one component at a time. Replace the required component and perform a POR before replacing a second component. If this procedure is not followed, the printer will be rendered inoperable. Never replace both the control panel and the controller board without a POR after installing each one or the printer will be rendered inoperable. Never install or remove these components as a method of troubleshooting while operating in normal user mode. See **"Controller board/control panel replacement" on page 426**.

Warning—Potential Damage: When a component has been installed in a machine and has been powered up in normal user mode, it cannot be used in another machine; it must be returned to the manufacturer. The machine must be powered up in Diagnostic mode or the controller board, control panel boards, or control panel will become locked.

⚠ **CAUTION—POTENTIAL INJURY:** This product contains a lithium battery. There is a risk of explosion if the battery is replaced with an incorrect type. Discard used batteries according to the battery manufacturer's instructions and local regulations.

1 Remove the right cover. See **"Right cover removal" on page 584**.

2 Remove the rear lower cover. See **"Rear lower cover removal" on page 532**.

3 Remove the LVPS. See **"LVPS removal" on page 592**.

4 Remove the left cover. See **"Left cover removal" on page 565**.

5 Remove the controller board access shield. See **"Controller board access shield removal" on page 570**.

6 Disconnect all cables from the controller board.

7 Remove the six screws (B) securing the controller board to the machine.

B
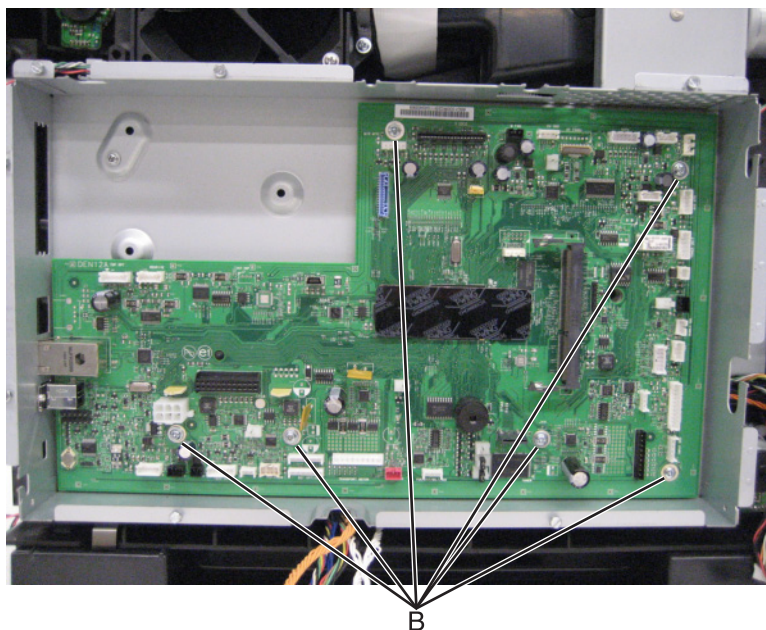
8 Remove the controller board.

Installation notes:

- Make sure you retain the flash card from the original controller board so that you can use it with the replacement controller board.
- After installing a new controller board, perform the printer configuration restoration. See **"Restoring the printer configuration after replacing the controller board" on page 427**.

Controller board access cover removal

Detach the controller board access cover from the machine.
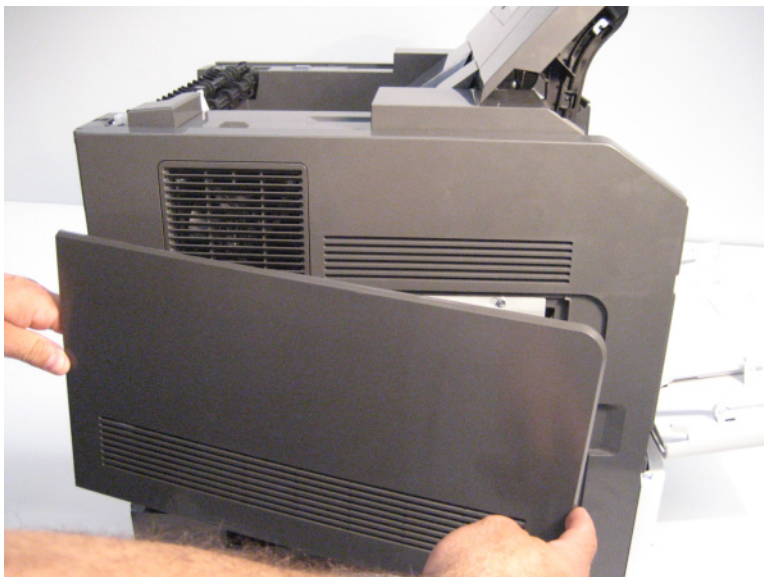
Controller board access shield removal

1 Remove the left cover. See **"Left cover removal" on page 565**.

2 Loosen the eight screws (A) securing the controller board access shield to the machine.
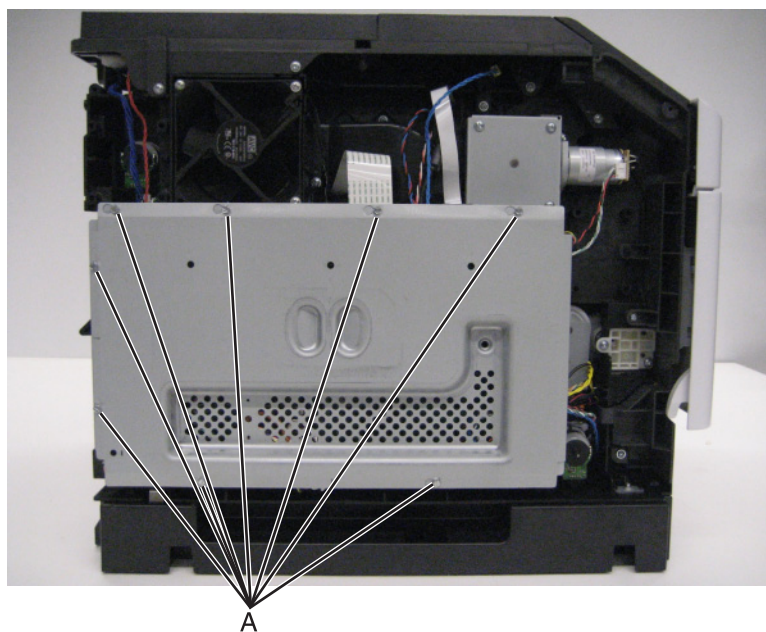
3 Move the controller board access shield toward the front of the machine to remove it.

Fuser drive motor removal

1 Remove the rear door. See **"Rear door removal" on page 534**.

2 Remove the fuser. See **"Fuser removal" on page 538**.

3 Remove the imaging unit from the machine.

4 Remove the LVPS. See **"LVPS removal" on page 592**.

5 Remove the left cover. See **"Left cover removal" on page 565**.

6 Remove the board housing. See **"Board housing removal" on page 577**.

7 Remove the main drive motor. See **"Main drive motor removal" on page 574**.

8 Remove the harnesses from the clamp (A).

9 Remove the three screws (B) securing the fuser drive motor to the machine.

B   A   B
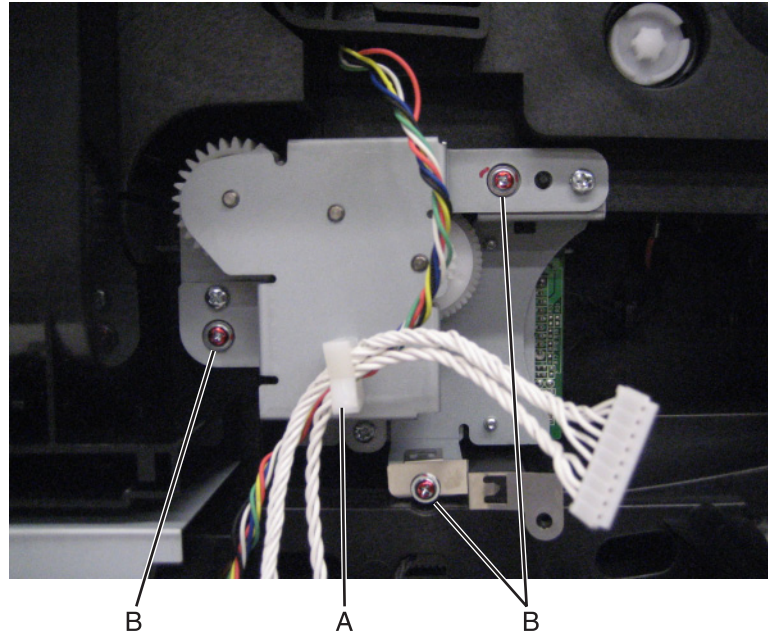
Note: When removing the lowermost screw, the grounding plate will become detached.

10 Disconnect the cable (C) from the fuser drive motor.

C
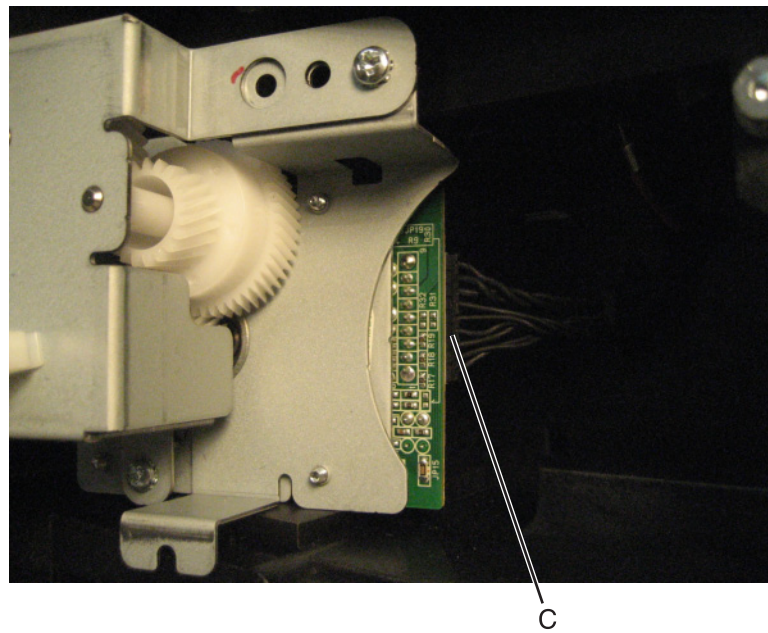
11 Remove the fuser drive motor.
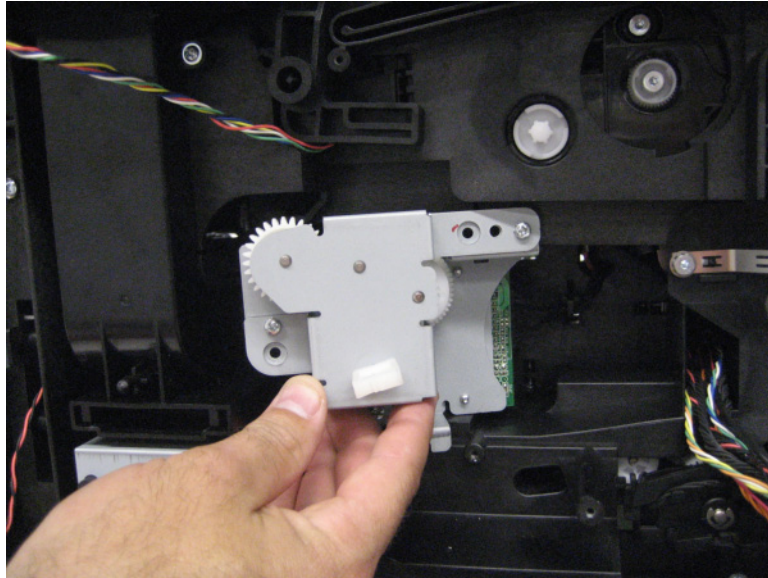
Installation notes:

- When replacing the fuser drive motor, ensure that the grounding plate is properly reattached.
- When replacing the fuser drive motor, ensure that the cable is properly reconnected.

Main cooling fan removal

1 Remove the left cover. See .

2 Remove the controller board access shield. See .

3 Remove the three screws (B) securing the main cooling fan to the machine.

B
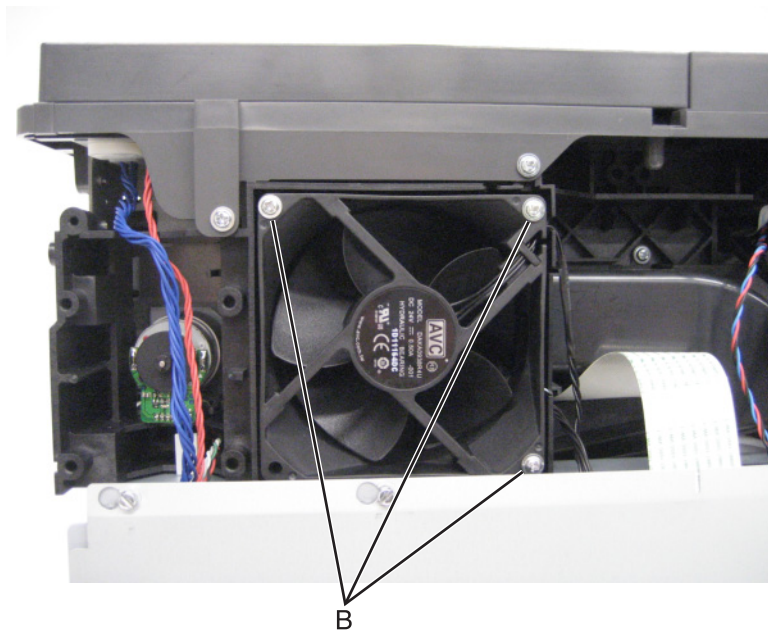
Parts removal

4 Disconnect the cable (C) from the controller board, and remove the main cooling fan.

C
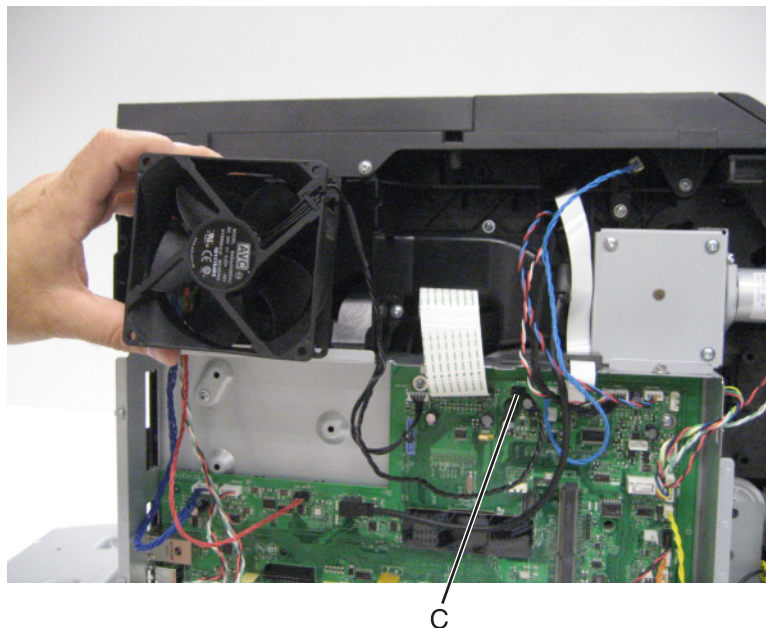
Main drive motor removal

Installation warning: When replacing the main drive motor, make sure that the control panel door is in the closed position or the main drive motor will not align properly, and damage will occur.

1 Remove the imaging unit from the machine.

2 Remove the right cover. See **"Right cover removal" on page 584**.

3 Remove the rear lower cover. See **"Rear lower cover removal" on page 532**.

4 Remove the LVPS. See **"LVPS removal" on page 592**.

5 Remove the left cover. See **"Left cover removal" on page 565**.

6 Remove the board housing. See **"Board housing removal" on page 577**.

7 Remove the harnesses from the clamp (A).

8 Remove the four screws (B) securing the main drive motor to the machine.

A   B
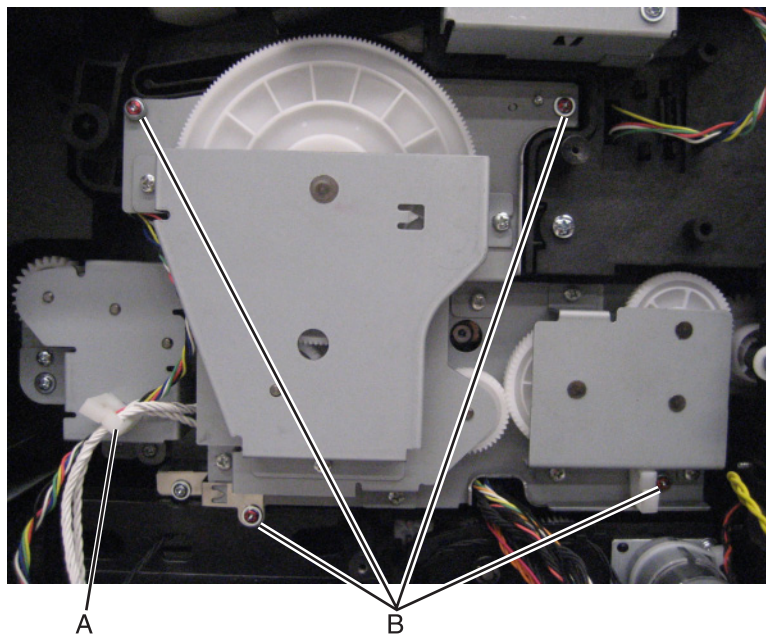
9 Remove the main drive motor from the machine.
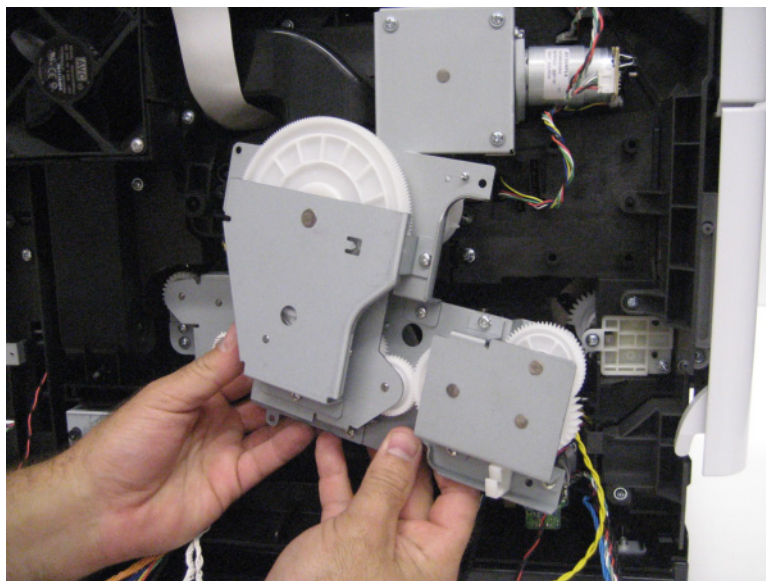
10 Disconnect the cable from the main drive motor.

Installation warning: When replacing the main drive motor, make sure that all gears and drive shafts are properly aligned, or damage will occur.

Media feeder removal

1 Remove the right cover. See .

2 Remove the rear lower cover. See .

3 Remove the LVPS. See .

4 Remove the left cover. See **"Left cover removal" on page 565**.

5 Remove the board housing. See **"Board housing removal" on page 577**.

6 Remove the pick roller assembly. See **"Pick roller assembly removal" on page 559**.

7 Remove the three screws (A) securing the media feeder to the machine.
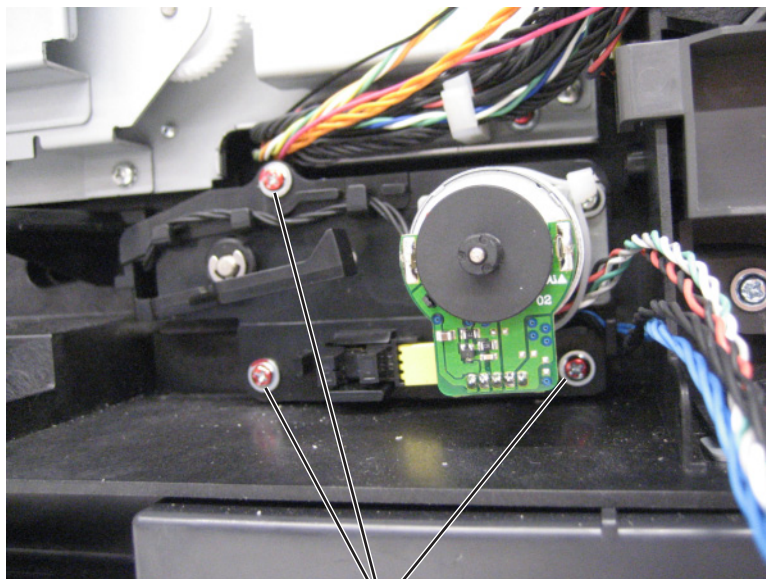
A

Note: Use care when removing the media feeder to avoid damage.

8 Remove the media feeder.
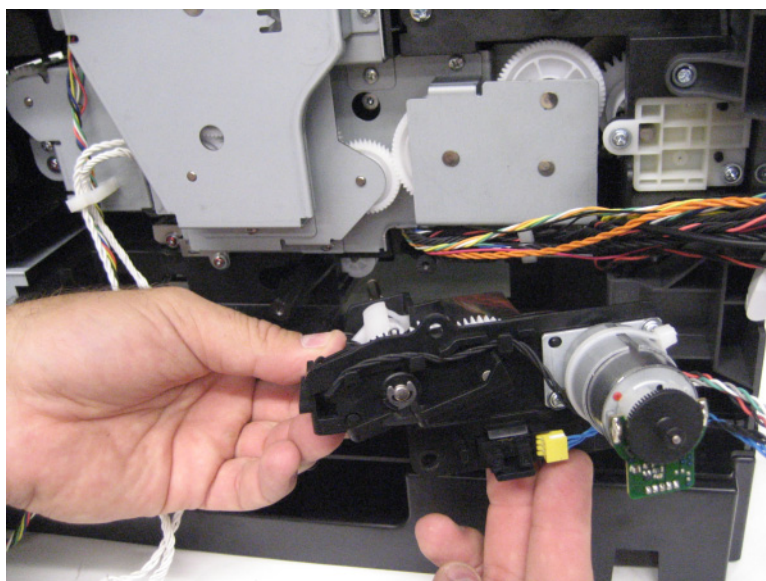
Board housing removal

Note: When removing the board housing, the controller board will remain attached to the board housing.

1 Remove the right cover. See **"Right cover removal" on page 584**.

2 Remove the rear lower cover. See **"Rear lower cover removal" on page 532**.

3 Remove the LVPS. See **"LVPS removal" on page 592**.

4 Remove the left cover. See **"Left cover removal" on page 565**.

5 Disconnect all of the cables from the controller board.

6 Remove the five screws (A).
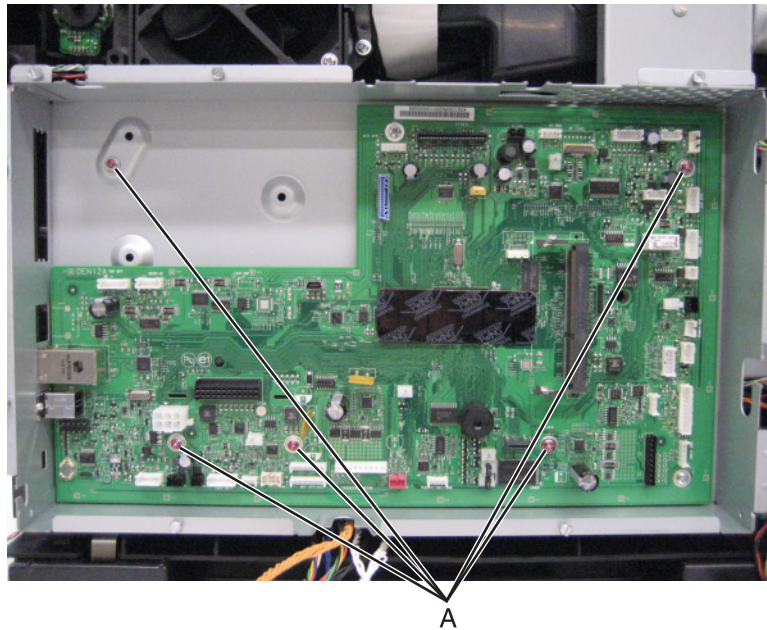
7 Remove the board housing.
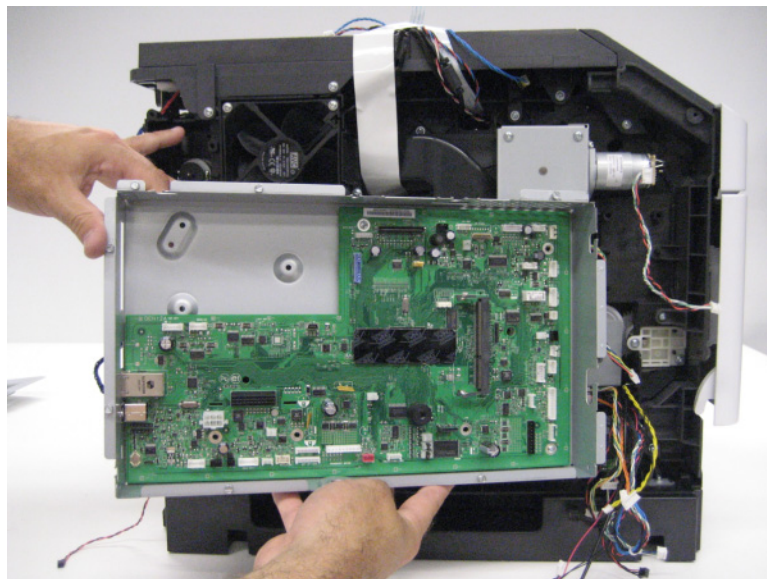
Parts removal

577

Sensor (control panel interlock) removal

1 Remove the left cover. See **"Left cover removal" on page 565**.

2 Remove the screw (A) securing the bracket to the machine.
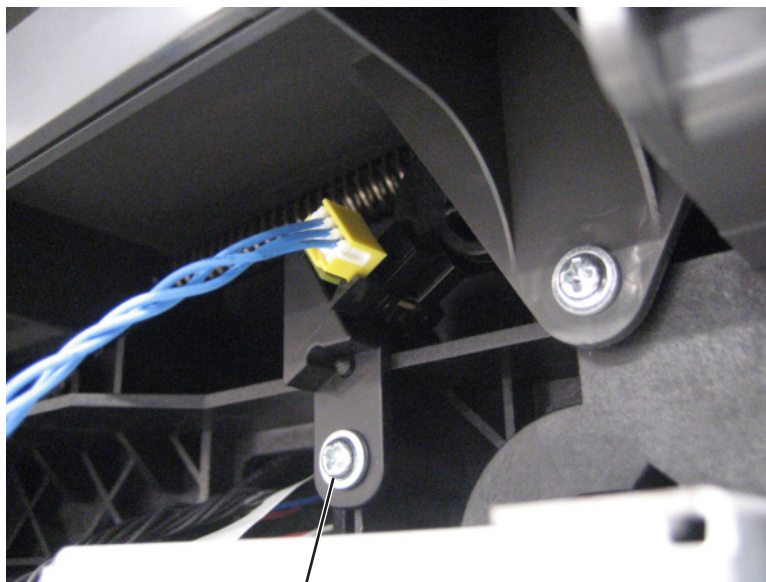
A

3 Remove the bracket from the machine.

4 Disconnect the cable (B) from the sensor (control panel interlock), and remove it.
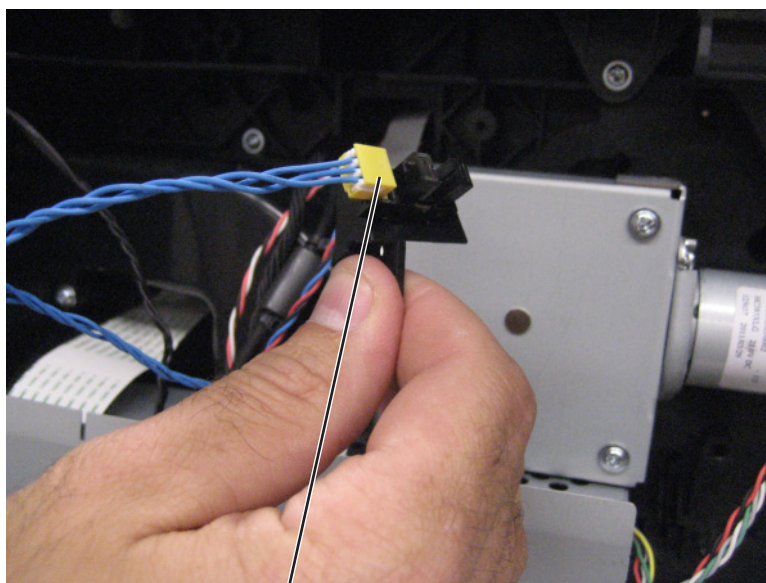
B

Sensor (pick roller position) removal

1 Remove the right cover. See **"Right cover removal" on page 584**.

2 Remove the rear lower cover. See **"Rear lower cover removal" on page 532**.

3 Remove the LVPS. See **"LVPS removal" on page 592**.

4 Remove the left cover. See **"Left cover removal" on page 565**.

5 Remove the board housing. See **"Board housing removal" on page 577**.

6 Remove the pick roller assembly. See **"Pick roller assembly removal" on page 559**.

7 Remove the media feeder. See **"Media feeder removal" on page 575**.

8 Release the hooks (A) securing the sensor (pick roller position) to the assembly.

A
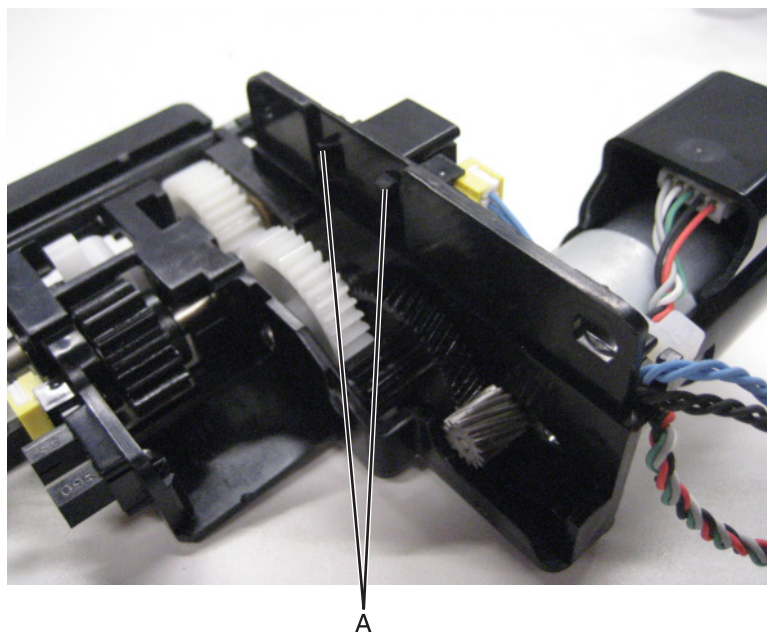
9 Remove the sensor (pick roller position).

10 Disconnect the cable.
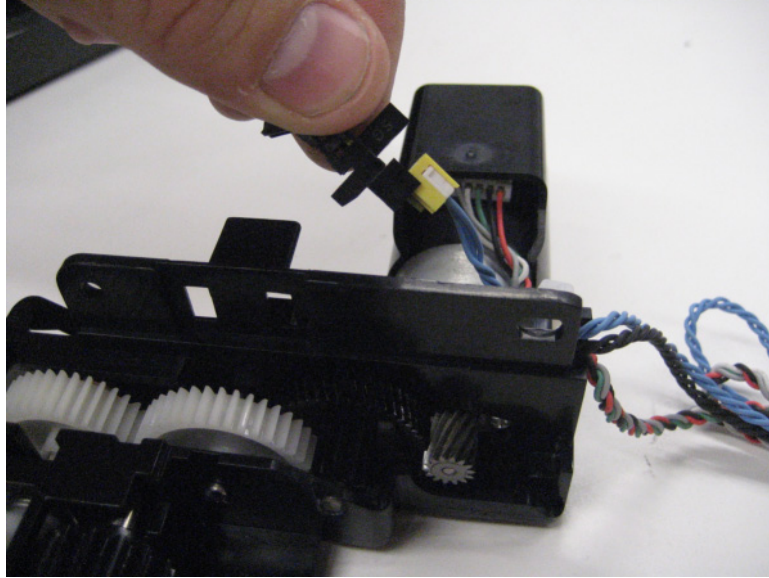
Toner add motor removal

1 Remove the left cover. See **"Left cover removal" on page 565**.

2 Remove the controller board access shield. See **"Controller board access shield removal" on page 570**.

3 Remove the four controller board housing screws (A).

4 Remove the four screws (B) securing the toner add motor to the machine and controller board housing.

B
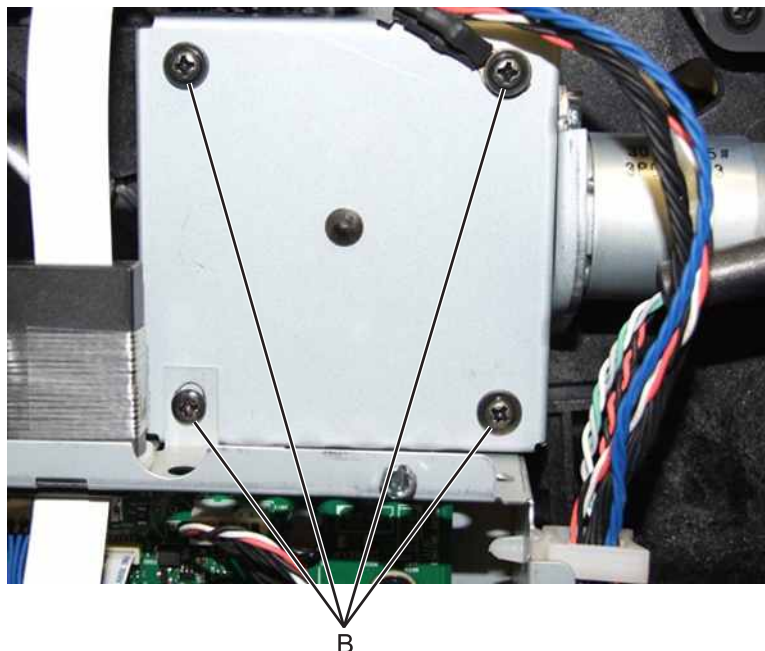
5 Disconnect the motor cable on the controller board.

6 Gently ease the controller board housing away from the printer, and then remove the motor.

Imaging unit smart chip contact removal

1 Remove the right cover. See **"Right cover removal" on page 584**.

2 Remove the rear lower cover. See **"Rear lower cover removal" on page 532**.

3 Remove the rear door. See **"Rear door removal" on page 534**.

4 Remove the fuser. See **"Fuser removal" on page 538**.

5 Remove the imaging unit from the machine.

6 Remove the LVPS. See **"LVPS removal" on page 592**.

7 Remove the left cover. See **"Left cover removal" on page 565**.

8 Remove the board housing. See **"Board housing removal" on page 577**.

9 Remove the main drive motor. See **"Main drive motor removal" on page 574**.

10 Remove the fuser drive motor. See **"Fuser drive motor removal" on page 571**.

11 From the left side, release the latches (A).
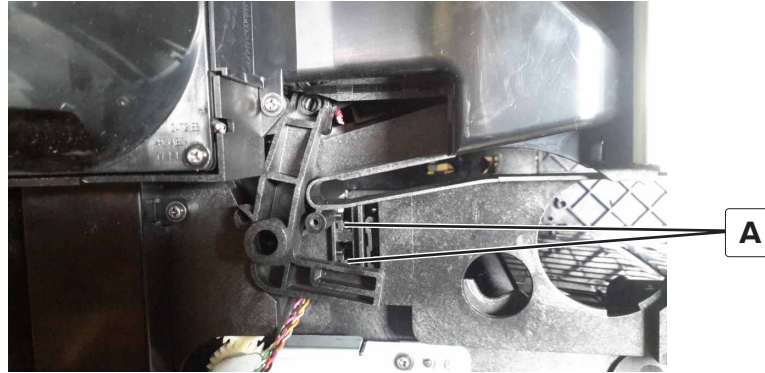
12 Lift the smart chip contact, and then remove.

Toner cartridge smart chip contact removal

1 Remove the right cover. See **"Right cover removal" on page 584**.

2 Remove the rear lower cover. See **"Rear lower cover removal" on page 532**.

3 Remove the LVPS. See **"LVPS removal" on page 592**.

4 Remove the left cover. See **"Left cover removal" on page 565**.

5 Remove the board housing. See **"Board housing removal" on page 577**.

6 From the left side, release the latches (A).
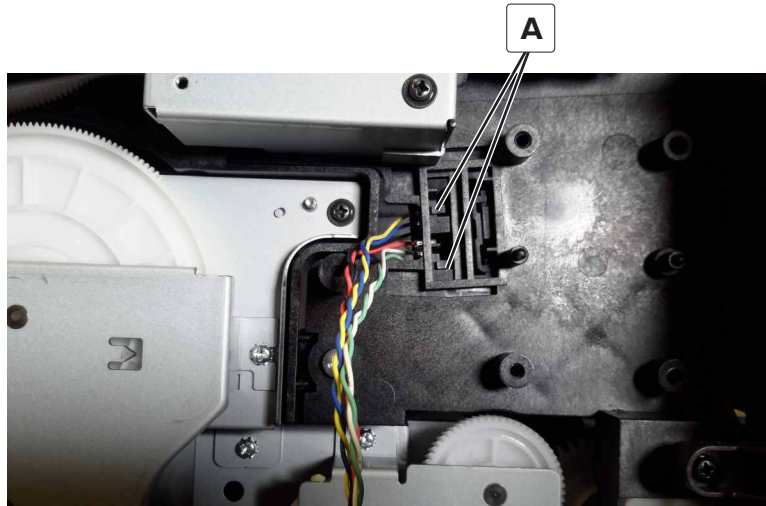
7 Lift the smart chip contact, and then remove.
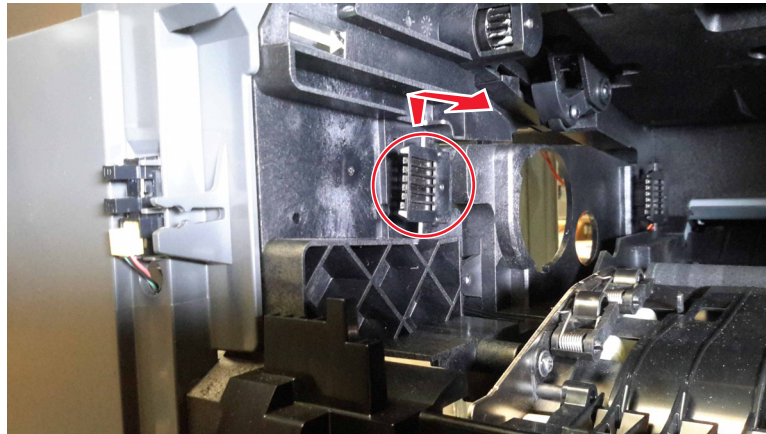
Right side removals

Right cover removal

1 Open the front door.

2 Raise the control panel to its uppermost position.
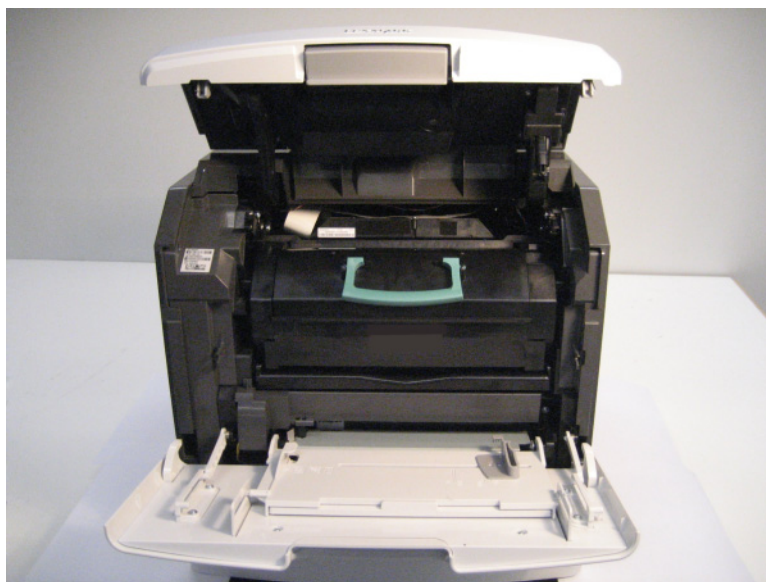
3 Remove the rear door. See **"Rear door removal" on page 534**.

4 Remove the rear lower door. See **"Rear lower cover removal" on page 532**.

5 Remove the top cover. See **"Top cover removal" on page 544**.

6 Remove the five screws (A) securing the right cover to the machine.

A
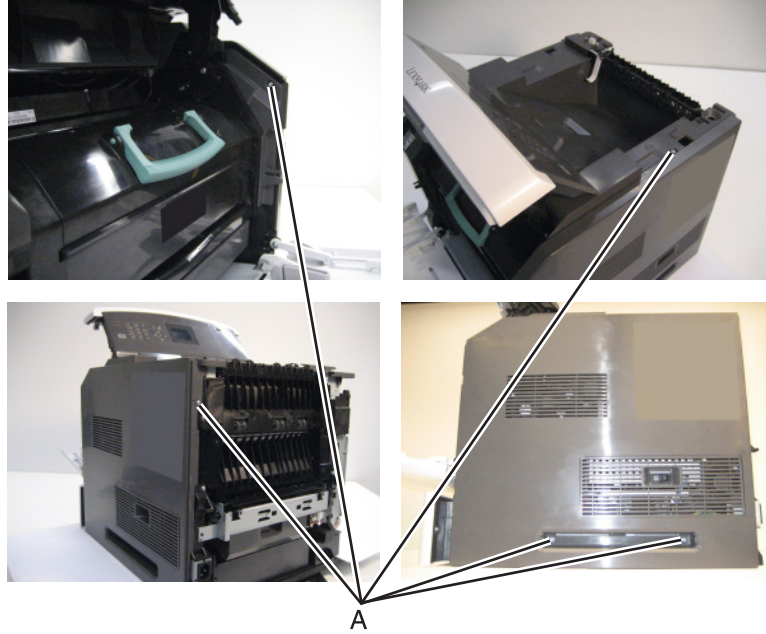
7 Remove the right cover.

Cartridge cooling fan removal

1 Remove the right cover. See **"Right cover removal" on page 584**.

2 Remove the screw (A) securing the cartridge cooling fan to the machine.

A
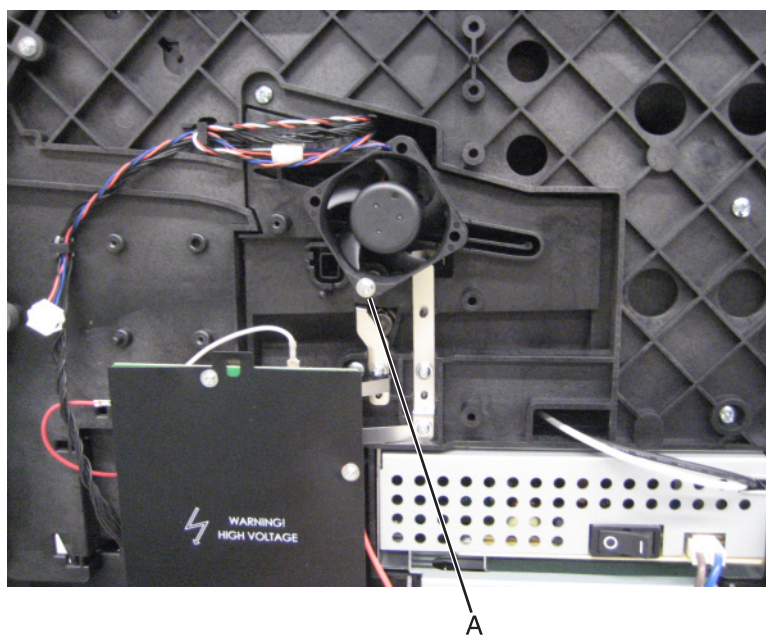
3 Remove the cartridge cooling fan.

4 Disconnect the cable (B).

B
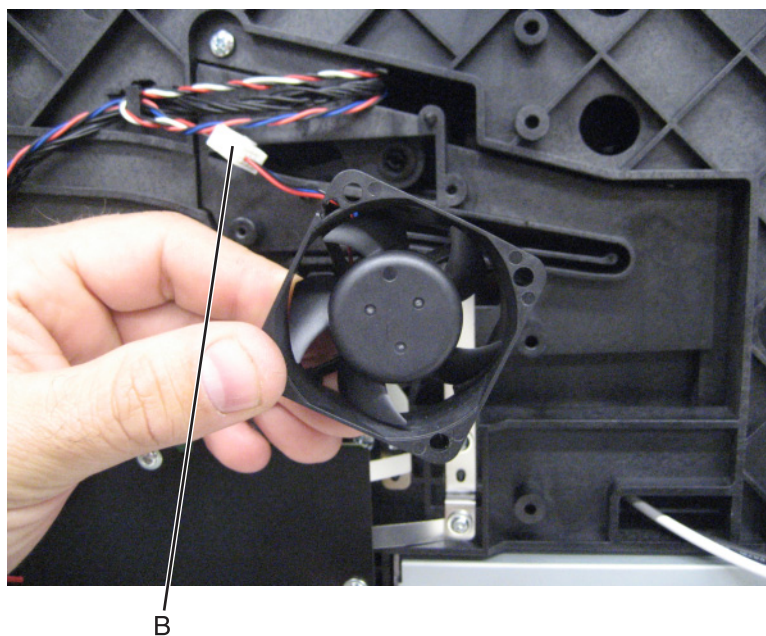
Installation note: When replacing the cartridge cooling fan, ensure that it is installed as shown in the picture.

Duplex cooling fan removal

1 Remove the right cover. See **"Right cover removal" on page 584**.

2 Remove the screw (A) securing the duplex cooling fan from the machine.
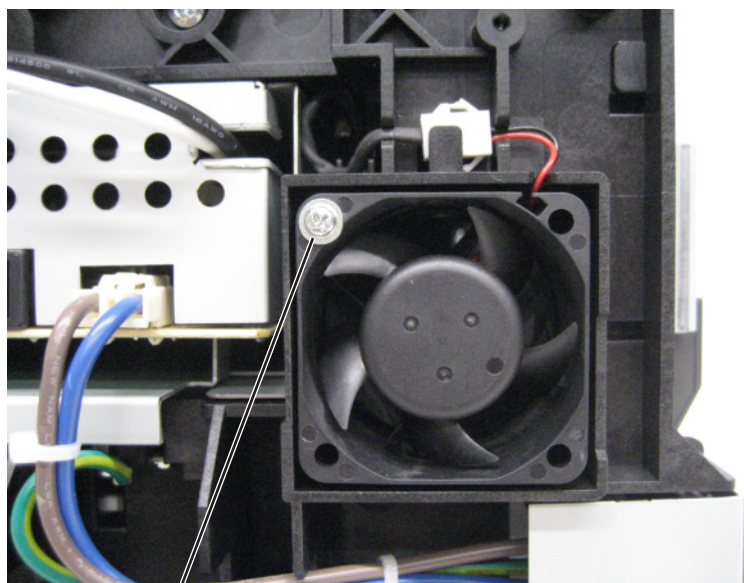
A

3 Remove the duplex cooling fan.

4 Disconnect the cable (B).

B
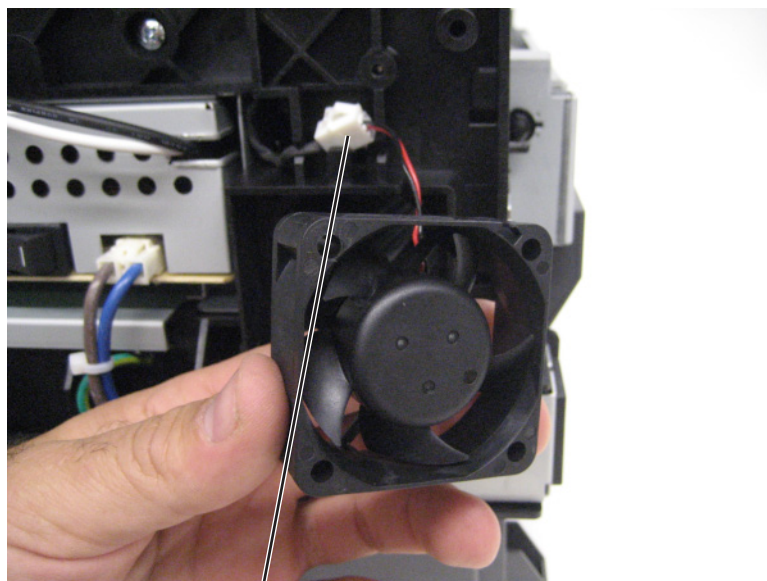
Installation note: When replacing the duplex cooling fan, ensure that it is installed as shown in the picture.

Fuser cooling fan removal

1 Remove the right cover. See **"Right cover removal" on page 584**.

2 Remove the two screws (A) securing the fuser cooling fan to the machine.
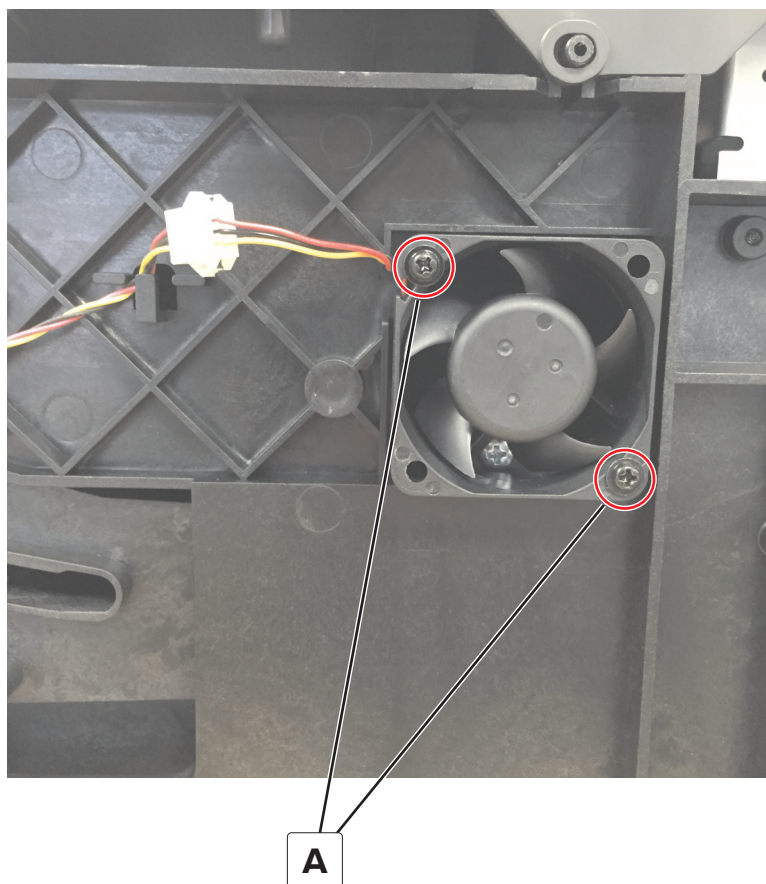
3 Remove the fuser cooling fan.

4 Disconnect the cable (B).

B

Parts removal

589
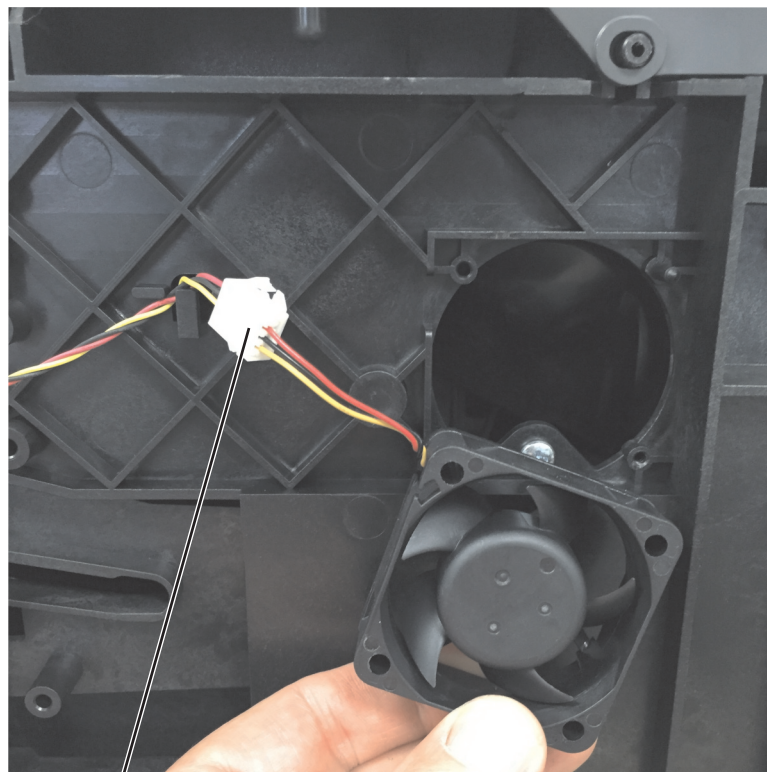
HVPS removal

1 Remove the right cover. See **"Right cover removal" on page 584**.

2 Disconnect four cables (A) from the HVPS.

A
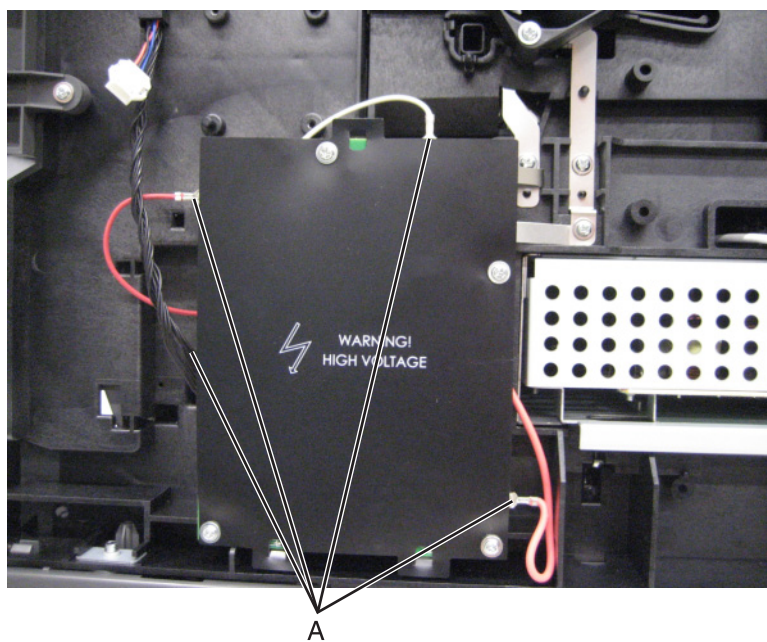
3 Remove the four screws (B) securing the HVPS to the machine.

B
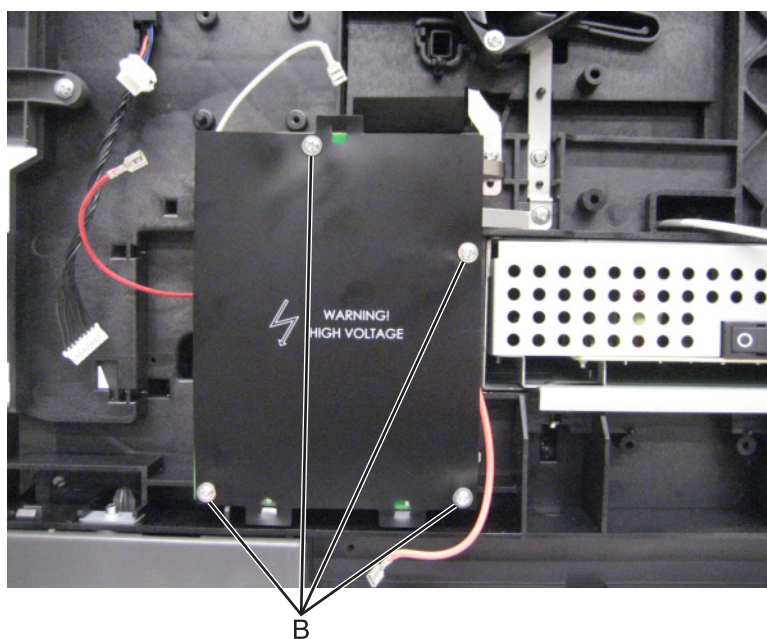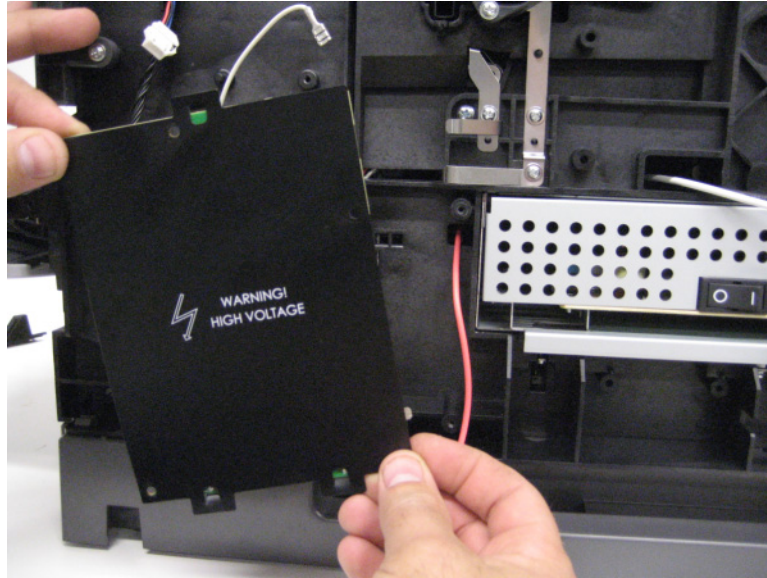
4 Remove the HVPS.

Installation notes:

- When replacing the HVPS, make sure the plastic insulating shield is properly reattached.
- When replacing the HVPS, make sure the cables are properly reattached.

HVPS contacts removal

1 Remove the right cover. See **"Right cover removal" on page 584**.

2 Remove the HVPS. See **"HVPS removal" on page 590**.

3 Remove the three screws (A), and then remove the two contacts (B).
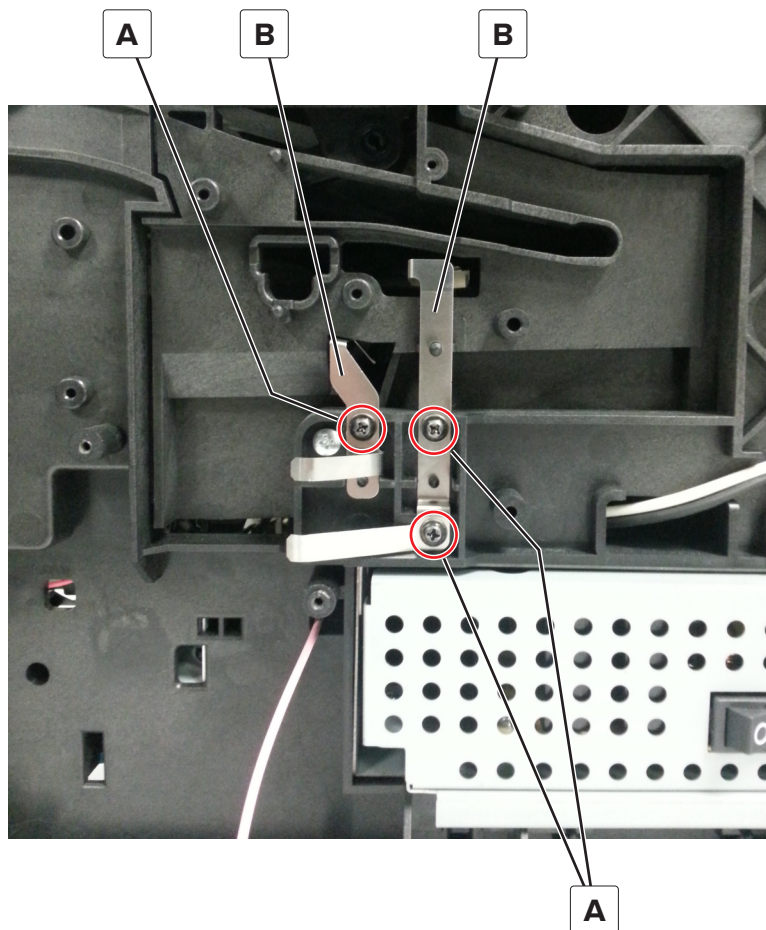
LVPS removal

1 Remove the right cover. See **"Right cover removal" on page 584**.

2 Remove the rear lower cover. See **"Rear lower cover removal" on page 532**.

3 Disconnect the main power cable (A) from the LVPS.

A
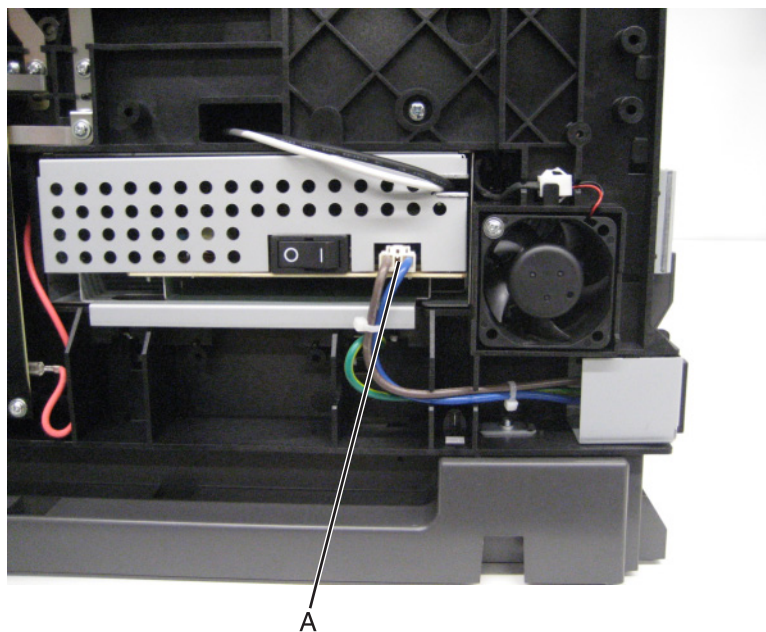
4 While holding down the duplex rear flap, remove the two screws (B) securing the LVPS to the machine.

B

Parts removal
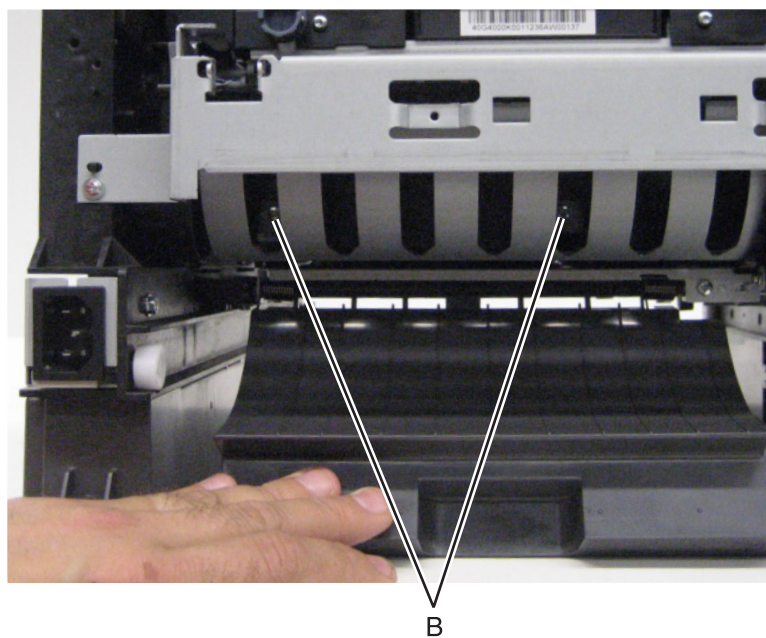
5 Gently but firmly pull the LVPS partially from the machine, as shown in the following image.
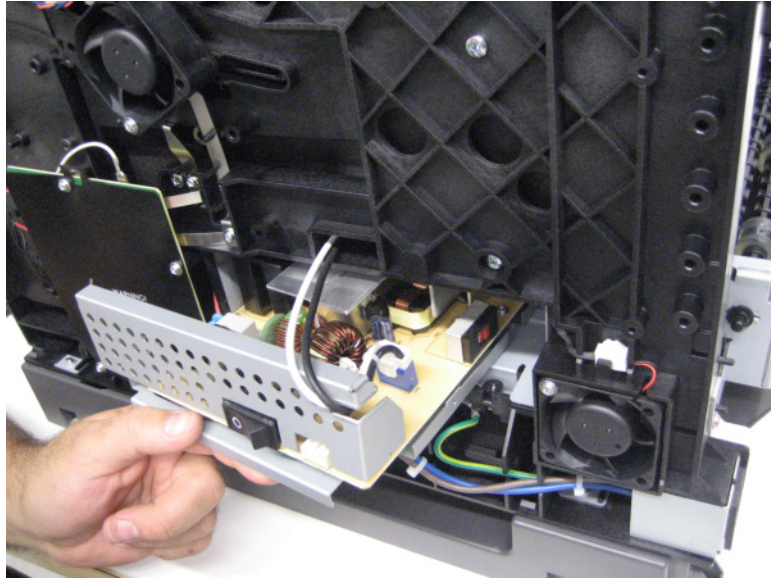
6 Disconnect the fuser power cable (C) from the LVPS.

C
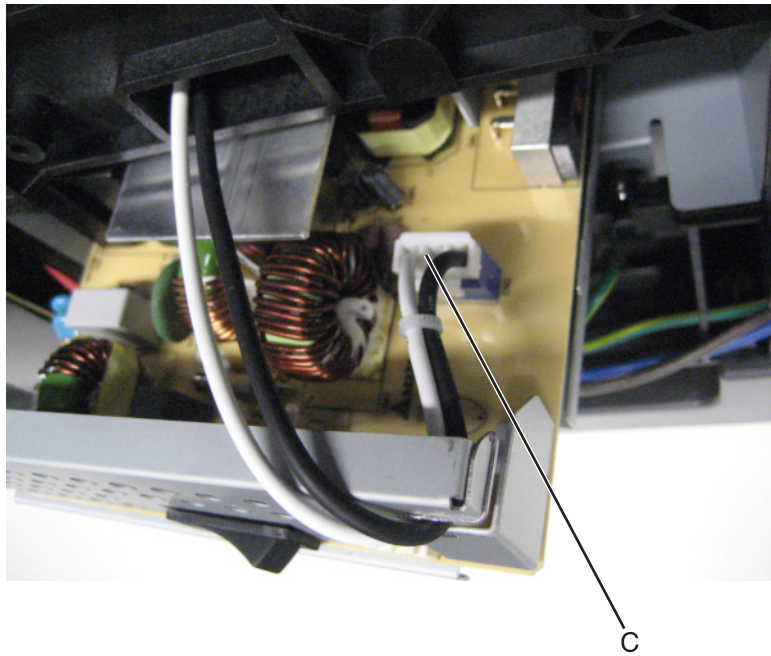
7 Remove the LVPS.
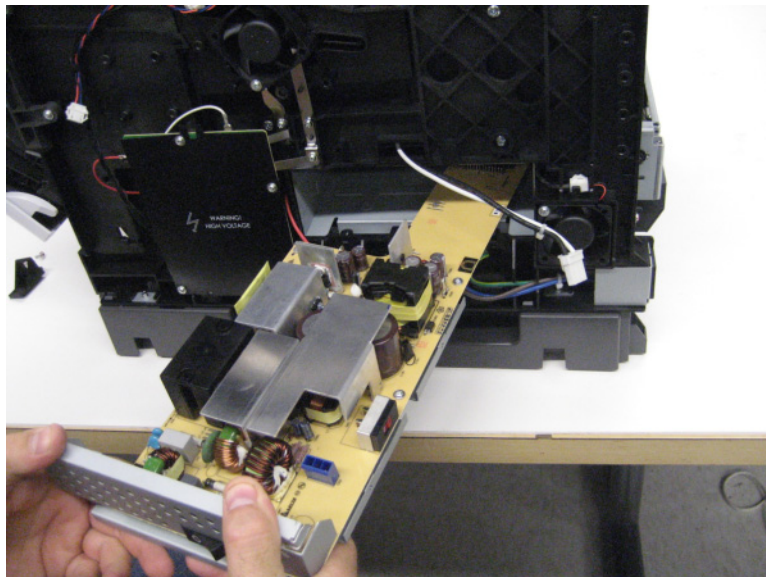
Installation warning: When replacing the LVPS, ensure that the LVPS is perfectly square to the printer, as opposed to replacing it at an angle. If you try to replace the LVPS at an angle, damage will occur to the controller board.

Installation notes:

- When replacing the LVPS, ensure that all connections are replaced.
- When replacing the LVPS, ensure that the connector pins (D) properly engage the controller board.
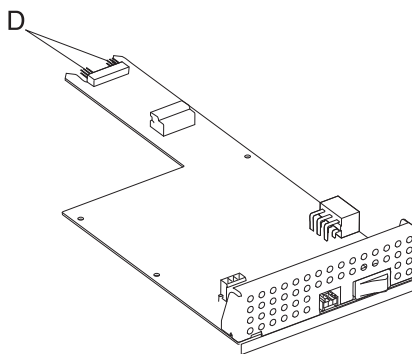
250/550-sheet media tray option removals

250/550-sheet media tray and drawer assembly removal

1 Push the latch to unlock the drawer.

2 Lift the printer or drawer above it.
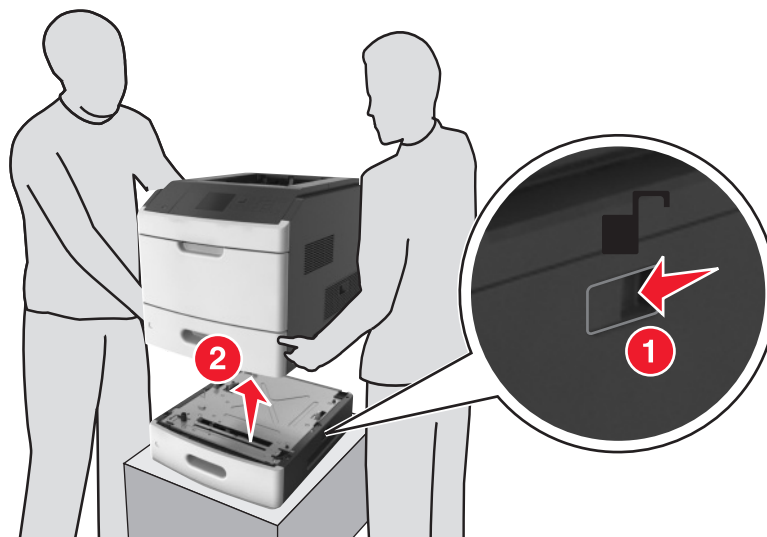
Media tray separation roller removal

Press and hold the button (1), then pull the separation roller (2) and remove.

Media tray assembly removal

Fully extend the tray, then tilt it upward and remove.
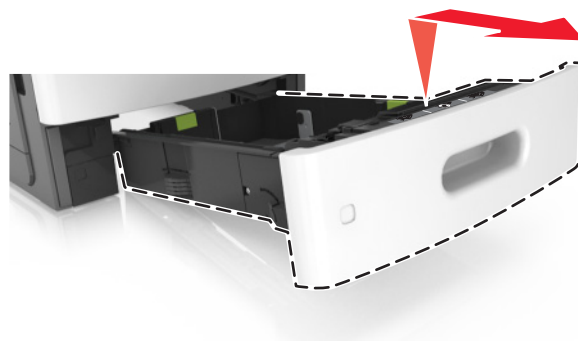
Media tray front cover removal

1 Remove the media tray. See **"250/550-sheet media tray and drawer assembly removal" on page 596**.

2 Remove the two screws (A) securing the front tray cover.

3 Release the tabs (B) at the bottom, then remove the front tray cover.
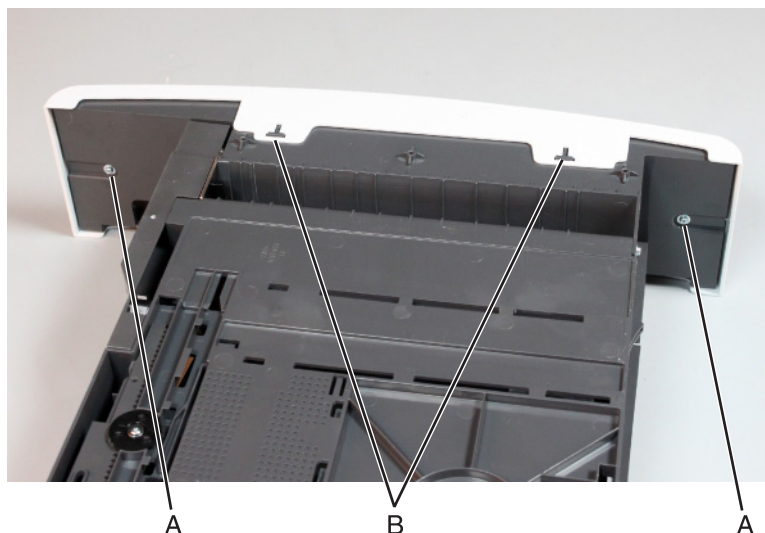
Drawer pick roller removal

1 Remove the media tray. See **"250/550-sheet media tray and drawer assembly removal" on page 596**.

2 Move the rollers downward (1), then push the latches inward (2), and pull out the pick roller (3).
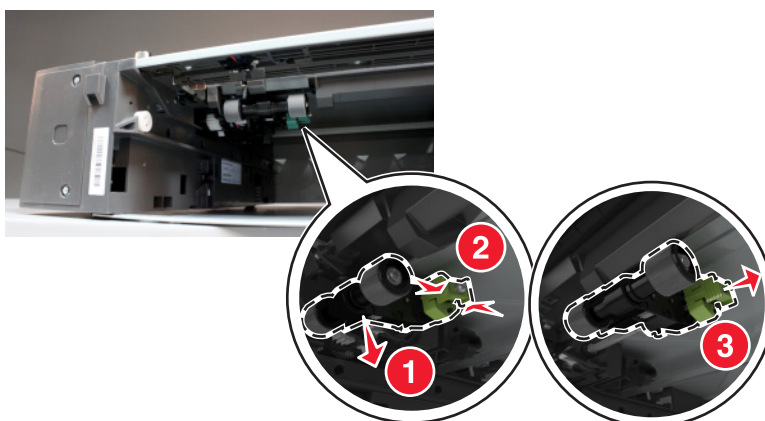
Sensor (pick roll position) removal

1 Remove the media tray. See **"250/550-sheet media tray and drawer assembly removal" on page 596**.

2 Remove the pick roller. See **"Drawer pick roller removal " on page 597**.

3 Release the latches (A), then pull away the sensor.

4 Disconnect the cable (B), and remove the sensor (pick roller position).
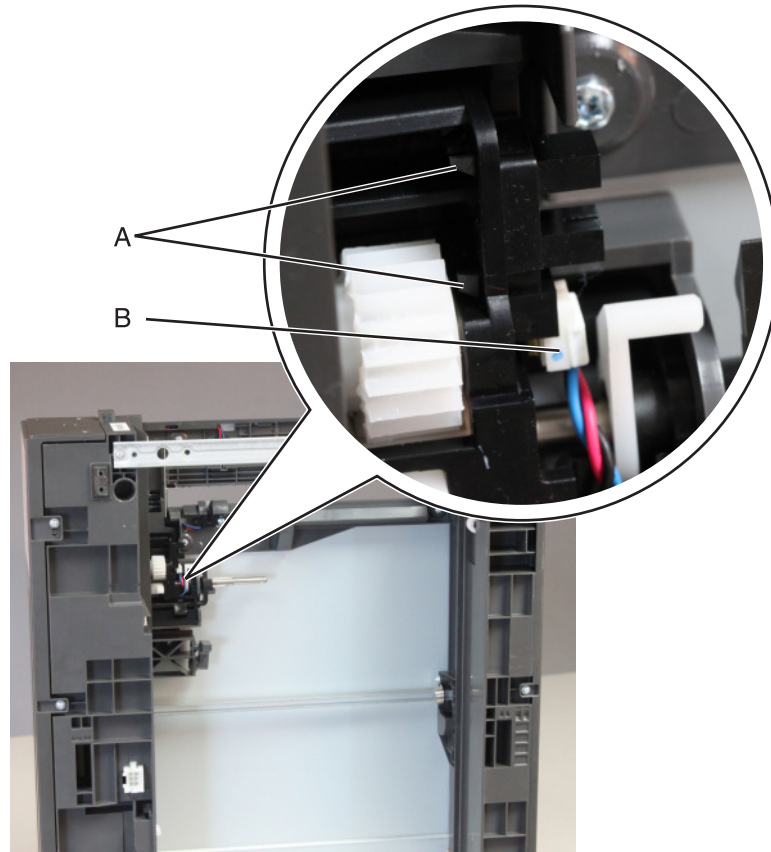
Drawer assembly rear cover removal

Note: This is not a FRU.

Remove the four screws (A), then remove the rear cover.
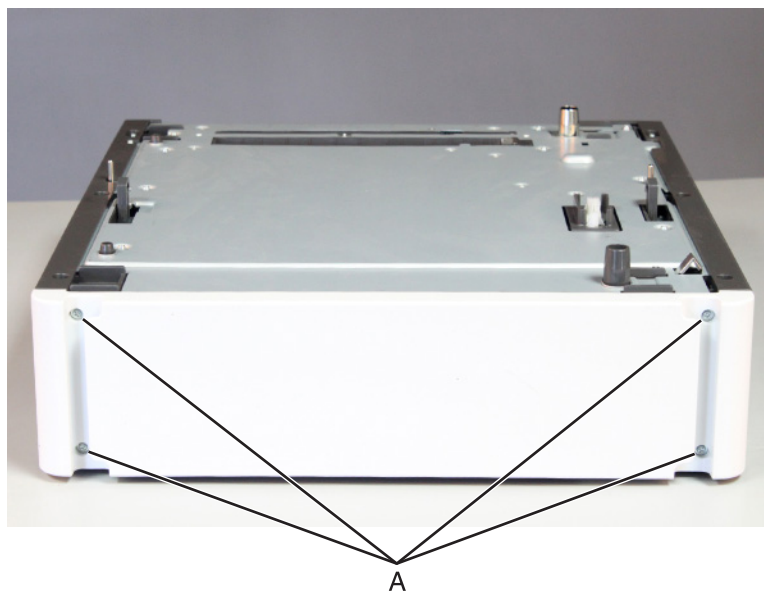
Parts removal

Drawer assembly left cover removal

Note: This is not a FRU.

1 Remove the drawer assembly rear cover. See **"Drawer assembly rear cover removal" on page 598**.

2 Remove the five screws (A) from the left cover.

A
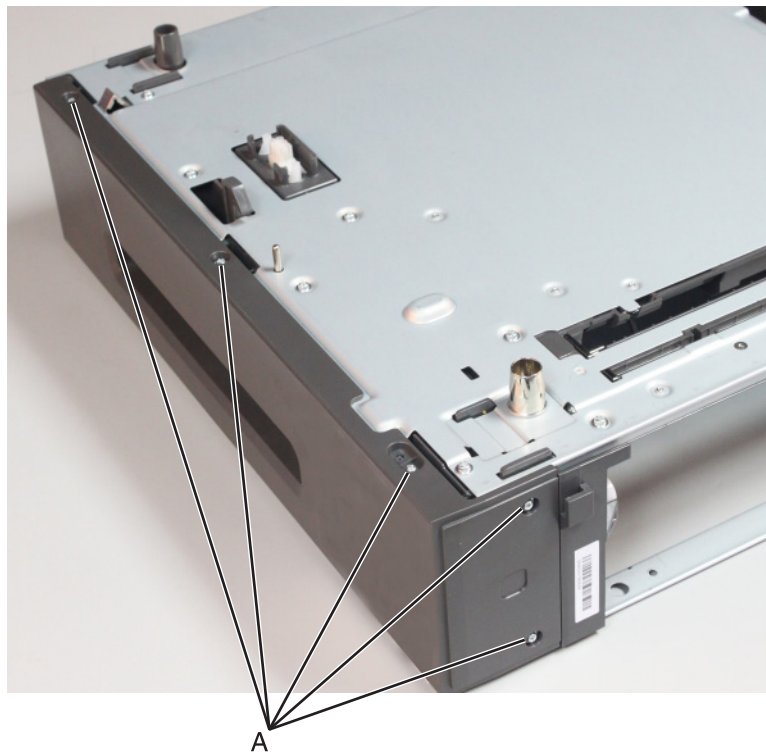
3 Remove the three screws (B) from the bottom of the left cover.

B
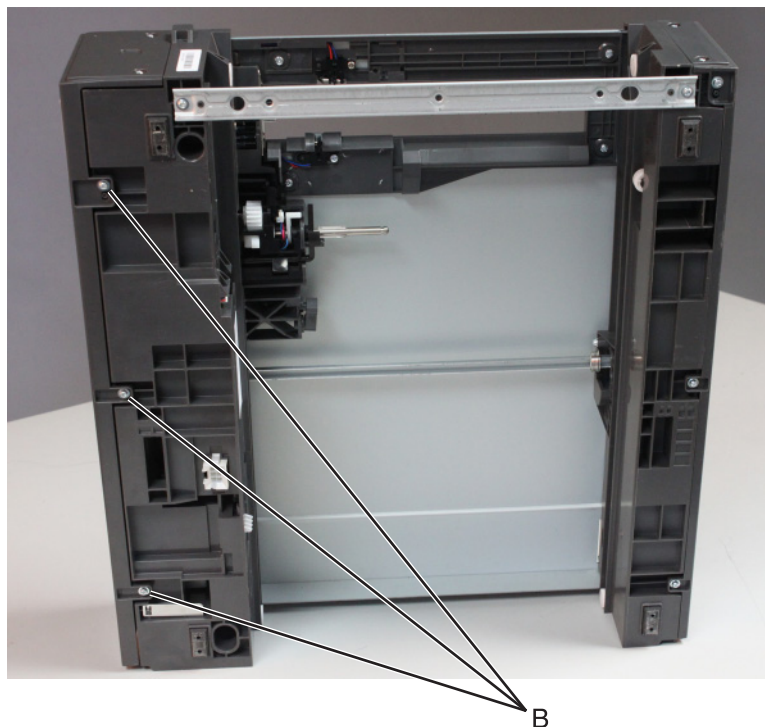
4 Pull the left cover, and remove.

Drawer controller board removal

1 Remove the drawer assembly rear cover. See **"Drawer assembly rear cover removal" on page 598**.

2 Remove the drawer assembly left cover. See **"Drawer assembly left cover removal" on page 599**.

3 Disconnect all cables (J3, J4, J11, J10, J9, J8, J7, J6, and J1) from the controller board, then remove the two screws (A).

A
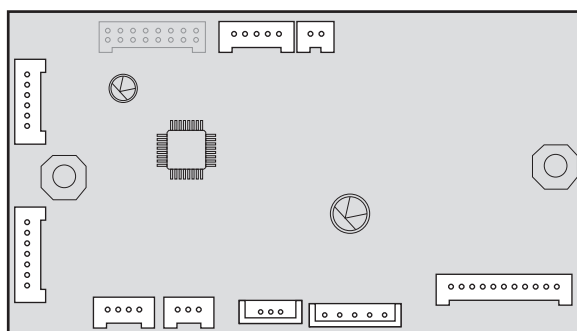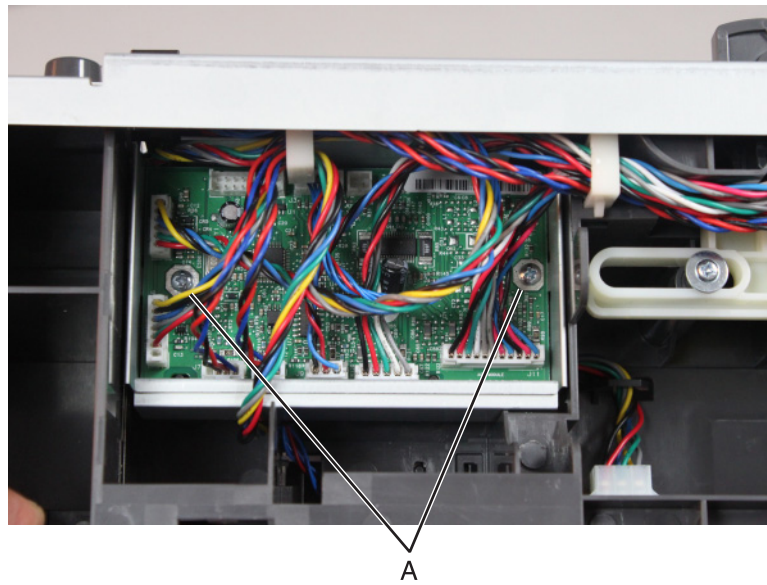
4 Remove the controller board.

Drawer upper interface cable removal

1 Remove the drawer assembly rear cover. See **"Drawer assembly rear cover removal" on page 598**.

2 Remove the drawer assembly left cover. See **"Drawer assembly left cover removal" on page 599**.

3 Remove the tray controller board. See **"Drawer controller board removal" on page 600**.

4 Remove the controller board shield.
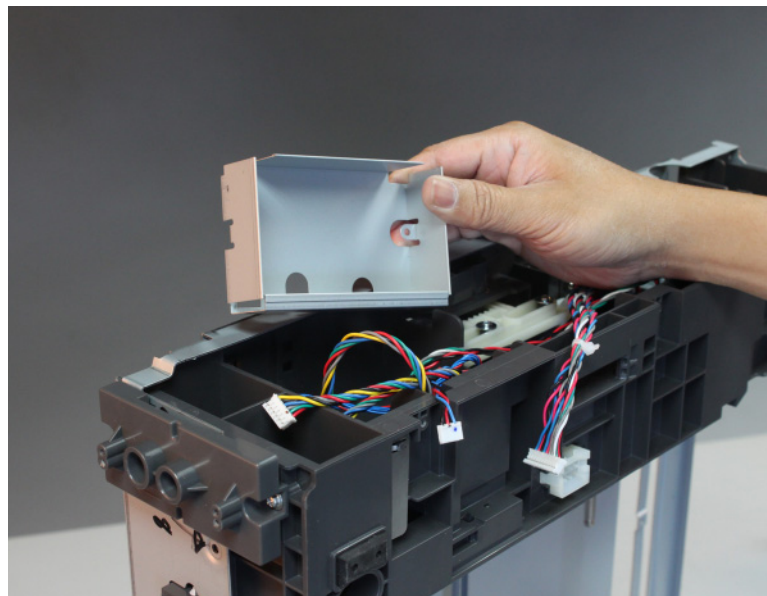
5 Crimp both connector studs (A) using a pliers to make them fit to the holes. Push the connector off its slot.

A
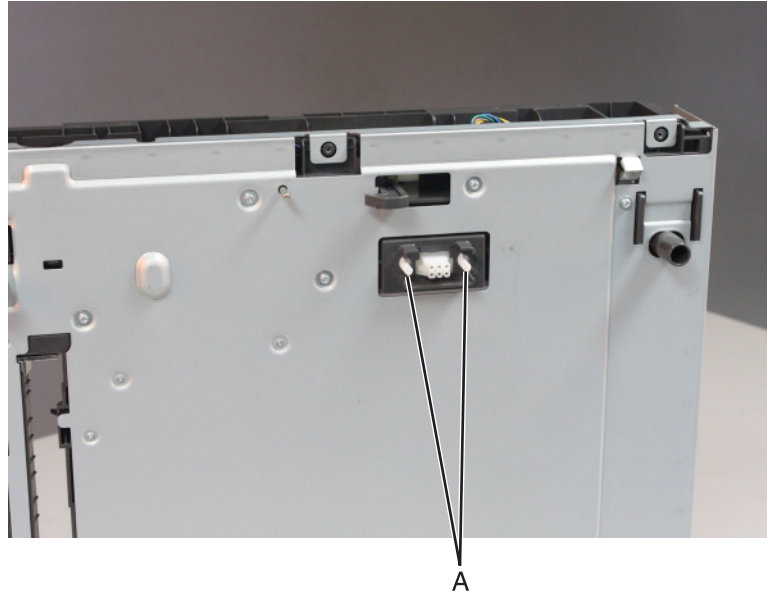
6 Route the upper interface cable off the drawer, and remove.

> **Note:** Pay attention to the original routing of the cable.

Drawer lower interface cable removal

1 Remove the drawer assembly rear cover. See **"Drawer assembly rear cover removal" on page 598**.

2 Remove the drawer assembly left cover. See **"Drawer assembly left cover removal" on page 599**.

3 Remove the drawer controller PCBA. See **"Drawer controller board removal" on page 600**.

4 Remove the controller PCBA shield.

Parts removal
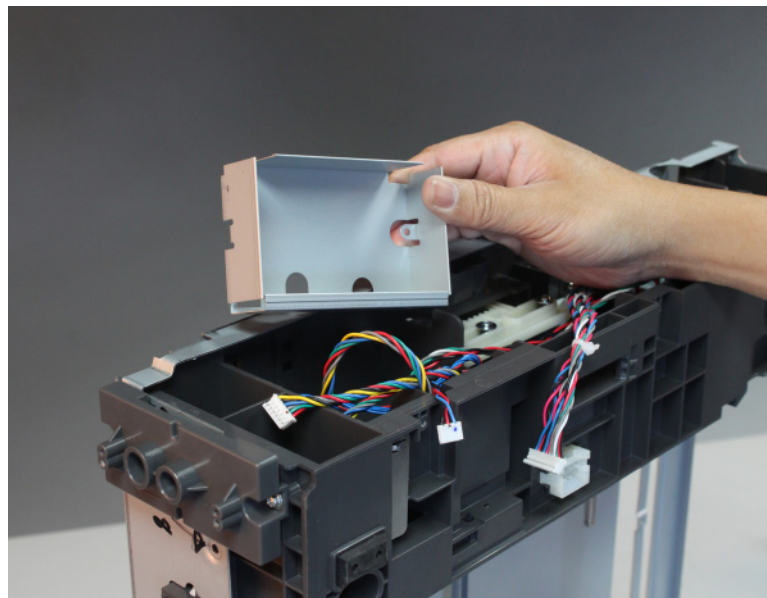
5 Push the tabs inward, then push the connector off its slot.
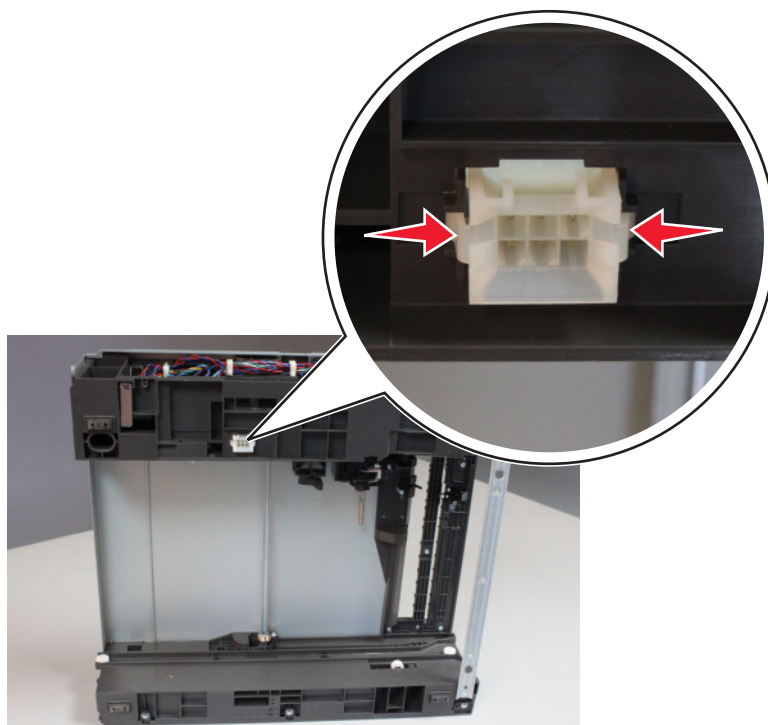
6 Route the interface cable off the drawer, and remove.

Note: Pay attention to the original routing of the cable.

Drawer media feeder removal

1 Remove the drawer assembly rear cover. See **"Drawer assembly rear cover removal" on page 598**.

2 Remove the drawer assembly left cover. See **"Drawer assembly left cover removal" on page 599**.

3 Disconnect the three media feeder cables (J11, J4 and J7) from the controller board.
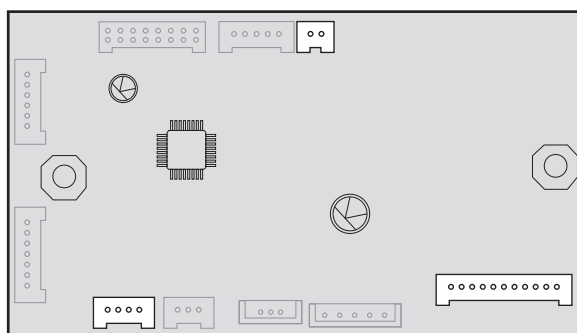
4 Remove the three screws from the media feeder using a #1 Phillips screwdriver.
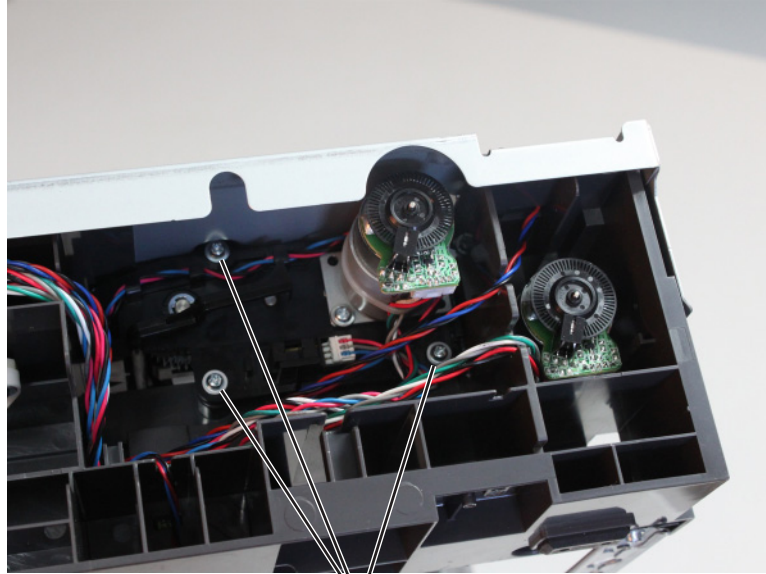
A

5 To remove the media feeder, take note of the following:

- While pushing the media feeder upward, clear the obstacle points (B).
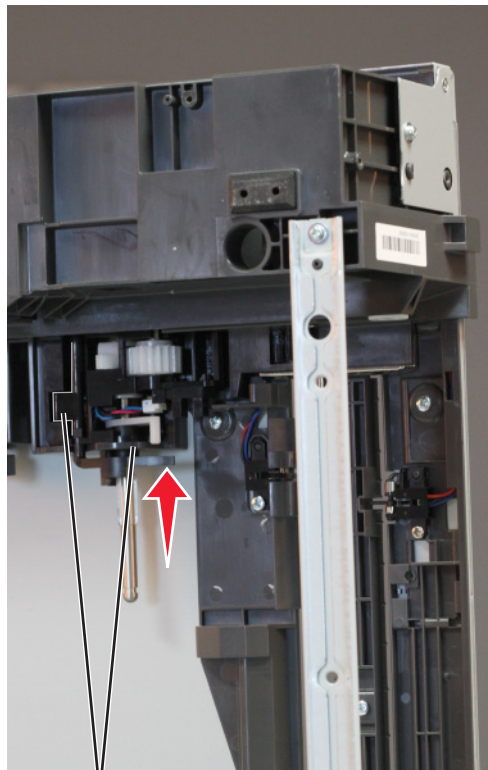
B

Parts removal

- While pushing the media feeder upward, release the tab (C) by pulling the feeder backward.

C
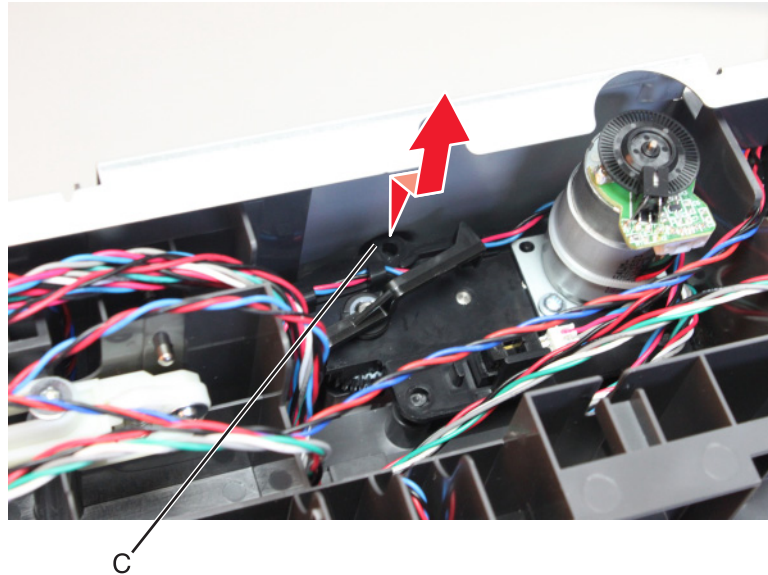
Warning—Potential Damage: Ease the media feeder off the drawer. Be careful not to damage the media feeder.

Drawer transport motor removal

1 Remove the drawer assembly rear cover. See **"Drawer assembly rear cover removal" on page 598**.

2 Remove the drawer assembly left cover. See **"Drawer assembly left cover removal" on page 599**.

3 Disconnect the drive motor cable J10 from the controller board.
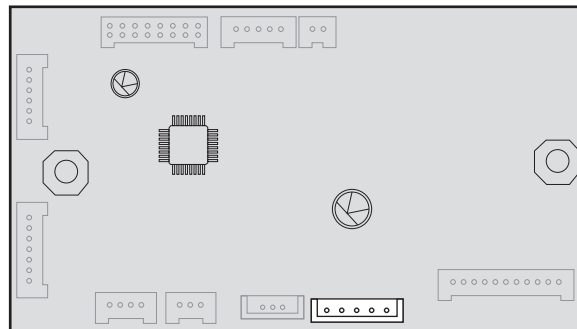
4 Remove the two screws (A) using a #1 Phillips screwdriver.

A
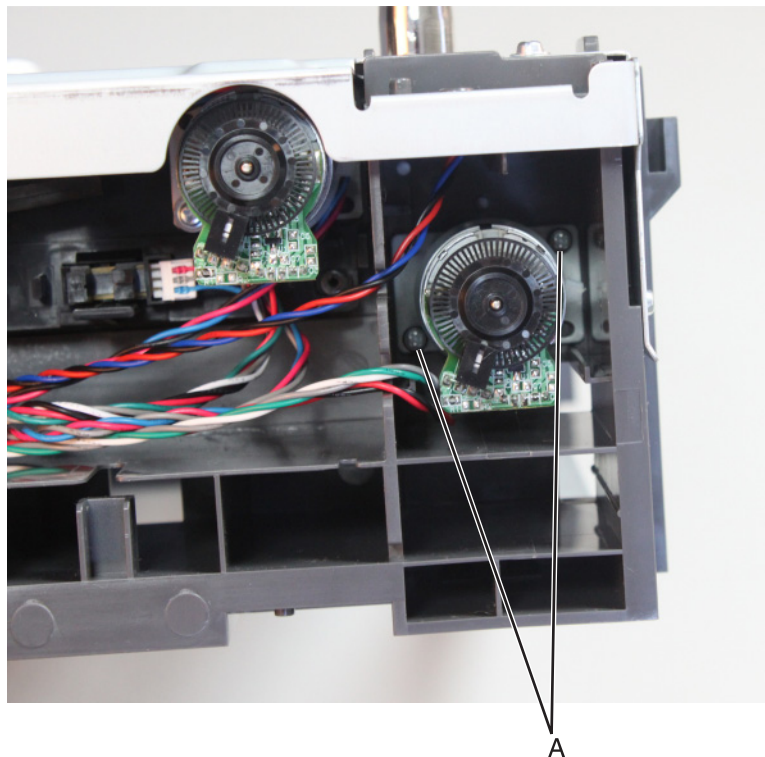
5 Route the cable off the drawer, then remove the transport motor.

Sensor (trailing edge) removal

1 Remove the media tray. See **"250/550-sheet media tray and drawer assembly removal" on page 596**.

2 Remove the rear cover. See **"Drawer assembly rear cover removal" on page 598**.

3 Remove the left cover. See **"Drawer assembly left cover removal" on page 599**.

4 Disconnect and release the cables (J4, J8 and J7) from the controller board.
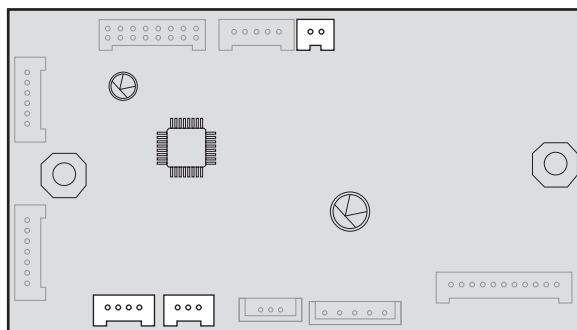
Note: Pay attention to the original position of the cables.

5 Remove the six screws (A) under the drawer.
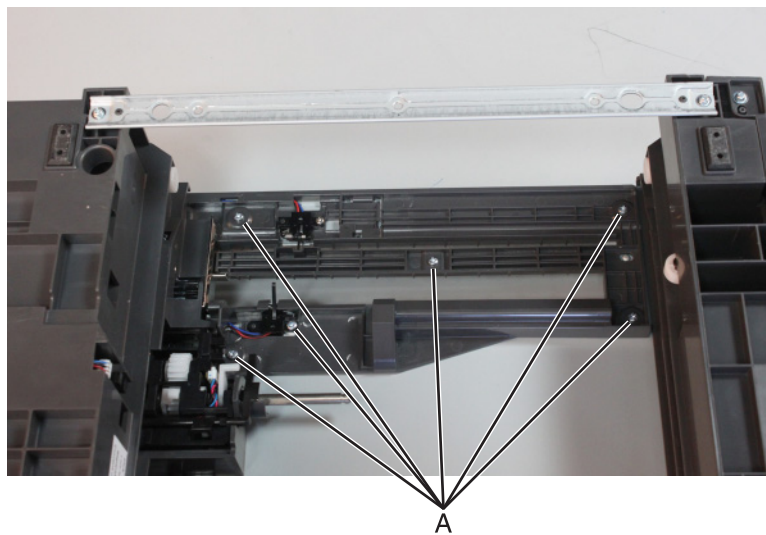
6 From the left side of the drawer, remove the nine screws (B).
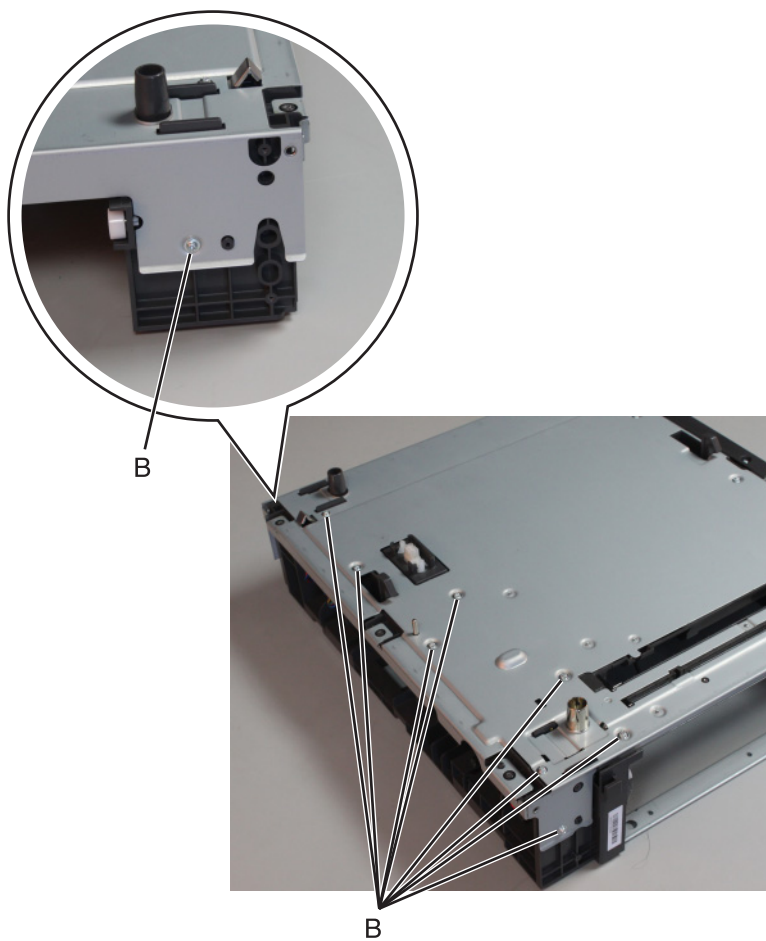
7 Pry the frame loose to release the pins (C).

C
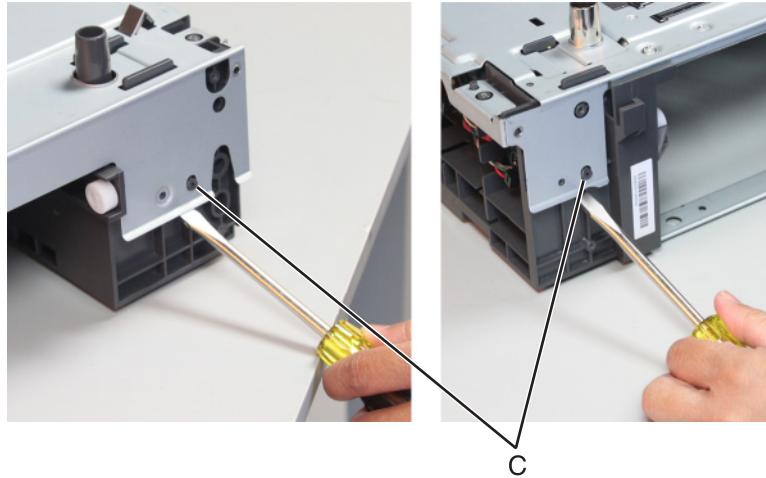
8 To access the cable, lift the left side of the top plate, and pull the sensor assembly away from the drawer.
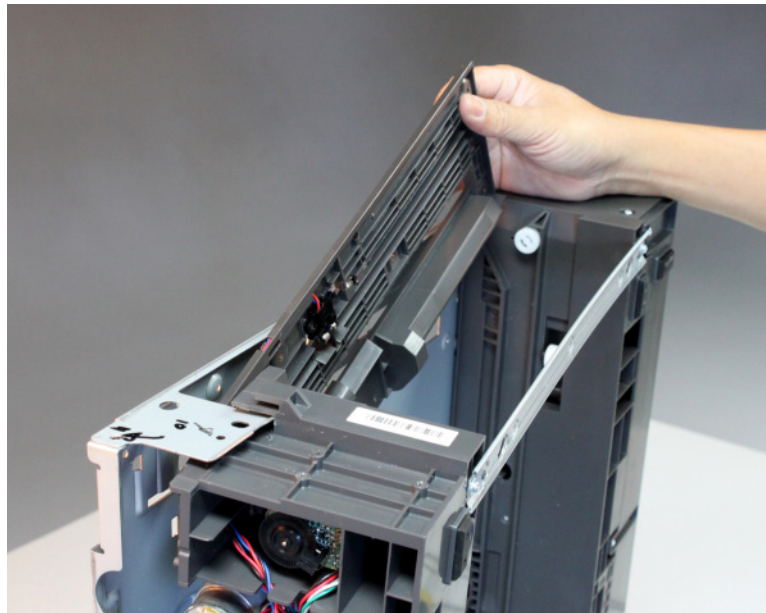
Note: Pay attention to the original routing of the cable.

9 Route the sensor cable off the drawer, and remove the sensor.

Sensor (drawer pass through) removal

1 Remove the media tray. See **"250/550-sheet media tray and drawer assembly removal" on page 596**.

2 Remove the rear cover. See **"Drawer assembly rear cover removal" on page 598**.

3 Remove the left cover. See **"Drawer assembly left cover removal" on page 599**.

4 Disconnect and release the cables (J4, J8 and J7) from the controller board.
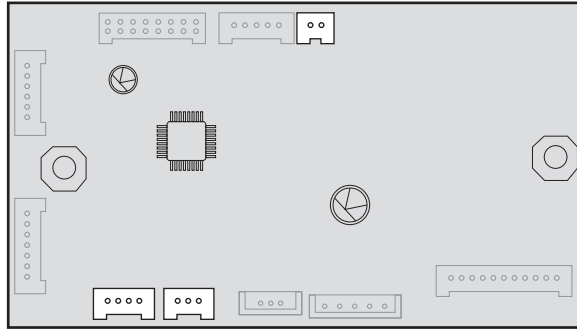
Note: Pay attention to the original position of the cables.

