A3 low/mid-speed Color MFP

TASKalfa **Iris**

A3 mid-speed BW MFP

TASKalfa **Iris mono**

For New A3 series

Enhancement units

- Service training materials – Ver 1.0

April 4, 2016

, Quality Assurance Department 4
Quality Assurance Division

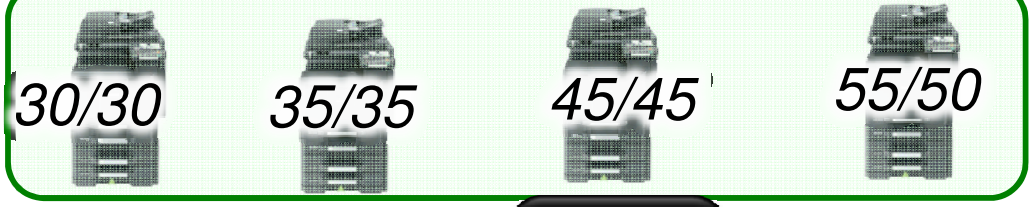
Engine Lineup

A3