5 Remove the seven screws (A) under the drawer.
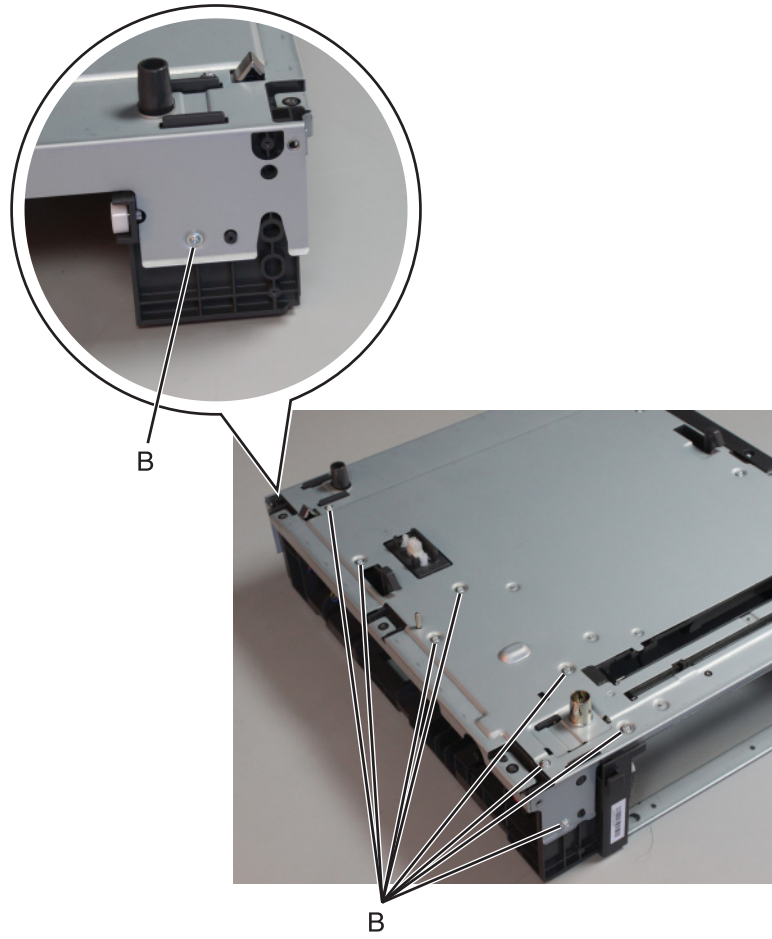
6 From the left side of the drawer, remove the nine screws (B).

B

B

7 Pry the frame loose to release the pins (C).

C

Parts removal

8 To access the cable, lift the left side of the top plate, and pull the sensor assembly away from the drawer.

Note: Pay attention to the original routing of the cable.

9 Route the sensor cable off the drawer, and remove the sensor.

High capacity input tray option removals

High capacity input tray option removal

1 Push the latch sideward until it locks.

2 Lift the printer or drawer above it, and separate.

HCIT removal

1 Fully extend the tray, then press the left and right latches to release the tray.
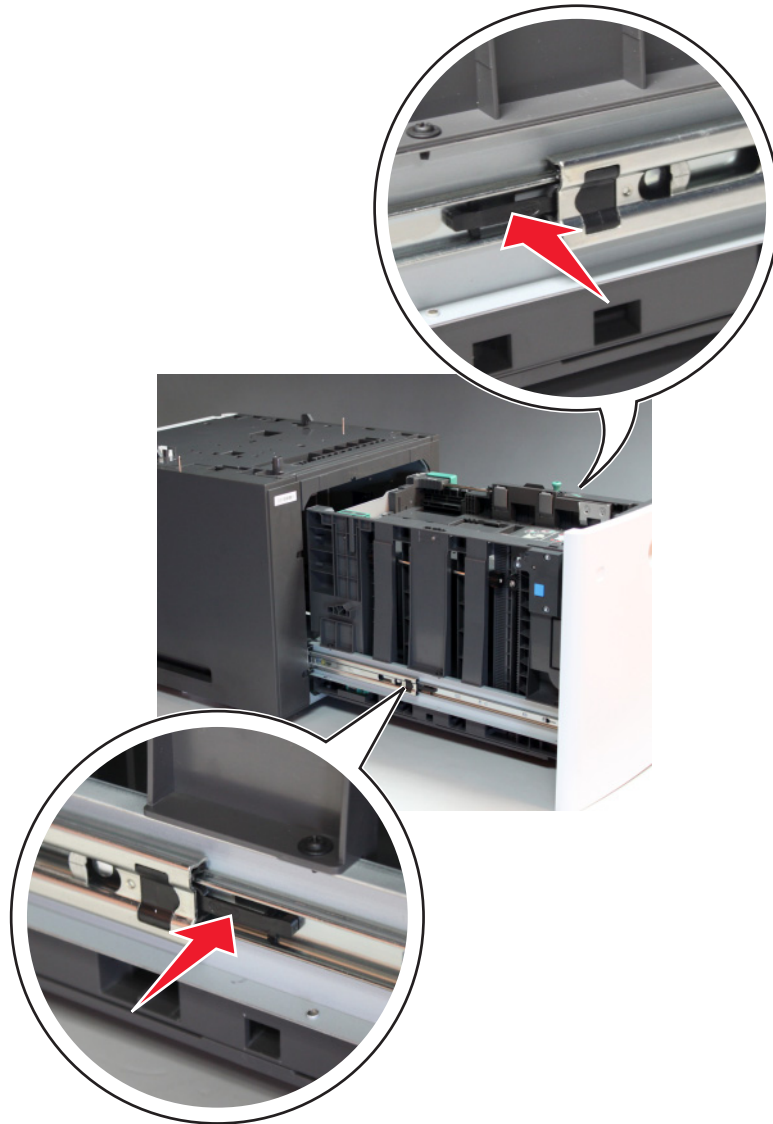
2 Pull the media tray out of the drawer.

HCIT drawer assembly removal

Remove the HCIT. See **"HCIT removal" on page 612**.

The drawer remains.

HCIT separator roller assembly removal

1 Press and hold the button.

2 Pull the separator roller assembly and remove.
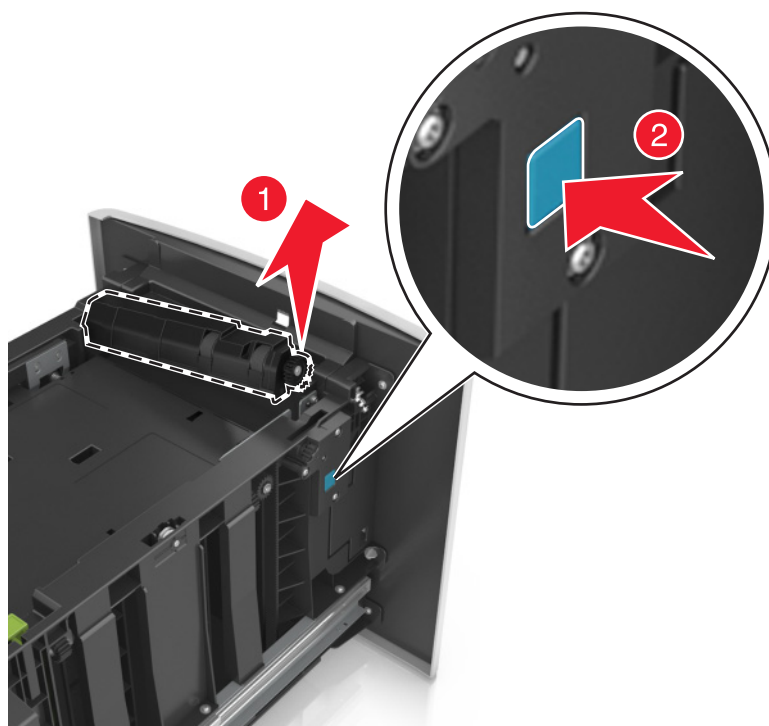
HCIT media guide removal

1 Pull the media guide out of the tray.

2 Remove the media guide.
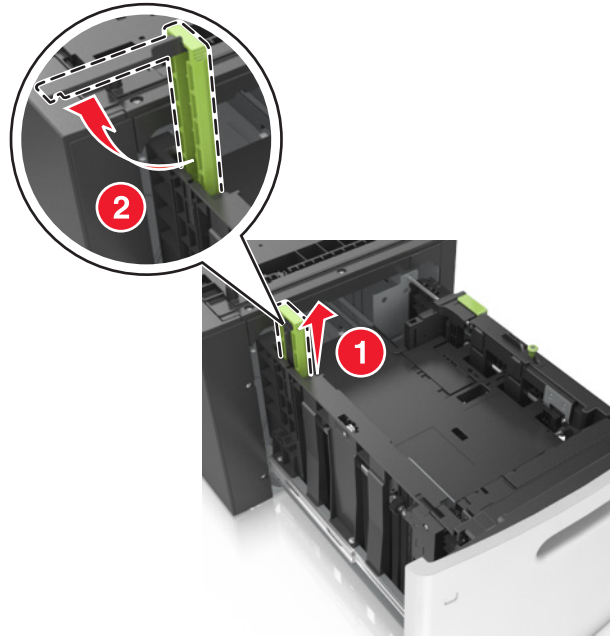
HCIT front cover removal

1 Remove the HCIT. See **"HCIT removal" on page 612**.

2 Remove the three screws (A) behind the media tray front cover.
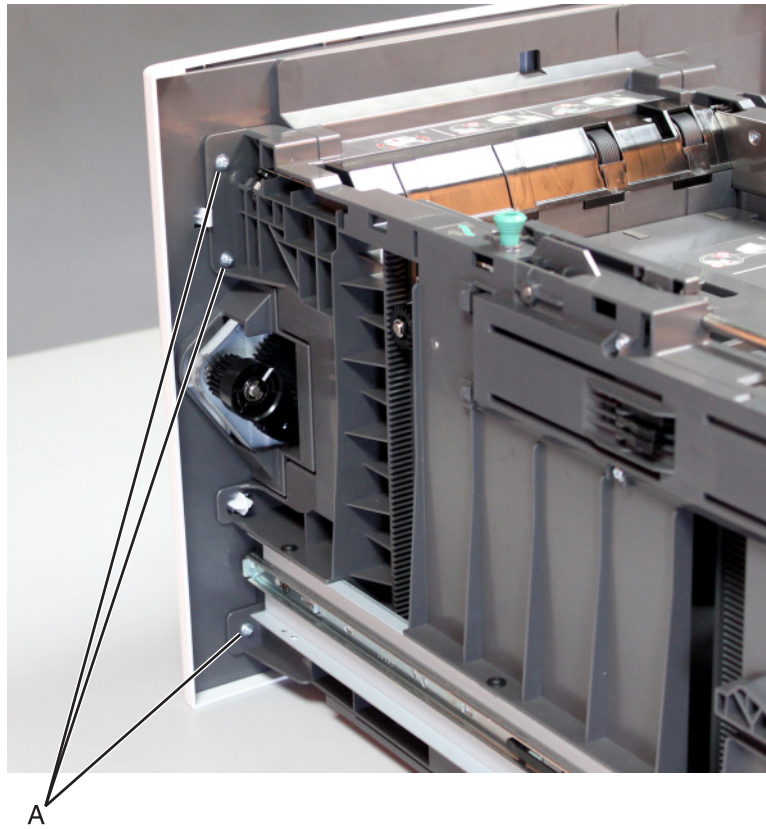
3 Remove the three screws (B) behind the cover at the other side.

B
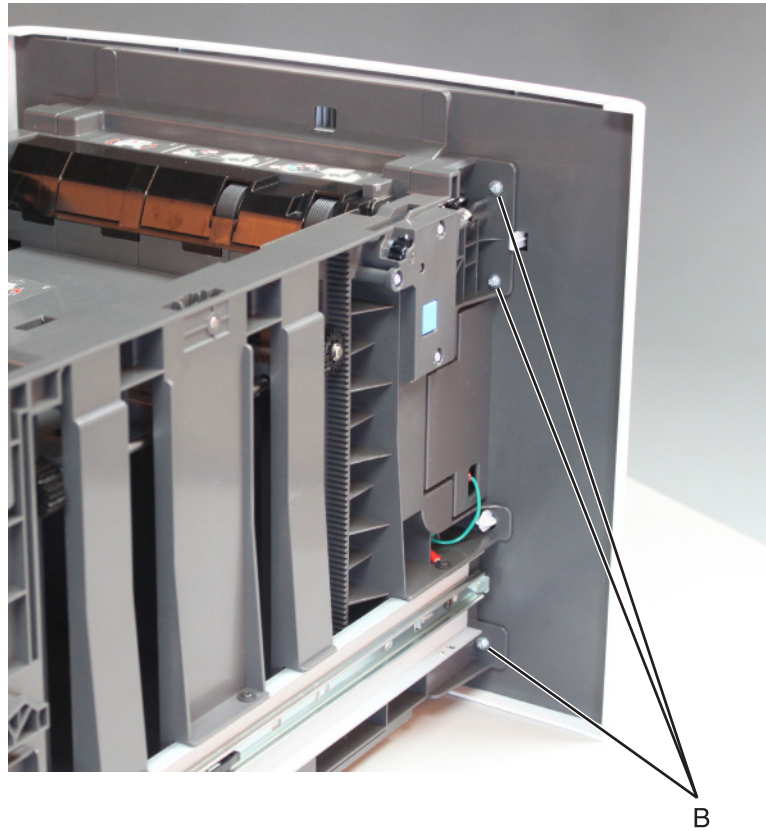
4 Release the latches, and remove the media tray front cover.
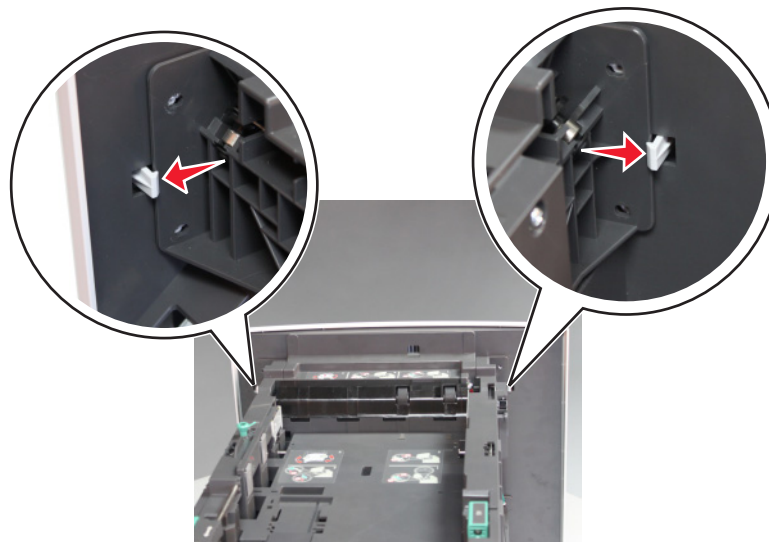
HCIT pick roller assembly removal

1 Remove the HCIT. See **"HCIT removal" on page 612**.

2 Push the latches inward (1), and pull out the pick roller assembly (2).
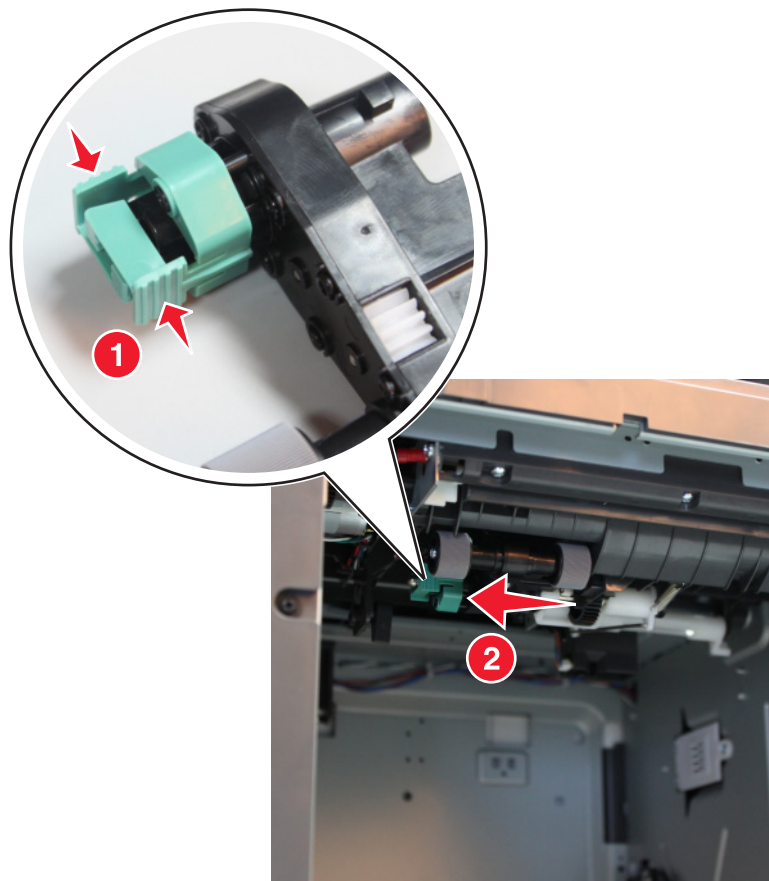
HCIT rear cover removal

Note: This is not a FRU.

1 Remove the four screws (A) from the rear cover.

2 Flex the cover to release the tabs securing the upper portion.

3 Ease the rear cover off the drawer, and remove.

HCIT left cover removal

1 Remove the HCIT rear cover. See **"HCIT rear cover removal" on page 618**.

2 Remove the two screws (A) from the front side of the cover.

A

3 Remove the two screws (B) from the top side of the cover.

B

Parts removal
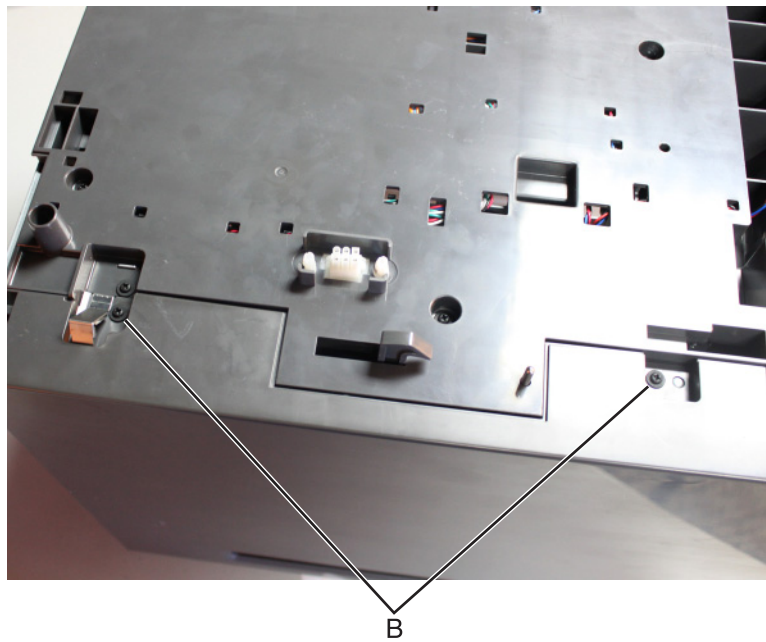
4 Remove the two screws (C) from the rear side of the cover.

5 Remove the left cover.

HCIT right cover removal

1 Remove the HCIT rear cover. See **"HCIT rear cover removal" on page 618**.

2 Remove the two screws (A) from the front side of the cover.

Parts removal
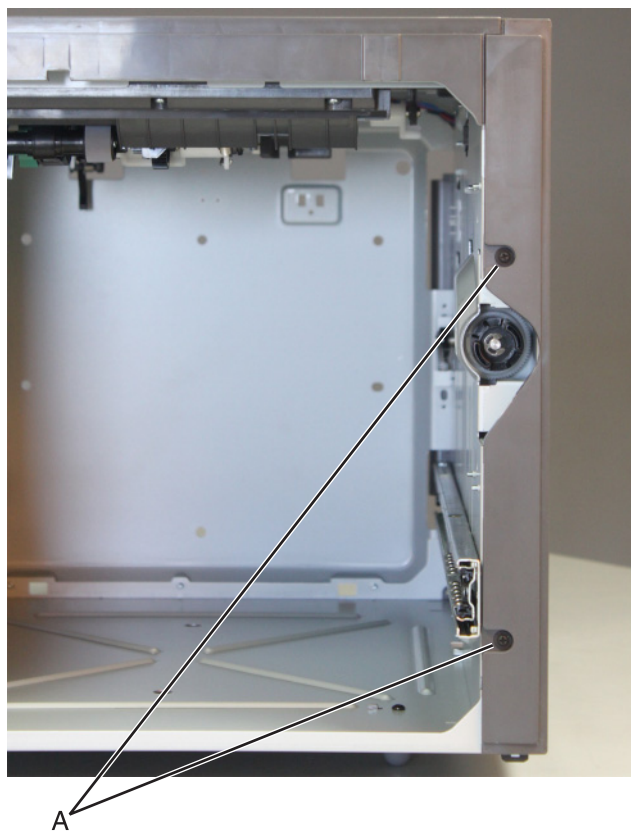
3 Remove the two screws (B) from the top side of the cover.
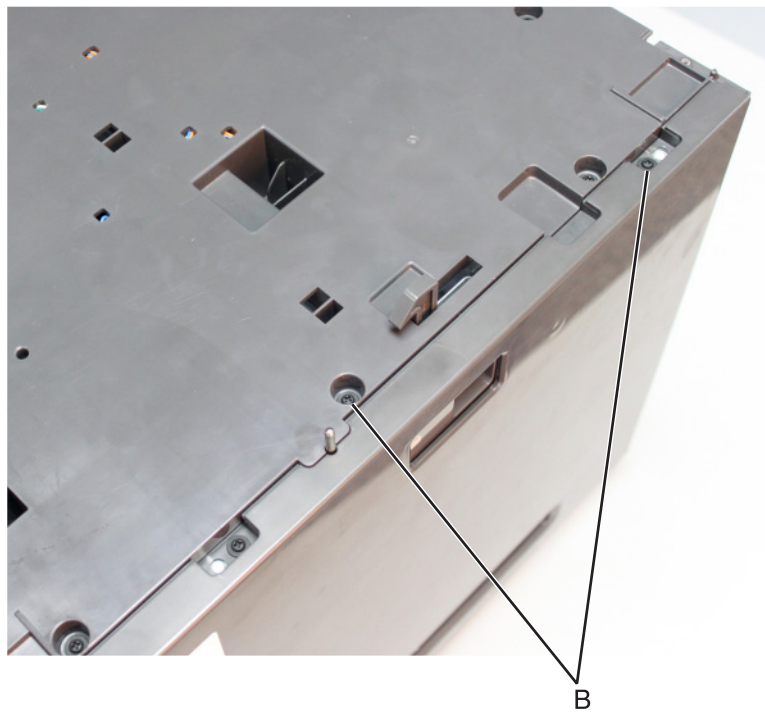
4 Remove the two screws (C) from the rear side of the cover.
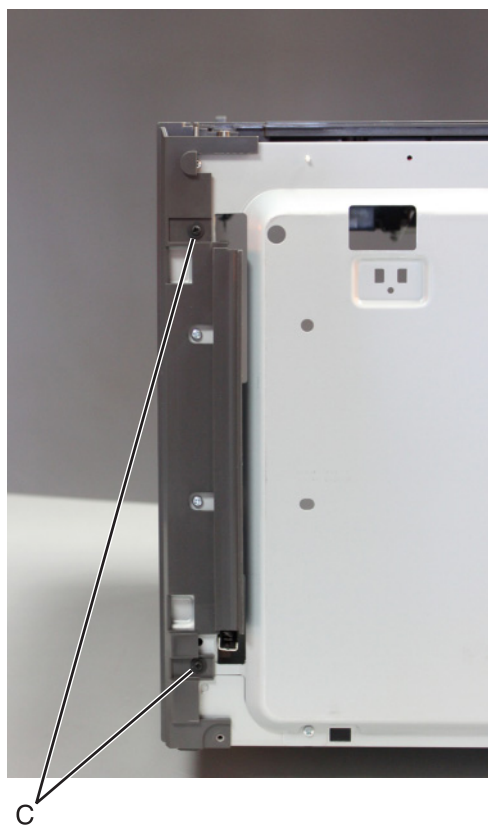
5 Pull the tab to release, then remove the right cover.
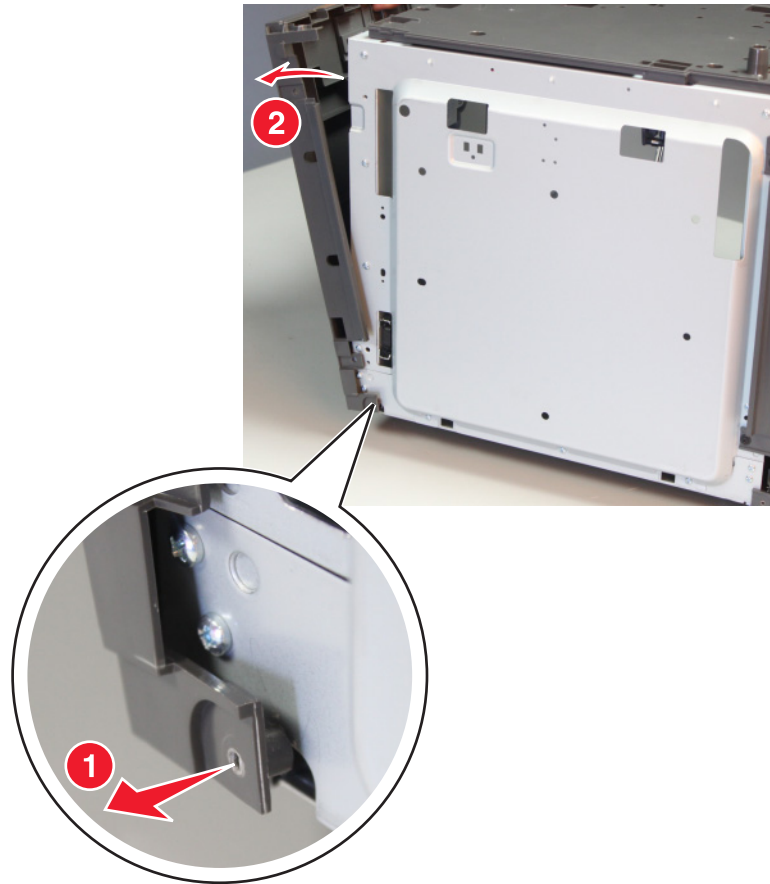
HCIT controller board removal

1 Remove the HCIT rear cover. See **"HCIT rear cover removal" on page 618**.

2 Remove the HCIT left cover. See **"HCIT left cover removal" on page 619**.

3 Disconnect all the cables (J3, J5, J11, J10, J9, J8, J7 and J1) from the controller board, then remove the two screws (A).

Parts removal

B   A   B   A
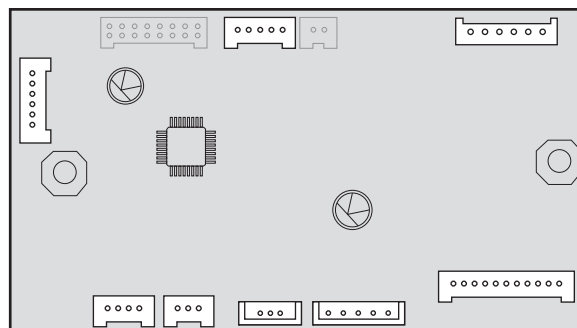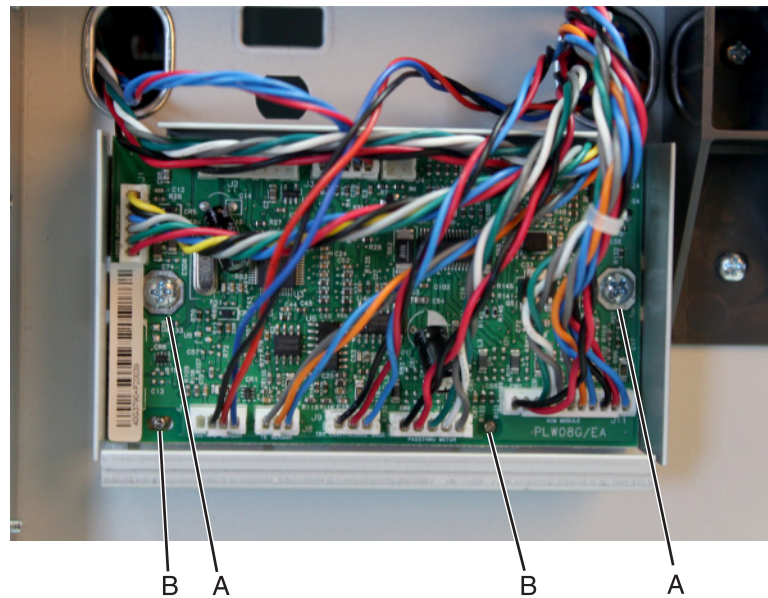
4 Remove the controller board.

   Installation note: Make sure the controller board is properly mounted by aligning the pins (B).

HCIT top cover assembly removal

Note: This is not a FRU.

1 Remove the HCIT rear cover. See **"HCIT rear cover removal" on page 618**.

2 Remove the HCIT left cover. See **"HCIT left cover removal" on page 619**.

3 Disconnect all cables from the controller board.

   Note: Pay attention to the original routing of the cables. Make sure that the cables don't interfere with the drawer's moving parts. Use cable ties to keep the cables organized.

4 Remove the ground screw (A).
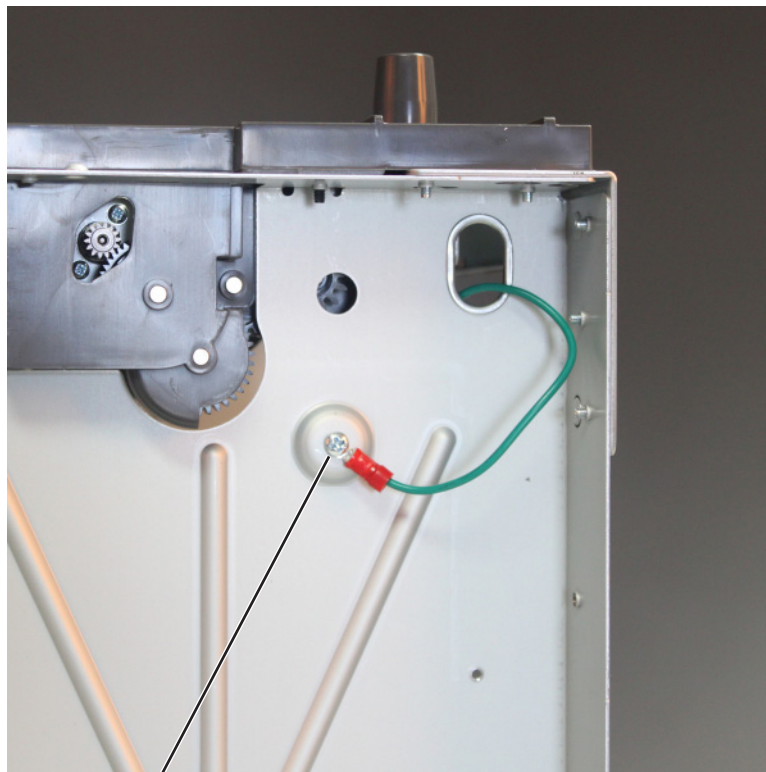
A

5 Remove the 11 screws (B), then remove the top cover.
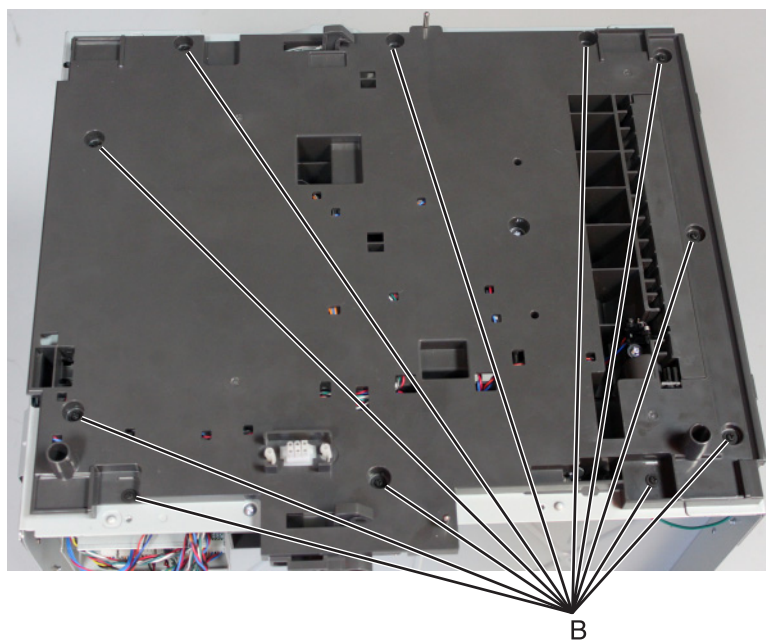
B

Parts removal

HCIT lift drive motor removal

1 Remove the HCIT rear cover. See **"HCIT rear cover removal" on page 618**.

2 Remove the HCIT right cover. See **"HCIT right cover removal" on page 621**.

3 Disconnect the drive motor cable (B), then remove the four screws (A) from the drive motor frame.

A   B
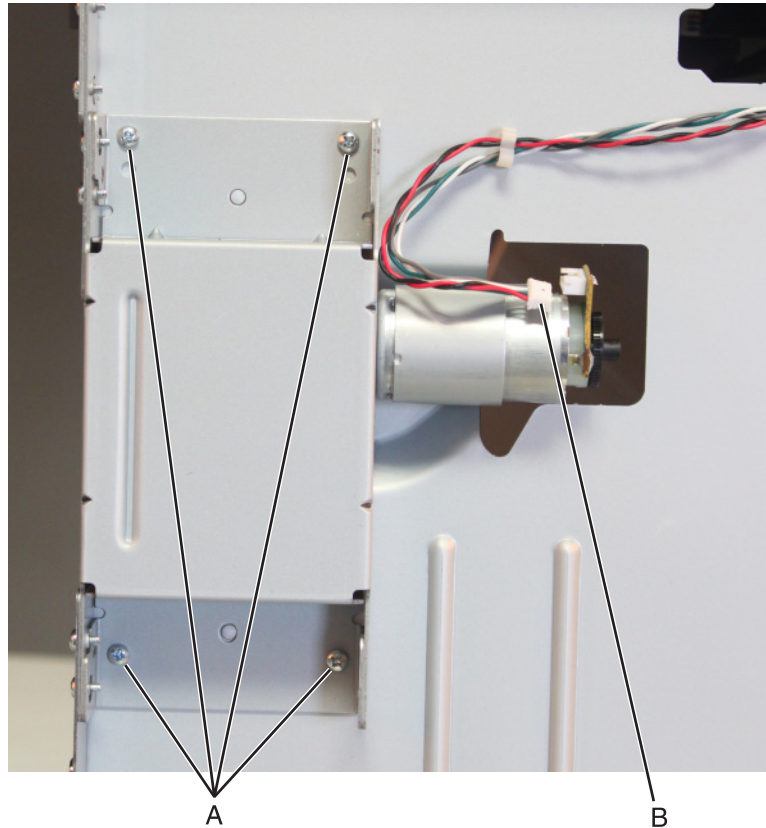
4 Remove the other four screws (C) from the front side of the frame.

C

5 Lift the motor cover, and remove the two screws (D) using a #1 Phillips screwdriver.
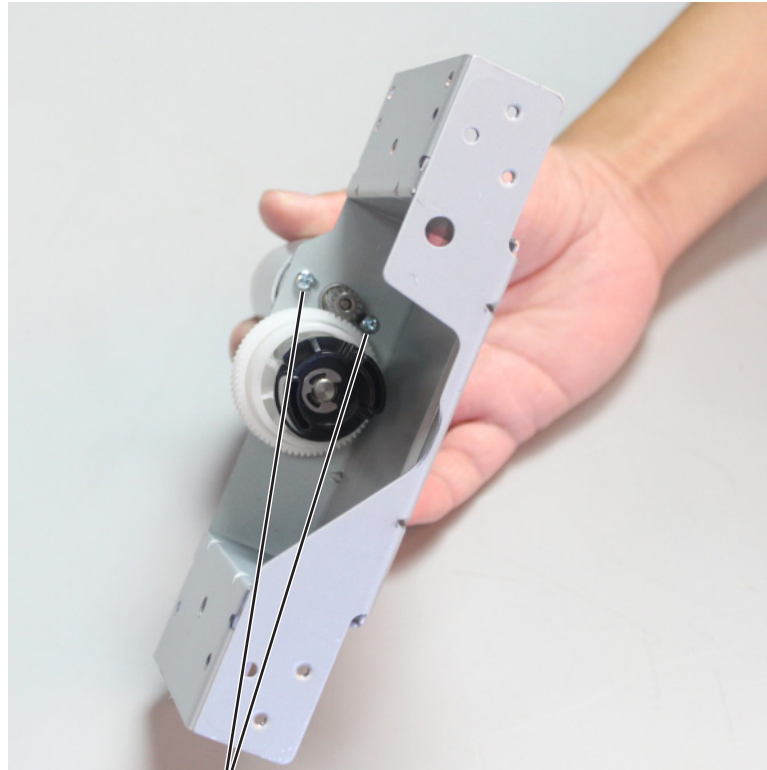
D

6 Remove the lift drive motor.

HCIT interface cable removal

1 Remove the HCIT rear cover. See **"HCIT rear cover removal" on page 618**.

2 Remove the HCIT left cover. See **"HCIT left cover removal" on page 619**.

3 Disconnect the interface cable J1 from the controller board.
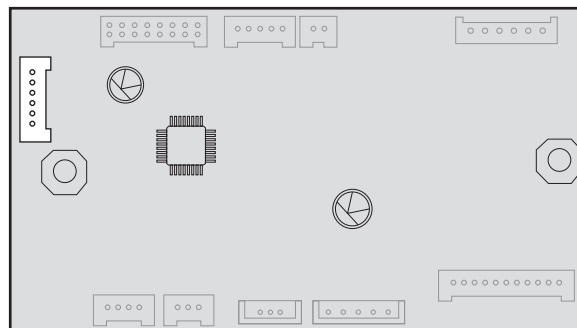
4 Crimp both connector pins (A) using pliers to make them fit through the pin holes. Push the connector off its slot.

A
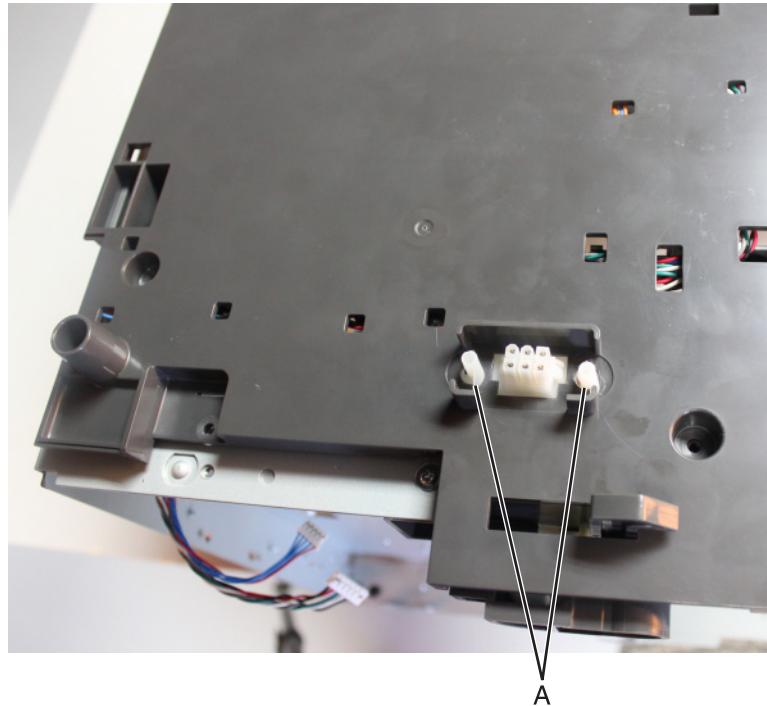
5 Route the interface cable off the drawer, and remove.

Note: Pay attention to the original routing of the cable.

Sensor (HCIT media low) with flag removal

1 Remove the HCIT. See **"HCIT removal" on page 612**.

2 Remove the HCIT rear cover. See **"HCIT rear cover removal" on page 618**.

3 Remove the HCIT left cover. See **"HCIT left cover removal" on page 619**.

4 Release the latches (A) securing the sensor to the drawer.

Parts removal

5 Disconnect the cable (B), and remove the sensor.
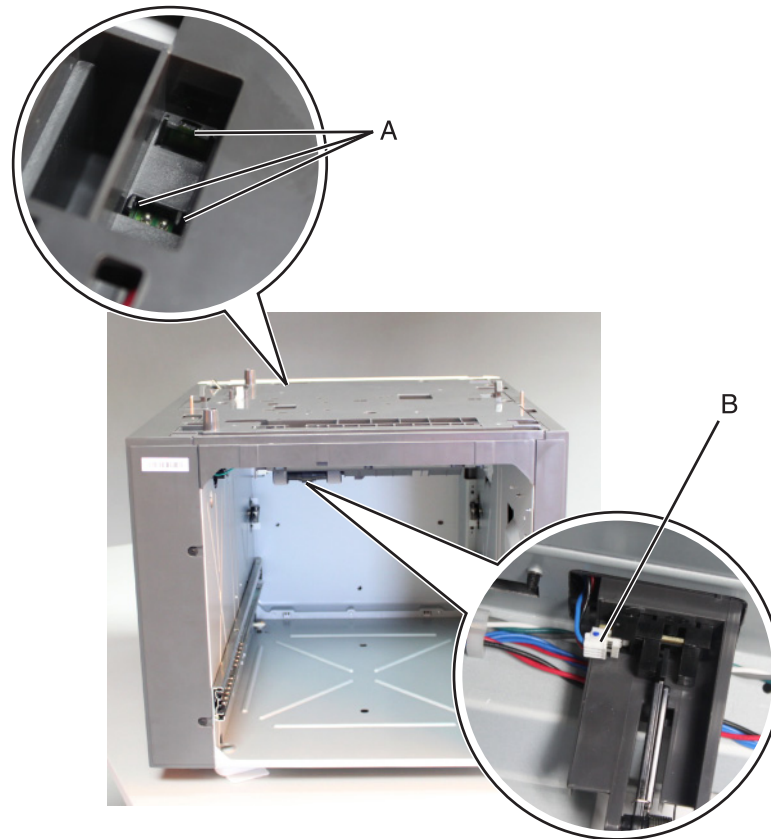
6 Flex the brace to release, then remove the flag.

Sensor (HCIT pick roller position) removal

1 Remove the HCIT. See **"HCIT removal" on page 612**.

2 Remove the HCIT rear cover. See **"HCIT rear cover removal" on page 618**.

3 Remove the HCIT left cover. See **"HCIT left cover removal" on page 619**.

4 Remove the HCIT top cover assembly. See **"HCIT top cover assembly removal" on page 624**.

5 Release the latches (A) holding the sensor to the media feeder.

6 Disconnect the cable (B), and remove the sensor.

B
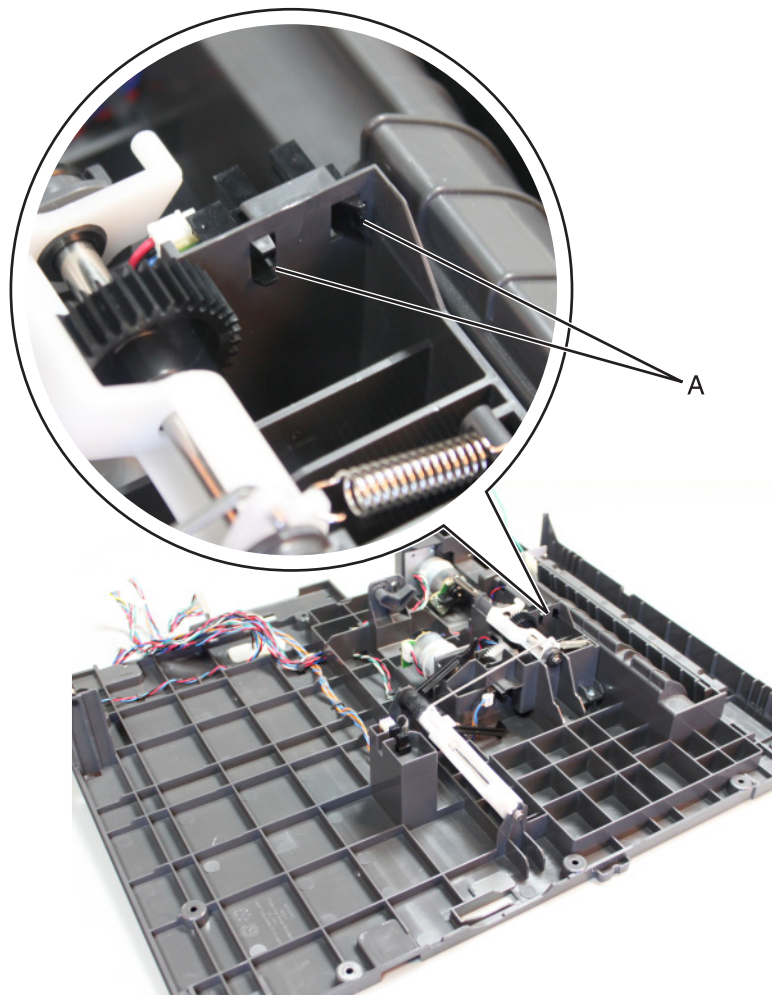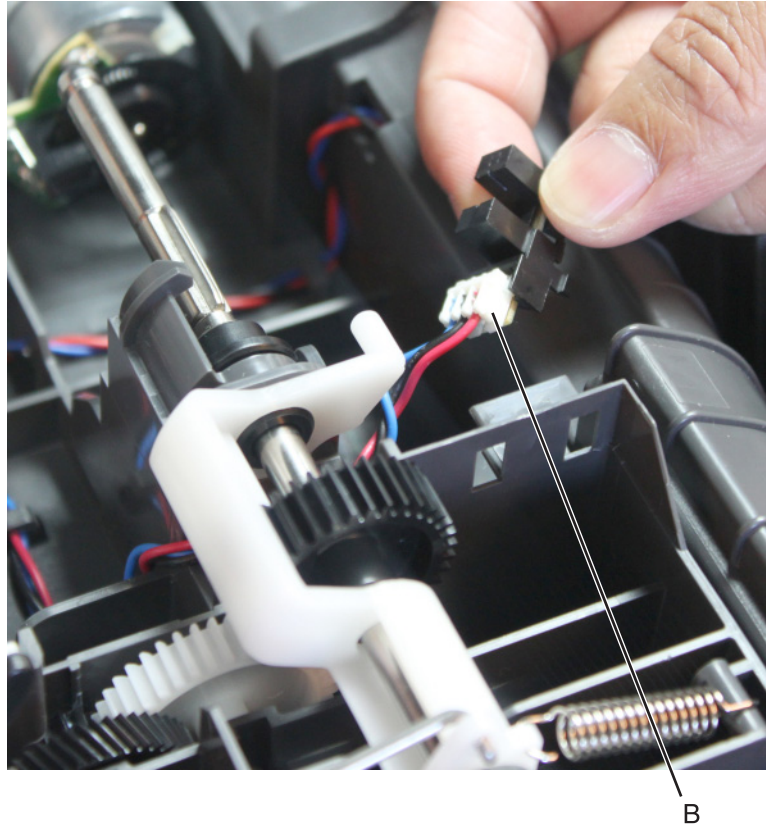
Sensor (HCIT pick) removal

1 Remove the HCIT. See **"HCIT removal" on page 612**.

2 Remove the HCIT rear cover. See **"HCIT rear cover removal" on page 618**.

3 Remove the HCIT left cover. See **"HCIT left cover removal" on page 619**.

4 Remove the HCIT top cover assembly. See **"HCIT top cover assembly removal" on page 624**.

5 Remove the screw (A) securing the sensor.

A
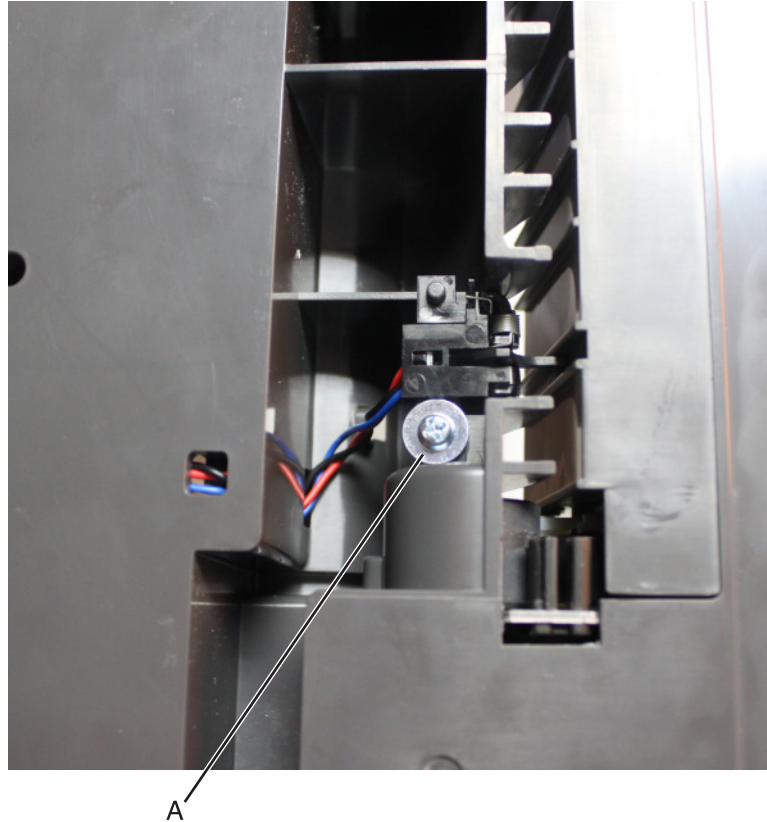
6 Release the cable from its cable holders, then remove the sensor.

HCIT media feeder removal

1 Remove the HCIT. See **"HCIT removal" on page 612**.

2 Remove the HCIT rear cover. See **"HCIT rear cover removal" on page 618**.

3 Remove the HCIT left cover. See **"HCIT left cover removal" on page 619**.

4 Remove the HCIT top cover assembly. See **"HCIT top cover assembly removal" on page 624**.

5 Remove the sensor (HCIT pick roller position). See **"Sensor (HCIT pick roller position) removal" on page 630**.

6 Remove the screw (A) securing the feeder to the top.

A
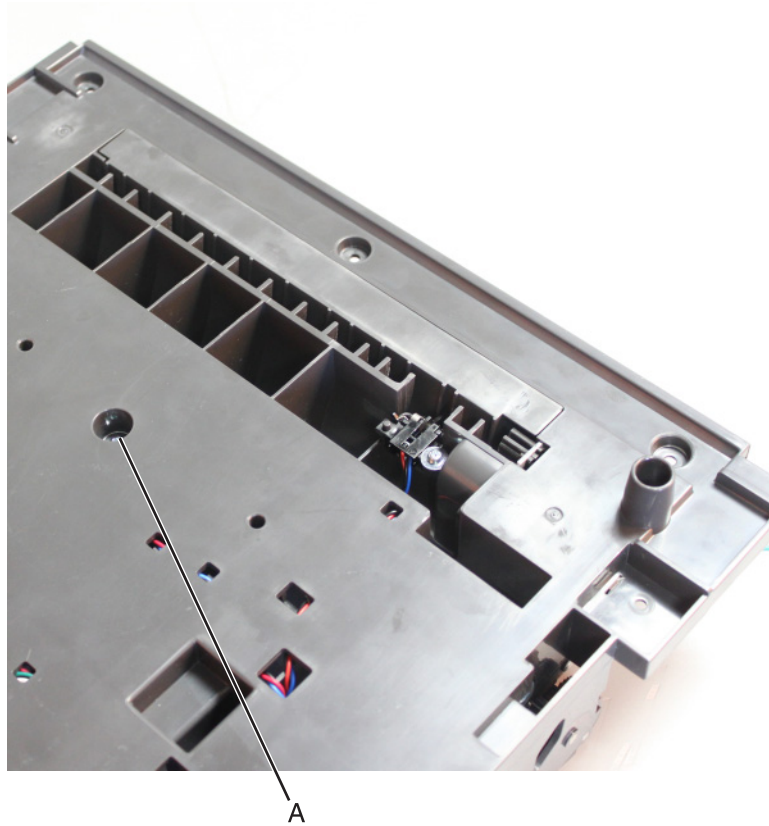
7 Disconnect the two cables (B) from the media feeder.

8 Remove the six screws (C) securing the media feeder.

B   C
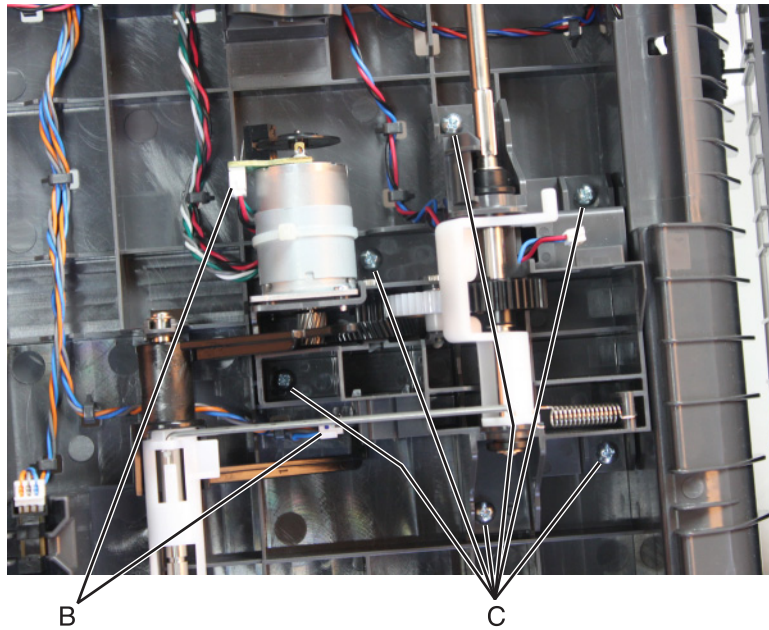
Parts removal

9 With a prying tool, release the spring to loosen the link (D).
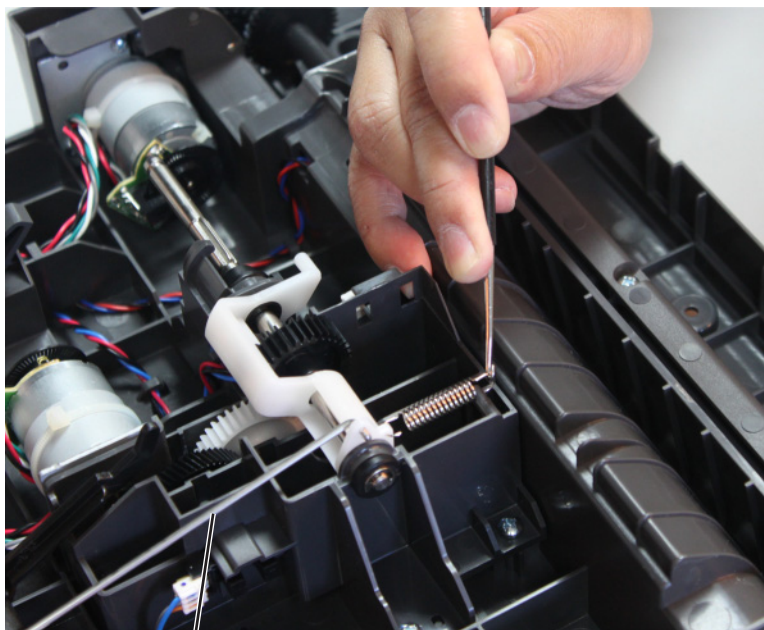
D

10 Lift the media feeder and release the link holding the media feeder.

11 Ease the media feeder off the drawer, and remove.

Output expander option removals

Output expander option removal

1 Press the latches.

2 Lift the option off the printer.

Output expander top cover removal

Lift the top cover off the expander, and remove.

Output expander rear door removal

1 Open the rear door, and detach the string (A) from the door.
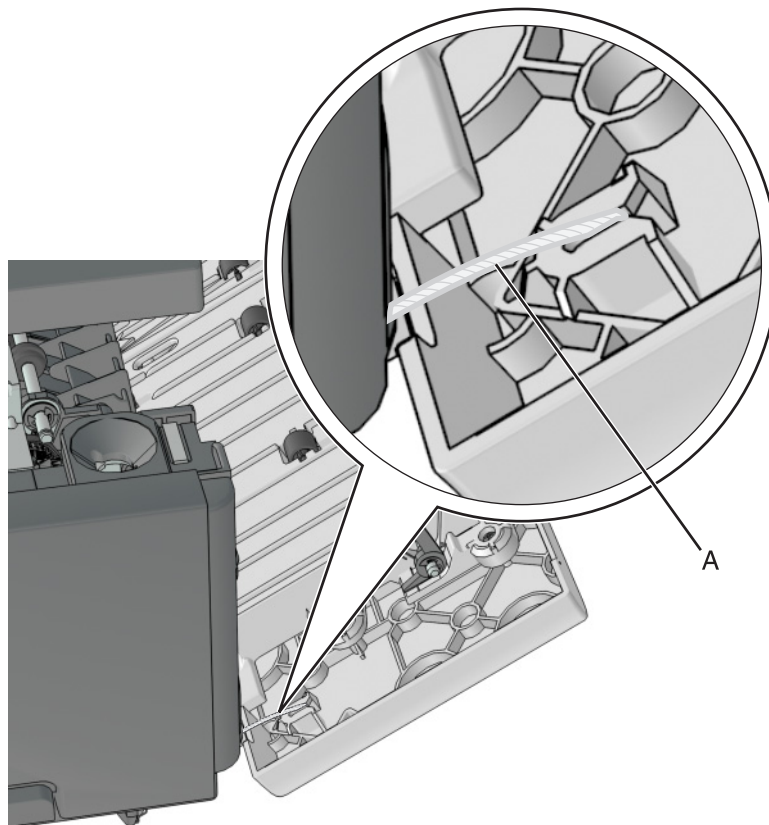
Note: Fasten the string to the rear side to prevent it from recoiling into the interior of the expander.
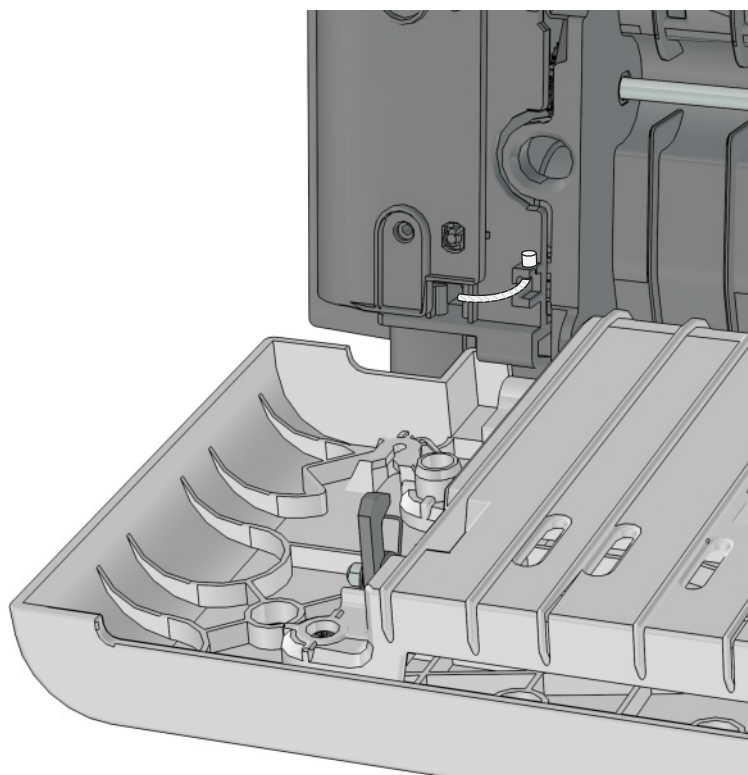
2 Position the door at an angle approximately 90 degrees from the expander, then remove.
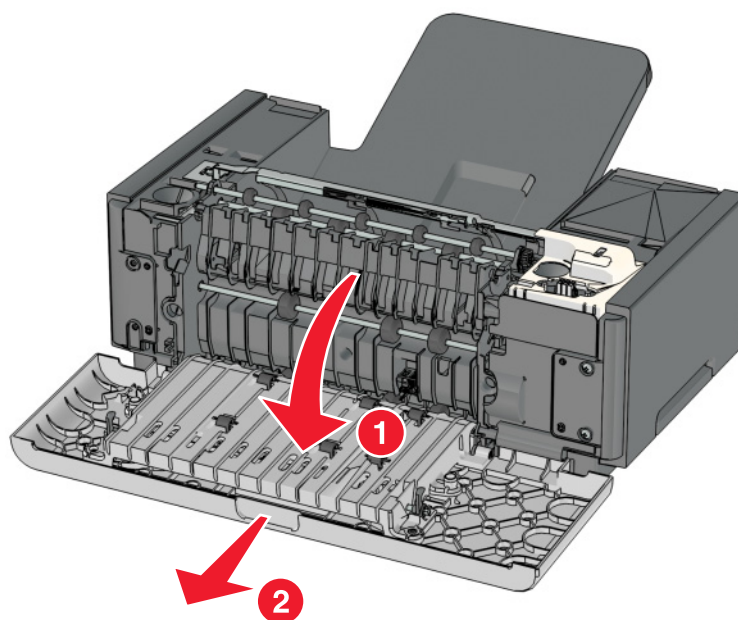
Output expander sensor cover removal

1 Remove the output expander top cover. See **"Output expander top cover removal" on page 636**.

2 Push the latches (A) to release, then remove the sensor cover.

Output expander bin full flag removal

1 Remove the output expander top cover. See **"Output expander top cover removal" on page 636**.

2 Remove the output expander sensor cover. See **"Output expander sensor cover removal" on page 639**.

3 Remove the two screws (A), and then remove the bin full flag.

Sensor (media bin full) with flag removal

1 Remove the output expander top cover. See **"Output expander top cover removal" on page 636**.

2 Remove the output expander sensor cover. See **"Output expander sensor cover removal" on page 639**.

3 Remove the two screws (A) securing the sensor brace.

Parts removal
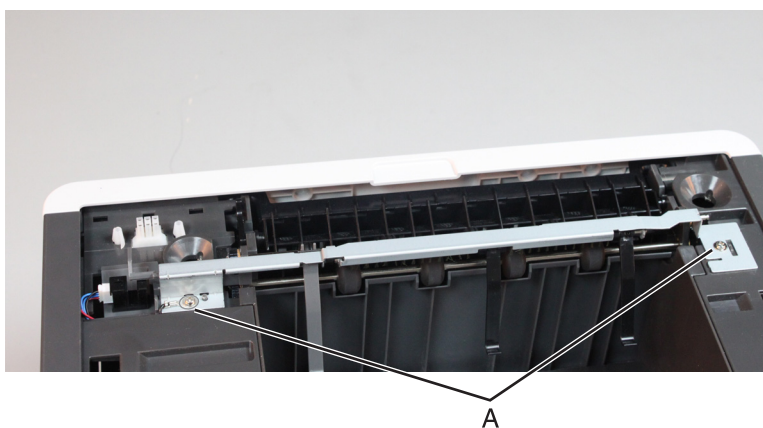
4 Disconnect the cable (B), and remove the sensor (media bin full) with flag.

Output expander right cover removal

1 Open the rear door, then detach the string (A) from the rear door.

Note: Fasten the string to the rear side to prevent it from recoiling into the interior of the expander.

2 Remove the two screws (B), then remove the right cover.

B

Output expander left cover removal

1 Open the rear door, then detach the string (A) from the rear door.
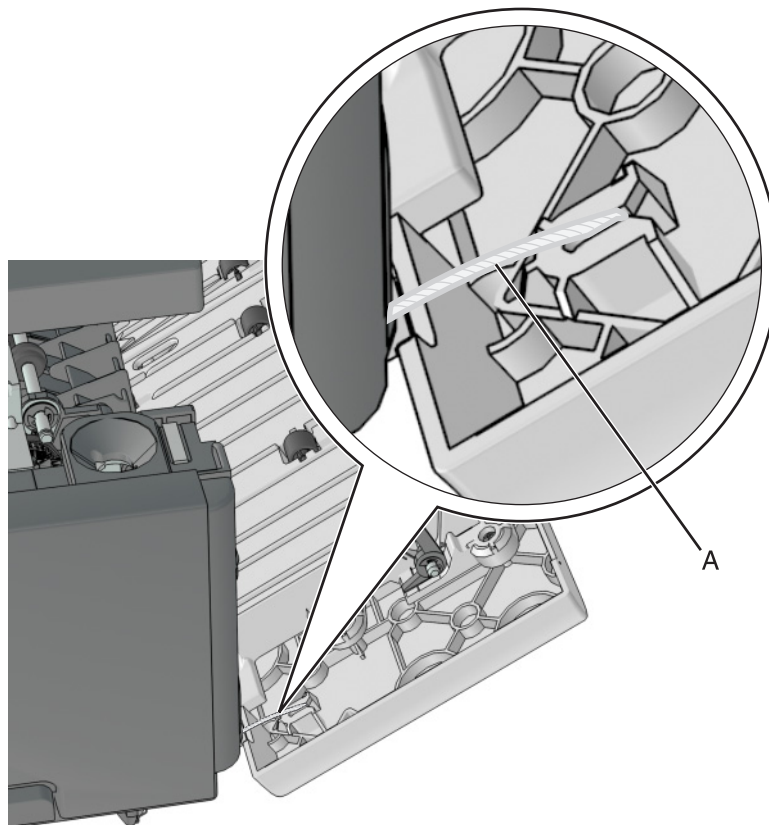
Note: Fasten the string to the rear side to prevent it from recoiling into the interior of the expander.

2 Remove the two screws (B), then remove the left cover.

Output expander controller board removal

1 Remove the output expander left cover. See **"Output expander left cover removal" on page 642**.

2 Disconnect all the cables (J7, J10, J3, J1, J2, J14, J6, J4 and J5) from the controller board.
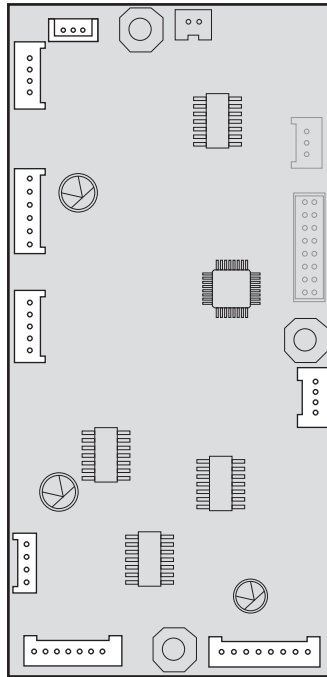
3 Remove the three screws (A), then remove the controller board.
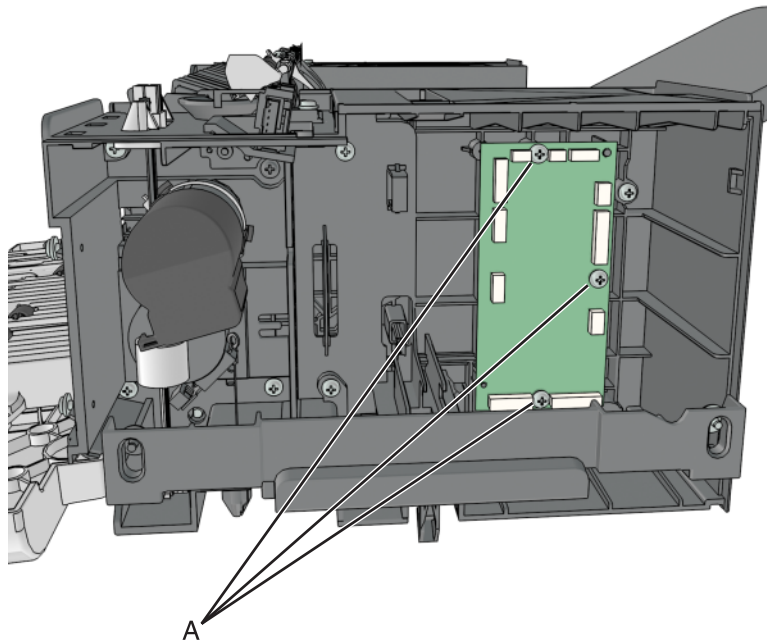
Lower interface cable removal

1 Remove the output expander left cover. See **"Output expander left cover removal" on page 642**.

2 Disconnect the lower interface cable J1 from the controller board.
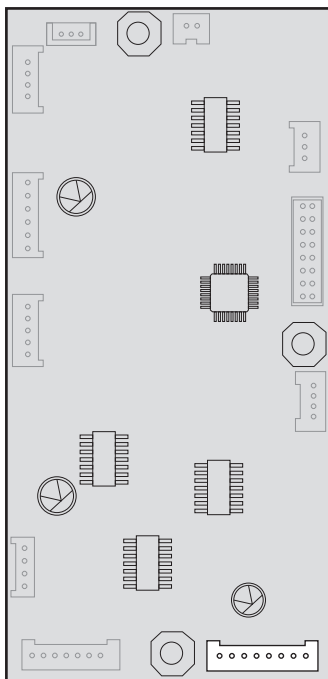
3 Push inward to release the latches, then push the connector out of its slot.
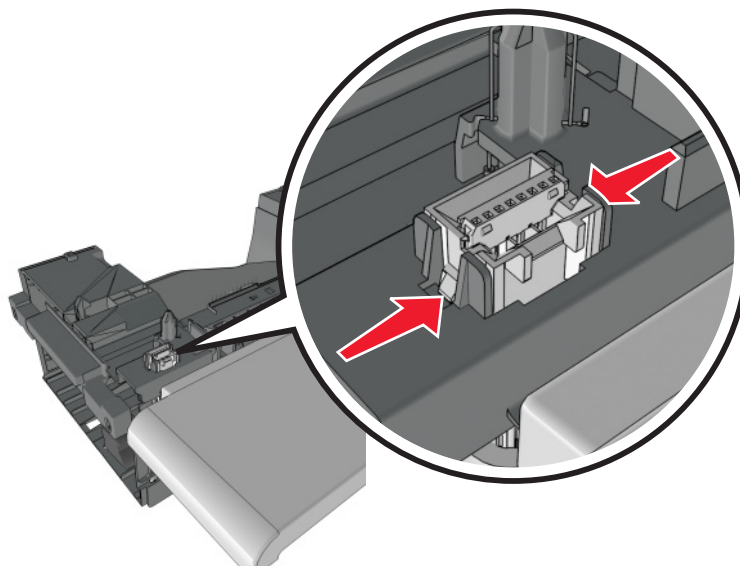
4 Remove the lower interface cable.

Upper interface cable removal

1 Remove the output expander sensor cover. See **"Output expander sensor cover removal" on page 639**.

2 Remove the output expander left cover. See **"Output expander left cover removal" on page 642**.

3 Disconnect the upper interface cable J2 from the controller board.
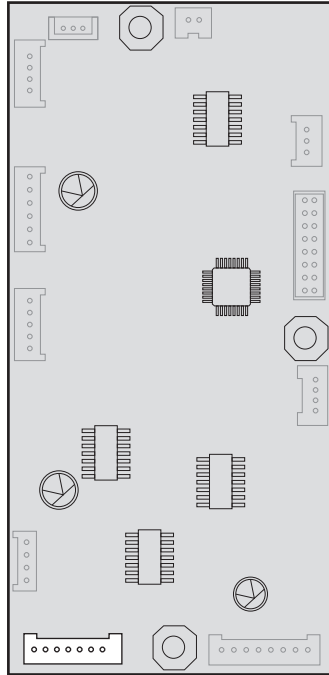
4 Crimp the two connector pins using pliers to make them fit through the pin holes. Push the connector out of its slot.
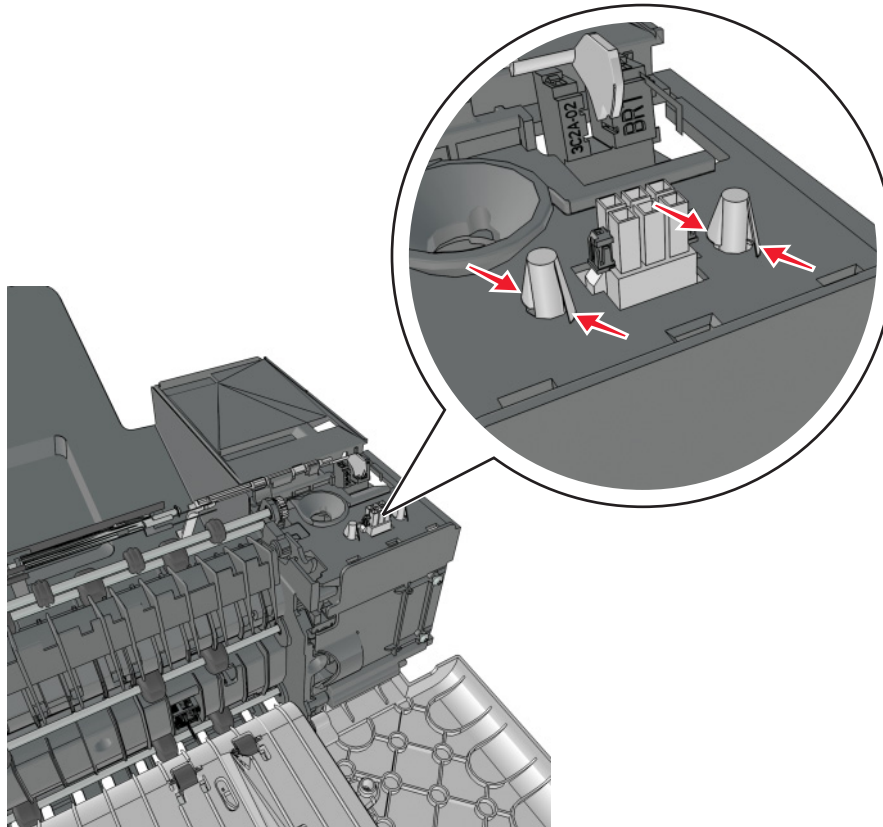
5 Remove the upper interface cable.

Spring with string removal
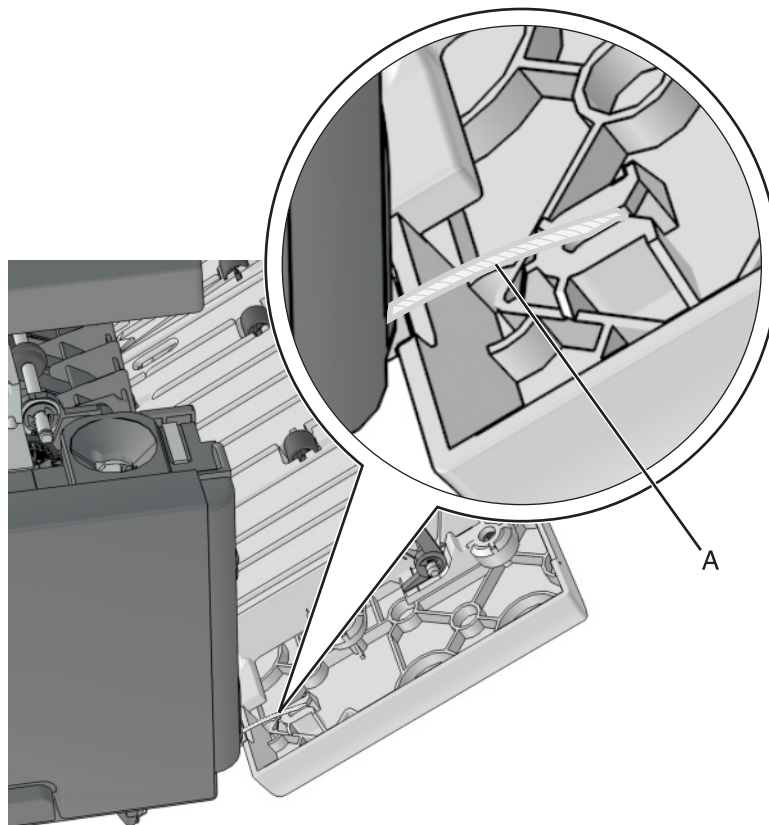
1 Open the rear door, and detach the string (A).

2 Remove the output expander right cover. See .

3 Remove the spring with string.

> **Note:** Pay attention to the original position of the string. The string on the pulley is wound clockwise.
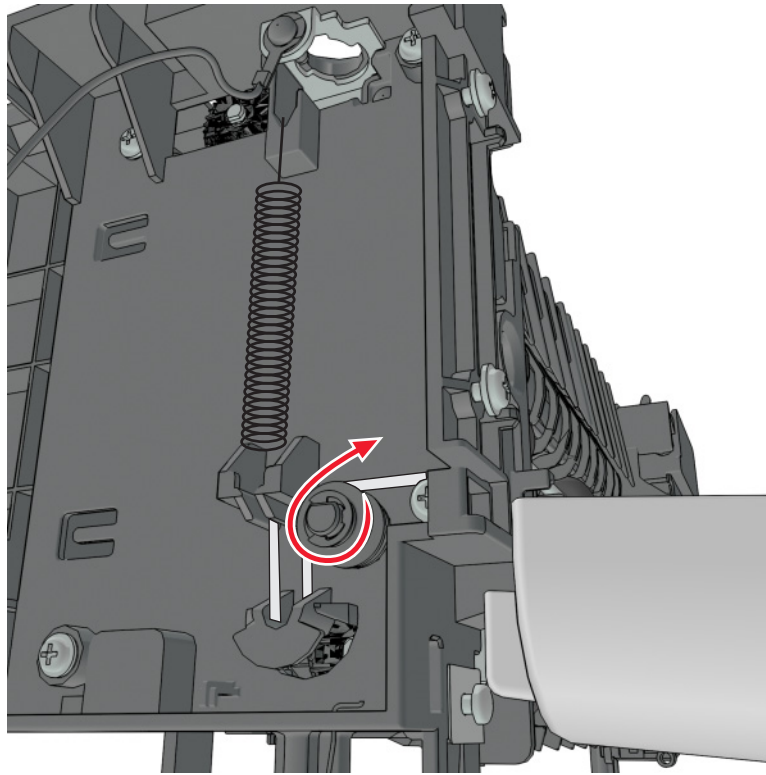
Output expander option latch removal

1 Remove the output expander left cover or output expander right cover.
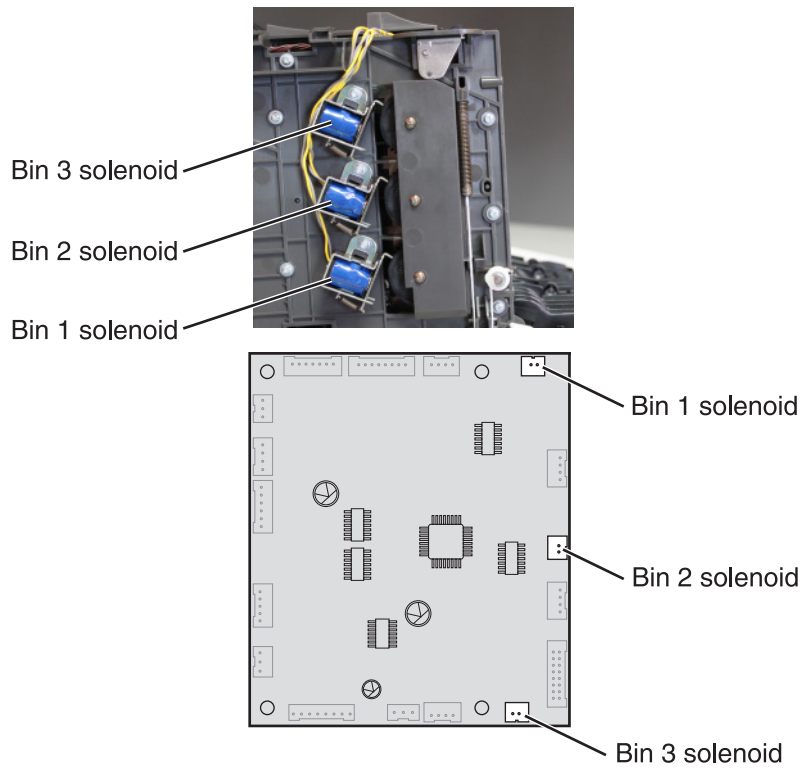
See **"Output expander left cover removal" on page 642** or **"Output expander right cover removal" on page 640**.

2 Pull the latch off the expander.
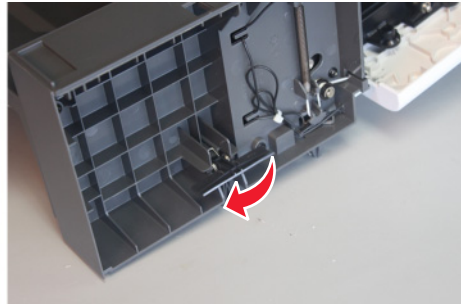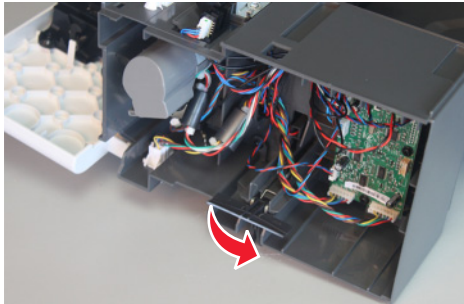
Output expander diverter motor removal

1 Remove the output expander left cover. See **"Output expander left cover removal" on page 642**.

2 Disconnect the motor cable, and then remove the two screws (A) securing the motor.
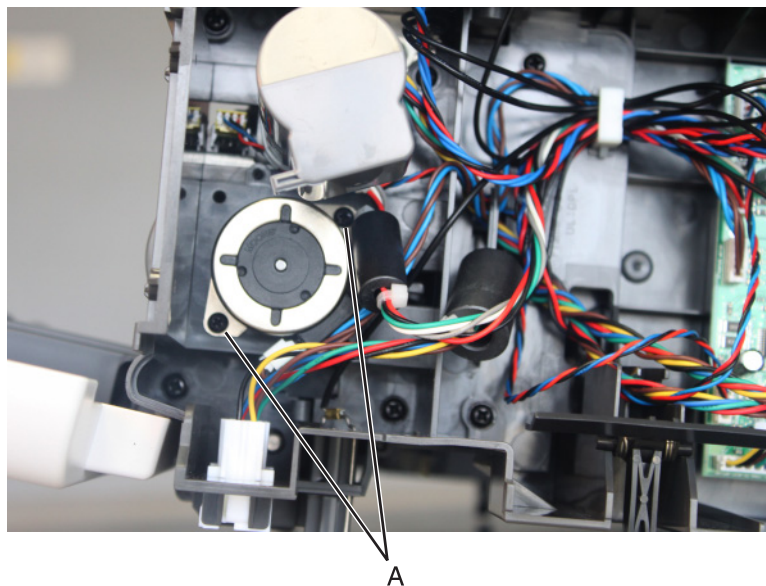
3 Pull the motor off the device, and remove.

Output expander diverter plunger assembly removal

Diverter plunger removal

1 Remove the output expander left cover. See **"Output expander left cover removal" on page 642**.

2 Remove the seven screws (A) from the frame.
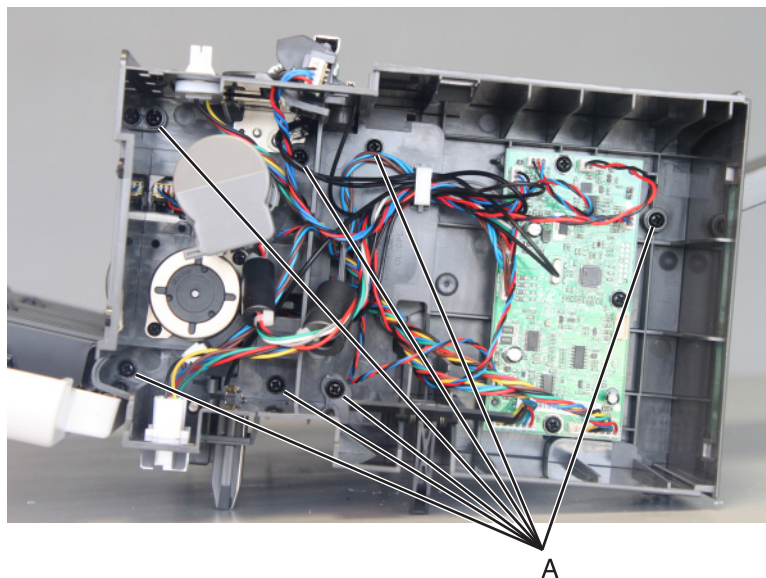
Parts removal

3 Pull away the frame to access the parts underneath. Remove the two screws (B), and then remove the plunger.
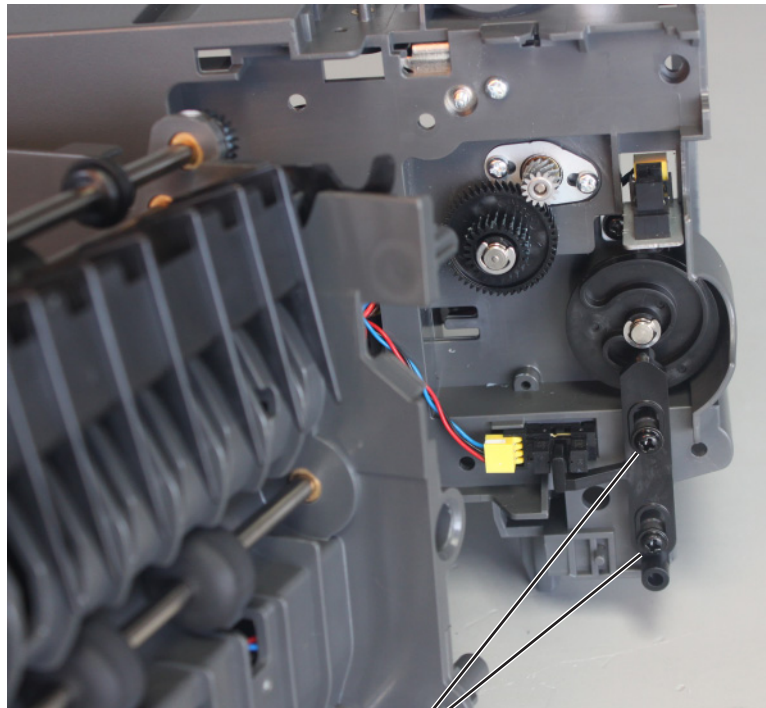
B

Diverter cam removal

1 Remove the output expander left cover. See .

2 Remove the output expander diverter plunger. See preceding removal.

3 Remove the E-clip (A), and then remove the cam.

Output expander drive gear removal

1 Remove the output expander left cover. See .

2 Remove the seven screws (A) from the frame.

Parts removal

3 Pull away the frame to access the parts underneath. Remove the E-clip (B), and pull the gear off its shaft.

B

Output expander main motor removal

1 Remove the output expander left cover. See **"Output expander left cover removal" on page 642**.

2 Remove the seven screws (A) from the frame.

A

Parts removal

3 Pull away the frame to access the parts underneath. Remove the E-clip (B), and pull the gear off its shaft.

B

4 Remove the two screws (C), and then remove the motor.

C

Sensor (OE rear door interlock) removal

1 Remove the output expander left cover. See .

2 Remove the seven screws (A) from the frame.

A

Parts removal

3 Pull away the frame to access the parts underneath. Remove the screw (B), and then pull away the sensor bracket.
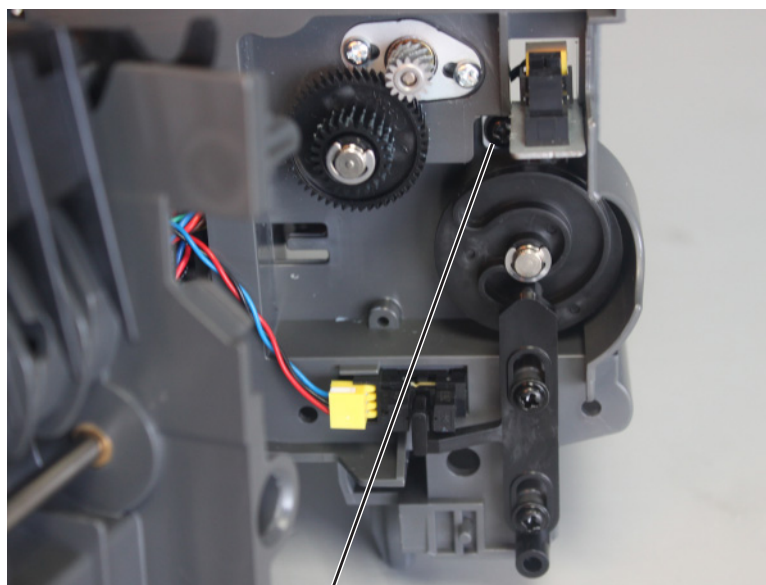
B

4 Remove the mylar cover (C), disconnect the sensor cable (D), and then release the latches from the sensor bracket. Pull the sensor off the sensor bracket, and remove.
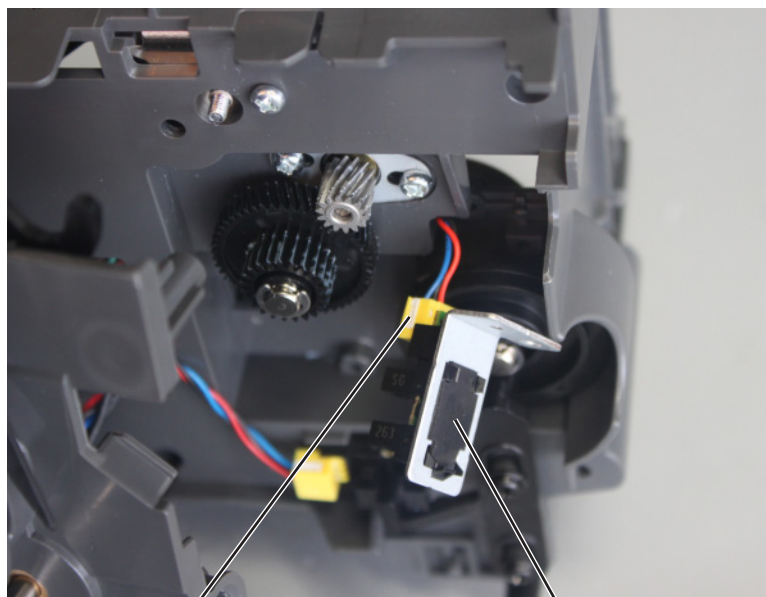
D   C

Parts removal

Sensor (OE diverter plunger HP) removal

1 Remove the output expander left cover. See **"Output expander left cover removal" on page 642**.

2 Remove the seven screws (A) from the frame.

A
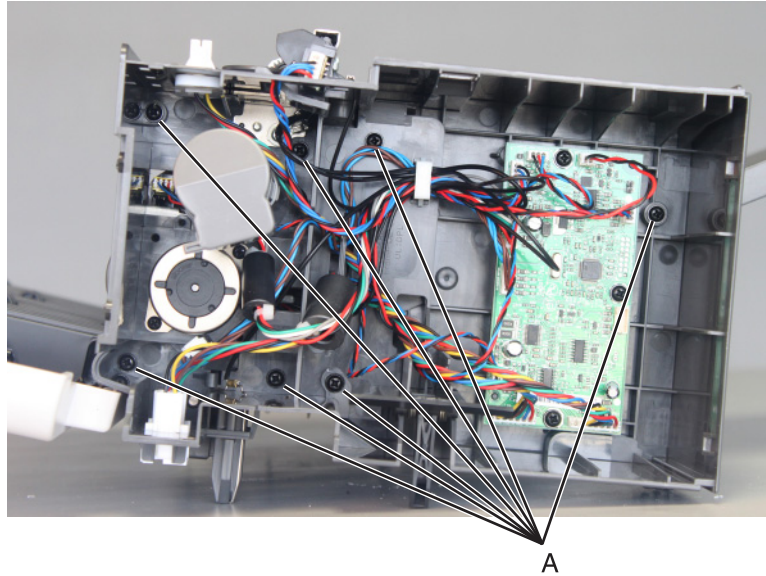
3 Pull away the frame to access the parts underneath. Disconnect the sensor cable (B).

B
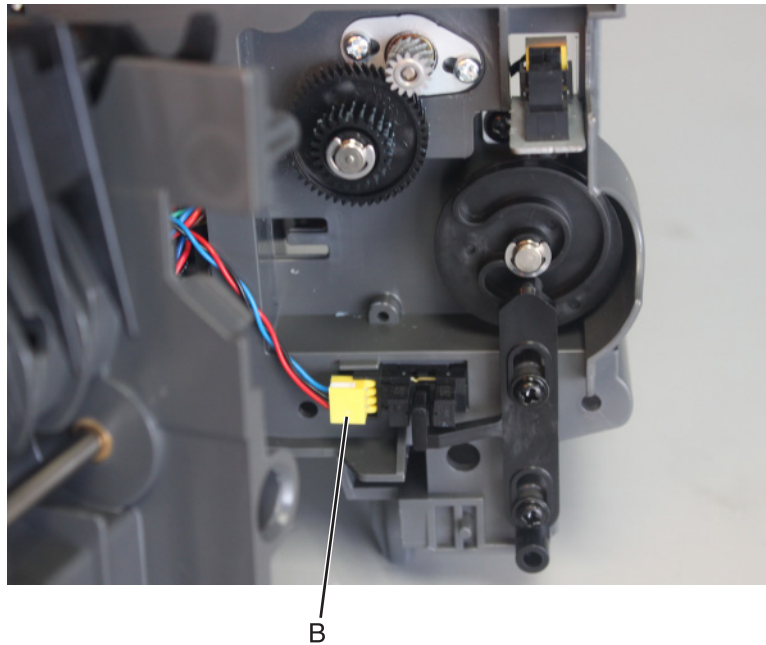
4 Release the latches (C) securing the sensor to the frame, and then remove the sensor.

Note: It will be less difficult releasing the latches if a prying tool is used.
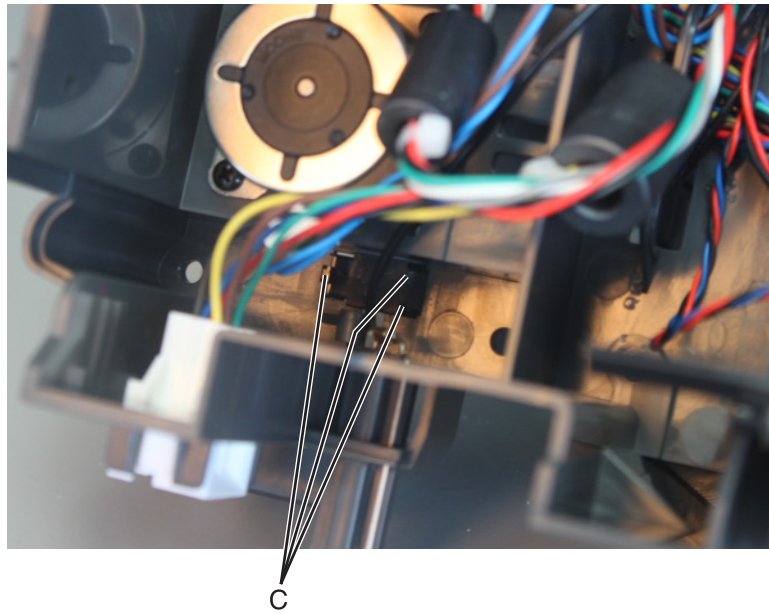
C

Output expander diverter spring removal

1 Remove the output expander left cover. See **"Output expander left cover removal" on page 642**.

2 Remove the seven screws (A) from the frame.

A
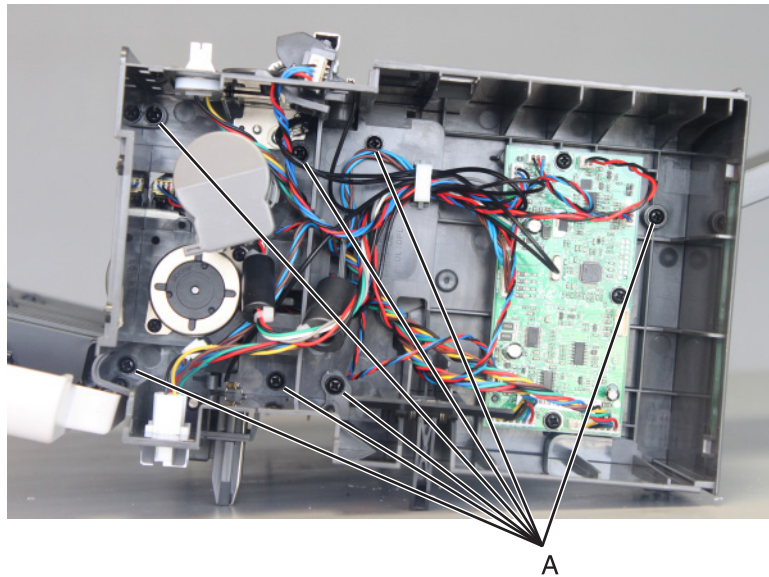
Parts removal

3 Pull away the frame to access the parts underneath. Release the hook (B), and then remove the spring.
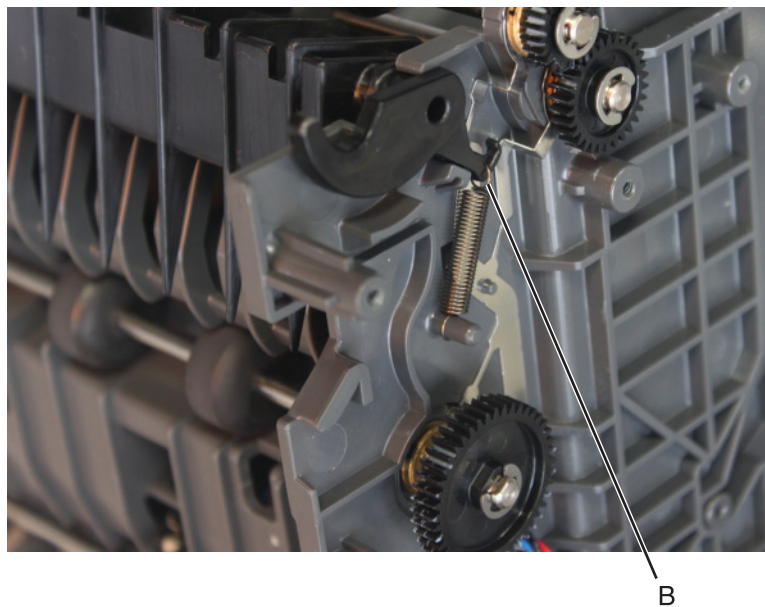
B

Output expander diverter removal

1 Remove the output expander left cover. See **"Output expander left cover removal" on page 642**.

2 Remove the seven screws (A) from the frame.

A
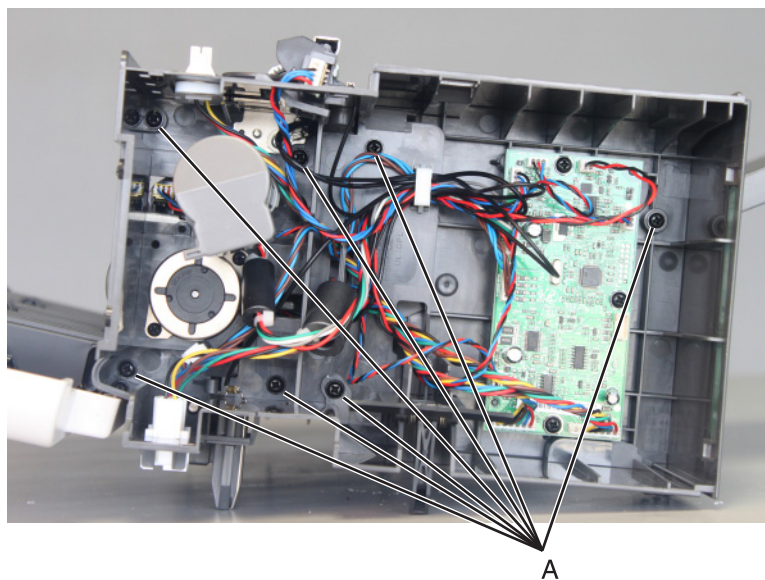
3 Pull away the frame to access the parts underneath. Release the hook (B) from the diverter.

B
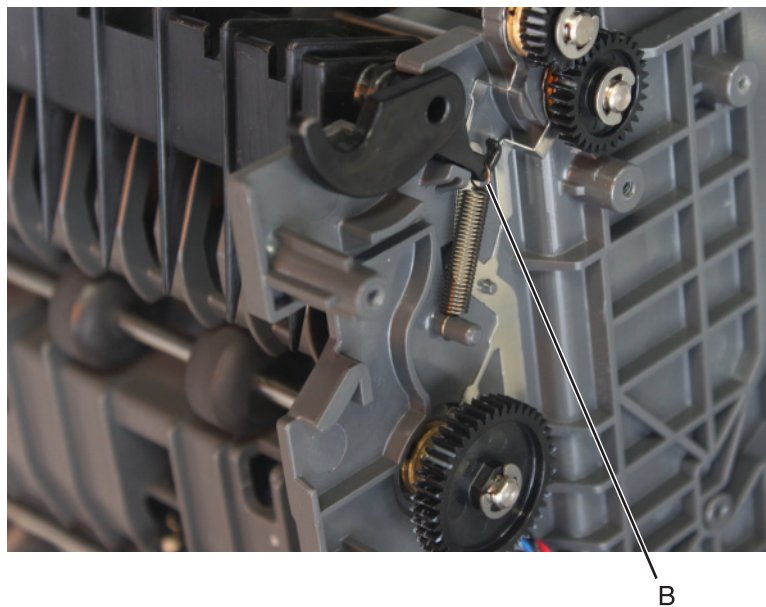
4 Pry the diverter to release, and then remove.

Parts removal

Output expander drive belt removal

1 Remove the output expander right cover. See **"Output expander right cover removal" on page 640**.

2 Remove the six screws (A) securing the frame. Pull away the frame, and remove.

A
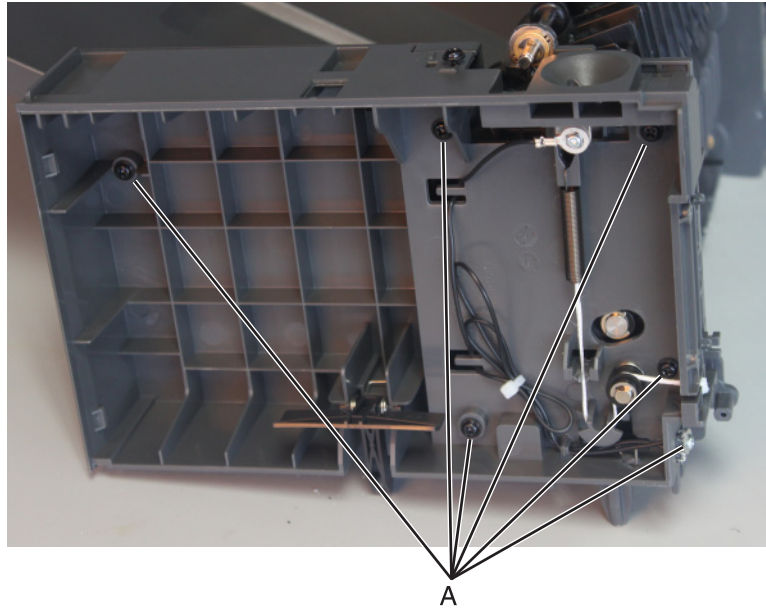
3 Loosen the screw (B) to unlock and allow more slack on the mechanism, and then remove the belt.
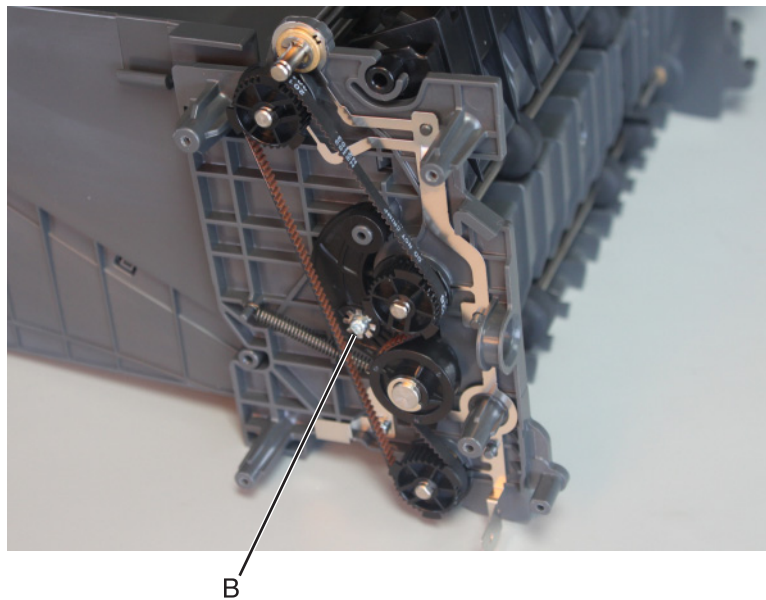
B

Output expander belt tensioner removal

1 Remove the output expander right cover. See **"Output expander right cover removal" on page 640**.

2 Remove the output expander drive belt. See **"Output expander drive belt removal" on page 660**.

3 Remove the screw (A) from the tensioner.

Parts removal

4 Unhook the spring (B) from the frame, and then remove the tensioner from the frame.
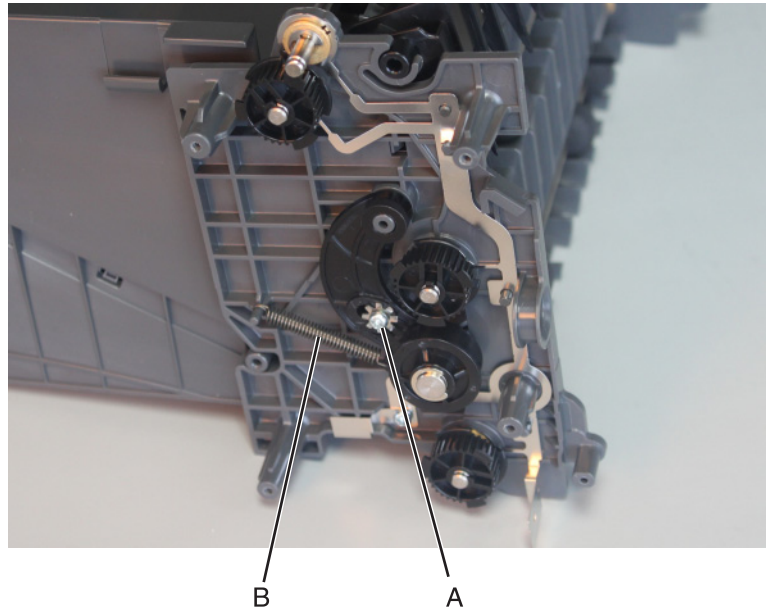
B   A

Output expander bin removal

1 Remove the output expander left cover. See .

2 Remove the output expander right cover. See .

3 Disconnect the cable J10 from the controller board.

4 Remove the seven screws (A), to release the left inner frame.

A
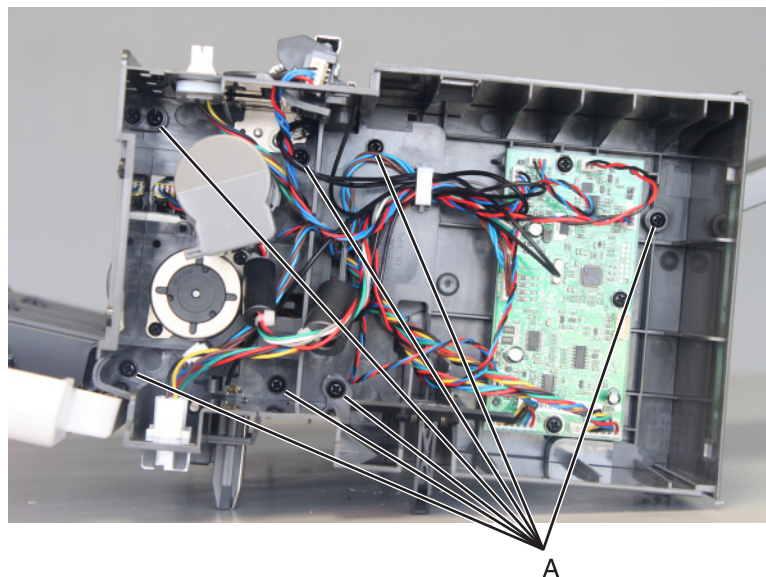
5 Remove the six screws (B), to release the right inner frame.

B
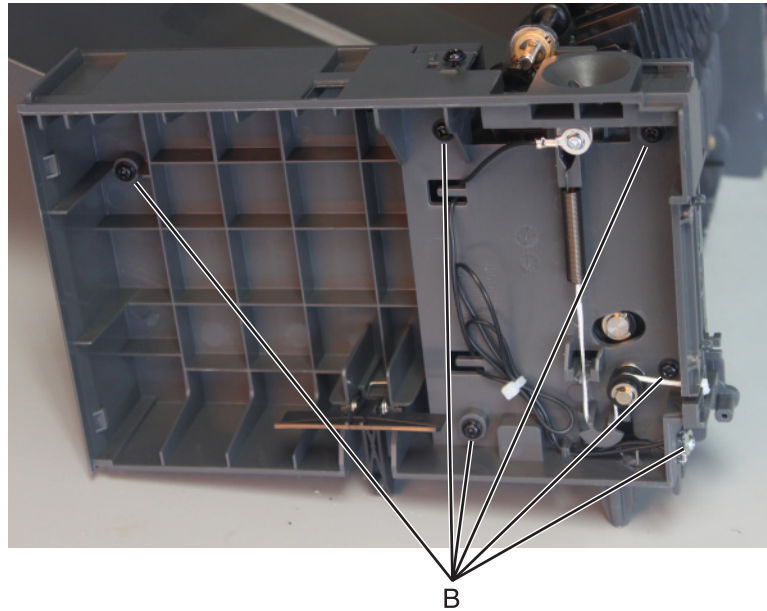
6 Move away the left and right inner frames, and then pull away the bin.
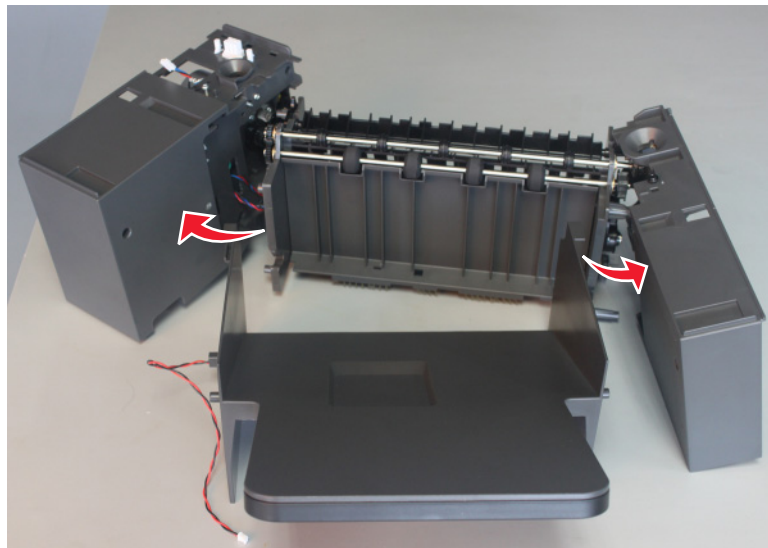
Sensor (OE pass through) removal

1 Remove the output expander left cover. See **"Output expander left cover removal" on page 642**.

2 Remove the output expander right cover. See **"Output expander right cover removal" on page 640**.

3 Remove the output expander bin. See **"Output expander bin removal" on page 661**.

4 Disconnect the sensor cable J3 from the controller board.

5 Release the latches holding the sensor (A) to the rear side, and then remove the screw (B) from the chute.

B   A
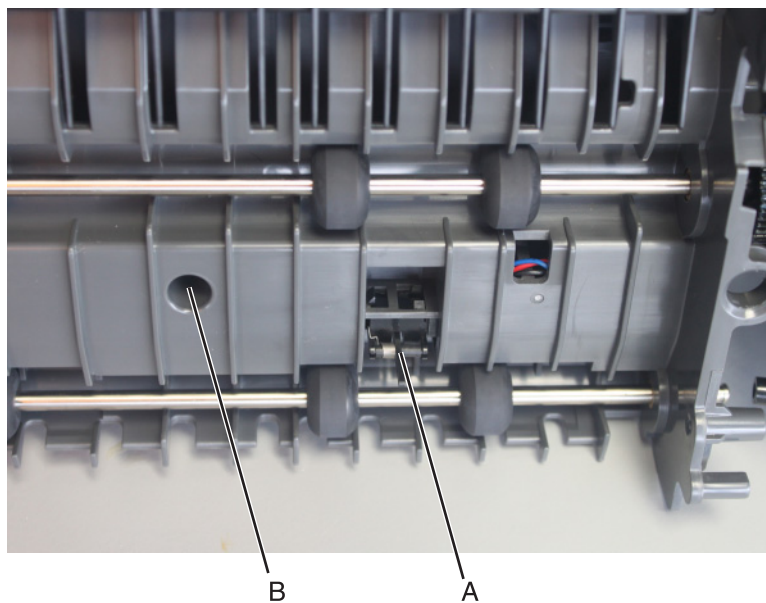
6 Remove the screw (C) securing the ground plate to the inner frame.

C
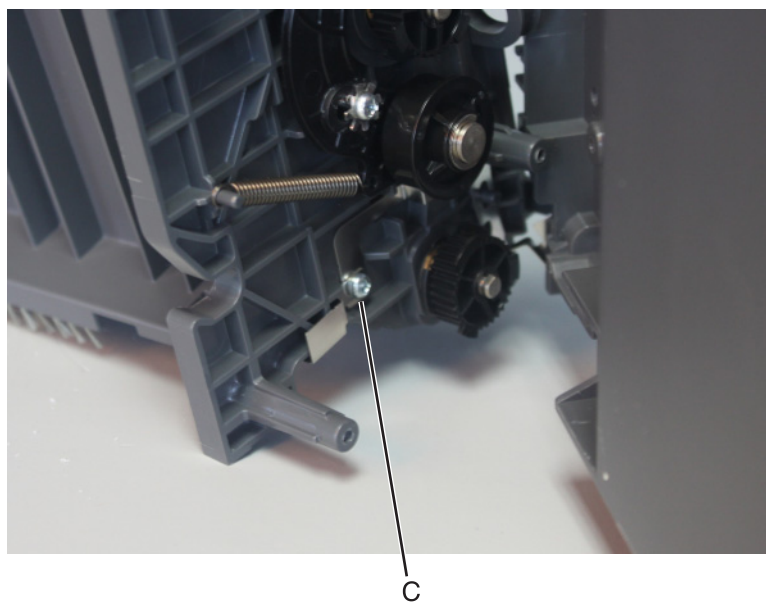
7 From the other side of the chute, pull the cover to access the sensor underneath it.
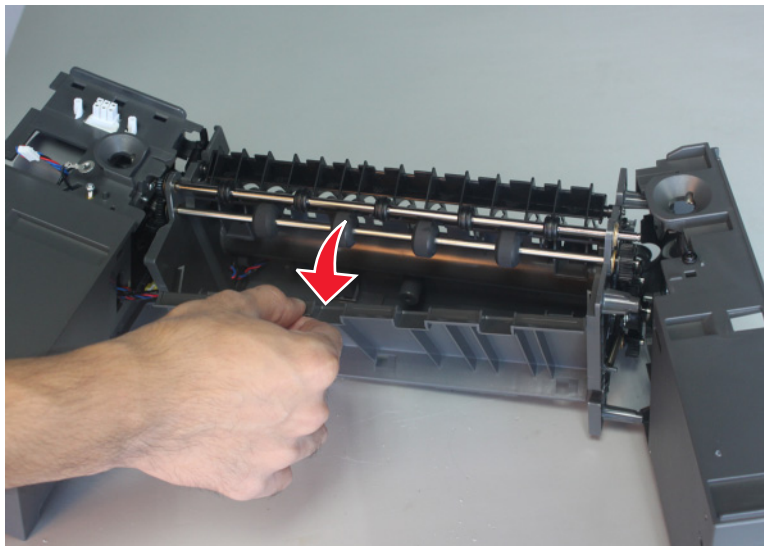
8 Route the cables off the cable guides, and then carefully ease the sensor with cable off the machine.

Note: Pay attention to the original routing of the cables.
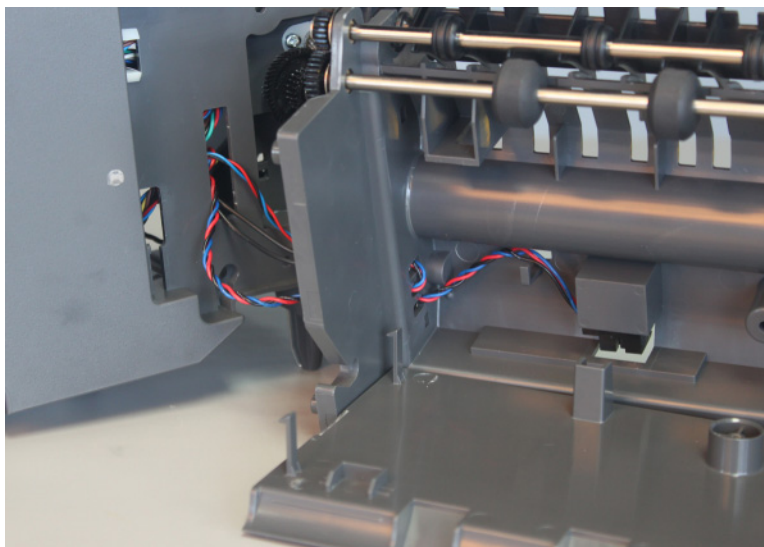
High capacity output expander option removals

High capacity output expander option removal

1 Press the latches to release.
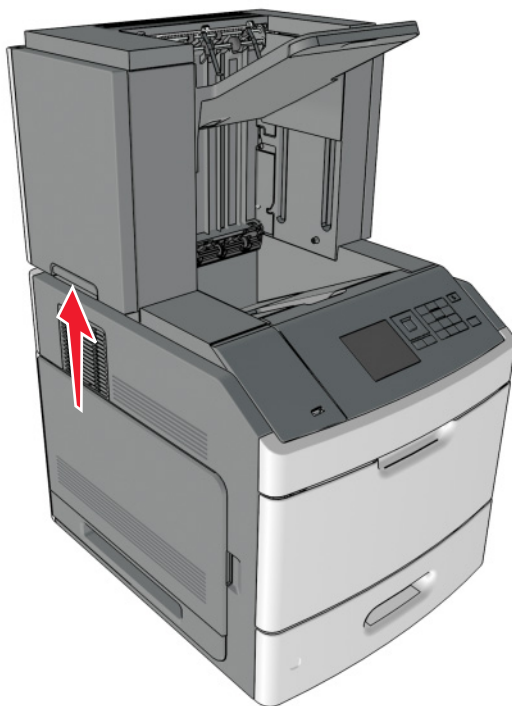
2 Lift the option off the printer.

HCOE top cover removal

1 Lift the top cover off the HCOE.

2 Remove the HCOE.

HCOE rear door removal

1 Open the rear door, and disconnect the string (A) from the door.
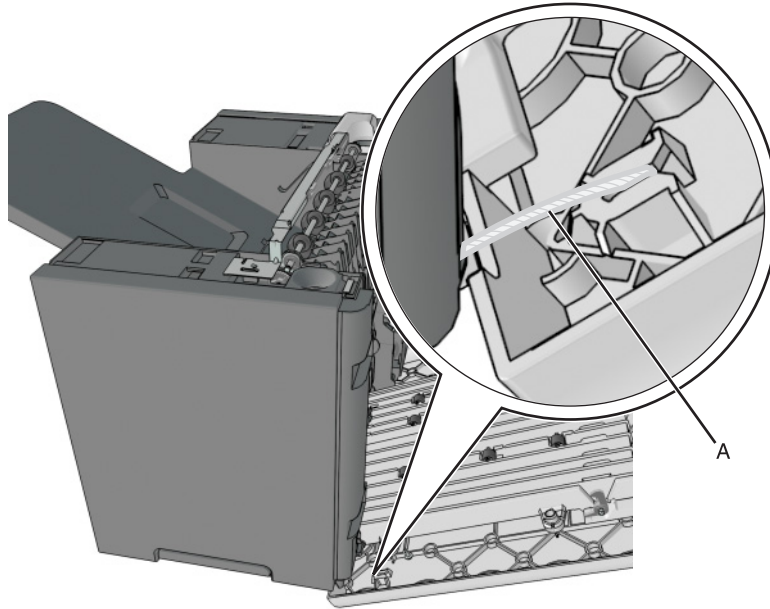
Note: Fasten the string to the rear side, to prevent it from recoiling into the interior of the HCOE.
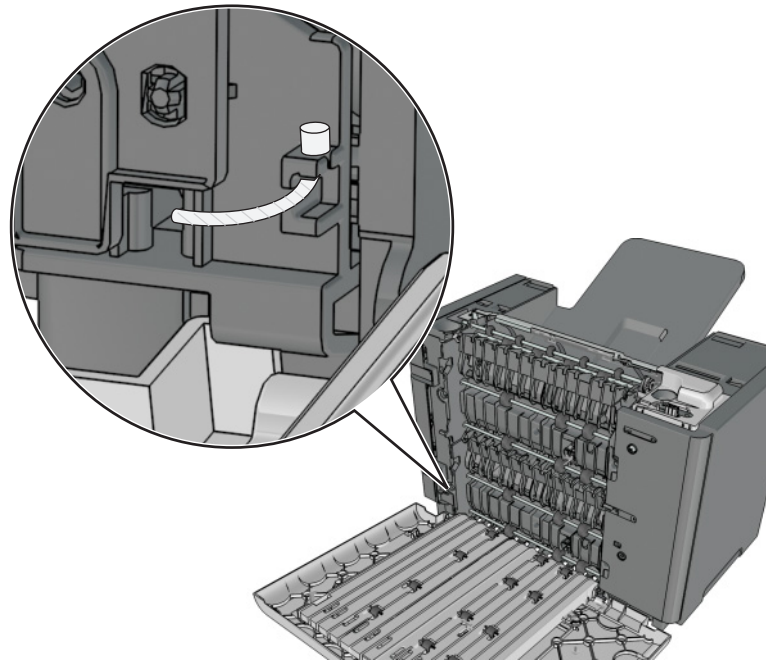
2 Position the door to an angle approximately 90 degrees from the expander, then remove.
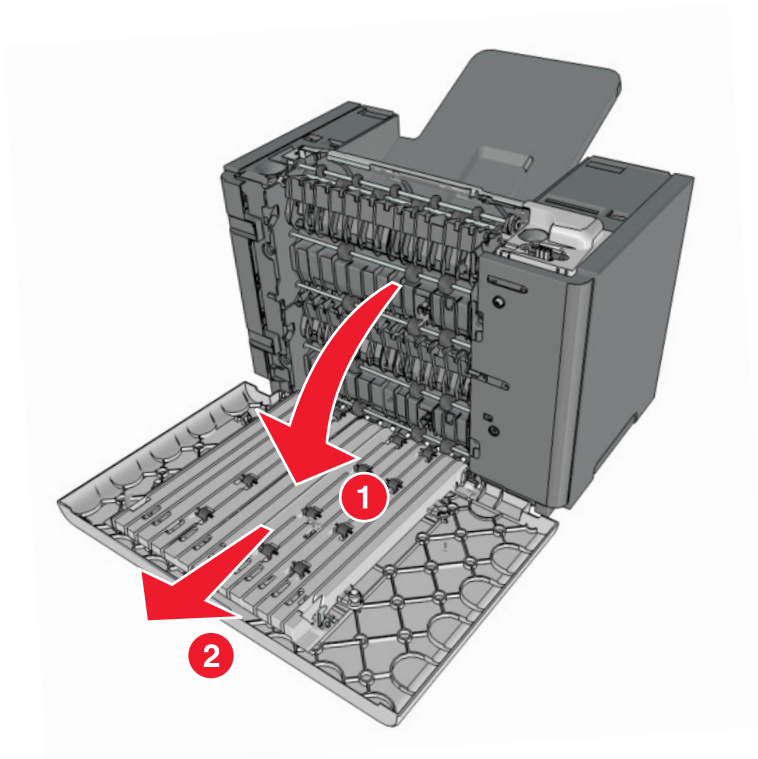
HCOE sensor cover removal

1 Press the latches (A) to release.
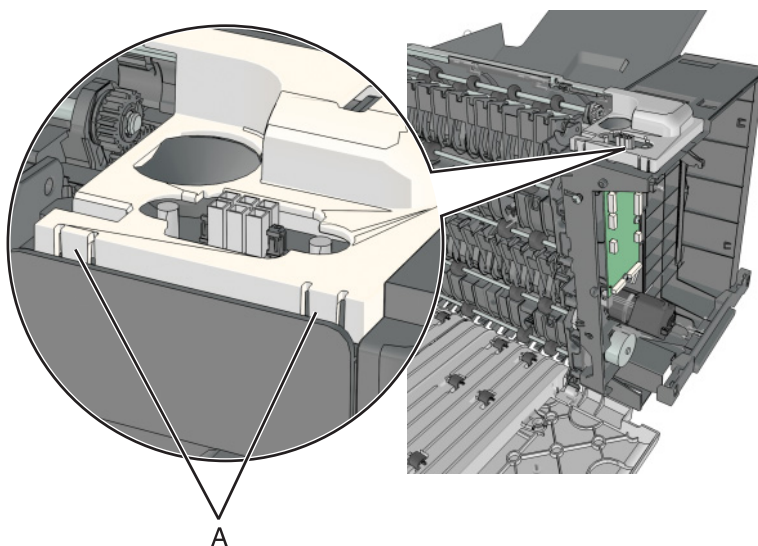
2 Remove the sensor cover.

HCOE bin full flag removal

1 Remove the HCOE top cover. See **"HCOE top cover removal" on page 665**.

2 Remove the HCOE sensor cover. See **"HCOE sensor cover removal" on page 667**.

3 Remove the two screws (A), and then remove the bin full flag.
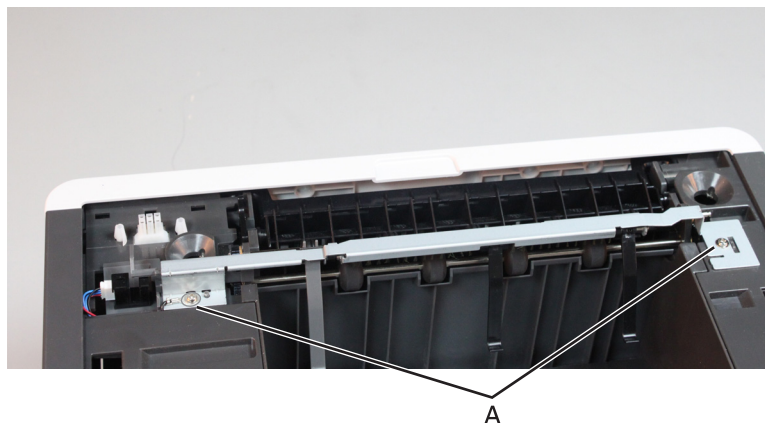
Sensor (HCOE media bin full) with flag removal

1 Remove the HCOE sensor cover. See **"HCOE sensor cover removal" on page 667**.

2 Remove the two screws (A) securing the sensor brace.

3 Disconnect the cable (B), and remove the sensor with flag.
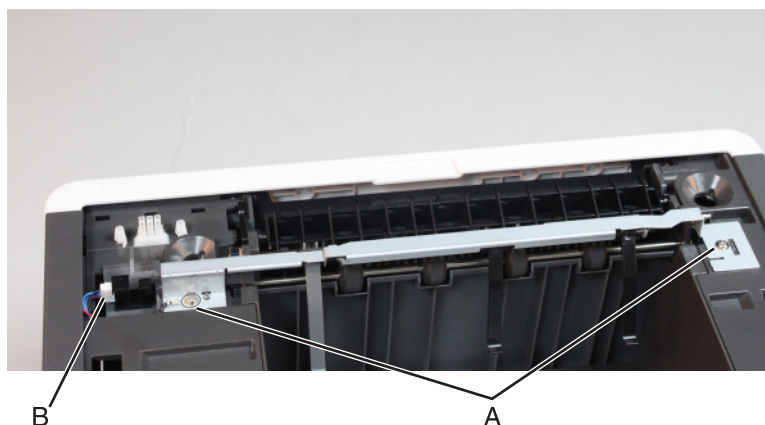
Parts removal

HCOE right cover removal

1 Open the rear door, then detach the string (A) from the rear door.
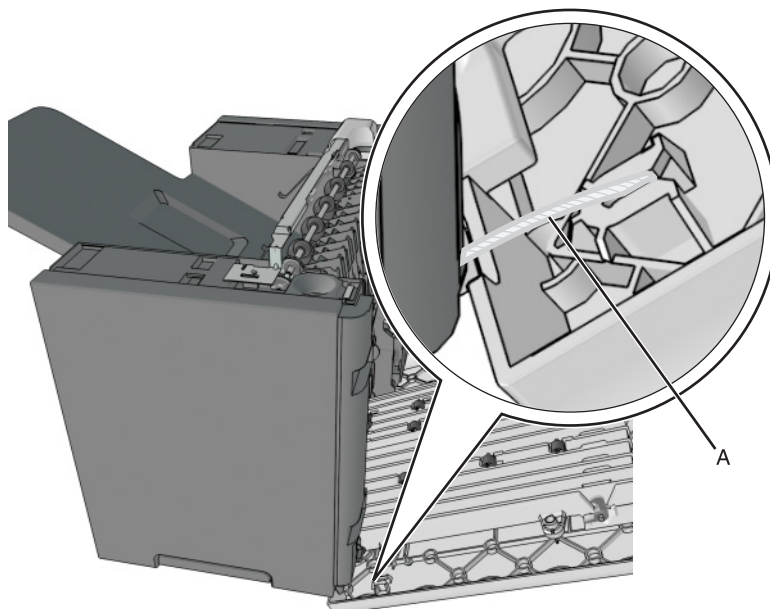
Note: Fasten the string to the rear side to prevent it from recoiling into the interior of the HCOE.
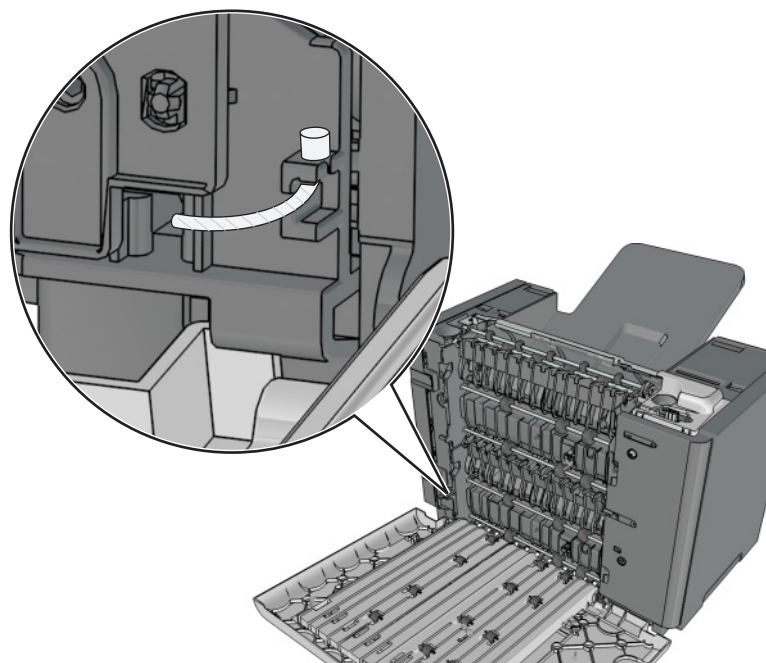
2 Remove the two screws (B), then remove the right cover.

HCOE left cover removal

1 Open the rear door, then detach the string (A) from the rear door.

Note: Fasten the string to the rear side to prevent it from recoiling into the interior of the HCOE.

2 Remove the two screws (B), then remove the left cover.

B
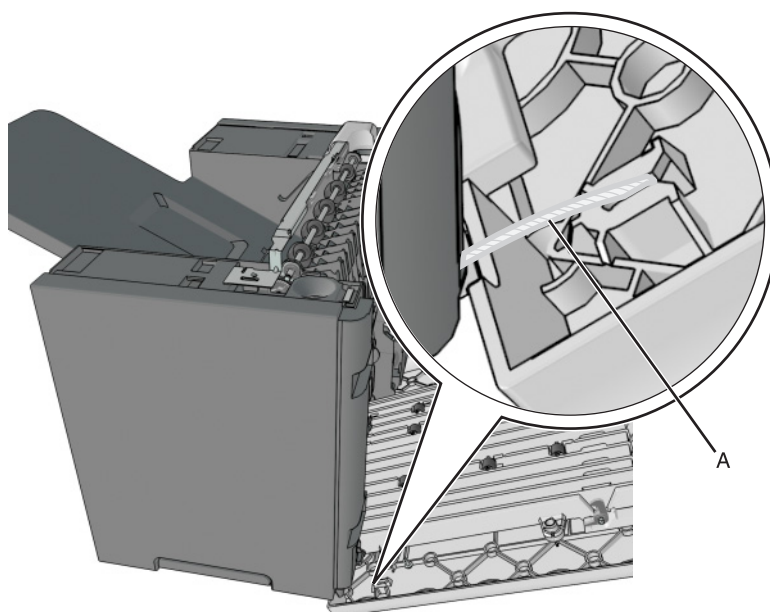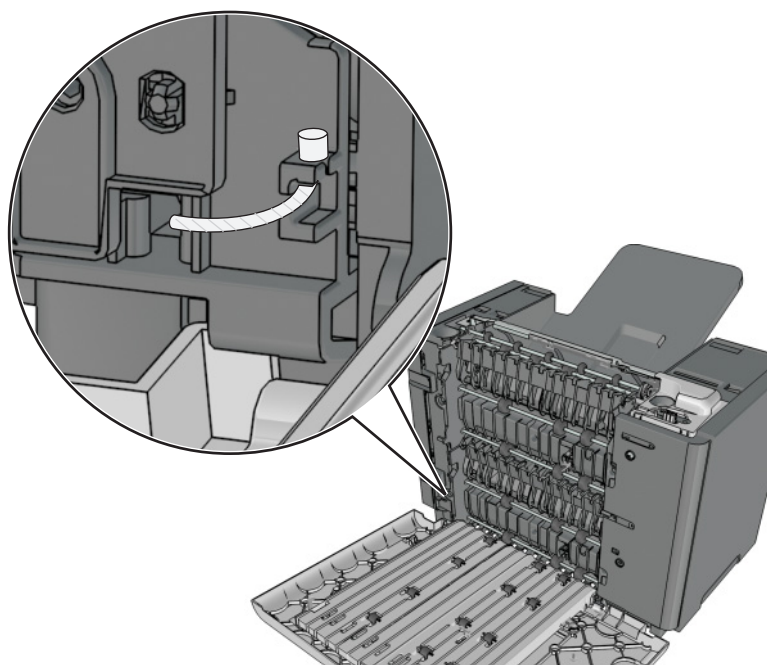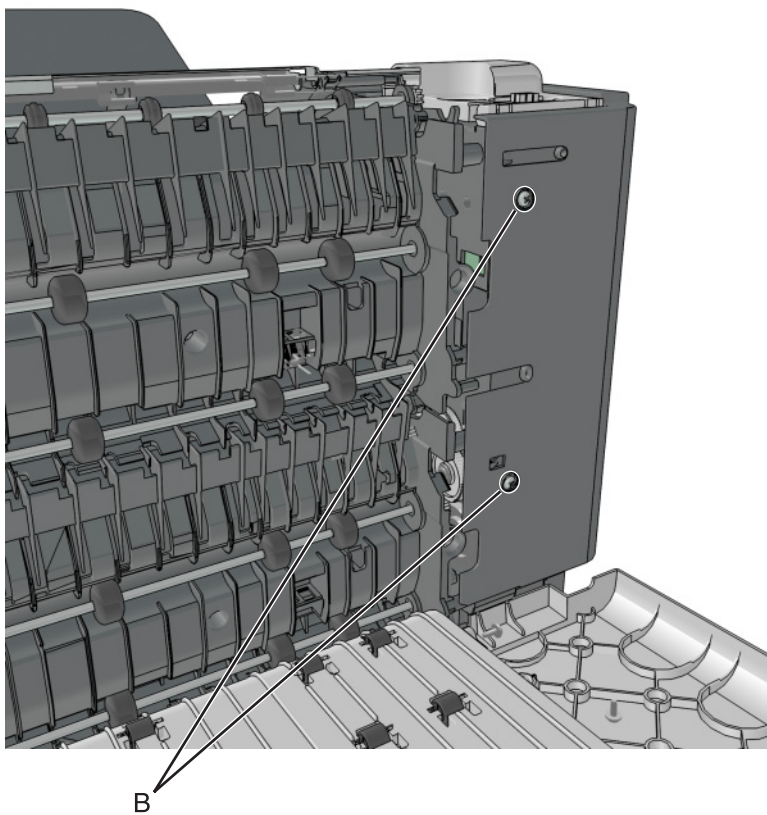
HCOE controller board removal

1 Remove the HCOE left cover. See **"HCOE left cover removal" on page 670**.

2 Disconnect all the cables (J7, J10, J3, J8, J1, J2, J14, J6, J4, and J5) from the controller board.
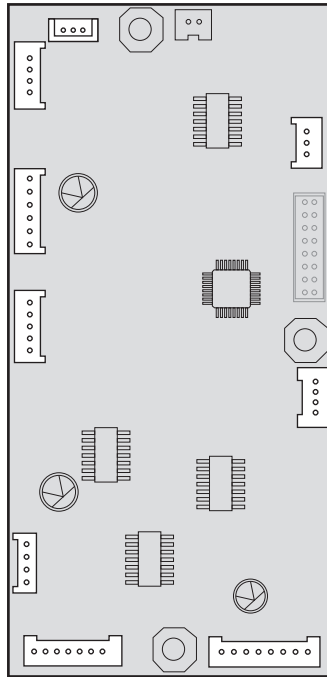
3 Remove the three screws (A), then remove the controller board.
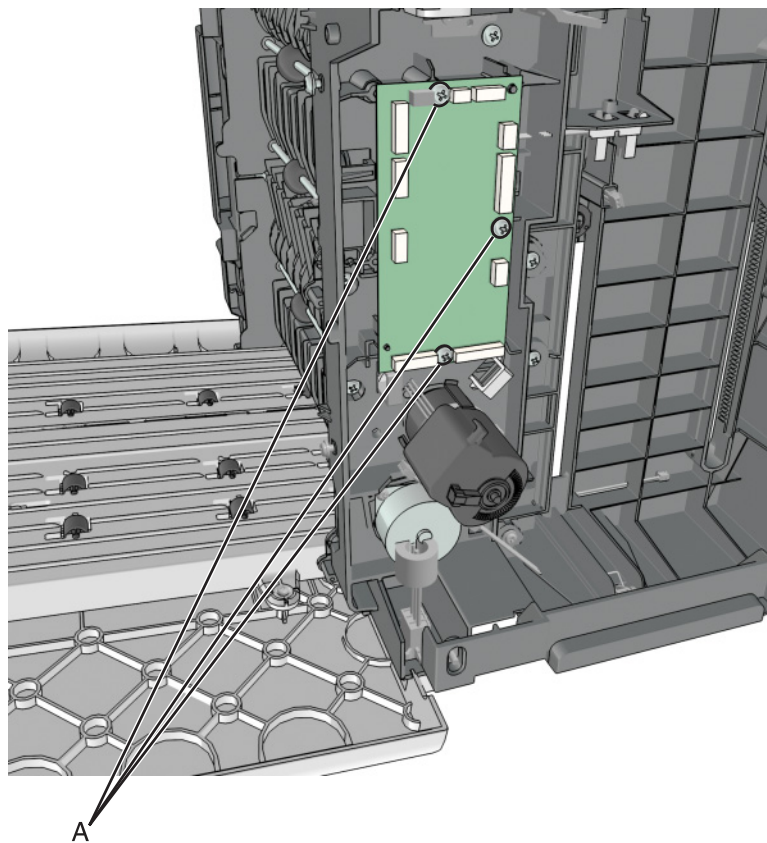
HCOE lower interface cable removal

1 Remove the HCOE left cover. See **"HCOE left cover removal" on page 670**.

**2** Disconnect the lower interface cable J1 from the controller board.
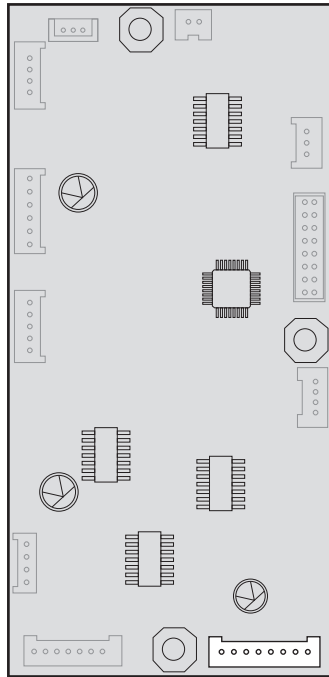
3 Push inward to release the latches, then push the connector out of its slot.
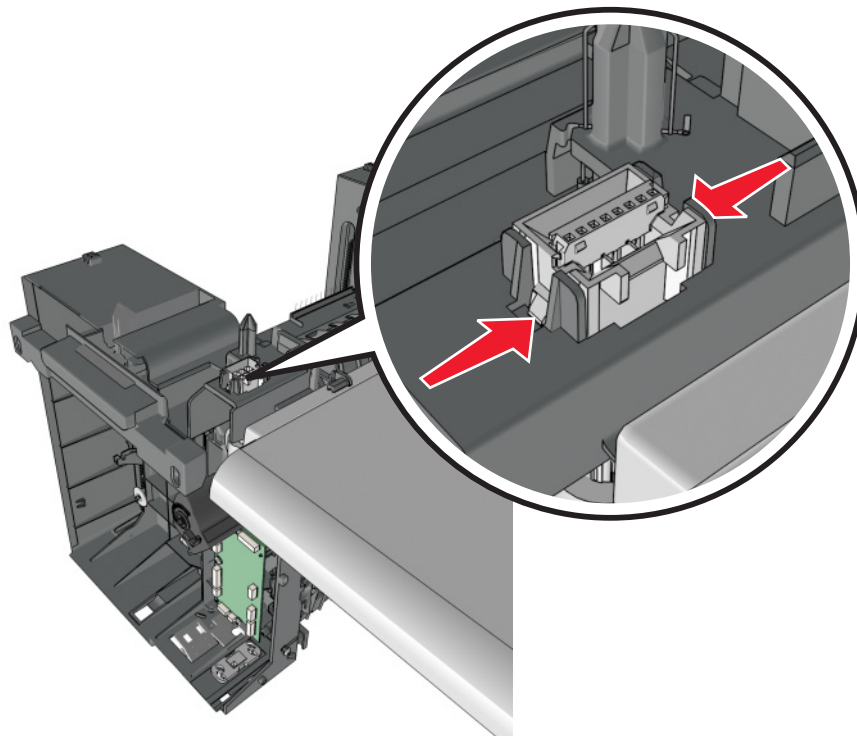
4 Remove the lower interface cable.

HCOE upper interface cable removal

1 Remove the HCOE sensor cover. See **"HCOE sensor cover removal" on page 667**.

2 Remove the HCOE left cover. See **"HCOE left cover removal" on page 670**.

**3** Disconnect the upper interface cable from the controller board.

4 Crimp both connector pins using pliers to make them fit through the pin holes. Push the connector out of its slot.
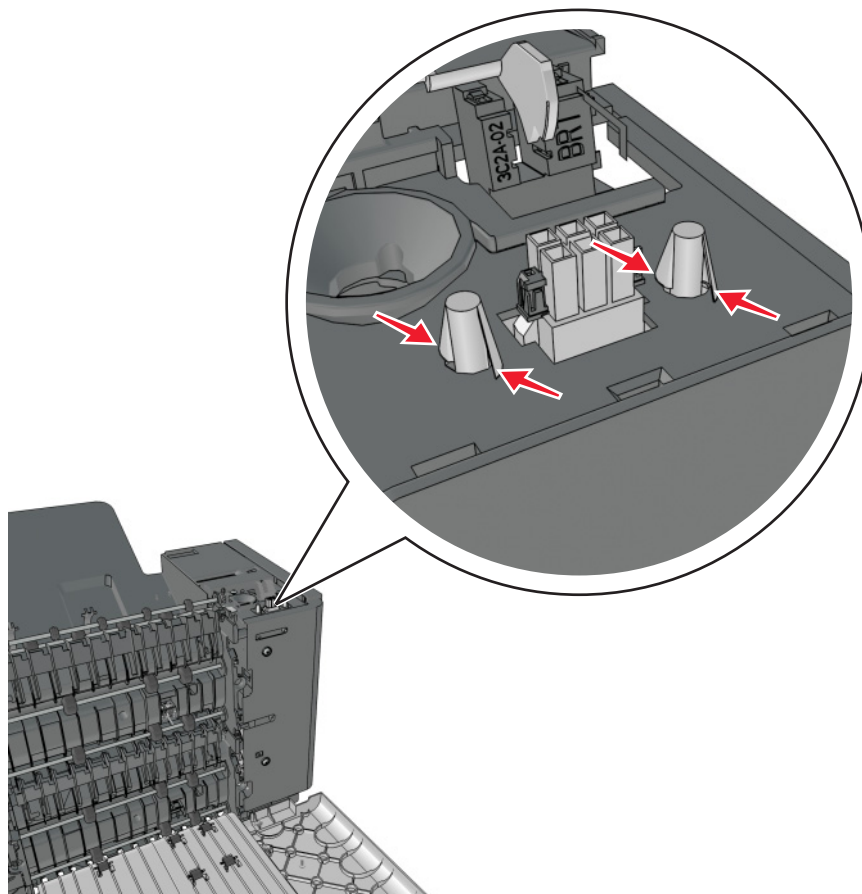
5 Remove the upper interface cable.

HCOE option latch removal

1 Remove the HCOE left cover or HCOE right cover. See **"HCOE left cover removal" on page 670** or **"HCOE right cover removal" on page 669**.

2 Pull the latches off the mailbox, and then remove.

Note: The latch on the opposite side can be removed using the same method shown.
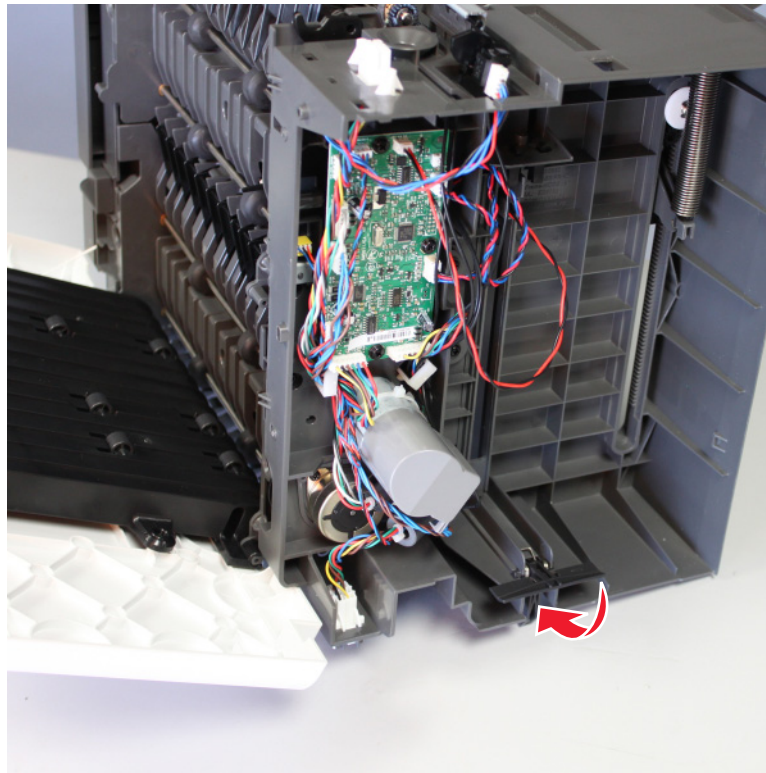
HCOE diverter motor removal

1 Remove the HCOE left cover. See **"HCOE left cover removal" on page 670**.

2 Disconnect the cable (A) from the diverter motor.

3 Remove the two screws (B), and then remove the motor.
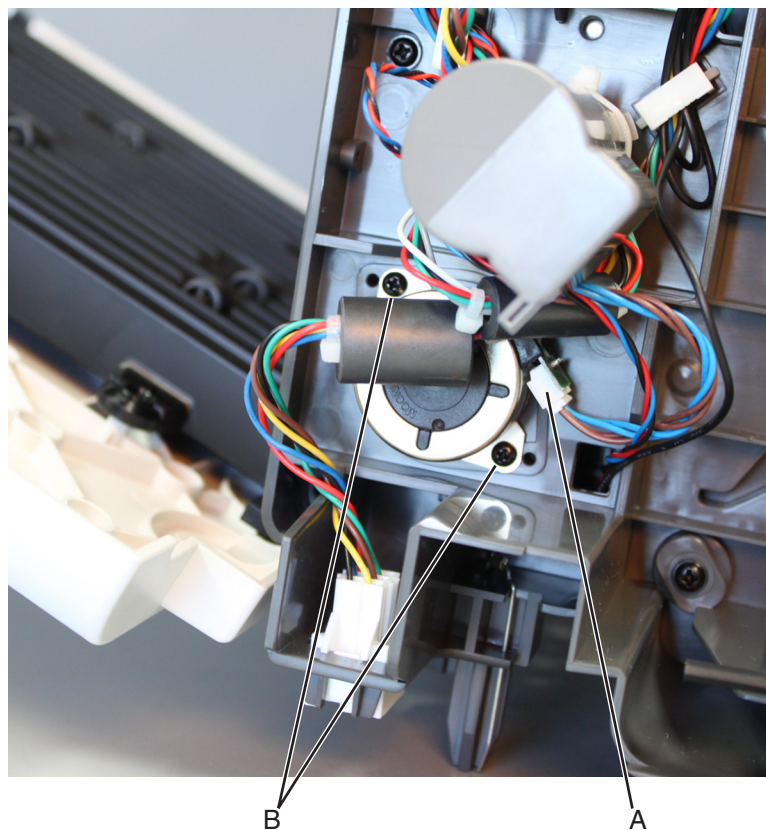
Sensor (HCOE tray HP) removal

1 Remove the HCOE left cover. See .

2 Release the latches (A) securing the sensor to the bracket.

3 Disconnect the cable (B), and then remove the sensor.

HCOE tray spring removal

1 Remove the HCOE left cover. See .

2 Unhook the spring (A) from the HCOE, and remove.

  Note: The spring on the opposite side can be removed using the same method shown.
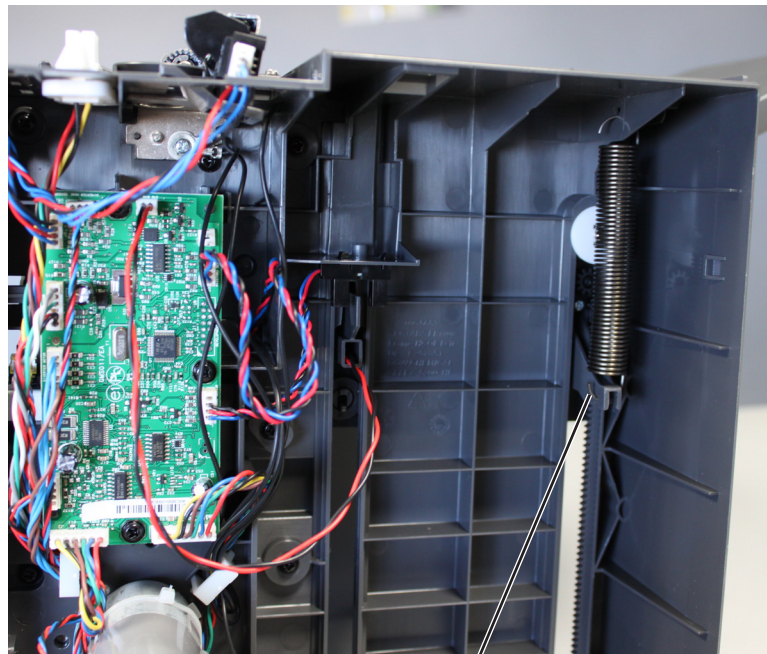
A

HCOE tray pinion removal

1 Remove the HCOE left cover. See **"HCOE left cover removal" on page 670**.

2 Unhook the spring (A) to release the HCOE tray.
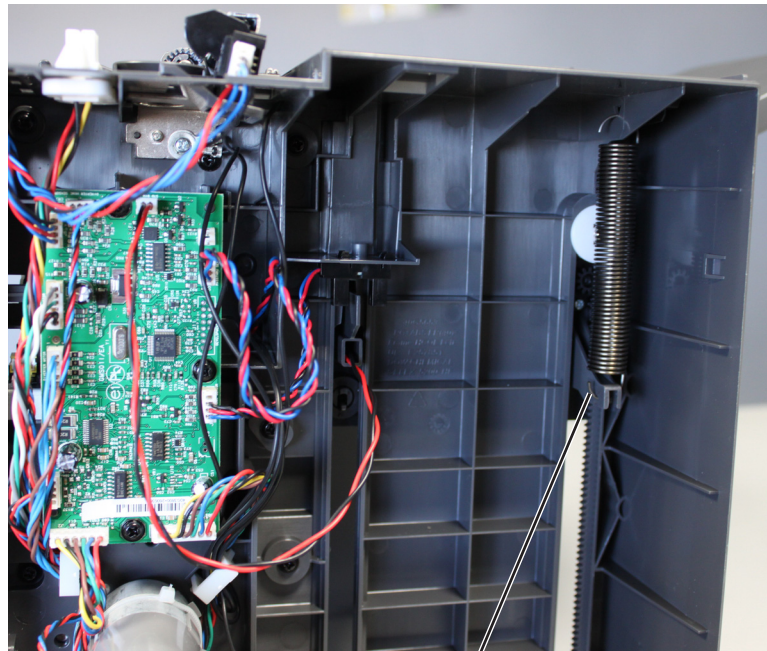
A

3 Dislodge the E-clip (B) to release the pinion. Pull the pinion off its shaft, and remove.

Note: The pinion on the opposite side can be removed using the same method shown.
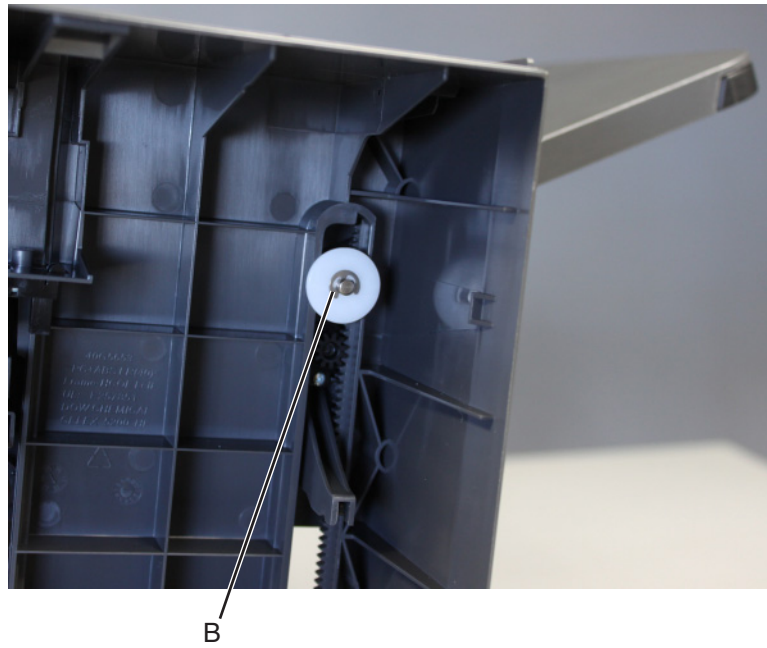
B

Sensor (HCOE rear door interlock) removal

1 Remove the HCOE left cover. See **"HCOE left cover removal" on page 670**.

2 Remove the three screws (A) securing the controller board.

A

Parts removal
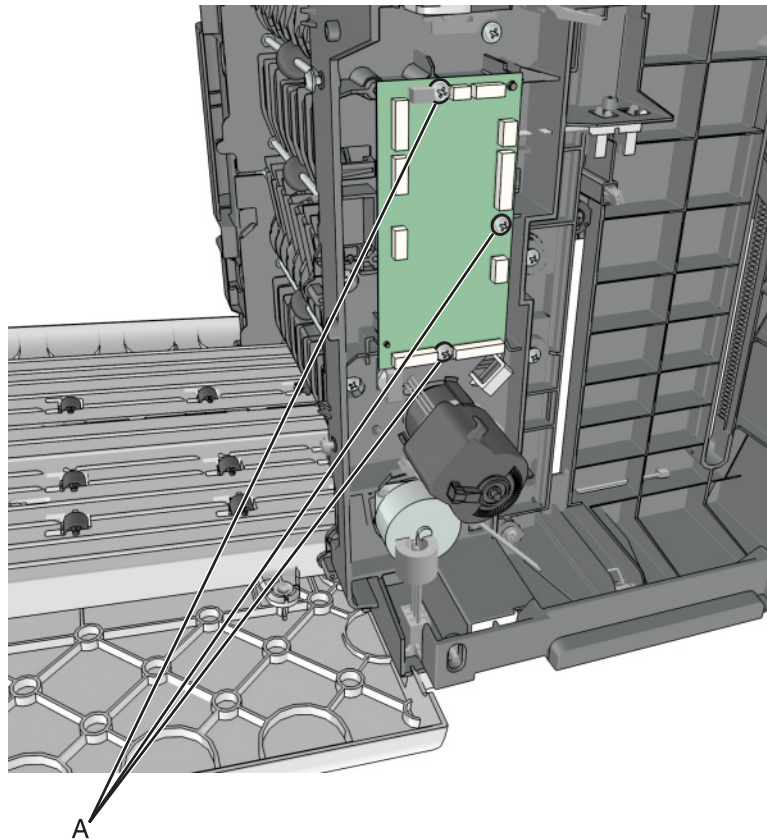
3 Slightly move the board to access the screw (B) underneath it.

B
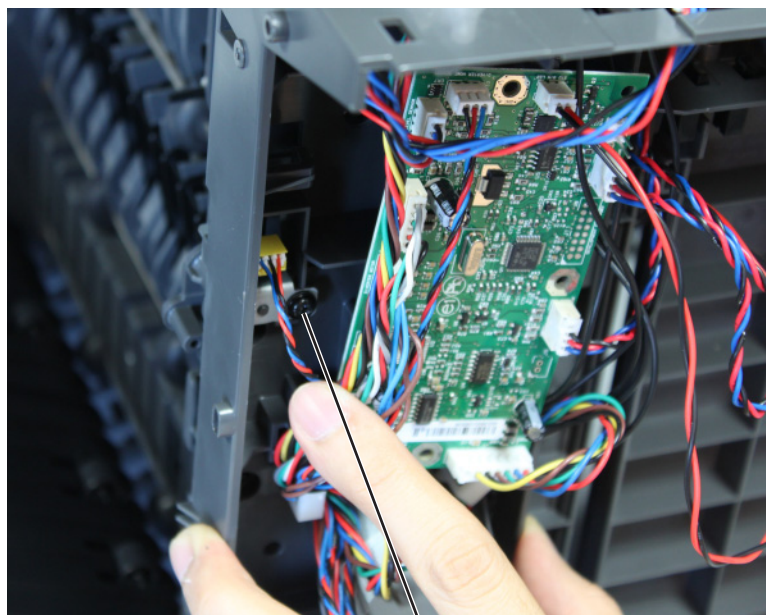
4 Remove the screw (B) and pull away the bracket with sensor.
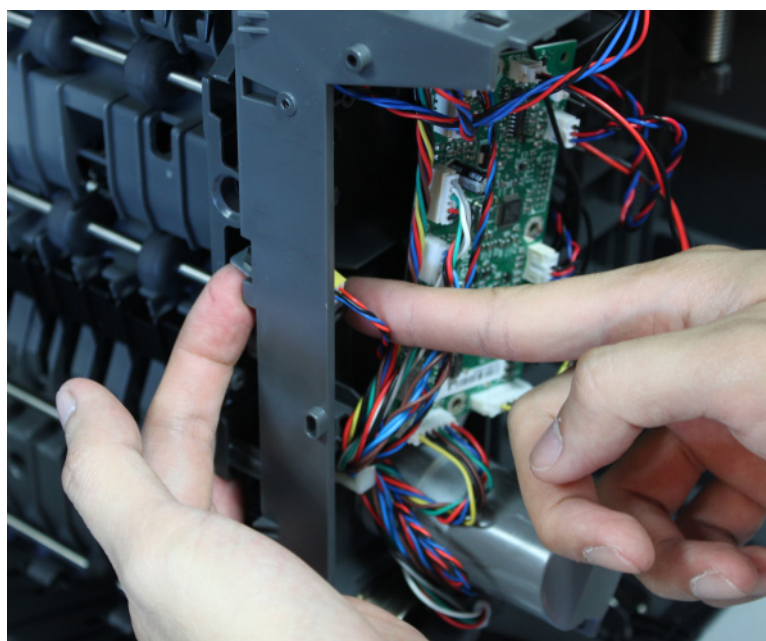
5 Disconnect the cable, remove the mylar cover (C). Release the latches to remove the sensor from the bracket. Pull the sensor off the bracket, and remove.
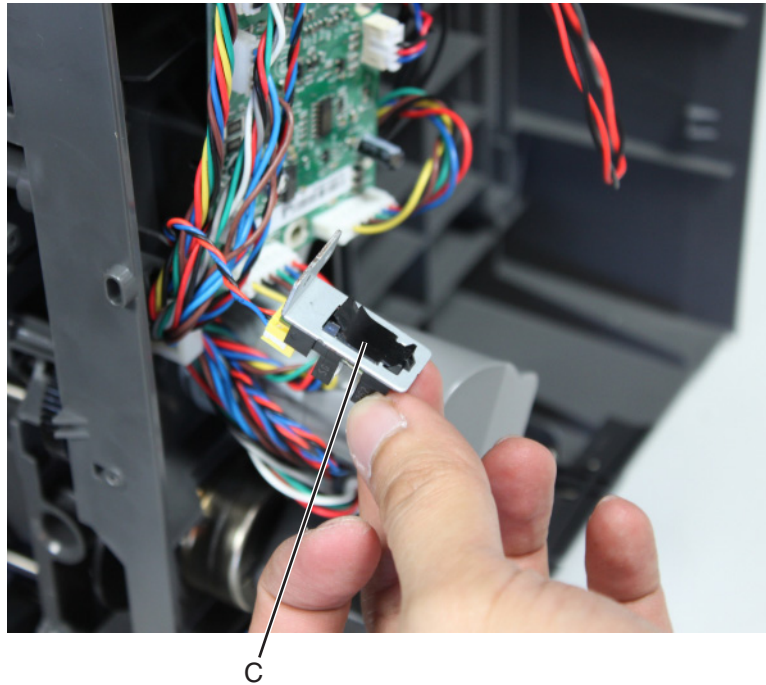
C

HCOE belt tensioner removal

1 Remove the HCOE right cover. See **"HCOE right cover removal" on page 669**.

2 Remove the HCOE latch. See **"HCOE option latch removal" on page 675**.

3 Remove the HCOE tray pinion. See **"HCOE tray pinion removal" on page 679**.

4 Remove the HCOE drive belt. See **"HCOE drive belt removal" on page 683**.

5 Remove the screw (A) from the tensioner.

6 Unhook the spring (B) from the frame, and then remove the tensioner from the frame.
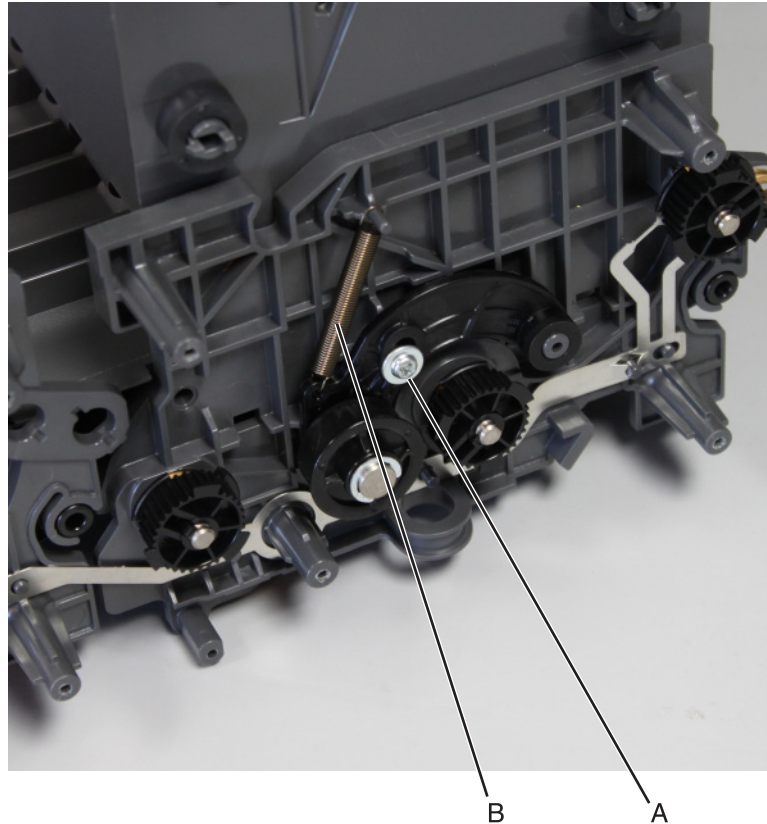
B   A

HCOE drive belt removal

1 Remove the HCOE right cover. See **"HCOE right cover removal" on page 669**.

2 Remove the HCOE latch. See **"HCOE option latch removal" on page 675**.

3 Remove the HCOE tray pinion. See **"HCOE tray pinion removal" on page 679**.

4 Remove the eight screws (A) securing the right frame.
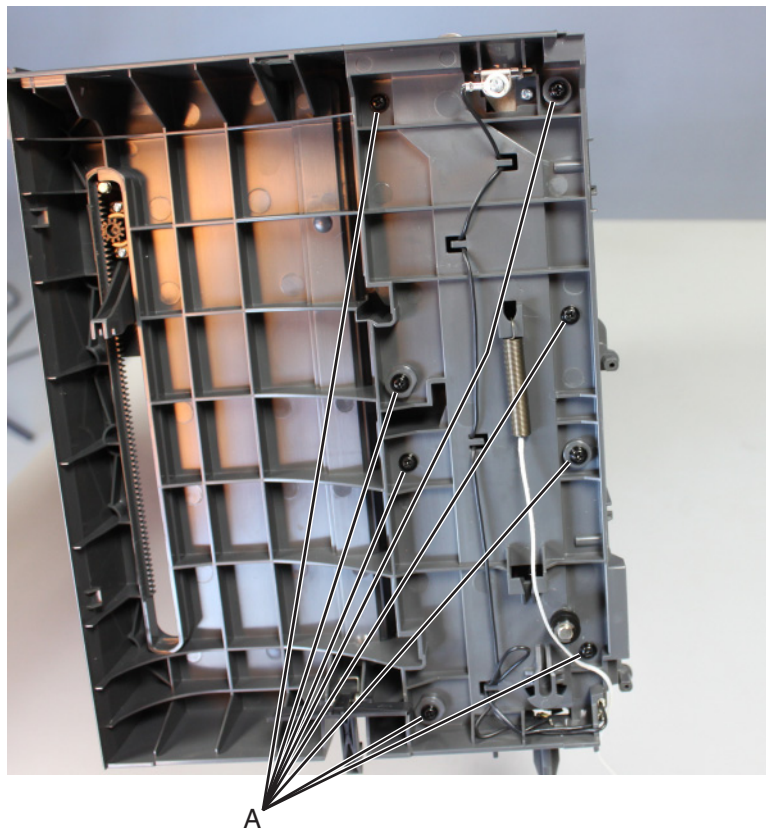
5 Remove the screw (B) securing the rear side of the right frame.
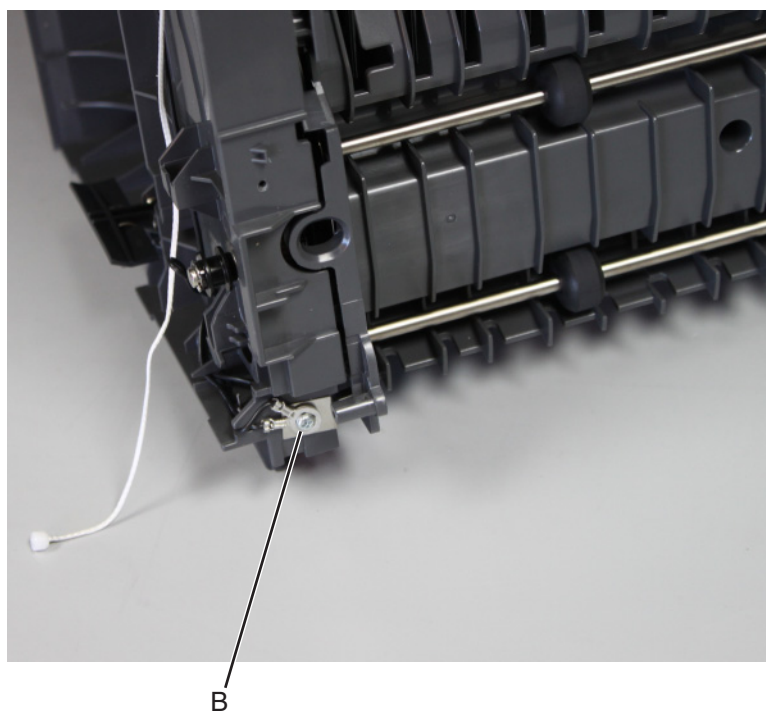
6 Remove the belts from the gear assembly.

Note: Pay attention to the original position of the belts.
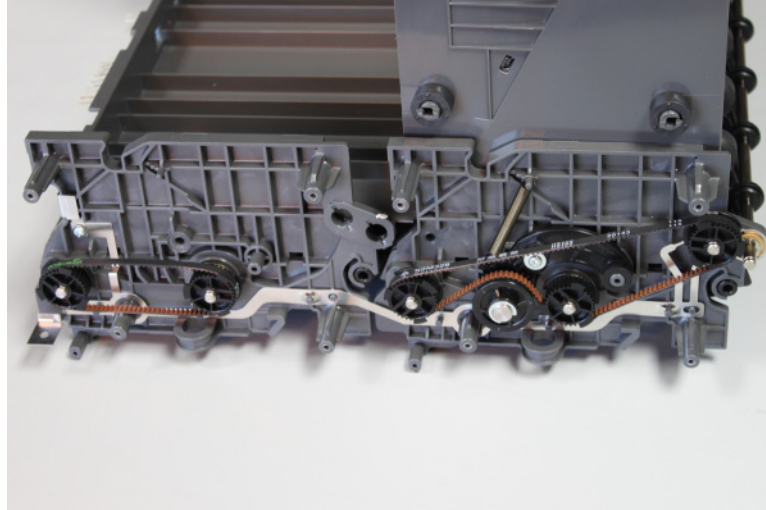
Warning—Potential Damage: Do not lose any dislodged washers.

HCOE diverter plunger assembly removal

1 Remove the HCOE rear door. See **"HCOE rear door removal" on page 666**.

2 Remove the HCOE left cover. See **"HCOE left cover removal" on page 670**.

3 Remove the 10 screws (A) from the inner left frame.
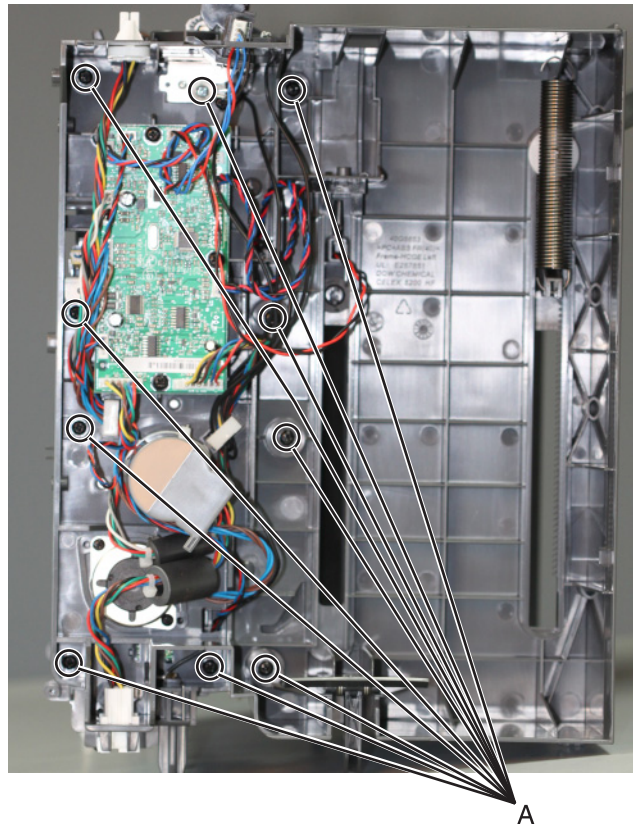
Parts removal

4 Slightly pull away the frame to access the gear assembly underneath it.

5 Remove the two screws (B), and then remove the plunger.

6 Remove the E-clip (C), and then remove the diverter cam.
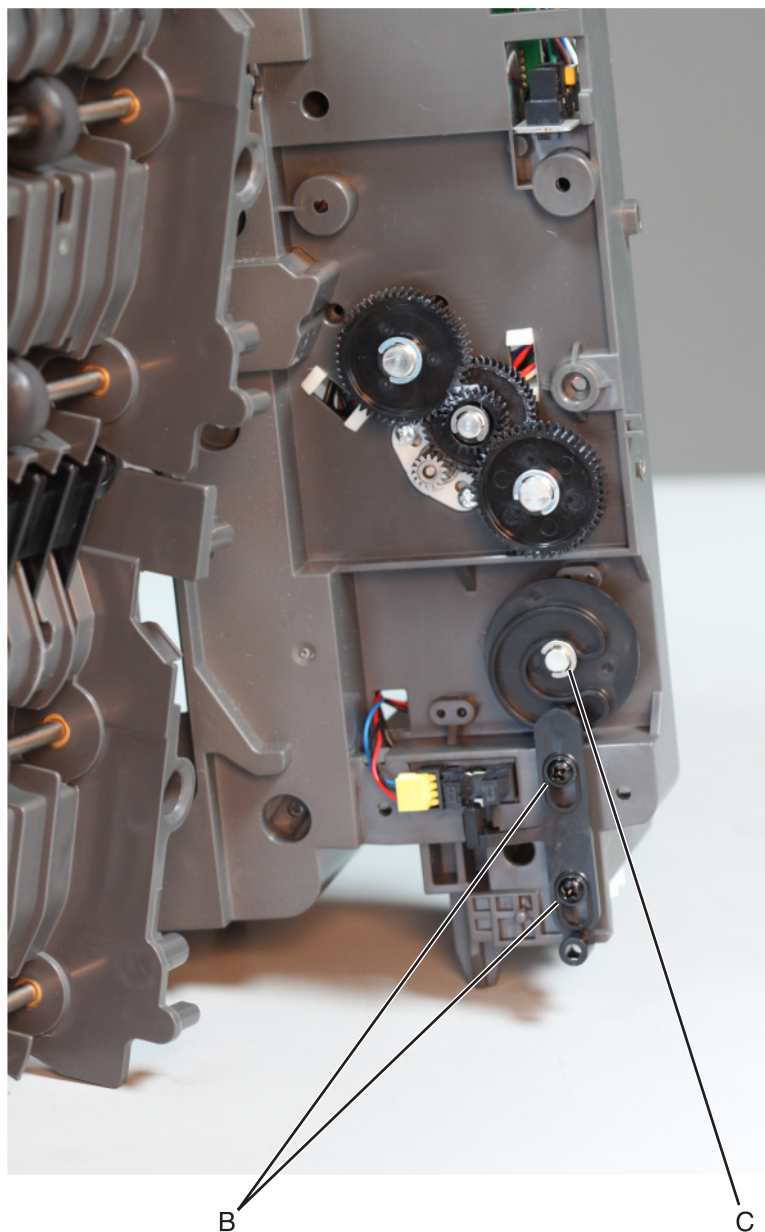
B   C

HCOE main drive gear assembly removal

1 Remove the HCOE rear door. See **"HCOE rear door removal" on page 666**.

2 Remove the HCOE left cover. See **"HCOE left cover removal" on page 670**.

3 Remove the ten screws (A) from the inner left frame.
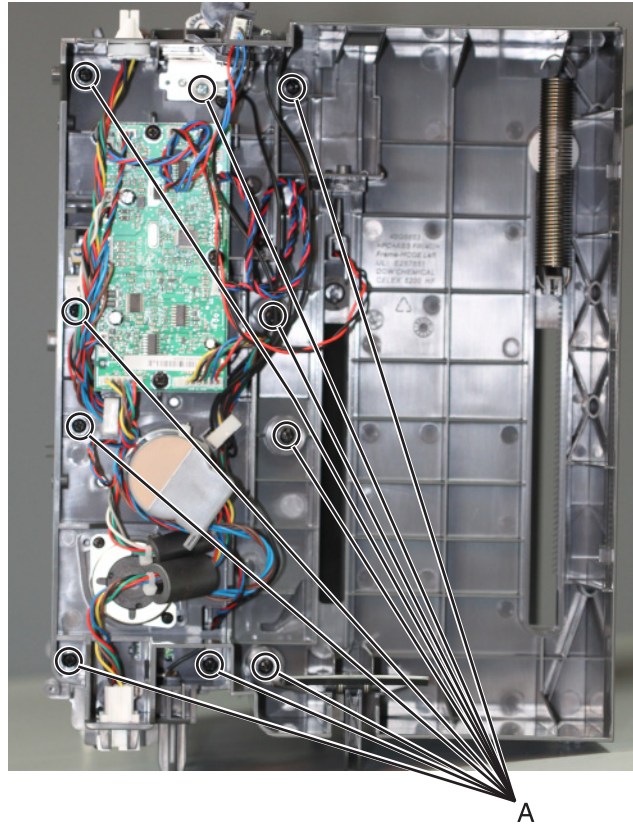
4 Slightly pull away the frame to access the gear assembly underneath it.

5 Remove the three E-clips securing the gears (B).

B
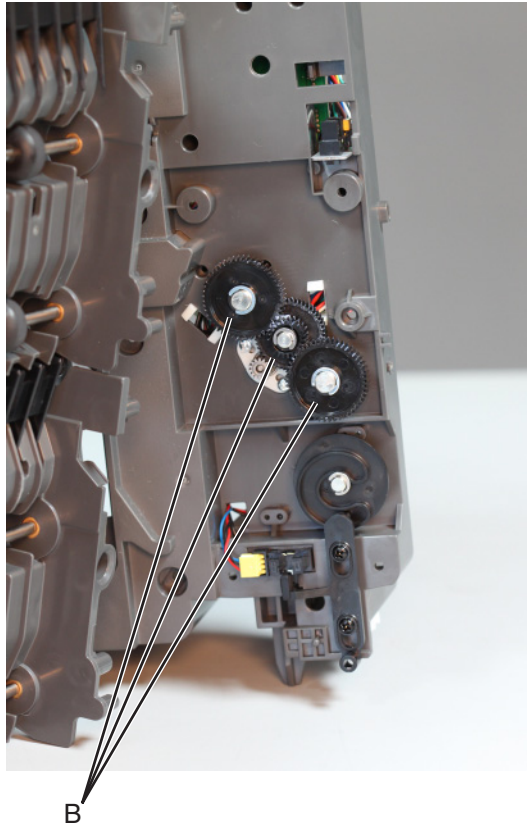
6 Pull off the gears, and remove.

HCOE main motor removal

1 Remove the HCOE rear door. See **"HCOE rear door removal" on page 666**.

2 Remove the HCOE left cover. See **"HCOE left cover removal" on page 670**.

3 Disconnect the main motor cable from the controller board.

4 Remove the 10 screws (A) from the inner left frame.
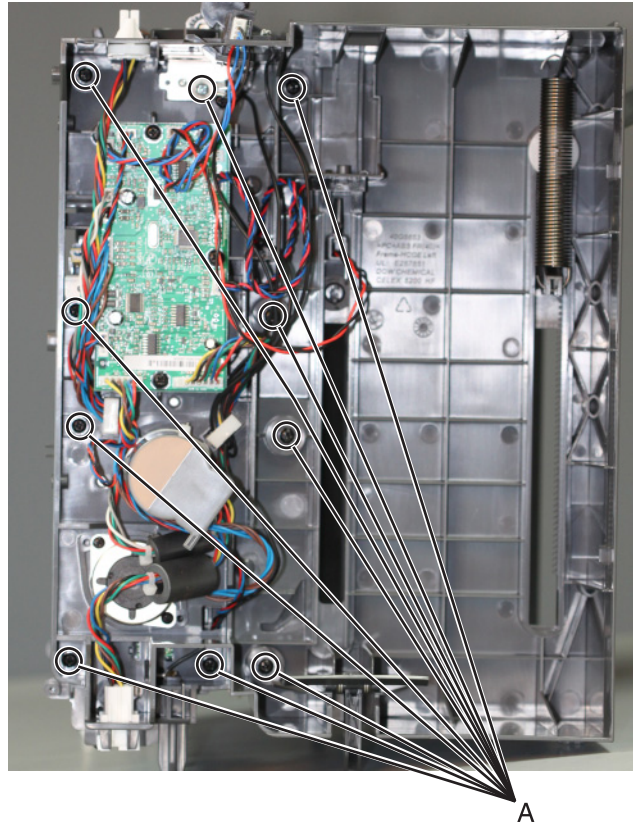
5 Slightly pull away the frame to access the parts underneath it.

6 Remove the three E-clips (B) securing the gears.

7 Remove the two screws (C) securing the main motor to the frame.
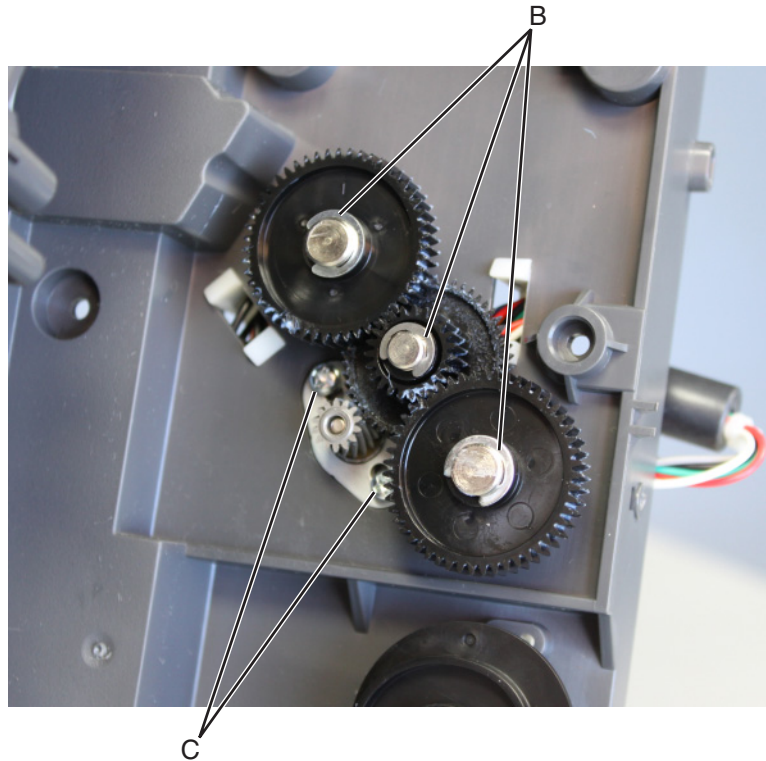
8 Pull the motor off the frame.

Sensor (HCOE diverter HP) removal

1 Remove the HCOE rear door. See **"HCOE rear door removal" on page 666**.

2 Remove the HCOE left cover. See **"HCOE left cover removal" on page 670**.

3 Remove the 10 screws (A) from the inner left frame.
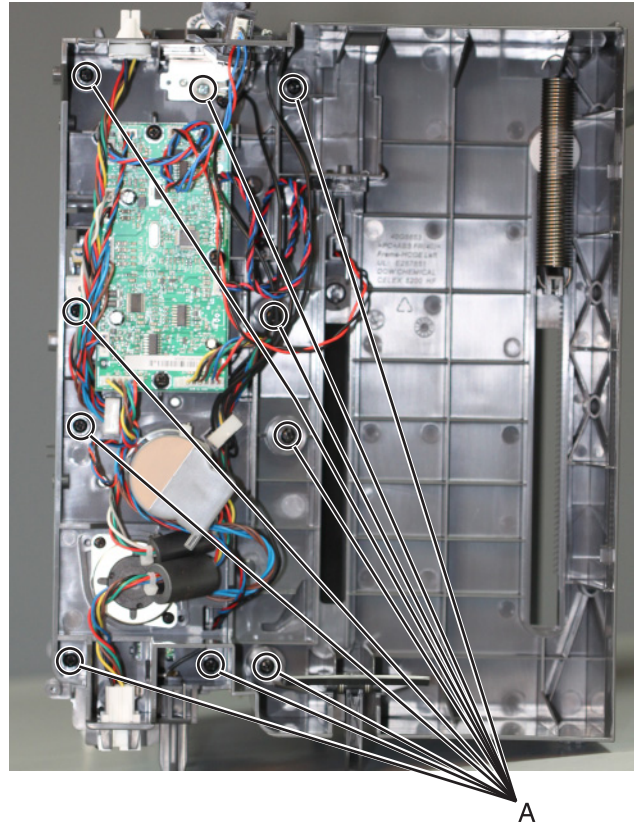
4 Slightly pull away the frame to access the parts underneath it.

5 Disconnect the sensor cable (B).
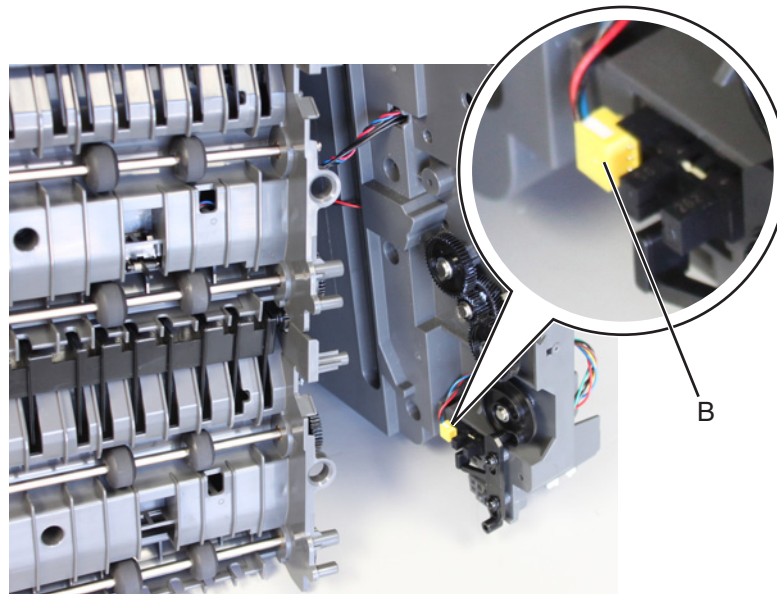
6 Release the latches securing the sensor to the frame, and then remove the sensor.

HCOE top diverter spring removal

1 Remove the HCOE rear door. See **"HCOE rear door removal" on page 666**.

2 Remove the HCOE left cover. See **"HCOE left cover removal" on page 670**.

3 Remove the 10 screws (A) from the inner left frame.
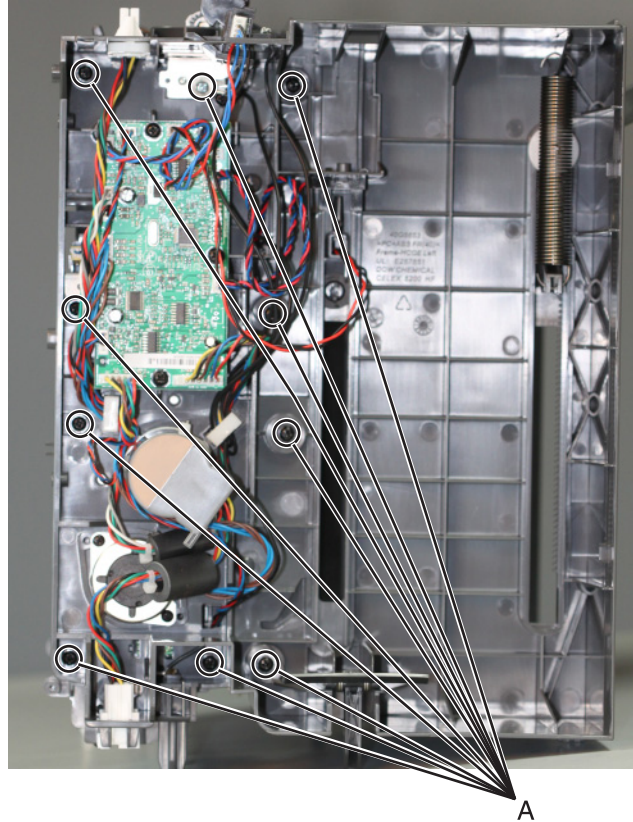
4 Slightly pull away the frame to access the parts underneath it.

5 Unhook the lower end (B) to release, and then remove the spring.
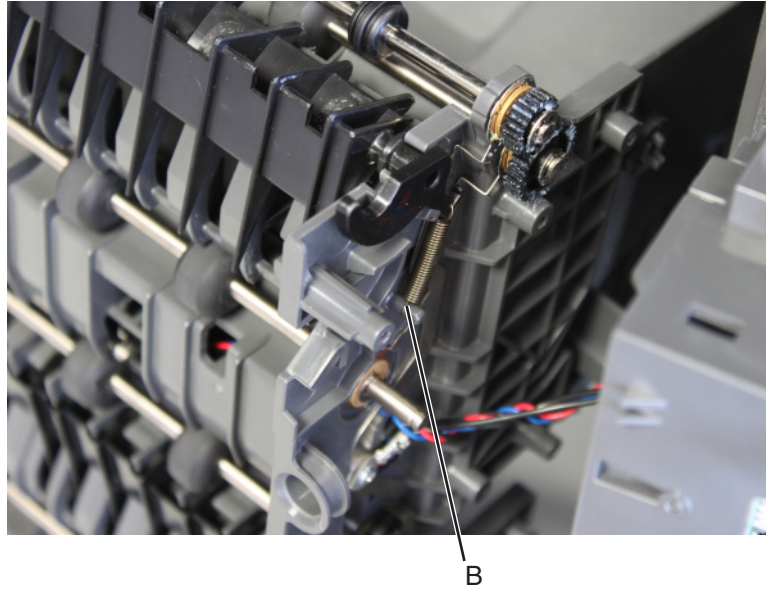
B

HCOE top diverter removal

1 Remove the HCOE rear door. See **"HCOE rear door removal" on page 666**.

2 Remove the HCOE left cover. See **"HCOE left cover removal" on page 670**.

3 Remove the 10 screws (A) from the inner left frame.

A
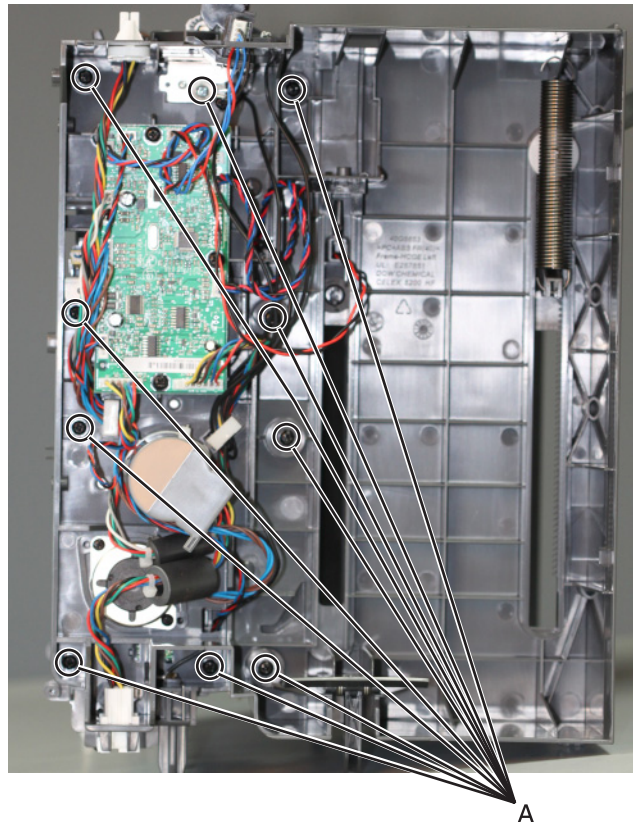
Parts removal

4 Slightly pull away the frame to access the parts underneath it.

5 Unhook the lower end (B) of the spring.

B
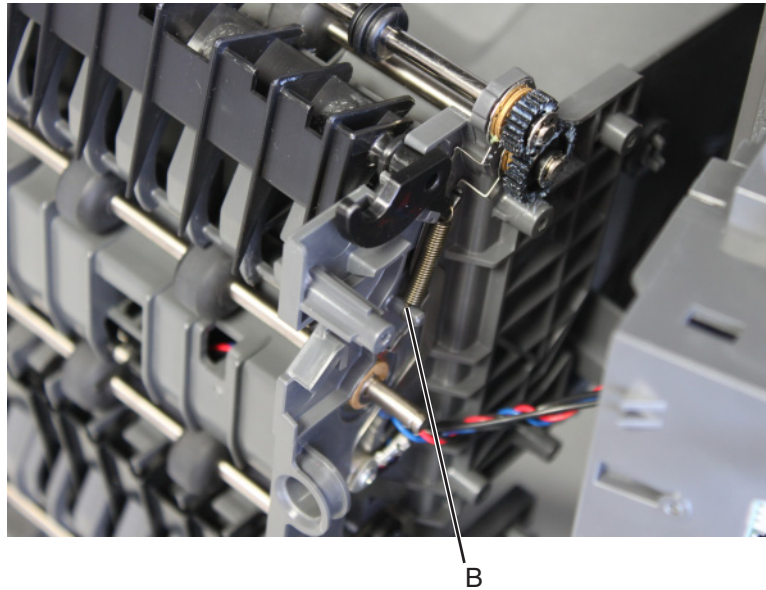
6 Pry the right side of the diverter to release, and then remove the diverter.
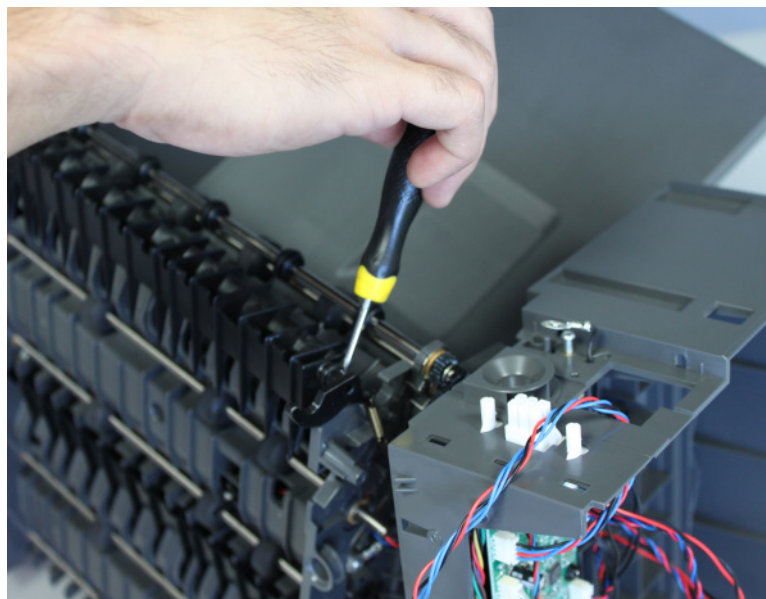
HCOE tray shaft removal

Note: This is not a FRU.

1 Remove the HCOE left cover. See **"HCOE rear door removal" on page 666**.

2 Remove the HCOE right cover. See **"HCOE left cover removal" on page 670**.

3 Remove the HCOE tray pinion. See **"HCOE tray pinion removal" on page 679**.

4 Pull the shaft off the output bin, and remove.

HCOE bin removal

1 Remove the HCOE left cover. See **"HCOE left cover removal" on page 670**.

2 Remove the HCOE right cover. See **"HCOE right cover removal" on page 669**.

3 Remove the HCOE tray pinion. See **"HCOE tray pinion removal" on page 679**.

4 Remove the HCOE tray shaft. See **"HCOE tray shaft removal" on page 694**.

5 Disconnect the cable J10 from the controller board.

6 Remove the 10 screws (A), and then remove the inner left frame.
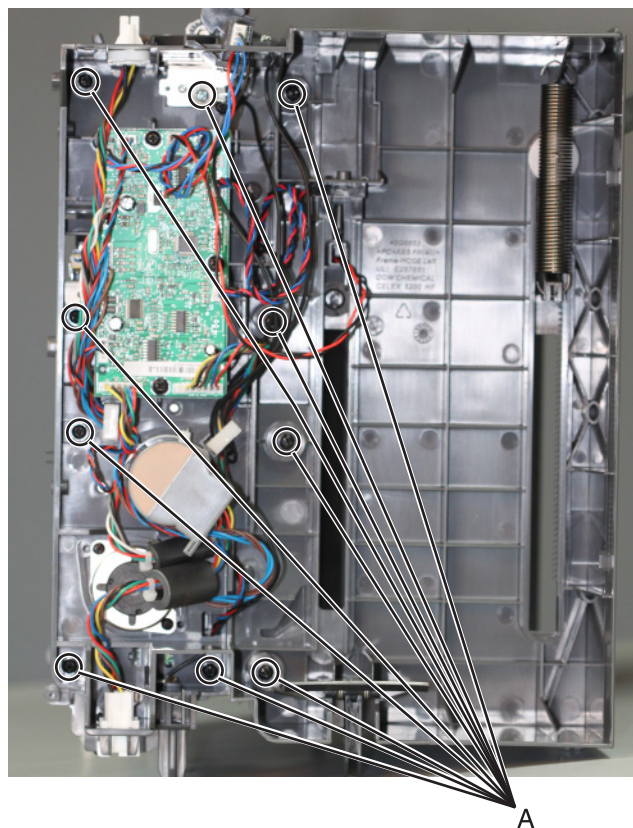
7 Remove the eight screws (B) from the right frame.
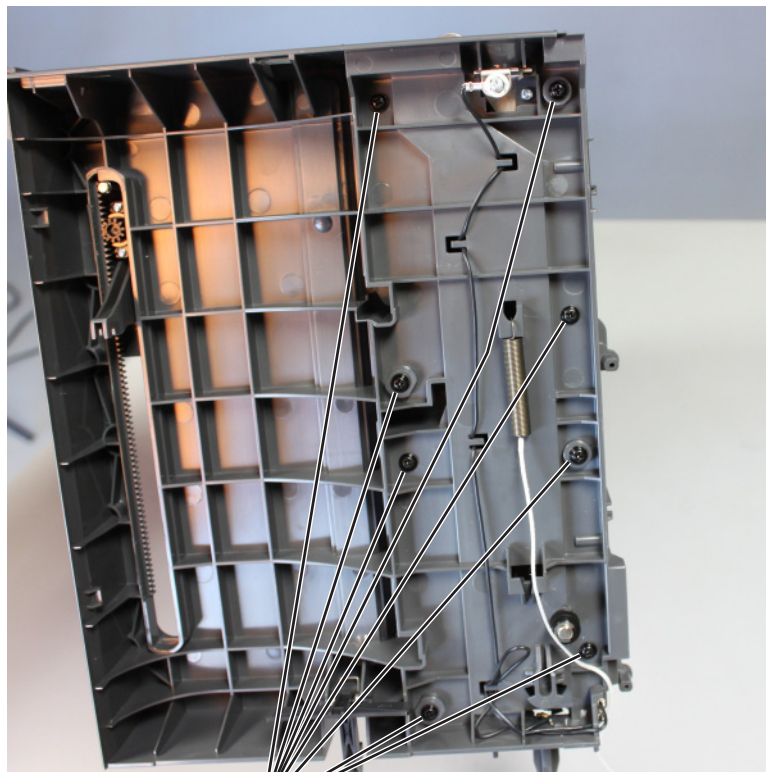
B

8 Remove the screw (C) securing the rear side of the right frame, and then remove the frame.
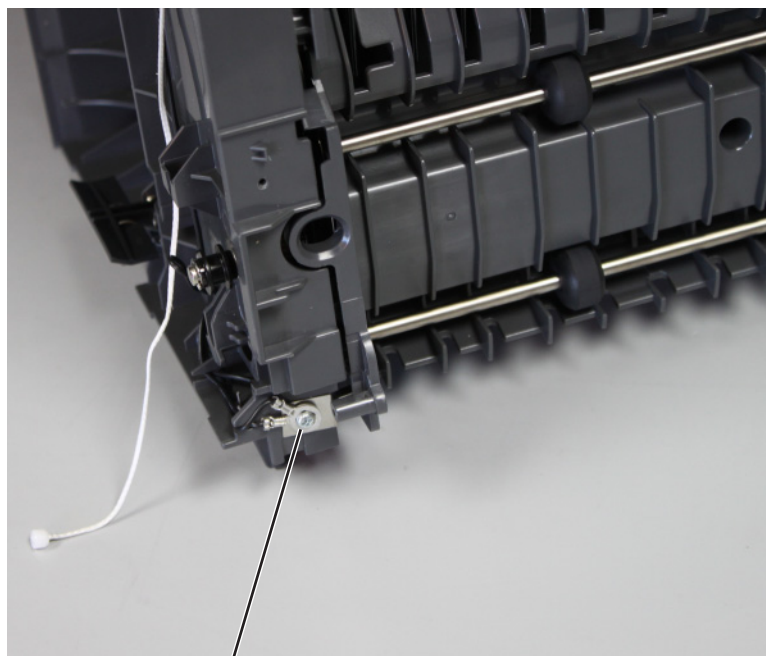
C

Parts removal

9 Disengage the bin from the right and left inner frames, and then remove the bin.
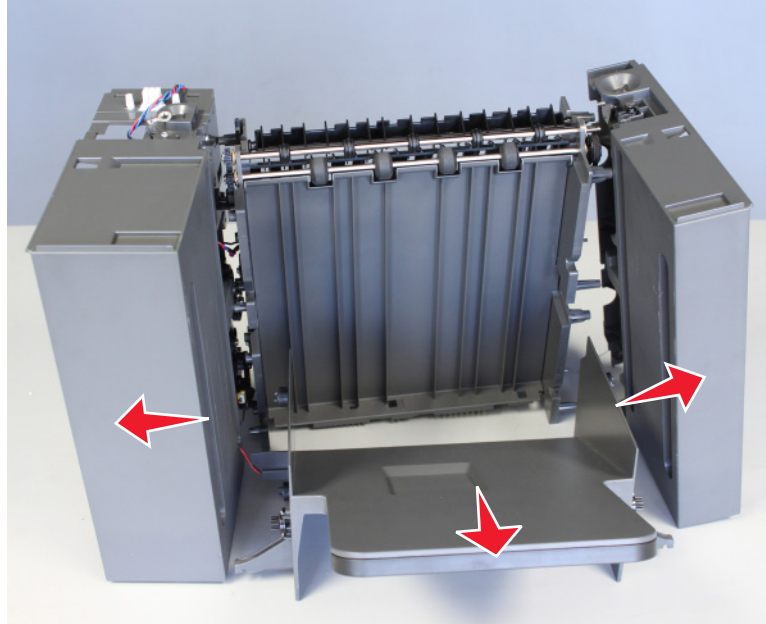
Sensor (HCOE pass through) removal

1 Remove the HCOE left cover. See **"HCOE left cover removal" on page 670**.

2 Remove the HCOE right cover. See **"HCOE right cover removal" on page 669**.

3 Remove the HCOE tray pinion. See **"HCOE tray pinion removal" on page 679**.

4 Remove the HCOE tray shaft. See **"HCOE tray shaft removal" on page 694**.

5 Remove the HCOE tray. See **"HCOE bin removal" on page 695**.

6 Disconnect the sensor cable J3 from the controller board.

7 Remove the two screws from the rear (A).
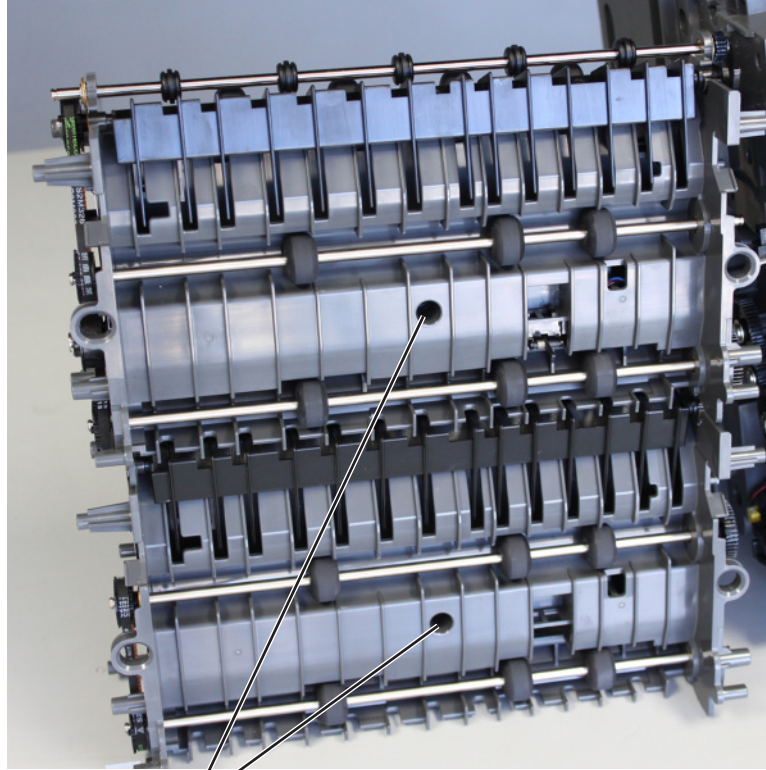
A

8 Release the latches (B) securing the sensor.

B

Parts removal
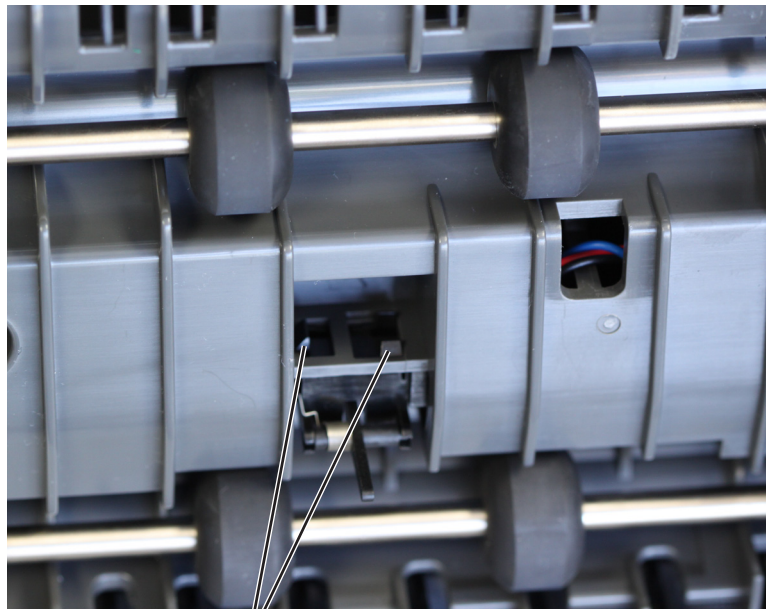
9 Open the cover on the other side to access the sensor underneath it.
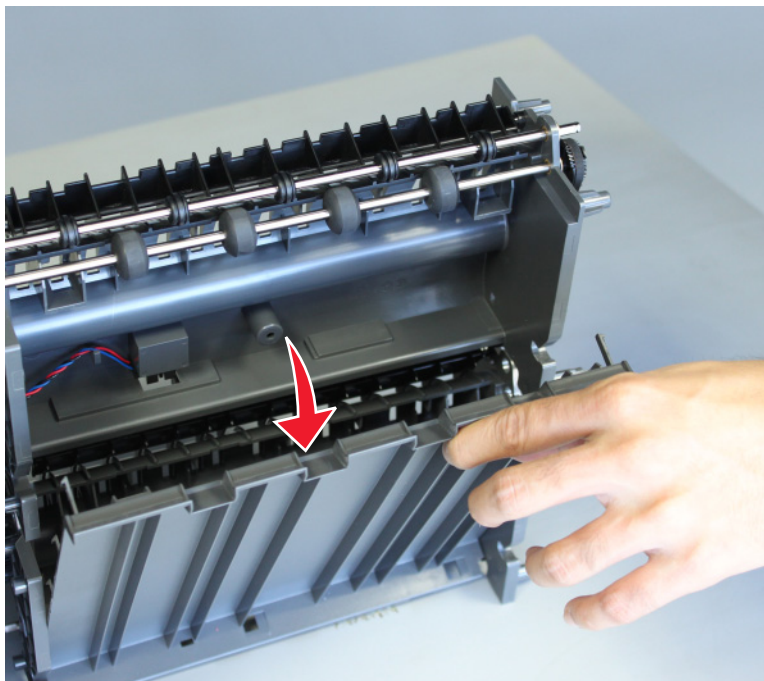
10 Route the cables off the holes and guides, and then remove the sensor.

Note: Pay attention to the original routing of the cable.
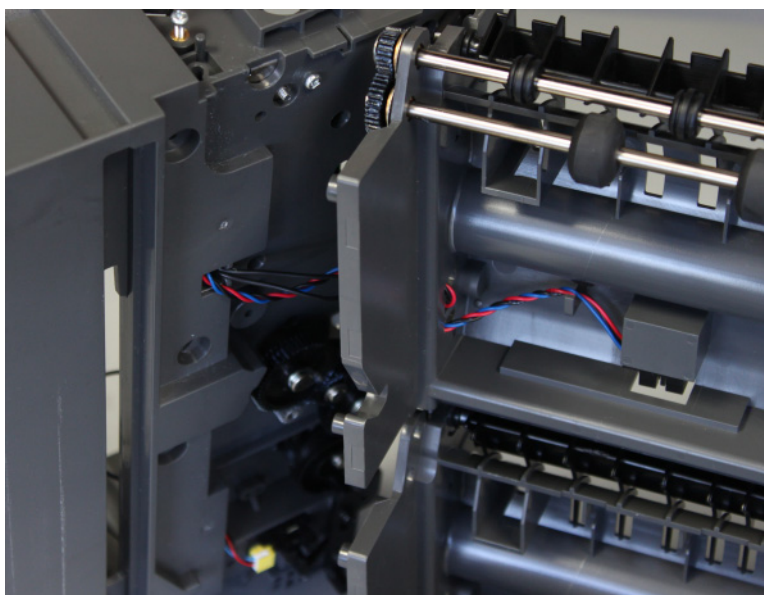
Staple finisher option removals

Staple finisher option removal

1 Press the latches to release.
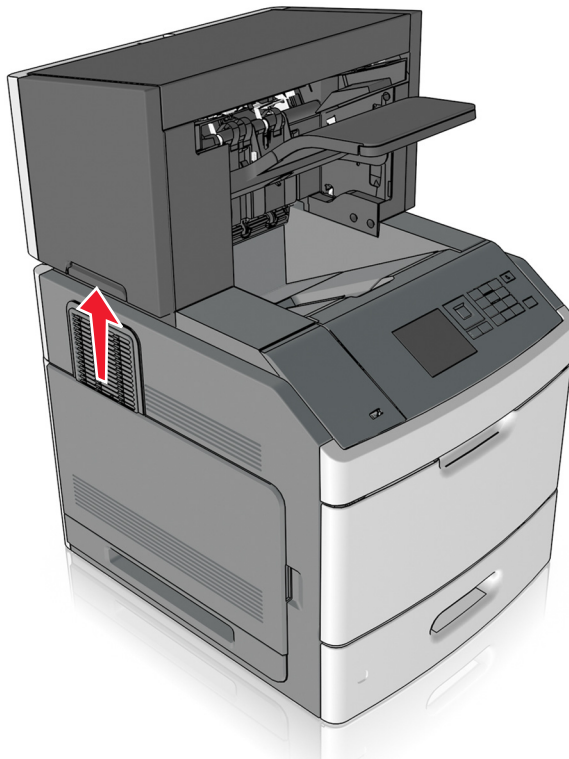
2 Lift the option off the printer.

Stapler rear door removal

1 Open the rear door, and detach the string (A) from the door.

A

Note: Fasten the string end (B) to the rear side to prevent it from recoiling into the interior of the finisher.
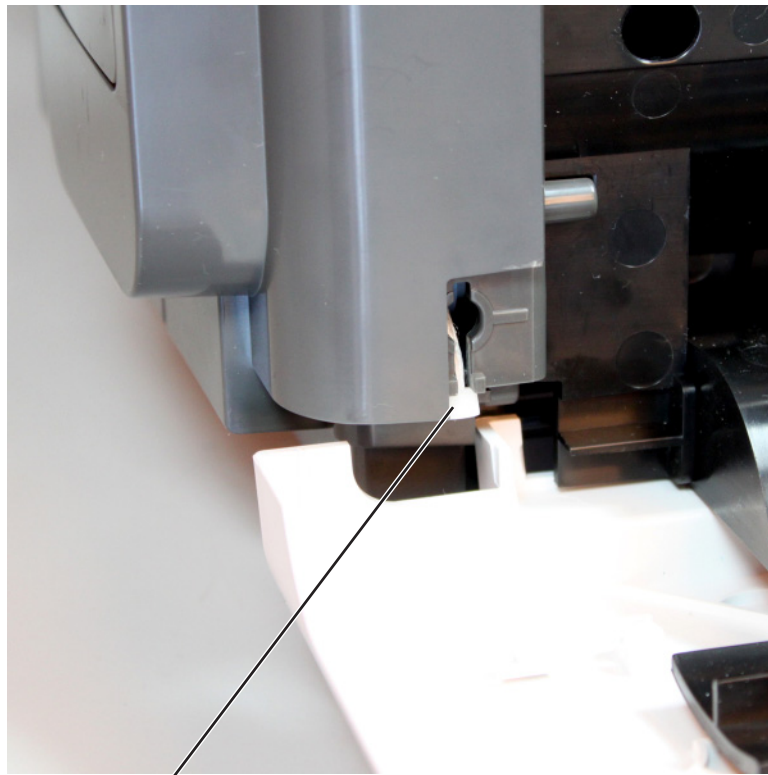
B

2 Position the door at an angle approximately 90 degrees from the stapler. Release the right hinge of the door first (1), then move the door to the right (2) to release the left hinge.

Parts removal

3 Remove the rear door.

Stapler right cover removal

1 Open the rear door, then detach the string from the rear door.

A

Note: Fasten the string end (B) to the rear side to prevent it from recoiling into the interior of the finisher.

B
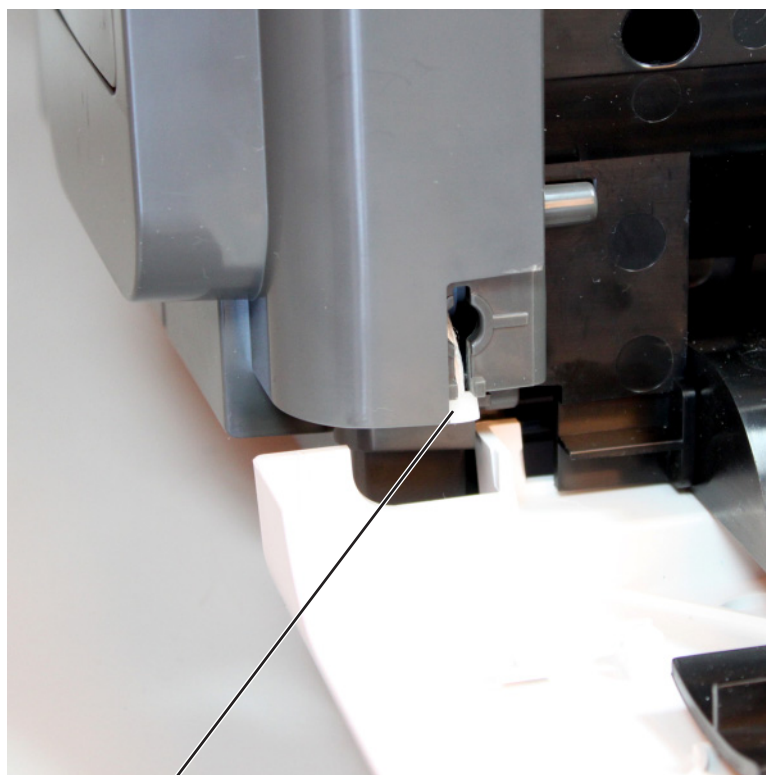
2 Remove the two screws (C), then remove the right cover.

C

Parts removal

Stapler door close limit switch removal

1 Remove the stapler left cover. See **"Stapler left cover removal" on page 710**.

2 Remove the stapler right cover. See **"Stapler right cover removal" on page 704**.

3 Remove the stapler top cover. See **"Stapler top cover removal" on page 715**.

4 Remove the four screws (A) securing the stapler carriage frame.
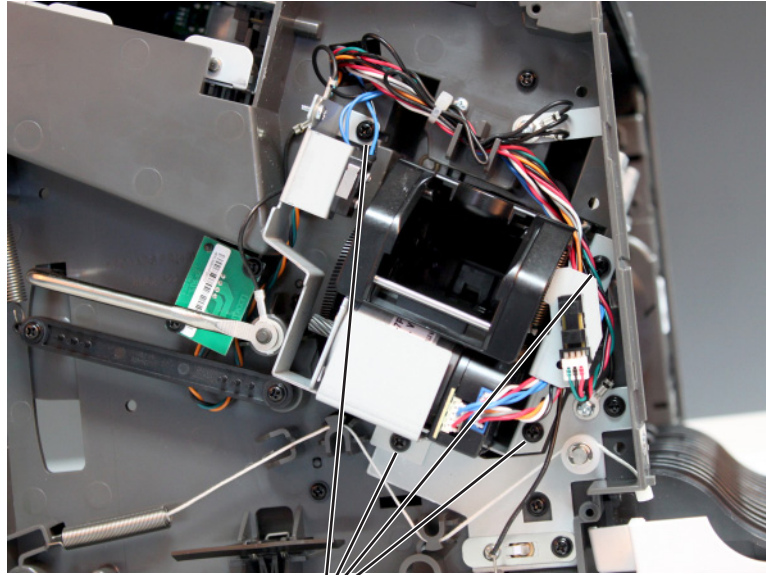
5 Disconnect the cables (B) from the stapler carriage assembly.

6 Lift the stapler carriage frame, then remove the two screws from the stapler carriage assembly (C).
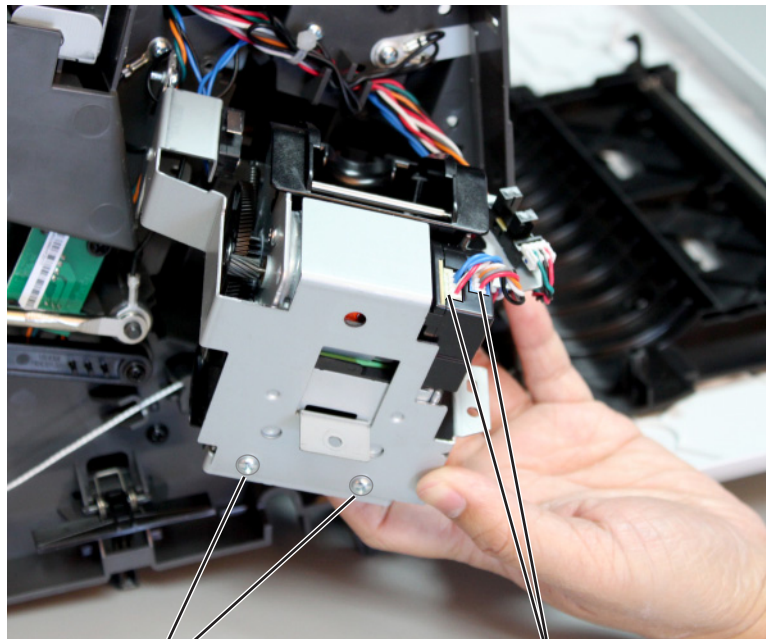
Parts removal

7 Lift the stapler carriage to access the screws securing the limit switch.

8 Remove the two screws (D) securing the limit switch.

D
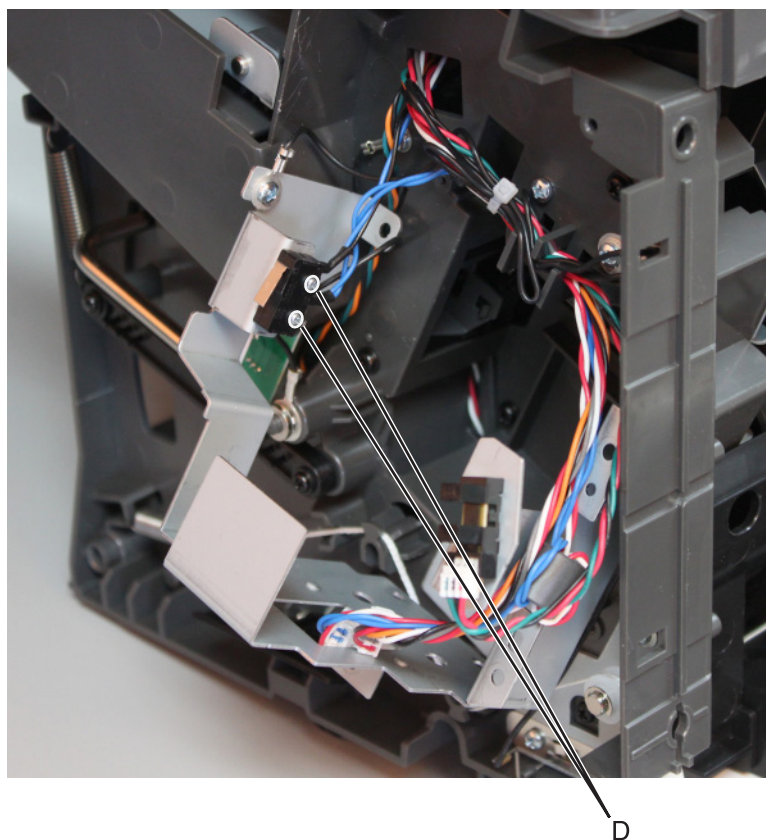
9 Disconnect the cable J7 from the controller board.

10 Route the cable off the stapler, and remove the stapler door close limit switch.

    Note: Pay attention to the original routing of the cables.

Sensor (cartridge door interlock) removal

1 Remove the stapler right cover. See .

2 Disconnect the cable (A) from the sensor.

3 Release the latches from the stapler assembly frame, then remove the sensor (B).

B   A
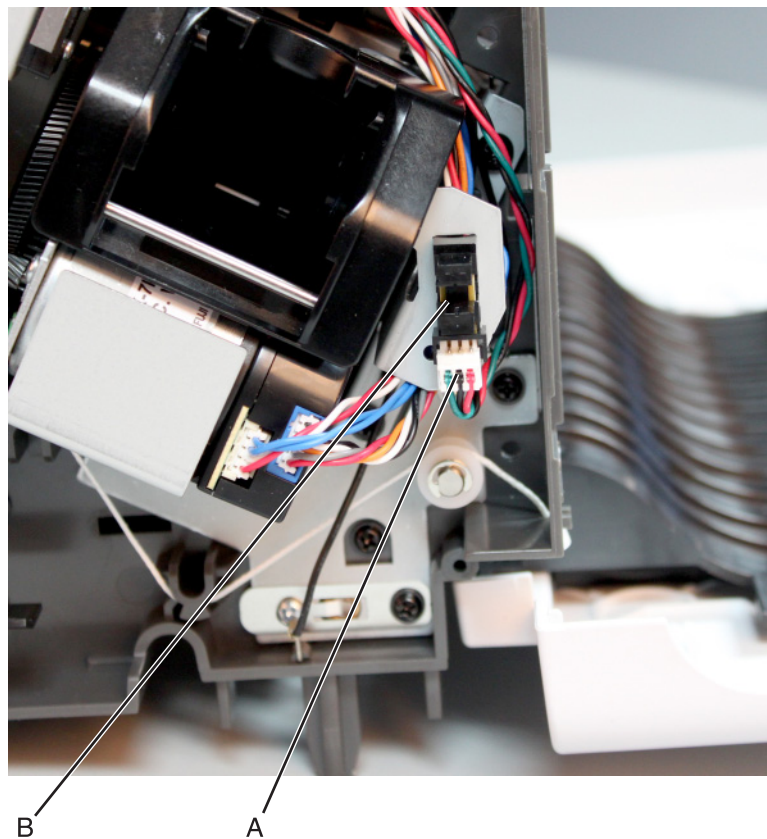
Stapler carriage assembly removal

1 Remove the stapler right cover. See **"Stapler right cover removal" on page 704**.

2 Remove the four screws (A) securing the stapler carriage frame.

A
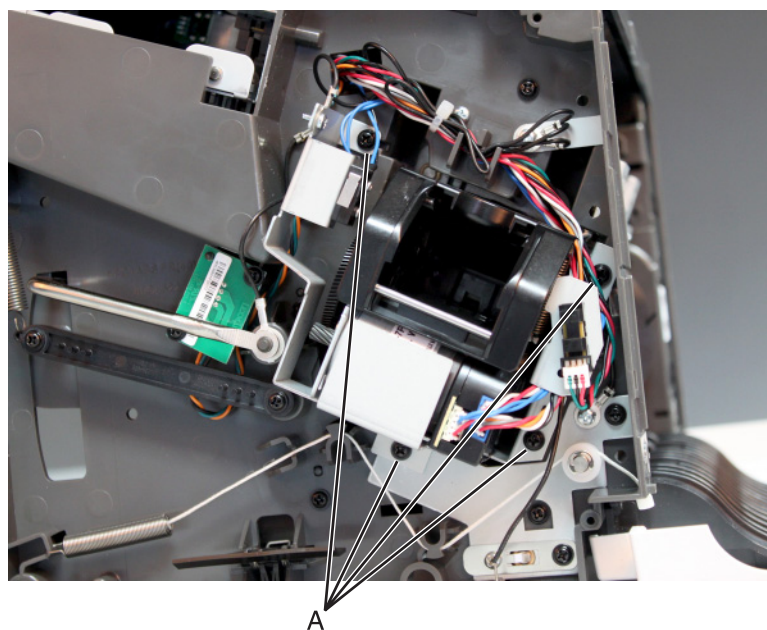
Parts removal

3 Disconnect the two cables (B) from the stapler carriage assembly.

4 Lift the stapler carriage frame, then remove the two screws (C) from the stapler carriage assembly.

C   B
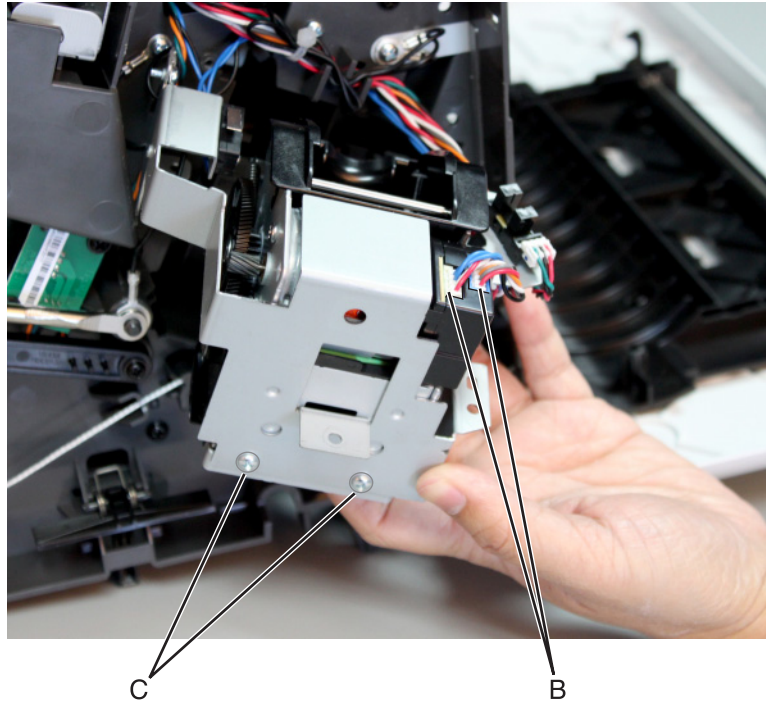
5 Remove the stapler carriage assembly.

Stapler left cover removal

Note: This is not a FRU.

1 Open the rear door, then detach the string (A) from the rear door.

A

Installation note: Fasten the string end (B) to the rear side to prevent it from recoiling into the interior of the finisher.

B
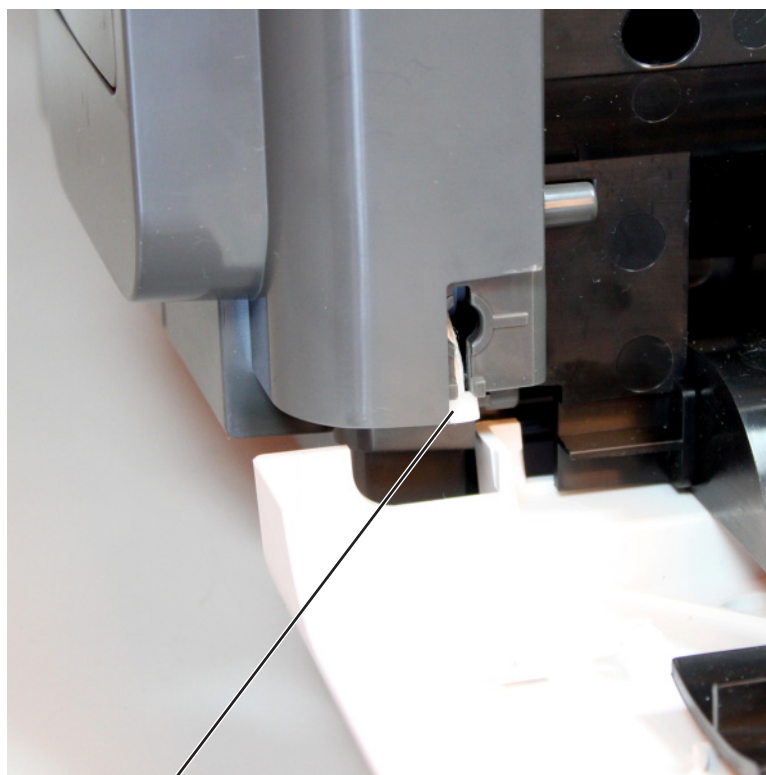
2 Remove the two screws (C), then remove the left cover.

C
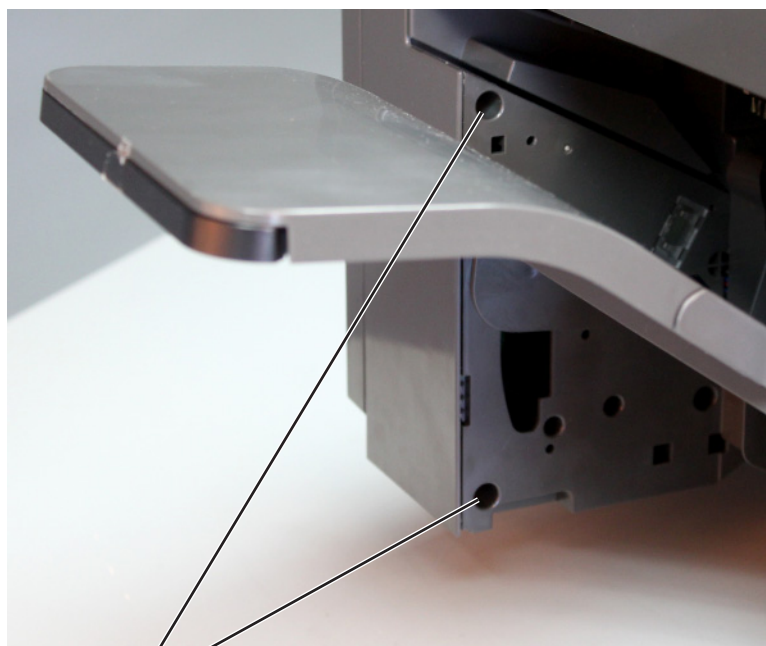
Stapler cartridge access door removal

Open the access door, then pull it off the stapler right cover.

A

Sensor (throat media present) removal

1 Remove the stapler right cover. See .

2 Remove the stapler top cover. See .

3 Remove the four screws (A) securing the stapler carriage frame. Move the stapler carriage assembly out of the way to access the parts underneath it.

A

4 Release the latches (B) securing the sensor.

B

Parts removal

5 Disconnect the cable (C), and remove the sensor.

Installation note: Make sure the sensor is correctly installed onto the frame. Push the sensor until it is securely latched onto the frame.

Stapler top cover removal

1 Remove the stapler left cover. See **"Stapler left cover removal" on page 710**.

2 Remove the stapler right cover. See **"Stapler right cover removal" on page 704**.

3 Remove the two screws (A) from the left side of the option.
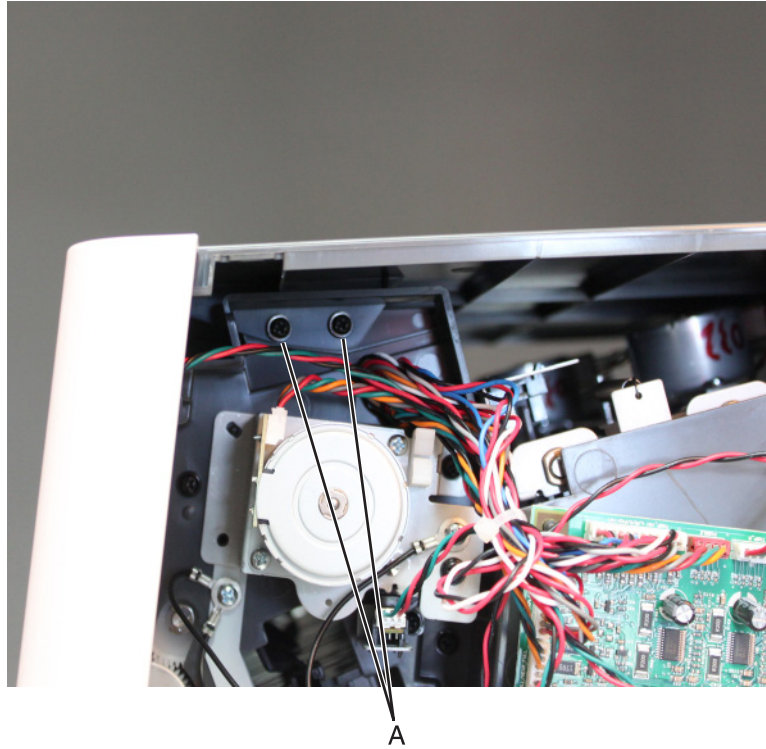
4 Remove the two screws (B) from the right side of the option.

B
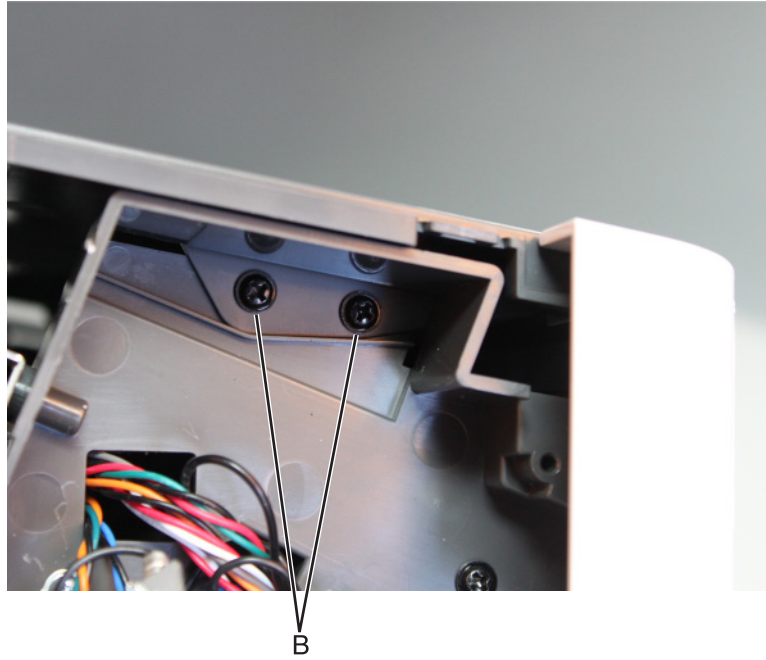
5 Remove the stapler top cover.

Stapler spring with string removal

1 Open the rear door, and detach the string (A).

A

2 Remove the stapler right cover. See **"Stapler right cover removal" on page 704**.

3 Remove the spring (B) with string.

Installation note: Pay attention to the original position of the string. The string on the pulley is wound clockwise.

B

Parts removal
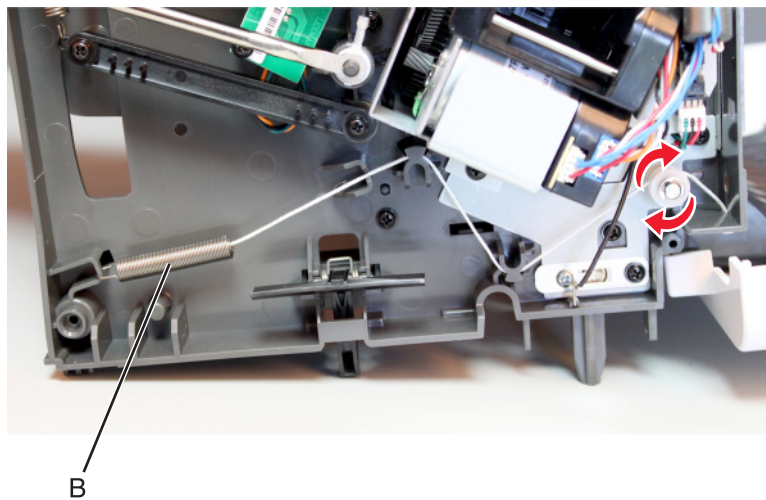
Stapler option latch removal

1 Remove the stapler left cover or stapler right cover. See **"Stapler left cover removal" on page 710** or **"Stapler right cover removal" on page 704**.

2 Pull the latch off the machine.
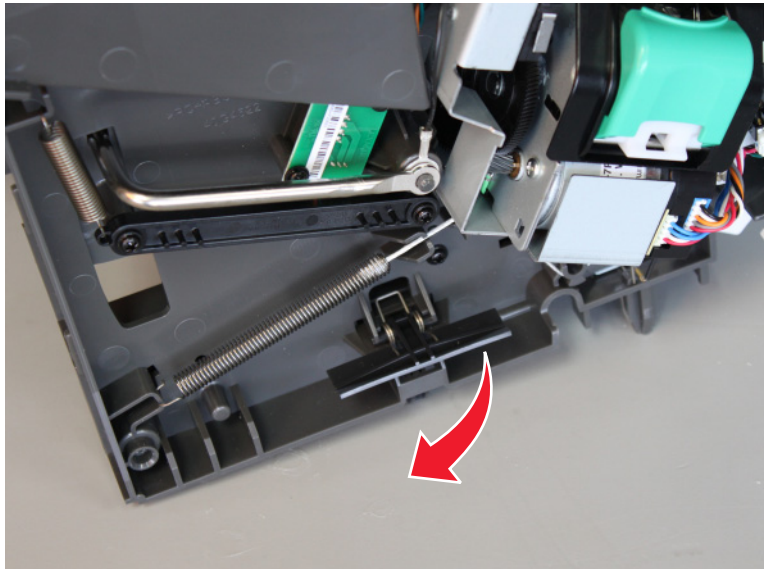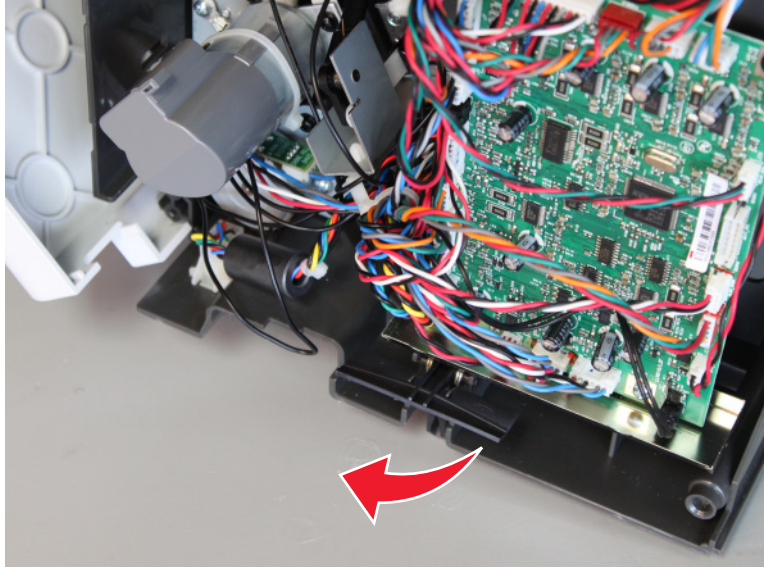
Stapler tray spring removal

1 Remove the stapler left cover and stapler right cover. See **"Stapler left cover removal" on page 710** and **"Stapler right cover removal" on page 704**.

2 Disconnect the spring (A) off the frame, and remove.

A

A
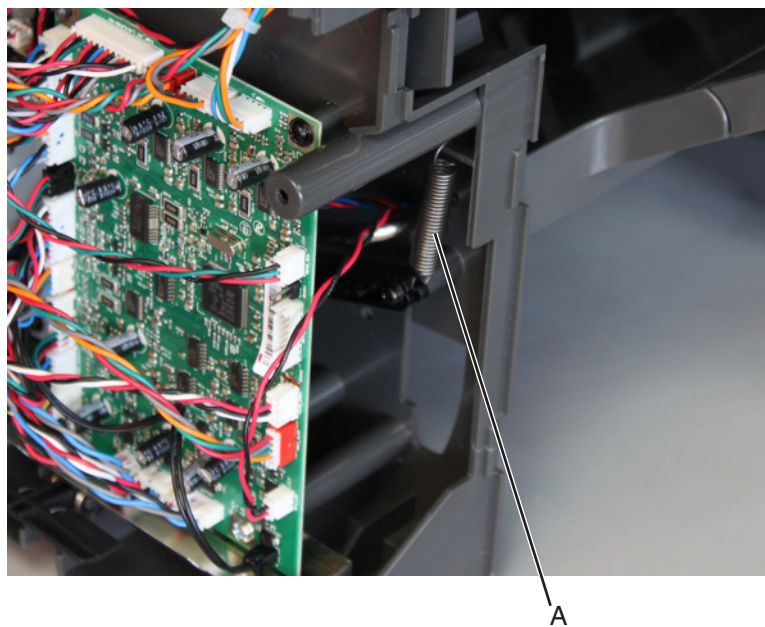
Stapler tray link assembly removal

Left tray link removal

1 Remove the stapler left cover. See **"Stapler left cover removal" on page 710**.

2 Unhook the spring (A) to release the tray link.

A
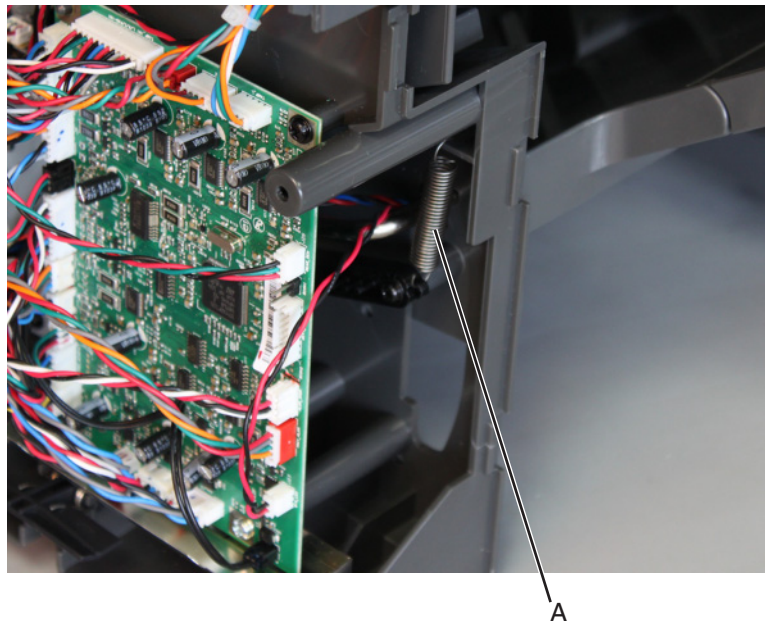
3 Remove the three screws (B) securing the controller board. Move the board to access the link underneath it.
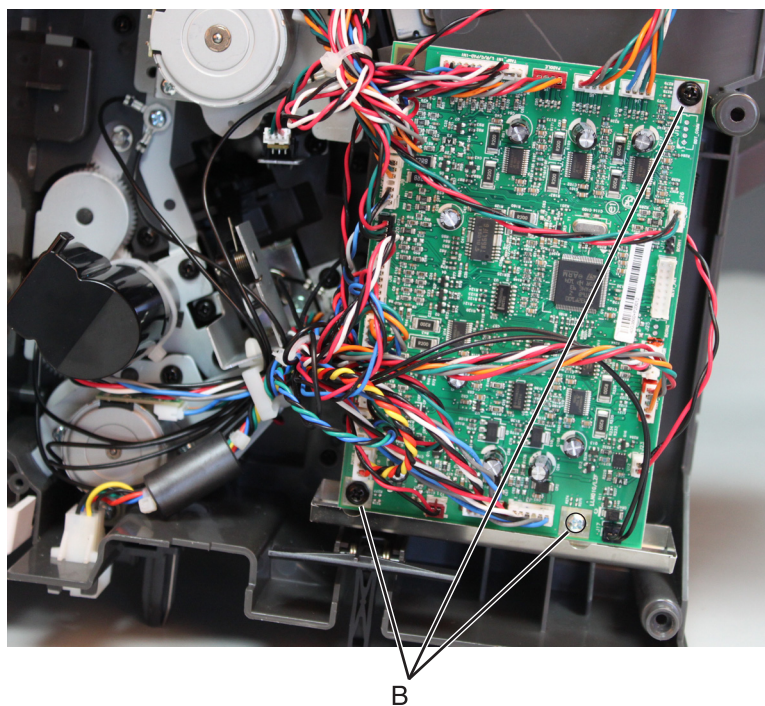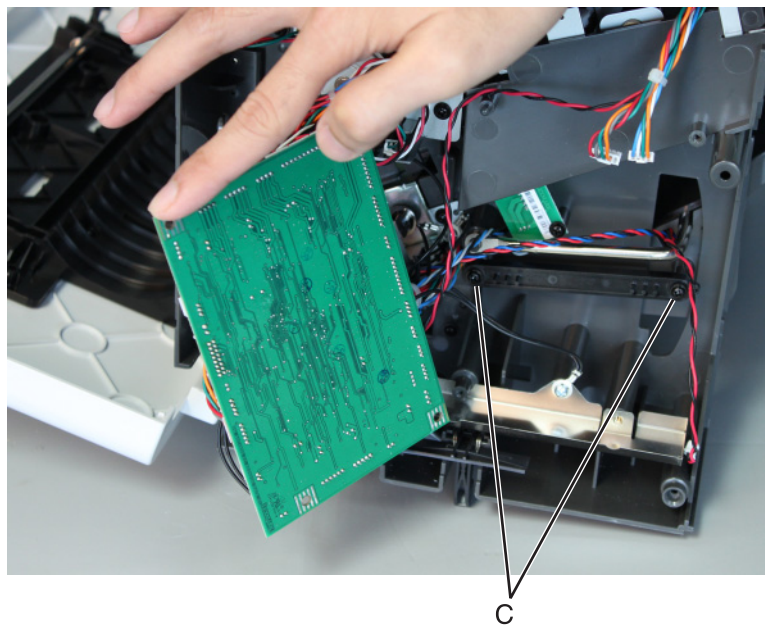
B

Parts removal

4 Remove the two screws (C), and then remove the link.

C

Right tray link removal

1 Remove the stapler right cover. See .

2 Unhook the spring (A) to release the tray link.

A

3 Remove the two screws (B), and then remove the link.

B

Sensor (stapler rear door interlock) removal

1 Remove the stapler left cover. See **"Stapler left cover removal" on page 710**.

2 Disconnect the cable (A) from the sensor.

A
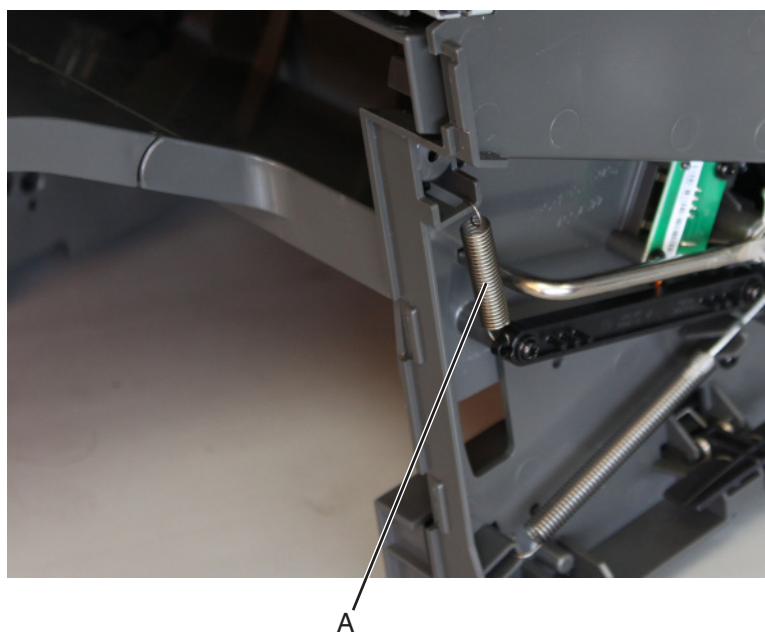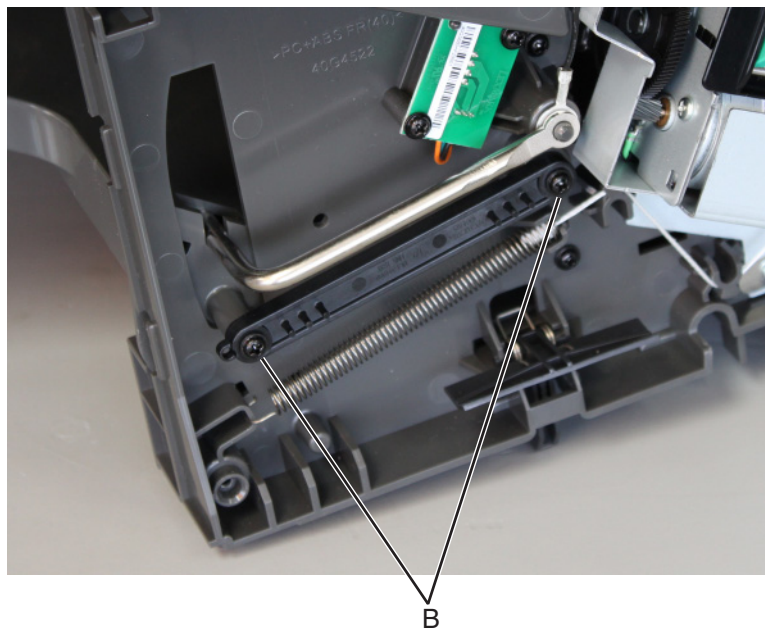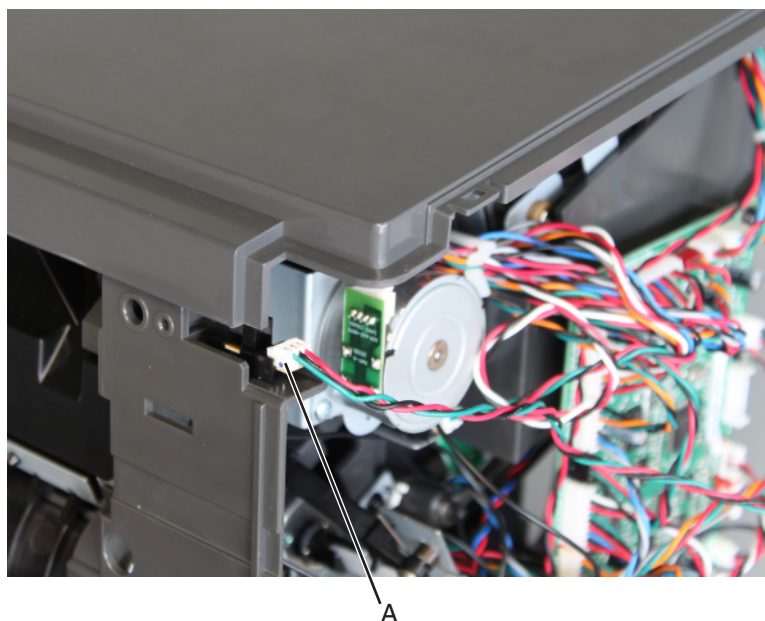
3 Release the latches securing the sensor to the frame, and then remove the sensor.

Sensor (paddle motor HP) removal

1 Remove the stapler left cover. See **"Stapler left cover removal" on page 710**.

2 Disconnect the cable (A) from the sensor. Remove the screw (B), and then remove the sensor bracket.

A   B
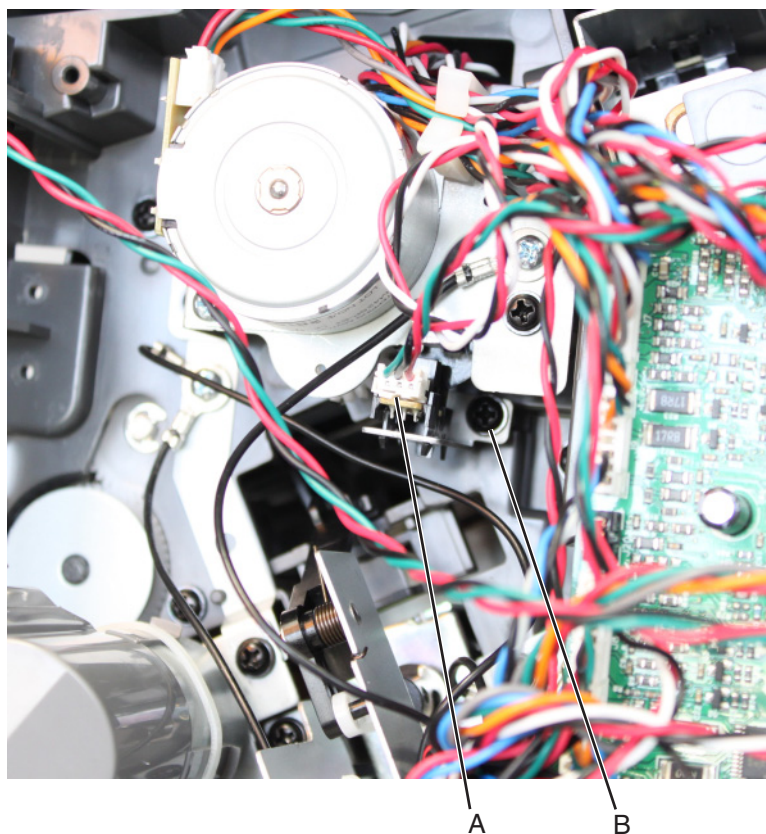
3 Release the latches securing the sensor to the bracket, and then remove the sensor.

Media stack flap (right) removal

1 Remove the stapler left cover. See **"Stapler left cover removal" on page 710**.

2 Remove the stapler right cover. See **"Stapler right cover removal" on page 704**.

3 Remove the stapler top cover. See **"Stapler top cover removal" on page 715**.

4 Remove the two screws (B) from the cover (A).

5 Move the media stack flap to the right to release the pins from the holes.

Note: The metal latch (C) may need to be flexed to release the pins.

C
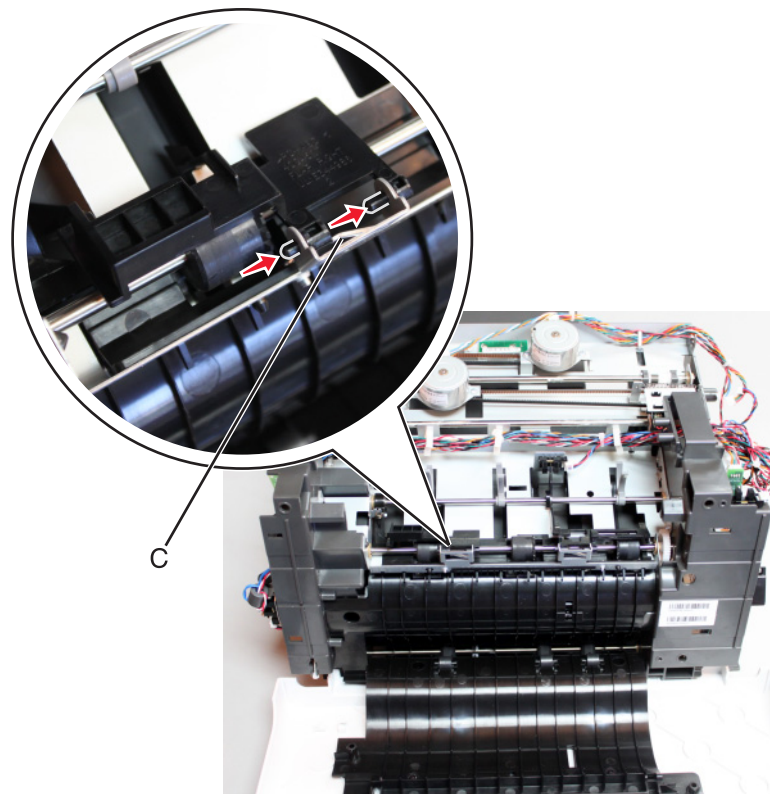
6 Ease the media stack flap off the option.

Media stack flap (left) removal

1 Remove the stapler left cover. See **"Stapler left cover removal" on page 710**.

2 Remove the stapler right cover. See **"Stapler right cover removal" on page 704**.

3 Remove the stapler top cover. See **"Stapler top cover removal" on page 715**.

4 Remove the two screws (B) from the cover (A).

B

B

A
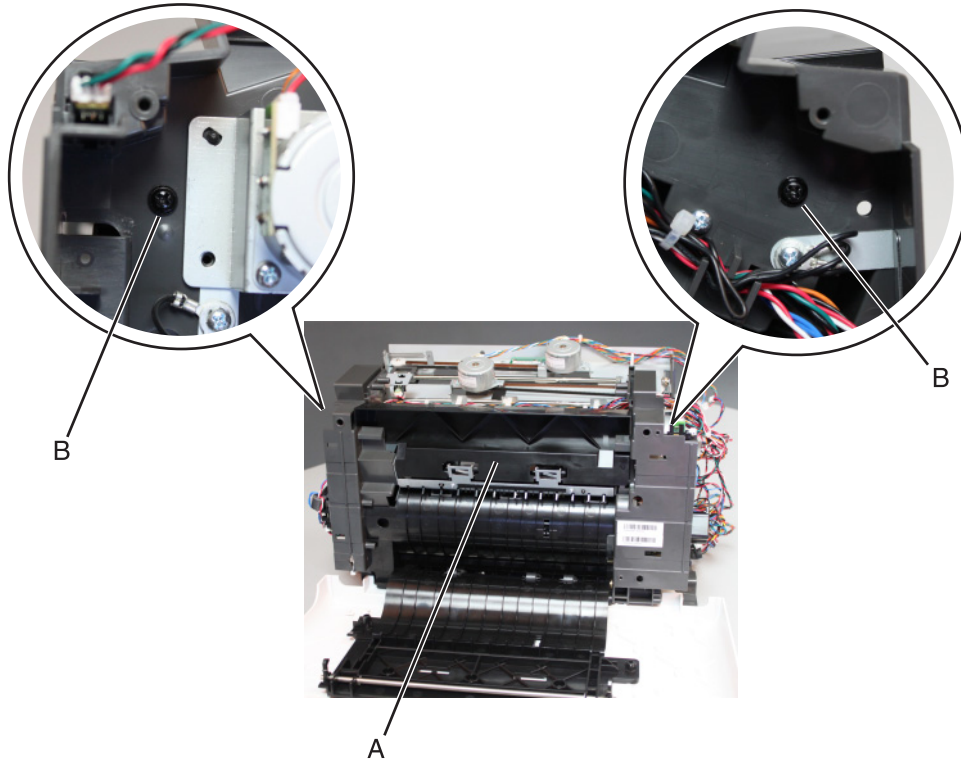
5 Move the media stack flap to the right to release the pins from the holes.

Note: The metal latch (C) may need to be flexed to release the pins.
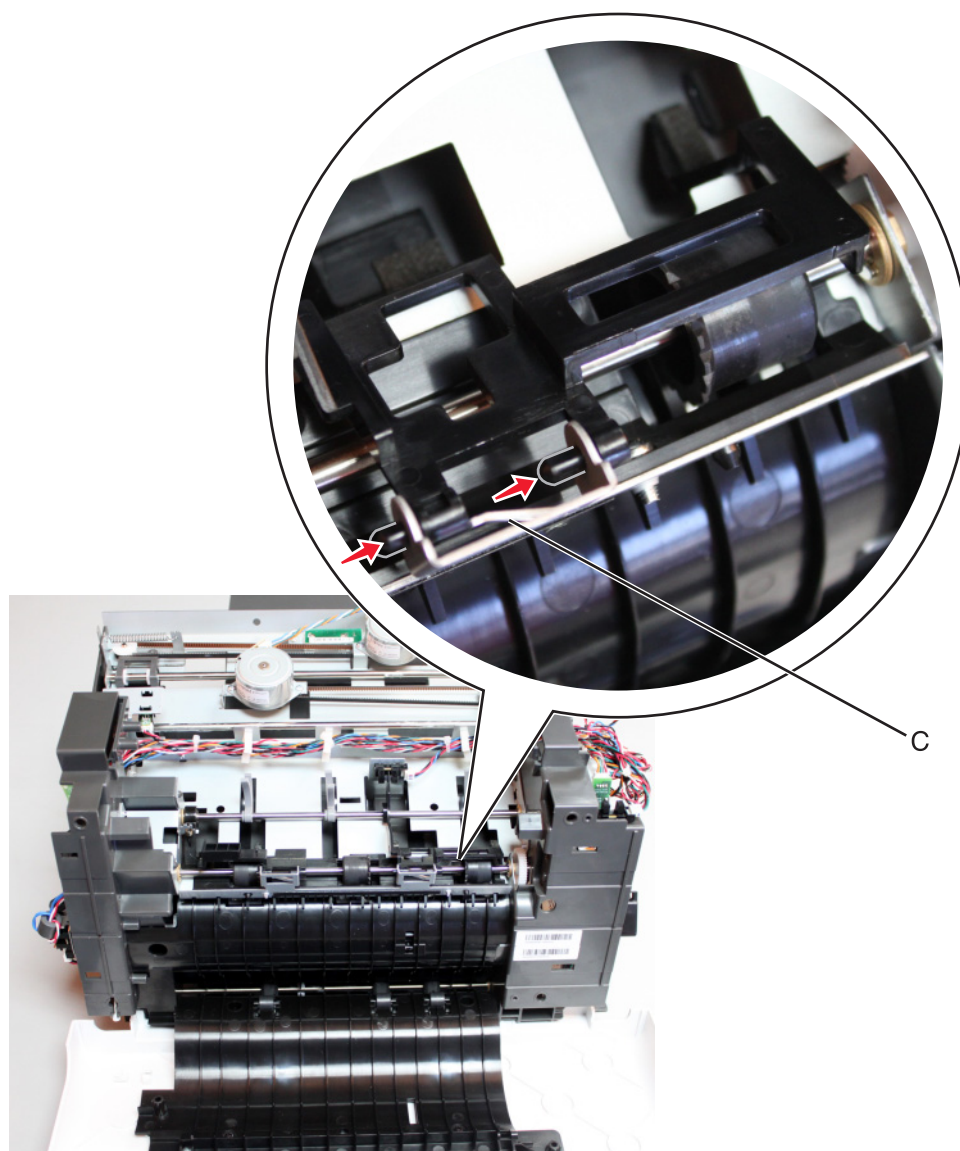
6 Ease the media stack flap off the option.

Sensor (right tamper motor HP) removal

1 Remove the stapler left cover. See **"Stapler left cover removal" on page 710**.

2 Remove the stapler right cover. See **"Stapler right cover removal" on page 704**.

3 Remove the stapler top cover. See **"Stapler top cover removal" on page 715**.

4 Move the right tamper arm to clear the home position flag (A) off the path of the sensor.
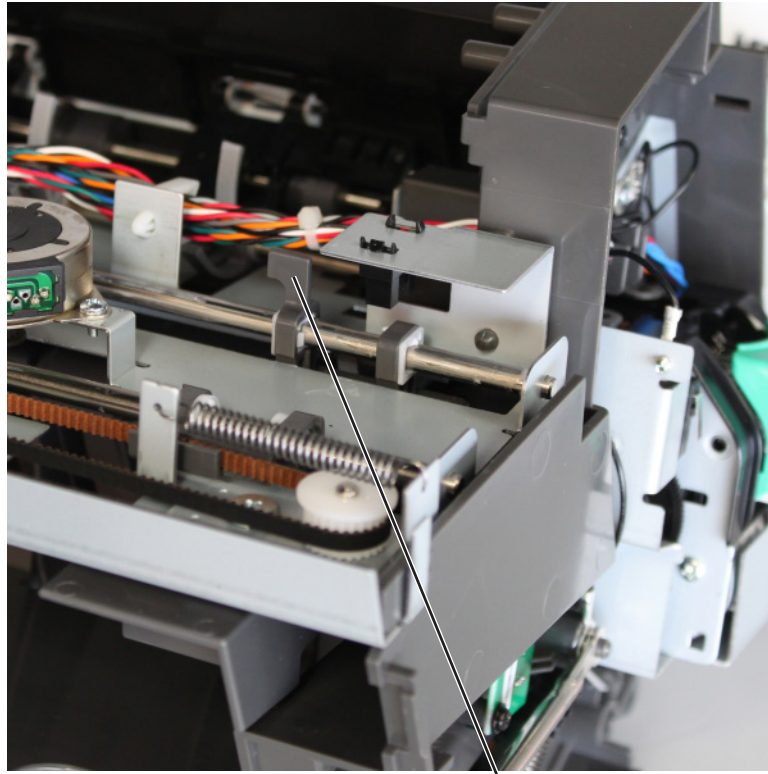
A

5 Disconnect the cable (B) from the sensor, and then release the latches securing the sensor to the frame.

B
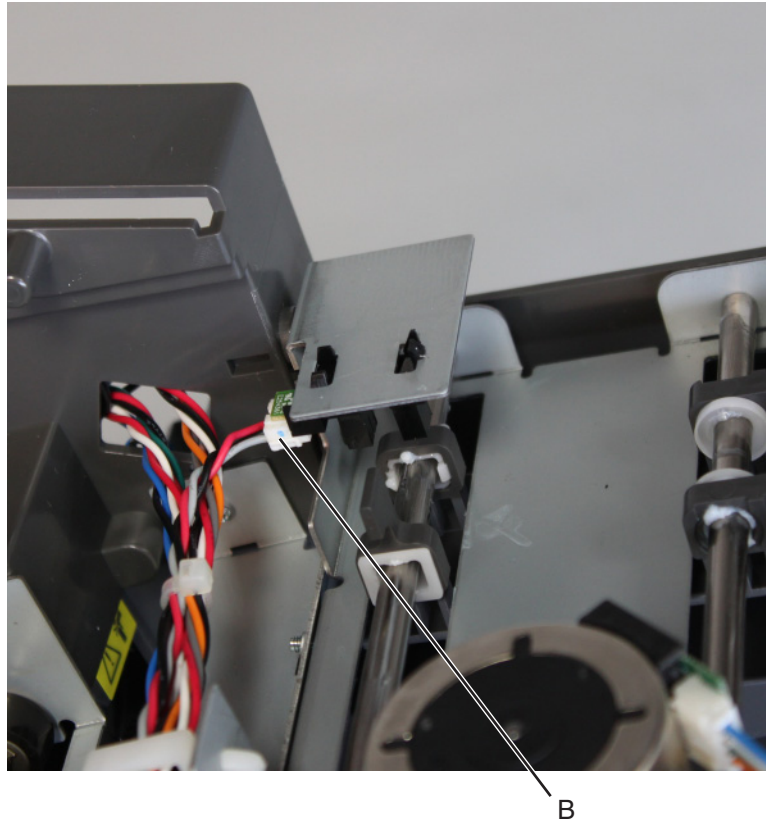
6 Pull the sensor off the frame and remove.

Sensor (left tamper motor HP) removal

1 Remove the stapler left cover. See **"Stapler left cover removal" on page 710**.

2 Remove the stapler right cover. See **"Stapler right cover removal" on page 704**.

3 Remove the stapler top cover. See **"Stapler top cover removal" on page 715**.

4 Move the left tamper arm to clear the home position flag (A) off the path of the sensor.
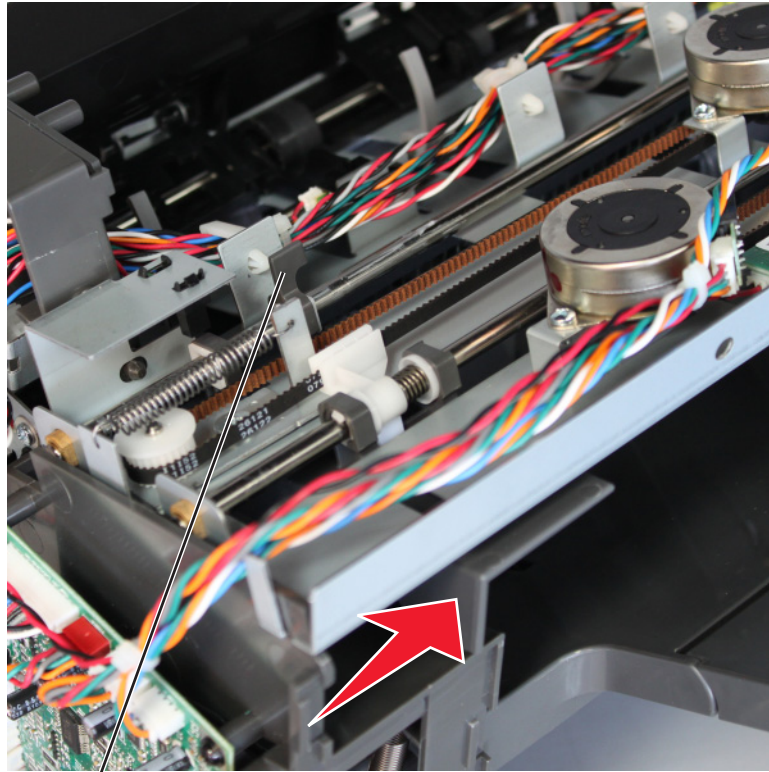
A

5 Disconnect the cable (B) from the sensor, and then release the latches securing the sensor to the frame.

B
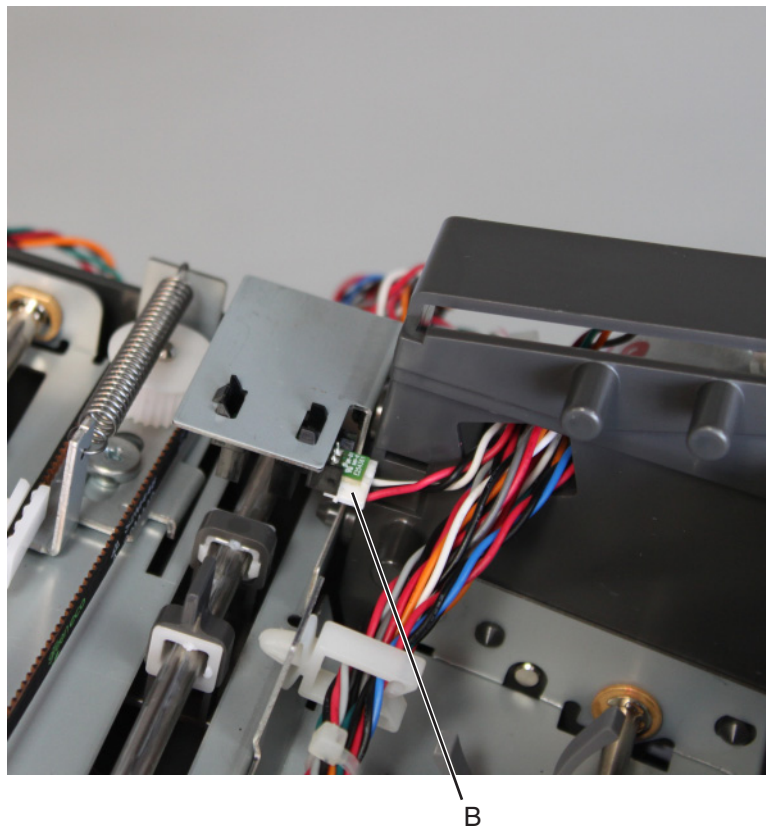
6 Pull the sensor off the frame and remove.

Standard output bin LED removal
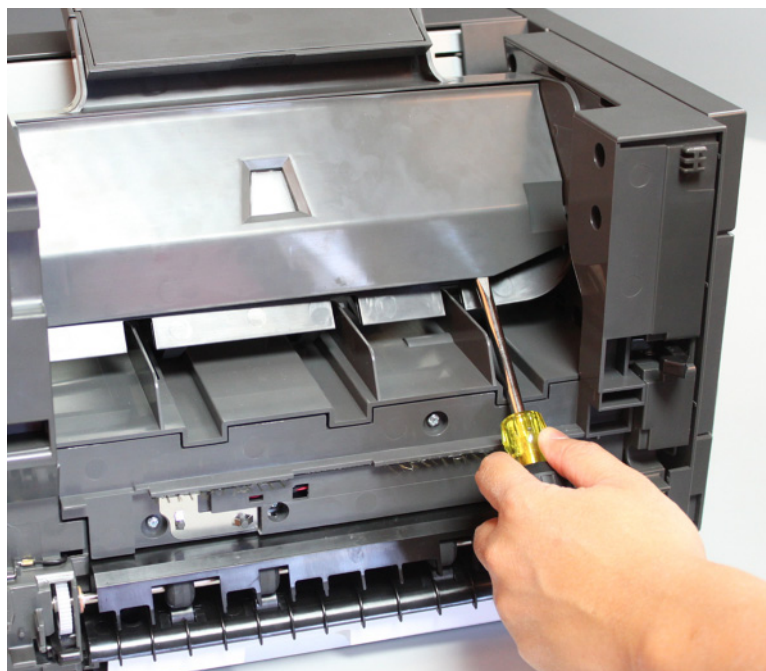
1 With a prying tool, open the LED sensor cover.

2 Release the latches (A) to remove the LED clear lens. Disconnect the cable (B), and remove the standard output bin LED.
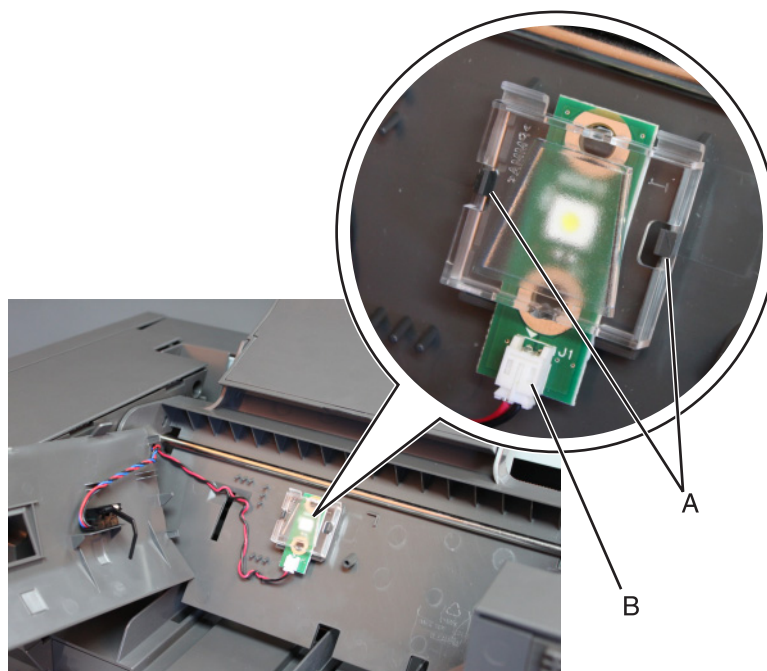
Sensor (finisher bin media present) removal

1 Remove the stapler left cover. See **"Stapler left cover removal" on page 710**.

2 With a prying tool, open the LED sensor cover.
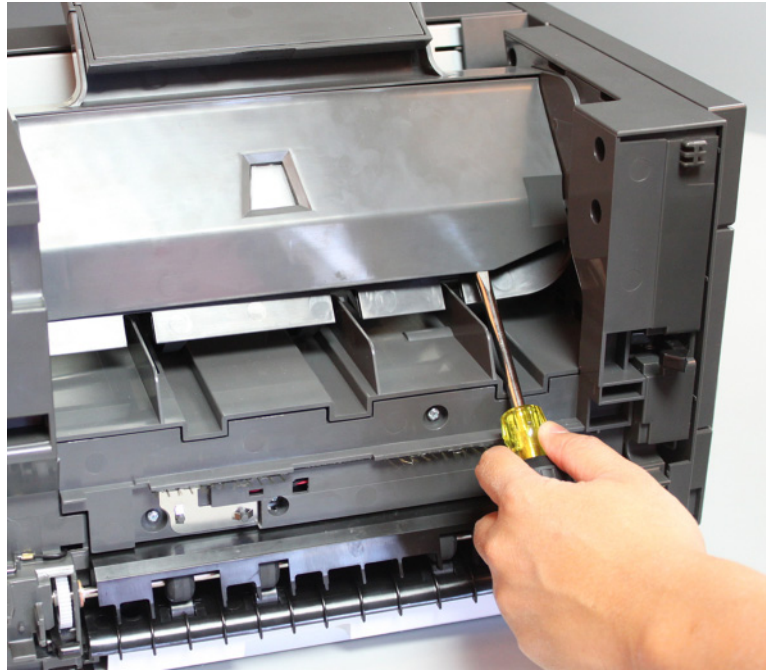
3 Release the latches holding the sensor (B) to the cover.
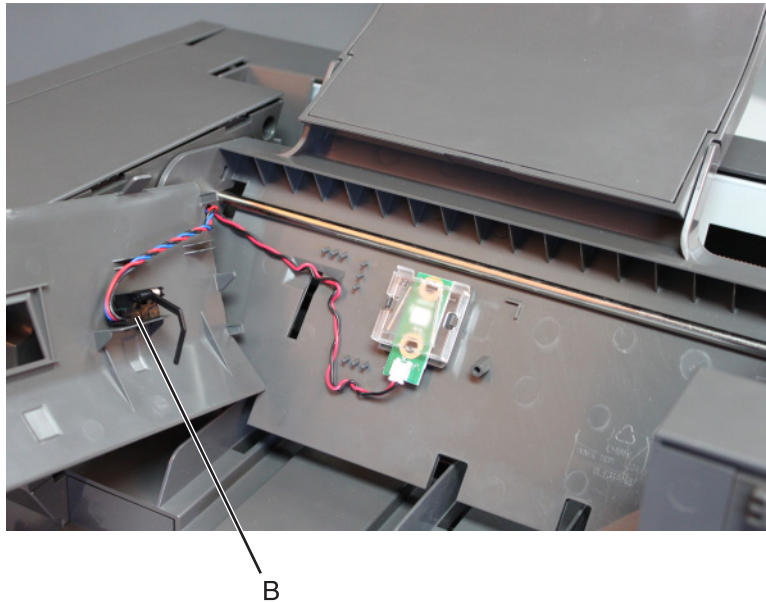
B

4 Disconnect the cable from the stapler controller board, then remove the sensor (finisher bin media present).

Tamper assembly removal

1 Remove the stapler left cover. See **"Stapler left cover removal" on page 710**.

2 Remove the stapler right cover. See **"Stapler right cover removal" on page 704**.

3 Remove the stapler top cover. See **"Stapler top cover removal" on page 715**.

4 Disconnect the tamper cables J2, J4 and J6 from the controller board.

5 Release the latches (A) securing the sensors.

A   A
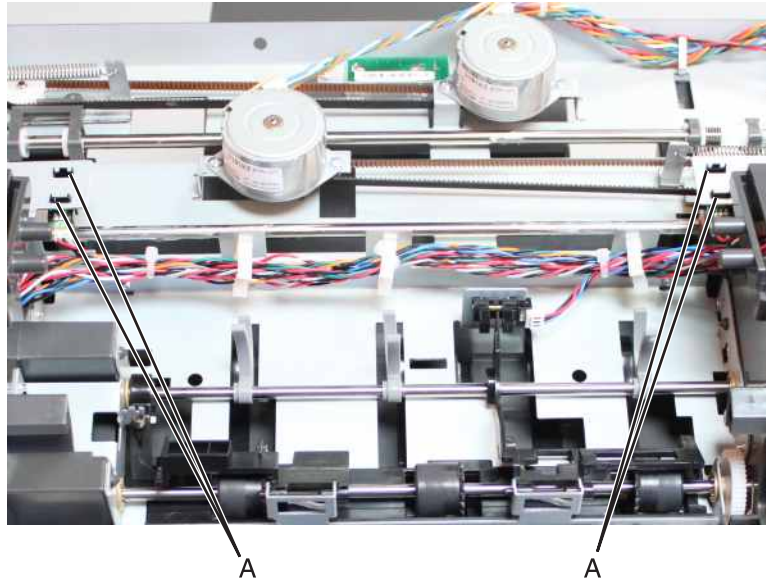
6 Remove the stapler output bin LED. See **"Stapler output bin LED removal" on page 738**.

7 Remove the left and right tamper motors. See **"Tamper motor (left) removal" on page 736** and **"Tamper motor (right) removal" on page 736**.

8 Remove the tamper drive belts. See **"Tamper drive belt removal" on page 737**.

9 Remove the four screws (B) securing the tamper assembly to the frame.

B
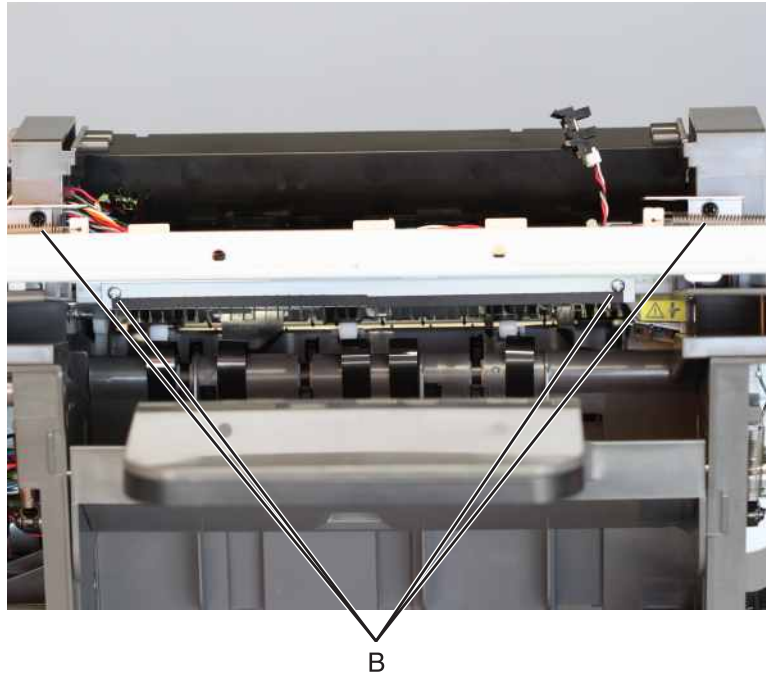
10 Remove the tamper assembly.

Installation note: Make sure the tab (C) is correctly inserted into its designated slot.
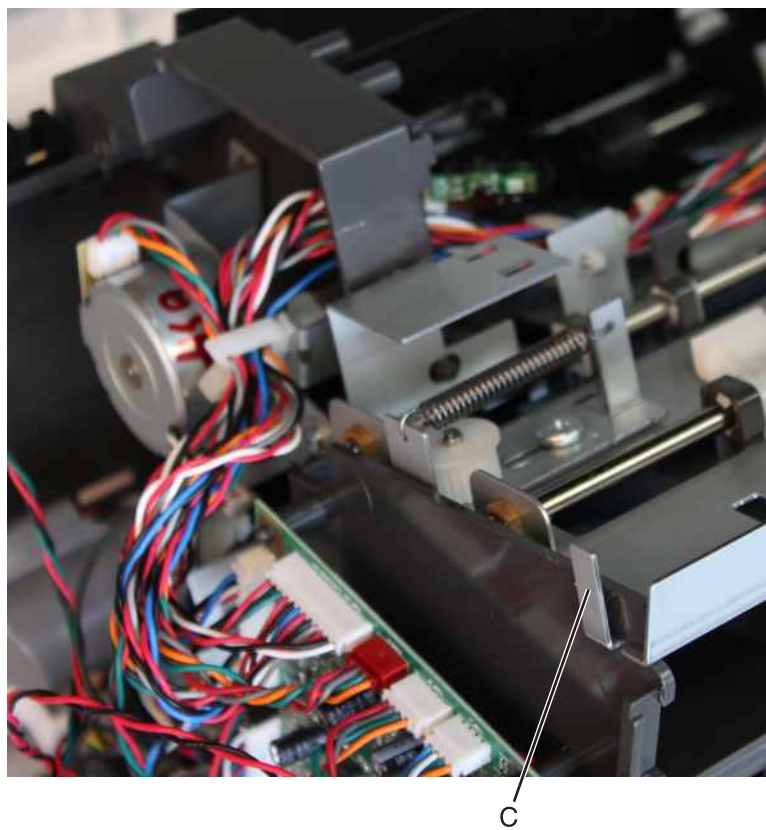
C

Tamper motor (right) removal

1 Remove the stapler left cover. See **"Stapler left cover removal" on page 710**.

2 Remove the stapler right cover. See **"Stapler right cover removal" on page 704**.

3 Remove the stapler top cover. See **"Stapler top cover removal" on page 715**.

4 Disconnect the tamper motor cable (A).

5 Remove the two screws (B), then remove the motor.

Tamper motor (left) removal

1 Remove the stapler left cover. See **"Stapler left cover removal" on page 710**.

2 Remove the stapler right cover. See **"Stapler right cover removal" on page 704**.

3 Remove the stapler top cover. See **"Stapler top cover removal" on page 715**.

4 Disconnect the tamper motor cable (A).

5 Remove the two screws (B), then remove the motor.

B   A
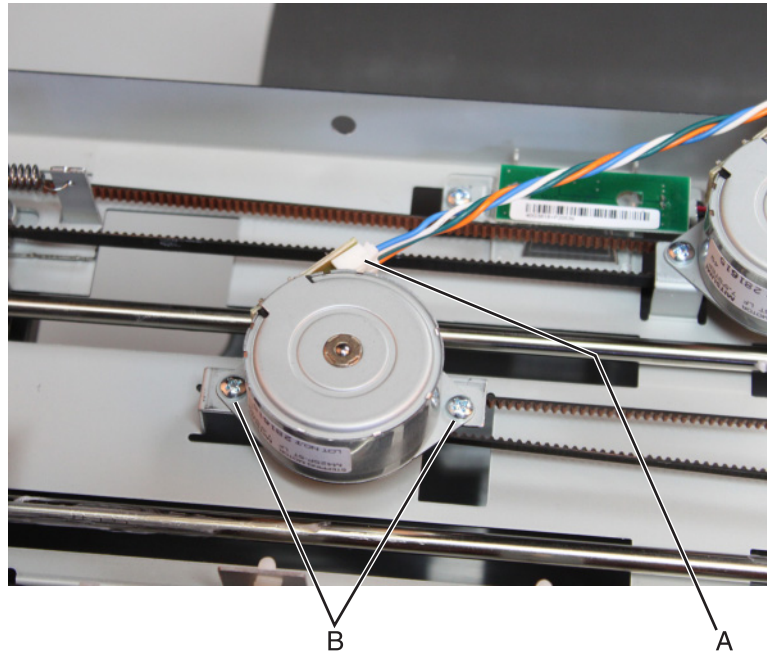
Tamper drive belt removal

1 Remove the stapler left cover. See **"Stapler left cover removal" on page 710**.

2 Remove the stapler right cover. See **"Stapler right cover removal" on page 704**.

3 Remove the stapler top cover. See **"Stapler top cover removal" on page 715**.

4 Remove the tamper motor engaged to the belt. See **"Tamper motor (right) removal" on page 736** or **"Tamper motor (left) removal" on page 736**.

5 Unhook the spring (A) to loosen and release the belt.
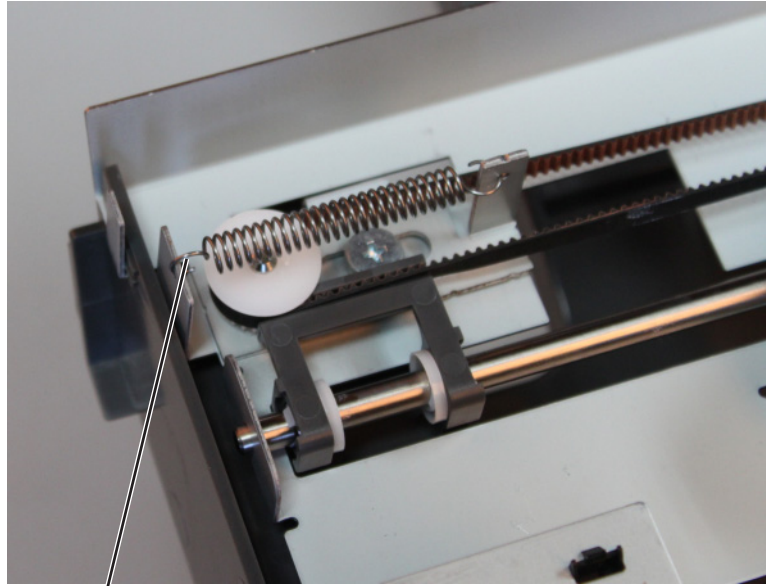
A

6 Remove the tamper drive belt.

Stapler output bin LED removal

1 Remove the stapler left cover. See **"Stapler left cover removal" on page 710**.

2 Remove the stapler right cover. See **"Stapler right cover removal" on page 704**.

3 Remove the stapler top cover. See **"Stapler top cover removal" on page 715**.

4 Release the latches (A) securing the LED.
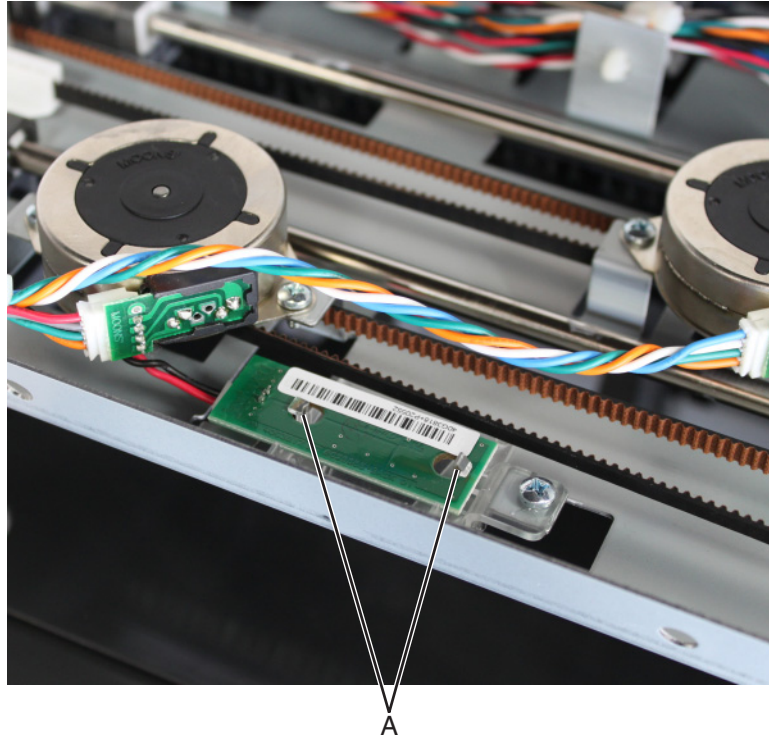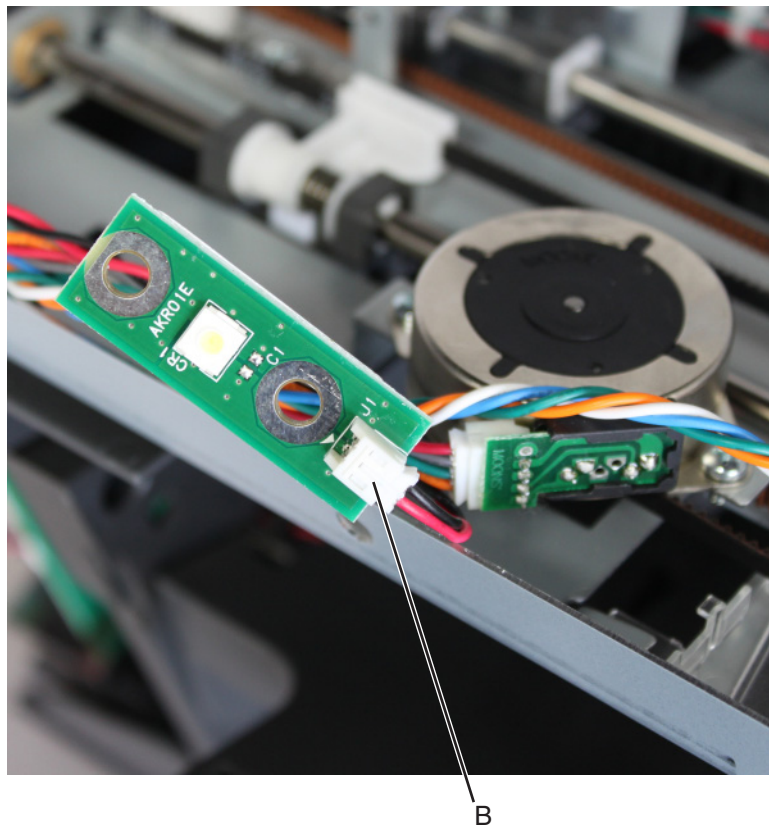
A

5 Disconnect the cable (B), and remove the LED.

B

Parts removal

Paddle drive motor removal

1 Remove the stapler left cover. See **"Stapler left cover removal" on page 710**.

2 Remove the stapler right cover. See **"Stapler right cover removal" on page 704**.

3 Disconnect the cable (A) from the drive motor.

4 Remove the two screws (B), then remove the paddle drive motor.
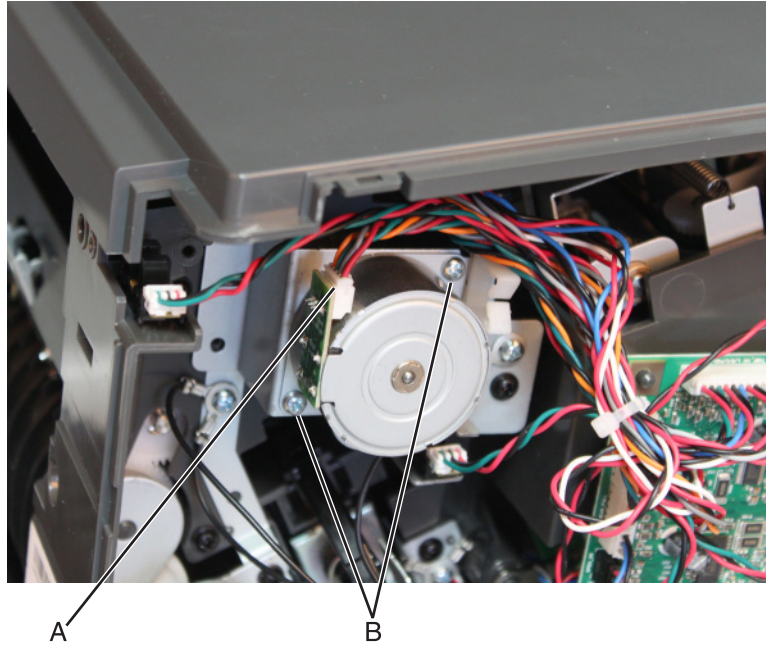
Stapler lower interface cable removal

1 Remove the stapler left cover. See **"Stapler left cover removal" on page 710**.

2 Unplug the two connectors (J18 and J15) from the controller board.
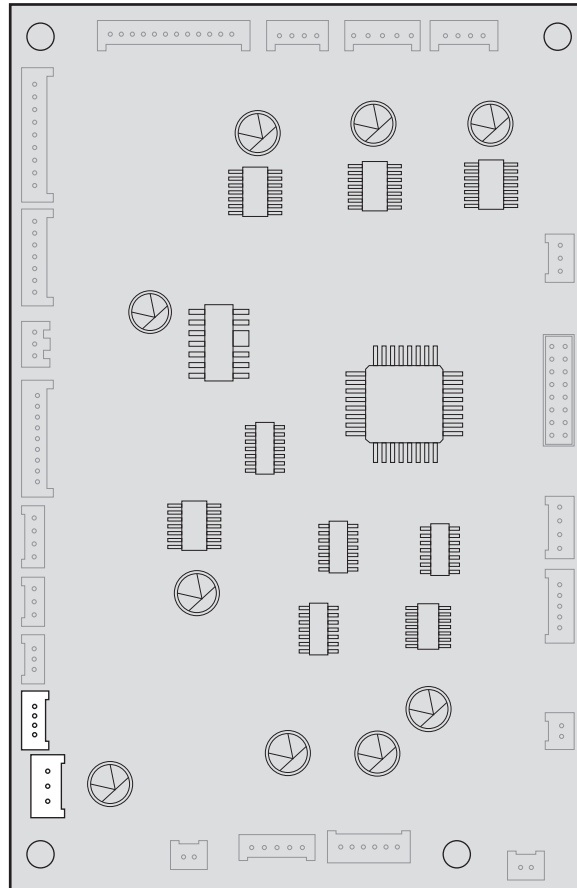
3 From the bottom of the stapler, release the latches, and push the connector off its slot.
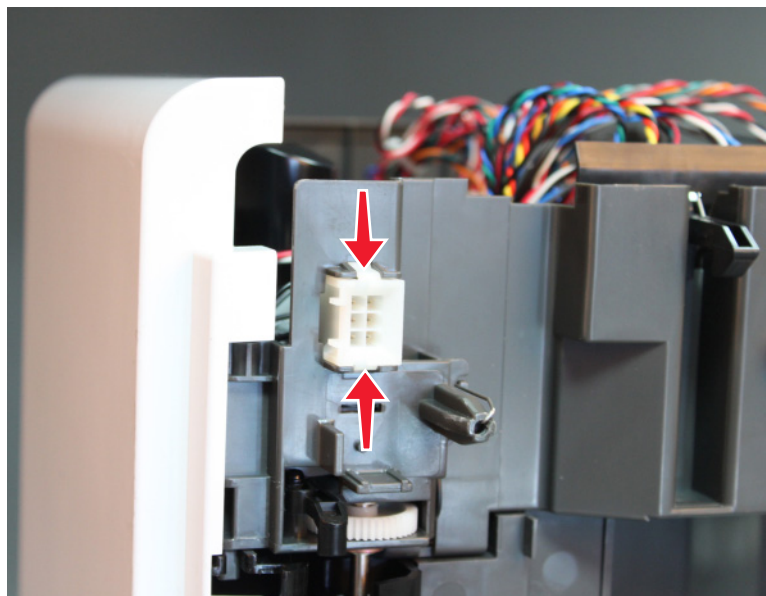
4 Remove the lower interface cable.

Stapler controller board removal

1 Remove the stapler left cover. See **"Stapler left cover removal" on page 710**.

2 Disconnect all the cables (J11, J5, J6, J4, J26, J24, J22, J23, J17, J3, J2, J1, J18, J15, J1, J12, J14, J8, J20, J9, and J7), then remove the three screws (A) from the controller board.
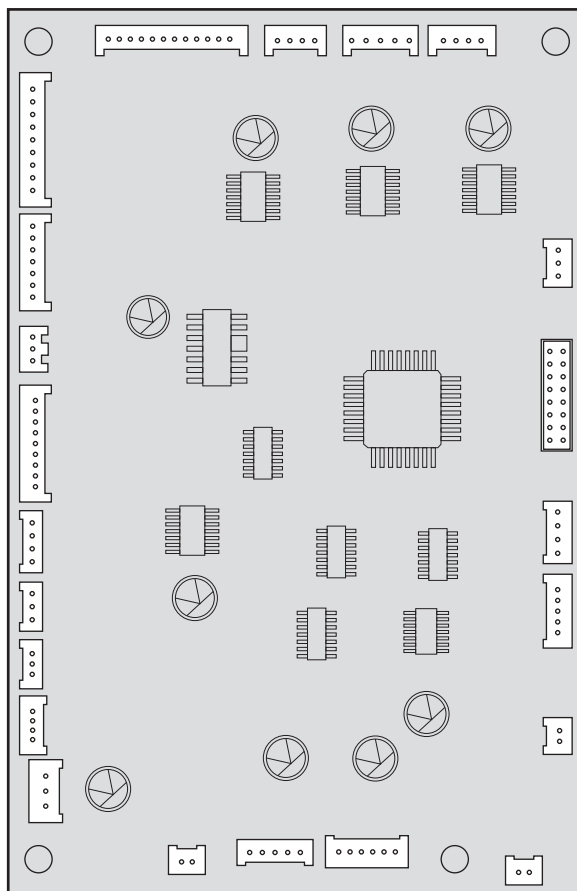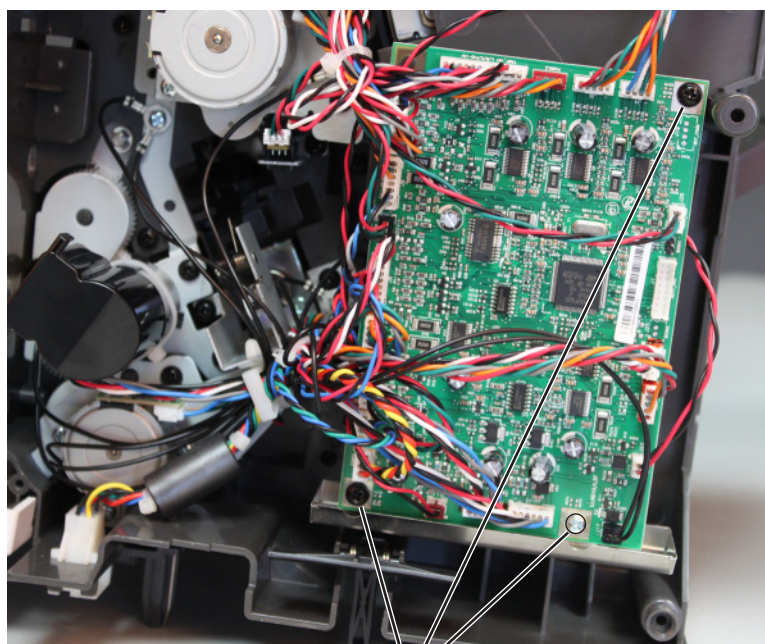
A

3 Remove the controller board.

Stapler main motor removal

1 Remove the stapler left cover. See **"Stapler left cover removal" on page 710**.

2 Disconnect the motor cable J3 from the controller board.

3 Remove the three screws (A) from the motor bracket, and then cut the cable tie securing the cables.

Note: Pay attention to the original routing of the cables. Make sure the cables don't get in the way of moving parts by securing them with cable ties.
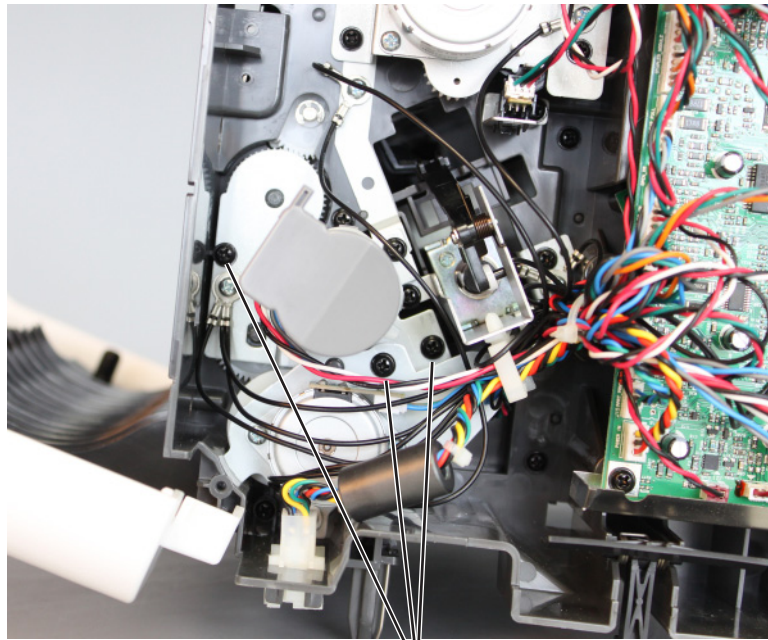
4 Move away the bracket to access the screws (B). Remove the two screws (B), and then remove the motor from the bracket.
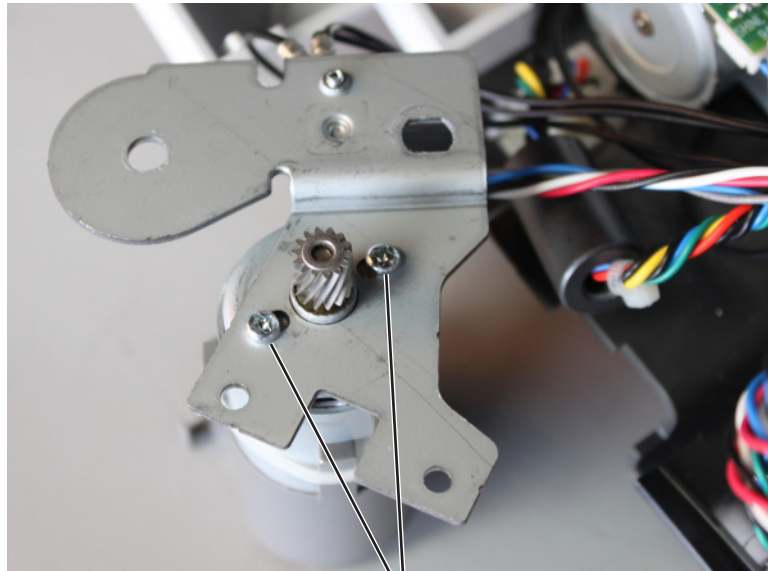
Stapler diverter motor removal

1 Remove the stapler left cover. See **"Stapler left cover removal" on page 710**.

2 Disconnect the motor cable (A), and then remove the two screws (B).

3 Remove the motor from the bracket.

Stapler diverter plunger assembly removal

1 Remove the stapler left cover. See **"Stapler left cover removal" on page 710**.

2 Remove the three screws (A) from the main motor bracket.
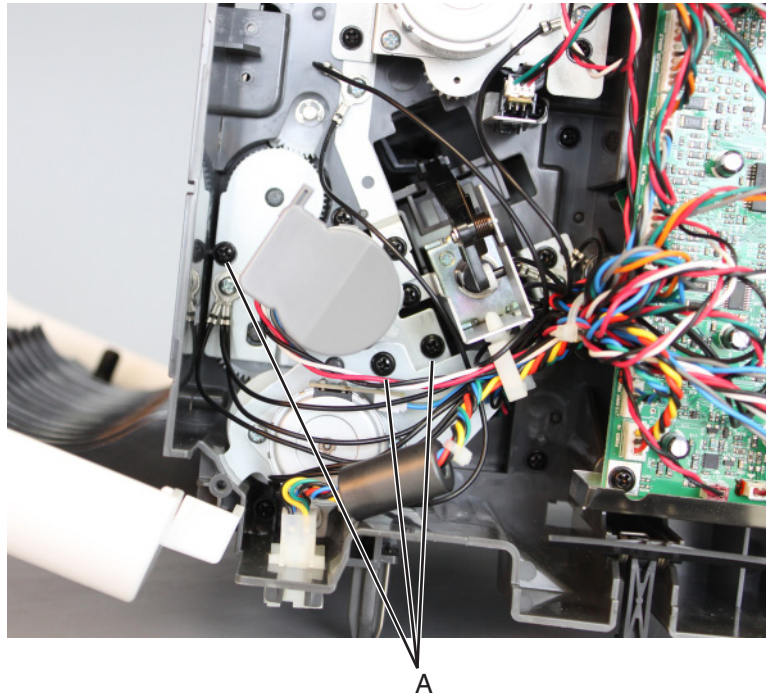
A

Note: Removing the main motor bracket will not be required. Just move it out of the way to make it easier to release the diverter motor bracket.

3 Remove the two screws (B) from the diverter motor bracket.

B

Note: Removing the diverter motor bracket will not be required. Just move it out of the way to access the parts underneath it.

Parts removal

4 Remove the two screws (C) securing the diverter plunger and cam.

C
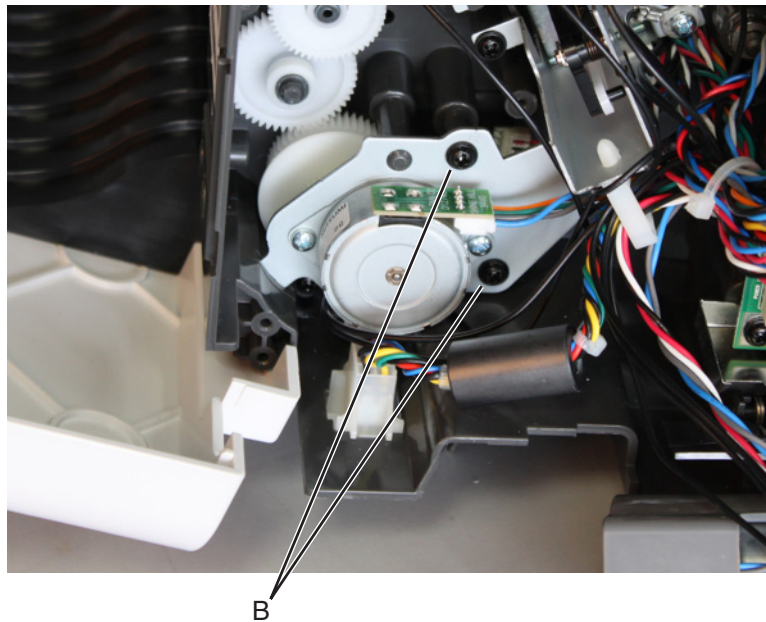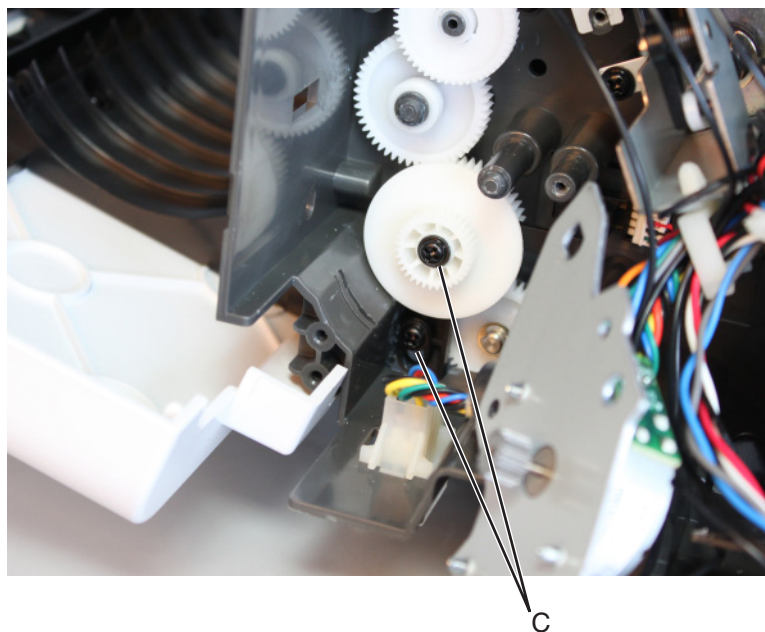
5 Remove the cam first, and then remove the plunger.

Installation note: Make sure that the locating pin (D) is correctly inserted into the diverter cam. The C-shaped slot on the cam must be engaged with the locating pin (D) on the plunger.

D

Stapler drive gear assembly removal

1 Remove the stapler left cover. See **"Stapler left cover removal" on page 710**.

2 Remove the stapler diverter plunger assembly. See **"Stapler diverter plunger assembly removal" on page 747**.

Parts removal

3 Release the E-clip securing the lowermost gear. Remove the spacers, and then pull the gears off the machine.

Sensor (bin full send) removal

1 Remove the stapler right cover. See .

2 Remove the two screws (A) from the sensor.

A

3 Disconnect the cable (B), and remove the sensor (bin full send).

B

Sensor (bin full receive) removal

1 Remove the stapler left cover. See **"Stapler left cover removal" on page 710**.

2 Remove the stapler controller board. See **"Stapler controller board removal" on page 743**.

3 Remove the two screws (A) from the sensor.
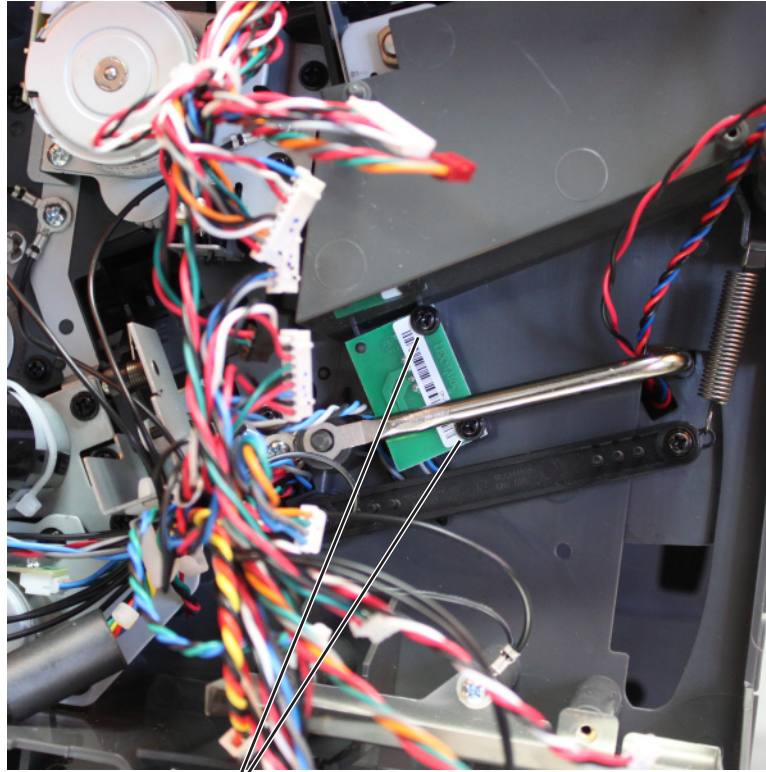
A

4 Disconnect the cable (B), and remove the sensor (bin full receive).

B
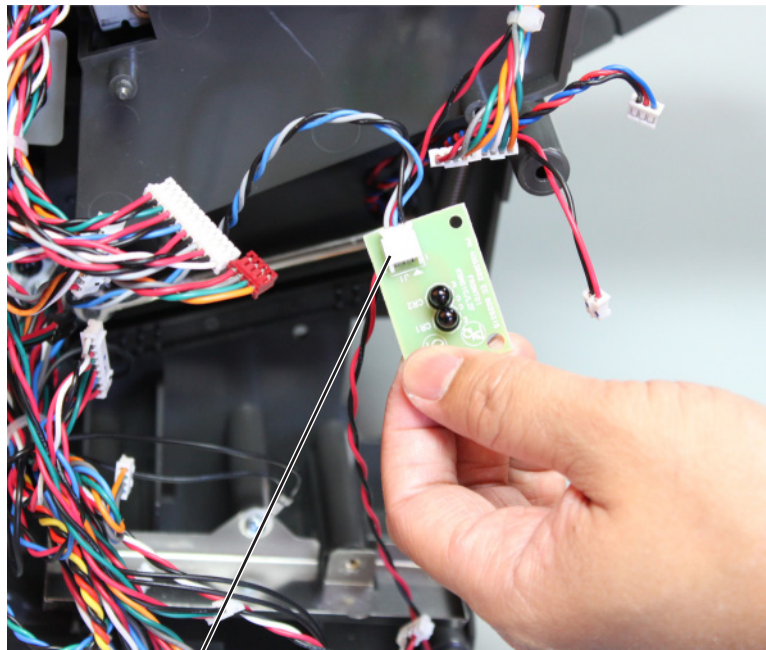
Parts removal

Media pusher assembly removal

1 Remove the stapler left cover. See **"Stapler left cover removal" on page 710**.

2 Disconnect the cable J17 from the controller board.

3 Remove the three screws (A), and then remove the media pusher.

A
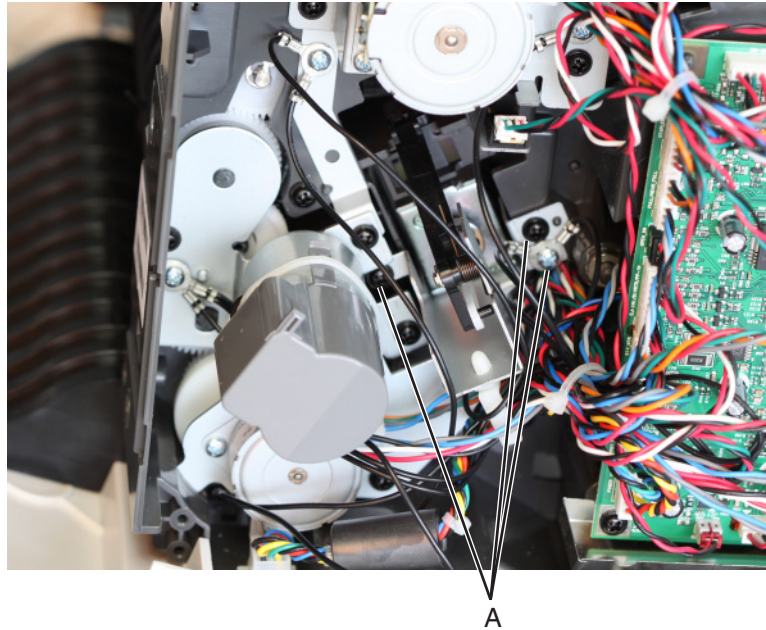
Stapler feed roll removal

Note: This is not a FRU.

1 Remove the stapler left cover. See **"Stapler left cover removal" on page 710**.

2 Remove the stapler right cover. See **"Stapler right cover removal" on page 704**.

3 Remove the stapler diverter plunger assembly. See **"Stapler diverter plunger assembly removal" on page 747**.

4 Remove the stapler drive gear assembly. See **"Stapler drive gear assembly removal" on page 748**.

5 Remove the two E-clips (A) securing the shaft.

A
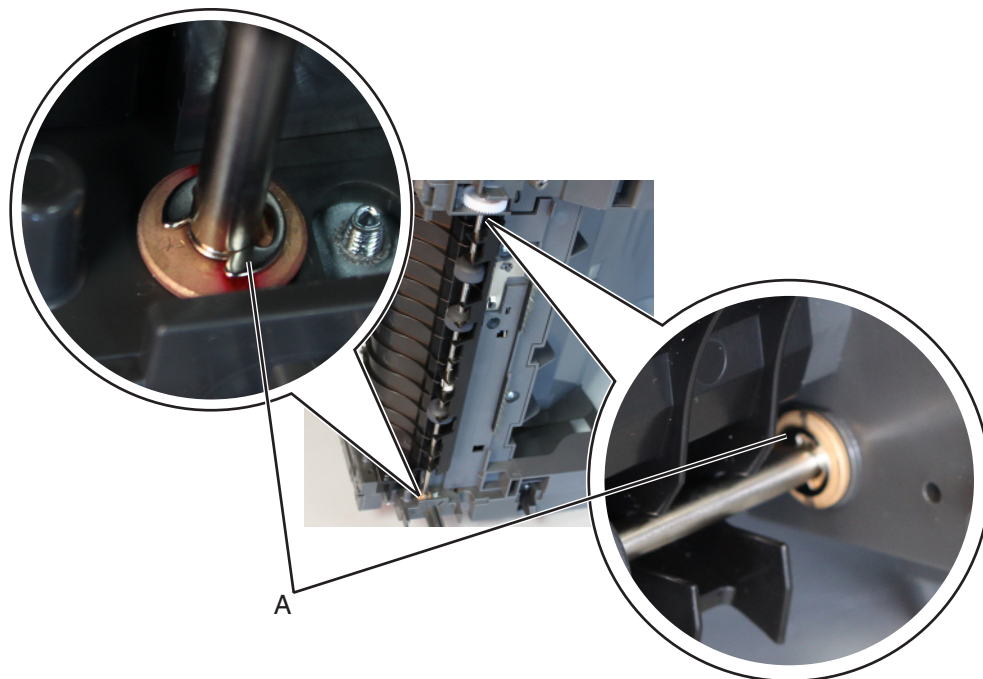
Warning—Potential Damage: Be careful not to lose the E-clips and spacers.

6 Remove the two screws (B), and remove the grounding plate.

B
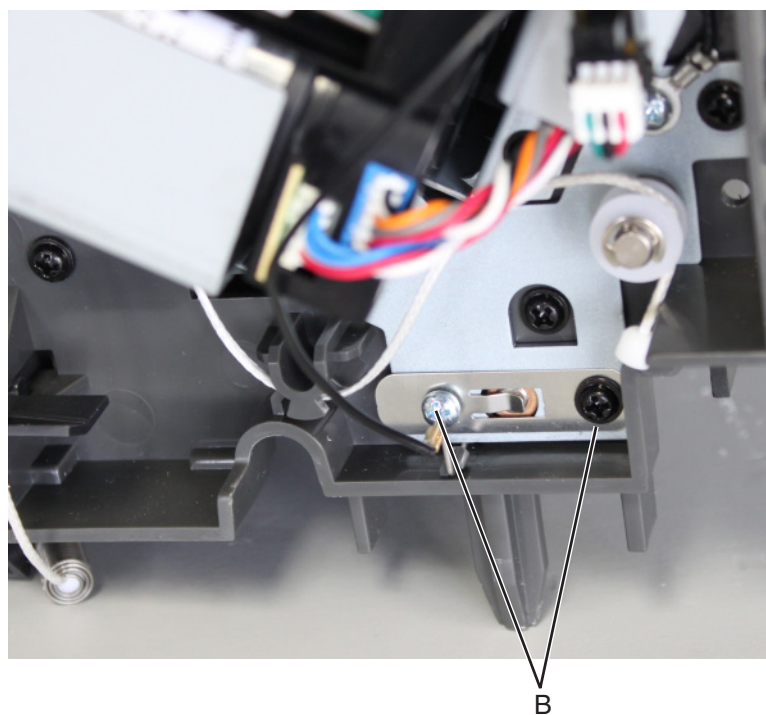
7 Slightly move the shaft horizontally to release, and then remove it.
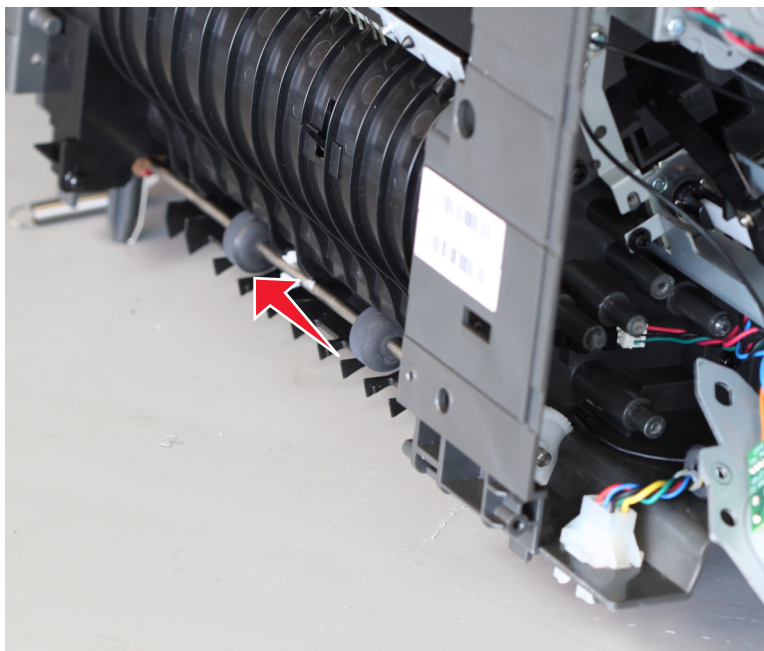
Warning—Potential Damage: Be careful not to lose the bushing and spacers that hold the shaft.

Installation note: To make it less difficult to reinstall the E-clip, use a pair of long-nose pliers to position it onto the shaft, and then lock it in place.
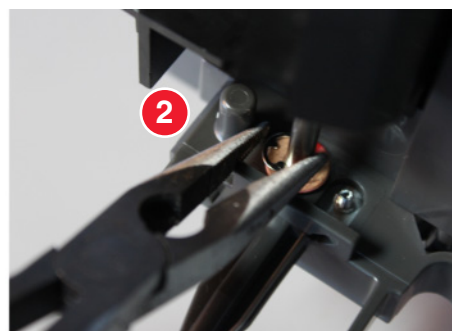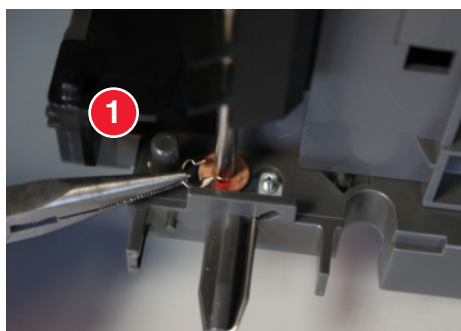
Stapler chute assembly removal

Note: This is not a FRU.

1 Remove the stapler left cover. See **"Stapler left cover removal" on page 710**.

2 Remove the stapler right cover. See **"Stapler right cover removal" on page 704**.

3 Remove the stapler diverter plunger assembly. See **"Stapler diverter plunger assembly removal" on page 747**.

4 Remove the stapler drive gear assembly. See **"Stapler drive gear assembly removal" on page 748**.

5 Remove the stapler feed roll. See **"Stapler feed roll removal" on page 752**.

6 Remove the two screws (A) from the left side of the machine.

A
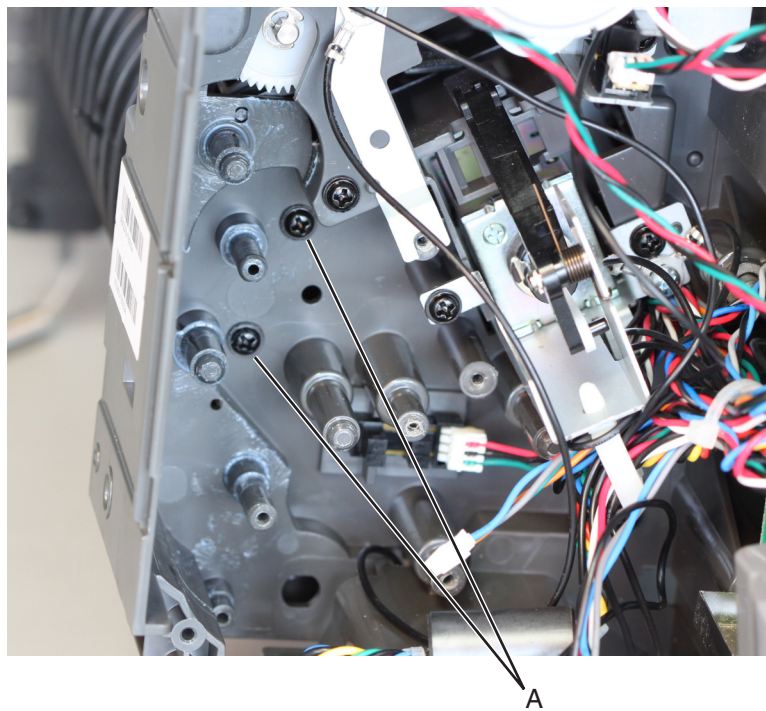
7 Remove the two screws (B) from the right side of the machine.

B
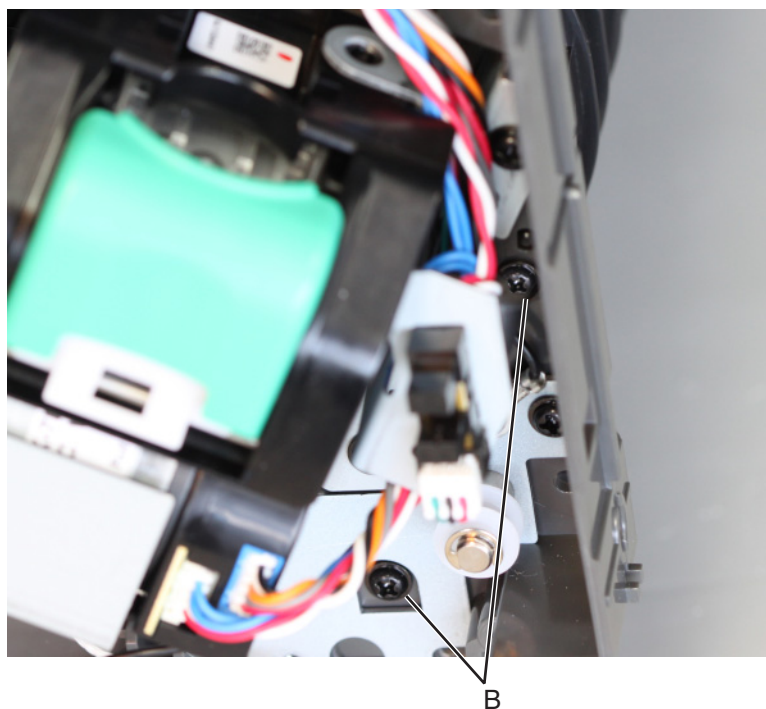
8 Slightly push the right frame to loosen the left part of the chute, while pushing the chute upward to dislodge it from its frame.
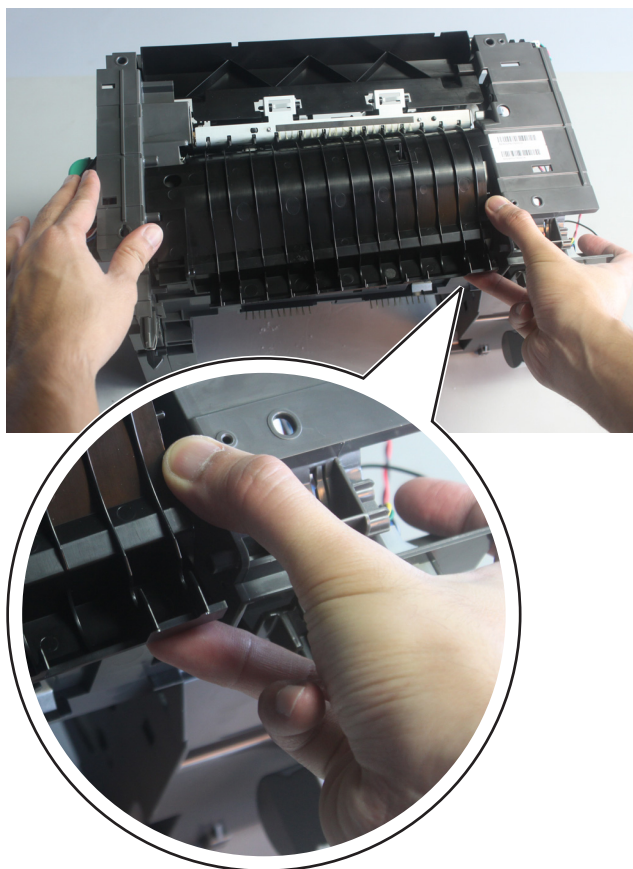
9 Obstacles (C) may cause difficulty in removing the chute. Ease the chute out of obstacles (C), and release it from the machine.

C
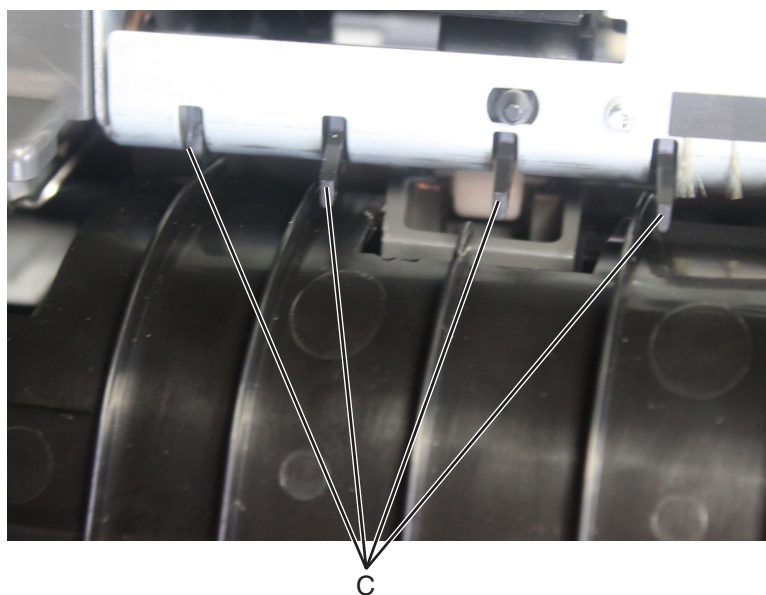
Installation note: Insert the tabs to their respective slots.

Parts removal
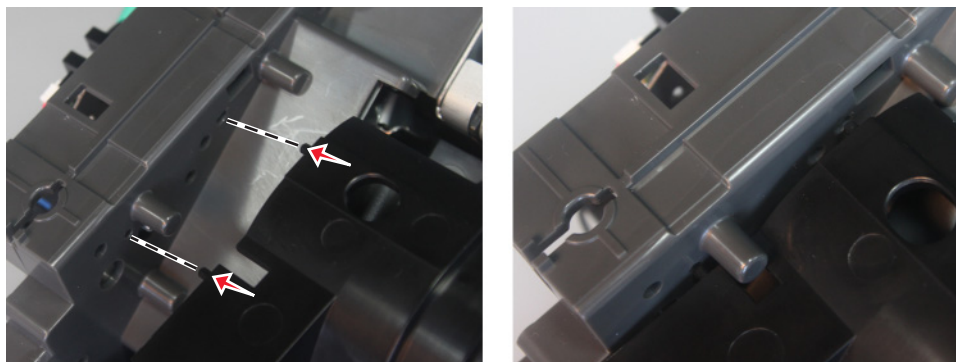
10 Disconnect the sensor cable (D), and remove the stapler chute assembly.
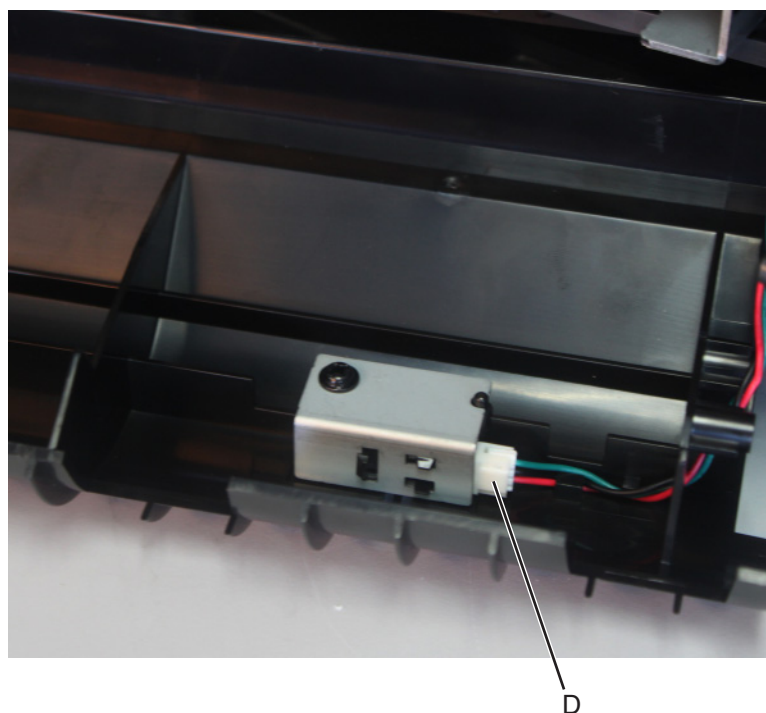
D

Sensor (stapler pass through) removal

1 Remove the stapler left cover. See **"Stapler left cover removal" on page 710**.

2 Remove the stapler right cover. See **"Stapler right cover removal" on page 704**.

3 Remove the stapler diverter plunger assembly. See **"Stapler diverter plunger assembly removal" on page 747**.

4 Remove the stapler drive gear assembly. See **"Stapler drive gear assembly removal" on page 748**.

5 Remove the stapler feed roll. See **"Stapler feed roll removal" on page 752**.

6 Remove the stapler chute assembly. See **"Stapler chute assembly removal" on page 754**.

7 Disconnect the sensor cable (A), and then remove the screw (B) from the sensor bracket. Release the latches securing the sensor to the bracket, and then remove the sensor.

B   A

Stapler ejector motor assembly removal

1 Remove the stapler left cover. See **"Stapler left cover removal" on page 710**.

2 Remove the stapler right cover. See **"Stapler right cover removal" on page 704**.

3 Remove the stapler diverter plunger assembly. See **"Stapler diverter plunger assembly removal" on page 747**.

4 Remove the stapler drive gear assembly. See **"Stapler drive gear assembly removal" on page 748**.

5 Remove the stapler feed roll. See **"Stapler feed roll removal" on page 752**.

6 Remove the stapler chute assembly. See **"Stapler chute assembly removal" on page 754**.

7 Release the cable holder (A) from the frame and remove it.

A

8 Remove the four screws (B) from the motor assembly frame.

B

Parts removal

9 Remove the three screws (C) securing the bottom part of the motor assembly.

C

10 Release the cables off their guides.

Note: Pay attention to the original routing of the cables.

11 Pull the motor assembly away from the machine.

12 Remove the screw (D) securing the sensor bracket. Pull the bracket and separate it from the motor assembly.

D
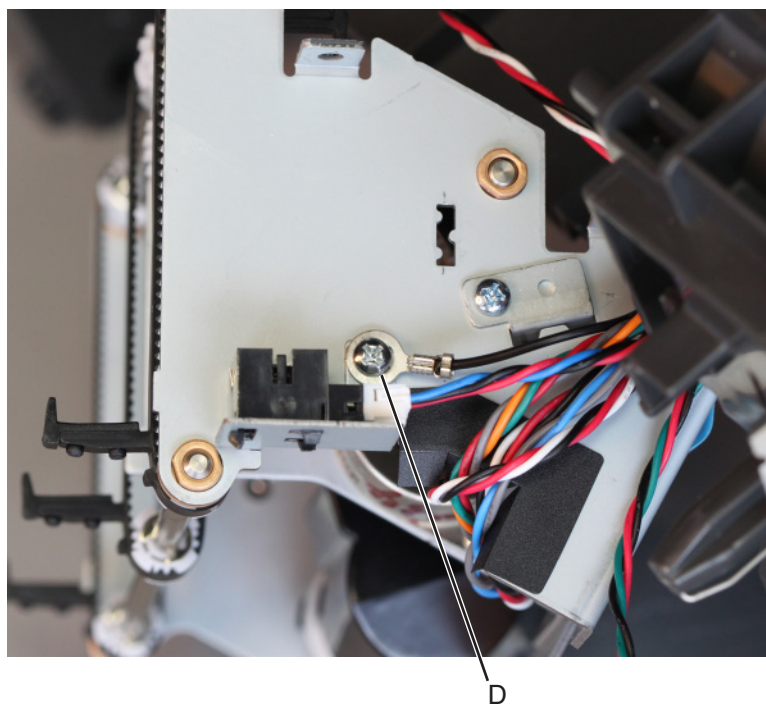
Installation note: Make sure the paddles (E) align and fit properly.

Parts removal

E
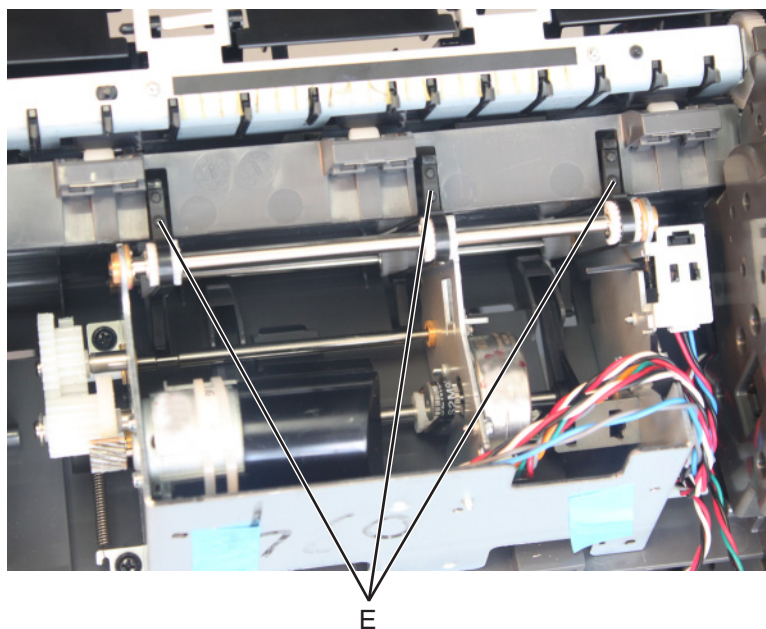
Installation note: Make sure the cables don't get in the way of moving parts.

Sensor (stapler ejector HP) removal

1 Remove the stapler left cover. See **"Stapler left cover removal" on page 710**.

2 Remove the stapler right cover. See **"Stapler right cover removal" on page 704**.

3 Remove the stapler diverter plunger assembly. See **"Stapler diverter plunger assembly removal" on page 747**.

4 Remove the stapler drive gear assembly. See **"Stapler drive gear assembly removal" on page 748**.

5 Remove the stapler feed roll. See **"Stapler feed roll removal" on page 752**.

6 Remove the stapler chute assembly. See **"Stapler chute assembly removal" on page 754**.

7 Release the cable holder (A) from the frame and remove it.

A

8 Remove the four screws (B) from the motor assembly frame.

B

Parts removal

9 Remove the three screws (C) securing the bottom part of the motor assembly.

C

10 Release the cables off their guides.

Note: Pay attention to the original routing of the cables.

11 Pull the motor assembly away from the machine.

12 Disconnect the cable (D), and release the latches to remove the sensor from the bracket.

D

Parts removal

Sensor (media pusher HP) removal

1 Remove the stapler left cover. See **"Stapler left cover removal" on page 710**.

2 Remove the stapler right cover. See **"Stapler right cover removal" on page 704**.

3 Remove the stapler diverter plunger assembly. See **"Stapler diverter plunger assembly removal" on page 747**.

4 Remove the stapler drive gear assembly. See **"Stapler drive gear assembly removal" on page 748**.

5 Remove the stapler feed roll. See **"Stapler feed roll removal" on page 752**.

6 Remove the stapler chute assembly. See **"Stapler chute assembly removal" on page 754**.

7 Release the cable holder (A) from the frame and remove it.

A

8 Remove the four screws (B) from the motor assembly frame.

B

9 Remove the three screws (C) securing the bottom part of the motor assembly.

C

10 Release the cables off their guides.

   Note: Pay attention to the original routing of the cables.

11 Pull the motor assembly away from the machine.

12 Remove the mylar plate (D) covering the sensor latches. Release the sensor latches.
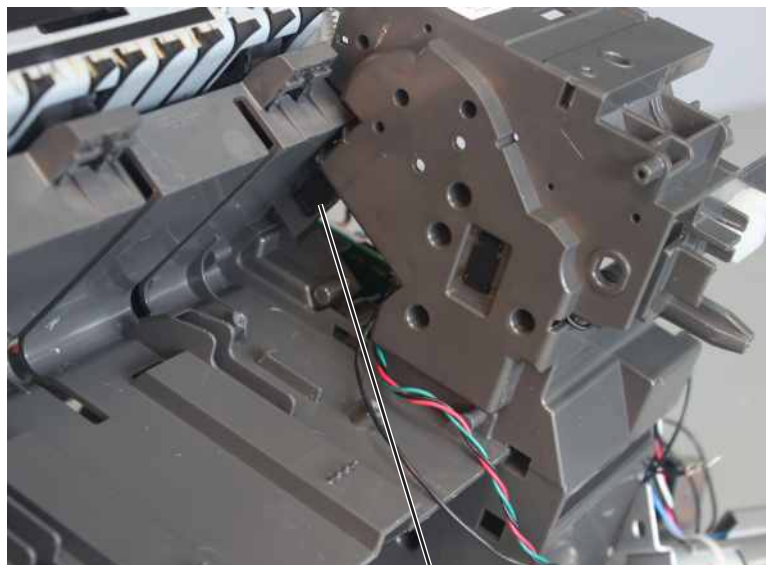
D

13 From the other side of the frame, disconnect the sensor cable, and then remove the sensor from the frame.

Sensor (stapler diverter plunger HP) removal

1 Remove the stapler left cover. See **"Stapler left cover removal" on page 710**.

2 Remove the stapler right cover. See **"Stapler right cover removal" on page 704**.

3 Remove the stapler diverter plunger assembly. See **"Stapler diverter plunger assembly removal" on page 747**.

4 Remove the stapler drive gear assembly. See **"Stapler drive gear assembly removal" on page 748**.

5 Remove the stapler feed roll. See **"Stapler feed roll removal" on page 752**.

6 Remove the stapler chute assembly. See **"Stapler chute assembly removal" on page 754**.

7 Release the cable holder (A) from the frame and remove it.

A

8 Remove the four screws (B) from the motor assembly frame.

B

Parts removal

9 Remove the three screws (C) securing the bottom part of the motor assembly.

C

10 Release the cables off their guides.

> **Note:** Pay attention to the original routing of the cables.

11 Pull the motor assembly away from the machine.

12 Remove the mylar plate covering the sensor latches. Release the sensor latches.

13 From the other side of the frame, disconnect the sensor cable, and then remove the sensor from the frame.

Mailbox option removals

Mailbox option removal

1 Press the latches to release.

2 Lift the option off the printer.

Mailbox top cover removal

1 Lift the top cover.

2 Remove the top cover from the mailbox option.

Mailbox rear door removal
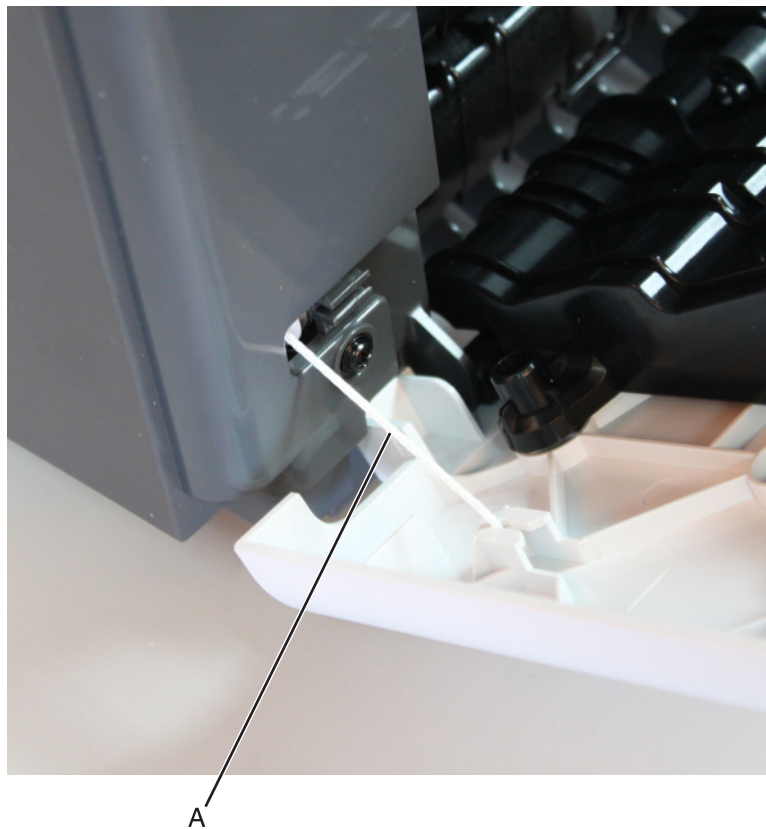
1 Open the rear door, and detach the string (A) from the door.

A

Note: Fasten the string end (B) to the rear side to prevent it from recoiling into the interior of the mailbox.

B
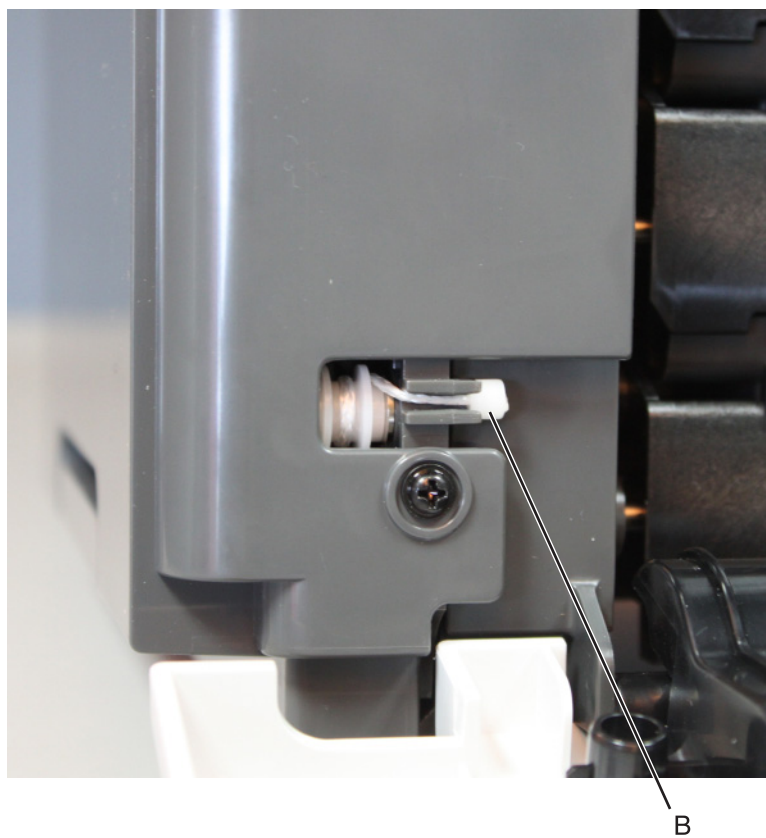
2 Position the rear door at the angle shown, and pull the door off the mailbox.

Mailbox right cover removal

1 Open the rear door, and detach the string (A) from the door.
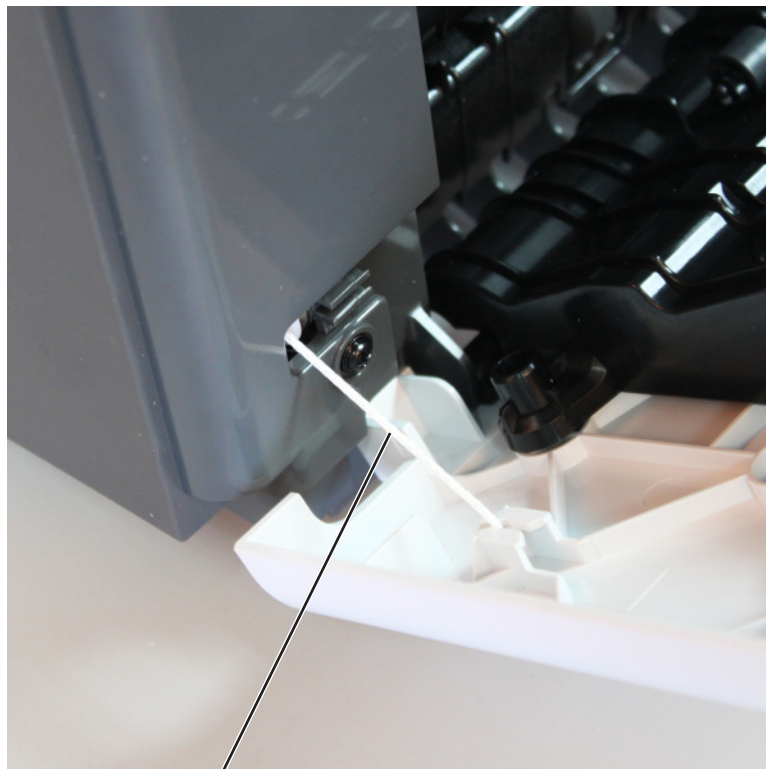
A

2 Remove the mailbox top cover. See **"Mailbox top cover removal" on page 768**.

3 Remove the two screws (B) from the mailbox, then remove the right cover.

B
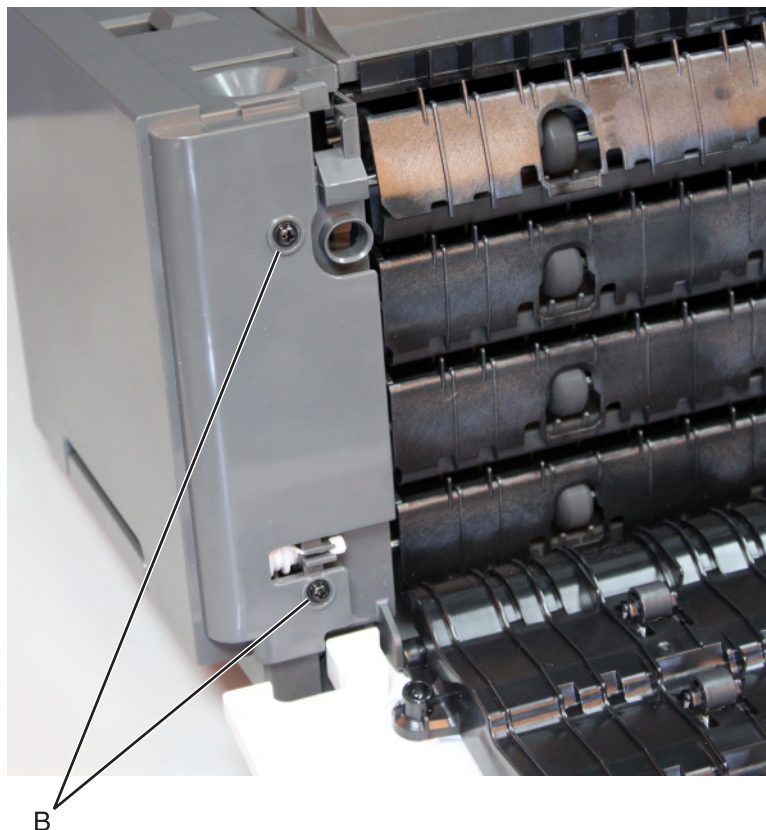
Mailbox top bin cover with bail removal

1 Slightly push the inner frame of the mailbox to the left to release the bin cover, and then lift the bin cover.

Parts removal
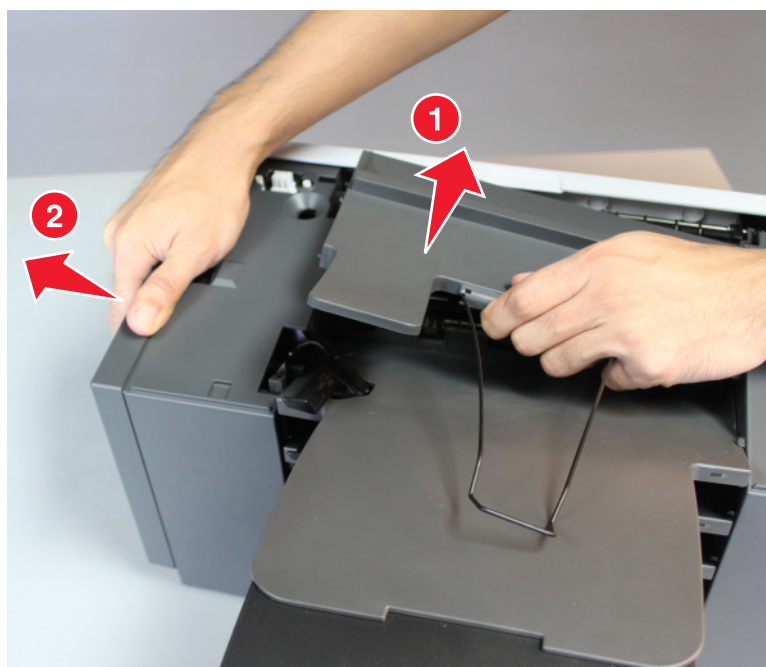
2 Release the mud bail flap from the bin cover, and then remove.
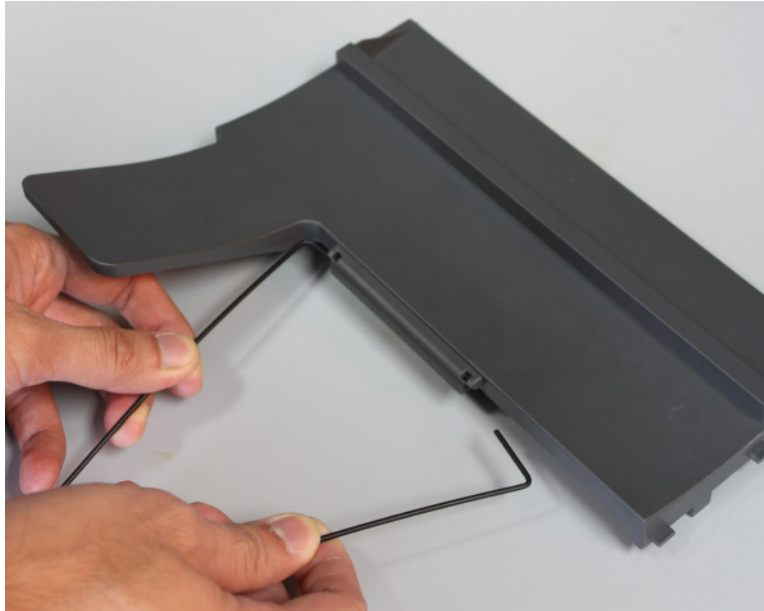
Mailbox spring with string removal

1 Remove the mailbox top cover. See **"Mailbox top cover removal" on page 768**.

2 Remove the mailbox right cover. See **"Mailbox right cover removal" on page 771**.

3 Remove the spring (A) with string.

> **Note:** Pay attention to the original position of the string. The string on the pulley is wound clockwise.

A
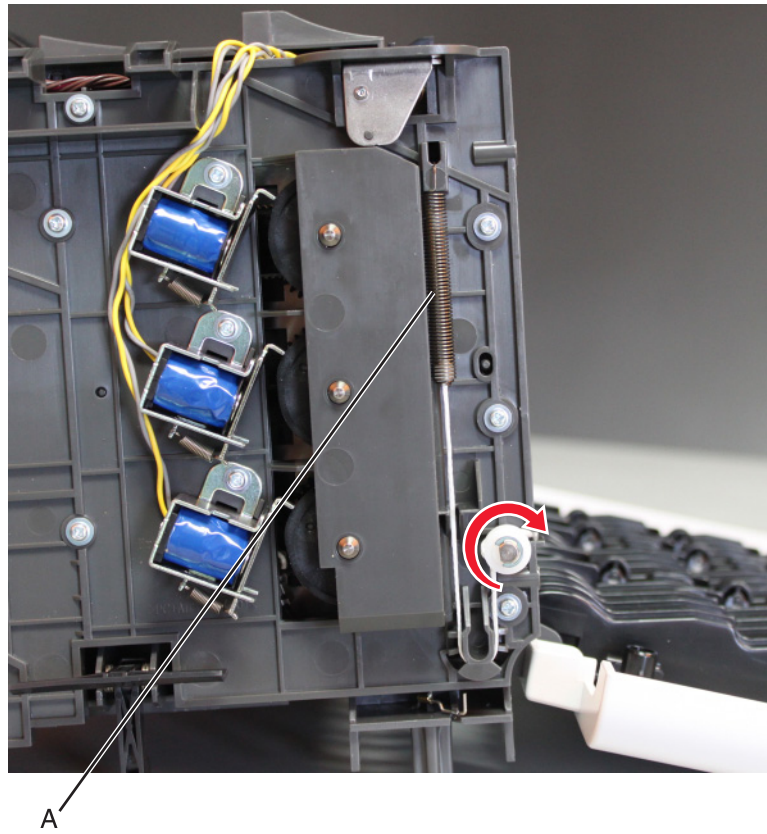
Mailbox solenoid removal

1 Remove the mailbox top cover. See **"Mailbox top cover removal" on page 768**.

2 Remove the mailbox right cover. See **"Mailbox right cover removal" on page 771**.

3 Remove the mailbox left cover. See **"Mailbox left cover removal" on page 776**.

4 Lift the middle portion of the cover to release the tabs (A), then remove the cover.

A
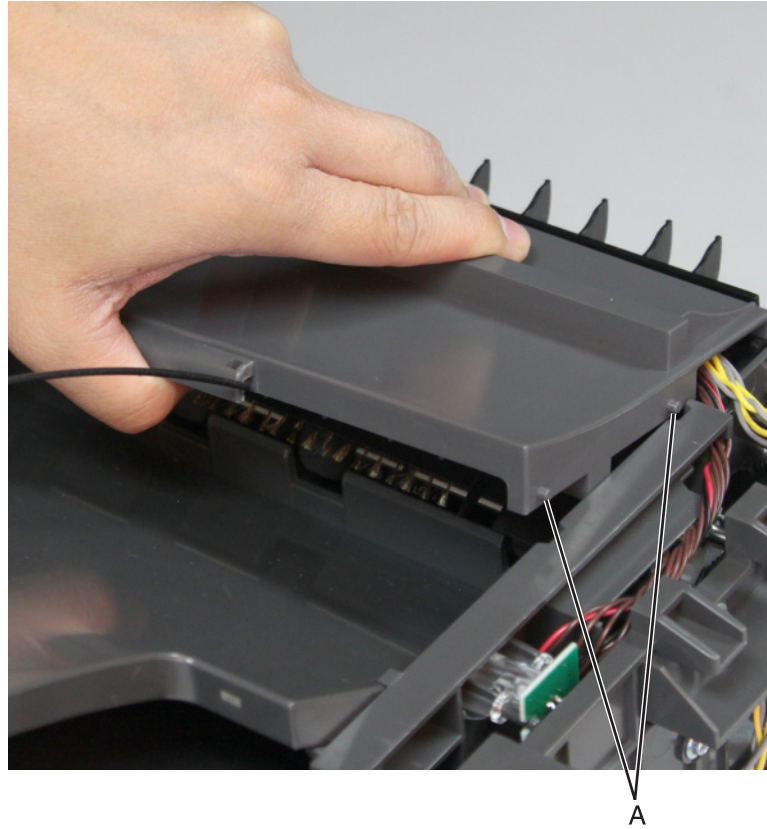
5 Disconnect the solenoid cable (J2A, J2B, or J2C) from the controller board.

Bin 3 solenoid

Bin 2 solenoid

Bin 1 solenoid

Bin 1 solenoid

Bin 2 solenoid

Bin 3 solenoid

Parts removal

775

6 Remove the screw (B) securing the solenoid.

B
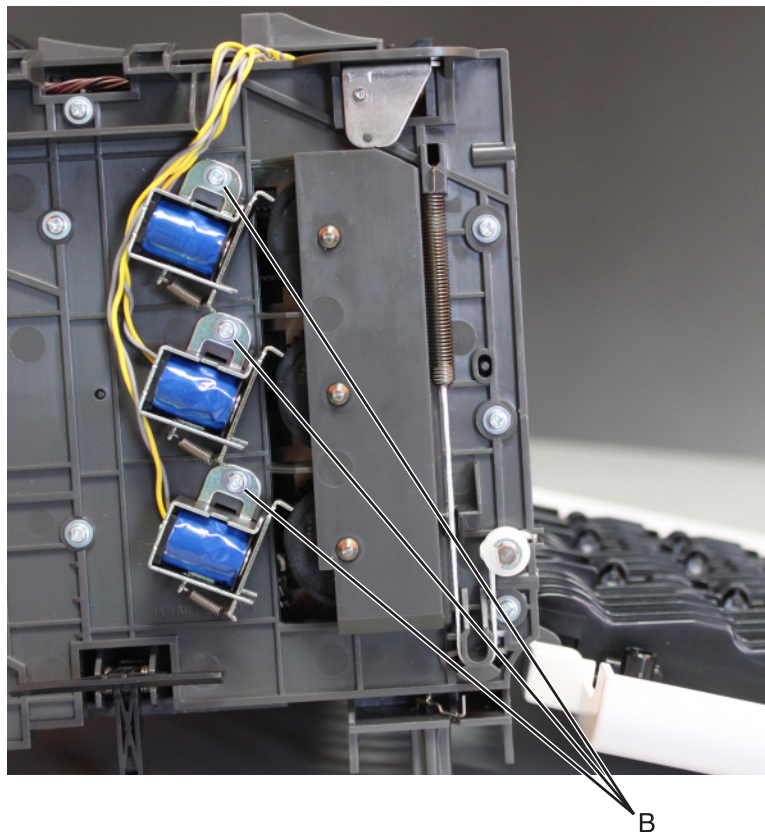
7 Route the cable off the mailbox, then remove the solenoid.

Mailbox left cover removal

1 Open the rear door.

2 Remove the mailbox top cover. See **"Mailbox top cover removal" on page 768**.

3 Remove the screw from the mailbox (A), then remove the left cover.

A
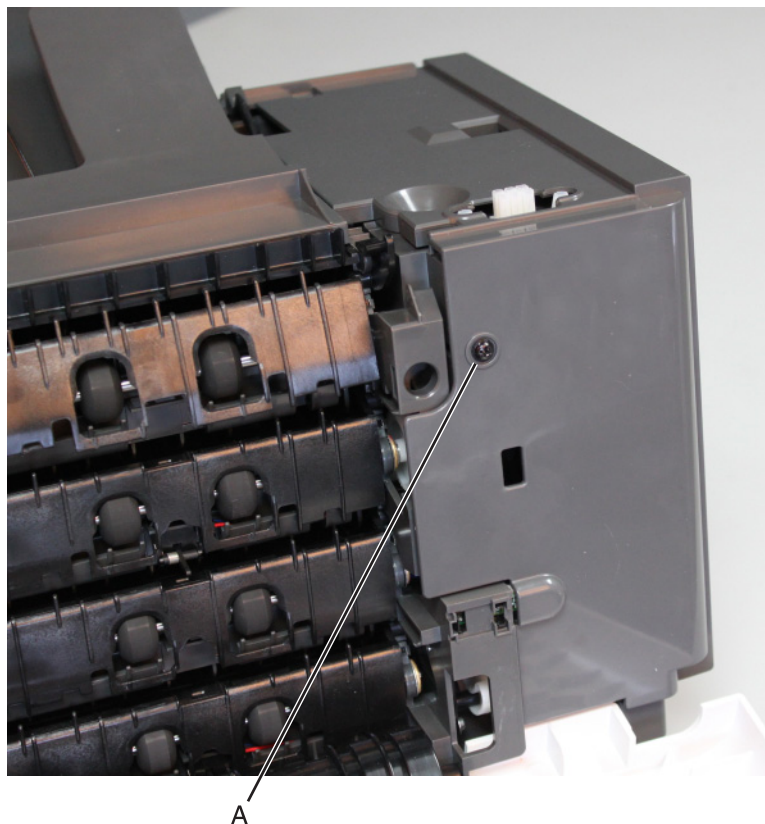
Mailbox option latch removal

1 Remove the mailbox left cover or right cover. See or .
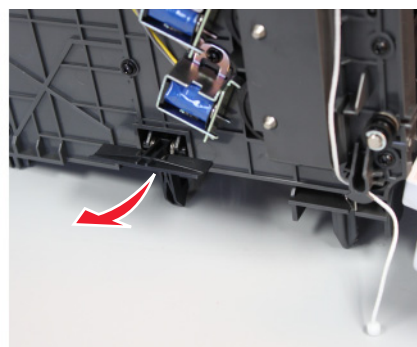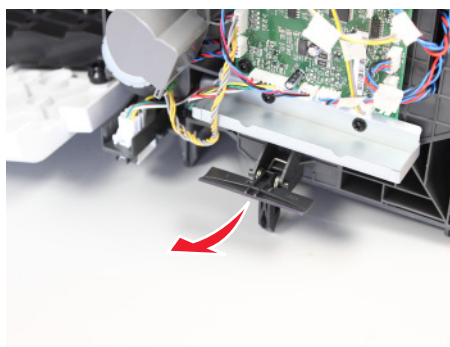
2 Pull the latches off the mailbox, and then remove.

Sensor (mailbox rear door interlock) removal

1 Remove the mailbox left cover. See .

2 Pry the mylar cover off the sensor latches.

3 Disconnect the cable (A), and then release the latches to remove the sensor.
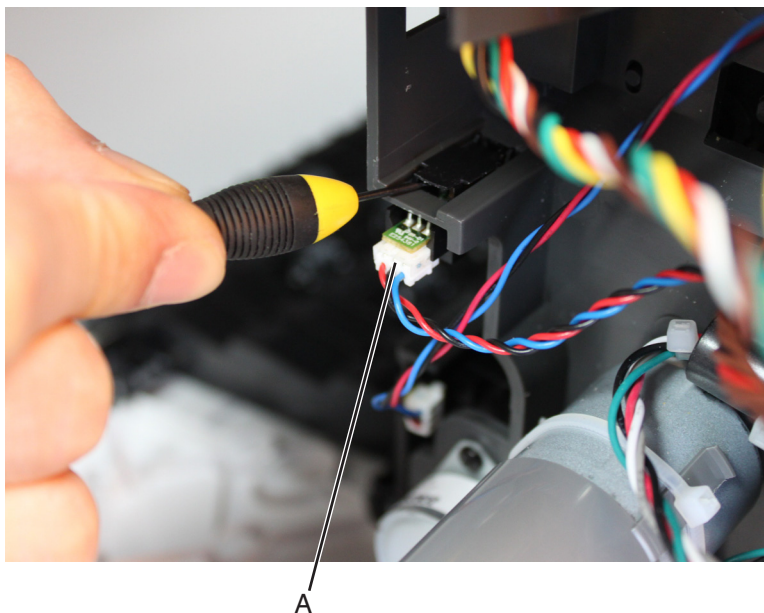
A

Mailbox diverter plunger assembly removal

1 Remove the mailbox left cover. See **"Mailbox left cover removal" on page 776**.

2 Remove the mailbox rear door. See **"Mailbox rear door removal" on page 769**.

3 Remove the two screws (A), and then remove the shield.

A

4 Remove the seven screws (B) from the inner left frame.

Note: Pay attention to the original position of the grounding plate (C).

C
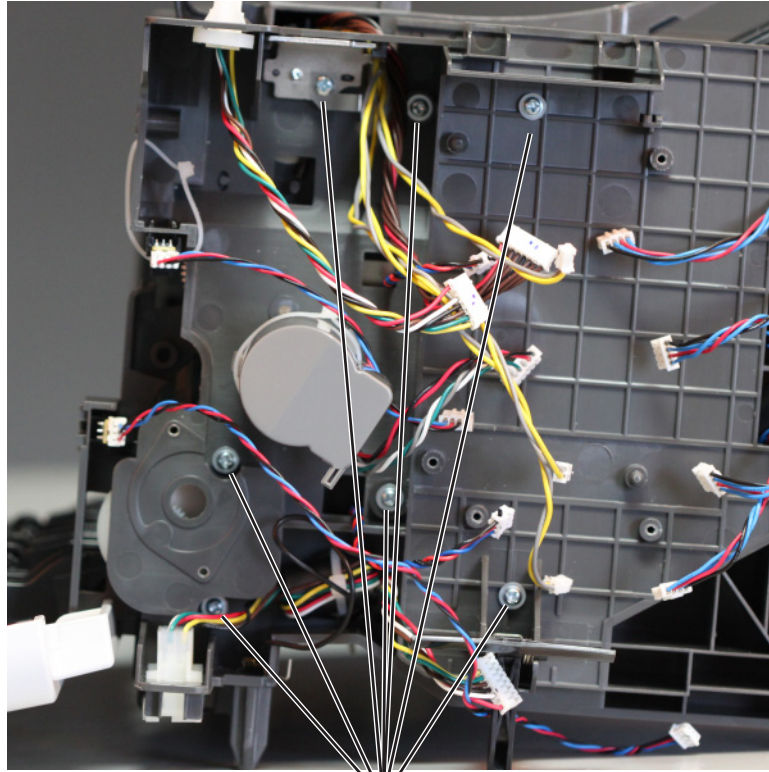
5 Move away the left inner frame to access the parts underneath.

6 Remove the two screws (D), and then remove the diverter plunger.
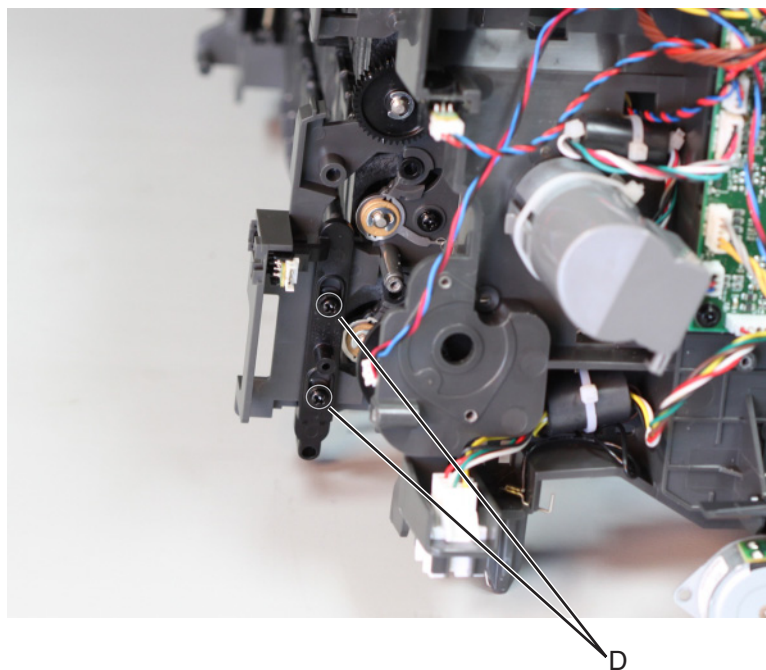
7 Remove the E-clip (E) to release the cam, and then remove the diverter cam.
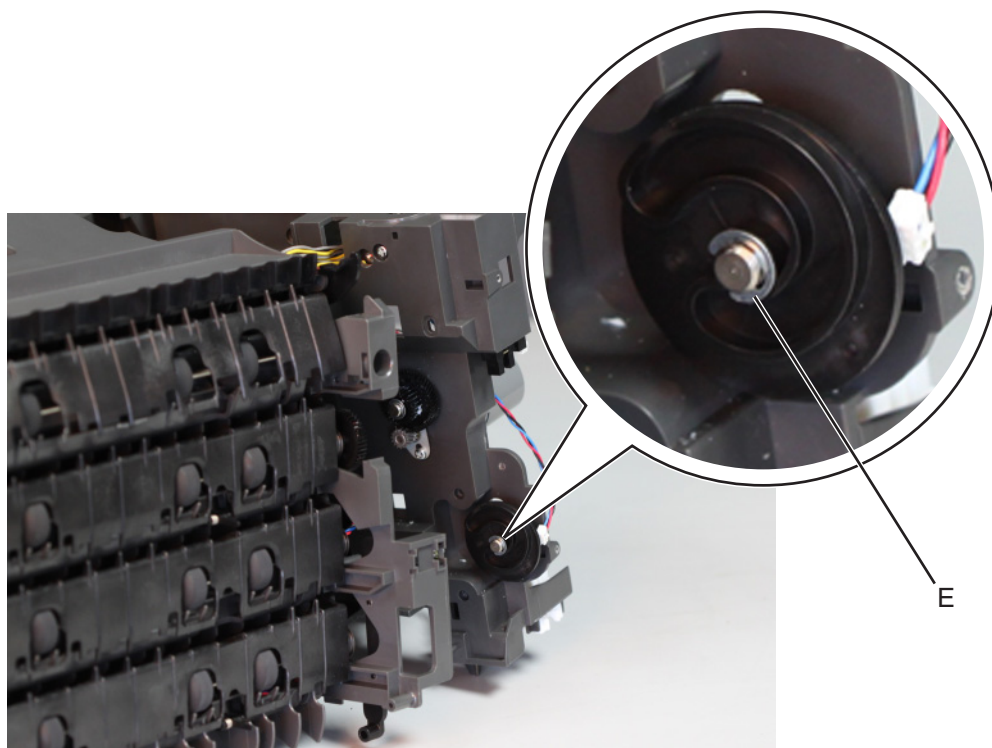
Mailbox main drive gear removal

1 Remove the mailbox left cover. See **"Mailbox left cover removal" on page 776**.

2 Remove the mailbox rear door. See **"Mailbox rear door removal" on page 769**.

3 Remove the two screws (A), and then remove the shield.

A
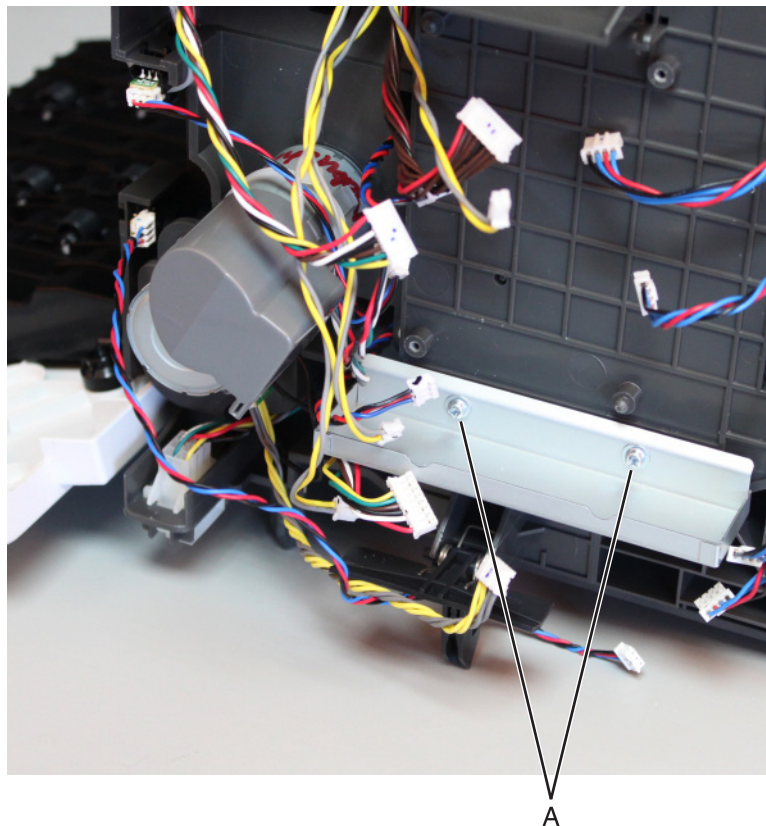
4 Remove the seven screws (B) from the inner left frame.
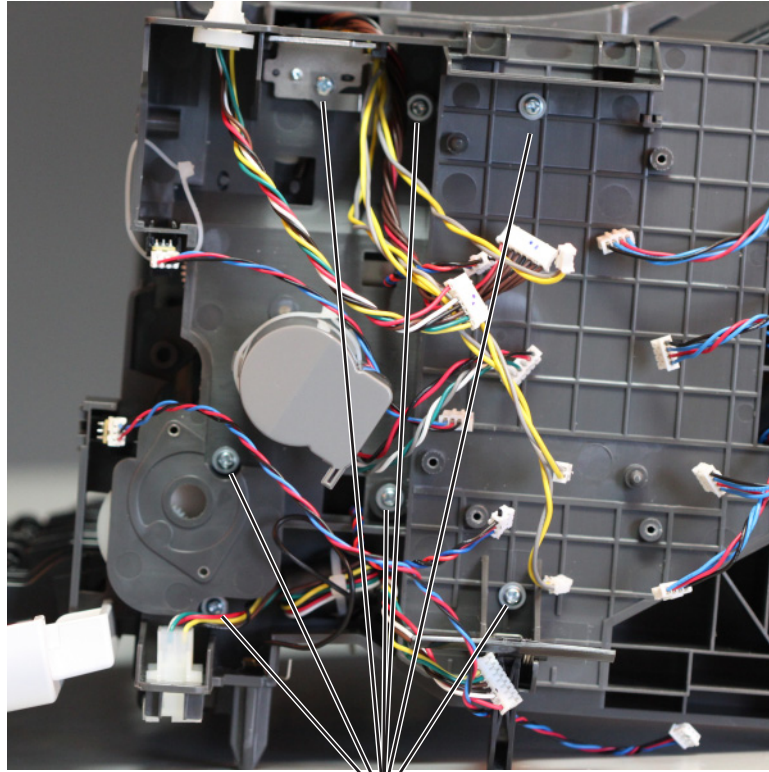
B

Note: Pay attention to the original position of the grounding plate (C).
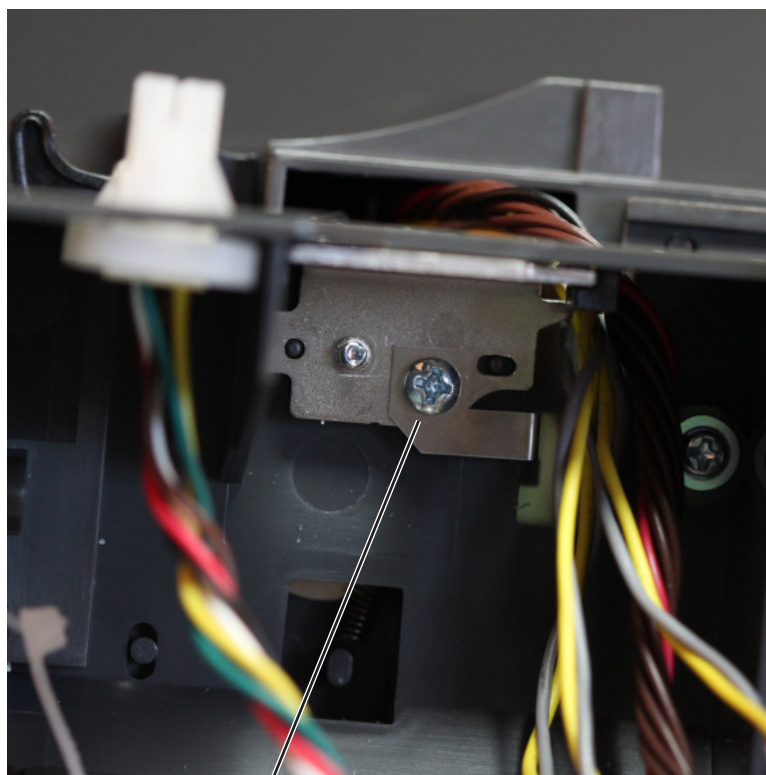
C

5 Move away the left inner frame to access the parts underneath.
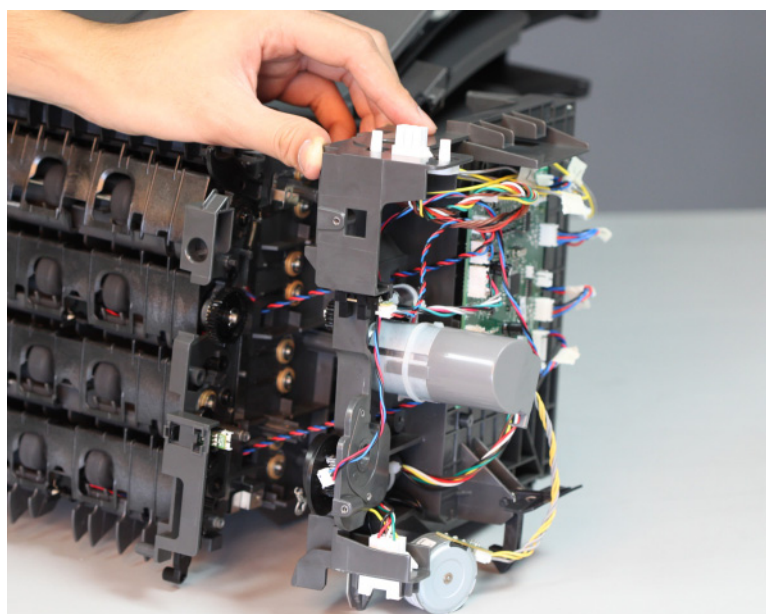
6 Remove the E-clip (D) to release the gear, and then pull the gear off the shaft.
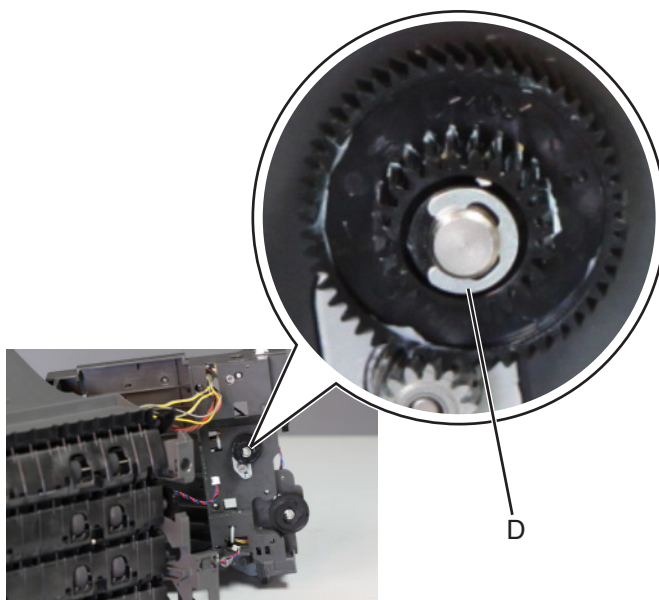
D

Mailbox main motor removal

1 Remove the mailbox left cover. See **"Mailbox left cover removal" on page 776**.

2 Remove the mailbox rear door. See **"Mailbox rear door removal" on page 769**.

3 Remove the mailbox main drive gear. See **"Mailbox main drive gear removal" on page 783**.

4 Remove the two screws (A), and then pull the main motor off the left side, and remove it.
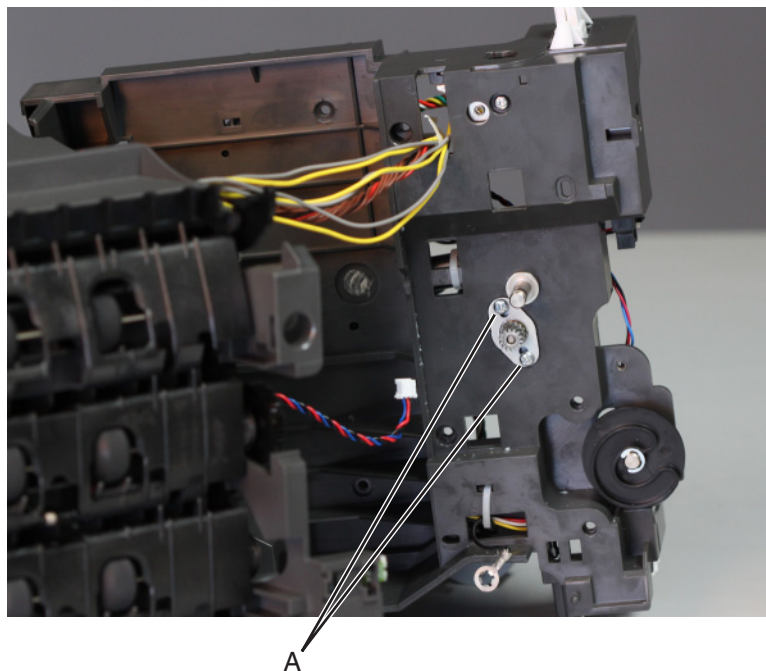
A

Parts removal

Mailbox controller board removal

1 Remove the mailbox top cover. See **"Mailbox top cover removal" on page 768**.

2 Remove the mailbox left cover. See **"Mailbox left cover removal" on page 776**.

3 Disconnect all cables (J1B, J5, J4D, J2A, J4C, J2B, J4B, J2C, J4A, J8, J1A, J3B, J7, J6, J12, and J3T), and then remove the two screws (A) from the controller board.

Parts removal
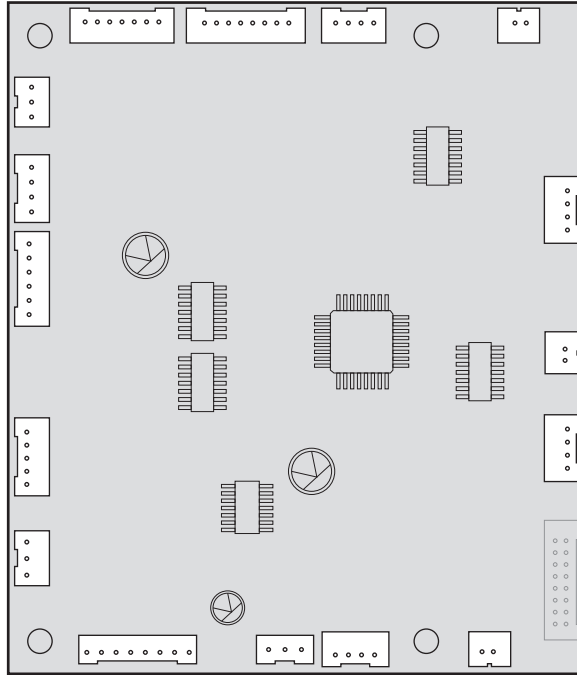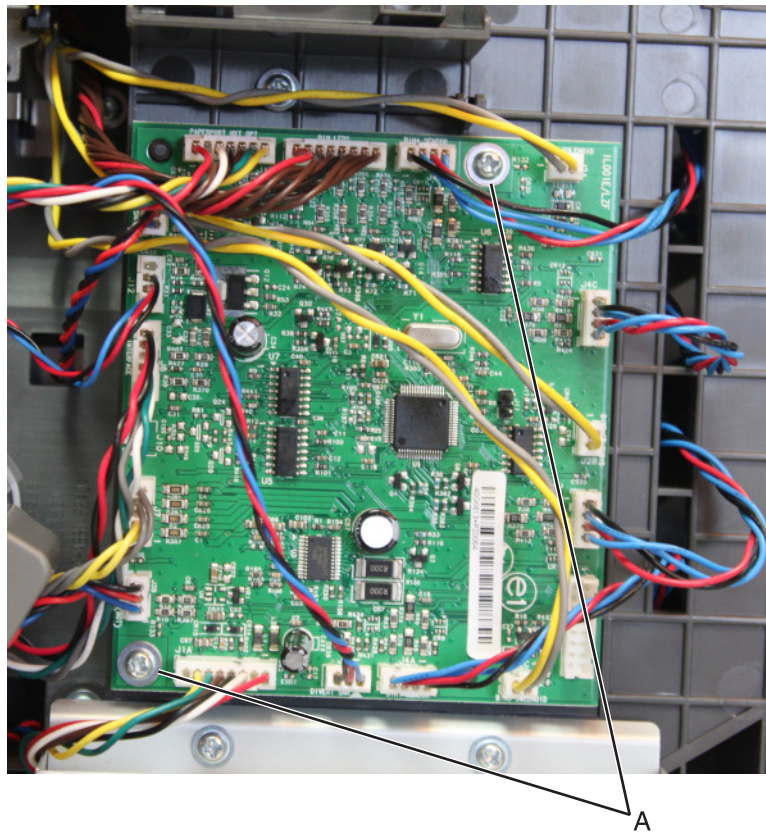
4 Remove the controller board.

Sensor (mailbox diverter plunger HP) removal

1 Remove the mailbox top cover. See **"Mailbox top cover removal" on page 768**.

2 Remove the mailbox left cover. See **"Mailbox left cover removal" on page 776**.

3 Rotate the cam to clear the obstacle blocking the sensor.
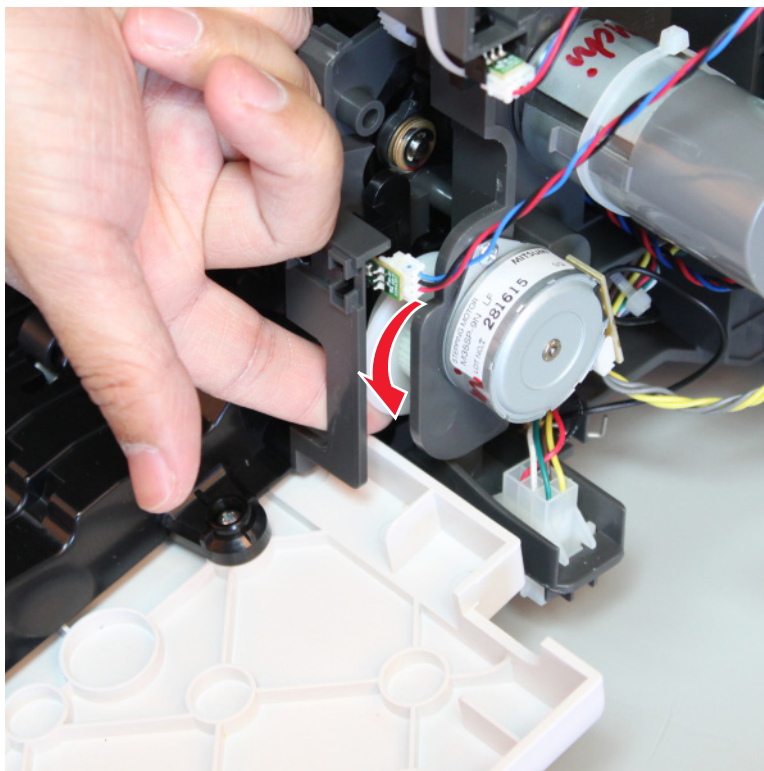
4 Disconnect the sensor cable (A).

5 Release the latches (B), and remove the sensor.
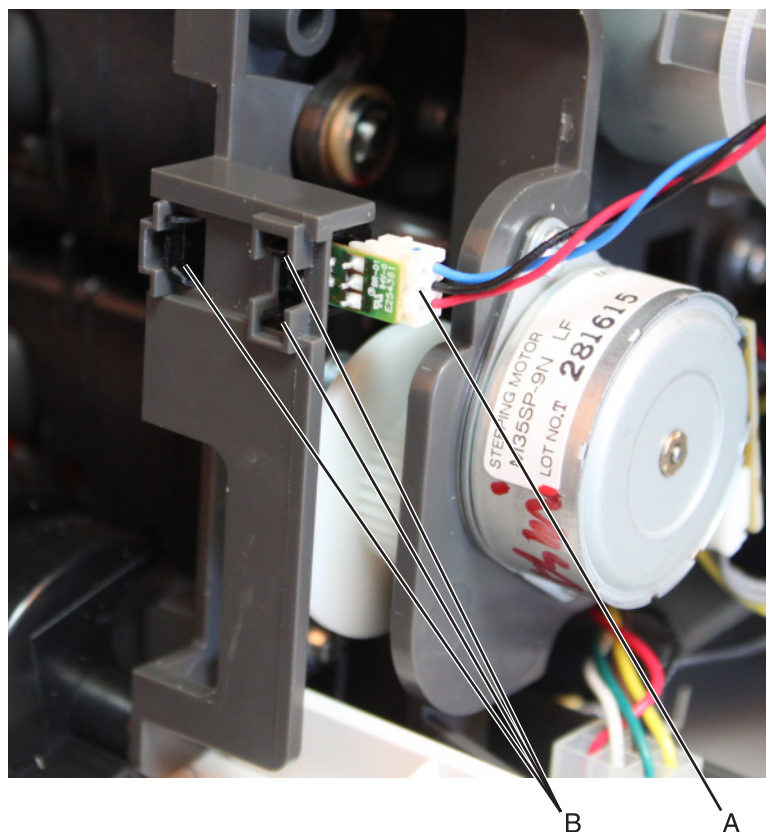
Mailbox lower interface cable removal

1 Remove the mailbox top cover. See .

2 Remove the mailbox left cover. See .

3 Disconnect the lower interface cable J1A from the controller board.
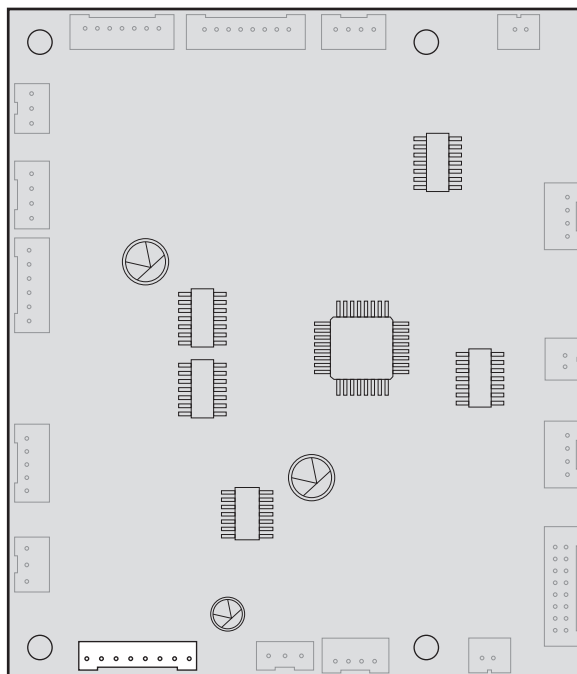
4 Cut the cable tie holding the lower interface cable.

Installation note: Make sure the cables don't get in the way of moving parts.

5 Push inward to release the latches (A), then push the connector off its slot.
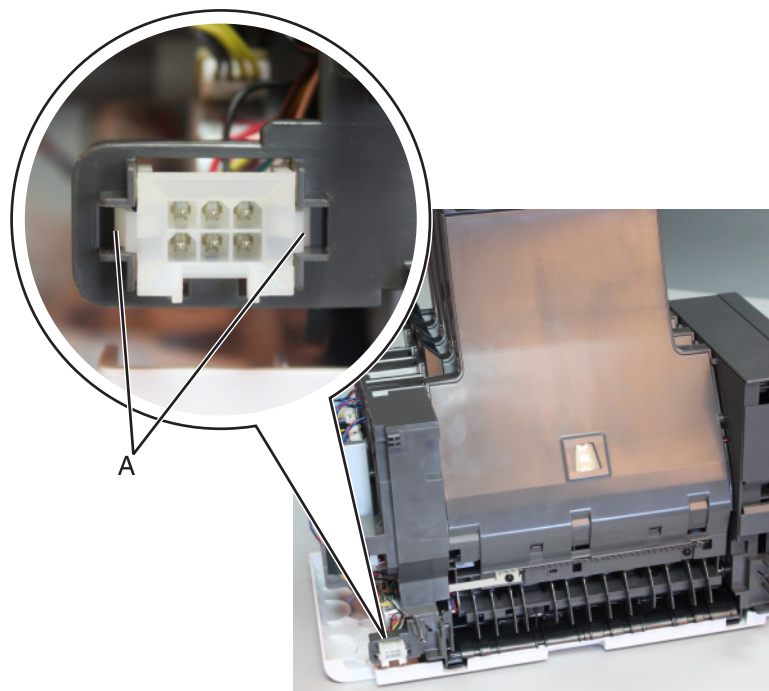
6 Remove the lower interface cable.

Mailbox upper interface cable removal

1 Remove the mailbox top cover. See **"Mailbox top cover removal" on page 768**,

2 Remove the mailbox left cover. See **"Mailbox left cover removal" on page 776**.

3 Disconnect the upper interface cable J1B from the controller board.
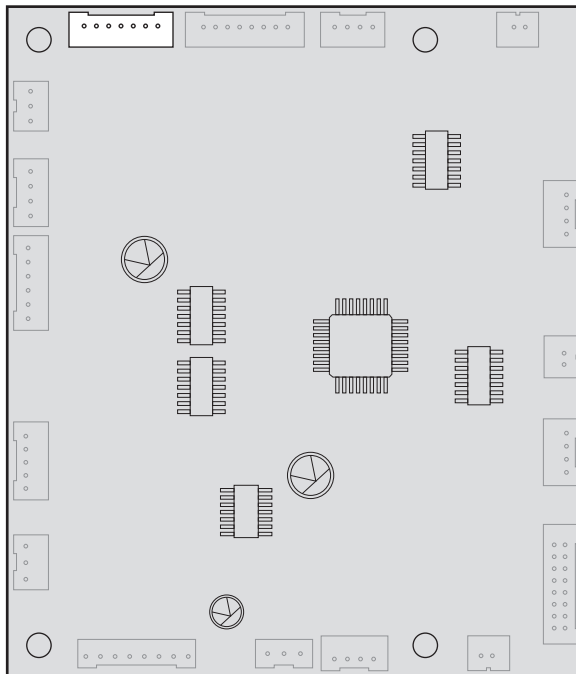
4 Crimp both connector pins, using pliers to make them fit the pin holes. Push the connector off its slot.

5 Remove the upper interface cable.

Mailbox diverter motor removal

1 Remove the mailbox top cover. See **"Mailbox top cover removal" on page 768**.

2 Remove the mailbox left cover. See **"Mailbox left cover removal" on page 776**.

3 Disconnect the cable (A) from the divert motor.

4 Remove the two screws (B) using a #1 Phillips screwdriver, then remove the motor.

B   A
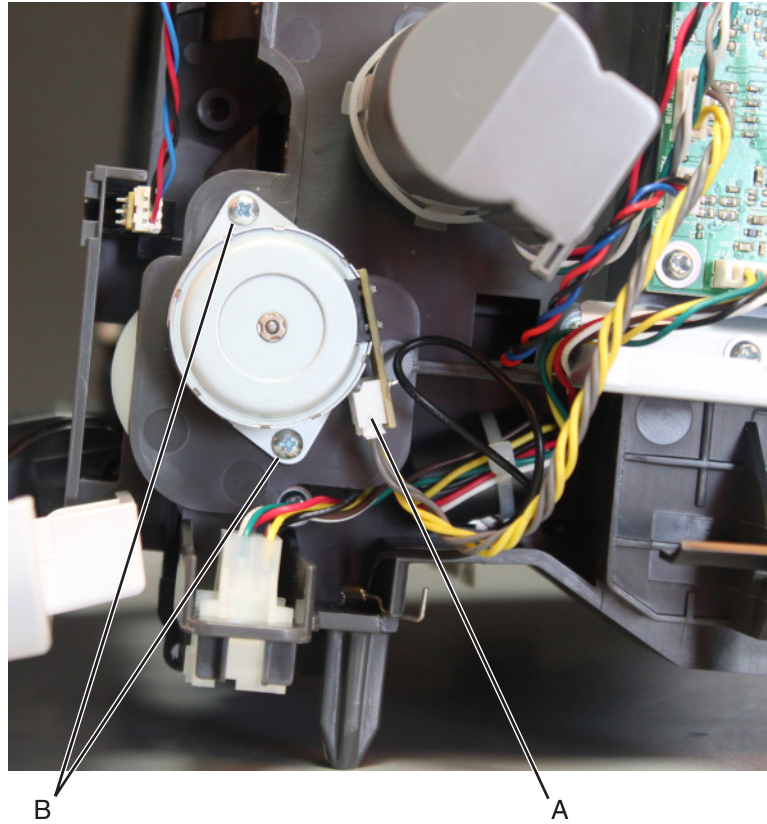
Mailbox media bin full flag removal

1 Pull the flag upwards to release the front pin.

2 Ease the media bin full flag off the mailbox.

Installation note: Make sure the flag's front and rear pins are inserted into their respective slots.

Sensor (mailbox bin full receive) removal

1 Remove the mailbox top cover. See **"Mailbox top cover removal" on page 768**.

2 Remove the mailbox left cover. See **"Mailbox left cover removal" on page 776**.

3 Remove the mailbox diverter motor. See **"Mailbox diverter motor removal" on page 792**.

4 Disconnect all cables (J1B, J5, J4D, J2A, J4C, J2B, J4B, J2C, J4A, J8, J1A, J3B, J7, J6, J12, and J3T) from the controller board.
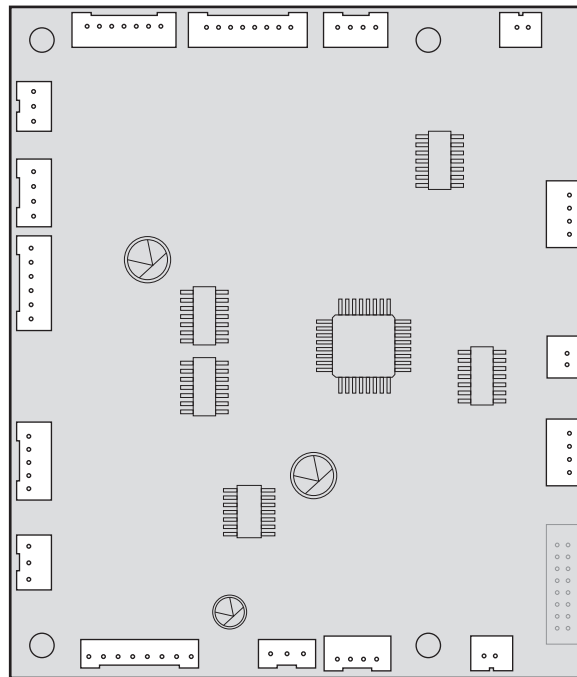
5 Remove the two screws (A), then remove the shield.

A

Parts removal
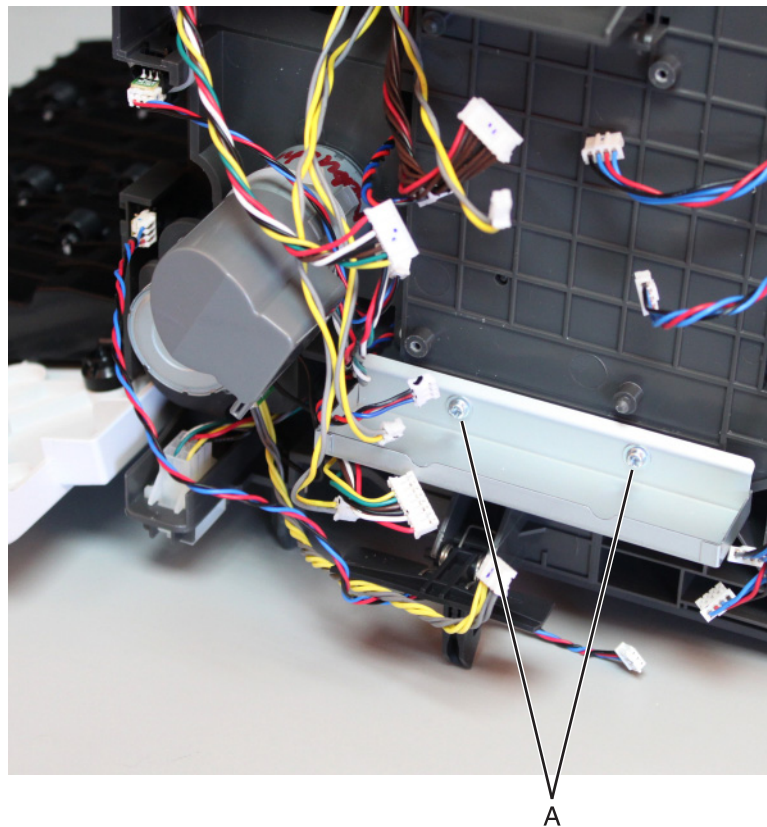
6 Remove the seven screws (B) from the inner left frame.

B
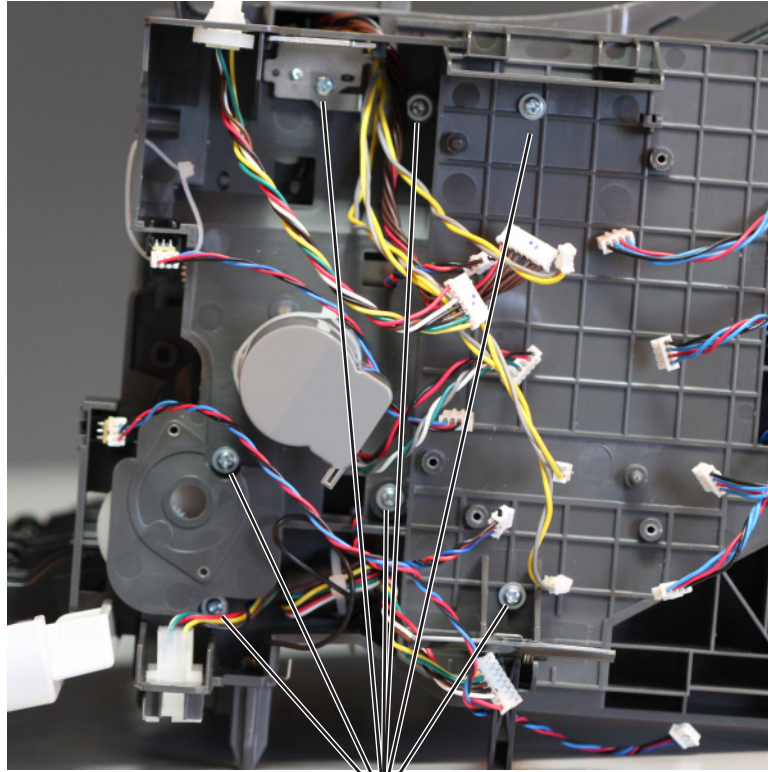
Installation note: Pay attention to the original position of the grounding plate (C).
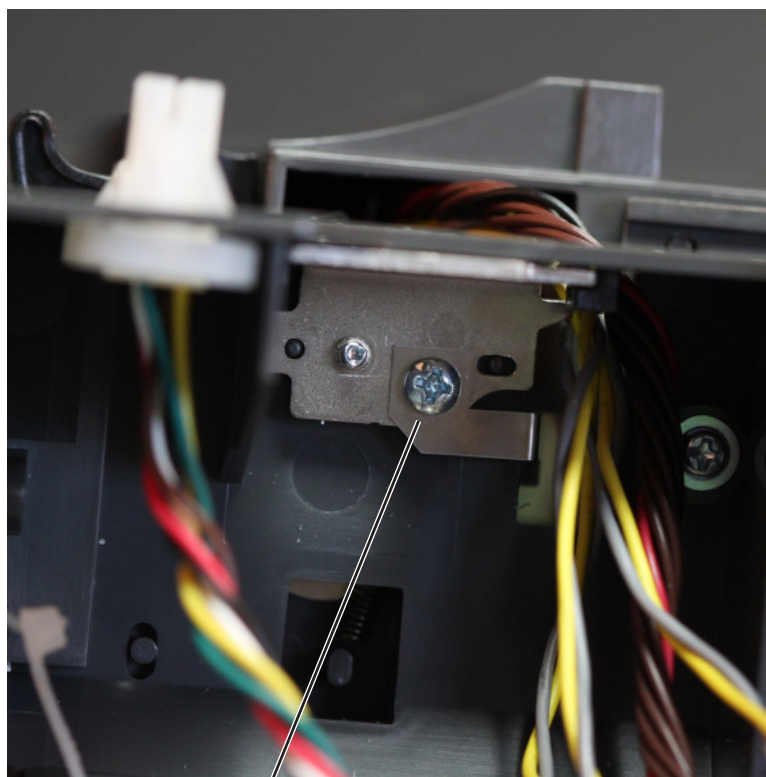
C

7 Swing the inner left frame away from the mailbox to access the sensors.

8 Disconnect the cable (D) from the sensor.
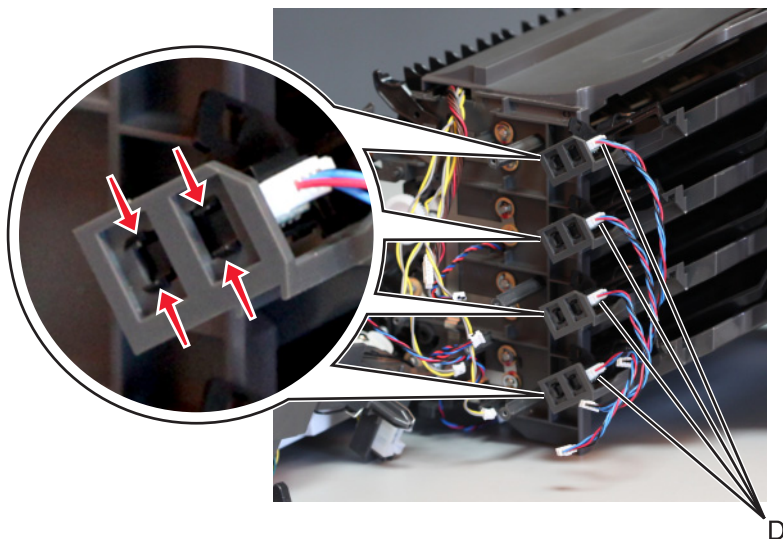
D
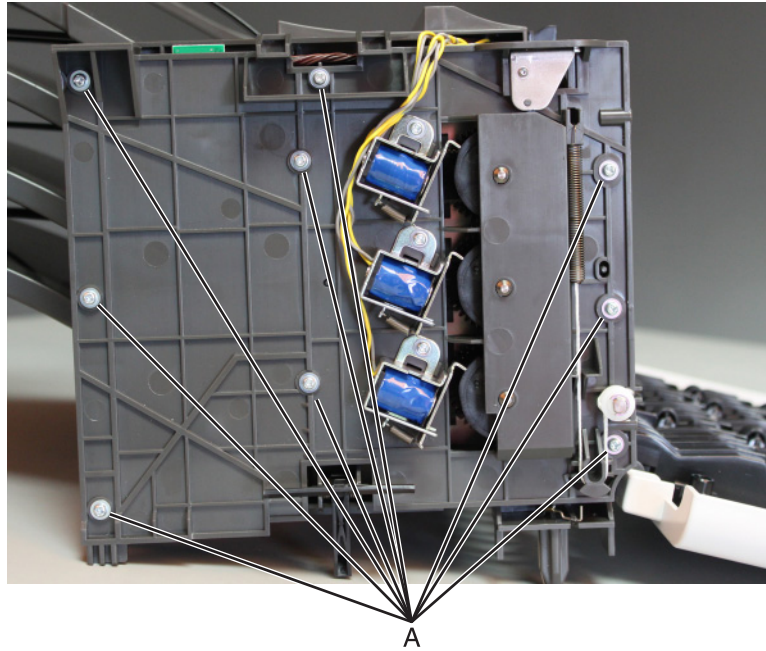
9 Release the latches, and remove the sensor.

Mailbox belt removal
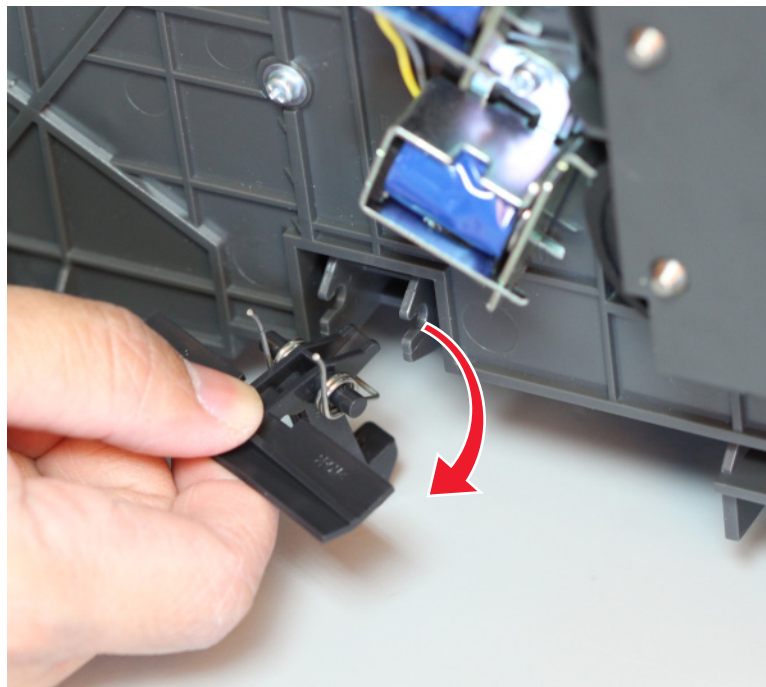
1 Remove the mailbox top cover. See **"Mailbox top cover removal" on page 768**.

2 Remove the mailbox right cover. See **"Mailbox right cover removal" on page 771**.

Parts removal

3 Remove the nine screws (A) from the inner right frame.

4 Pull the latch to release, then remove.

Parts removal

5 Carefully lift the inner right frame, then remove the ground screw (B).
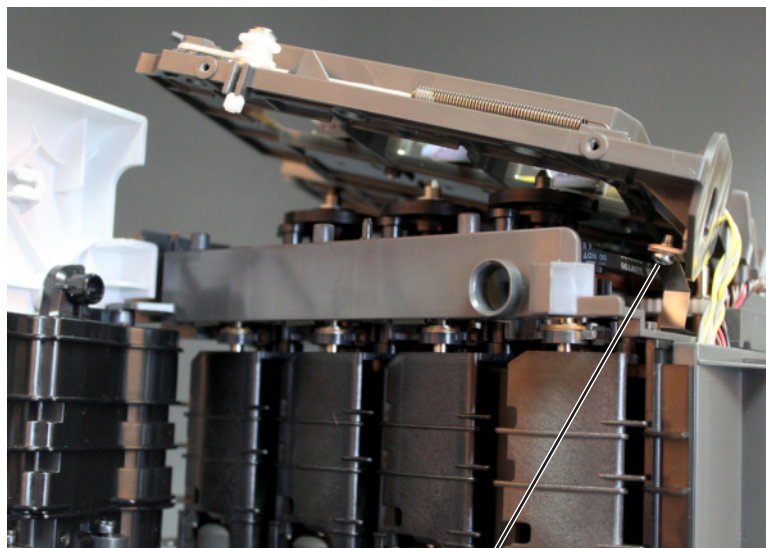
6 Swing away the inner right frame to access the belt (C).
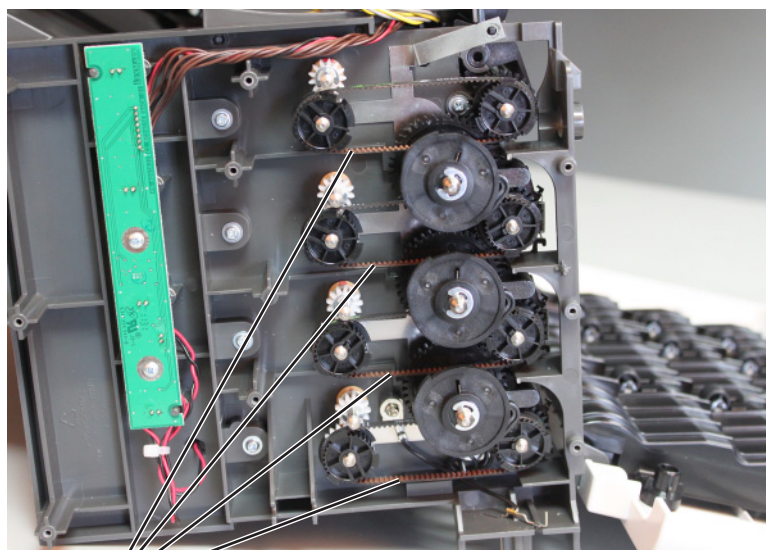
7 Remove the belt.

Mailbox output bin LED assembly removal

1 Remove the mailbox top cover. See **"Mailbox top cover removal" on page 768**.

2 Remove the mailbox right cover. See **"Mailbox right cover removal" on page 771**.

3 Remove the nine screws (A) from the inner right frame.

4 Pull the latch to release, then remove.

Parts removal

5 Carefully lift the inner right frame, then remove the ground screw (B).

B
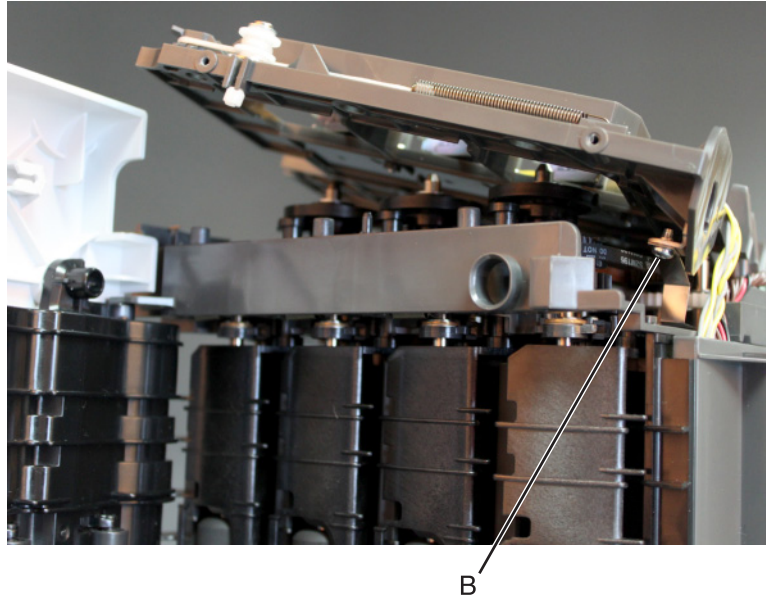
6 Swing the inner right frame away to access the LED assembly.

7 Using a #1 Phillips screwdriver, remove the two screws (C) from the LED assembly.

C
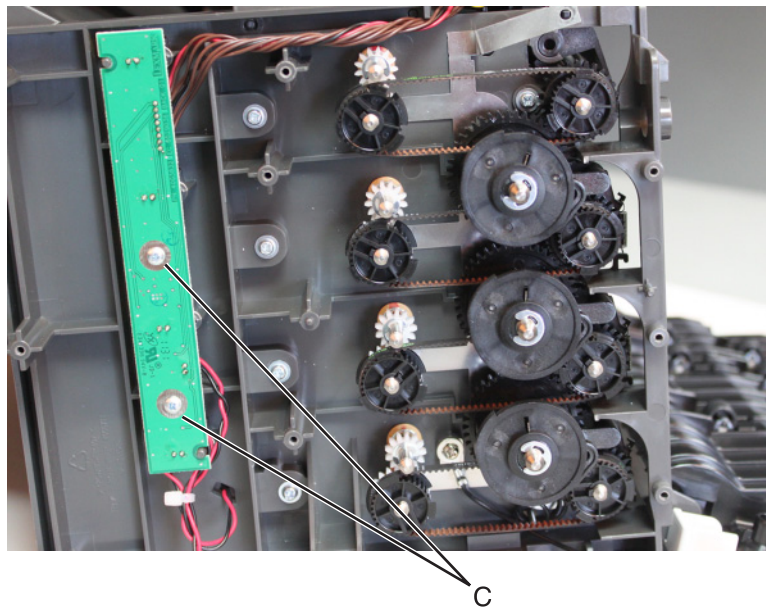
8 Disconnect the two cables (D), and remove the output bin LED assembly.
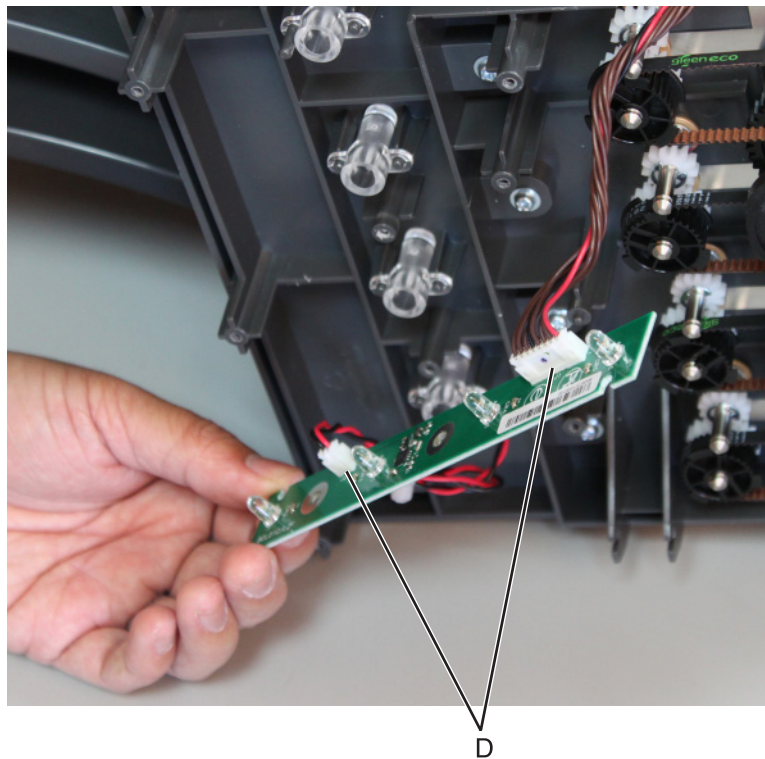
D

Mailbox top diverter removal

1 Remove the mailbox left cover. See .

2 Remove the mailbox rear door. See .

3 Remove the two screws (A), and then remove the shield.

A

4 Remove the seven screws (B) from the inner left frame.

Note: Pay attention to the original position of the grounding plate (C).

C
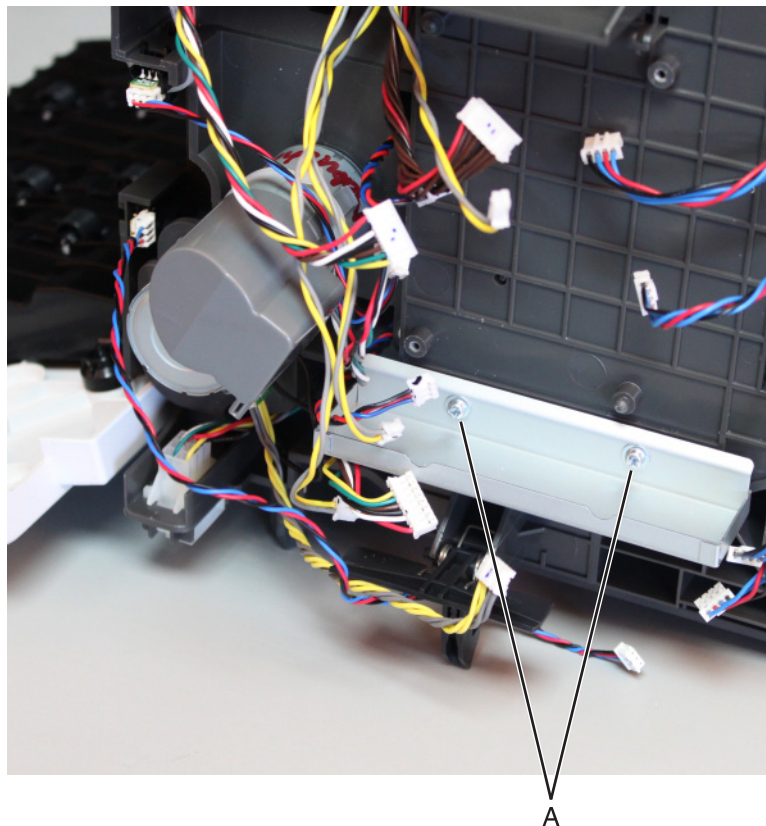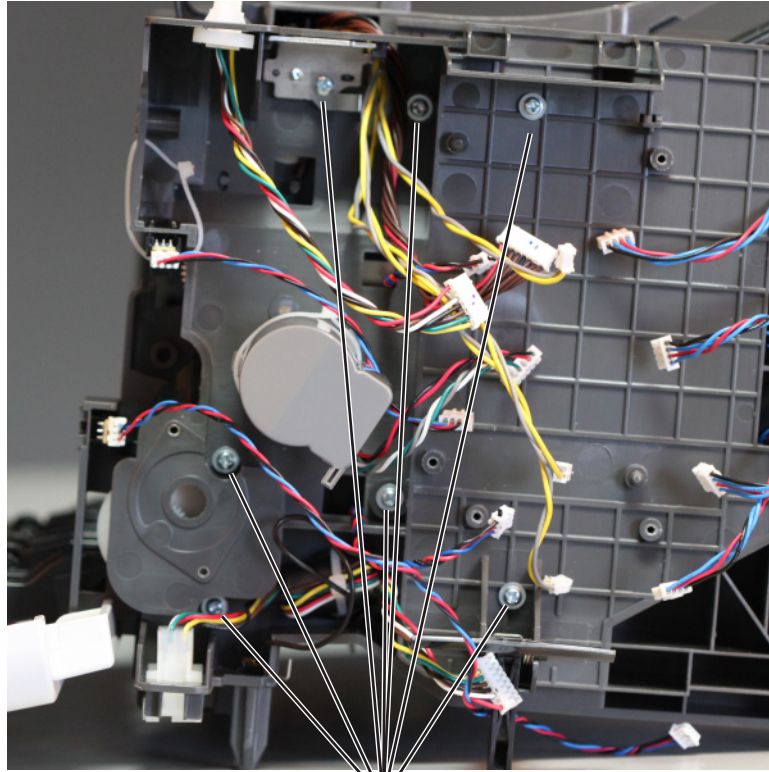
5 Move away the left inner frame to access the parts underneath.
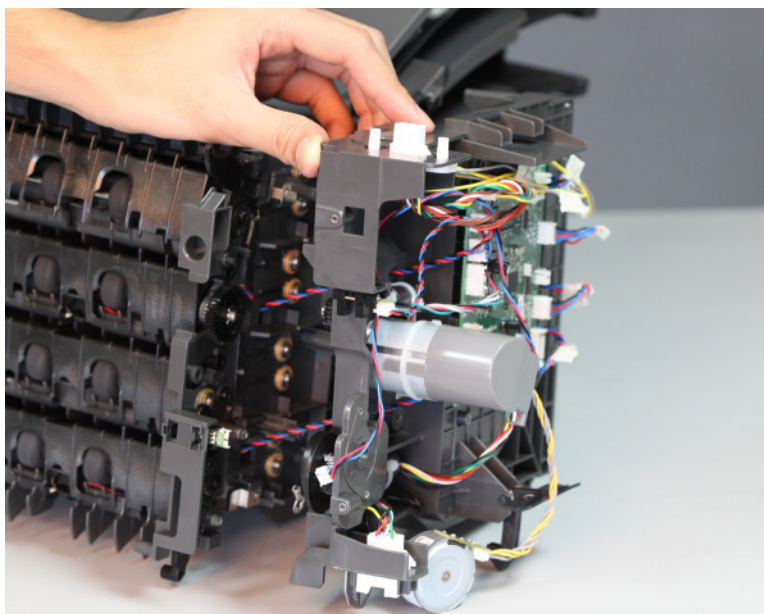
6 Unhook the diverter spring (D) to release the diverter.

Note: Be careful not to lose the diverter spring (D).

D
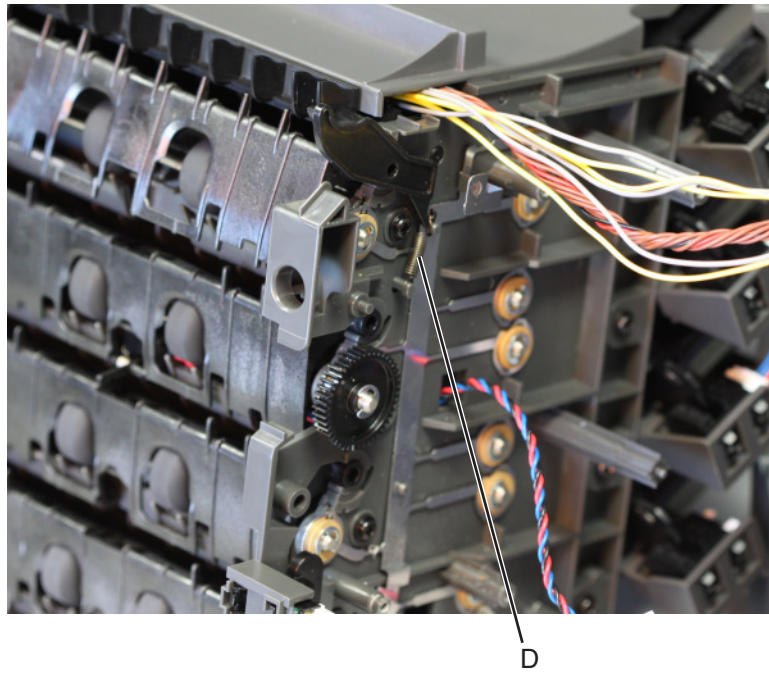
7 Pry the right end of the diverter off its hinge. Dislodge also the other end of the diverter, and then pull the diverter off the mailbox.
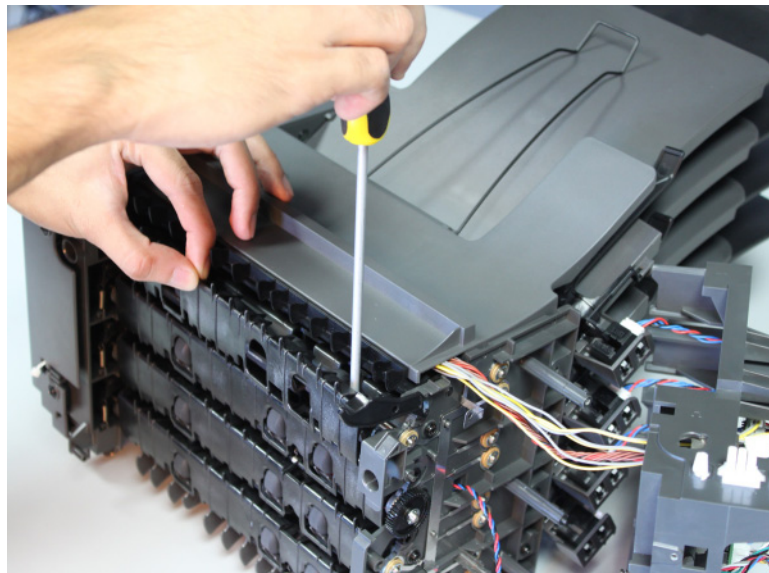
Parts removal

Mailbox middle diverter removal

1 Remove the mailbox rear door. See **"Mailbox rear door removal" on page 769**.

2 Release the spring (A) from the diverter.
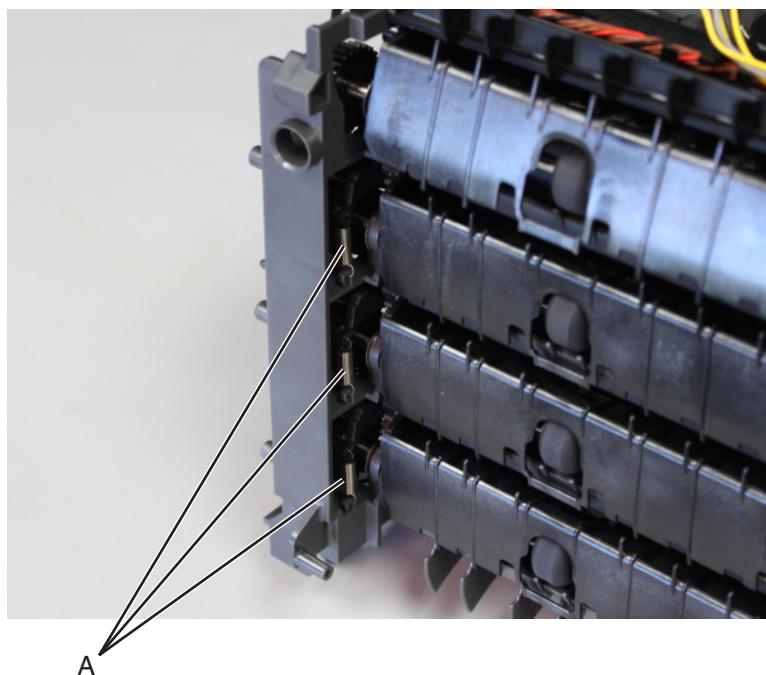
3 Pry the right end of the diverter until it is released.
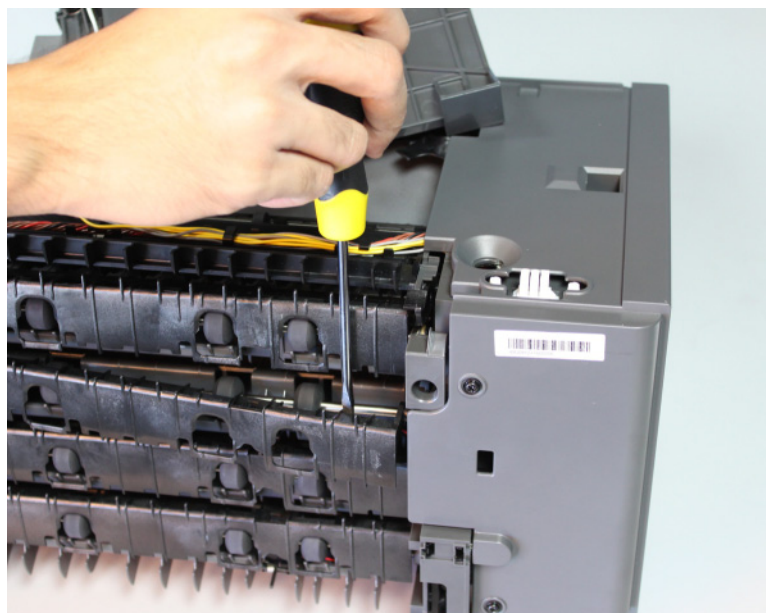
4 Carefully twist until the left end is also released.
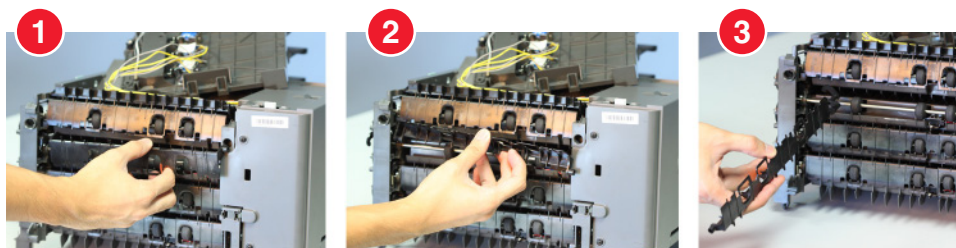
5 Remove the diverter.

> **Installation note:** Use a flat-head screwdriver to push the left and right ends of the diverter in place.

Mailbox top diverter spring removal

1 Remove the mailbox left cover. See **"Mailbox left cover removal" on page 776**.

2 Remove the mailbox rear door. See **"Mailbox rear door removal" on page 769**.

3 Remove the two screws (A), and then remove the shield.

A

4 Remove the seven screws (B) from the inner left frame.

Note: Pay attention to the original position of the grounding plate (C).

C
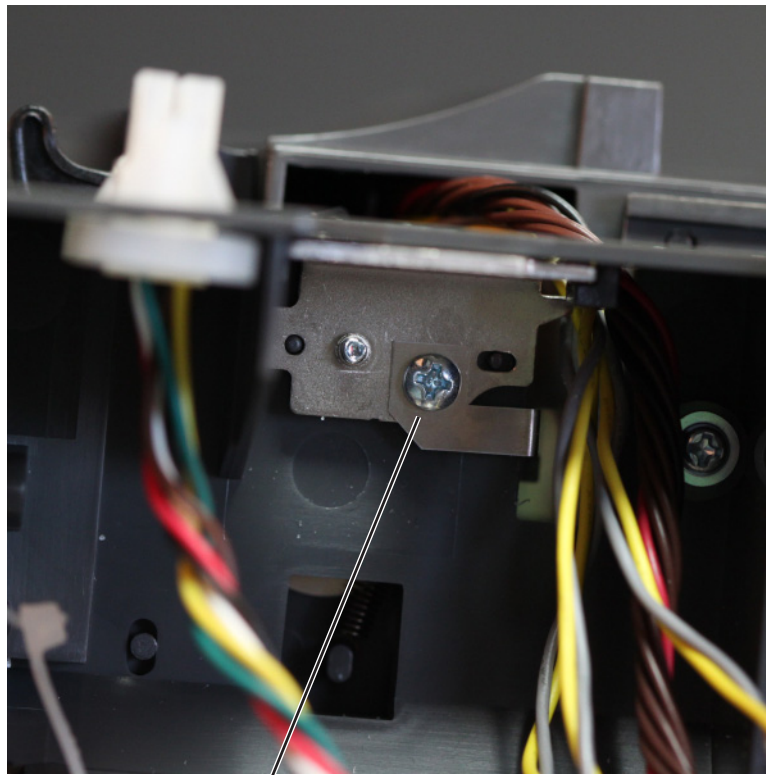
5 Move away the left inner frame to access the parts underneath.
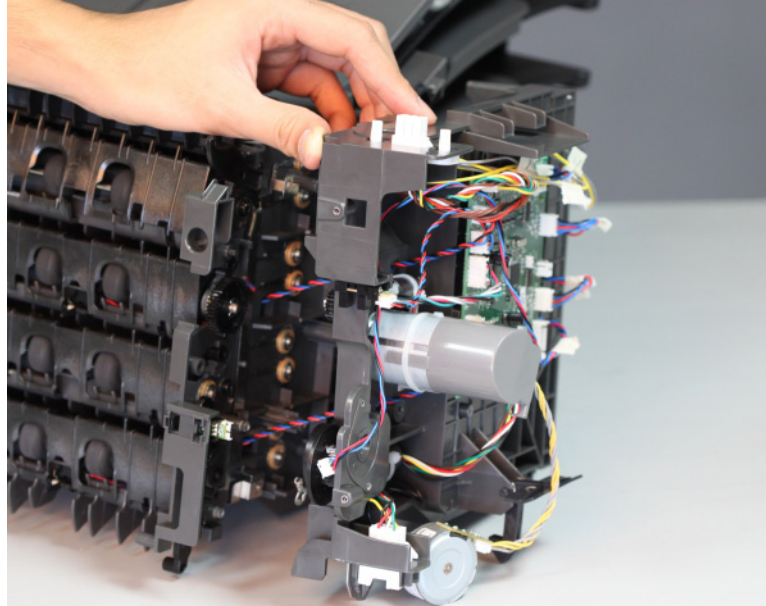
6 Unhook the diverter spring (D), and remove.
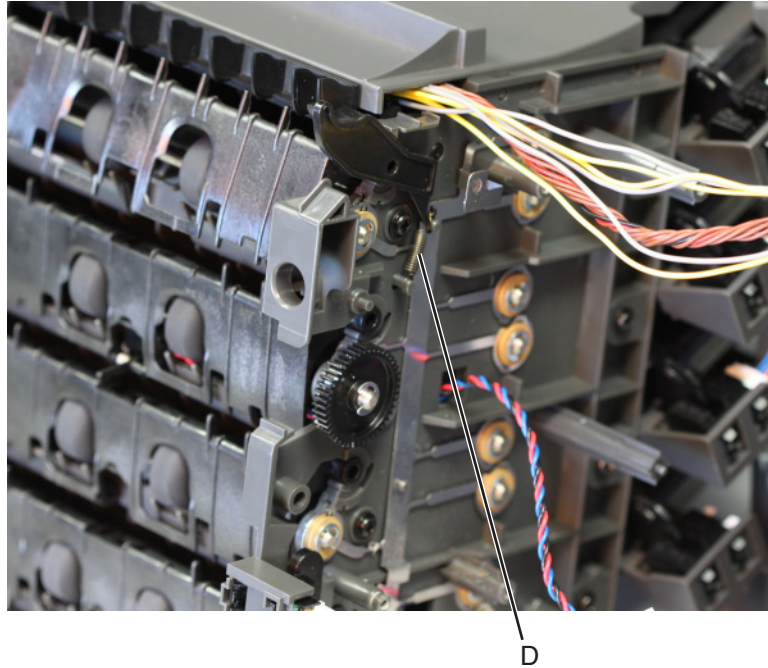
D

Sensor (mailbox pass through) removal

1 Remove the mailbox left cover. See **"Mailbox left cover removal" on page 776**.

2 Remove the mailbox rear door. See **"Mailbox rear door removal" on page 769**.

3 Remove the two screws (A), and then remove the shield.

A

4 Remove the seven screws (B) from the inner left frame.

Note: Pay attention to the original position of the grounding plate (C).

C

5 Move away the left inner frame to access the parts underneath.

6 Disconnect the sensor cable from the controller board.

7 Pull the sensor off its slot, and then carefully route the cable off its cable guides.
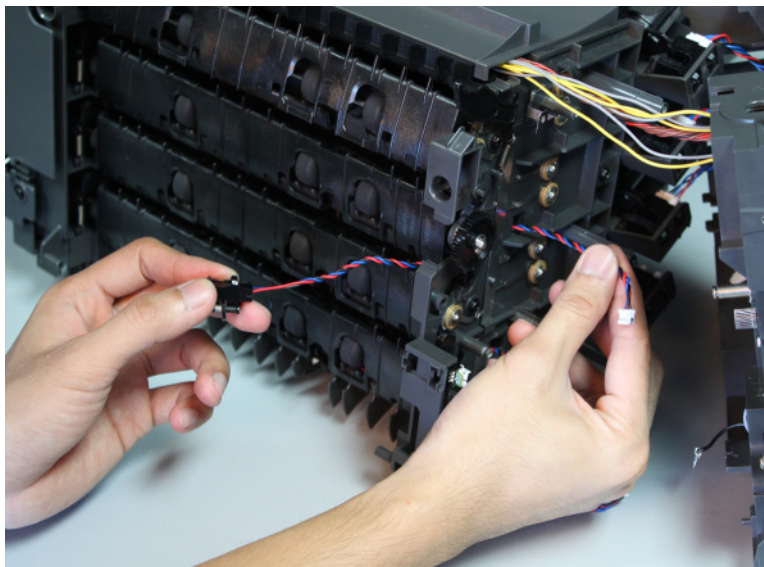
8 Thread the sensor cable through the hole until it is removed.

Note: Pay attention to the original route of the sensor cable.

Installation note: There will be some difficulty inserting the connector through the hole. Use a spring hook to thread the connector through the hole.

Parts removal
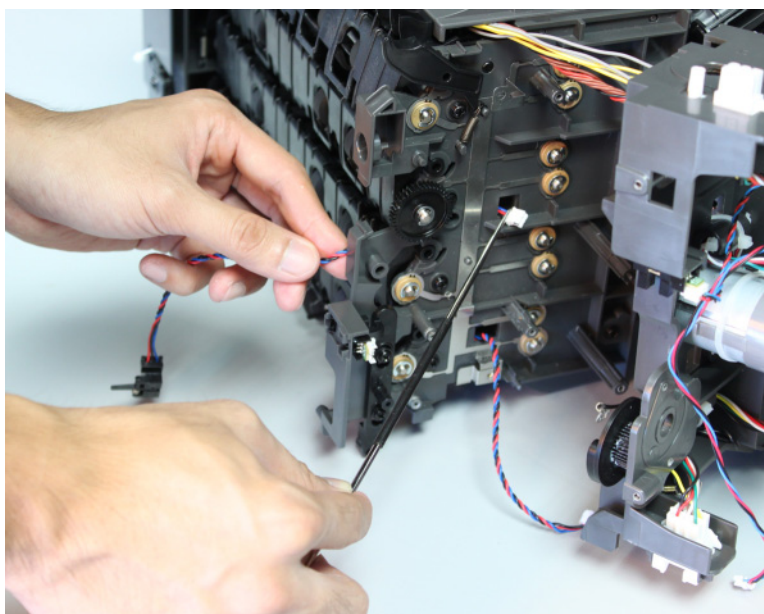
Staple, hole punch finisher option removals

Staple, hole punch finisher option removal

1 Press the latches to unlock the option.
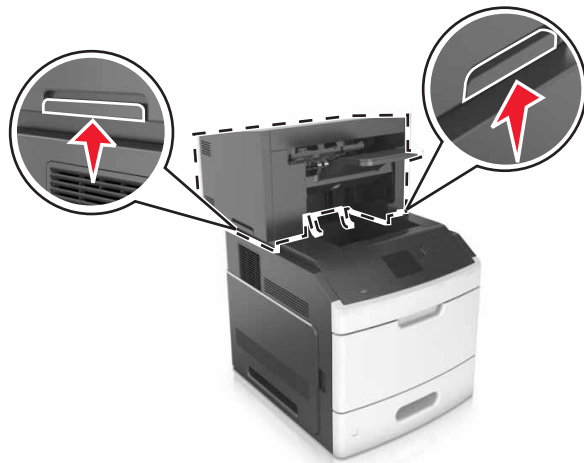
2 Pull the option off the printer.

Stapler cartridge access door removal

1 Open the access door.

2 Pull the door off the stapler right cover.

Hole punch box removal

1 Firmly hold the hole punch box by its handles.

2 Pull out the hole punch box.
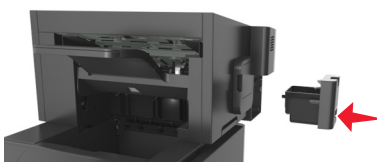
Staple, hole punch left cover removal

1 Open the rear door, and then remove the two screws (A) securing the left cover.

A

Parts removal

2 From the inner portion of the stapler, remove the two screws (B) securing the left cover.

B
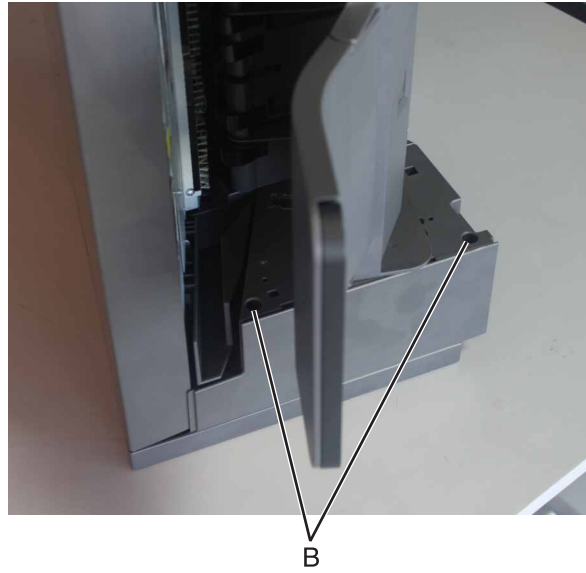
3 Push down on the top cover to loosen the left cover, and then pull the left cover off the finisher.
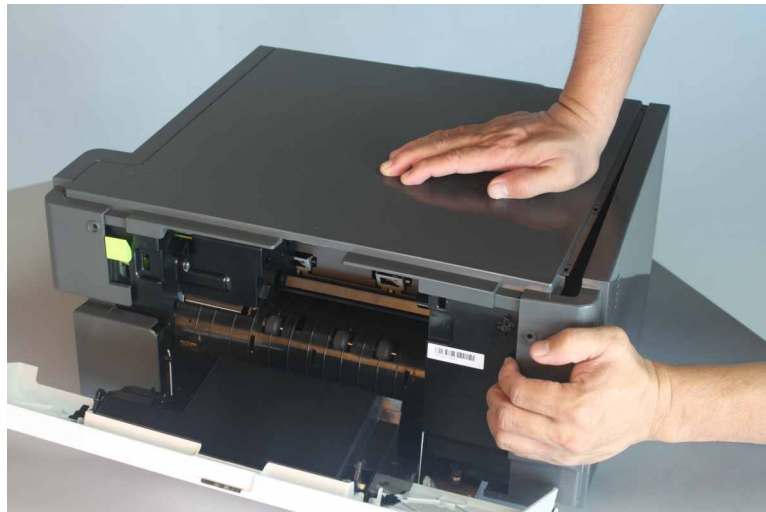
Staple, hole punch right cover removal

1 Remove the hole punch box. See **"Hole punch box removal" on page 819**.

2 Open the rear door, and then remove the screw (A) securing the right cover.

A
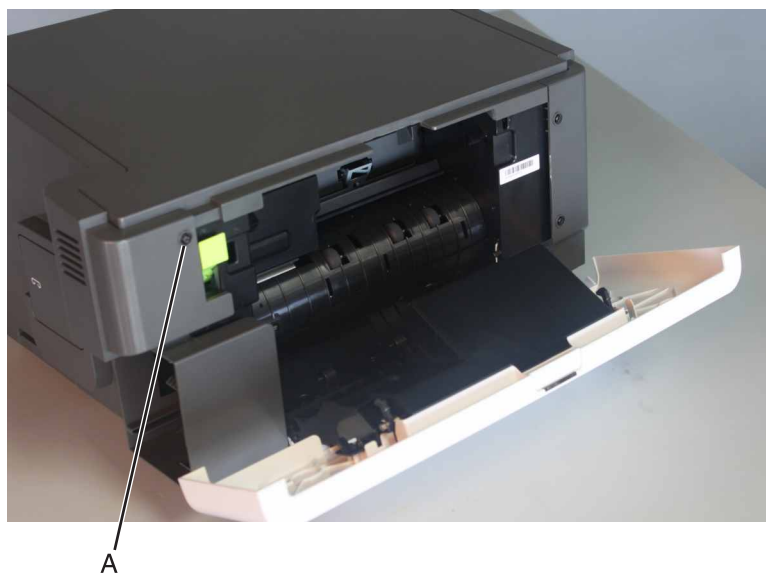
3 From the inner portion of the stapler, remove the two screws (B) securing the right cover.

B
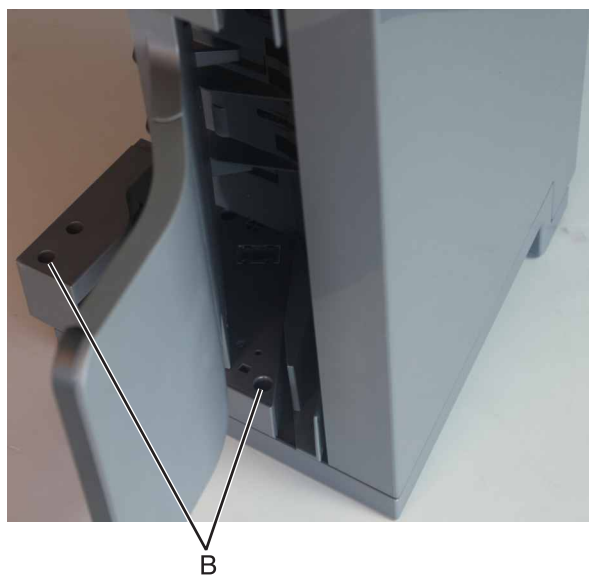
4 Remove the screw (C) from the right cover.

C
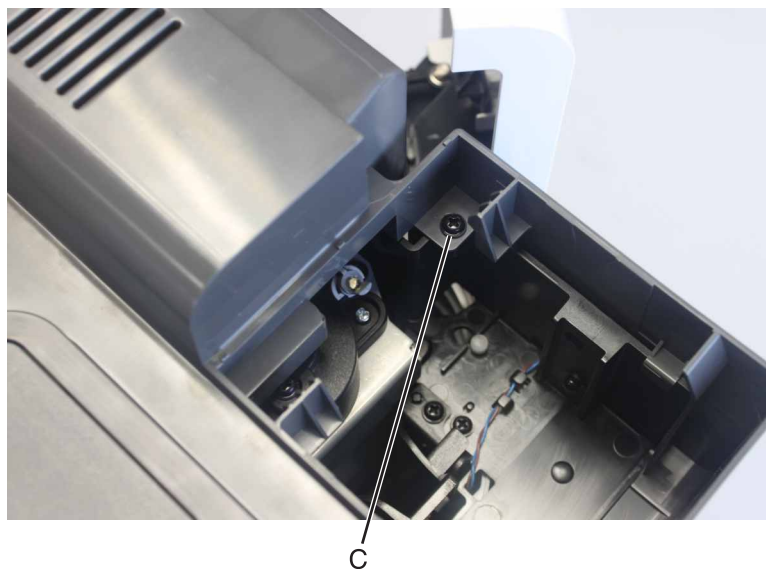
5 Push down on the top cover to loosen the right cover, and then pull the right cover off the finisher.

Sensor (cartridge door interlock) removal

1 Remove the finisher right cover. See **"Staple, hole punch right cover removal" on page 821**.

2 Disconnect the cable (A) from the sensor.

3 Release the latches from the stapler assembly frame, then remove the sensor (B).

B   A

Stapler door close limit switch removal

1 Remove the finisher left cover. See **"Staple, hole punch left cover removal" on page 819**.

2 Remove the finisher right cover. See **"Staple, hole punch right cover removal" on page 821**.

3 Remove the finisher top cover. See **"Staple, hole punch top cover removal" on page 842**.

4 Remove the four screws (A) securing the stapler carriage frame.
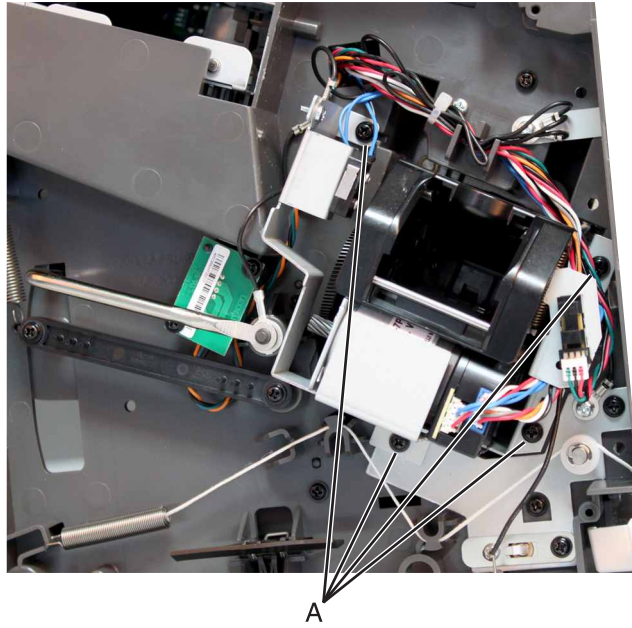
A

5 Disconnect the cables (B) from the stapler carriage assembly.

6 Lift the stapler carriage frame, then remove the two screws from the stapler carriage assembly (C).

C   B

7 Lift the stapler carriage to access the screws securing the limit switch.

8 Remove the two screws (D) securing the limit switch.

D

9 Disconnect the cable J7 from the controller board.

10 Route the cable off the stapler, and remove the stapler door close limit switch.

Note: Pay attention to the original routing of the cables.

Stapler carriage assembly removal

1 Remove the finisher right cover. See **"Staple, hole punch right cover removal" on page 821**.

2 Remove the four screws (A) securing the stapler carriage frame.

A

3 Disconnect the two cables (B) from the stapler carriage assembly.

4 Lift the stapler carriage frame, then remove the two screws (C) from the stapler carriage assembly.

C   B

5 Remove the stapler carriage assembly.

Parts removal

Sensor (throat media present) removal

1 Remove the finisher right cover. See **"Staple, hole punch right cover removal" on page 821**.

2 Remove the four screws (A) securing the stapler carriage frame. Move the stapler carriage assembly out of the way to access the parts underneath it.

A

3 Release the latches (B) securing the sensor.

B

Parts removal

827

4 Disconnect the cable (C), and remove the sensor.

C

Installation note: Make sure the sensor is correctly installed onto the frame. Push the sensor until it is securely latched onto the frame.

Staple, hole punch latch removal

1 Remove the finisher left cover or finisher right cover. See **"Staple, hole punch left cover removal" on page 819** or **"Staple, hole punch right cover removal" on page 821**.

2 Pull the latch off the finisher.
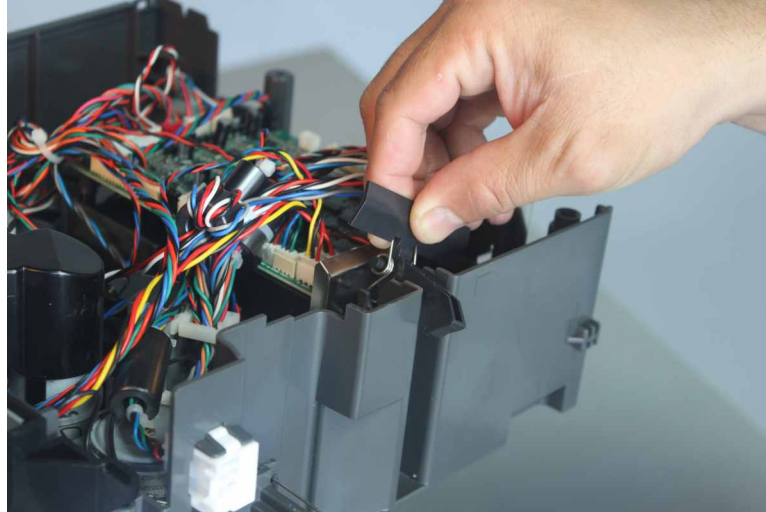
> **Note:** The latch on the right side of the finisher can also be removed by the same manner.

Stapler controller board removal

1 Remove the finisher left cover. See **"Staple, hole punch left cover removal" on page 819**.

2 Remove the three screws (A) from the controller board.

A
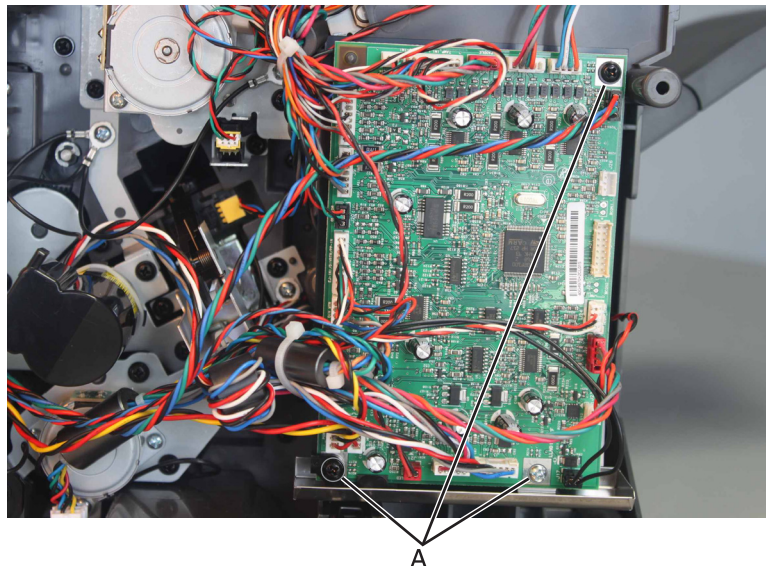
3 Disconnect all connectors, and then remove the controller board.

Parts removal

Stapler main motor removal

1 Remove the finisher left cover. See **"Staple, hole punch left cover removal" on page 819**.

2 Disconnect the motor cable J3 from the controller board.

3 Remove the three screws (A) securing the motor bracket to the frame.

A
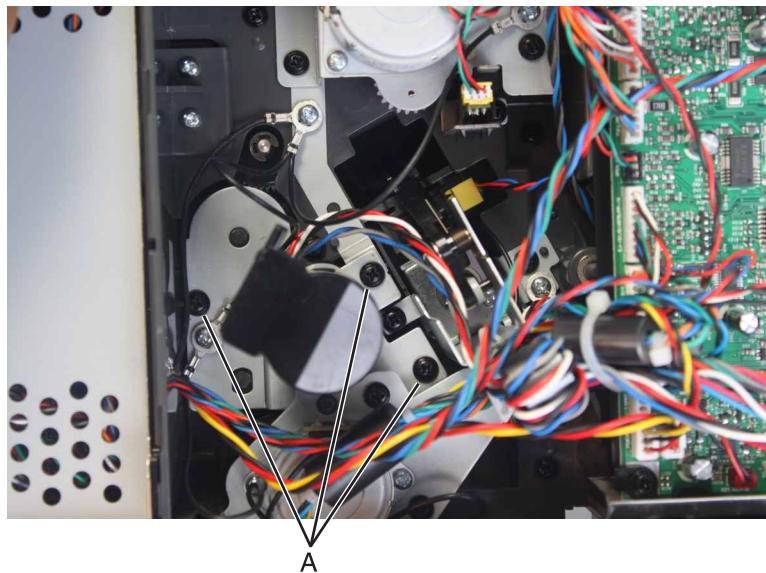
4 Move away the bracket to access the screws. Remove the two screws (B), and then remove the motor from the bracket.

B

Parts removal

830
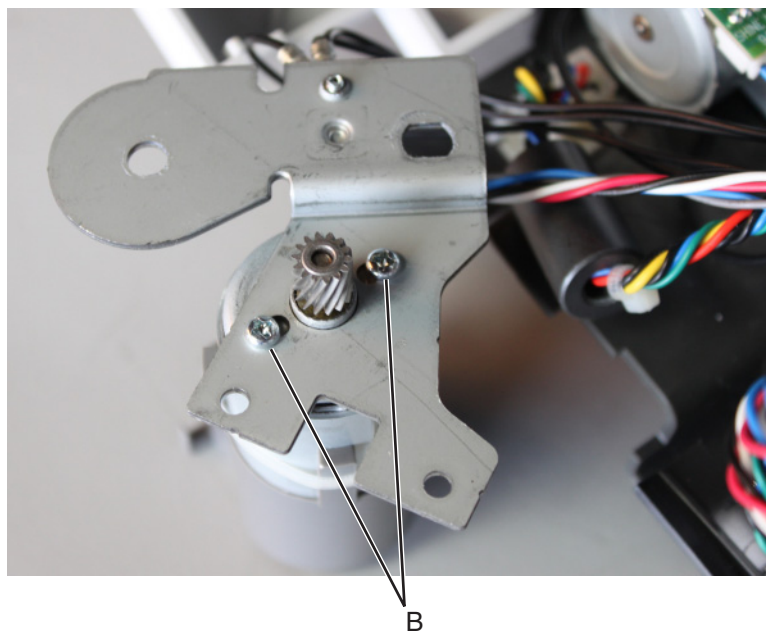
Stapler paddle motor removal

1 Remove the finisher left cover. See **"Staple, hole punch left cover removal" on page 819**.

2 Disconnect the motor cable (A), and then remove the two screws (B) from the motor.
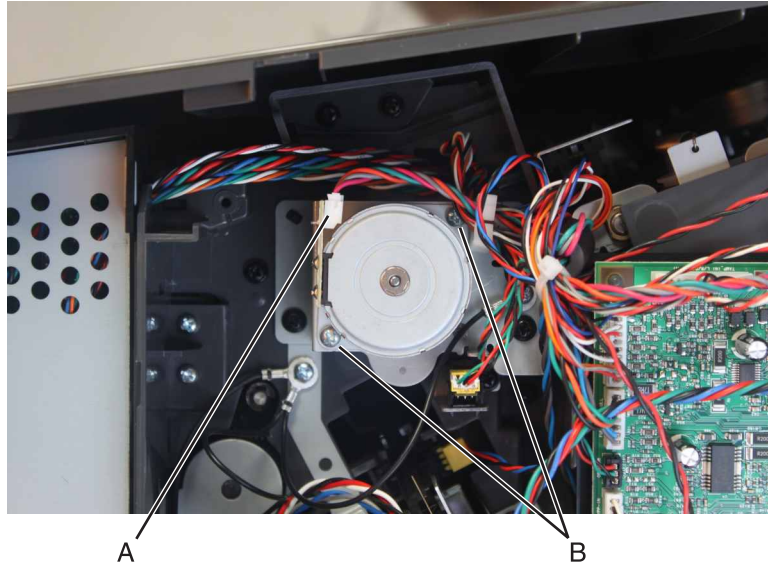
3 Remove the motor.

Sensor (paddle motor HP) removal

1 Remove the finisher left cover. See **"Staple, hole punch left cover removal" on page 819**.

2 Disconnect the cable (A) from the sensor. Remove the screw (B), and then remove the sensor bracket.

A   B
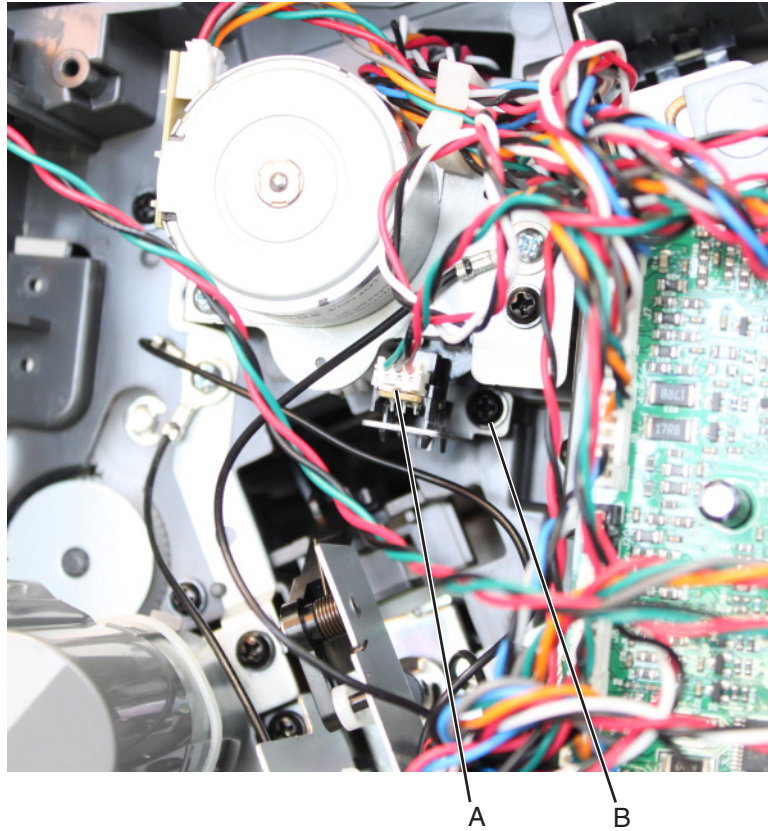
3 Release the latches securing the sensor to the bracket, and then remove the sensor.

Stapler diverter motor removal

1 Remove the finisher left cover. See **"Staple, hole punch left cover removal" on page 819**.

2 From the bottom of the finisher, press the latches to release, and then move the lower interface cable out of the way to access the parts underneath it.

3 Disconnect the motor cable (A), and then remove the two screws (B) from the motor.

B   A

4 Remove the motor from the bracket.

Parts removal

833

Stapler diverter plunger assembly removal

1 Remove the finisher left cover. See **"Staple, hole punch left cover removal" on page 819**.

2 Remove the three screws (A) from the main motor bracket.

A

Note: Removing the main motor bracket will not be required. Just move it out of the way to make it easier to release the diverter motor bracket.

3 Remove the two screws (B) from the diverter motor bracket.

B

Note: Removing the diverter motor bracket will not be required. Just move it out of the way to access the parts underneath it.

Parts removal

4 Remove the two screws (C) securing the diverter plunger and cam.

C

5 Remove the cam first, and then remove the plunger.

Installation note: Make sure that the pin (D) is inserted into the center hole on the diverter cam. The C-shaped slot on the cam must be engaged with the locating pin on the plunger.
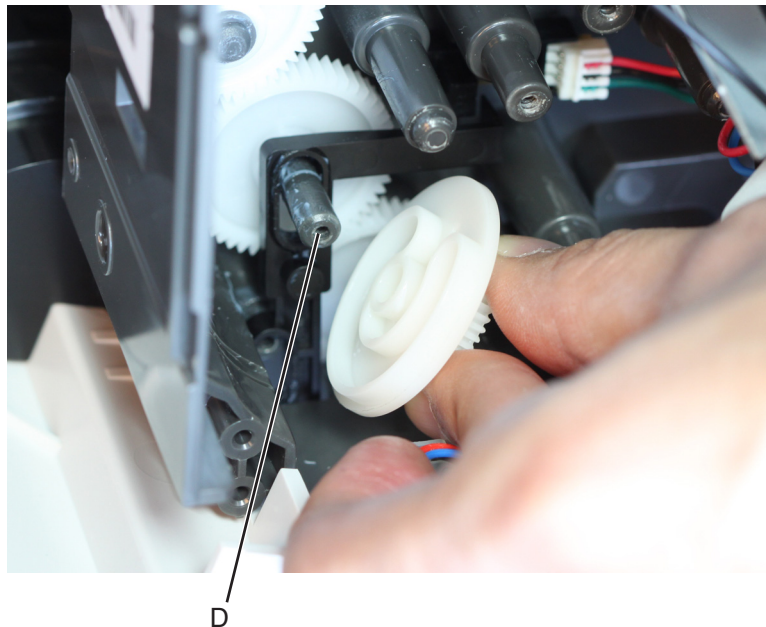
D

Stapler drive gear assembly removal

1 Remove the finisher left cover. See **"Staple, hole punch left cover removal" on page 819**.

2 Remove the stapler diverter plunger assembly. See **"Stapler diverter plunger assembly removal" on page 834**.

Parts removal

3 Release the E-clip securing the lowermost gear. Remove the spacers, and then pull the gears off the machine.

Sensor (bin full send) removal

1 Remove the finisher right cover. See **"Staple, hole punch right cover removal" on page 821**.

2 Remove the two screws (A) from the sensor.
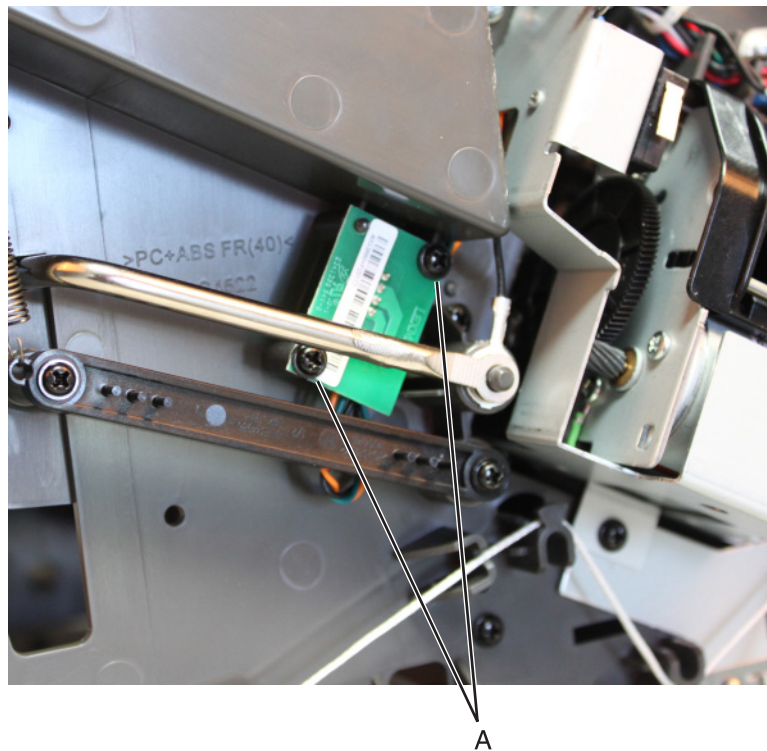
A

Parts removal

3 Disconnect the cable (B), and remove the sensor (bin full send).

B

Sensor (bin full receive) removal

1 Remove the finisher left cover. See .

2 Remove the stapler controller board. See .

3 Remove the two screws (A) from the sensor.

A
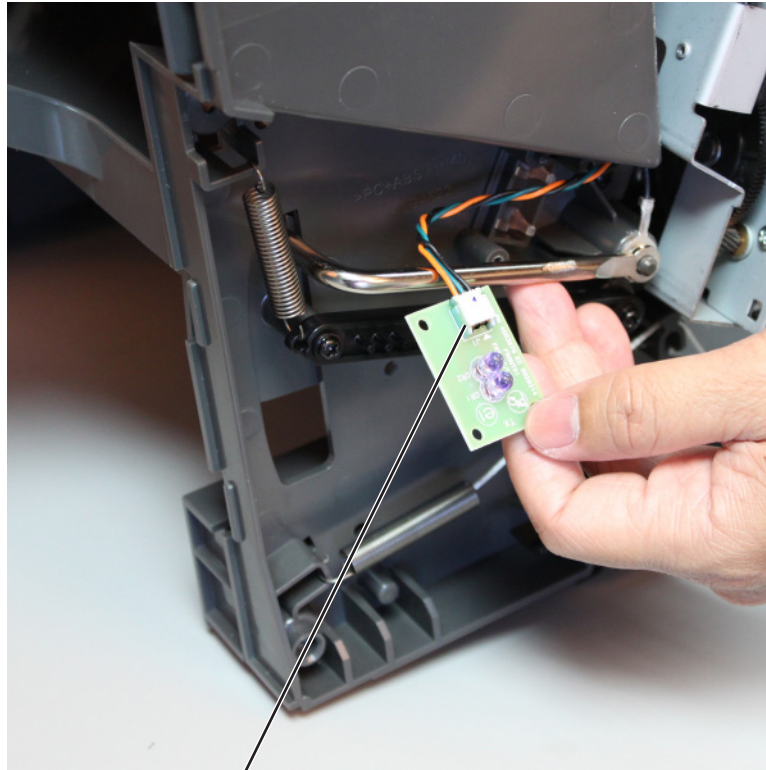
4 Disconnect the cable (B), and remove the sensor (bin full receive).

B

Parts removal

Staple, hole punch lower interface cable removal

1 Remove the finisher left cover. See **"Staple, hole punch left cover removal" on page 819**.

2 Unplug the connector J15 from the stapler controller board.

3 From the bottom of the finisher, release the latches, and then push connector off its slot.
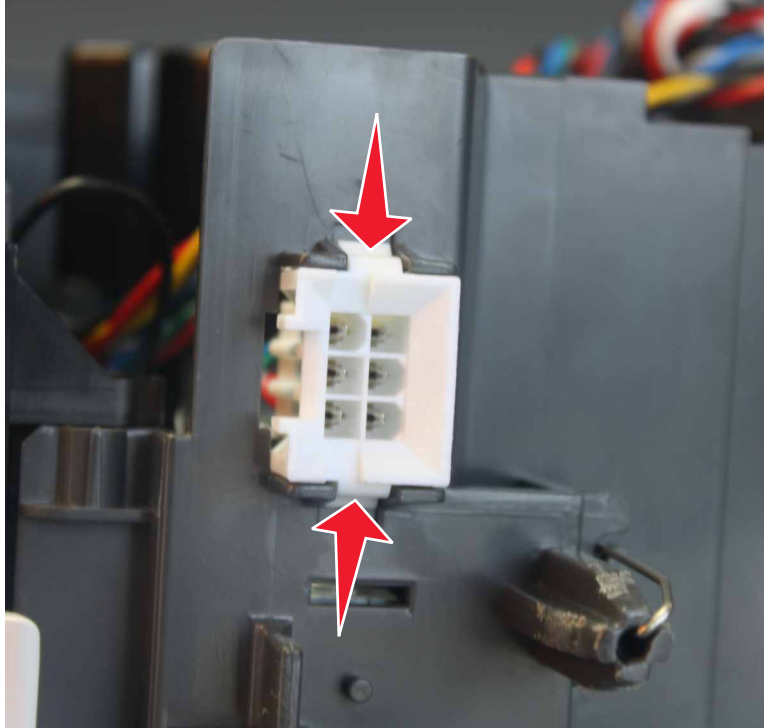
4 Remove the interface cable.

Media pusher assembly removal

1 Remove the finisher left cover. See **"Staple, hole punch left cover removal" on page 819**.

2 Disconnect the cable J17 from the stapler controller board.

3 Remove the three screws (A), and then remove the media pusher.
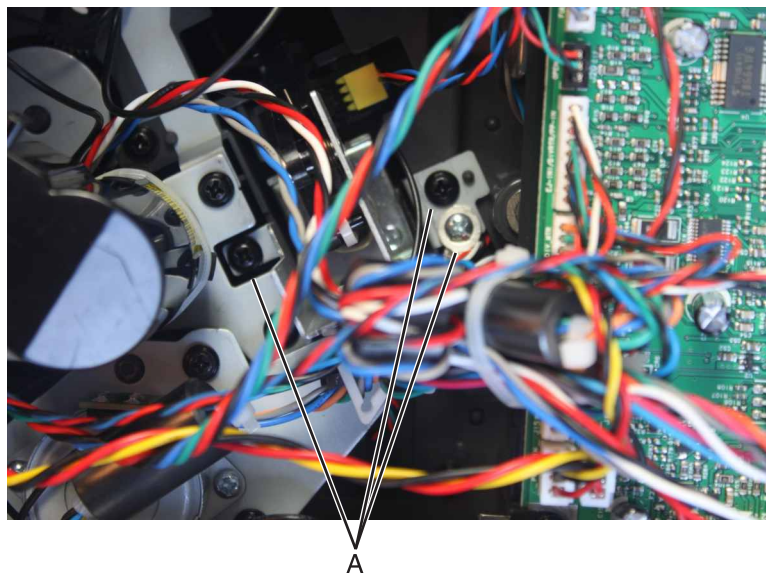
Standard output bin LED removal
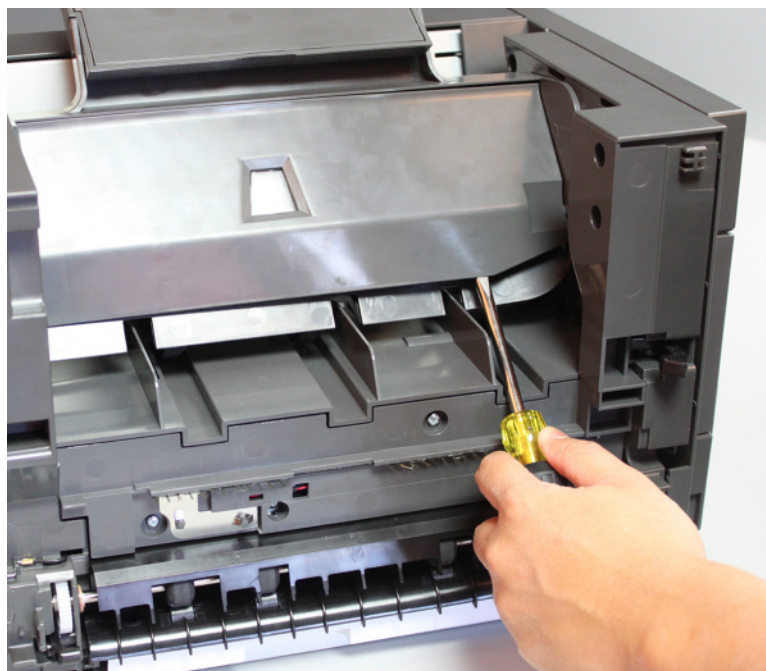
1 With a prying tool, open the LED sensor cover.

2 Release the latches (A) to remove the LED clear lens. Disconnect the cable (B), and remove the standard output bin LED.
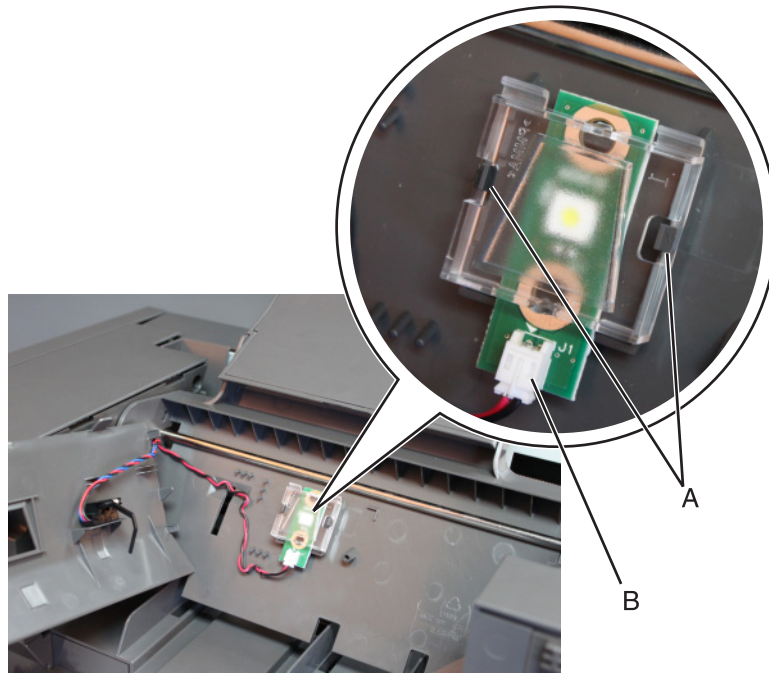
Sensor (finisher bin media present) removal

1 Remove the finisher left cover. See **"Staple, hole punch left cover removal" on page 819**.

2 With a prying tool, open the LED sensor cover.

Parts removal

3 Release the latches holding the sensor (B) to the cover.

B
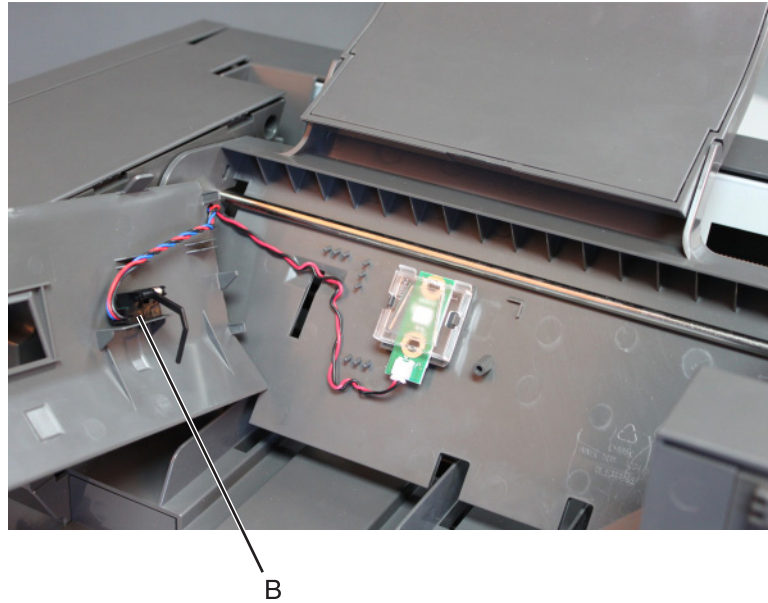
4 Disconnect the cable from the stapler controller board, then remove the sensor (finisher bin media present).

Staple, hole punch top cover removal

1 Remove the finisher left cover. See **"Staple, hole punch left cover removal" on page 819**.

2 Remove the finisher right cover. See **"Staple, hole punch right cover removal" on page 821**.

3 Remove the two screws (A) from the right side of the finisher.

A
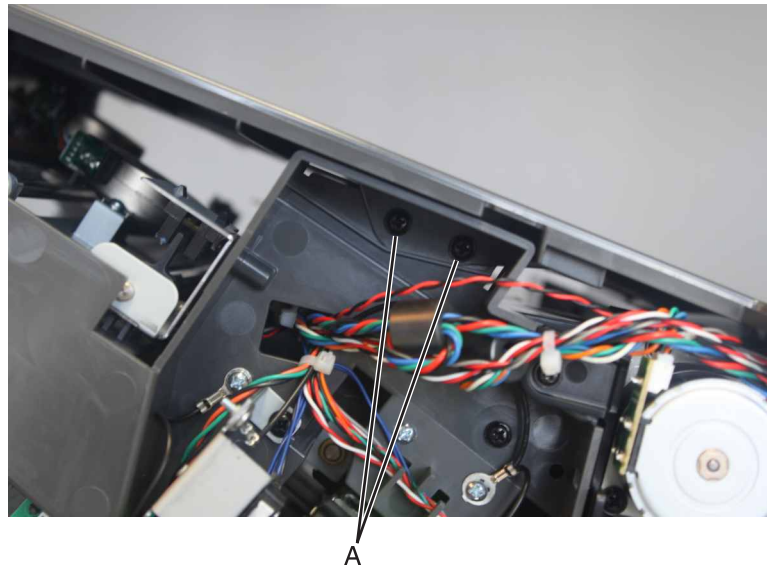
4 Remove the two screws (B) from the left side of the finisher.

B
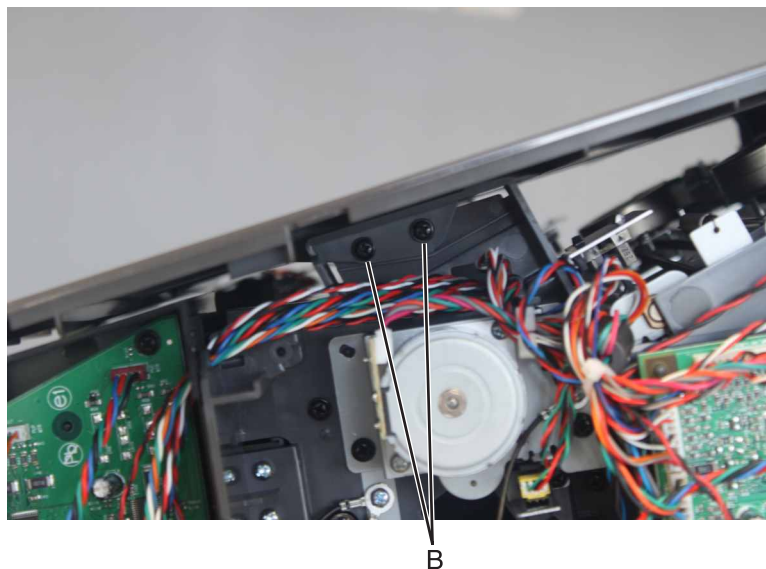
5 Pull the top cover off the finisher, and remove.

Sensor (right tamper motor HP) removal

1 Remove the finisher left cover. See **"Staple, hole punch left cover removal" on page 819**.

2 Remove the finisher right cover. See **"Staple, hole punch right cover removal" on page 821**.

3 Remove the finisher top cover. See **"Staple, hole punch top cover removal" on page 842**.

4 Move the right tamper arm to clear the home position flag (A) off the path of the sensor.
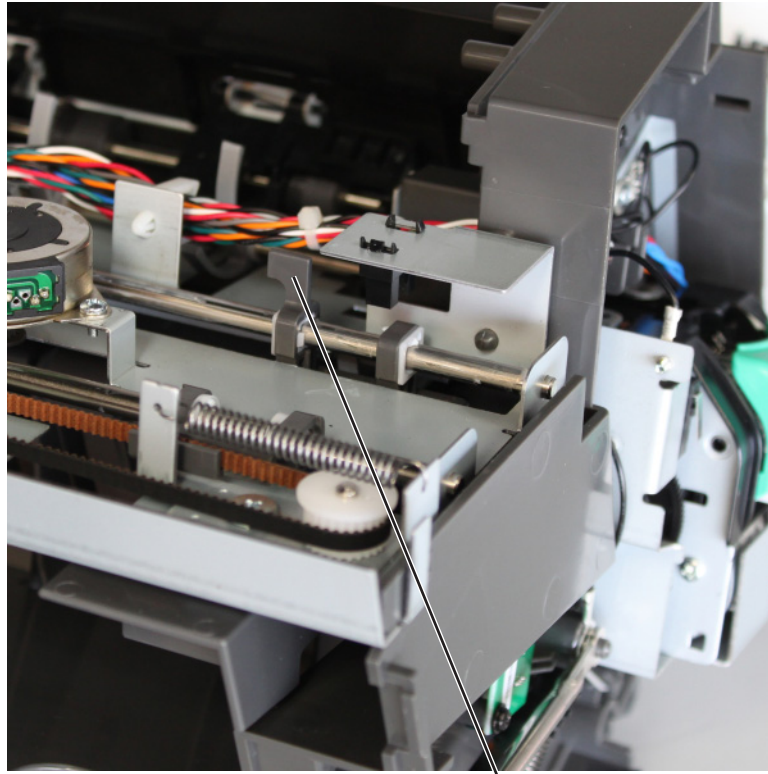
A

5 Disconnect the cable (B) from the sensor, and then release the latches securing the sensor to the frame.

B
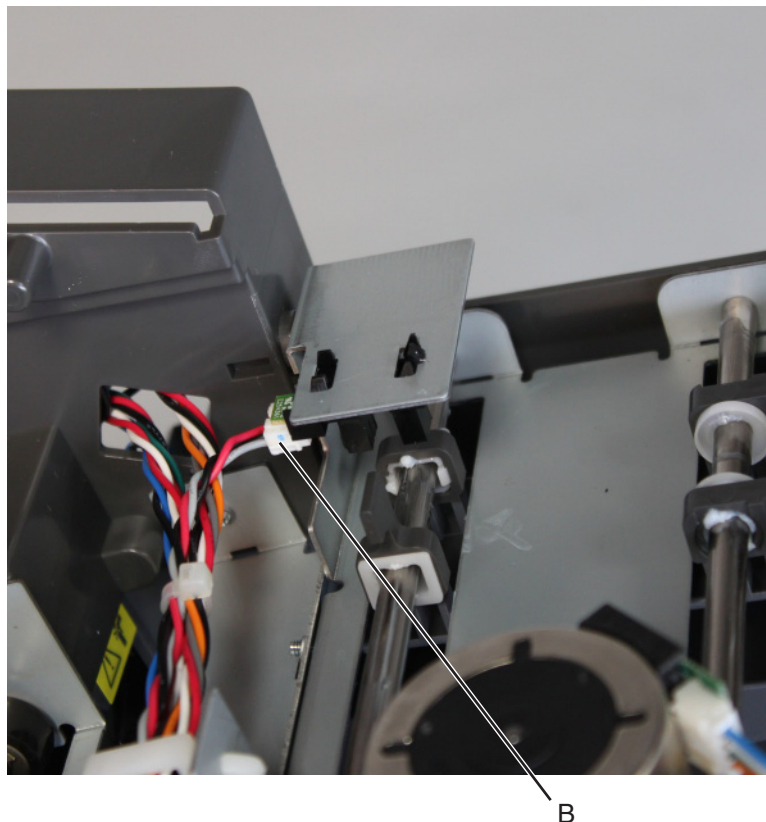
6 Pull the sensor off the frame and remove.

Sensor (left tamper motor HP) removal

1 Remove the finisher left cover. See **"Staple, hole punch left cover removal" on page 819**.

2 Remove the finisher right cover. See **"Staple, hole punch right cover removal" on page 821**.

3 Remove the finisher top cover. See **"Staple, hole punch top cover removal" on page 842**.

4 Move the left tamper arm to clear the home position flag (A) off the path of the sensor.
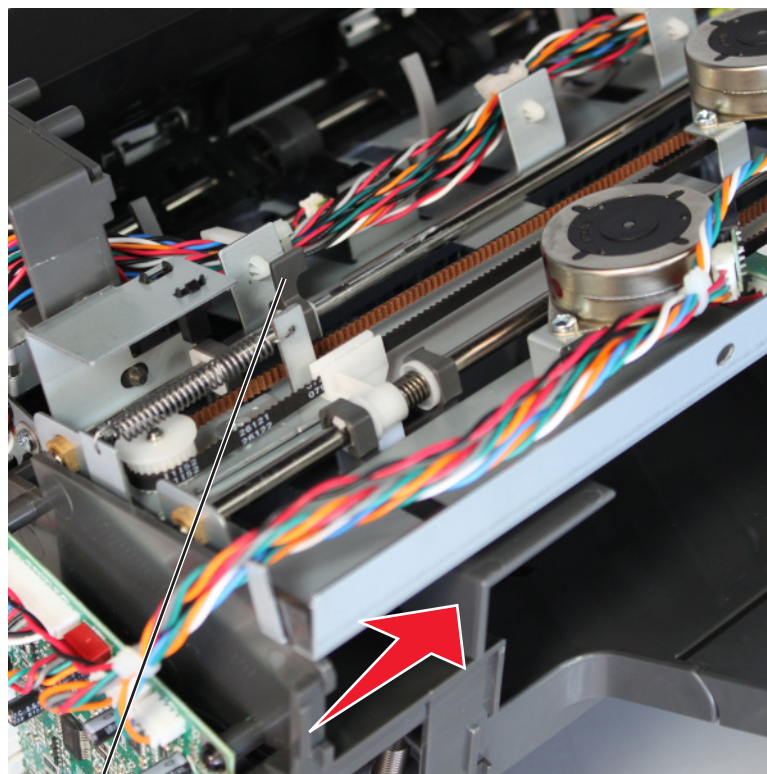
A

5 Disconnect the cable (B) from the sensor, and then release the latches securing the sensor to the frame.

B
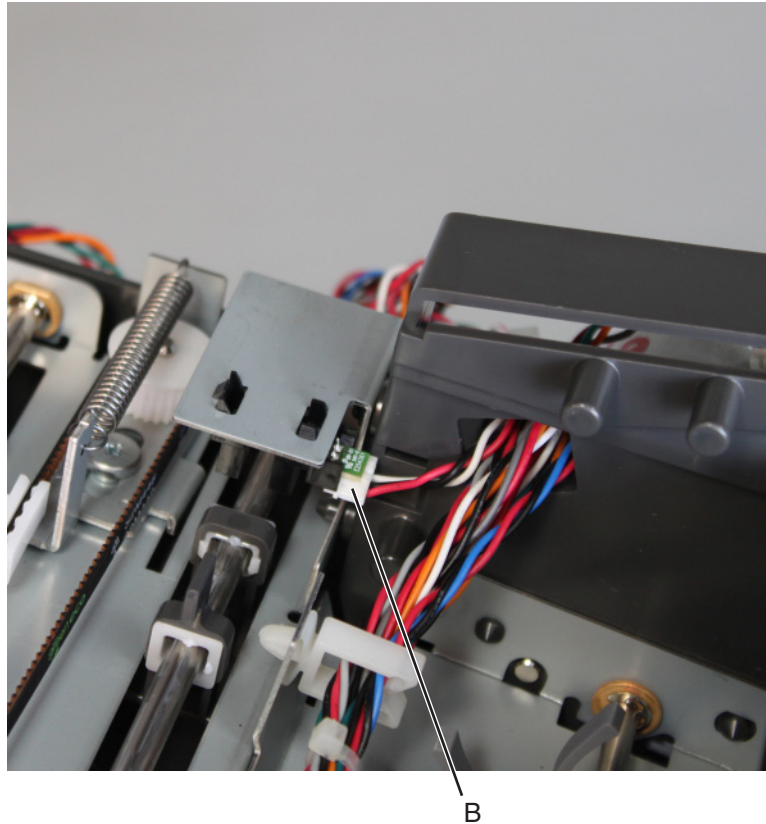
6 Pull the sensor off the frame and remove.

Stapler tamper assembly removal

1 Remove the finisher left cover. See **"Staple, hole punch left cover removal" on page 819**.

2 Remove the finisher right cover. See **"Staple, hole punch right cover removal" on page 821**.

3 Remove the finisher top cover. See **"Staple, hole punch top cover removal" on page 842**.

4 Disconnect the tamper cables J2, J4, and J6 from the stapler controller board.

5 Release the latches (A) securing the sensors.
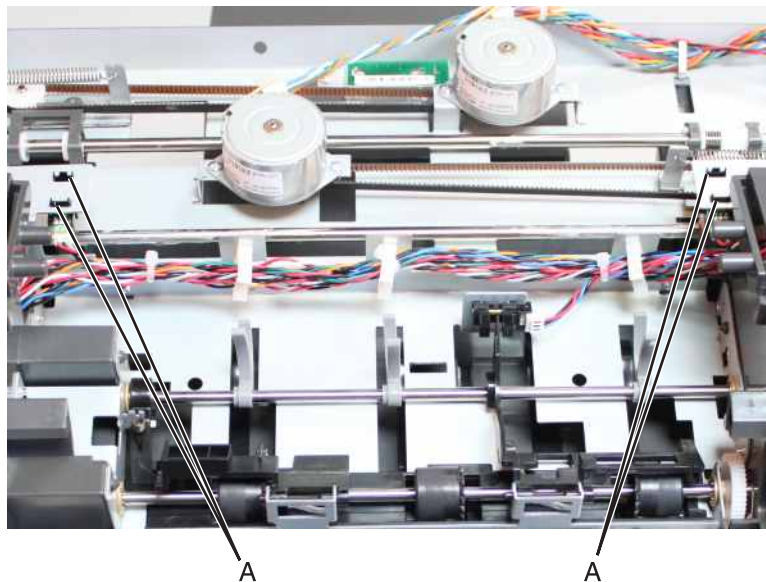
6 Remove the stapler output bin LED. See **"Stapler output bin LED removal" on page 852**.

7 Remove the left and right tamper motors. See **"Tamper motor (left) removal" on page 850** and **"Tamper motor (right) removal" on page 849**.

8 Remove the tamper drive belts. See **"Tamper drive belt removal" on page 851**.

9 Remove the two screws (B) from the tamper assembly.
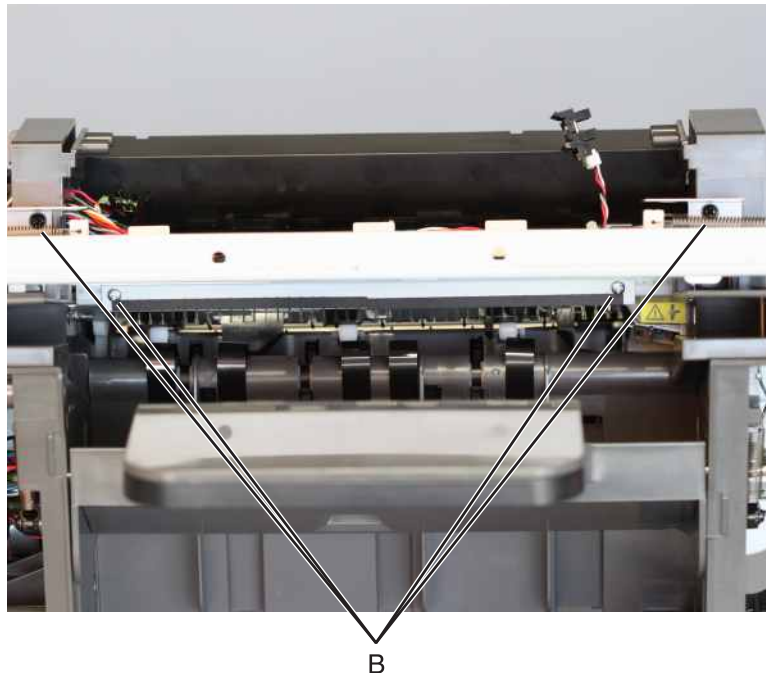
10 Pull away the tamper assembly, and remove.

Installation note: Make sure the tab (C) is correctly inserted into its designated slot.

C

Tamper motor (right) removal

1 Remove the finisher left cover. See **"Staple, hole punch left cover removal" on page 819**.

2 Remove the finisher right cover. See **"Staple, hole punch right cover removal" on page 821**.

3 Remove the finisher top cover. See **"Staple, hole punch top cover removal" on page 842**.

4 Disconnect the tamper motor cable (A).

5 Remove the two screws (B), then remove the motor.

A   B

Tamper motor (left) removal

1 Remove the finisher left cover. See **"Staple, hole punch left cover removal" on page 819**.

2 Remove the finisher right cover. See **"Staple, hole punch right cover removal" on page 821**.

3 Remove the finisher top cover. See **"Staple, hole punch top cover removal" on page 842**.

4 Disconnect the tamper motor cable (A).

5 Remove the two screws (B), then remove the motor.

B   A

Tamper drive belt removal

1 Remove the finisher left cover. See **"Staple, hole punch left cover removal" on page 819**.

2 Remove the finisher right cover. See **"Staple, hole punch right cover removal" on page 821**.

3 Remove the finisher top cover. See **"Staple, hole punch top cover removal" on page 842**.

4 Remove the tamper motor engaged to the belt. See **"Tamper motor (right) removal" on page 849** or **"Tamper motor (left) removal" on page 850**.

5 Unhook the spring (A) to loosen and release the belt.
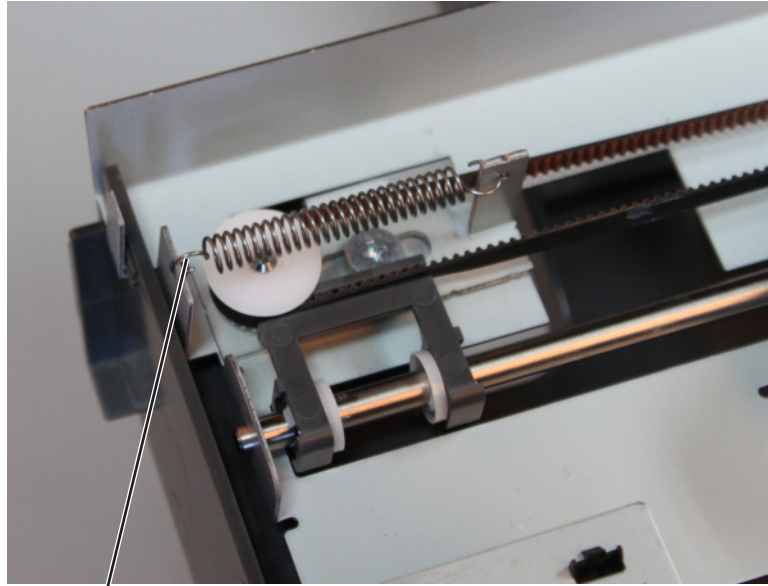
A

6 Remove the tamper drive belt.

Stapler output bin LED removal

1 Remove the finisher left cover. See **"Staple, hole punch left cover removal" on page 819**.

2 Remove the finisher right cover. See **"Staple, hole punch right cover removal" on page 821**.

3 Remove the finisher top cover. See **"Staple, hole punch top cover removal" on page 842**.

4 Release the latches (A) securing the LED.
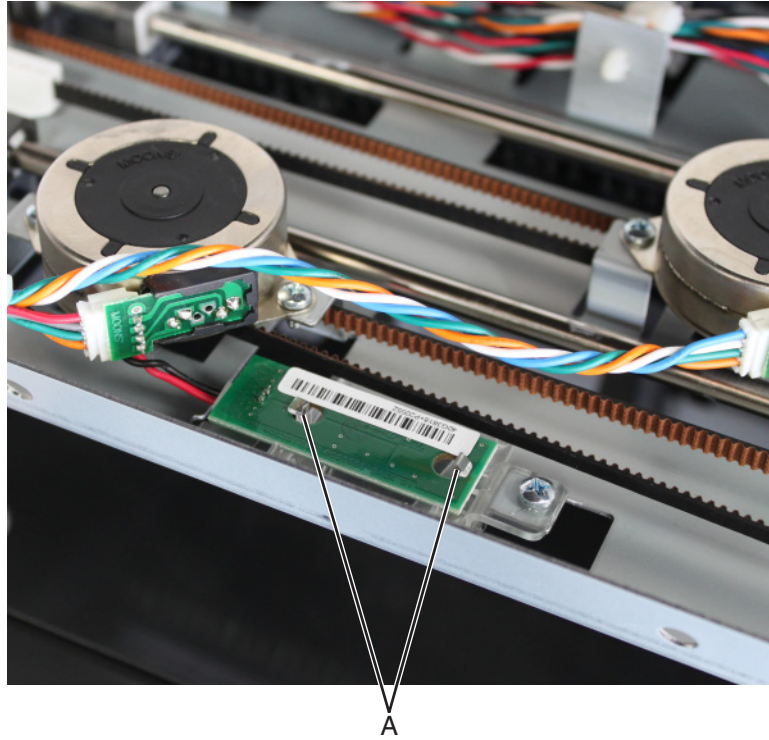
A

5 Disconnect the cable (B), and remove the LED.

B
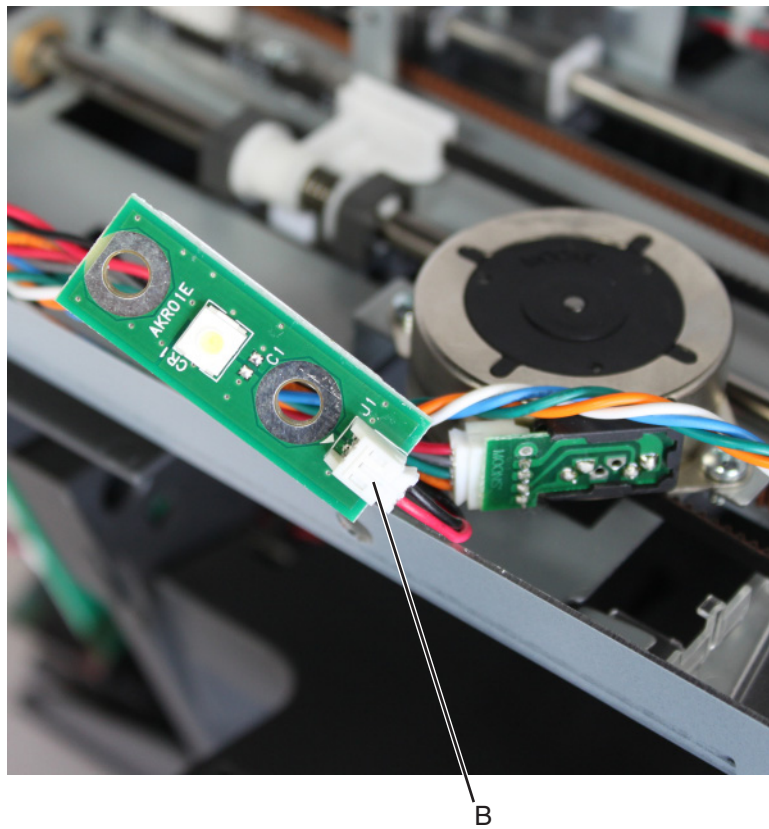
Parts removal

Staple, hole punch tray link tension spring removal

1 Remove the finisher left cover. See **"Staple, hole punch left cover removal" on page 819**.

2 Remove the finisher right cover. See **"Staple, hole punch right cover removal" on page 821**.

3 On the left side of the finisher, unhook the tension spring (A), and then remove.
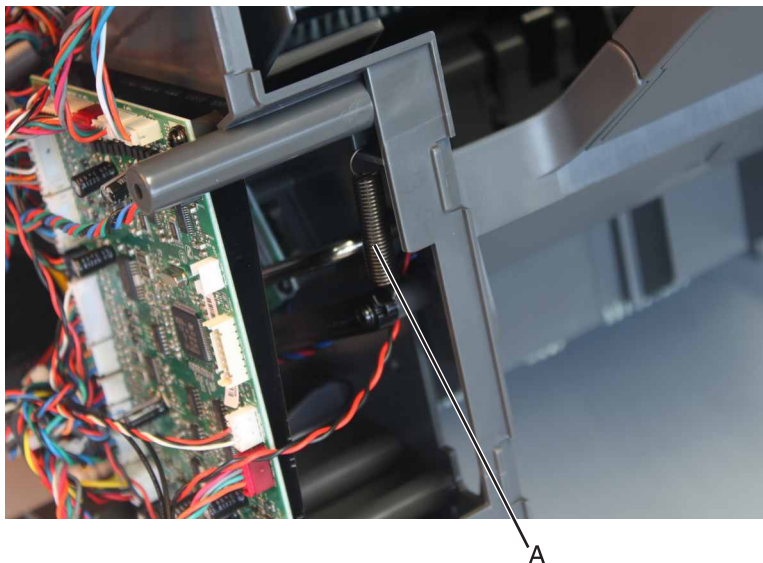
4 On the right side of the finisher, unhook the tension spring (B), and then remove.
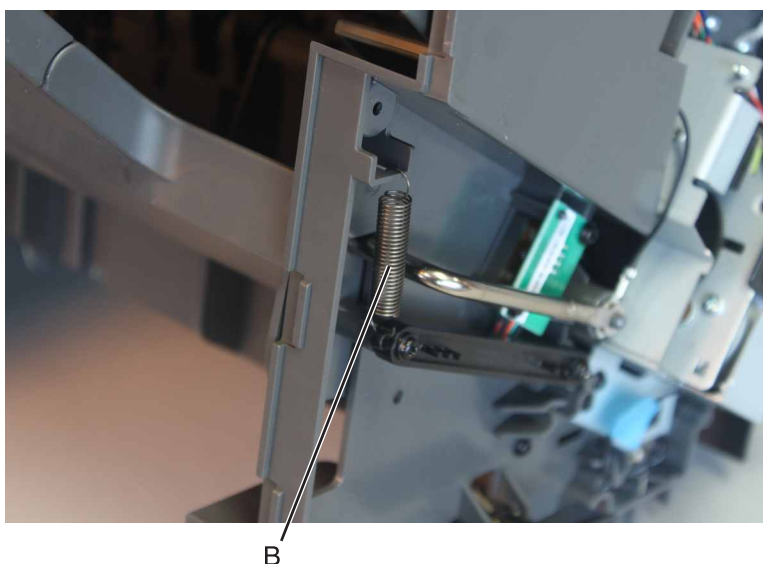
Staple, hole punch tray link removal

1 Remove the finisher left cover. See **"Staple, hole punch left cover removal" on page 819**.

2 Remove the finisher right cover. See **"Staple, hole punch right cover removal" on page 821**.

3 Remove the stapler controller board. See **"Stapler controller board removal" on page 829**.

4 Remove the two screws (A), and then remove the left tray link.

A
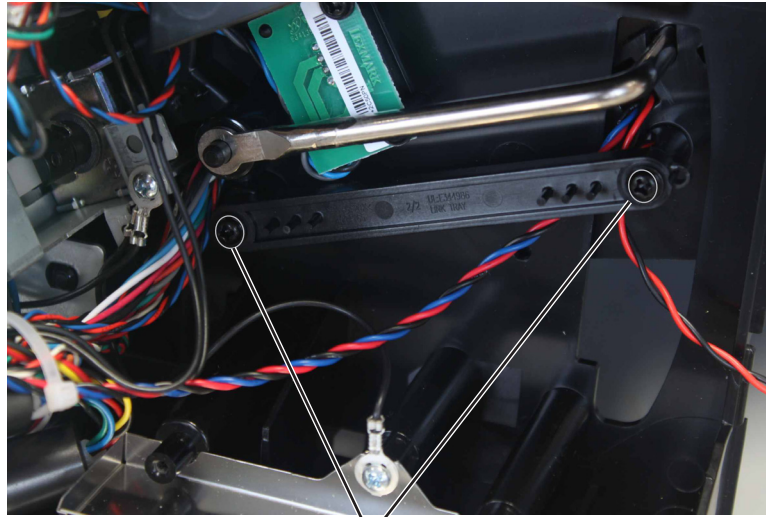
5 Remove the two screws (B), and then remove the right tray link.

B

Sensor (hole punch box present) removal

1 Remove the hole punch box. See **"Hole punch box removal" on page 819**.

2 Remove the right cover. See **"Staple, hole punch right cover removal" on page 821**.

3 Disconnect the sensor cable (A), and then release the latches securing the sensor.

A
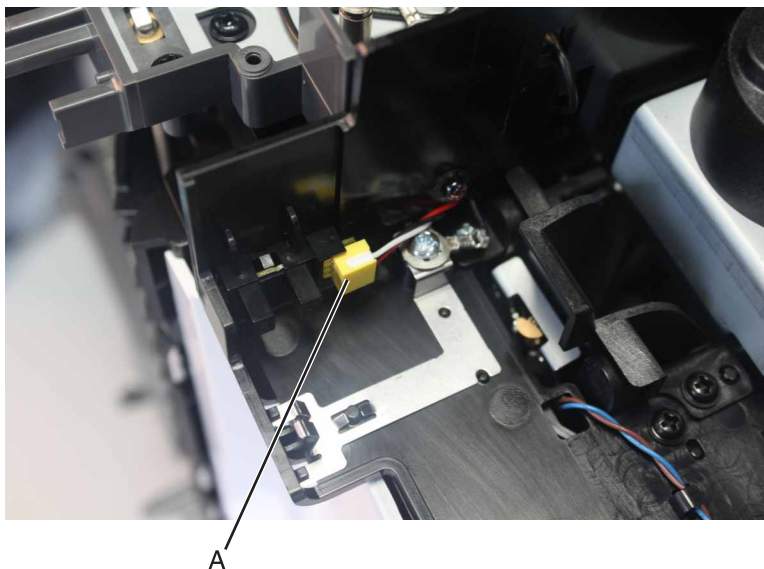
4 Remove the sensor.

Sensor (HPU rear door interlock) removal

1 Remove the finisher left cover. See .

2 Remove the screw (A), and then remove the shield.

A
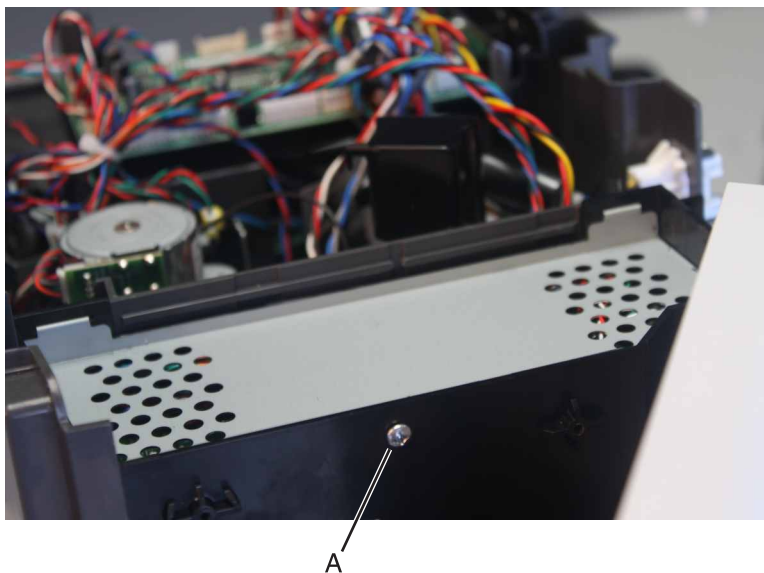
3 Remove the four screws (B) from the controller board.

Note: No need to remove the controller board, just move it out of the way to access the sensor underneath it.

B
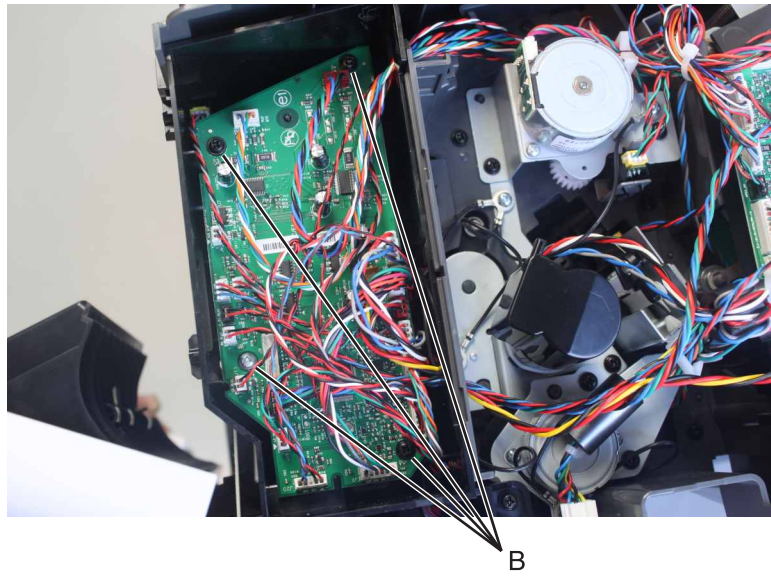
4 Disconnect the sensor cable, and release the latches securing the sensor.

C
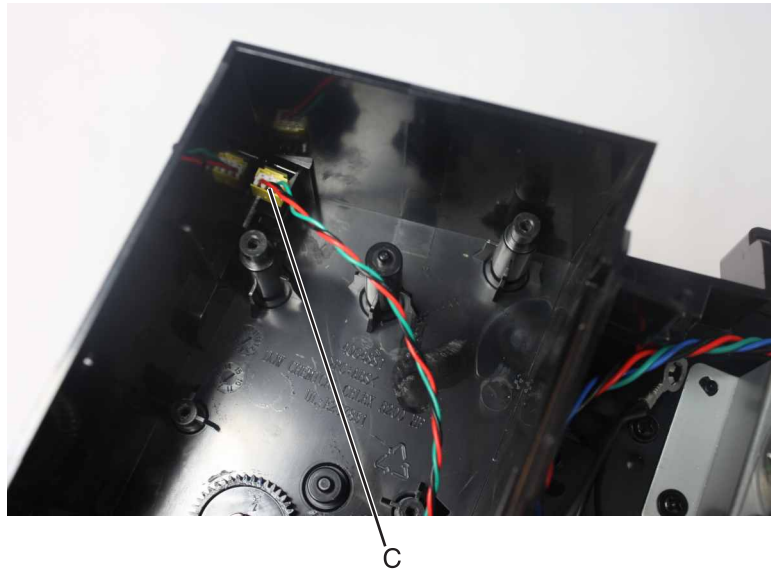
5 Remove the sensor.

Component locations

Exterior locations

Front view

Basic model
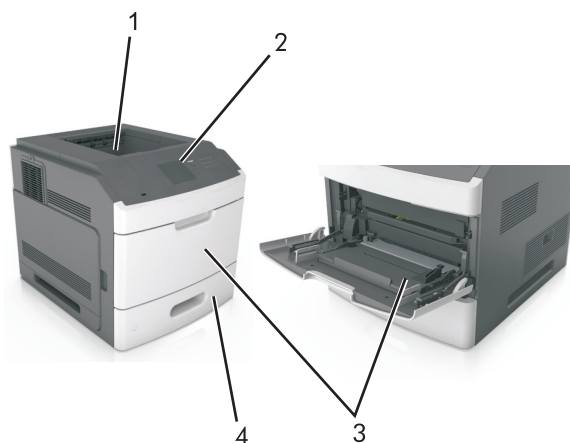
1	Standard bin
2	Printer control panel
3	Multipurpose feeder
4	Standard 250- or 550-sheet tray (Tray 1)

Configured model

#	Hardware option	Alternative hardware option
1	Staple finisher	• Output expander • 4-bin mailbox
2	4-bin mailbox	• Output expander • High-capacity output expander • Staple finisher
3	Caster base	None
4	2100-sheet tray	None
5	550-sheet tray	250-sheet tray
6	250-sheet tray	550-sheet tray
7	4-bin mailbox	Output expander
8	Output expander	4-bin mailbox

In a configuration with two or more optional finishers:

- The staple finisher must always be on top.
- The high-capacity output expander must always be at the bottom.
- The output expander is the only finisher that can be placed on top of the high-capacity output expander.
- The output expander and mailbox may be installed in any order.

When using optional trays:

- Always use a caster base when the printer is configured with a 2100-sheet tray.
- The 2100-sheet tray must always be at the bottom of a configuration.
- A maximum of four optional trays may be configured with the printer.
- The optional 250- and 550-sheet trays may be installed in any order.

Rear view
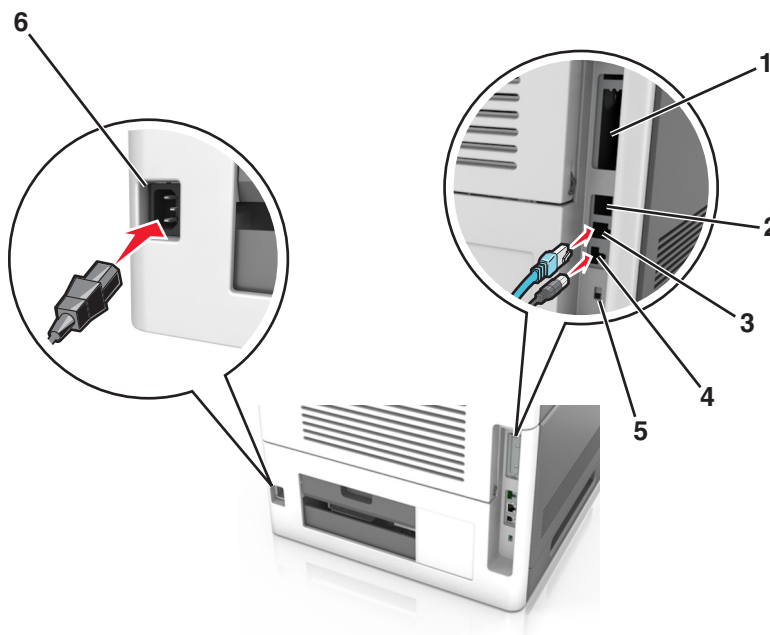
#	Part name
1	Parallel port
2	USB port
3	Ethernet port
4	USB printer port
5	Security slot
6	Printer power cord socket

Connectors

See the wiring diagram section at the end of this manual.

Controller board

Connector	Connects to	Pin no.	Signal
J3	MPF pick solenoid	1	S_MPF_PWM*_C
		2	+24V_FUSE_A

Component locations

Connector	Connects to	Pin no.	Signal
J9	Cartridge cooling fan/HVPS	1	S_CART_FAN_ENC_C
		2	GND
		3	S_CART_FAN_C
		4	S_HVPS_SERVO_C
		5	S_HVPS_TX_ENB*_C
		6	S_HVPS_TX_PWM_C
		7	S_+24V_SW_C
		8	S_HVPS_CHG_C
		9	GND
		10	S_HVPS_DEV_C
		11	S_HVPS_ID_C
		12	not used
J13	Control panel USB interface	N/A	N/A
J18	Rear door interlock sensor	1	RR_DRV_SNS_OUT_C
		2	GND
		3	S_RR_DRV_LED_C
J20	Sensor (input)	1	S_INPUTSNS*_C
		2	GND
		3	S_INPUTSNS_LED_C
		4	not used
J21	Main motor	1	XPORT_HALL_U_C
		2	XPORT_HALL_V_C
		3	XPORT_HALL_W_C
		4	XPORT_FG_C
		5	GND
		6	+5V_SW
		7	XPORT_WIND_U_C
		8	XPORT_WIND_V_C
		9	XPORT_WIND_W_C

Component locations

Connector	Connects to	Pin no.	Signal
J24	Fuser drive motor	1	FUSER_HALL_U_C
		2	FUSER_HALL_V_C
		3	FUSER_HALL_W_C
		4	FUSER_FG_C
		5	GND
		6	+5V_SW
		7	FUSER_WIND_U_C
		8	FUSER_WIND_V_C
		9	FUSER_WIND_W_C
J27	Fuser sensor/smart chip	1	S_NAR_MEDIA*_C
		2	GND
		3	A_SLAB_THERM1_C
		4	BELT*_C
		5	A_SLAB_THERM2_C
		6	+5V_SW
		7	A_BR_THERM_C
		8	S_EXITSNS*_C
		9	S_CART_3V
		10	S_FUSER_SCL_C
		11	S_FUSER_SDA_C
		12	not used
J28	Duplex drive motor	1	S_DPX_ENC_LED_C
		2	S_DPX_ENC_C
		3	GND
		4	+24V_FUSE_A
		5	DPX_MOT-_C
J29	Duplex path sensor	1	S_DPXSNS_LED_C
		2	GND
		3	S_DPXSNS_C
J31B	Media size sensor	1	PSIZE0_C
		2	GND
		3	PSIZE1_C
		4	PSIZE2_C
		5	PSIZE3_C

Component locations

Connector	Connects to	Pin no.	Signal
J37	Duplex cooling fan	1	+24V_FUSE_A
		2	S_DPX_FAN*_C
J38	MPF media present sensor	1	S_MPF_POUT_C
		2	GND
		3	S_MPF_LED_C
J39	Standard bin full sensor	1	S_HOPPER*_C
		2	GND
		3	S_HOPPER_LED_C
J45	Imaging unit smart chip contact	1	S_IU_SDA_C
		2	V_IU_C
		3	S_IU_SCL_C
		4	GND
		5	S_FSR_RELAY_C
		6	+24F_IU
J48	Toner add motor	1	S_AUGER_LED_C
		2	S_AUGER_ENC_C
		3	GND
		4	S_AUG_MOT-_C
		5	S_AUG_MOT+_C
J50	Media out sensor/media pick motor/pick roller position sensor	1	S_PAPER_INDEX_C
		2	GND
		3	S_PINDEX_LED_C
		4	S_PAPER_OUT_C
		5	GND
		6	S_POUT_LED_C
		7	S_PICK_LED_C
		8	S_PICK_ENC_C
		9	GND
		10	S_PICK_MOT-_C
		11	S_PICK_MOT+_C
J54	Main cooling fan	1	S_MAIN_FAN_ENC_C
		2	GND
		3	S_MAIN_FAN_C

Component locations

Connector	Connects to	Pin no.	Signal
J56	Control panel interlock sensor	1	S_COVER_CLOSED_C
		2	GND
		3	S_COVER_LED_C
J57	Printhead mirror motor	1	MM_REFCLK_C
		2	MM_LOCK*_C
		3	MM_START*_C
		4	GND
		5	+24V_FUSE_B
J58	Toner cartridge smart chip contact	1	S_CART_SDA_C
		2	V_CART
		3	S_CART_SCL_C
		4	GND
		5	S_LD_RELAY_HI_C
		6	S_LD_RELAY_RET_C
J73	Image density sensor	1	S_TDS_LED_PWM*_C
		2	S_A_TDS_C
		3	GND
		4	S_TDS+5V_C
J80	Top option interface cable	1	+24V_TOP_OPT_C
		2	GND
		3	S_RXD_PP_TOP_C
		4	GND
		5	S_TXD_PP_TOP_C
		6	GND
J81	Lower option interface cable	1	+24V_BOT_OPT_C
		2	GND
		3	S_RXD_PP_BOT_C
		4	GND
		5	S_TXD_PP_BOT_C
		6	GND

Component locations

Connector	Connects to	Pin no.	Signal
J101	Printhead laser control	1	GND
		2	L_ENB*_C
		3	S_LD_PWR_C
		4	S_LD_PWR_C
		5	S_HSYNC*_C
		6	GND
		7	BOOST_1_C
		8	BOOST_0_C
		9	GND
		10	DP_VID3+_C
		11	DP_VID3-_C
		12	GND
		13	DP_VID2+_C
		14	DP_VID2-_C
		15	GND
		16	DP_VID1+_C
		17	DP_VID1-_C
		18	GND
		19	DP_VID0+_C
		20	DP_VID0-_2
		21	GND
		22	GND
		23	L_ADJ_3*_C
		24	GND
		25	L_ADJ_2*_C
		26	L_SHADE_C
		27	L_ADJ_1*_C
		28	L_POW_A_C
		29	L_ADJ_0*_C
		30	GND

Component locations

Connector	Connects to	Pin no.	Signal
J104	Upper redrive motor	1	S_RDRV_LED_C
		2	S_RDRV_ENC_C
		3	GND
		4	S_RDRV_MOT-_C
		5	S_RDRV_MOT+_C
JAUD1	Speaker	1	SPEAKER1
		2	SPEAKER2
JCTLS1	Toner level contact	1	CTLS_SNS
		2	CTLS_GUARD
		3	V20_GND
JUI2	Control panel board	1	+6.5V_UI
		2	OP_PAN_INT
		3	SLEEP_BUTTON
		4	LED_DRV_YLW1
		5	OP_I2C_CLK_1
		6	OP_I2C_DATA_1
		7	+5V_UI
		8	LVDS_CLK-
		9	LVDS_CLK+
		10	GND
		11	LVDS_D0-
		12	LVDS_D0+
		13	GND
		14	LVDS_D1-
		15	LVDS_D1+
		16	GND
		17	LVDS_D2-
		18	LVDS_D2+
		19	+5V_UI
		20	GND
		21	+5V_UI
		22	+5V_UI
		23	GND
		24	+5V_UI

Component locations

Connector	Connects to	Pin no.	Signal
JUSBH1	USB interface (MS71x and MS81x models only)	N/A	N/A
JW1	Temperature probe	1	A_WS_MACHINE_C
		2	GND

Component locations

Maintenance

Inspection guide

The purpose of this Inspection guide is to aid you in identifying the intervals, based on page count, at which parts must be Inspected (for visible physical damage), cleaned, or replaced.

If any unsafe conditions exist, find out how serious the hazard could be and if you can continue before you correct the hazard.

As you service the machine, check for the following:

- Damaged, missing, or altered parts, especially in the area of the On/Off switch and the power supply
- Damaged, missing, or altered covers, especially in the area of the top cover and the power supply cover
- Possible safety exposure from any non-Lexmark attachments
- Printer and input options are sitting flat (for example, not sitting on cables or hanging over a ledge)
- Printer is properly set on any input options

Use the following tables to determine when specified parts should be inspected:

Lexmark MS81x	EVERY SERVICE CALL	EVERY 200K PAGES	NOTES
Media tray—All			
Media tray side guides	Inspect	Inspect	Check for correct positioning.
Media tray length guides	Inspect	Inspect	Check for correct positioning.
Separation roller	Inspect, clean if needed	Replace	Clean with damp cloth.
Tray lift gear assembly	Inspect	Inspect	Ensure correct operation.
Transfer roller	Inspect	Replace	Ensure correct installation.
Fuser	Inspect	Replace	Ensure correct installation.
Media feeders—All			
Media tray pick roller	Inspect, clean if needed	Replace	Clean with a damp cloth.
MPF pick roller	Inspect, clean if needed	Inspect, clean if needed	Clean with a damp cloth.
Covers and doors			
Rear door	Inspect	Inspect	Ensure correct operation and closure.
Fuser access door	Inspect	Inspect	Ensure correct operation and closure.
Paper path			
Duplex path	Inspect	Inspect	Check for media fragments and tears.

Lexmark MS81x	EVERY SERVICE CALL	EVERY 200K PAGES	NOTES
Miscellaneous			
Toner spillage	Clean	Clean	Remove all toner spillage from the printer.
Pick tires	Inspect, clean if needed	Inspect, clean if needed	Check for toner contamination.

Lexmark MS71x	EVERY SERVICE CALL	EVERY 200K PAGES	NOTES
Media tray—All			
Media tray side guides	Inspect	Inspect	Check for correct positioning.
Media tray length guides	Inspect	Inspect	Check for correct positioning.
Separation roller	Inspect, clean if needed	Replace	Clean with damp cloth.
Tray lift gear assembly	Inspect	Inspect	Ensure correct operation.
Media feeders—All			
Media tray pick roller	Inspect, clean if needed	Replace	Clean with damp cloth.
MPF pick roller	Inspect, clean if needed	Inspect, clean if needed	Clean with damp cloth.
Transfer roller	Inspect	Replace	Ensure correct installation.
Fuser	Inspect	Replace	Ensure correct installation.
Fuser wiper	Inspect	Inspect	Ensure correct operation.
Covers and doors			
Rear door	Inspect	Inspect	Ensure correct operation.
Fuser access door	Inspect	Inspect	Ensure correct operation and closure.
Paper path			
Duplex path	Inspect	Inspect	Ensure media fragments and tears are not present.
Miscellaneous			
Toner spillage	Clean	Clean	Remove all toner spillage from the printer.
Pick tires	Inspect, clean if needed	Inspect, clean if needed	Check for toner contamination.

Scheduled maintenance

The operator panel displays the message *80* or *Scheduled Maintenance* when it reaches certain page counts. It is necessary to replace the appropriate maintenance kit at certain intervals to maintain the print quality and reliability of the printer. If needed, reset the maintenance counter after performing scheduled maintenance.

Fuser maintenance kits

The printer may stop printing when the fuser rated life is reached. At rated fuser life, a Fuser maintenance kit is required. The correct Fuser maintenance kit must be installed for the type of fuser that is installed in the printer. See **"Identifying the type of fuser used in the printer" on page 873**.

Code levels prior to Base code of LW20.DN4.P231-0 and Engine code of FDN.DN.E410-0 set the 80.3x error as a non-continuable stop. To change the 80.3x error code to a continuable stop, please see technical bulletin TE523 by visiting **www.lexmark.com**. A continuable stop is an error code that will allow the user to continue using the printer once the error is acknowledged using the control panel.

There are multiple warnings to indicate that the fuser is nearing end of life and that a maintenance kit is required.

Maintenance kit nearly low [80.0x]

1 Replace the maintenance kit. For more information, see the instruction sheet that came with the replacement parts.

2 From the printer control panel, select **Continue** to clear the message and continue printing. For

non-touch-screen printer models, press ✓ to confirm.

3 If you do not have a maintenance kit, then see **"Replacing fuser maintenance kits" on page 872**, or see the *Ordering a maintenance kit* section of the *User's Guide*, or visit **www.lexmark.com**.

Maintenance kit low [80.1x]

1 Replace the maintenance kit. For more information, see the instruction sheet that came with the replacement parts.

2 From the printer control panel, select **Continue** to clear the message and continue printing. For

non-touch-screen printer models, press ✓ to confirm.

3 If you do not have a maintenance kit, then see **"Replacing fuser maintenance kits" on page 872**, or see the *Ordering a maintenance kit* section of the *User's Guide*, or visit **www.lexmark.com**.

Maintenance kit very low, 2000 estimated pages remain [80.2x]

1 Replace the maintenance kit. For more information, see the instruction sheet that came with the replacement parts.

2 From the printer control panel, select **Continue** to clear the message and continue printing. For

non-touch-screen printer models, press ✓ to confirm.

3 If you do not have a maintenance kit, then see **"Replacing fuser maintenance kits" on page 872**, or see the *Ordering a maintenance kit* section of the *User's Guide*, or visit **www.lexmark.com**.

Maintenance kit low, 0 estimated pages remain [80.3x]

1 Replace the maintenance kit. For more information, see the instruction sheet that came with the replacement parts.

2 If you do not have a maintenance kit, then see **"Replacing fuser maintenance kits" on page 872**, or see the *Ordering a maintenance kit* section of the *User's Guide*, or visit **www.lexmark.com**.

Note: The printer is not intended to continue past this point [80.3x]. If a maintenance kit cannot be installed at this time, contact the Lexmark help desk for procedures to allow the printer to continue printing for a limited number of additional pages. For the contact information, visit **http://support.lexmark.com**.

Maintenance kit very low, 0 estimated pages remain [80.4x]

1 Replace the maintenance kit. For more information, see the instruction sheet that came with the replacement parts.

2 If you do not have a maintenance kit, then see **"Replacing fuser maintenance kits" on page 872**, or see the *Ordering a maintenance kit* section of the *User's Guide*, or visit **www.lexmark.com**.

Note: The printer is not intended to continue past this point [80.4x]. There are no additional procedures that will allow the printer to print without installing a maintenance kit.

Replacing fuser maintenance kits

The operator panel displays the message **80 "Replace maintenance kit"** at required maintenance intervals. You must replace the fuser, transfer roller, pick roller, and separation roller at this interval to maintain the print quality and reliability of the printer. The following fuser maintenance kits are available:

Description	Part number	Maintenance interval
Roller Kit **Note:** The roller kit will only be needed in situations where the fuser does not reach the rated life (200K). When the fuser is replaced before reaching 200K, the fuser maintenance count is reset to zero, while the roller maintenance count continues. When the roller maintenance count reaches 300K, a message will be displayed to replace the Roller kit.	40X7706	300K
MS81x Return Program Fuser Maintenance Kit Type 00, 110-120V Letter	40X8420	200K
MS81x Return Program Fuser Maintenance Kit Type 01, 220-240V A4	40X8421	200K
MS81x Return Program Fuser Maintenance Kit Type 02, 100V A4	40X8422	200K
MS81x Return Program Fuser Maintenance Kit Type 03, 110-120V A4	40X8423	200K
MS81x Return Program Fuser Maintenance Kit Type 04, 220-240V Letter	40X8424	200K
MS81x Fuser Maintenance Kit Type 05, 110-120V Letter	40X8425	200K
MS81x Fuser Maintenance Kit Type 06, 220-240V A4	40X8426	200K
MS81x Fuser Maintenance Kit Type 07, 100V A4	40X8427	200K
MS81x Fuser Maintenance Kit Type 08, 110-120V A4	40X8428	200K
MS81x Fuser Maintenance Kit Type 09, 220-240V Letter	40X8429	200K

Description	Part number	Maintenance interval
MS71x Return Program Fuser Maintenance Kit Type 11, 110-120V	40X8530	200K
MS71x Return Program Fuser Maintenance Kit Type 13, 220-240V	40X8531	200K
MS71x Return Program Fuser Maintenance Kit Type 15, 100V	40X8532	200K
MS71x Fuser Maintenance Kit Type 17, 110-120V	40X8533	200K
MS71x Fuser Maintenance Kit Type 19, 220-240V	40X8534	200K
MS71x Fuser Maintenance Kit Type 21, 100V	40X8535	200K

After replacing the maintenance kit, the maintenance count will automatically be reset to zero to clear the **80 "Replace maintenance kit"** message.

Identifying the type of fuser used in the printer

From the front of the machine:

1 Open the front cover.

2 Remove the cartridge and imaging unit.

3 On the EP frame, see the number in the area, as shown in the following image:
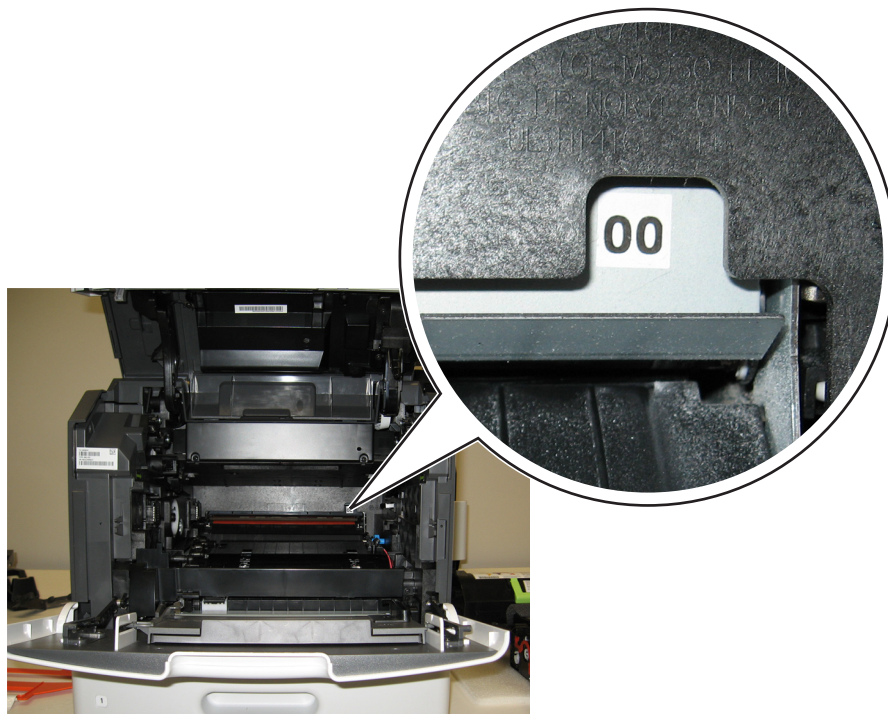
From the rear of the machine:

1 Remove the rear upper cover.

2 Pull down the redrive.

3 See the number in the area, as shown in the following image:

Resetting the Roller Kit counter

After replacing a roller kit, the roller kit counter must be reset to zero to clear the "81 Replace Roller kit" message.

To reset the maintenance count:

1 Turn off the printer.

2 Enter the Configuration Menu.

    a Press and hold the **2** and **6** buttons simultaneously.

    b Turn on the printer.

    c Release the buttons after 10 seconds. The Configuration Menu appears on the LCD.

3 Touch **Reset Roller Kit Counter** from the Configuration Menu.

4 From the options displayed, select the roller kit to reset.

5 Touch **Yes** to reset the roller kit counter value. Touch **No** or **Back** to return to the previous menu.

The roller kit count resets to zero, and the LCD returns to the Configuration Menu.

Preventive maintenance

Between scheduled maintenance intervals, paper feed, paper transport, and image quality problems can occur. Some preventive maintenance procedures can help prevent issues like these.

Device-specific preventive maintenance

To clean the touchscreen and keypad, use the LCD cleaning cloth. A single two-step LCD cleaning cloth is stored in the compartment beneath the exit tray. Additional cleaning cloths are available.

The following table lists the parts needed to perform preventive maintenance:

Part number	Description	Maintenance interval
40X0392	LCD cleaning kit	As needed

Lubrication specification

There are no lubrication requirements for this printer.

Cleaning the printer

Cleaning the printer

Note: You may need to perform this task after every few months.

Warning—Potential Damage: Damage to the printer caused by improper handling is not covered by the printer warranty.

1. Make sure that the printer is turned off and unplugged from the electrical outlet.

   ⚠ **CAUTION—SHOCK HAZARD:** To avoid the risk of electrical shock when cleaning the exterior of the printer, unplug the power cord from the electrical outlet and disconnect all cables from the printer before proceeding.

2. Remove paper from the standard bin and multipurpose feeder.

3. Remove any dust, lint, and pieces of paper around the printer using a soft brush or vacuum.

4. Dampen a clean, lint-free cloth with water, and use it to wipe the outside of the printer.

   Warning—Potential Damage: Do not use household cleaners or detergents to prevent damage to the exterior of the printer.

5. Make sure all areas of the printer are dry before sending a new print job.

Cleaning the printhead mirror and glass

Use the cleaning kit (P/N 41X1007).

1. Remove the toner cartridge and imaging unit.

2. Find the printhead access opening in the top of the frame at the front of the printer.

3 Hold the swab (A) soaked in alcohol at a 45-degree angle, and then insert the swab in the opening.

4 Gently move the swab back and forth along the surface of the mirror (B) to clean it.

5 Repeat step 4 to clean the glass (C).
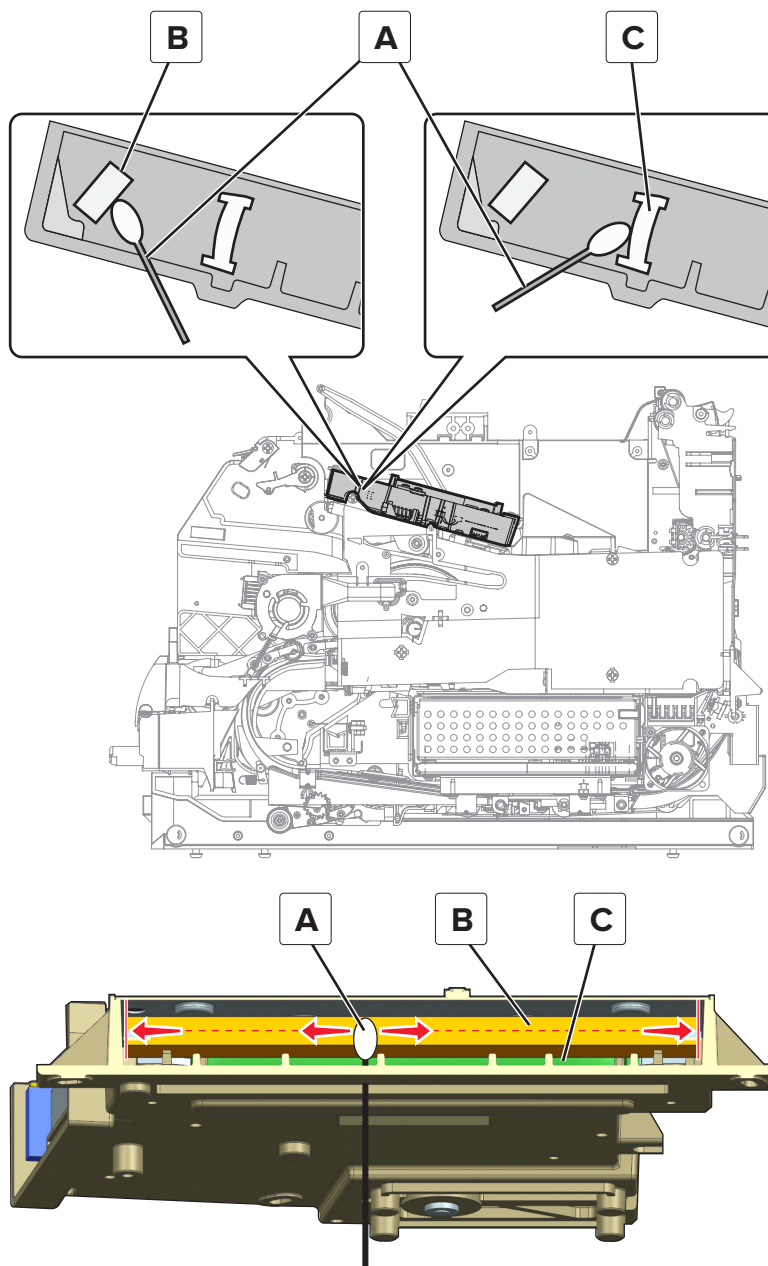
6 Hold the dry swab (A) at a 45-degree angle, and then insert the swab in the opening.

7 Repeat steps 4 through 5.

Note: Use the wipes that came with the swabs to clean the scanner glass and control panel.

Emptying the hole punch box

1 Pull out the hole punch box.
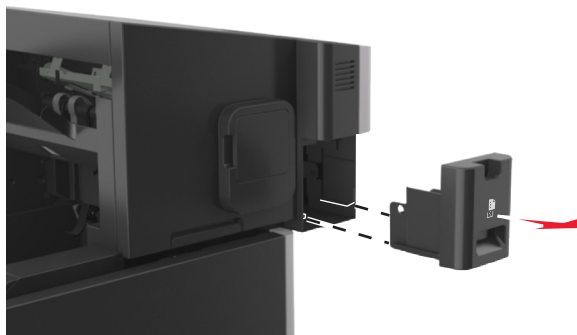
2 Empty the container.

3 Insert the emptied hole punch box back into the finisher until it *clicks* into place.
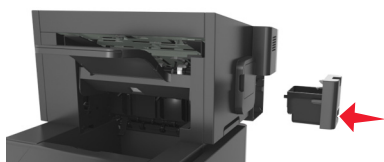
Parts catalog

Legend

The following column headings are used in the parts catalog:

- **ASM-index**—Identifies the assembly and the item in the diagram. For example, 3-1 indicates Assembly 3 and item 1 in the table.

- **Part number**—Identifies the unique number that correlates with the part.

- **Units/mach**—Refers to the number of units actually used in the base machine or product.

- **Units/option**—Refers to the number of units in a particular option.

- **Units/FRU**—Refers to the number of units in a particular FRU.

- **Description**—A brief description of the part.

The following abbreviations are used in the parts catalog:

- **NS** (not shown) in the Asm-index column indicates that the part is procurable but is not pictured in the illustration.
- **PP** (parts packet) in the Description column indicates that the part is contained in a parts packet.

Assembly 1: Covers
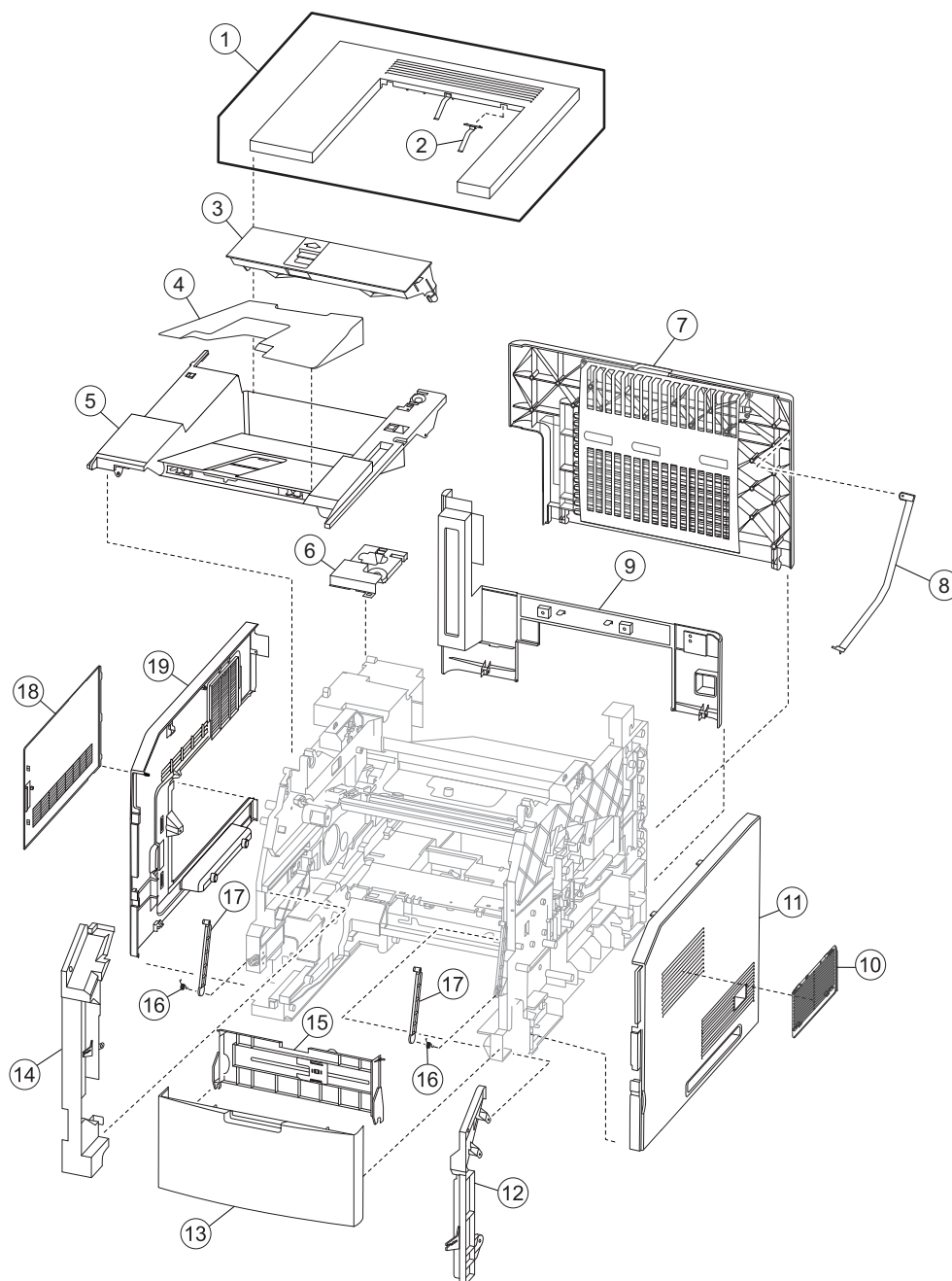
Assembly 1: Covers

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X7673	1	1	Top cover	See **"Top cover removal" on page 544**.
2	40X7604	2	1	Output bin guide	N/A
3	40X8398	1	1	Fuser wiper cover (hot roll fuser printer only)	N/A
4	40X8855	1	1	Bin insert	N/A
5	40X8397	1	1	Standard bin cover (integrated 250-sheet tray)	See **"Standard bin cover removal" on page 545**.
5	40X7675	1	1	Standard bin cover (integrated 550-sheet tray)	See **"Standard bin cover removal" on page 545**.
6	40X7677	1	1	Bin sensor cover	See **"Output bin sensor cover removal" on page 541**.
7	40X7678	1	1	Rear door	See **"Rear door removal" on page 534**.
8	40X7726	1	1	Rear door support	N/A
9	40X7671	1	1	Rear lower cover (integrated 550-sheet tray)	See **"Rear lower cover removal" on page 532**.
9	40X8404	1	1	Rear lower cover (integrated 250-sheet tray)	See **"Rear lower cover removal" on page 532**.
10	41X0053	1	1	Louver	--
11	40X7680	1	1	Right cover (integrated 550-sheet tray)	See **"Right cover removal" on page 584**.
11	40X8403	1	1	Right cover (integrated 250-sheet tray)	See **"Right cover removal" on page 584**.
12	40X7670	1	1	Right inner cover	See **"Right inner cover removal" on page 478**.
13	40X7674	1	1	Front door	See **"Front door removal" on page 455**.
14	40X7669	1	1	Inner left cover	See **"Left inner cover removal" on page 462**.
15	40X7725	1	1	MPF tray	See **"MPF tray removal" on page 476**.
16	40X7690	2	1	Torsion spring	N/A
17	40X7715	2	1	Front door support link	N/A

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
18	40X7672	1	1	Controller board access cover	See **"Controller board access cover removal" on page 570**.
19	40X7679	1	1	Left cover (integrated 550-sheet tray)	See **"Left cover removal" on page 565**.
19	40X8402	1	1	Left cover (integrated 250-sheet tray)	See **"Left cover removal" on page 565**.

Parts catalog

Assembly 2: Paper path
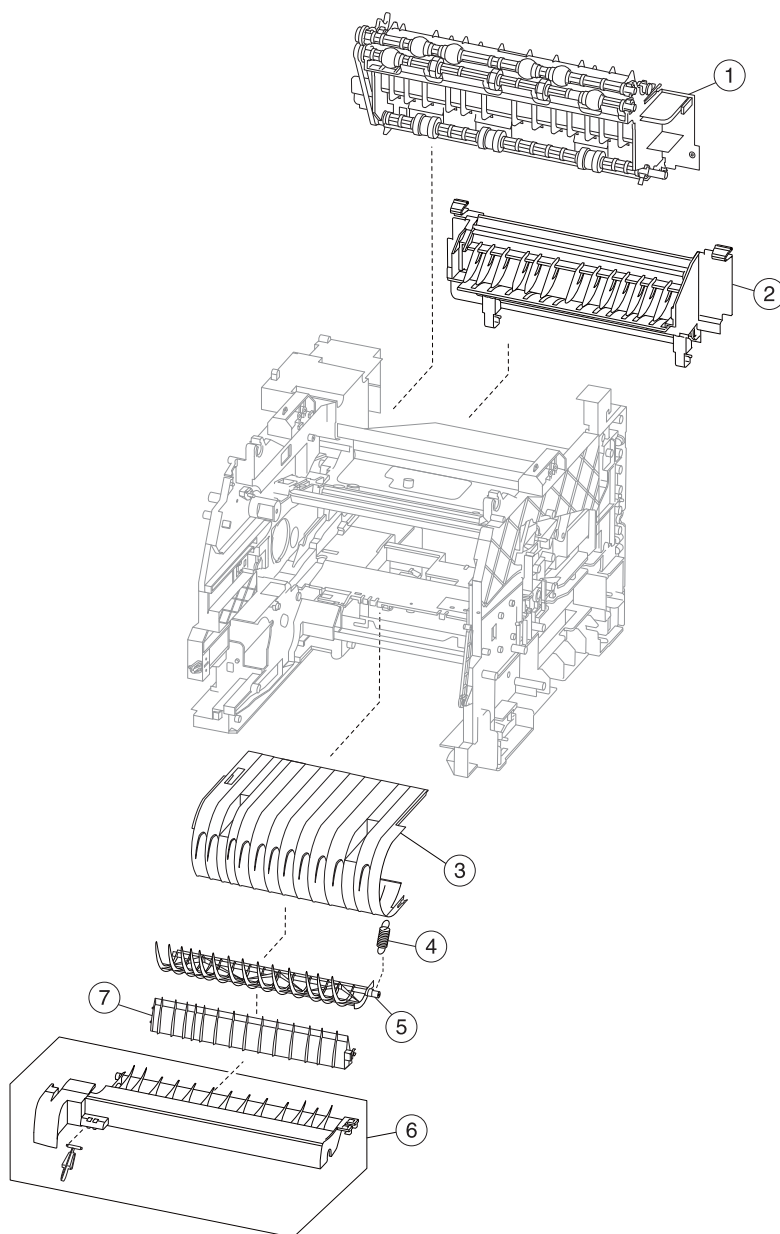
Assembly 2: Paper path

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X7602	1	1	Upper redrive	See **"Upper redrive removal" on page 549**.
2	40X7588	1	1	Fuser access door (belt fuser printers only)	See **"Fuser access door removal" on page 539**.
2	40X8399	1	1	Fuser access door (hot roll fuser printers only)	See **"Fuser access door removal" on page 539**.
3	40X7587	1	1	Inner guide deflector	See **"Inner guide deflector removal" on page 456**.
4	40X7585	1	1	Recoil spring	N/A
5	40X7584	1	1	Duplex exit diverter	See **"Duplex exit diverter removal" on page 453**.
6	40X7583	1	1	Media turn guide	See **"Media turn guide removal" on page 466**.
7	40X7586	1	1	Media vertical guide	See **"Media vertical guide removal" on page 467**.

Assembly 3: Fusers
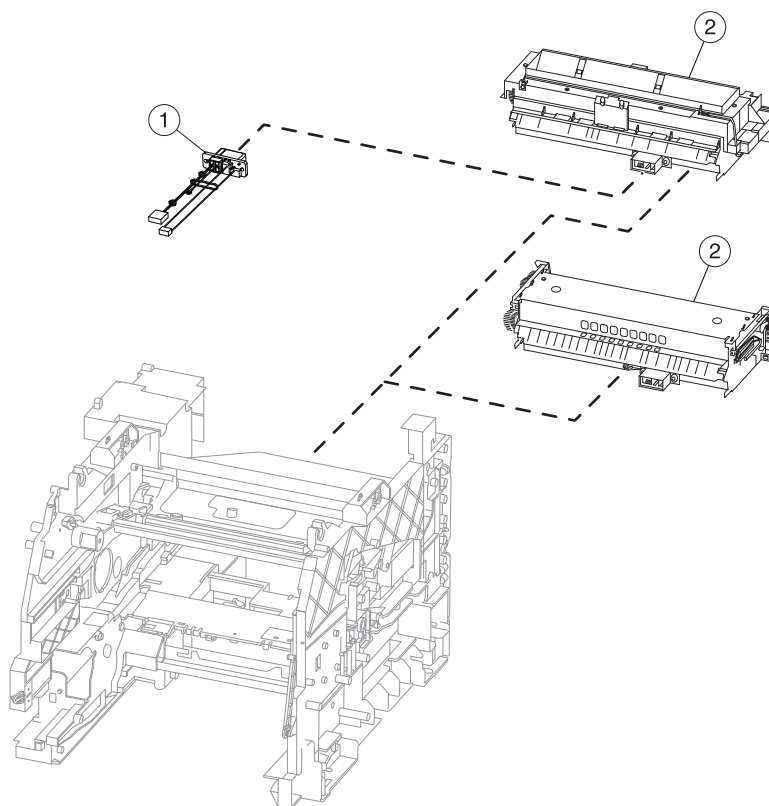
Assembly 3: Fusers

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X7577	1	1	Fuser auto-connect cable assembly	N/A
2	40X7743	1	1	Fuser - MS81x Return Program Fuser Type 00, 110-120V Letter	See **"Fuser removal" on page 538**.
2	40X7744	1	1	Fuser - MS81x Return Program Fuser Type 01, 220-240V A4	See **"Fuser removal" on page 538**.
2	40X7745	1	1	Fuser - MS81x Return Program Fuser Type 02, 100V A4	See **"Fuser removal" on page 538**.
2	40X7581	1	1	Fuser - MS81x Return Program Fuser Type 03, 110-120V A4	See **"Fuser removal" on page 538**.
2	40X7734	1	1	Fuser - MS81x Return Program Fuser Type 04, 220-240V Letter	See **"Fuser removal" on page 538**.
2	40X8016	1	1	Fuser - MS81x Fuser Type 05, 110-120V Letter	See **"Fuser removal" on page 538**.
2	40X8017	1	1	Fuser - MS81x Fuser Type 06, 220-240V A4	See **"Fuser removal" on page 538**.
2	40X8018	1	1	Fuser - MS81x Fuser Type 07, 100V A4	See **"Fuser removal" on page 538**.
2	40X8019	1	1	Fuser - MS81x Fuser Type 08, 110-120V A4	See **"Fuser removal" on page 538**.
2	40X8020	1	1	Fuser - MS81x Fuser Type 09, 220-240V Letter	See **"Fuser removal" on page 538**.
2	40X8503	1	1	Fuser - MS71x Return Program Fuser Type 11, 110-120V contact	See **"Fuser removal" on page 538**.
2	40X8504	1	1	Fuser - MS71x Return Program Fuser Type 13, 220-240V contact	See **"Fuser removal" on page 538**.
2	40X8505	1	1	Fuser - MS71x Return Program Fuser Type 15, 100V contact	See **"Fuser removal" on page 538**.
2	40X8506	1	1	Fuser - MS71x Fuser Type 17, 110V contact	See **"Fuser removal" on page 538**.
2	40X8507	1	1	Fuser - MS71x Fuser Type 19, 220V contact	See **"Fuser removal" on page 538**.
2	40X8508	1	1	Fuser - MS71x Fuser Type 21, 100V contact	See **"Fuser removal" on page 538**.

Assembly 4: Electronics
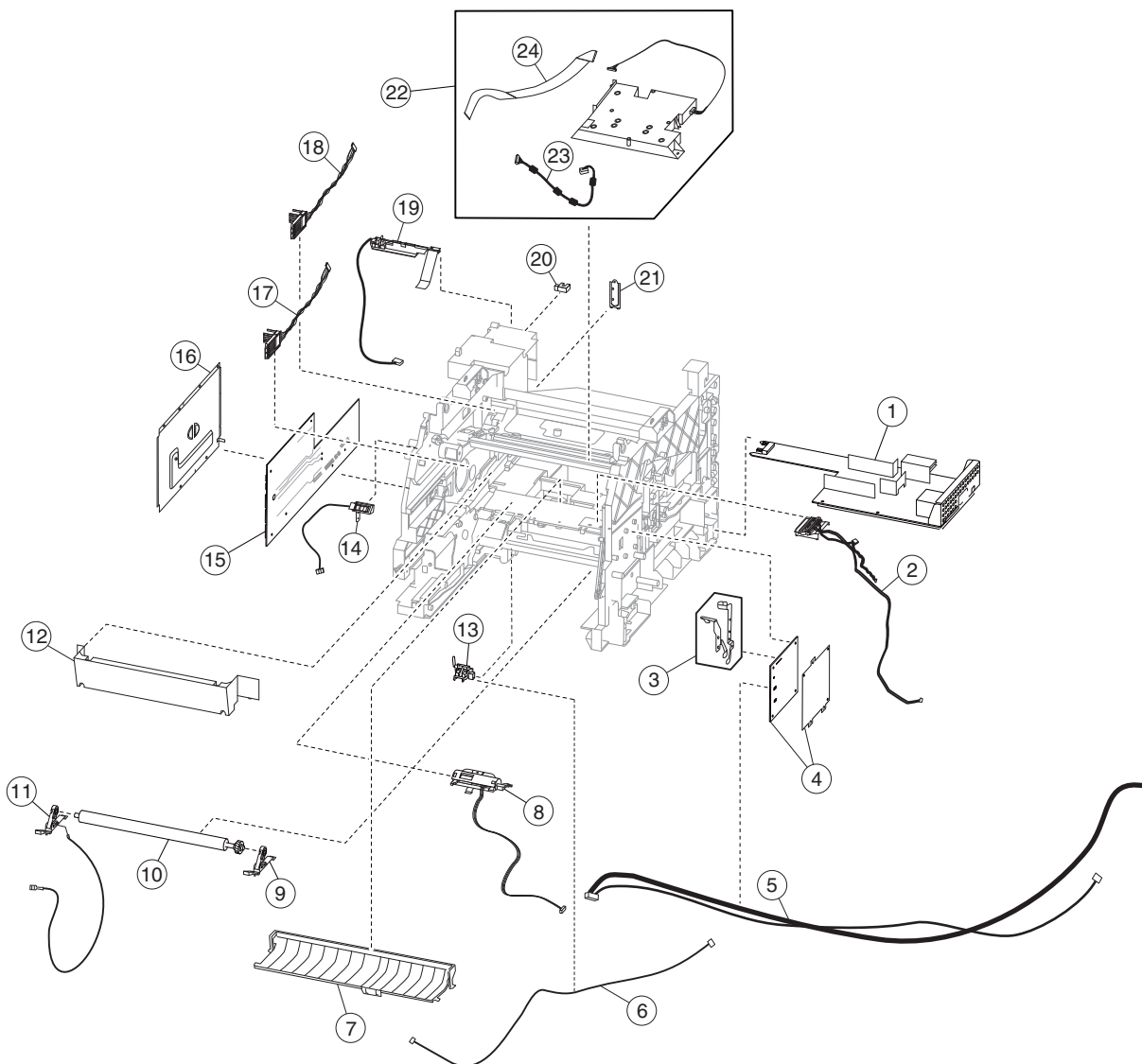
Assembly 4: Electronics

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X7694	1	1	LVPS (universal)	**"LVPS removal" on page 592**
2	40X7685	1	1	Imaging unit contact block	**"HVPS removal" on page 590**
3	41X1721	1	1	HVPS contacts	**"HVPS contacts removal" on page 591**
4	40X7578	1	1	HVPS	**"HVPS removal" on page 590**
5	40X7699	1	1	HVPS/toner cartridge fan cable	N/A
6	40X7688	1	1	Input sensor cable	N/A
7	40X9754	1	1	Transfer guide static brush	N/A
8	40X7686	1	1	Sensor (toner density) Includes shutter and cable	**"Transfer roller right arm removal" on page 485**
9	40X7606	1	1	Transfer roller right arm	**"Transfer roller right arm removal" on page 485**
10	40X7582	1	1	Transfer roller	**"Transfer roller removal" on page 488**
11	40X7605	1	1	Transfer roller left arm with cable	**"Transfer roller left arm with cable removal" on page 484**
12	40X8365	1	1	Printhead access cover	**"Laser printhead removal" on page 458**
13	40X7607	1	1	Sensor (input)	**"Sensor (input) removal" on page 481**
14	40X7693	1	1	Sensor (control panel interlock) Includes bracket and cable	**"Sensor (control panel interlock) removal" on page 578**
15	40X7570	1	1	Controller board (2.4" display printers only)	**"Controller board removal" on page 568**
15	40X7571	1	1	Controller board (4.3" tilting display printers only)	**"Controller board removal" on page 568**
15	40X7572	1	1	Controller board (7" tilting display printers only)	**"Controller board removal" on page 568**
16	40X7722	1	1	Controller board access shield	**"Controller board access shield removal" on page 570**
17	40X7692	1	1	Toner cartridge smart chip contact with cable	**"Toner cartridge smart chip contact removal" on page 582**
18	40X7689	1	1	Imaging unit smart chip contact with cable	**"Imaging unit smart chip contact removal" on page 581**
19	40X7691	1	1	Sensor (standard bin full) with output bin guide	**"Sensor (standard bin full) removal" on page 544**

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
20	40X7592	1	1	Interrupt sensor • sensor (rear door interlock)	**"Sensor (rear door interlock) removal" on page 543**
21	40X8034	1	1	Option card cover plate	N/A
22	40X7597	1	1	Laser printhead (quad diode) (belt fuser printers only) Includes data and power cables	**"Laser printhead removal" on page 458**
22	40X8481	1	1	Laser printhead (dual diode) (hot roller fuser printers only) Includes data and power cables	**"Laser printhead removal" on page 458**
23	40X7707	1	1	Printhead power cable	**"Laser printhead removal" on page 458**
24	40X7708	1	1	Printhead video cable	**"Laser printhead removal" on page 458**

Assembly 5: Drive motors
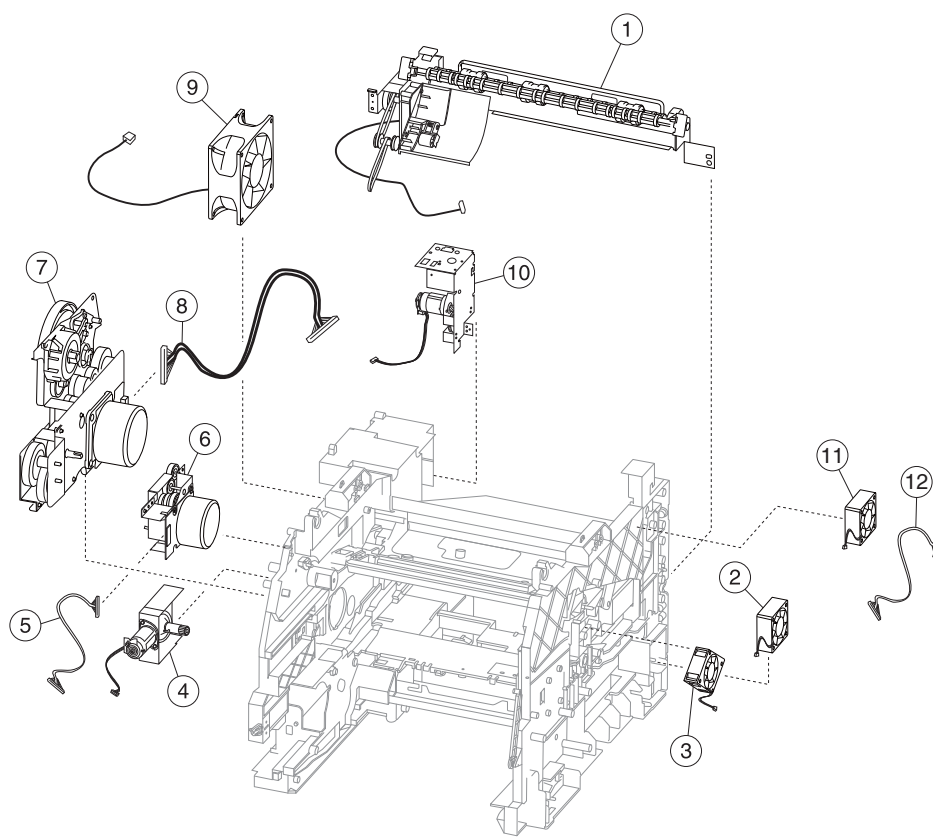
Assembly 5: Drive motors

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X7684	1	1	Duplex motor with cable	See **"Duplex motor removal" on page 535**.
2	40X7695	1	1	Duplex cooling fan	See **"Duplex cooling fan removal" on page 587**.
3	40X7580	1	1	Cartridge cooling fan	See **"Cartridge cooling fan removal" on page 586**.
4	40X7596	1	1	Toner add motor with cable	See **"Toner add motor removal" on page 580**.
5	40X7576	1	1	Fuser drive motor cable	See **"Fuser drive motor removal" on page 571**.
6	40X7595	1	1	Fuser drive motor (belt fuser printers only)	See **"Fuser drive motor removal" on page 571**.
6	40X8401	1	1	Fuser drive motor (hot roll fuser printers only)	See **"Fuser drive motor removal" on page 571**.
7	40X7594	1	1	Main drive motor	See **"Main drive motor removal" on page 574**.
8	40X7574	1	1	Main motor cable	See **"Main cooling fan removal" on page 573**.
9	40X7579	1	1	Main cooling fan with cable	See **"Main cooling fan removal" on page 573**.
10	40X7682	1	1	Upper redrive motor with cable	See **"Upper redrive motor removal" on page 547**.
11	40X8483	1	1	Fuser cooling fan (hot roll fuser printers only)	N/A
12	40X8484	1	1	Fuser cooling fan cable (hot roll fuser printers only)	N/A

Assembly 6: Duplex
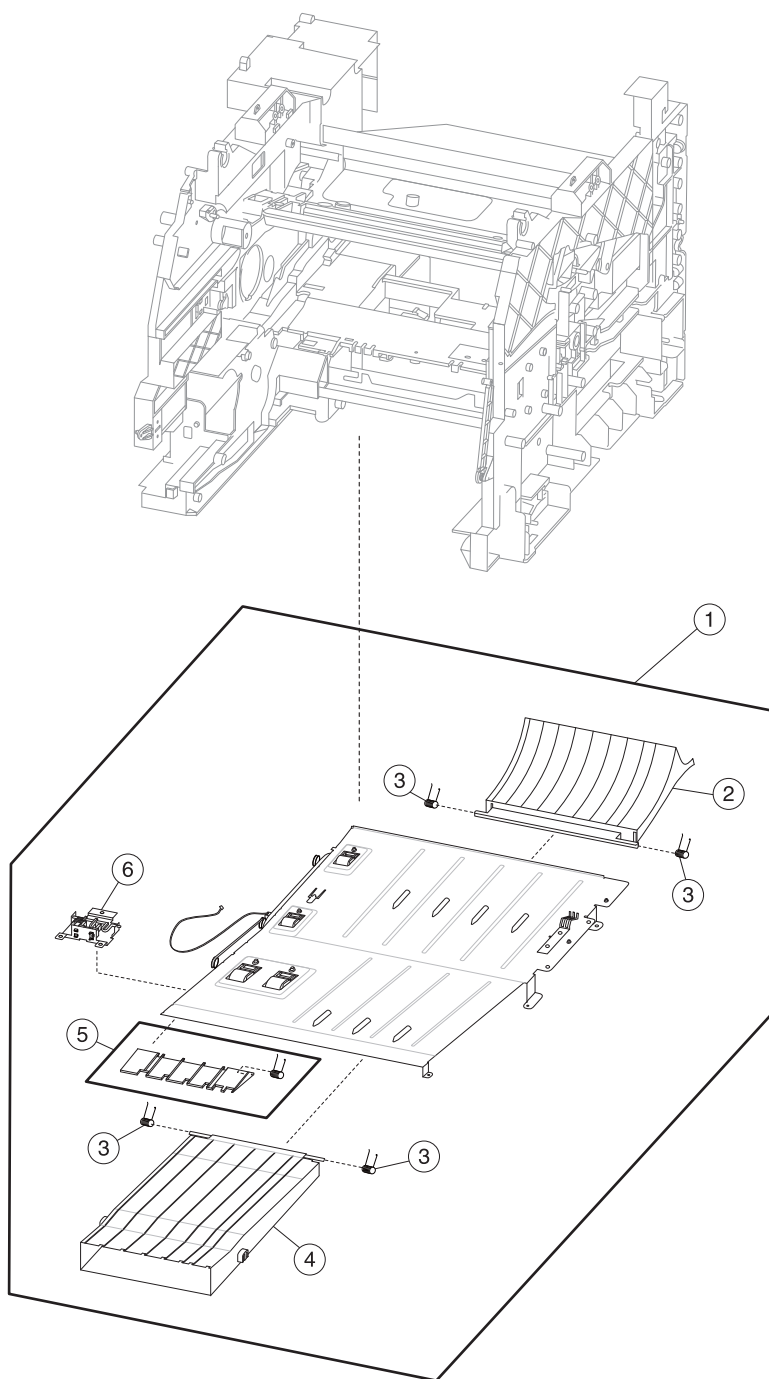
Assembly 6: Duplex

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8803	1	1	Internal duplex with cable (MS710)	N/A
1	40X7683	1	1	Internal duplex with cable	N/A
2	40X8804	1	1	Duplex rear flap (MS710)	**"Duplex rear flap removal" on page 553**
2	40X7668	1	1	Duplex rear flap	**"Duplex rear flap removal" on page 553**
3	40X7723	4	1	Torsion spring	N/A
4	40X7667	1	1	Duplex front flap	**"Duplex front flap removal" on page 552**
5	40X7952	1	1	Duplex jam release guide	N/A
6	40X7697	1	1	Sensor (duplex path) with cable	**"Sensor (duplex path) removal" on page 561**

Assembly 7: Frame
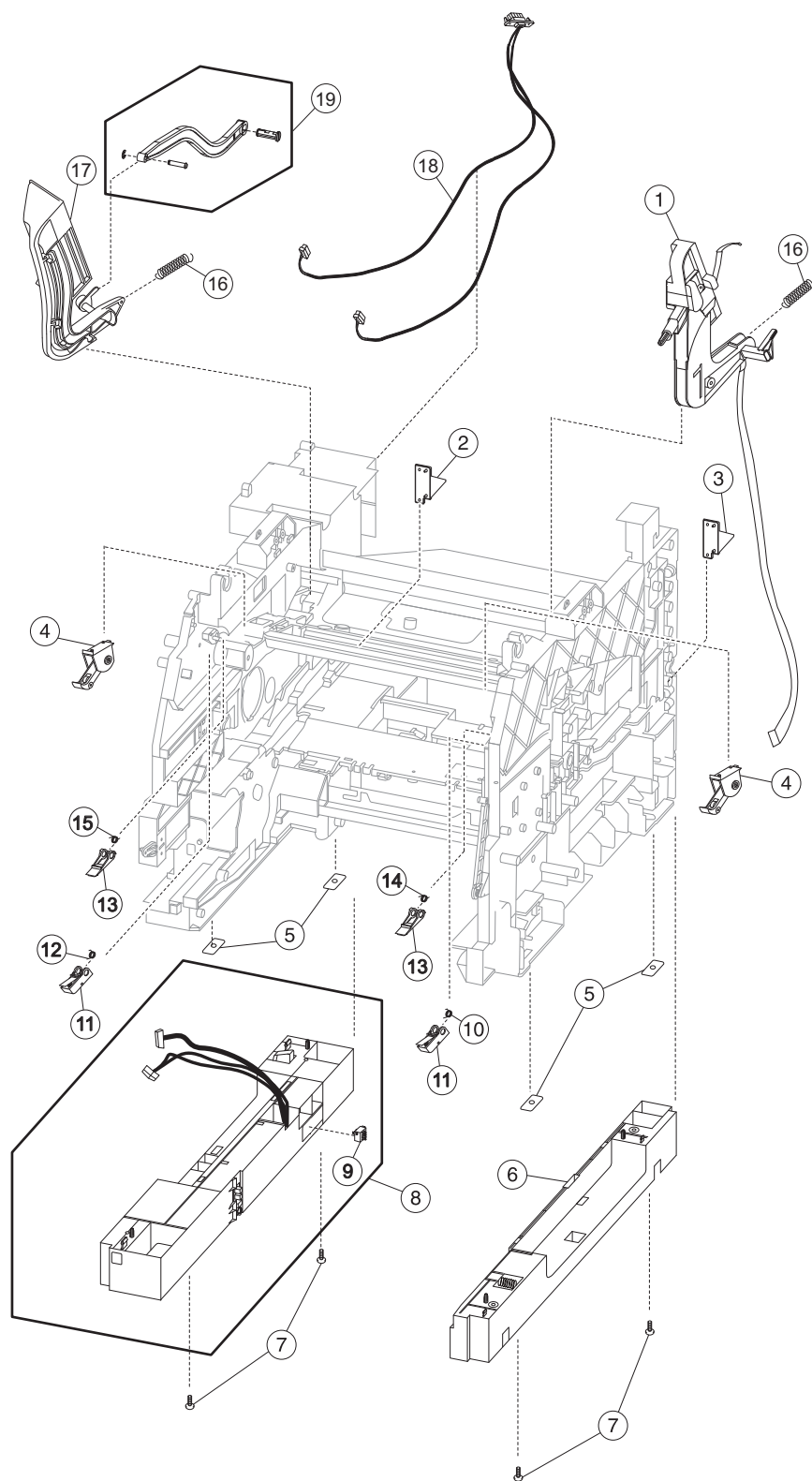
Assembly 7: Frame

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8316	1	1	Right control panel hinge, with control panel cable	See **"Right control panel hinge removal" on page 529**.
2	40X7732	1	1	Left frame pivot	See **"Left frame pivot removal" on page 540**.
3	40X7733	1	1	Right frame pivot	See **"Right frame pivot removal" on page 542**.
4	40X7714	2	1	Imaging unit clamp	N/A
5	40X7589	4	1	Fastener plate	N/A
6	40X7728	1	1	Right frame extension with tray latch (integrated 550-sheet tray)	See **"Right frame extension" on page 560**.
6	40X8408	1	1	Right frame extension (integrated 250-sheet tray)	See **"Right frame extension" on page 560**.
7	40X7590	4	1	M5x12 screw	N/A
8	40X7727	1	1	Left frame extension (integrated 550-sheet tray) - with input option interface cable - with sensor (media tray position) with cable	See **"Left frame extension removal" on page 554**.
8	40X8407	1	1	Left frame extension (integrated 250-sheet tray) - with input option interface cable - with sensor (media tray position) with cable	See **"Left frame extension removal" on page 554**.
9	40X7911	1	1	Sensor (media size)	N/A
10	40X7721	1	1	Torsion spring	N/A
11	40X7716	2	1	Toner cartridge lock	N/A
12	40X7719	1	1	Torsion spring	N/A
13	40X7717	2	1	Toner cartridge clamp	N/A
14	40X7720	1	1	Torsion spring	N/A
15	40X7718	1	1	Torsion spring	N/A
16	40X7724	2	1	Recoil spring	N/A
17	40X8315	1	1	Left control panel hinge	See **"Left control panel hinge removal" on page 526**.
18	40X7575	1	1	Top option interface cable	N/A
19	41X0793	1	1	Imaging unit release link	N/A

Assembly 8: Control panel
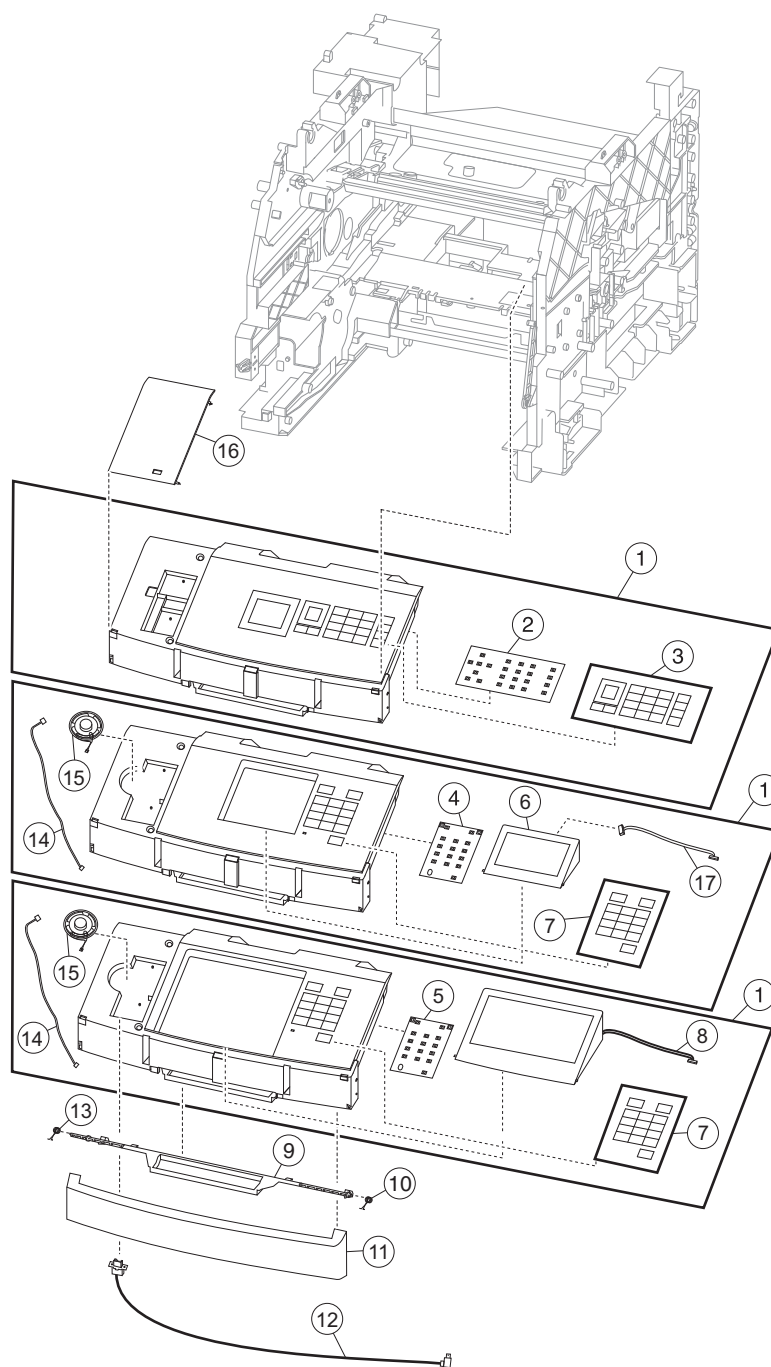
Assembly 8: Control panel

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X7700	1	1	2.4" LCD control panel (MS71x, MS810n, MS810dn, MS811n, MS811dn, MS812dn)	N/A
1	40X7701	1	1	4.3" touch screen control panel (MS810de)	**"Control panel removal (4.3-inch screen, 7-inch screen)" on page 507**
1	40X7875	1	1	7" touch screen control panel (MS812de)	**"Control panel removal (4.3-inch screen, 7-inch screen)" on page 507**
2	40X7737	1	1	Control panel board (2.4" display only)	**"Control panel board (2.4-inch tilting display) removal" on page 513**
3	40X7741	1	1	Control panel buttons (2.4" display only)	N/A
4	40X7735	1	1	Control panel board (4.3" tilting display only)	**"Control panel board (4.3-inch tilting display) removal" on page 516**
5	40X8042	1	1	Control panel board (7" tilting display only)	**"Control panel board (4.3-inch tilting display) removal" on page 516**
6	40X8537	1	1	4.3" tilting display	**"4.3-inch tilting display removal" on page 496**
7	40X8661	1	1	Control panel buttons (4.3" and 7" tilting displays only)	N/A
8	40X8538	1	1	7" tilting display	**"7-inch tilting display removal" on page 499**
9	40X7729	1	1	Control panel latch	**"Control panel latch removal" on page 524**
10	40X7731	1	1	Torsion spring	N/A
11	40X7681	1	1	Control panel front cover	**"Control panel front cover removal" on page 522**
12	40X7704	1	1	USB cable	N/A
13	40X7730	1	1	Torsion spring	N/A
14	40X7702	1	1	Speaker cable	N/A
15	40X9079	1	1	Control panel speaker	N/A
16	40X8583	1	1	Control panel left bezel (M5155)	**"Control panel left bezel removal" on page 525**
16	40X8584	1	1	Control panel left bezel (M5163)	**"Control panel left bezel removal" on page 525**

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
16	40X8585	1	1	Control panel left bezel (M5170)	**"Control panel left bezel removal" on page 525**
16	40X8334	1	1	Control panel left bezel (MS810n)	**"Control panel left bezel removal" on page 525**
16	40X8335	1	1	Control panel left bezel (MS810dn)	**"Control panel left bezel removal" on page 525**
16	40X8336	1	1	Control panel left bezel (MS810de)	**"Control panel left bezel removal" on page 525**
16	40X8337	1	1	Control panel left bezel (MS811n)	**"Control panel left bezel removal" on page 525**
16	40X8338	1	1	Control panel left bezel (MS811dn)	**"Control panel left bezel removal" on page 525**
16	40X8339	1	1	Control panel left bezel (MS812dn)	**"Control panel left bezel removal" on page 525**
16	40X8340	1	1	Control panel left bezel (MS812de)	**"Control panel left bezel removal" on page 525**
16	41X2038	1	1	Control panel left bezel (MS817n)	**"Control panel left bezel removal" on page 525**
16	40X8364	1	1	Control panel left USB delete cover	N/A
16	40X8362	1	1	Control panel left bezel (MS710)	**"Control panel left bezel removal" on page 525**
16	40X8363	1	1	Control panel left bezel (MS711)	**"Control panel left bezel removal" on page 525**
17	40X7705	1	1	Display to control panel board cable (4.3" tilting display only)	N/A

Parts catalog

900

Assembly 9: Paper tray
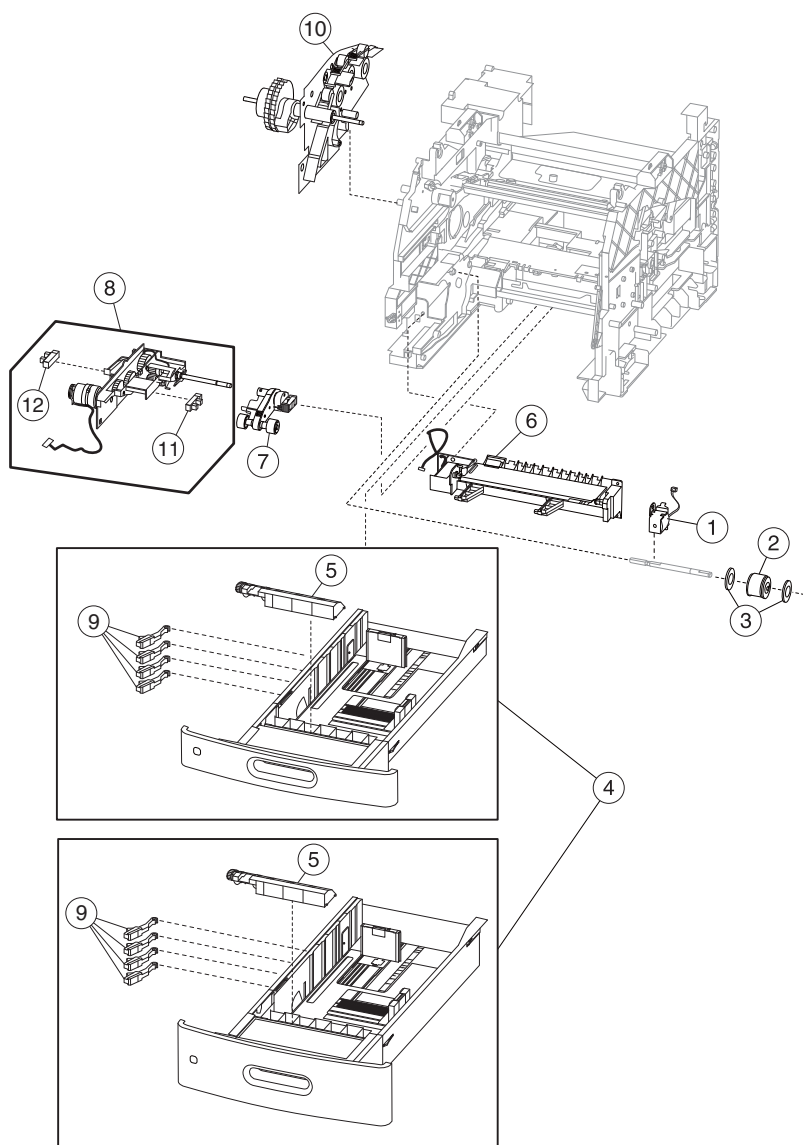
Assembly 9: Paper tray

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X7712	1	1	MPF solenoid	See **"MPF solenoid removal" on page 474**.
2	40X7600	1	1	MPF pick roller	See **"MPF pick roller removal" on page 472**.
3	40X7601	2	1	MPF feed roller flange	N/A
4	41X0976	1	1	550-sheet tray insert	N/A
4	40X8153	1	1	250-sheet tray insert	N/A
5	40X7713	1	1	Separator roller assembly	See **"Separator roller assembly removal" on page 564**.
5	40X9650	1	1	Special media separator roller assembly	See **"Separator roller assembly removal" on page 564**.
6	40X7598	1	1	MPF feeder lift plate with cable	See **"MPF feeder lift plate removal" on page 469**.
7	40X7593	1	1	Pick roller assembly	See **"Pick roller assembly removal" on page 559**.
8	40X7591	1	1	Media feeder	See **"Media feeder removal" on page 575**.
9	40X8541	4	1	Media size actuator	**"Media size actuator removal" on page 557**
10	40X7599	1	1	Media aligner roller with MPF pick roller	See **"Media aligner roller removal" on page 464**.
11	40X7592	1	1	Interrupt sensor • Sensor (pick roller position)	See **"Sensor (pick roller position) removal" on page 579**.
12	40X7592	1	1	Interrupt sensor • Sensor (media empty)	N/A

Assembly 10: Input options

Assembly 10: Input options

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8106	1	1	550-sheet tray option	**"250/550-sheet media tray and drawer assembly removal" on page 596**
1	40X8411	1	1	550-sheet tray option, lockable	**"250/550-sheet media tray and drawer assembly removal" on page 596**
2	40X8152	1	1	250-sheet tray option	**"250/550-sheet media tray and drawer assembly removal" on page 596**
2	40X8410	1	1	250-sheet tray option, lockable	**"250/550-sheet media tray and drawer assembly removal" on page 596**
3	40X8161	1	1	HCIT option	**"High capacity input tray option removal" on page 611**
NS	40X8409	1	1	Spacer	N/A

Assembly 11: 250-sheet tray option
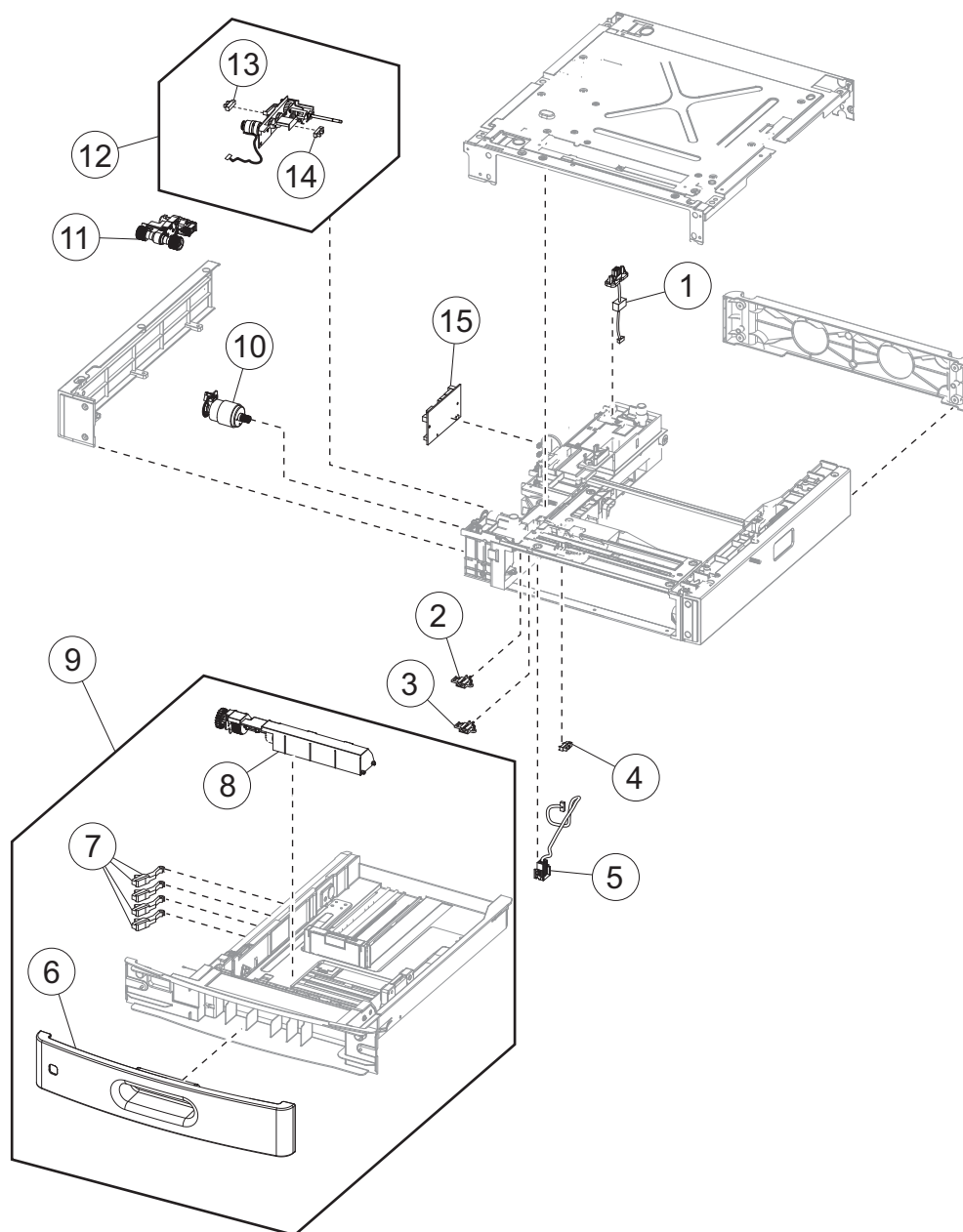
Assembly 11: 250-sheet tray option

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8160	1	1	250-sheet tray option upper interface cable	**"Drawer upper interface cable removal" on page 601**
2	40X8158	1	1	Sensor (trailing edge)	**"Sensor (trailing edge) removal" on page 606**
3	40X8156	1	1	Sensor (pass through)	**"Sensor (drawer pass through) removal " on page 608**
4	40X7592	1	1	Sensor (pick roller position)	**"Sensor (pick roll position) removal " on page 597**
5	40X8159	1	1	250-sheet tray option lower interface cable	**"Drawer lower interface cable removal" on page 602**
6	40X8154	1	1	250-sheet tray front cover	**"Media tray front cover removal" on page 597**
7	40X8541	4	1	Media size actuator	**"Media size actuator removal" on page 557**
8	40X7713	1	1	Separation roller	**"Media tray separation roller removal" on page 596**
9	40X8153	1	1	250-sheet tray insert	**"Media tray assembly removal" on page 596**
10	40X8157	1	1	250-sheet tray option transport motor	**"Drawer transport motor removal" on page 605**
11	40X7593	1	1	Pick roller	**"Drawer pick roller removal " on page 597**
12	41X0782	1	1	Media feeder	**"Drawer media feeder removal " on page 603**
13	40X7592	1	1	Interrupt sensor • Sensor (media empty)	N/A
14	40X7592	1	1	Interrupt sensor • Sensor (pick roller position)	N/A
15	40X8672	1	1	250-sheet tray option controller board	**"Drawer controller board removal" on page 600**

Assembly 12: 550-sheet tray option
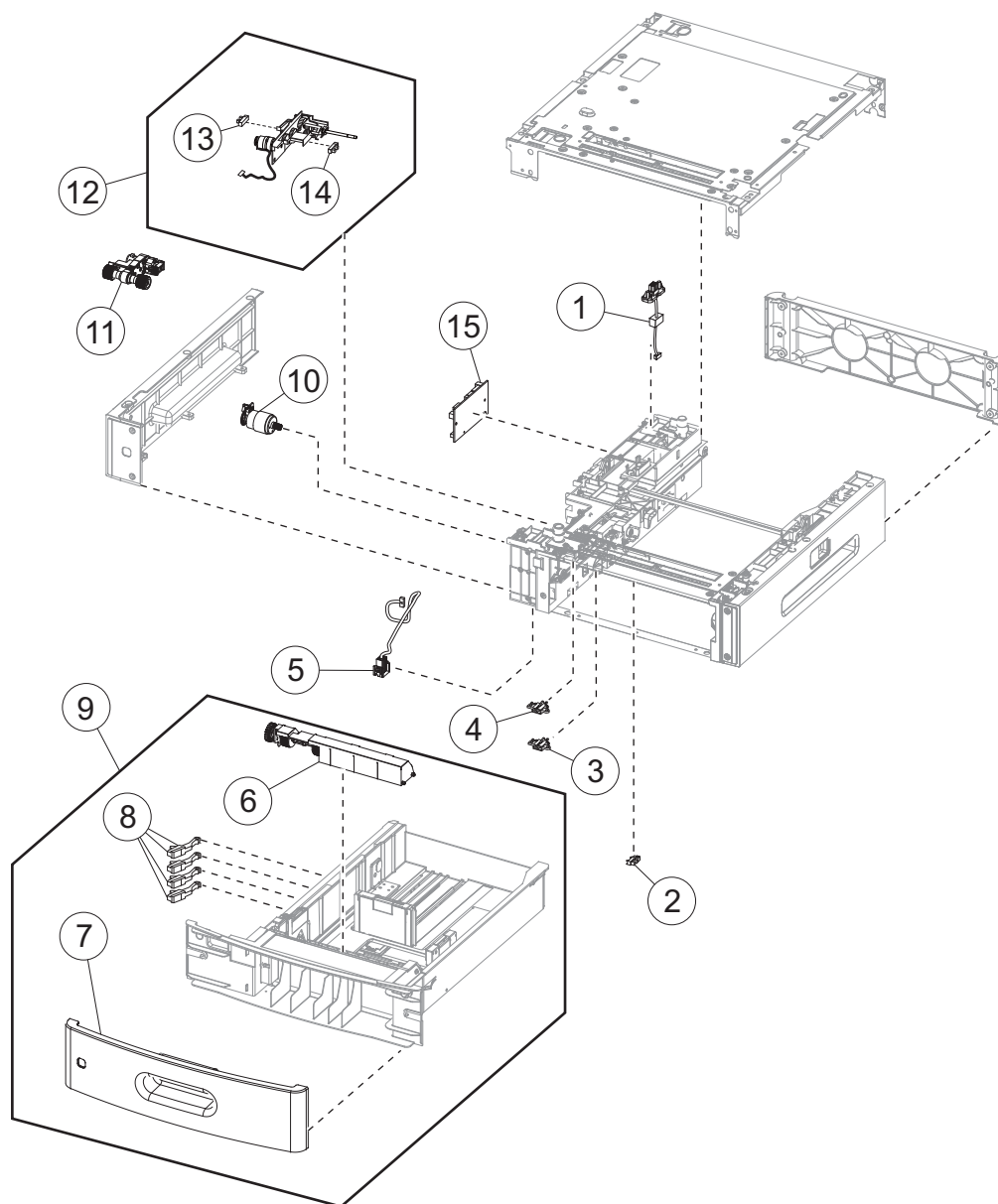
Assembly 12: 550-sheet tray option

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8160	1	1	550-sheet tray option upper interface cable	**"Drawer upper interface cable removal" on page 601**
2	40X7592	1	1	Sensor (pick roller position)	**"Sensor (pick roll position) removal " on page 597**
3	40X8156	1	1	Sensor (pass through)	**"Sensor (drawer pass through) removal " on page 608**
4	40X8158	1	1	Sensor (trailing edge)	**"Sensor (trailing edge) removal" on page 606**
5	40X8159	1	1	550-sheet tray option lower interface cable	**"Drawer lower interface cable removal" on page 602**
6	40X7713	1	1	Separation roller	**"Media tray separation roller removal" on page 596**
7	40X8109	1	1	550-sheet tray front cover	**"Media tray front cover removal" on page 597**
8	40X8541	4	1	Media size actuator	**"Media size actuator removal" on page 557**
9	41X0976	1	1	550-sheet tray insert	**"Media tray assembly removal" on page 596**
10	40X8157	1	1	550-sheet tray option transport motor	**"Drawer transport motor removal" on page 605**
11	40X7593	1	1	Pick roller	**"Drawer pick roller removal " on page 597**
12	41X0782	1	1	Media feeder	**"Drawer media feeder removal " on page 603**
13	40X7592	1	1	Interrupt sensor • Sensor (media empty)	N/A
14	40X7592	1	1	Interrupt sensor • Sensor (pick roller position)	N/A
15	40X8155	1	1	550-sheet tray option controller board	**"Drawer controller board removal" on page 600**

Assembly 13: High capacity input tray option 1
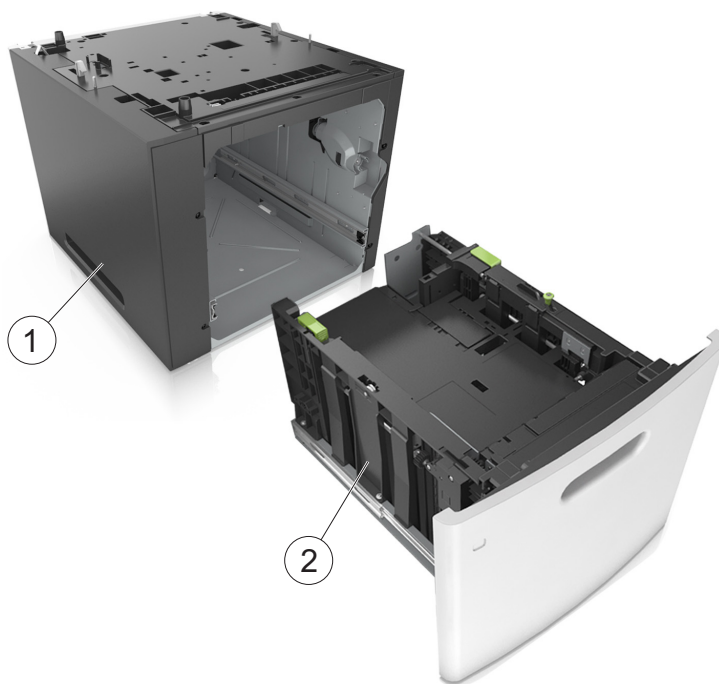
Assembly 13: High capacity input tray option 1

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8163	1	1	HCIT drawer assembly	**"HCIT drawer assembly removal" on page 612**
2	40X8165	1	1	HCIT	**"HCIT removal" on page 612**

Assembly 14: High capacity input tray option 2
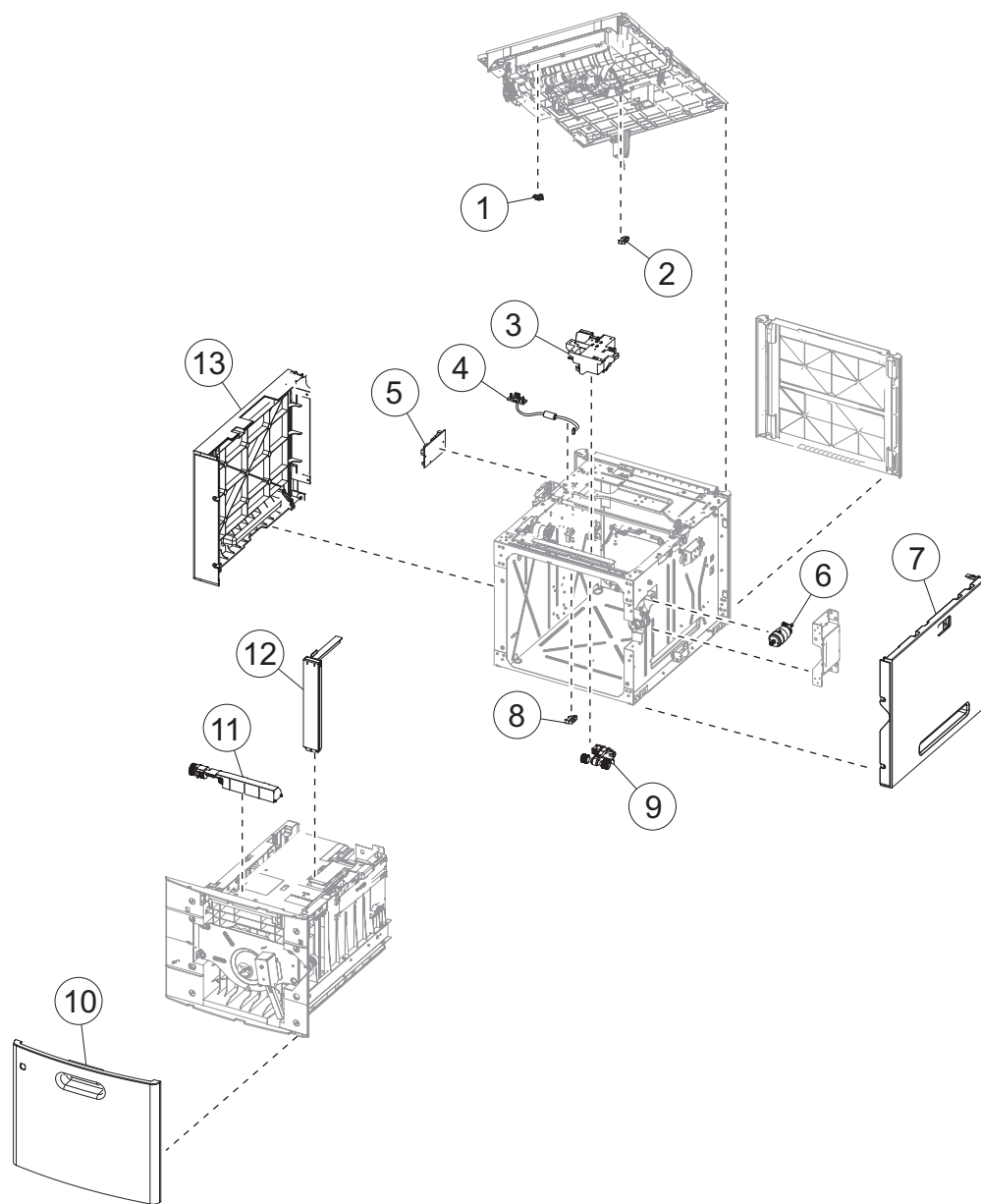
Assembly 14: High capacity input tray option 2

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8178	1	1	Sensor (HCIT pick) with cable	**"Sensor (HCIT pick) removal" on page 632**
2	40X8177	1	1	Sensor (HCIT media low) with flag	**"Sensor (HCIT media low) with flag removal" on page 629**
3	40X8174	1	1	HCIT media feeder	**"HCIT media feeder removal" on page 633**
4	40X8180	1	1	HCIT interface cable	**"HCIT interface cable removal" on page 628**
5	40X8173	1	1	HCIT controller board	**"HCIT controller board removal" on page 623**
6	40X8179	1	1	HCIT lift drive motor	**"HCIT lift drive motor removal" on page 626**
7	40X8169	1	1	HCIT right cover	**"HCIT right cover removal" on page 621**
8	40X7592	1	1	Sensor (HCIT pick roller position)	**"Sensor (HCIT pick roller position) removal" on page 630**
9	40X7593	1	1	HCIT pick roller assembly	**"HCIT pick roller assembly removal" on page 617**
10	40X8171	1	1	HCIT front cover	**"HCIT front cover removal" on page 615**
11	40X7713	1	1	HCIT separator roller assembly	**"HCIT separator roller assembly removal" on page 613**
12	40X8176	1	1	HCIT media guide	**"HCIT media guide removal" on page 614**
13	40X8167	1	1	HCIT left cover	**"HCIT left cover removal" on page 619**

Assembly 15: Output options
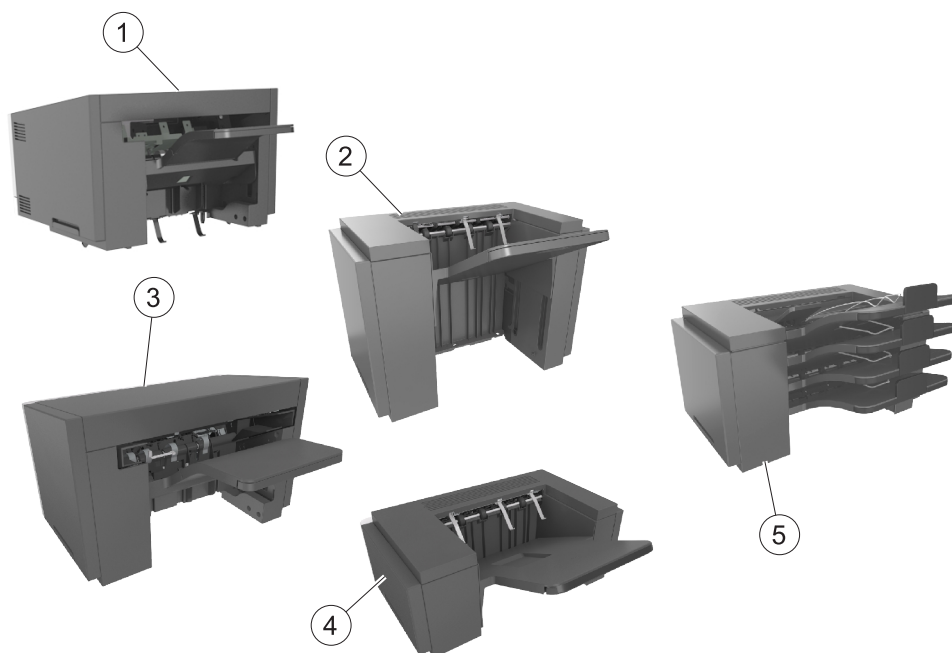
Assembly 15: Output options

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8416	1	1	Staple, hole punch finisher option	**"Staple, hole punch finisher option removal" on page 818**
2	40X8195	1	1	High capacity output expander option	**"High capacity output expander option removal" on page 665**
3	40X8207	1	1	Staple finisher option	**"Staple finisher option removal" on page 701**
4	40X8184	1	1	Output expander option	**"Output expander option removal" on page 636**
5	40X8241	1	1	Mailbox option	**"Mailbox option removal" on page 768**

Assembly 16: Output expander option 1
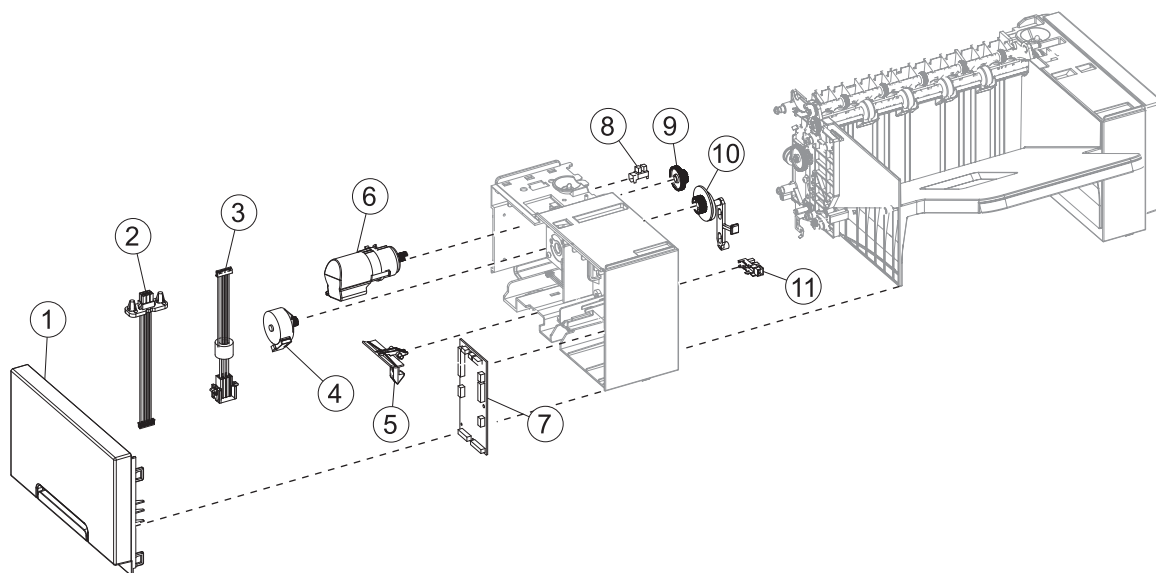
Assembly 16: Output expander option 1

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8190	1	1	Output expander left cover	**"Output expander left cover removal" on page 642**
2	40X8206	1	1	Upper interface cable	**"Upper interface cable removal" on page 645**
3	40X8205	1	1	Lower interface cable	**"Lower interface cable removal" on page 645**
4	40X8256	1	1	Output expander diverter motor	**"Output expander diverter motor removal" on page 649**
5	40X8721	2	2	Output expander option latch	**"Output expander option latch removal" on page 648**
6	40X8714	1	1	Output expander main motor	**"Output expander main motor removal" on page 652**
7	40X8199	1	1	Output expander controller board	**"Output expander controller board removal" on page 644**
8	40X7592	1	1	Sensor (OE rear door interlock)	**"Sensor (OE rear door interlock) removal" on page 654**
9	40X8726	1	2	Output expander drive gear	**"Output expander drive gear removal" on page 651**
10	40X8722	1	1	Output expander diverter plunger assembly	**"Output expander diverter plunger assembly removal" on page 649**
11	40X7592	1	1	Sensor (OE diverter plunger HP)	**"Sensor (OE diverter plunger HP) removal" on page 656**

Assembly 17: Output expander option 2
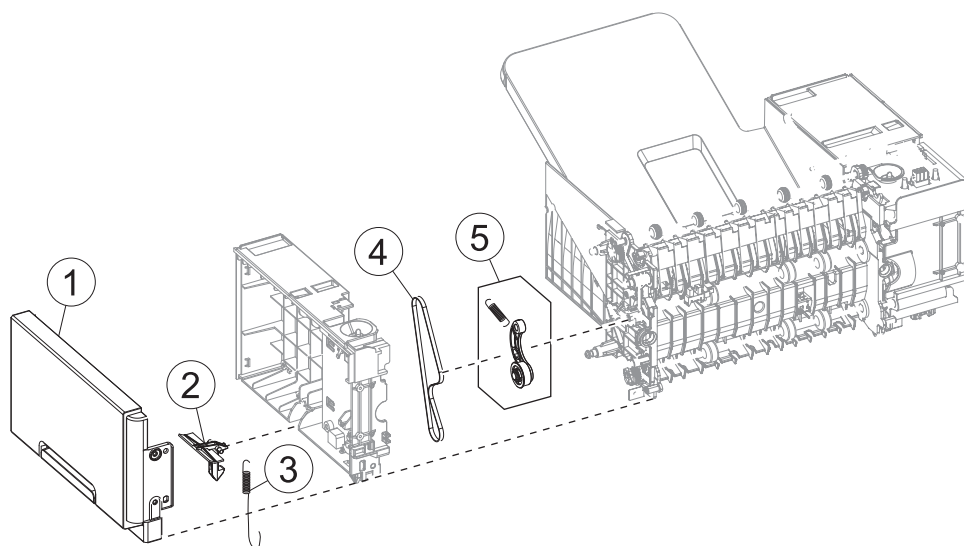
Assembly 17: Output expander option 2

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8187	1	1	Output expander right cover	**"Output expander right cover removal" on page 640**
2	40X8721	2	2	Output expander option latch	**"Output expander option latch removal" on page 648**
3	40X8192	1	1	Spring with string	**"Spring with string removal" on page 647**
4	40X8732	1	1	Output expander drive belt	**"Output expander drive belt removal" on page 660**
5	40X8718	1	1	Output expander belt tensioner	**"Output expander belt tensioner removal" on page 660**

Assembly 18: Output expander option 3
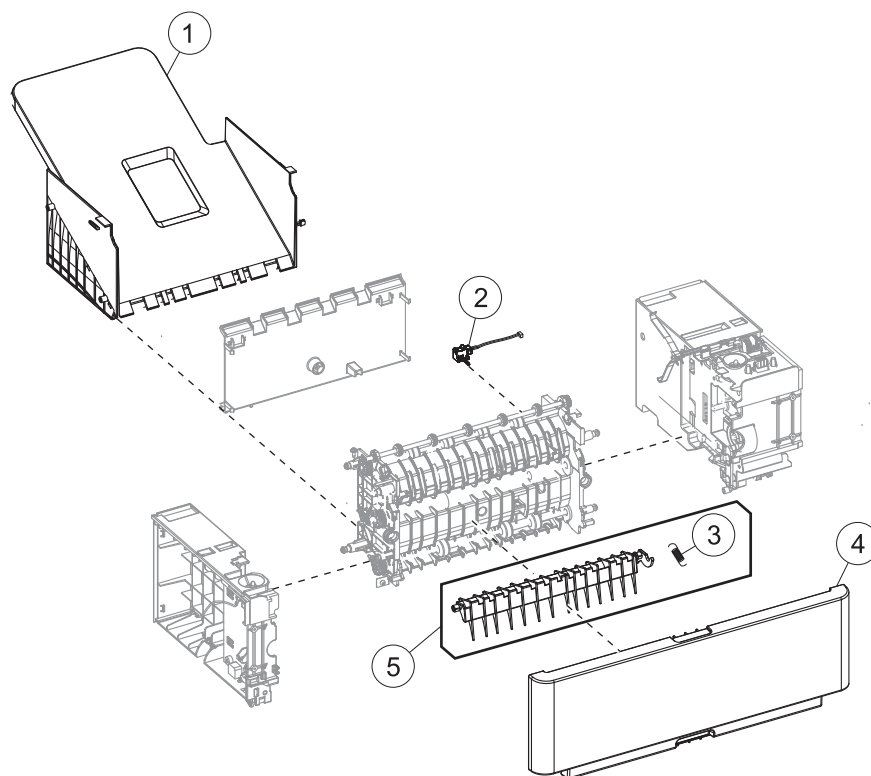
Assembly 18: Output expander option 3

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8717	1	1	Output expander bin	**"Output expander bin removal" on page 661**
2	40X8729	1	1	Sensor (OE pass through)	**"Sensor (OE pass through) removal" on page 662**
3	40X2000	1	1	Output expander diverter spring	**"Output expander diverter spring removal" on page 657**
4	40X8186	1	1	Output expander rear door	**"Output expander rear door removal" on page 637**
5	40X8713	1	1	Output expander diverter	**"Output expander diverter removal" on page 658**

Assembly 19: Output expander option 4
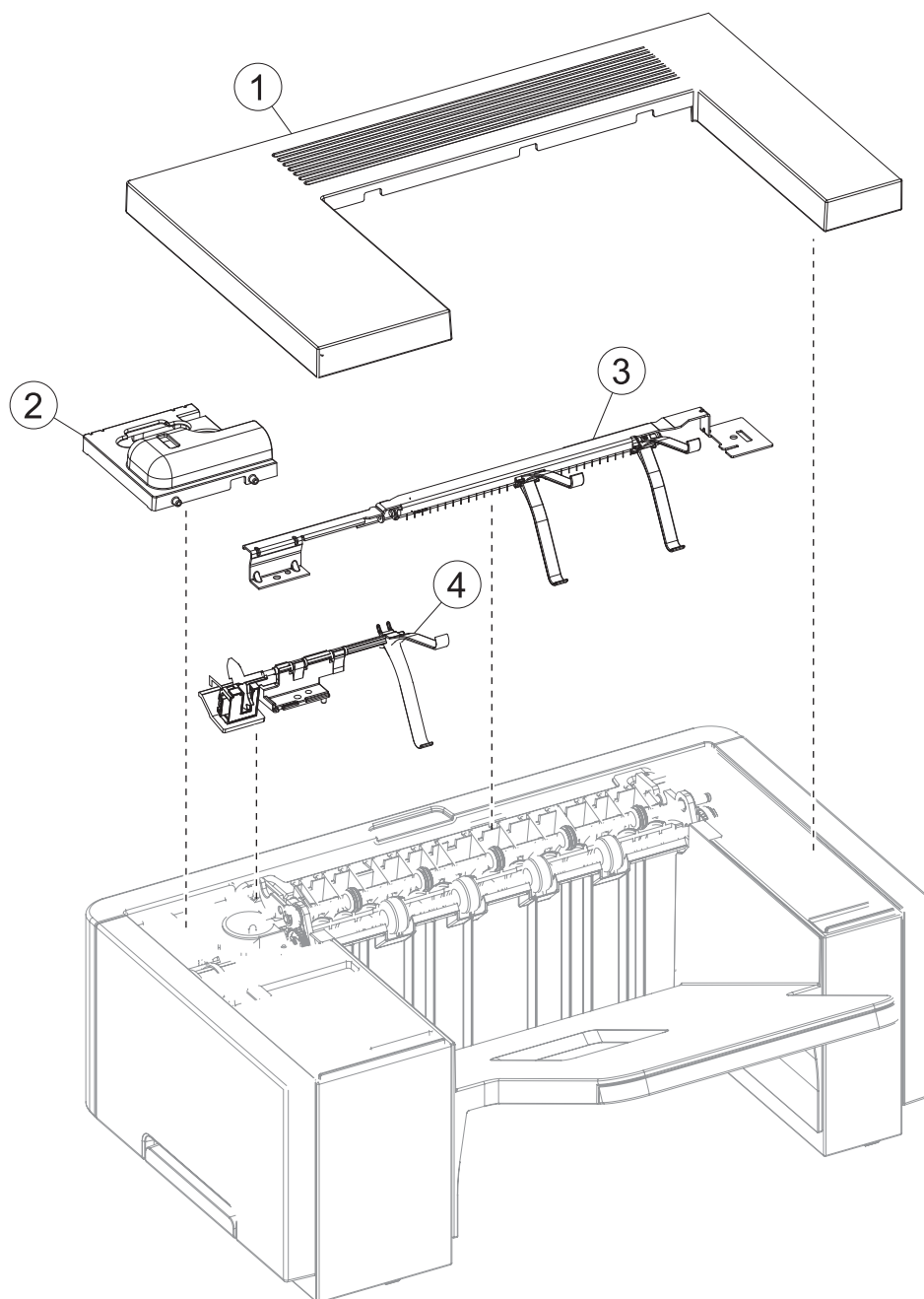
Assembly 19: Output expander option 4

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8196	1	1	Output expander top cover	**"Output expander top cover removal" on page 636**
2	40X8715	1	1	Output expander sensor cover	**"Output expander sensor cover removal" on page 639**
3	40X8712	1	1	Output expander bin full flag	**"Output expander bin full flag removal" on page 639**
4	40X8191	1	1	Sensor (media bin full) with flag	**"Sensor (media bin full) with flag removal" on page 639**

Assembly 20: High capacity output expander option 1
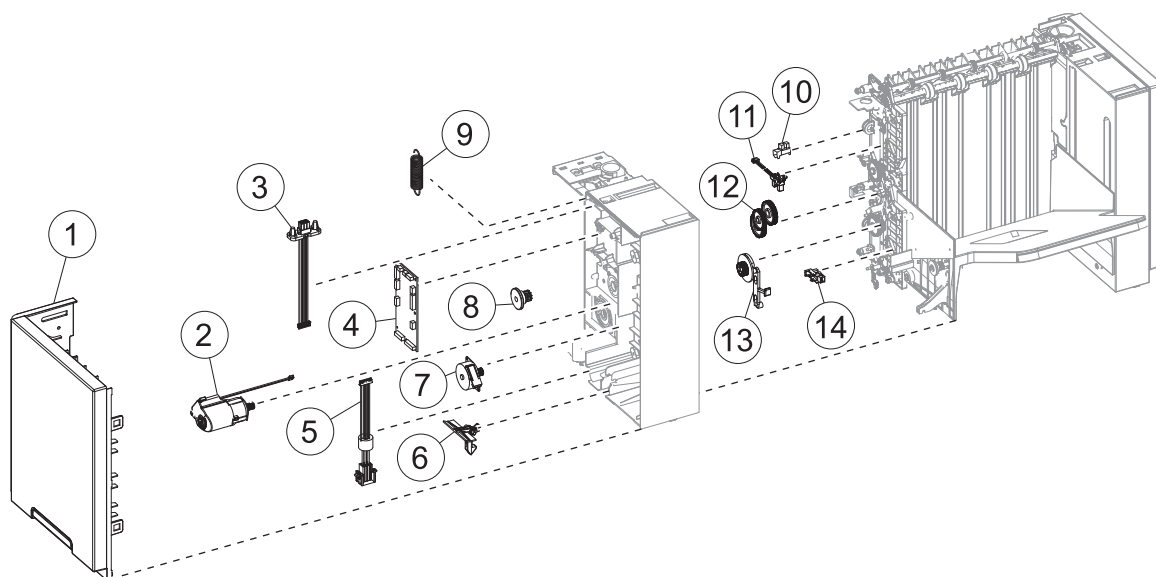
Assembly 20: High capacity output expander option 1

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8202	1	1	HCOE left cover	**"HCOE left cover removal" on page 670**
2	40X8730	1	1	HCOE main motor	**"HCOE main motor removal" on page 688**
3	40X8206	1	1	HCOE upper interface cable	**"HCOE upper interface cable removal" on page 675**
4	40X8199	1	1	HCOE controller board	**"HCOE controller board removal" on page 672**
5	40X8205	1	1	HCOE lower interface cable	**"HCOE lower interface cable removal" on page 674**
6	40X8721	2	2	HCOE option latch	**"HCOE option latch removal" on page 675**
7	40X8256	1	1	HCOE diverter motor	**"HCOE diverter motor removal" on page 676**
8	40X8731	2	2	HCOE Tray pinion	**"HCOE tray pinion removal" on page 679**
9	40X8733	2	2	HCOE Tray spring	**"HCOE tray spring removal" on page 678**
10	40X7592	2	1	Sensor (HCOE rear door interlock)	**"Sensor (HCOE rear door interlock) removal" on page 680**
11	40X8728	1	1	Sensor (HCOE tray HP)	**"Sensor (HCOE tray HP) removal" on page 677**
12	40X8726	1	1	HCOE main drive gear assembly	**"HCOE main drive gear assembly removal" on page 686**
13	40X8722	1	1	HCOE diverter plunger assembly	**"HCOE diverter plunger assembly removal" on page 685**
14	40X7592	2	1	Sensor (HCOE diverter HP)	**"Sensor (HCOE diverter HP) removal" on page 690**

Assembly 21: High capacity output expander option 2
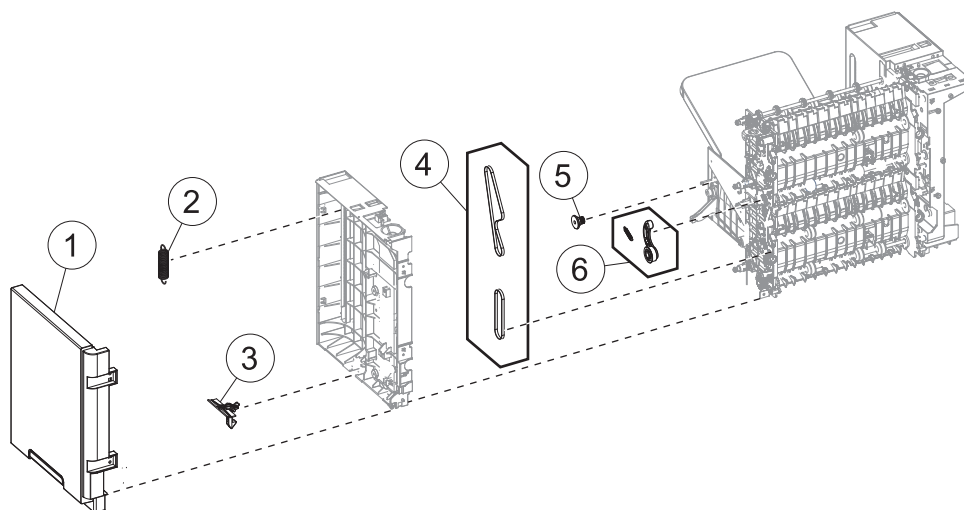
Assembly 21: High capacity output expander option 2

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8198	1	1	HCOE right cover	**"HCOE right cover removal" on page 669**
2	40X8733	2	2	HCOE Tray spring	**"HCOE tray spring removal" on page 678**
3	40X8721	2	2	HCOE option latch	**"HCOE option latch removal" on page 675**
4	40X8732	2	2	HCOE drive belt	**"HCOE drive belt removal" on page 683**
5	40X8731	2	2	HCOE Tray pinion	**"HCOE tray pinion removal" on page 679**
6	40X8718	1	1	HCOE belt tensioner	**"HCOE belt tensioner removal" on page 682**

Assembly 22: High capacity output expander option 3
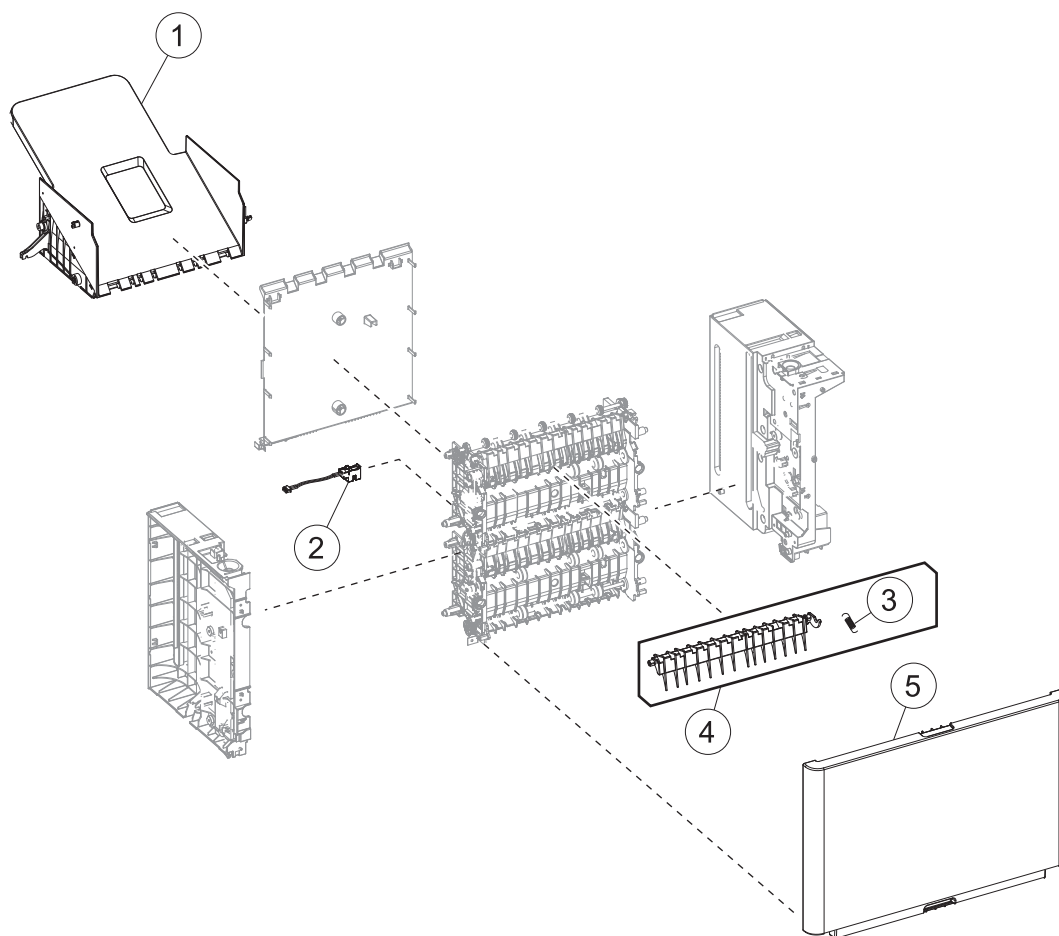
Assembly 22: High capacity output expander option 3

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8727	1	1	HCOE bin	**"HCOE bin removal" on page 695**
2	40X8729	1	1	Sensor (HCOE pass through)	**"Sensor (HCOE pass through) removal" on page 698**
3	40X2000	1	1	HCOE top diverter spring	**"HCOE top diverter spring removal" on page 692**
4	40X8713	1	1	HCOE top diverter	**"HCOE top diverter removal" on page 693**
5	40X8197	1	1	HCOE rear door	**"HCOE rear door removal" on page 666**

Assembly 23: High capacity output expander option 4
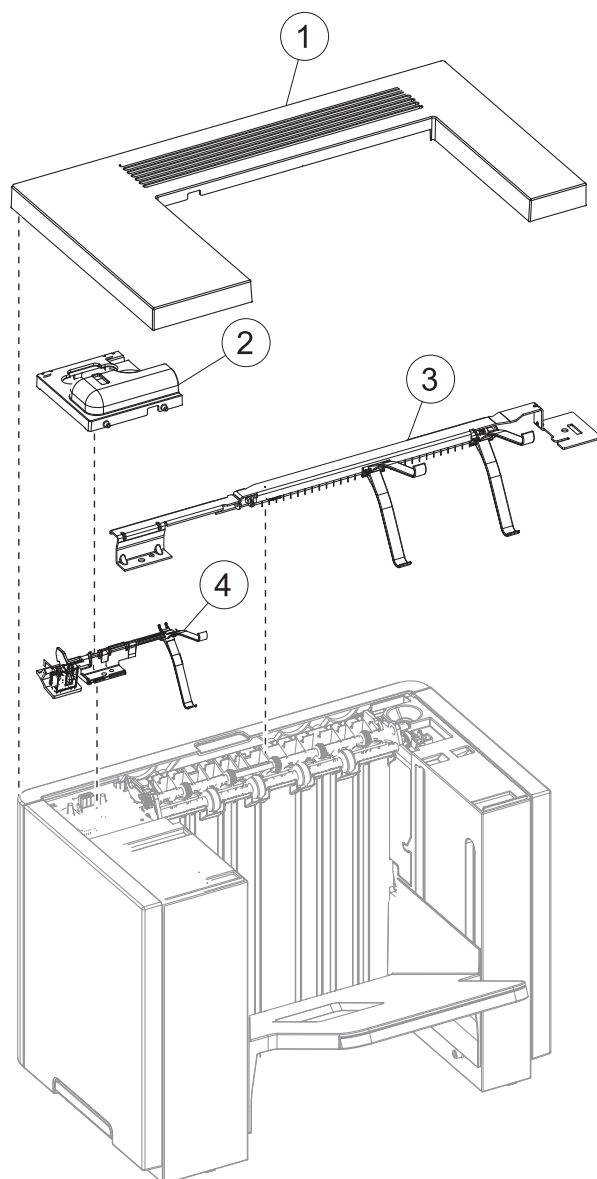
Assembly 23: High capacity output expander option 4

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8196	1	1	HCOE top cover	**"HCOE top cover removal" on page 665**
2	40X8715	1	1	HCOE sensor cover	**"HCOE sensor cover removal" on page 667**
3	40X8712	1	1	HCOE bin full flag	**"HCOE bin full flag removal" on page 668**
4	40X8191	1	1	Sensor (HCOE media bin full) with flag	**"Sensor (HCOE media bin full) with flag removal" on page 668**

Assembly 24: Staple finisher option 1
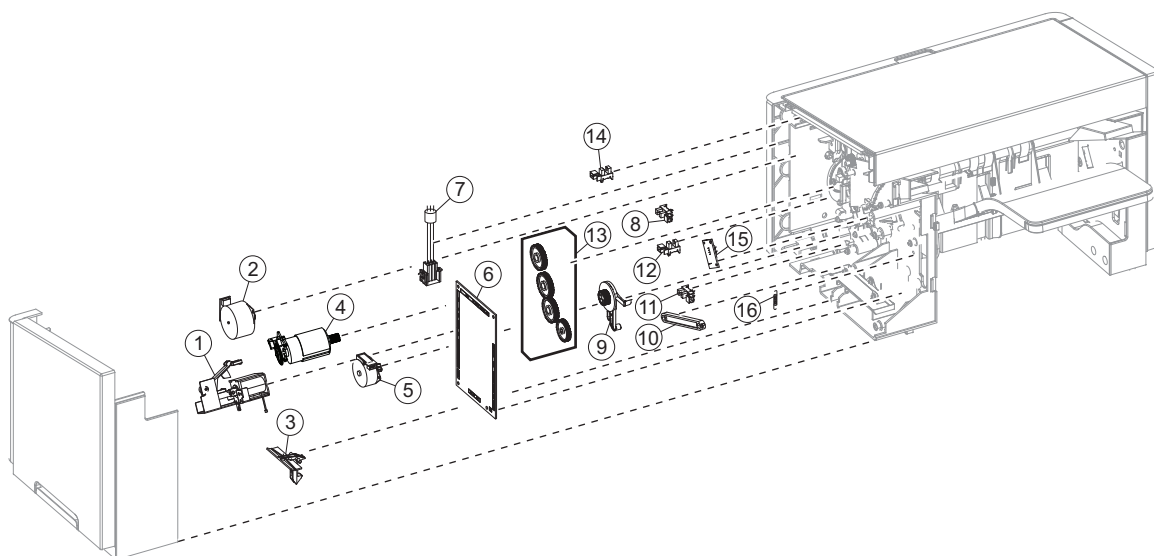
Assembly 24: Staple finisher option 1

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8740	1	1	Media pusher assembly	**"Media pusher assembly removal" on page 752**
2	40X8213	1	1	Stapler paddle drive motor	**"Paddle drive motor removal" on page 740**
3	40X8721	2	2	Stapler option latch	**"Stapler option latch removal" on page 718**
4	41X0529	1	1	Stapler main motor	**"Stapler main motor removal" on page 744**
5	40X8256	1	1	Stapler diverter motor	**"Stapler diverter motor removal" on page 746**
6	40X8221	1	1	Stapler controller board	**"Stapler controller board removal" on page 743**
7	40X8224	1	1	Stapler lower interface cable	**"Stapler lower interface cable removal" on page 741**
8	40X7592	1	1	Sensor (media pusher HP)	**"Sensor (media pusher HP) removal" on page 764**
9	40X8722	1	1	Stapler diverter plunger assembly	**"Stapler diverter plunger assembly removal" on page 747**
10	40X8744	2	2	Stapler tray link assembly	**"Stapler tray link assembly removal" on page 720**
11	40X7592	1	1	Sensor (stapler diverter plunger HP)	**"Sensor (stapler diverter plunger HP) removal" on page 766**
12	40X7592	1	1	Sensor (paddle motor HP)	**"Sensor (paddle motor HP) removal" on page 723**
13	40X8741	1	1	Stapler drive gear assembly	**"Stapler drive gear assembly removal" on page 748**
14	40X7592	1	1	Sensor (stapler rear door interlock)	**"Sensor (stapler rear door interlock) removal" on page 722**
15	40X8220	1	1	Sensor (bin full receive)	**"Sensor (bin full receive) removal" on page 750**
16	40X8742	2	2	Stapler tray spring	**"Stapler tray spring removal" on page 719**

Assembly 25: Staple finisher option 2
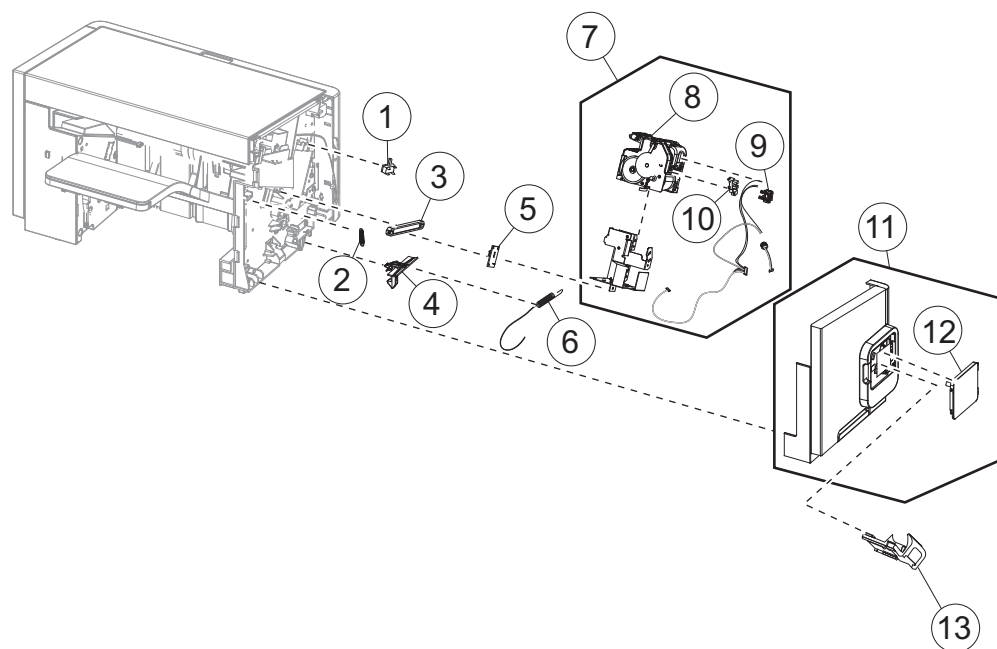
Assembly 25: Staple finisher option 2

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8745	2	1	Sensor (throat media present)	**"Sensor (throat media present) removal" on page 712**
2	40X8742	2	2	Stapler tray spring	**"Stapler tray spring removal" on page 719**
3	40X8744	2	2	Stapler tray link assembly	**"Stapler tray link assembly removal" on page 720**
4	40X8721	2	2	Stapler option latch	**"Stapler option latch removal" on page 718**
5	40X8217	1	1	Sensor (bin full send)	**"Sensor (bin full send) removal" on page 749**
6	40X8226	1	1	Stapler spring with string	**"Stapler spring with string removal" on page 717**
7	40X8223	1	1	Stapler carriage assembly	**"Stapler carriage assembly removal" on page 708**
8	41X0654	1	1	Staple unit	N/A
9	40X8225	1	1	Stapler door close limit switch	**"Stapler door close limit switch removal" on page 706**
10	40X7592	1	1	Sensor (cartridge door interlock)	**"Sensor (cartridge door interlock) removal" on page 707**
11	40X8216	1	1	Stapler right cover	**"Stapler right cover removal" on page 704**
12	40X8215	1	1	Stapler cartridge access door	**"Stapler cartridge access door removal" on page 712**
13	40X7466	1	1	Stapler cartridge holder	N/A

Assembly 26: Staple finisher option 3
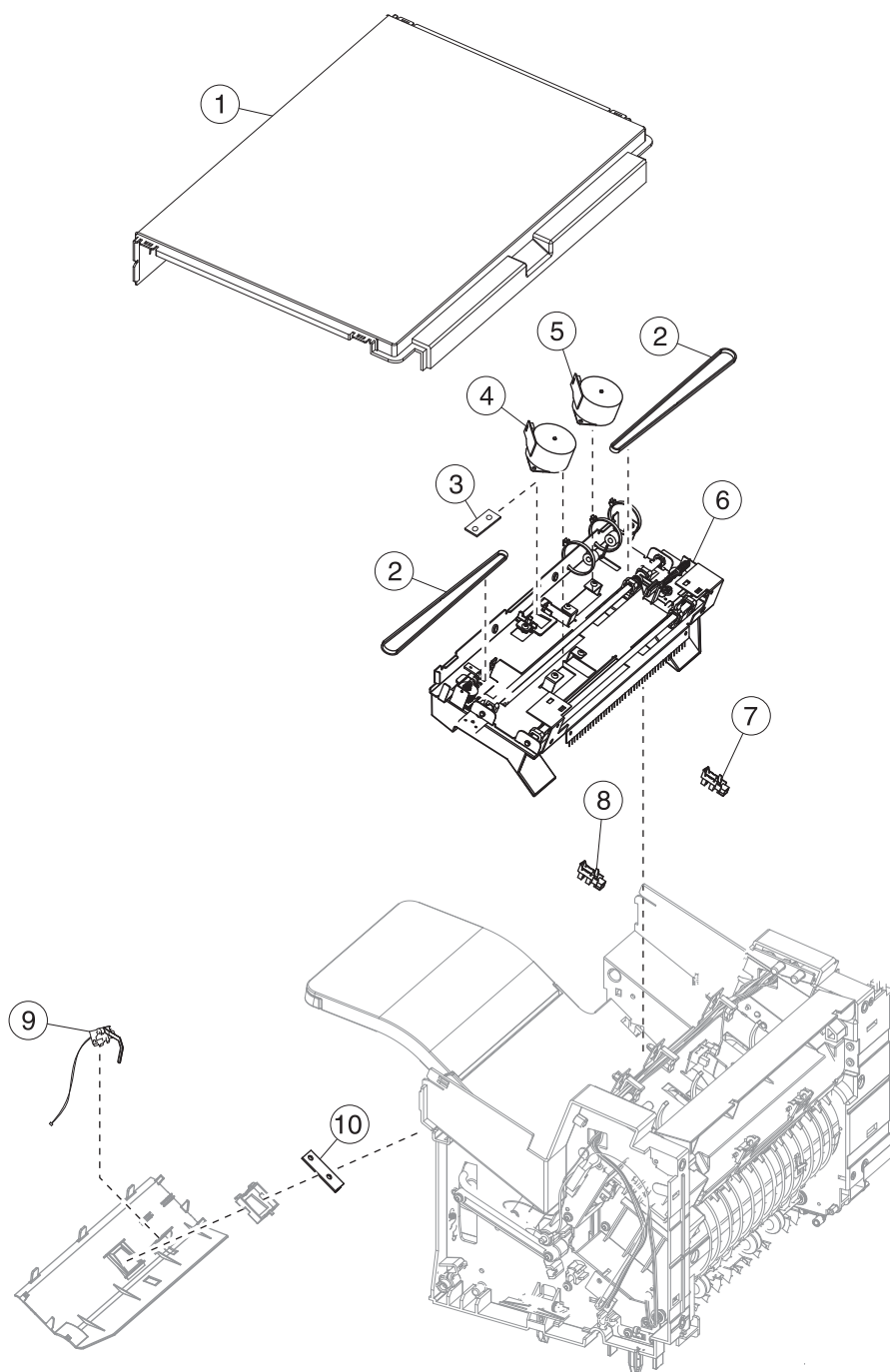
Assembly 26: Staple finisher option 3

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8222	1	1	Stapler top cover	**"Stapler top cover removal" on page 715**
2	40X8212	2	2	Tamper drive belt	**"Tamper drive belt removal" on page 737**
3	40X8218	1	1	Stapler output bin LED	**"Stapler output bin LED removal" on page 738**
4	40X8211	1	1	Tamper motor (right)	**"Tamper motor (right) removal" on page 736**
5	40X8211	1	1	Tamper motor (left)	**"Tamper motor (left) removal" on page 736**
6	40X8743	1	1	Tamper assembly	**"Tamper assembly removal" on page 734**
7	40X7592	1	1	Sensor (left tamper motor HP)	**"Sensor (left tamper motor HP) removal" on page 729**
8	40X7592	1	1	Sensor (right tamper motor HP)	**"Sensor (right tamper motor HP) removal" on page 727**
9	40X8219	1	1	Sensor (finisher bin media present)	**"Sensor (finisher bin media present) removal" on page 733**
10	40X8218	1	1	Standard output bin LED	**"Standard output bin LED removal" on page 732**

Assembly 27: Staple finisher option 4
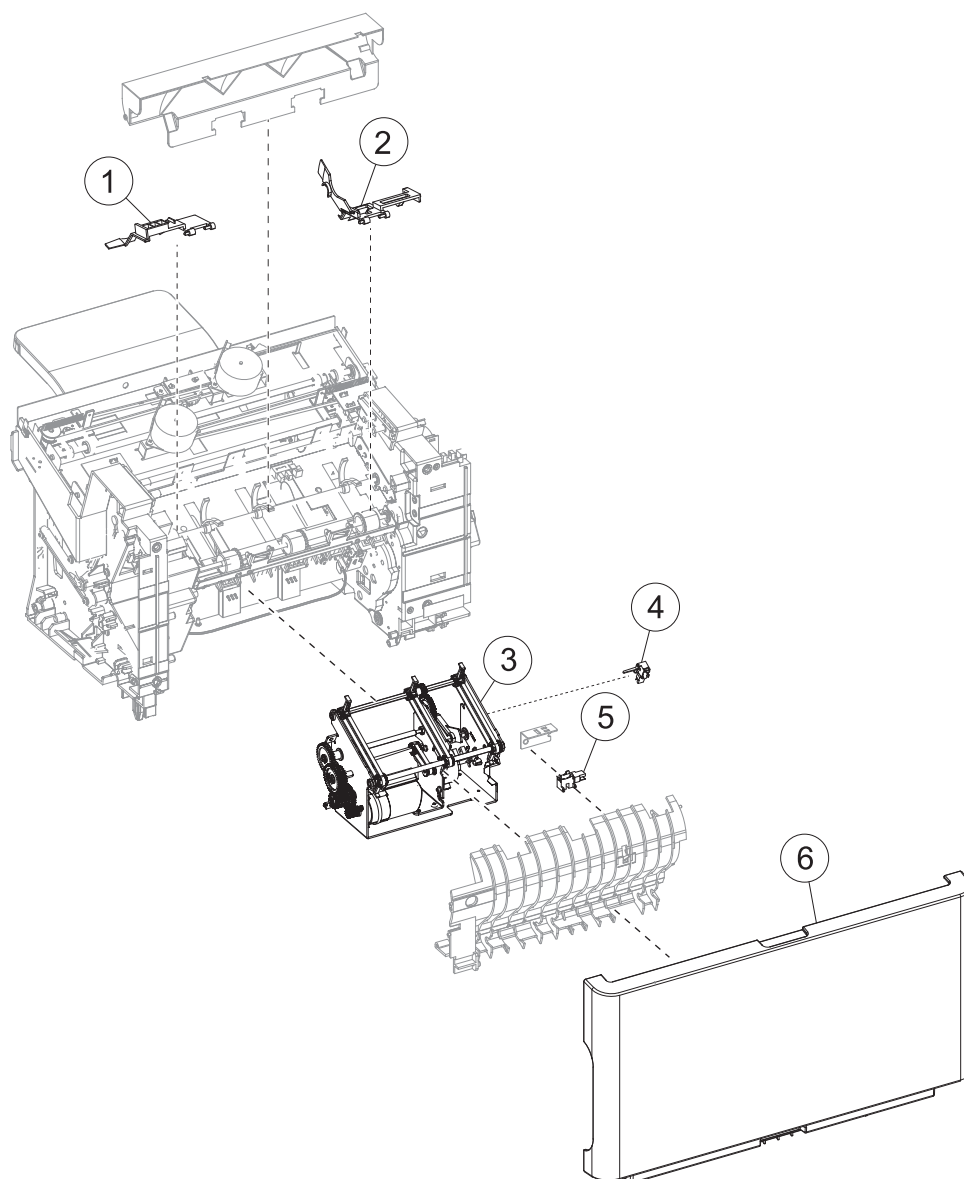
Assembly 27: Staple finisher option 4

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8209	1	1	Media stack flap (right)	**"Media stack flap (right) removal" on page 723**
2	40X8210	1	1	Media stack flap (left)	**"Media stack flap (left) removal" on page 725**
3	40X8738	1	1	Stapler ejector motor assembly	**"Stapler ejector motor assembly removal" on page 758**
4	40X8745	1	1	Sensor (stapler ejector HP)	**"Sensor (stapler ejector HP) removal" on page 761**
5	40X8134	1	1	Sensor (stapler pass through)	**"Sensor (stapler pass through) removal" on page 757**
6	40X8214	1	1	Stapler rear door	**"Stapler rear door removal" on page 702**

Assembly 28: Mailbox option 1
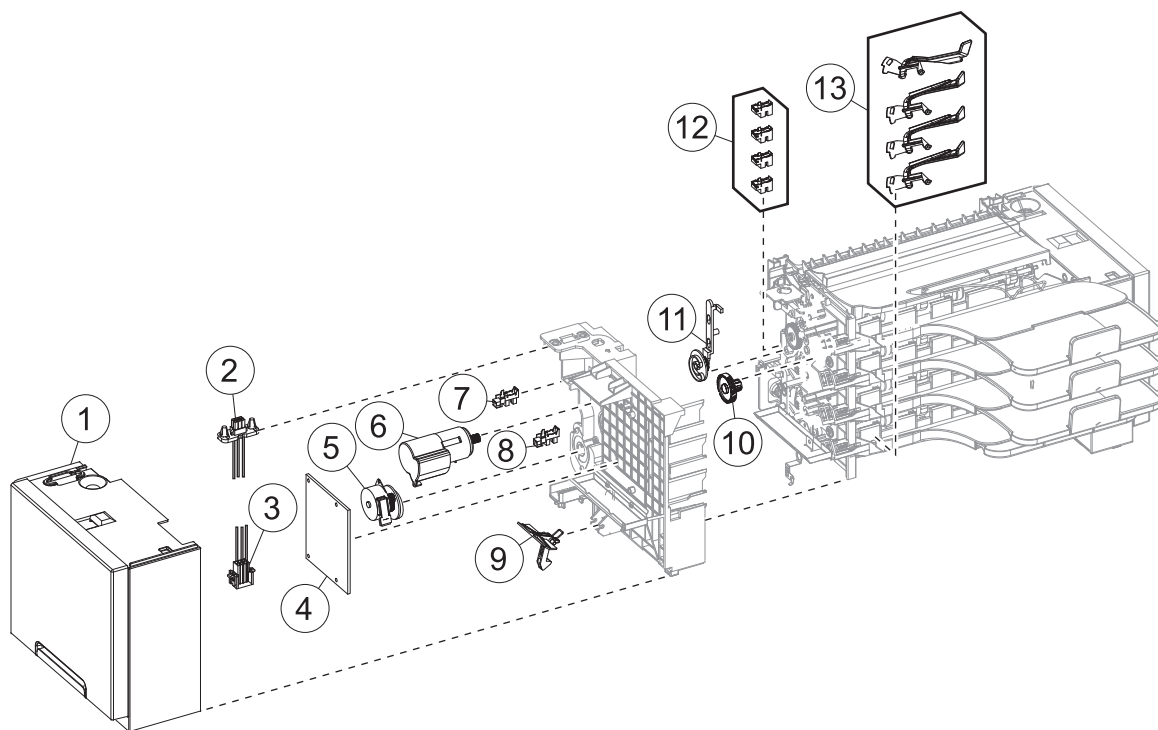
Assembly 28: Mailbox option 1

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8246	1	1	Mailbox left cover	**"Mailbox left cover removal" on page 776**
2	40X8254	1	1	Mailbox upper interface cable	**"Mailbox upper interface cable removal" on page 792**
3	40X8253	1	1	Mailbox lower interface cable	**"Mailbox lower interface cable removal" on page 790**
4	40X8244	1	1	Mailbox controller board	**"Mailbox controller board removal" on page 787**
5	40X8256	1	1	Mailbox diverter motor	**"Mailbox diverter motor removal" on page 792**
6	41X0955	1	1	Mailbox main motor	**"Mailbox main motor removal" on page 786**
7	40X7592	1	1	Sensor (mailbox rear door interlock)	**"Sensor (mailbox rear door interlock) removal" on page 777**
8	40X7592	1	1	Sensor (mailbox diverter plunger HP)	**"Sensor (mailbox diverter plunger HP) removal" on page 788**
9	40X8721	2	2	Mailbox option latch	**"Mailbox option latch removal" on page 777**
10	40X8726	1	1	Mailbox main drive gear	**"Mailbox main drive gear removal" on page 783**
11	40X8722	1	1	Mailbox diverter plunger assembly	**"Mailbox diverter plunger assembly removal" on page 778**
12	40X8248	4	4	Sensor (mailbox bin full receive)	**"Sensor (mailbox bin full receive) removal" on page 795**
13	40X8247	4	4	Mailbox media bin full flag	**"Mailbox media bin full flag removal" on page 794**
NS	40X8500	1	1	Actuator flag (media bin full)	N/A

Assembly 29: Mailbox option 2
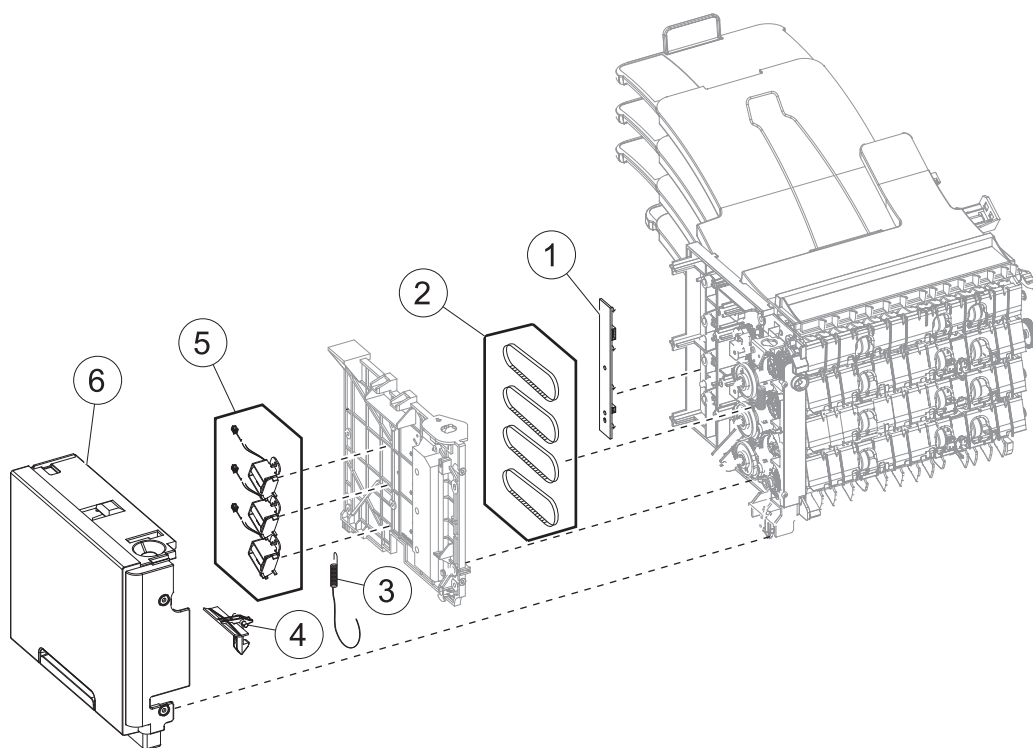
Assembly 29: Mailbox option 2

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8250	1	1	Mailbox output bin LED assembly	**"Mailbox output bin LED assembly removal" on page 800**
2	40X8249	4	1	Mailbox belt	**"Mailbox belt removal" on page 798**
3	40X8252	1	1	Mailbox spring with string	**"Mailbox spring with string removal" on page 773**
4	40X8721	2	2	Mailbox option latch	**"Mailbox option latch removal" on page 777**
5	40X8251	3	1	Mailbox solenoid	**"Mailbox solenoid removal" on page 774**
6	40X8243	1	1	Mailbox right cover	**"Mailbox right cover removal" on page 771**

Assembly 30: Mailbox option 3
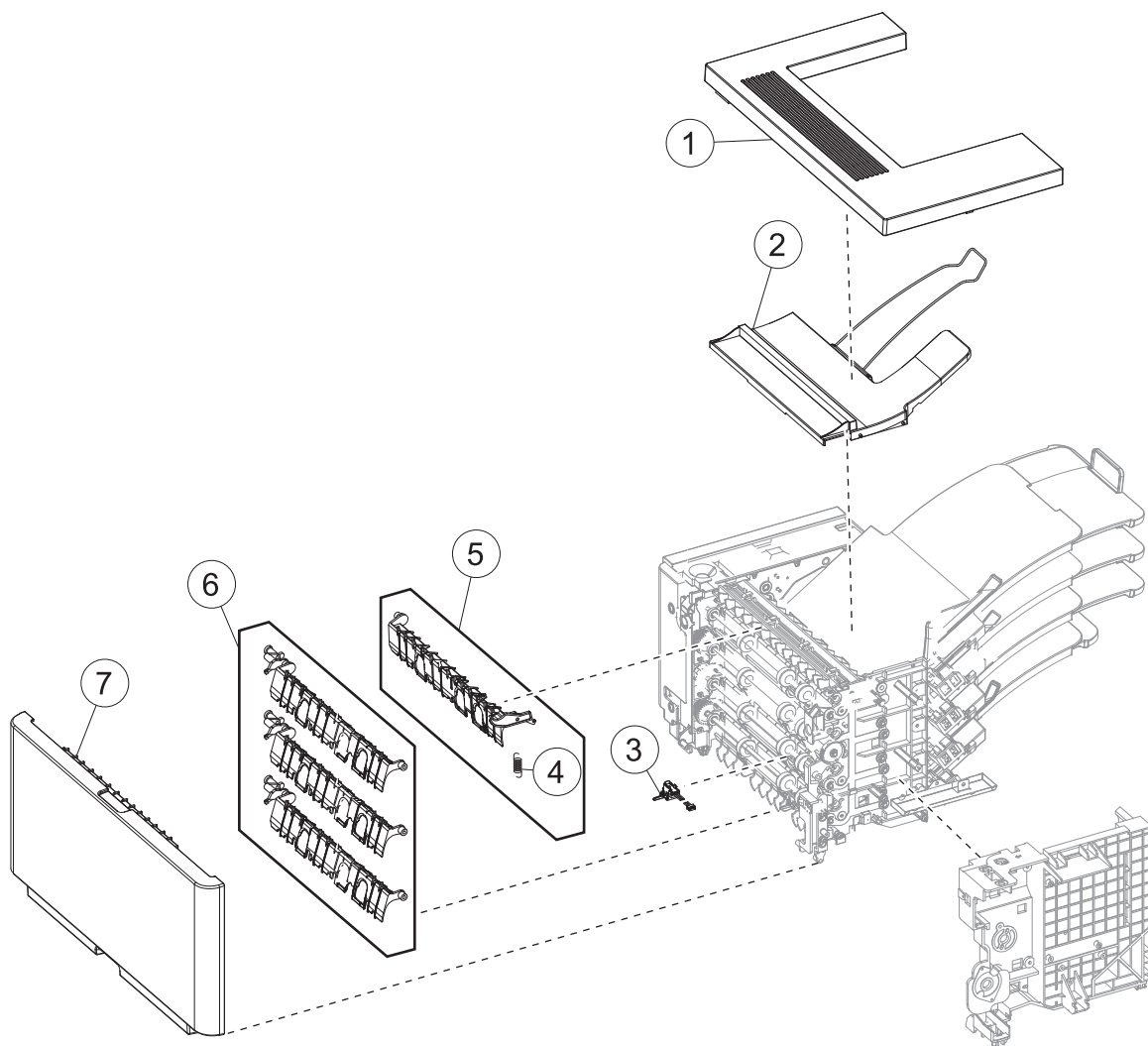
Assembly 30: Mailbox option 3

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8196	1	1	Mailbox top cover	**"Mailbox top cover removal" on page 768**
2	40X8720	1	1	Mailbox top bin cover with bail	**"Mailbox top bin cover with bail removal" on page 772**
3	40X8719	1	1	Sensor (mailbox pass through)	**"Sensor (mailbox pass through) removal" on page 813**
4	40X8725	1	1	Mailbox top diverter spring	**"Mailbox top diverter spring removal" on page 809**
5	40X8723	1	1	Mailbox top diverter	**"Mailbox top diverter removal" on page 803**
6	40X8724	3	1	Mailbox middle diverter	**"Mailbox middle diverter removal" on page 808**
7	40X8242	1	1	Mailbox rear door	**"Mailbox rear door removal" on page 769**

Assembly 31: Staple, hole punch finisher option 1
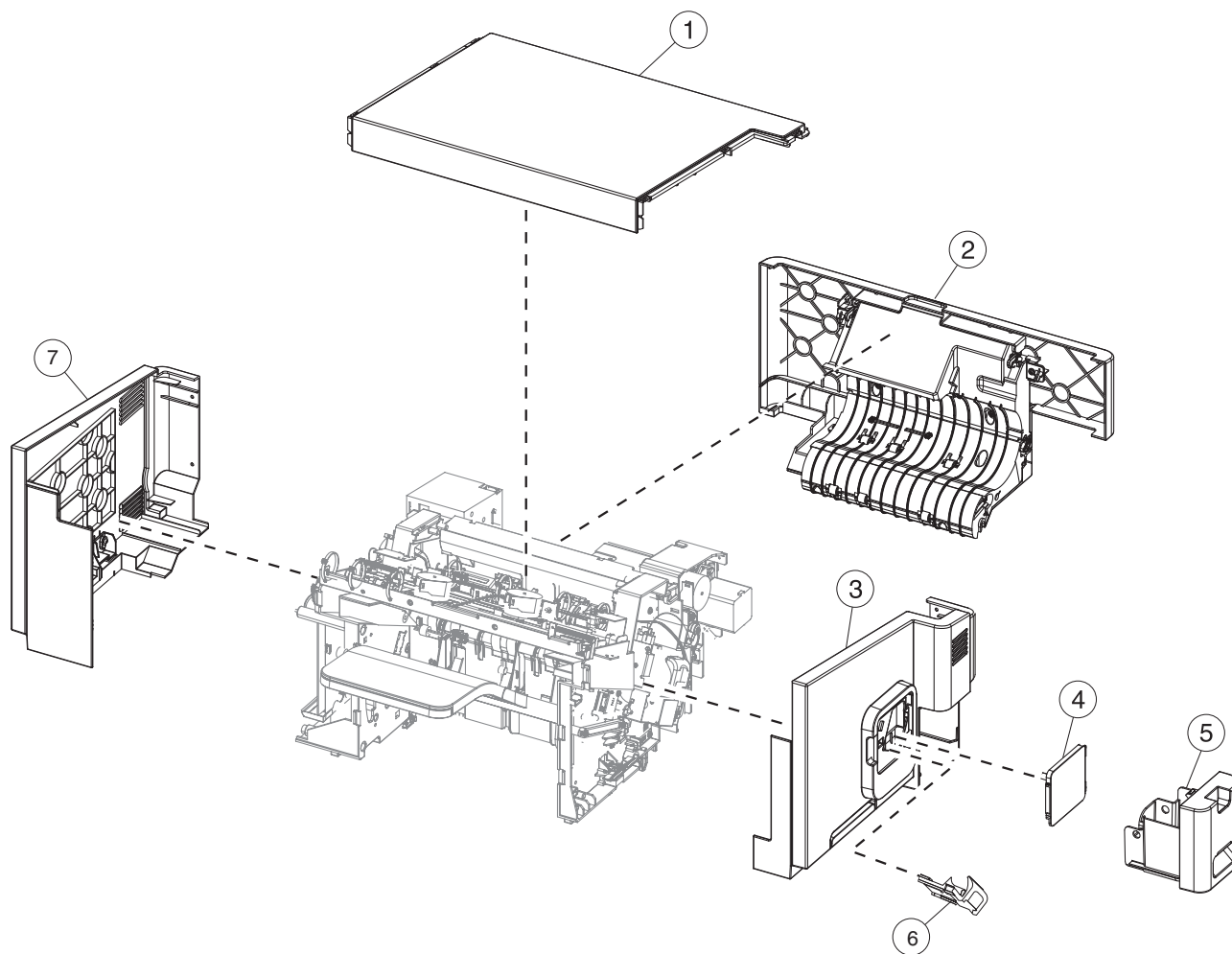
Assembly 31: Staple, hole punch finisher option 1

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8547	1	1	Staple, hole punch top cover	**"Staple, hole punch top cover removal" on page 842**
2	40X8545	1	1	Staple, hole punch rear cover	--
3	40X8550	1	1	Staple, hole punch right cover	**"Staple, hole punch right cover removal" on page 821**
4	40X8215	1	1	Stapler cartridge access door	**"Stapler cartridge access door removal" on page 819**
5	40X8552	1	1	Hole punch box	**"Hole punch box removal" on page 819**
6	40X7466	1	1	Stapler cartridge holder	N/A
7	40X8593	1	1	Staple, hole punch left cover	**"Staple, hole punch left cover removal" on page 819**

Assembly 32: Staple, hole punch finisher option 2
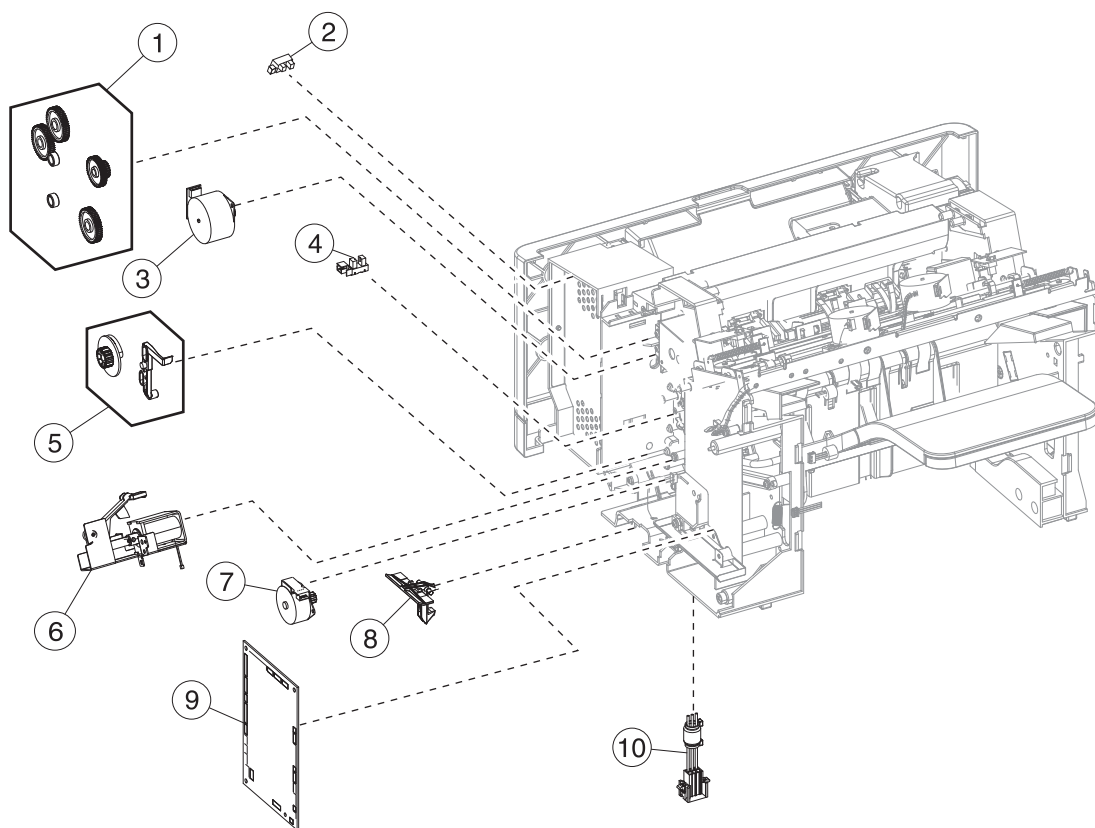
Assembly 32: Staple, hole punch finisher option 2

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8741	1	1	Stapler drive gear assembly	**"Stapler drive gear assembly removal" on page 835**
2	40X7592	1	1	Sensor (HPU rear door interlock)	**"Sensor (HPU rear door interlock) removal" on page 856**
3	40X8213	1	1	Stapler paddle motor	**"Stapler paddle motor removal" on page 831**
4	40X7592	1	1	Sensor (paddle motor HP)	**"Sensor (paddle motor HP) removal" on page 832**
5	40X8722	1	1	Stapler diverter plunger assembly	**"Stapler diverter plunger assembly removal" on page 834**
6	40X8740	1	1	Media pusher assembly	**"Media pusher assembly removal" on page 839**
7	40x8256	1	1	Stapler diverter motor	**"Stapler diverter motor removal" on page 833**
8	40X8721	2	2	Staple, hole punch latch	**"Staple, hole punch latch removal" on page 829**
9	40X8221	1	1	Stapler controller board	**"Stapler controller board removal" on page 829**
10	40X8224	1	1	Staple, hole punch lower interface cable	**"Staple, hole punch lower interface cable removal" on page 839**

Assembly 33: Staple, hole punch finisher option 3
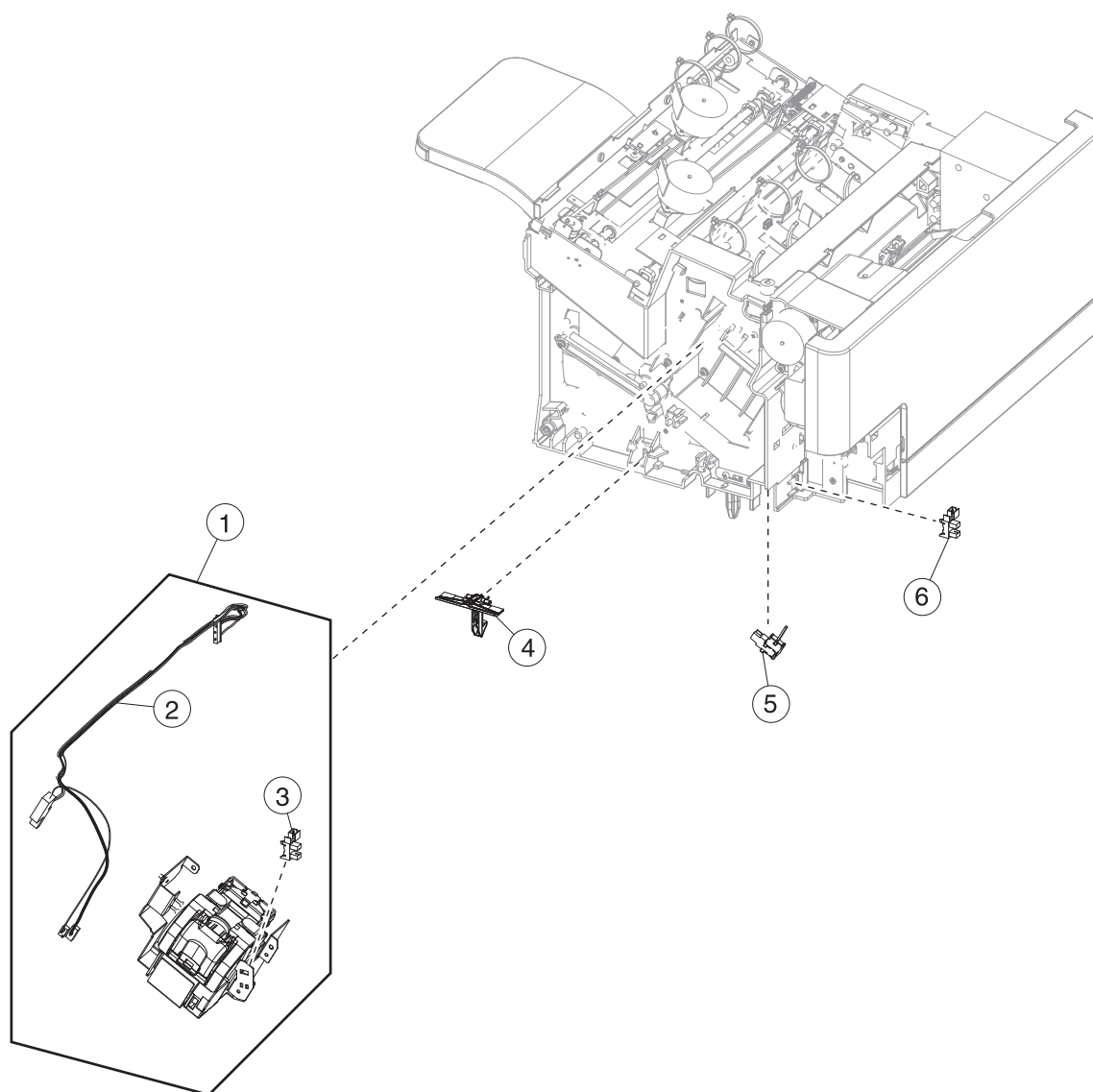
Assembly 33: Staple, hole punch finisher option 3

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8223	1	1	Stapler carriage assembly	**"Stapler carriage assembly removal" on page 826**
2	40X8225	1	1	Stapler door close limit switch	**"Stapler door close limit switch removal" on page 823**
3	40X7592	1	1	Sensor (cartridge door interlock)	**"Sensor (cartridge door interlock) removal" on page 822**
4	40X8721	2	2	Staple, hole punch latch	**"Staple, hole punch latch removal" on page 829**
5	40X8745	1	1	Sensor (throat media present)	**"Sensor (throat media present) removal" on page 827**
6	40X7592	1	1	Sensor (hole punch box present)	**"Sensor (hole punch box present) removal" on page 855**
NS	41X0654	1	1	Staple unit	N/A

Assembly 34: Staple, hole punch finisher option 4
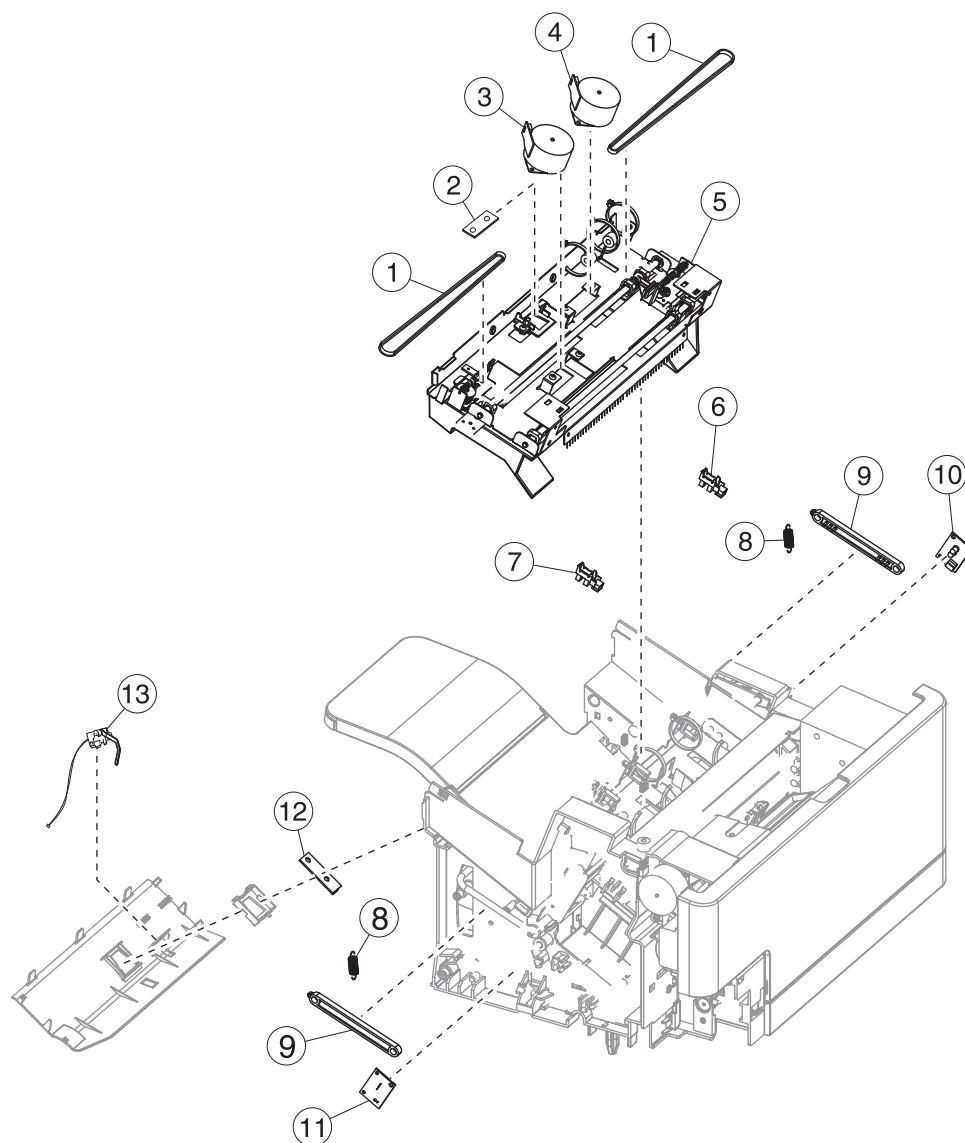
Assembly 34: Staple, hole punch finisher option 4

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8212	2	2	Tamper drive belt	**"Tamper drive belt removal" on page 851**
2	40X8218	1	1	Stapler output bin LED	**"Stapler output bin LED removal" on page 852**
3	40X8211	2	2	Tamper motor (right)	**"Tamper motor (right) removal" on page 849**
4	40X8211	2	2	Tamper motor (left)	**"Tamper motor (left) removal" on page 850**
5	40X8743	1	1	Stapler tamper assembly	**"Stapler tamper assembly removal" on page 847**
6	40X7592	1	1	Sensor (left tamper motor HP)	**"Sensor (left tamper motor HP) removal" on page 845**
7	40X7592	1	1	Sensor (right tamper motor HP)	**"Sensor (right tamper motor HP) removal" on page 843**
8	40X8742	2	2	Staple, hole punch tray link tension spring	**"Staple, hole punch tray link tension spring removal" on page 854**
9	40X8744	2	2	Staple, hole punch tray link	**"Staple, hole punch tray link removal" on page 854**
10	40X8220	1	1	Sensor (bin full receive)	**"Sensor (bin full receive) removal" on page 837**
11	40X8217	1	1	Sensor (bin full send)	**"Sensor (bin full send) removal" on page 836**
12	40X8218	1	1	Standard Output Bin LED	**"Standard output bin LED removal" on page 840**
13	40X8219	1	1	Sensor (finisher bin media present)	**"Sensor (finisher bin media present) removal" on page 841**

Assembly 35: Power cords

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
NS	40X0269	1	1	Power cord LV, USA & Canada, Latin America	N/A
NS	40X0288	1	1	Power cord HV, Argentina	N/A
NS	40X1766	1	1	Power cord HV, Bolivia & Peru	N/A
NS	40X0273	1	1	Power cord HV, Chile, Uruguay	N/A
NS	40X3141	1	1	Power cord HV (Albania, Austria, Belgium, Bosnia, Brazil, Bulgaria, Catalan, Czech Republic, Croatia, Egypt, Finland, France, Germany, Greece, Hungary, Iceland, Indonesia, Iran, Italy, Jordan, Lebanon, Lithuania, Luxembourg, Macedonia, Montenegro, Netherlands, Norway, Paraguay, Poland, Portugal, Romania, Russia, Serbia, Saudi Arabia (HV), Slovakia, Slovenia, Spain, Sweden, Syria, Turkey, Ukraine, US (HV), African Countries)	N/A
NS	40X4596	1	1	Power cord LV, Brazil PPB kits	N/A
NS	40X0271	1	1	Power cord HV, United Kingdom, Asian, Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam, Afghanistan, Bangladesh, Bhutan, India, Nepal, Pakistan, Sri Lanka, Tibet, & Hong Kong	N/A
NS	40X0301	1	1	Power cord HV, Australia & New Zealand	N/A
NS	40X0270	1	1	Power cord 100 V, Japan	N/A
NS	40X1792	1	1	Power cord HV, Korea	N/A
NS	40X0303	1	1	Power cord HV PRC	N/A
NS	40X1791	1	1	Power cord LV Taiwan	N/A
NS	40X1774	1	1	Power cord HV, Denmark, Finland, Norway, Sweden	N/A
NS	40X0275	1	1	Power cord HV, Israel	N/A
NS	40X1773	1	1	Power cord HV, South Africa, Namibia, Lesotho, Botswana & Pakistan	N/A
NS	40X1772	1	1	Power cord HV, Switzerland	N/A

Assembly 36: Miscellaneous

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
NS	40X4819	1	1	RS232C serial adapter	N/A
NS	40X5315	1	1	SHIP-WITH ISP (2PER) screw	N/A
NS	40X5316	1	1	14 PIN JST-FOR ISP cable	N/A
NS	40X5317	1	1	Tee with thumbscrew standoff	N/A
NS	40X4826	1	1	N8120 GIGABIT INA adapter	N/A
NS	40X4823	1	1	Parallel 1284-B THCK adapter	N/A
NS	40X9652	1	1	N8130 10/100 fiber adapter	N/A
NS	40X6522	1	1	DDR3-512Mx16 1GB-400MHZ RAM card	N/A
NS	40X7445	1	1	DDR3-512Mx32 2GB RAM card	N/A
NS	40X7566	1	1	DDR3-256Mx16 512MB-400MHZ RAM card	N/A
NS	40X7567	1	1	DDR3-256Mx32 1GB-400MHZ RAM card	N/A
NS	40X8555	1	1	256MB user flash card	N/A
NS	40X8556	1	1	Traditional Chinese font card	N/A
NS	40X8557	1	1	Simplified Chinese font card	N/A
NS	40X8568	1	1	Korean font card	N/A
NS	40X8569	1	1	Japanese font card	N/A
NS	41X0829	1	1	MS810/1/2 forms and barcode card	N/A
NS	41X0841	1	1	MS810de forms and barcode card	N/A
NS	40X8600	1	1	MS812de forms and barcode card	N/A
NS	41X0831	1	1	PRESCRIBE card	N/A
NS	40X8599	1	1	MS810de PRESCRIBE card	N/A
NS	40X8602	1	1	MS812de PRESCRIBE card	N/A
NS	41X0830	1	1	IPDS SCS TNe card	N/A
NS	40X8598	1	1	MS810de IPDS card	N/A
NS	40X8601	1	1	MS812de IPDS card	N/A
NS	40X0387	1	1	USB-A interface device	N/A
NS	40X1593	1	1	Lexmark MarkNet N7000e (1 port USB) Ethernet 10Base/100BaseTX	N/A
NS	40X1594	1	1	Lexmark MarkNet N7002e (1 port Parallel) Ethernet 10BaseT/100BaseTX	N/A
NS	40X1592	1	1	Lexmark MarkNet N7020e (4 port USB) Ethernet 10BaseT/100BaseTX/1000BaseT	N/A
NS	40X7706	1	1	MS71x & MS81x Roller Kit	N/A

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
NS	40X8420	1	1	MS81x Return Program Fuser Maintenance Kit Type 00, 110-120V Letter	N/A
NS	40X8421	1	1	MS81x Return Program Fuser Maintenance Kit Type 01, 220-240V A4	N/A
NS	40X8422	1	1	MS81x Return Program Fuser Maintenance Kit Type 02, 100V A4	N/A
NS	40X8423	1	1	MS81x Return Program Fuser Maintenance Kit Type 03, 110-120V A4	N/A
NS	40X8424	1	1	MS81x Return Program Fuser Maintenance Kit Type 04, 220-240V Letter	N/A
NS	40X8425	1	1	MS81x Fuser Maintenance Kit Type 05, 110-120V Letter	N/A
NS	40X8426	1	1	MS81x Fuser Maintenance Kit Type 06, 220-240V A4	N/A
NS	40X8427	1	1	MS81x Fuser Maintenance Kit Type 07, 100V A4	N/A
NS	40X8428	1	1	MS81x Fuser Maintenance Kit Type 08, 110-120V A4	N/A
NS	40X8429	1	1	MS81x Fuser Maintenance Kit Type 09, 220-240V Letter	N/A
NS	40X8530	1	1	MS71x Return Program Fuser Maintenance Kit Type 11, 110-120V	N/A
NS	40X8531	1	1	MS71x Return Program Fuser Maintenance Kit Type 13, 220-240V	N/A
NS	40X8532	1	1	MS71x Return Program Fuser Maintenance Kit Type 15, 100V	N/A
NS	40X8533	1	1	MS71x Fuser Maintenance Kit Type 17, 110-120V	N/A
NS	40X8534	1	1	MS71x Fuser Maintenance Kit Type 19, 220-240V	N/A
NS	40X8535	1	1	MS71x Fuser Maintenance Kit Type 21, 100V	N/A
NS	40X8093	1	1	MS7xx, MS8xx, MX7xx caster base	N/A
NS	40X8359	1	1	Locking caster	N/A
NS	40X8579	1	1	Oil Wiper (MS7xx only)	N/A
NS	40X8581	1	1	Wax Wiper (MS7xx only)	N/A
NS	40X7857	1	1	Hard disk drive	N/A
NS	40X7858	1	1	Network adapter 802.11 US	N/A
NS	40X8311	1	1	Case card reader—small stick-on	N/A
NS	40X8312	1	1	Case card reader—large stick-on	N/A
NS	40X8313	1	1	Case card reader—small snap-on	N/A

Parts catalog

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
NS	40X8693	1	1	Relocation kit (MX810)	N/A
NS	41X0548	1	1	550-sheet tray A4 rear guide lock block	N/A
NS	41X1007	1	1	Cleaning kit	N/A
NS	40X8737	1	1	RFID card reader	N/A
NS	40X9879	1	1	Smart card reader	N/A
NS	40X9938	1	1	Wireless network card	N/A
NS	41X0357	1	1	Surge protector, 110 V	N/A
NS	41X0370	1	1	Surge protector, 220 V	N/A
NS	41X0832	1	1	Forms card	N/A

Printer specifications

Power specifications

The average nominal power requirements for the base printer configuration are shown in the following table (power levels are shown in watts):

Printing States	MS710	MS711	MS810dn/de	MS811	MS812dn/de
Off	0.1 W		0.1 W	0.1 W	0.1 W
Hibernate	0.52 W		0.5 W	0.5 W	0.5 W
Sleep State	5.2 W		4.1 / 5.5W	4.1	4.1 / 7 W
Ready Mode					
Tier 1	110 W		55 W / 60 W	55 W	55 W / 60 W
Tier 2	75 W		30 W	30 W	30 W
Continuous printing					
1-sided	780 W		700 W	770 W	830 W
2-sided	575 W		500 W	560 W	6300 W
Maximum (Average) current while printing:					
100 - 110 Volts	10.0 A		11.5 A		
115 - 127 Volts	9.0 A		10.0 A		
220 - 240 Volts	4.6 A		5.0 A		
Printer Fuser Ceramic Slab	925 W		1185 W		

Maximum current shown in amp ergs.

Notes:

- Using a power converter or inverter is not recommended.
- Only duplex models are Energy Star qualified
- All models ship with Sleep Mode set to On.
- The default time-out to Sleep mode is 30 minutes.

Operating clearances

1	Top	115 mm (4.5 in.)
2	Right	305 mm (12 in.)
3	Front	508 mm (20 in.)
4	Left	305 mm (12 in.)
5	Rear	305 mm (12 in.)
Allow additional clearance around the printer for adding options, clearing misfeeds, and changing toner cartridges and imaging units.		

Acoustics

All measurements are made in accordance with ISO 7779 and conform with ISO 9296.

Status	1 Meter average sound pressure (dBA)	Declared sound power level (Bels)
MS810		
Idle (Standby mode)	32	4.8
Quiet mode	53	6.8
Simplex printing	53	6.8
Duplex printing	57	7.2
MS811		
Idle (Standby mode)	32	4.7
Quiet mode	53	6.8
Simplex printing	58	7.3
Duplex printing	57	7.2
MS812		
Idle (Standby mode)	32	4.7
Quiet mode	53	6.8
Simplex printing	58	7.3
Duplex printing	58	7.3
Measurements apply to 300 dpi, 600 dpi, and 1200 dpi printing.		

Environment

Printer Temperature and Humidity

- Operating
  - Temperature: 60 to 90° F (15.6 to 32.2° C)
  - Relative humidity: 8 to 80%
  - Maximum wet bulb temperature: 73° F (22.8° C)
  - Altitude: 9,500 ft. (0 to 2896 meters)
  - Atmospheric pressure: 74.6 kPa
- Power off
  - Temperature: 50 to 110° F (10 to 43.3° C)
  - Relative humidity: 8 to 80%
  - Maximum wet bulb temperature: 80.1° F (26.7° C)
  - Altitude: 9,500 ft. (0 to 2896 meters)
  - Atmospheric pressure: 74.6 kPa

- Ambient operating environment*
  - Temperature: 60 to 90° F (15.6 to 32.2° C)
  - Relative humidity: 8 to 80%
- Storage and shipping (packaged printer) with or without print cartridge

  Temperature: -40 to 110° F (-40 to 43.3° C)

*In some cases, performance specifications (such as paper OCF, EP cartridge usage) are measured at an ambient condition.

Processor

800 MHz, dual core

Enabling the security reset jumper

The security reset jumper can reset a printer that is locked due to a forgotten password or lost network connectivity.

Notes:

- Resetting the printer deletes all security settings.
- Before changing the security settings, ask for permission from your administrator.

1 Turn off the printer.

2 Access the controller board.

3 Move the jumper to cover the middle and exposed prongs.

   Note: The small, yellow jumper is located beside a lock icon on the controller board.

4 Turn on the printer.

Invalidating the effects of a jumper reset

1 From the Embedded Web Server, click **Settings** > **Security** > **Miscellaneous Security Settings**.

2 From the Security Reset Jumper menu, select **No Effect**.

   Warning: This setting disables access to the security menus of a locked printer. To regain access to the menus, replace the controller board.

3 Click **Submit**.

Notes:

- Use a cable lock to secure the controller board and prevent a malicious reset.
- For multifunction products, when the controller board is replaced, the security settings are lost and the LDAP configuration and Copy function are no longer protected.

Options and features

Lexmark C792 printers support only Lexmark C792 paper-handling options. These options are not compatible with any other Lexmark printer.

Some of the following options are not available in every country or region.

Available internal options

- Memory card
  - DDR3 DIMM
  - Flash memory
    - Fonts
    - Firmware cards
      - Forms barcode
      - PRESCRIBE
      - IPDS
      - Printcryption
- Printer hard disk
- Lexmark Internal Solutions Ports (ISP)
  - Parallel 1284-B interface
  - MarkNet™ N8350 802.11 b/g/n wireless printer server
  - MarkNet N8130 10/100 fiber interface
  - RS-232-C serial interface

Input options supported

- 550-sheet tray
- 550-sheet lockable tray
- 250-sheet tray
- 250-sheet lockable tray
- HCIT tray

Output options supported

- Output expander
- High capacity output expander
- Mailbox
- Staple finisher

Physical specifications (options)

Item	Height	Width	Depth	Weight
250-sheet tray	85 mm (3.3 in.)	421 mm (16.6 in.)	510 mm (20.1 in.)	5 kg (11.0 lb)
550-sheet tray	110 mm (4.3 in.)	421 mm (16.6 in.)	510 mm (20.1 in.)	5.8 kg (12.8 lb)
2100-sheet tray	350 mm (13.8 in.)	421 mm (16.6 in.)	510 mm (20.1 in.)	17.7 kg (39 lb)
Output expander	165 mm (6.5 in.)	423 mm (16.6 in.)	380 mm (14.9 in.)	2.6 kg (5.7 lb)
Mailbox	271 mm (10.7 in.)	421 mm (16.6 in.)	384 mm (15.1 in.)	6.3 kg (13.9 lb)
Stapler	320 mm (12.6 in.)	433 mm (17.1 in.)	403 mm (15.9 in.)	7.2 kg (15.8 lb)
Spacer	110 mm (4.3 in.)	421 mm (16.6 in.)	510 mm (20.1 in.)	3.4 kg (7.5 lb)

Options configurations

Sources and Capacities	MS810n/dn/dtn/de	MS811n/dn/dtn	MS812dn/dtn/de
Input sources: number of optional Trays	4 (3 for dtn)	4 (3 for dtn)	4 (3 for dtn)
Output sources			
Output expander	up to 3	up to 3	up to 3
Mailbox	up to 3	up to 3	up to 3
Staple finisher	1	1	1
High capacity output expander	1	1	1
Output expander + mailbox	1 each	1 each	1 each
Output expander (on top) + high capacity output expander	1 each	1 each	1 each
Output expander + staple finisher (on top only)	1 each	1 each	1 each
Mailbox + staple finisher (on top only)	1 each	1 each	1 each
Output capacity			
Output expander	500	550	550
Mailbox	400	400	400
Staple finisher (unstapled)	500	500	500
High capacity output expander	1500	1850	1850

Options and features

Theory of operation

Models MS81x and MS71x paper path rollers and sensors
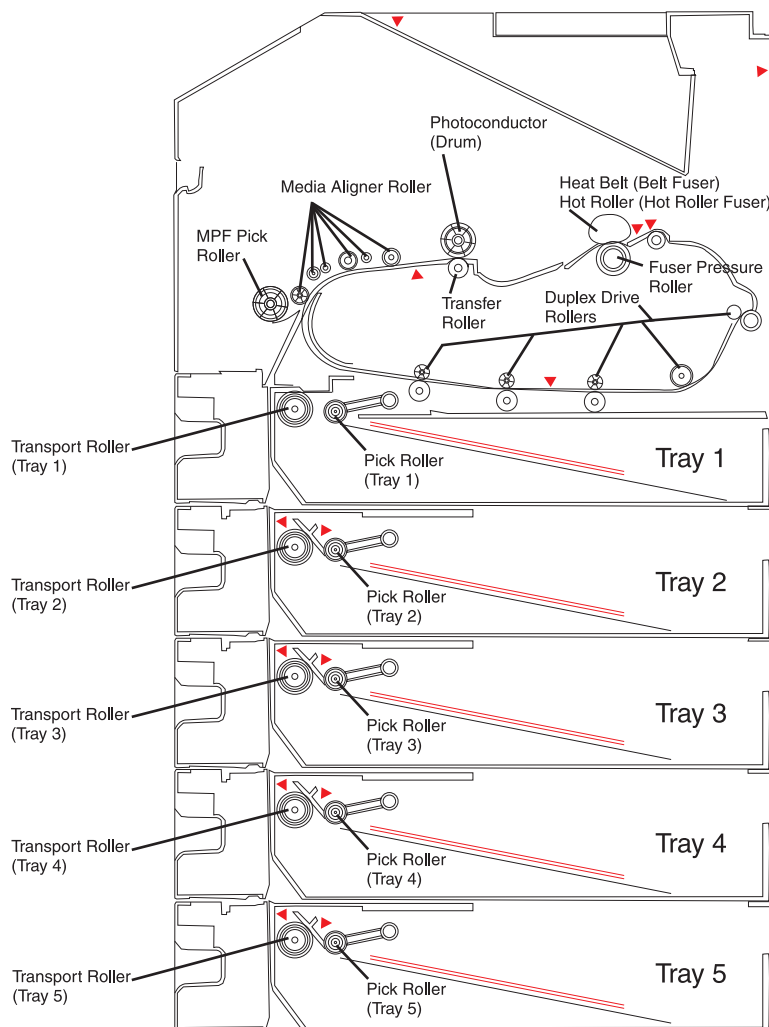
Models MS81x and MS71x sensors
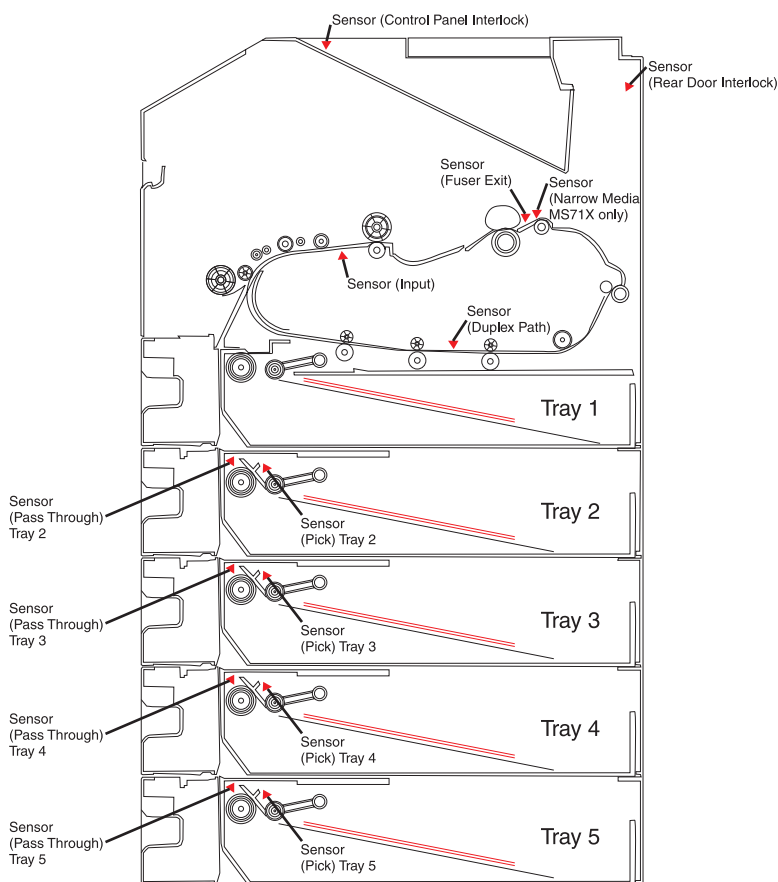
Media tray assembly

Media tray

The media tray is used to contain the media that will be printed on by the printer.

Rear media guide

The rear media tray guide assembly can be adjusted to different media sizes by moving it to the front or rear and can be locked in position. The rear guide should come into contact with the media and hold it in position.

Side media guide

The media tray assembly is designed so that it can adjust to the media width in the media feed direction by moving the side guide to the left or right.

Media feeder assembly

Media feeder
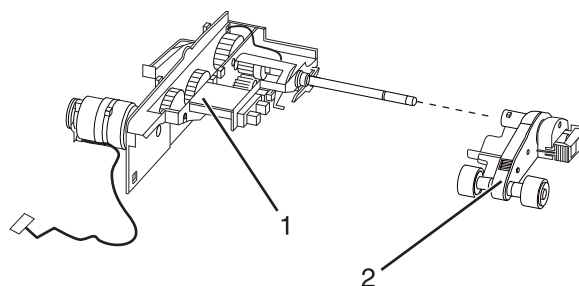
#	Part
1	Media feeder
2	Pick roller assembly

The pick roller assembly which is part of the media feeder, is a mechanical unit supplying media from the media tray to the paper path. The driving force from the media feeder drive motor, is transmitted to the two pick rollers to feed media from the tray and is also used to lift the tray plate that is used to lift the media stack into contact with the pick rollers.

Sensor (media size)

The sensor (media size) detects the size of media supplied from each media tray assembly. A system of four switches is used to decode the media size, which is then sent to the controller board.

Sensor (pick roller position)

This sensor is used to determine if the lift plate in the paper tray is at the optimum position for media to properly pick. As media is fed out, clearance will occur between the media and the pick rollers. When the specified amount of clearance is determined by the sensor, the lift plate will be raised to position the media in the optimum position to be properly picked.

Multipurpose feeder (MPF)

The MPF is a mechanical unit supplying media to the printer. The driving force from the main drive motor drive motor is transmitted to the MPF pick roller to feed media.
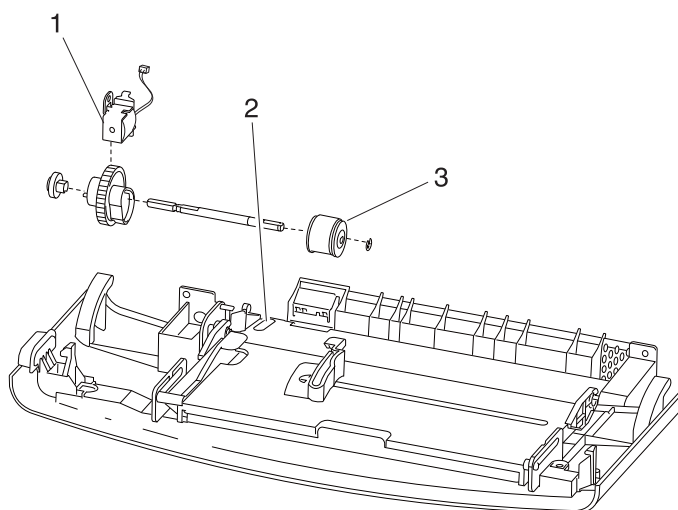
#	Part
1	MPF pick solenoid
2	Sensor (MPF media empty)
3	MPF pick roll assembly

MPF pick roller

The MPF pick roller feeds the media placed in the MPF media tray into the printer.

MPF pick solenoid

The MPF pick solenoid transmits the driving force from the main drive motor assembly to the MPF pick roller.

Registration

#	Part
1	Aligner assembly
2	Sensor (input)
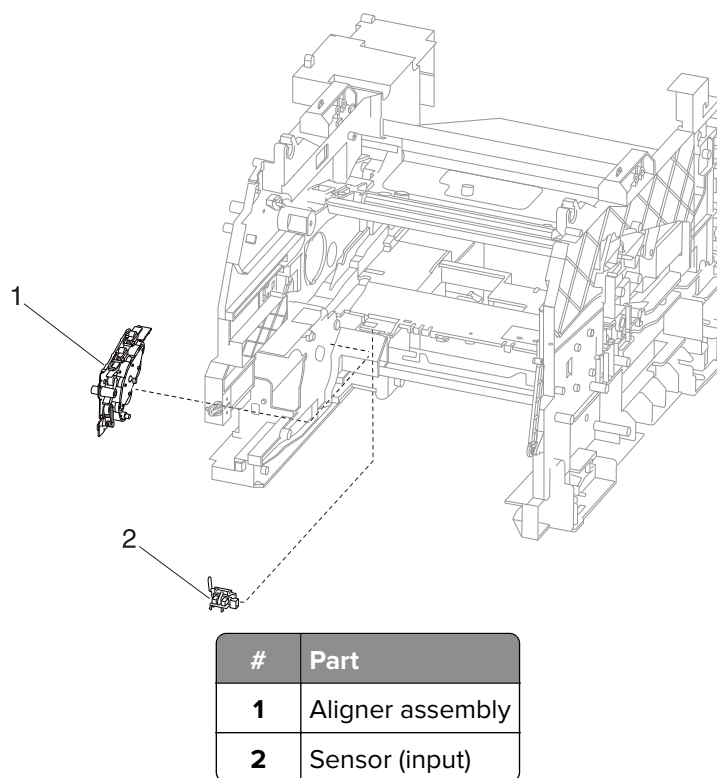
Sensor (input)

The sensor (input) is located just before the print cartridge and can detect whether media exists in the input path. The sensor is used to detect jams and to set functional timing.

Duplex

The printer has an integrated duplex that is used to provide two-sided printing. After the first side of the page is printed, the page enters the duplex path and then reenters the primary paper path just before the input sensor. The second image is then printed on the reverse side of the paper.

Sensor (duplex path)

The media aligner roller is used to feed the media through the input path and to ensure that media is fed straight (not skewed) through the machine. The media aligner roller can be adjusted to correct media skew issues and should always be adjusted when it is replaced or removed.

Transfer
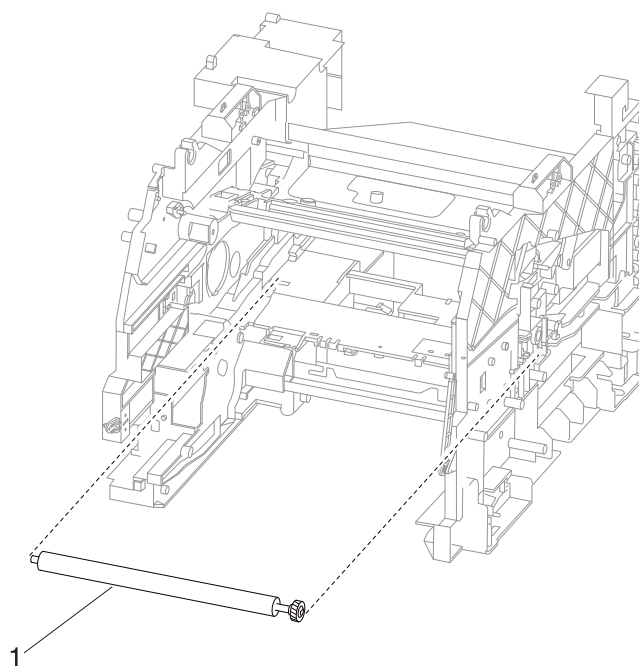
#	Part
1	Transfer roll

Transfer roller

The transfer roller applies charge to the rear surface of the media when the media passes between the transfer roller and photo conductor (drum). The toner image is transferred from the photo conductor (drum) surface to the media surface.

Printhead
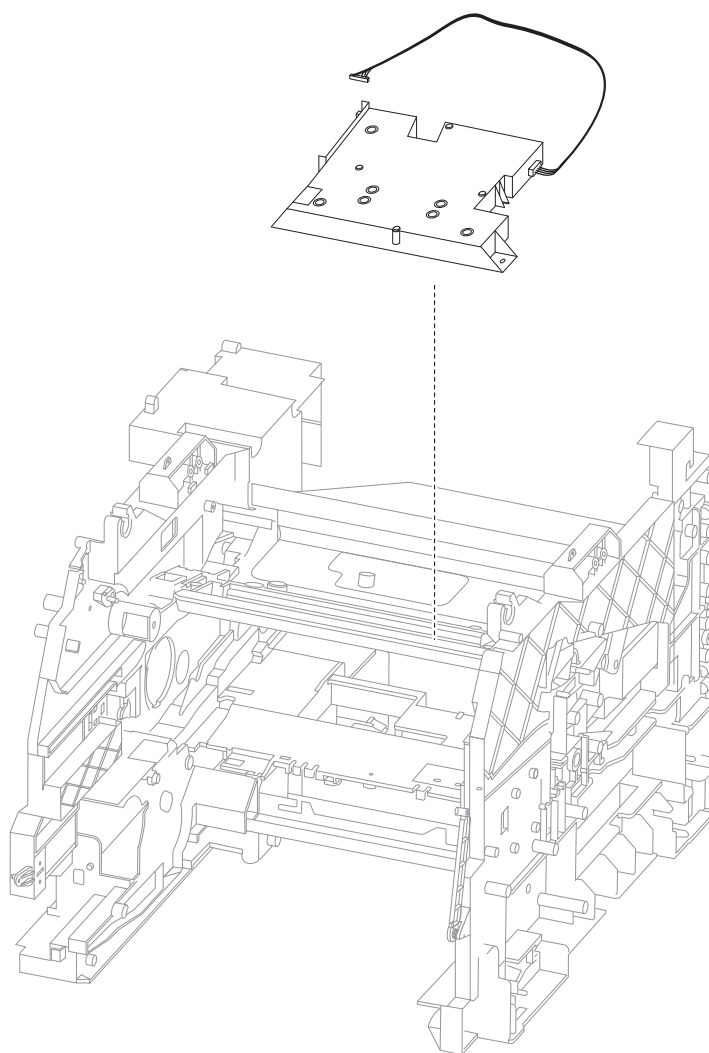
The printhead scans the photoconductor drum surface with a laser beam. It consists of four components: laser diode (LD) card assembly, printhead motor, polygon mirror, and the start of scan card assembly.

1 **LD card assembly**—The LD card assembly generates the laser beam. The beam is turned on or off according to a print data signal coming from the controller board.

2 **Printhead motor/polygon mirror**—The polygon mirror is mounted to the shaft of the printhead motor, and is rotated at a high speed by the printhead motor. The mirror rotation shifts the incidence and reflection angles of a laser beam to scan the photoconductor (drum) in a single direction. The laser beam reaches the polygon mirror as it passes through multiple lenses, mirrors, and windows. The laser beam then arrives at the photo conductor (drum) surface.

3 **SOS card assembly**—When a laser beam hits the SOS sensor on the SOS card assembly, the beam is converted to an electrical signal (SOS signal), and detects the initial position where a scan starts on each line.

When a laser beam is scanned across the photoconductor (drum) surface from one end to the other while turning on and off the beam, one line of latent image is created. If the scanning by the laser beam is repeated while rotating the drum, a two-dimensional image is created. The resolution in the scanning direction (from right to left) is determined by the rotational speed of the printhead motor, depending on how quickly the laser is adjusted. The resolution in the process direction (from top to bottom) is determined by the rotational speed of the printhead motor. (The higher the scanning speed becomes, the sooner the scanning of the next row can be started.)

The following image is a conceptual diagram of an image created by scanning:
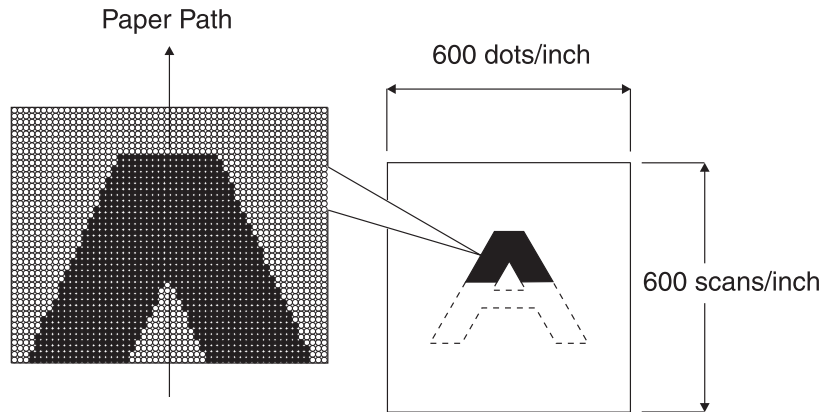
Fuser components
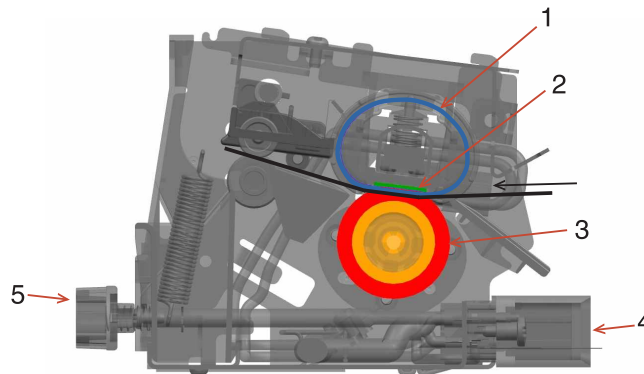
#	Part
1	Belt
2	Ceramic heater bar
3	Pressure roll
4	Connector
5	Knob
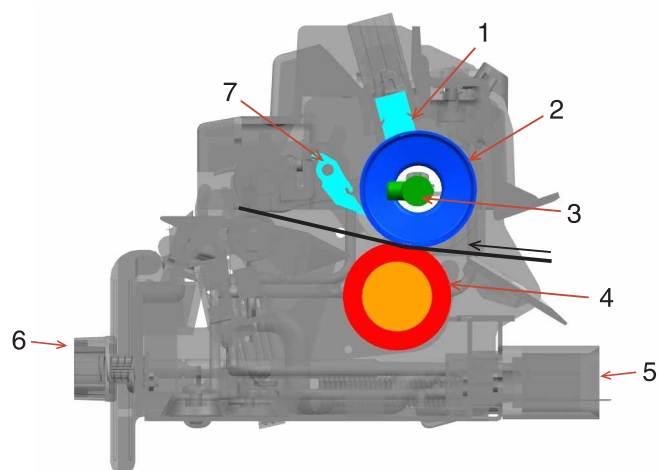
#	Part
1	Wiper
2	Hot roll
3	Halogen lamp
4	Pressure roll
5	Connector
6	Knob
7	Detack finger

Heat belt (belt fuser)

The heat belt is a thin metal belt with a coated surface. This belt is heated by a ceramic heater bar. The heat is applied to the media passing between the heat belt and pressure roll, fusing the toner on the media.

Heat belt (hot roll fuser)

The heat roll is a hollow metal tube with a coated surface. This tube is heated by a halogen lamp. The heat is applied to the media passing between the heat roll and pressure roll, fusing the toner on the media.

Pressure roll

The pressure roll is used to apply pressure to the media surface for fusing. Pressure is applied to the media between the pressure roll and heat roll (or heat belt) to aid in the fusing process.

Heater lamp (hot roll fuser)

The heater lamp is a quartz glass tube containing a halogen heater coil. A terminal is mounted to the end of the heater rod using a harness.

Thermistor

The thermistor monitors the surface temperature of the media-feed portion of the heat belt or heat roll to provide feedback to the controller board. This information is used to turn the ceramic heater or halogen lamp on and off to maintain the desired temperature.

Sensor (fuser exit)

The sensor (fuser exit) detects the arrival and departure of media as it passes through the fuser.

Sensor (narrow media) (hot roll fuser only)

The sensor (narrow media) detects the arrival and departure of media as it passes through the fuser. It also detects the width of the media.

Exit

Theory of operation
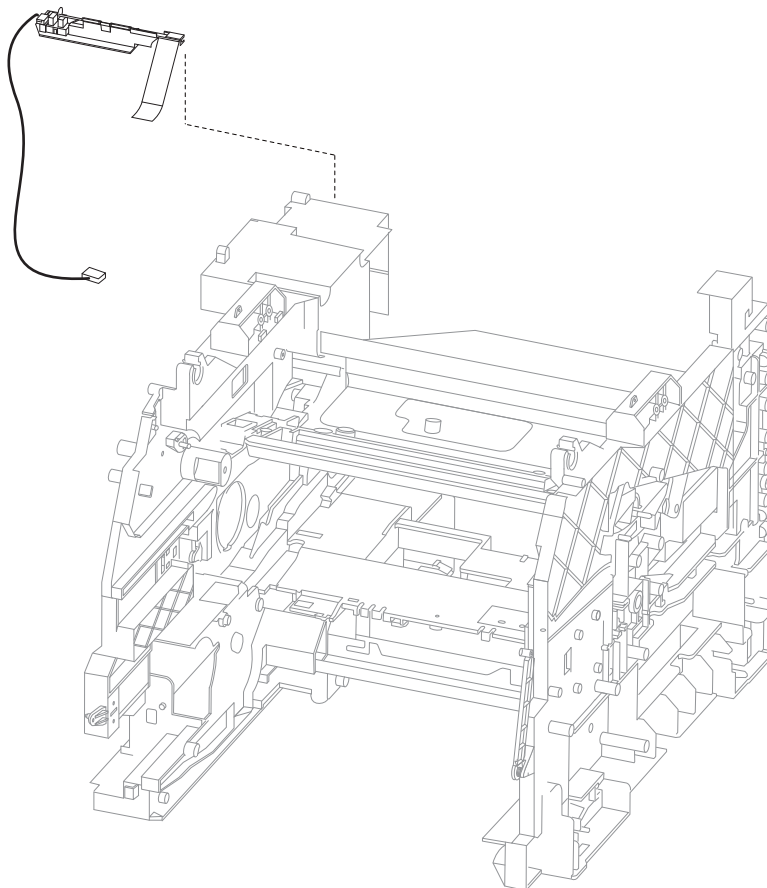
The standard media exit ejects printed media from the printer to the standard bin .

Sensor (standard bin full)

The sensor (standard bin full), along with the standard bin full flag, detects whether the standard bin is full and stops the printing process.

Drive

Main drive motor assembly

The main drive motor is a DC motor that drives the imaging unit, aligner, and MFP.

Fuser drive motor assembly

The fuser drive motor is a DC motor that drives the fuser.

Toner add motor assembly

The toner add motor is a DC motor that drives the toner cartridge in order to provide new toner.

Redrive motor assembly

The redrive motor assembly is a DC motor that drives the redrive assembly that transports the media into the duplex path entrance, standard bin, or output option.
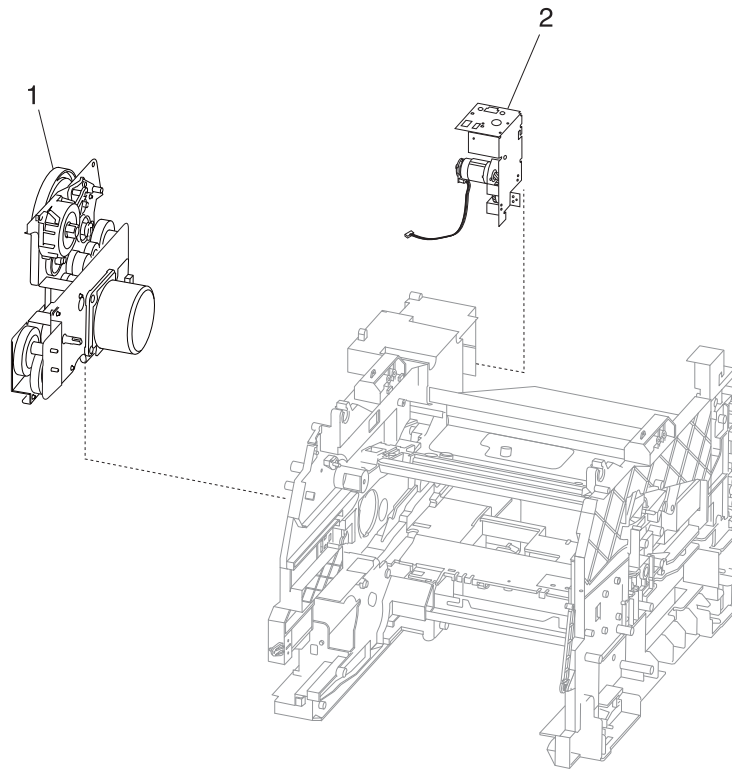
#	Part
1	Main drive motor assembly
2	Redrive motor assembly

Theory of operation

Sensors

Sensor (Control Panel Interlock)

Sensor (Rear Door Interlock)

Sensor (Fuser Exit)

Sensor (Narrow Media MS71X only)

Sensor (Input)

Sensor (Duplex Path)

Tray 1

Sensor (Pass Through) Tray 2

Sensor (Pick) Tray 2

Tray 2

Sensor (Pass Through) Tray 3

Sensor (Pick) Tray 3

Tray 3

Sensor (Pass Through) Tray 4

Sensor (Pick) Tray 4

Tray 4

Sensor (Pass Through) Tray 5

Sensor (Pick) Tray 5

Tray 5

Theory of operation

Electrical components and controller
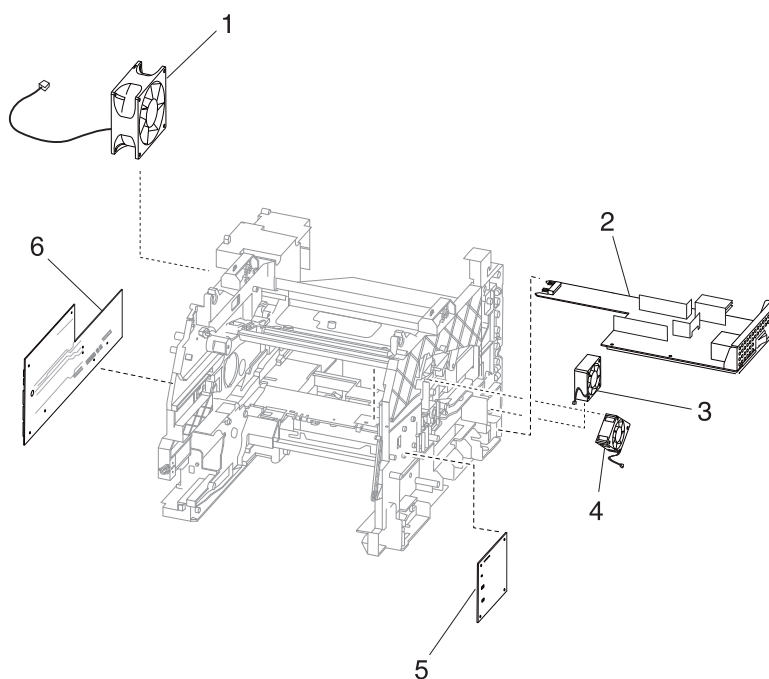
#	Part
1	Main cooling fan
2	LVPS card assembly
3	Duplex cooling fan
4	Print cartridge cooling fan
5	HVPS card assembly
6	Controller board

Sensor (control panel door interlock)

The sensor is a safety device to cut off a 24 VDC power supply from the LVPS to the high volt power supply (HVPS), controller board, and to the main drive motor assembly, while the control panel door is open.

Sensor (rear door interlock)

The sensor is a safety device to cut off a 24 VDC power supply from the LVPS to the HVPS, controller board, and to the main drive motor assembly, while the printer rear door is open.

Main cooling fan

The main cooling fan discharges air from the printer to provide cooling to this area of the printer.

Cartridge cooling fan

The imaging unit cooling fan discharges air from the print cartridge area to provide cooling to this area of the printer.

Duplex cooling fan

The Duplex cooling fan discharges air from the duplex drive motor area to provide cooling to this area of the printer.

Fuser cooling fan (hot roll printer only)

The fuser cooling fan discharges air from the fuser area to provide cooling to this area of the printer.

LVPS board assembly

The LVPS board assembly generates 6.5V and 25V DC voltages. The LVPS can be switched to work with 100V, 110, and 220V machines.

HVPS board assembly

The HVPS board assembly generates and provides DC voltages to the developer roll, the transfer roller, and the charge roller (located in the imaging unit).

Controller board

The controller board controls printing operation based on the communication with the RIP controller and optional peripherals. It also controls toner dispense, fuser control, sensor switch feedback, drive motors, clutches, and solenoids.

Xerographic and print cartridge components

Charge
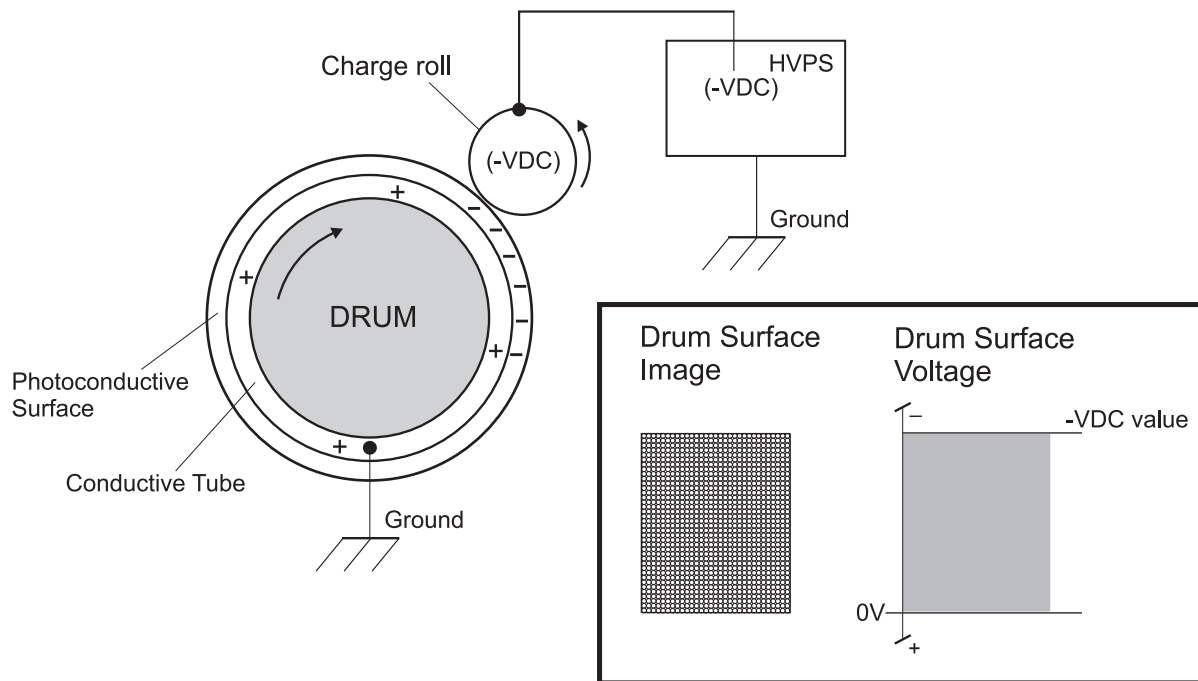
The charge roller places a uniform negative electrostatic charge on the surface of the drum. The drum surface is made of a photoconductive material that holds an electrical charge as long as the drum remains in darkness. Light striking the drum discharges the surface charge.

Exposure
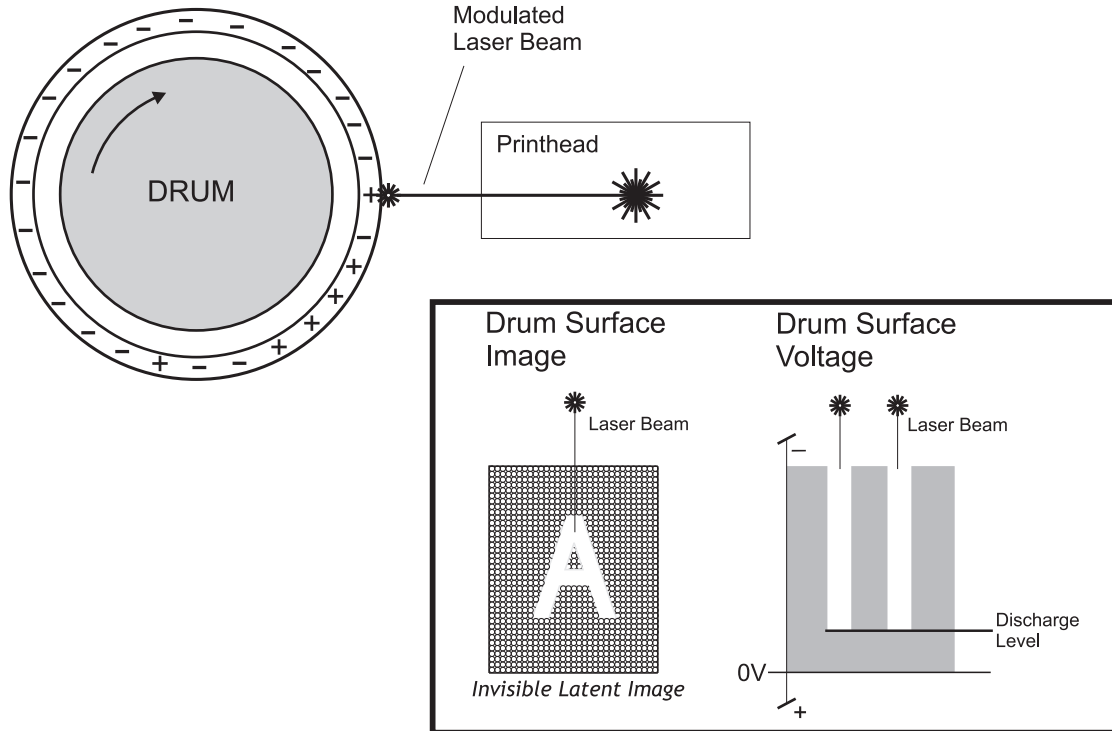
The Printhead generates a beam of laser light. Image data received from the controller board assembly modulates this beam, turning it on and off according to image information that is received from the host computer and software.

Through the use of a series of rotating and stationary mirrors within the Printhead, the beam scans the negative charged drum surface. Whenever the print controller sends a command to print a black pixel, the laser switches on long enough to shine onto the drum at a single pixel point. That point is now discharged and slightly less negative than the surrounding negative charge. The less negative areas are considered positive. This discharge/no discharge process creates an invisible, electrostatic image on the surface of the drum. This image is called a latent image.

Development
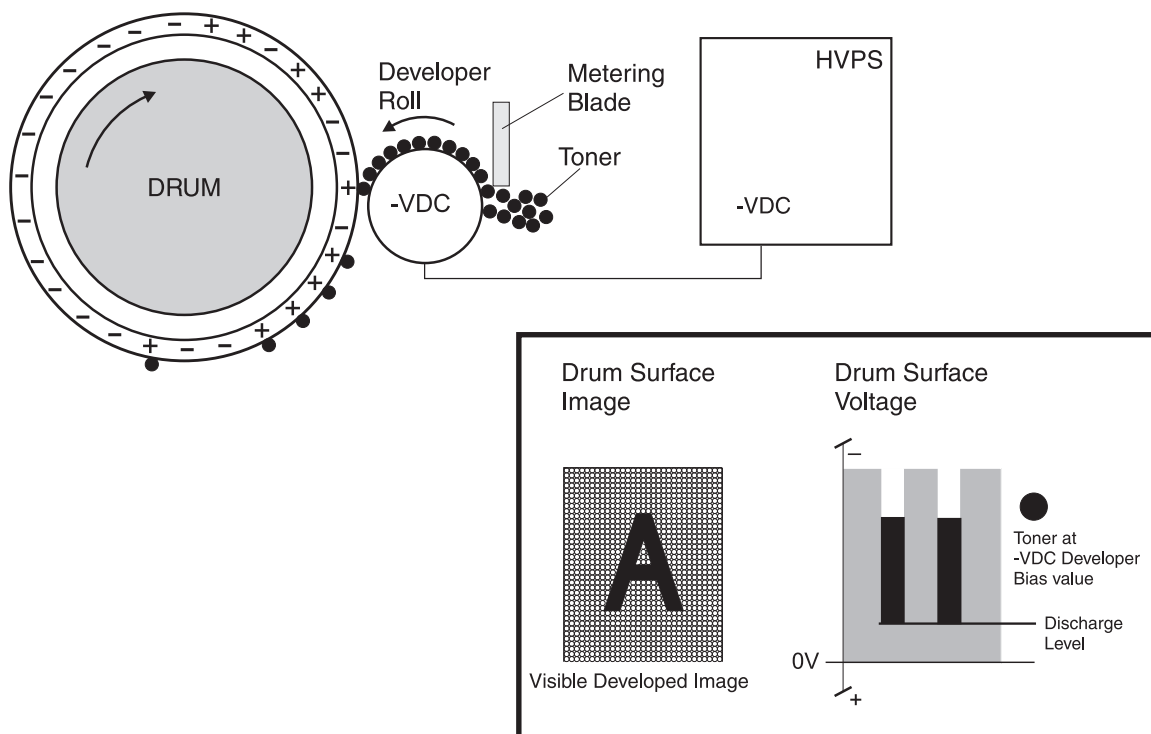
The toner contained within the PC cartridge has an electrical property that causes it to adhere to the development roller. The metering blade spreads the toner into a very thin layer on the development roller. Friction between the development roller and the CM blade development roller generates a small electrical charge that is transferred to the toner.

The surface of the developer roller is made up of a thin sheet of conductive material. The HVPS supplies the development roller with two voltages: a DC voltage and an AC voltage. The DC voltage is used to transfer toner from the development roller to the surface of the drum. The AC voltage agitates the toner on the development roller, making toner transfer easier.

The development roller maintains a negative DC electrical potential. Negative charged areas of the drum have a lower electrical potential, or higher relative negative value than the development roller. Discharged areas of the drum have a higher electrical potential, or lower relative negative value, than the development roller. A discharged point on the surface of the drum now appears less negative in relation to the negative charge on the development roller.

The toner adhering to the development roller is always in contact with the drum surface. When a less negative point on the drum (a discharged area) comes in contact with the more negative charged toner on the Magnet roller, toner transfers from the magnet roller to that point on the drum. There is now a visible toner image—developed image—on the drum surface.

Transfer
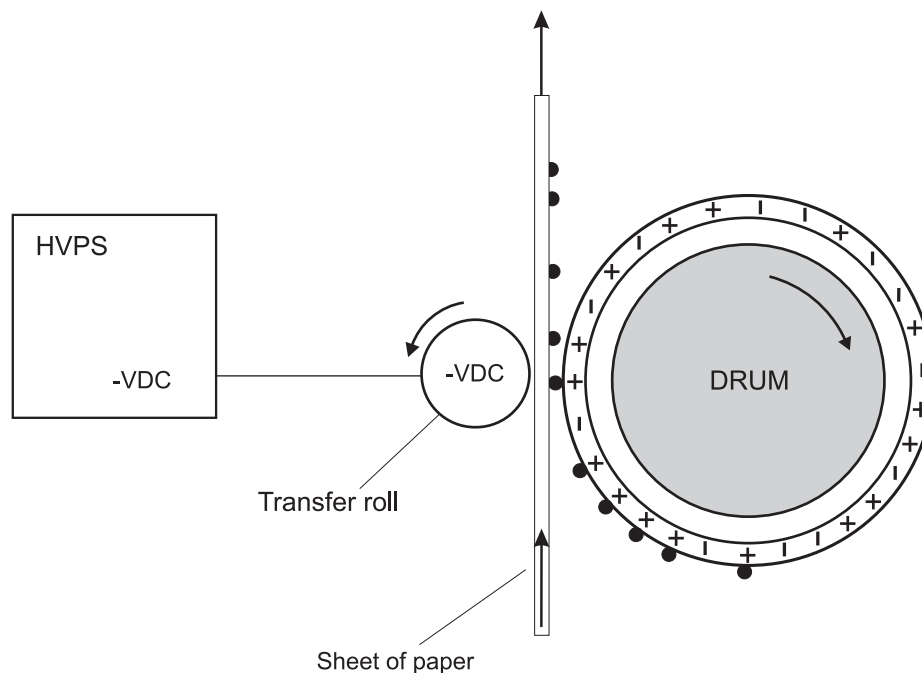
As the paper travels between the transfer roller and the photoconductor (drum), the Transfer roller applies a positive charge to the back of the printing paper. This positive charge transfers the negative charged toner image from the photoconductor (drum) to the top surface of the paper. The toner image is now on the paper and the paper is now stuck to the photoconductor (drum) due to the relative electrical differences between the negative electrical charge of the inner conductive layer of the drum and the positive electrical charge of the paper.

Cleaning
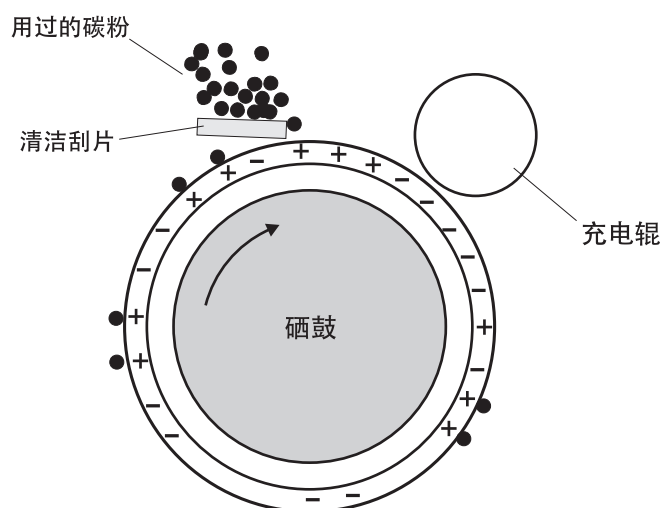
The cleaning blade removes any toner that remains on the drum after the transfer process. The toner that the cleaning blade removes is collected inside the sealed PC cartridge.

Theory of operation

Auto density sensing
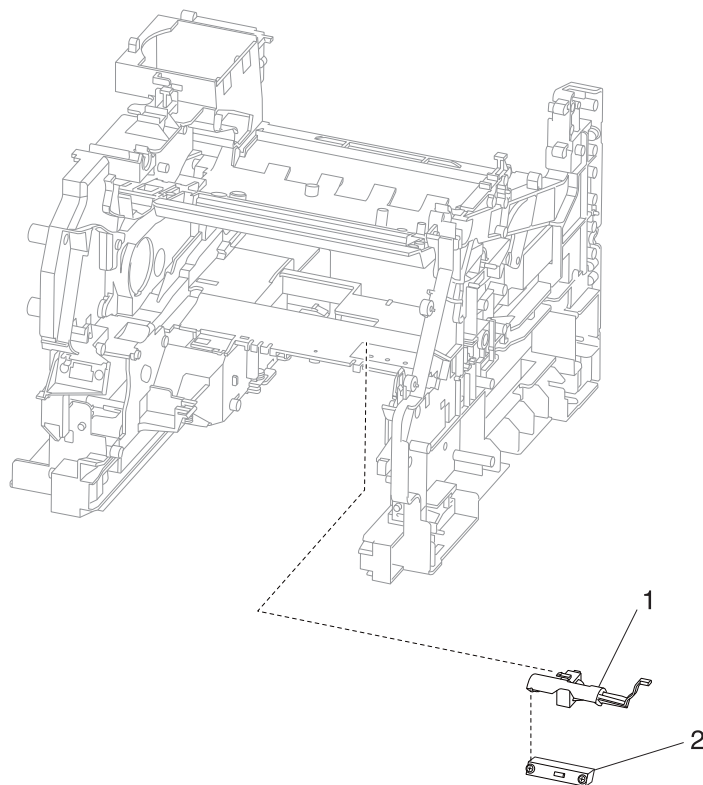
#	Part
1	Sensor shield assembly
2	Sensor (toner density)

The image density sensor assembly uses a reflection type sensor that detects a pre-placed toner patch and image on the photoconductor (drum) and outputs pulses when the central line of the patch image aligns with the central line of the detector. The sensor outputs pulses at the timing the patch image passes the sensor. Therefore observing changes of intervals at which pulses are output leads to toner density detection.

Output options theory

Output expander theory

The output expander enables the user to have additional output capacity. If the standard output bin of a printer is already full while printing, the media can be sent to the output expander. The output expander uses drive motors and a series of sensors to determine the media's location and position in the paper path.

Output expander paper path
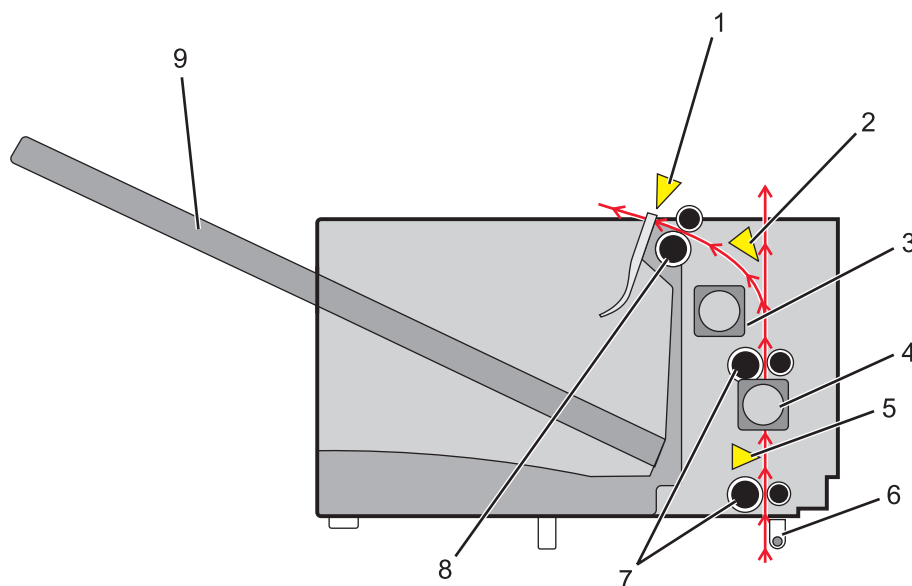
#	Part
1	Sensor (bin full)
2	Diverter
3	Interface/main motor
4	Diverter motor
5	Sensor (pass through)
6	Diverter plunger
7	Transport rollers
8	Exit roller
9	Output bin

When the output expander is installed on top of the printer, the diverter plunger changes the position of the diverter below it. Since the diverter position of the printer below is opened, the printed paper will be rerouted. Instead of exiting the standard output bin, the media enters the output expander. The movement of the diverter plunger can be controlled by its diverter motor, depending on the printer's commands.

Note: The diverter motor controls the diverter below it. Another way of saying it is that the diverter is controlled by the diverter motor of the output option above it.

The main motor drives the transport rollers which move the media along the paper path. The sensor (pass through) detects if the media has entered the expander. The diverter of the expander controls which way the media will go. If the diverter is closed, then the media will exit into the output bin. If the diverter is opened, then media will pass through the output expander and enter the output option above it.

Theory of operation

Upon exit, the media is fed out by the exit rollers towards the output bin. The sensor (bin full) verifies if the media has exited. The media level on the output bin is detected by the actuator flag. When the output bin is full, the actuator flag triggers the sensor (bin full). A signal will be sent to the printer:

- to prompt the user to clear the output bin
- to change the direction of the paper path, re-routing the media to the next output bin or output option above it

High capacity output expander theory

The function of the HCOE, which is to allow extra capacity to a printer's output bin, is similar to the output expander. See **"Output expander theory" on page 984**. What differentiates the HCOE aside from its size, is its ability to adjust the position of its output bin to accommodate more media.

HCOE paper path
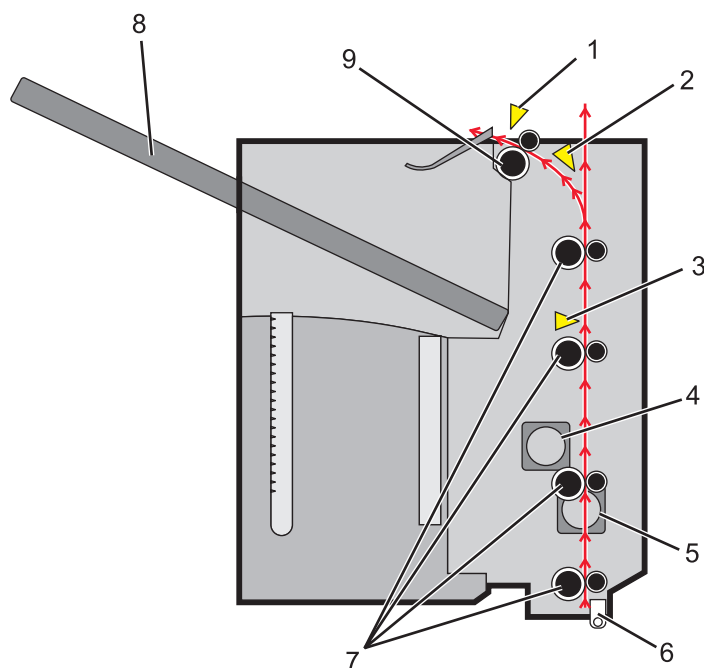
#	Part
1	Sensor (bin full)
2	Diverter
3	Sensor (pass through)
4	Interface/main motor
5	Diverter motor
6	Diverter plunger
7	Transport rollers
8	Output bin

Theory of operation

When the HCOE is installed on top of the printer, the diverter plunger changes the position of the diverter below it. Since the diverter position of the printer below is opened, the printed paper will be rerouted. Instead of exiting the standard output bin, the media enters the HCOE. The movement of the diverter plunger can be controlled by its diverter motor, depending on the printer's commands.

Note: The diverter motor controls the diverter below it. Another way of saying it is that the diverter is controlled by the diverter motor of the output option above it.

The main motor drives the transport rollers which move the media along the paper path. The sensor (pass through) detects if the media has entered the HCOE. The diverter of the HCOE controls which way the media will go. If the diverter is closed, then the media will exit into the output bin. If the diverter is opened, then media will pass through the HCOE and enter the output option above it.

Upon exit, the media is fed out by the exit rollers towards the output bin. The sensor (bin full) verifies if the media has exited. The media level on the output bin is detected by the actuator flag. When the output bin is full, the actuator flag triggers the sensor (bin full). A signal will be sent to the printer:

- to prompt the user to clear the output bin
- to change the direction of the paper path, re-routing the media to the next output bin or output option above it

Mailbox theory

The mailbox is capable of delivering printed media into multiple separate output destinations. This allows multiple users to automatically segregate the printed output. All of the user's printed outputs can be exited into the specific output bin assigned to him. The mechanism is controlled by a set of sensors that detect the media and drive motors that move the media along its paper path.

Mailbox paper path
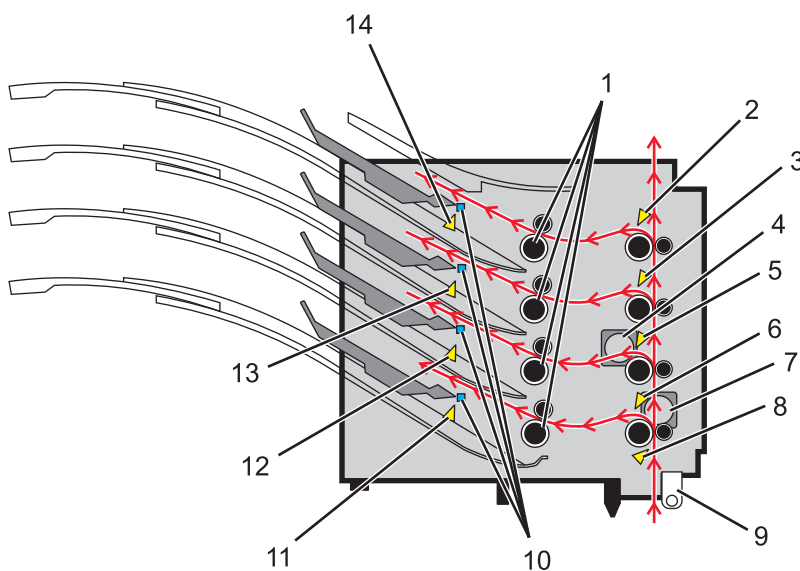
#	Part
1	Exit rollers
2	Diverter 4
3	Diverter 3

Theory of operation

#	Part
4	Interface/main motor
5	Diverter 2
6	Diverter 1
7	Diverter motor
8	Sensor (pass through)
9	Diverter plunger
10	Bin level sensors
11	Sensor (bin 1 full)
12	Sensor (bin 2 full)
13	Sensor (bin 3 full)
14	Sensor (bin 4 full)

When the mailbox is installed on top of the printer, the diverter plunger changes the position of the diverter below it. Since the diverter position of the printer below is opened, the printed paper will be rerouted. Instead of exiting the standard output bin, the media enters the mailbox. The movement of the diverter plunger can be controlled by its diverter motor, depending on the printer's commands.

Note: The diverter motor controls the diverter below it. Another way of saying it is that the diverter is controlled by the diverter motor of the output option above it.

The main motor drives the transport rollers which move the media along the paper path. The sensor (pass through) detects if the media has entered the mailbox. Four diverters control which way the media will go. If a diverter is opened, then media will pass through it and go to the next diverter above it. The media finally exits when it encounters a closed diverter.

Upon exit, the media is fed out by the exit rollers towards the assigned output bin. The sensor (bin full) verifies if the media has exited. The media level on the output bin is detected by the actuator flag. When the output bin is full, the actuator flag triggers the sensor (bin full). A signal will be sent to the printer:

- to prompt the user to clear the output bin
- to change the direction of the paper path, rerouting it to another available output bin.

Staple finisher theory

The staple finisher is capable of compiling multiple pages and stapling them into one document. Motors drive the stapling process and sensors detect the media's position and location.

Staple finisher paper path
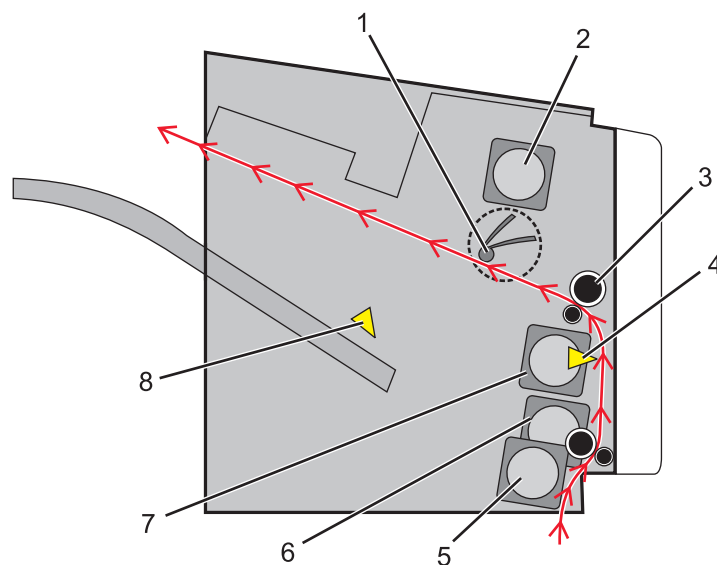
#	Part
1	Paddle roller
2	Paddle drive motor
3	Exit roller
4	Sensor (pass through)
5	Diverter motor
6	Ejector motor
7	Interface/main motor
8	Sensor (bin full)

When the finisher is installed on top of the printer, the diverter plunger changes the position of the diverter below it. Since the diverter position of the printer below is opened, the printed paper will be rerouted. Instead of exiting the standard output bin, the media enters the staple finisher. The movement of the diverter plunger can be controlled by its diverter motor, depending on the printer's commands.

Note: The diverter motor controls the diverter below it. Another way of saying it is that the diverter is controlled by the diverter motor of the output option above it.

The main motor drives the rollers which move the media along the paper path. The sensor (pass through) detects if the media has entered the staple finisher.

Stapling process

Exit rollers move the media to the tamper where it will be prepared for stapling. Multiple pages can be stacked on the tamper before the document is stapled. The paddle drive motor rotates the paddle rollers for aligning the trailing edge of the pages. The paddle rollers align the trailing edges by pushing each page towards a wall. The left and right tampers compress to align the left and right edges of the document to be stapled. The document is then moved towards the stapler cartridge for stapling. A corner of the trailing edge is held by a paper clamping mechanism controlled by a solenoid. The other corner of the trailing edge is positioned on the stapler throat where it is stapled. When the staple job is done, the ejector motor drives the ejector belts which push the stapled document into the top of the output bin. Then the tampers move to release the document into the bin. The sensor (bin full) on the left and right side of the stapler detects if the media stacked on the bin is already full.

Acronyms

Acronyms

ASIC	Application-Specific Integrated Circuit
BLDC	Brushless DC Motor
BOR	Black Only Retract
C	Cyan
CCD	Charge Coupled Device
CCP	Carbonless Copy Paper
CRC	Cyclic Redundancy Check
CSU	Customer Setup
CTLS	Capacitance Toner Level Sensing
DIMM	Dual Inline Memory Module
DRAM	Dynamic Random Access Memory
EDO	Enhanced Data Out
EP	Electrophotographic Process
EPROM	Erasable Programmable Read-Only Memory
ESD	Electrostatic Discharge
FRU	Field Replaceable Unit
GB	Gigabyte
HCF	High-Capacity Feeder
HCIT	High-Capacity Input Tray
HCOF	High-Capacity Output Finisher
HVPS	High Voltage Power Supply
ITU	Image Transfer Unit
K	Black
LCD	Liquid Crystal Display
LDAP	Lightweight Directory Access Protocol
LED	Light-Emitting Diode
LVPS	Low Voltage Power Supply
M	Magenta
MB	Megabyte
MFP	Multifunction Printer
MPF	Multipurpose Feeder
MROM	Masked Read Only Memory

MS	Microswitch
NVM	Non-volatile Memory
NVRAM	Non-volatile Random Access Memory
OEM	Original Equipment Manufacturer
OPT	Optical Sensor
PC	Photoconductor
pel, pixel	Picture element
POR	Power-On Reset
POST	Power-On Self Test
PSD	Position Sensing Device
PWM	Pulse Width Modulation
RIP	Raster Imaging Processor
ROM	Read Only Memory
SDRAM	Synchronous Dual Random Access Memory
SIMM	Single Inline Memory Module
SRAM	Static Random Access Memory
TPS	Toner Patch Sensing
UPR	Used Parts Return
V ac	Volts alternating current
V dc	Volts direct current
VTB	Vacuum Transport Belt
Y	Yellow

Acronyms

Index

Symbols

[x]-page jam, clear manual feeder. [250] 118
[x]-page jam, lift front cover to remove cartridge. [200–201] 109
[x]-page jam, open tray [x]. [24x] 116, 117
[x]-page jam, open upper and lower rear door. [231–234] 113
[x]-page jam, open upper rear door. [202] 112
[x]-page jam, remove paper, open expander rear door. Leave paper in bin. [41y.xx] 119
[x]-page jam, remove paper, open finisher rear door. Leave paper in bin. [451] 122
[x]-page jam, remove paper, open mailbox rear door. Leave paper in bin. [43y.xx] 121
[x]-page jam, remove paper, open stapler door. Leave paper in bin. [455–457] 123
[x]-page jam, remove standard bin jam. [203] 113
[x]-page jam, remove tray 1 to clear duplex. [235–239] 115

A

acronyms 991
adjustments
  media aligner roller adjustment 449
  polygon printhead mechanical registration 450
available internal options 963
avoiding jams 51
avoiding paper jams 104

B

blank pages 67
buttons, printer control panel 393

C

card stock
  tips 53
cartridge cooling fan
  print theory 979
  removal 586
Cartridge low [88.xy] 263
Cartridge nearly low [88.xy] 263
Cartridge very low, [x] estimated pages remain [88.xy] 263
Cartridge, imaging unit mismatch [41.xy] 263
Change [paper source] to [custom string] load [orientation] 264

Change [paper source] to [custom type name] load [orientation] 264
Change [paper source] to [paper size] load [orientation] 264
Change [paper source] to [paper type] [paper size] load [orientation] 264
change history 35
Check tray [x] connection 264
cleaning
  exterior of the printer 875
  printhead mirror and glass 875
cleaning the machine 869
cleaning the printer 875
cleaning the printhead mirror and glass 875
Close door or insert cartridge 265
Close rear door 265
Complex page, some data may not have printed [39] 265
Configuration change, some held jobs were not restored [57] 265
configuration menu
  A5 loading 419
  action for prompts 417
  automatically display error screens 421
  clear supply usage history 420
  clearing custom status 421
  conserve energy 416
  disk encryption 418
  download emuls 415
  envelope prompts 416
  erase hard disk 422
  event log 413
  font sharpening 418
  jobs on disk 417
  key repeat initial delay 420
  key repeat rate 420
  LES applications 419
  menu settings page 413
  PPDS emulation 414
  print quality pages 413
  require standby 418
  reset roller kit counter 413
  restore settings 422
  roller kit counter value 412
  safe mode 415
  size sensing 414
  UI automation 419
  USB pnp 421

Index

Index

right frame pivot
  removal 542
right inner cover
  removal 478

S

safe mode 62
safety information 30
schedule for Inspection 869
scheduled maintenance
  fuser maintenance kits 872
SE menu 423
security reset jumper
  enabling 961
selecting paper 51
sensor (control panel door interlock)
  print theory 978
sensor (control panel interlock)
  removal 578
sensor (duplex cooling fan)
  print theory 979
sensor (duplex path)
  print theory 969
sensor (fuser exit)
  print theory 974
sensor (input)
  print theory 969
  removal 481
sensor (narrow media)
  print theory 974
sensor (pick roller position)
  print theory 967
sensor (rear door interlock)
  print theory 978
sensor (standard bin full)
  print theory 975
  removal 544
sensor (tray 1 media out)
  removal 562
sensor media size
  print theory 967
sensor rear door interlock
  removal 543
sensors
  print theory 977
sensors, print theory 965, 966
Serial port [x] disabled [56] 279
serial wrap test 397
service checks troubleshooting
  network service check 349
service engineer (SE) menu 423
  accessing 423

service manual conventions 35
shadow images appear on prints 0
side guide
  print theory 966
skew
  polygon printhead mechanical registration
    adjustment 450
Sleep button
  printer control panel 393
solid black pages 81
Some held jobs were not restored 279
specifications
  acoustics 960
  environment 960
  operating clearances 959
  options configurations 964
  physical 964
  power 959
  processor 961
standard bin cover
  removal 545
Standard network software error [54] 279
Standard USB port disabled [56] 279
Stop or Cancel button
  printer control panel 393
storing
  paper 51
streaked horizontal lines appear on prints 0
Supply needed to complete job 280
supported paper sizes 56
supported paper types 55
supported paper weights 55

T

tests
  finisher sensors 404
theory of operations
  high capacity output expander 986
  mailbox 987
  output expander 984
  staple finisher 988
thermistor
  print theory 974
tips
  card stock 53
  labels, paper 54
  on using envelopes 53
  on using letterhead 54
  transparencies 55
tips on using envelopes 53
tips on using letterhead 54

Part number index

P/N	Part name	Page
40X0269	Power cord LV, USA & Canada, Latin America	953
40X0270	Power cord 100 V, Japan	953
40X0271	Power cord HV, United Kingdom, Asian, Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam, Afghanistan, Bangladesh, Bhutan, India, Nepal, Pakistan, Sri Lanka, Tibet, & Hong Kong	953
40X0273	Power cord HV, Chile, Uruguay	953
40X0275	Power cord HV, Israel	953
40X0288	Power cord HV, Argentina	953
40X0301	Power cord HV, Australia & New Zealand	953
40X0303	Power cord HV PRC	953
40X0387	USB-A interface device	955
40X1592	Lexmark MarkNet N7020e (4 port USB) Ethernet 10BaseT/100BaseTX/1000BaseT	955
40X1593	Lexmark MarkNet N7000e (1 port USB) Ethernet 10Base/100BaseTX	955
40X1594	Lexmark MarkNet N7002e (1 port Parallel) Ethernet 10BaseT/100BaseTX	955
40X1766	Power cord HV, Bolivia & Peru	953
40X1772	Power cord HV, Switzerland	953
40X1773	Power cord HV, South Africa, Namibia, Lesotho, Botswana & Pakistan	953
40X1774	Power cord HV, Denmark, Finland, Norway, Sweden	953
40X1791	Power cord LV Taiwan	953
40X1792	Power cord HV, Korea	953
40X2000	HCOE top diverter spring	928
40X2000	Output expander diverter spring	920
40X3141	Power cord HV (Albania, Austria, Belgium, Bosnia, Brazil, Bulgaria, Catalan, Czech Republic, Croatia, Egypt, Finland, France, Germany, Greece, Hungary, Iceland, Indonesia, Iran, Italy, Jordan, Lebanon, Lithuania, Luxembourg, Macedonia, Montenegro, Netherlands, Norway, Paraguay, Poland, Portugal, Romania, Russia, Serbia, Saudi Arabia (HV), Slovakia, Slovenia, Spain, Sweden, Syria, Turkey, Ukraine, US (HV), African Countries)	953
40X4596	Power cord LV, Brazil PPB kits	953
40X4819	RS232C serial adapter	955
40X4823	Parallel 1284-B THCK adapter	955
40X4826	N8120 GIGABIT INA adapter	955
40X5315	SHIP-WITH ISP (2PER) screw	955
40X5316	14 PIN JST-FOR ISP cable	955

Part number index

1005

Part number index

Part number index

Part number index

Part number index

Part number index

Part number index

Part number index

Part number index

Part number index

Part number index

Part number index

Part number index

Part name index

Part name index

Part name index

Part name index

Part name index

Part name index

Part name index

Part name index

Part name index

Part name index

Part name index

Part name index

Part name index

Part name index

COOLING FAN

PRINTHEAD LASER CONTROL

PRINTER MIRROR MOTOR

PANEL USB CONNECTOR

STANDARD BIN FULL SENSOR

TOP OPTION INTERFACE CABLE

REAR DOOR INTERLOCK SENSOR

USB INTERFACE

NETWORK CABLE INTERFACE

USB CONTACT

DUPLEX DRIVE MOTOR

DUPLEX PATH SENSOR

DUPLEX COOLING FAN

IMAGING UNIT SMART CHIP CONTACT

LOWER OPTION INTERFACE CABLE

MEDIA SIZE SENSOR

MAIN MOTOR

CONTROL PANEL INTERLOCK

CONTROL PANEL BOARD

TONER CARTRIDGE COOLING FAN

HVPS

SPEAKER (IF EQUIPED)

TONER ADD MOTOR

CARTRIDGE SMART CHIP CONTACT

MPF PICK SOLENOID

MPF MEDIA PRESENT SENSOR

TEMPERATURE PROBE

IMAGE DENSITY SENSOR

MEDIA EMPTY SENSOR

PICK ROLLER POSITION SENSOR

PICK ROLLER MOTOR

INPUT SENSOR

FUSER EXIT SENSOR

NARROW MEDIA SENSOR

FUSER SMART CHIP

FUSER DRIVE MOTOR

TONER LEVEL CONTACT

UPPER REDRIVE MOTOR

For signal, voltage and ground information, click here.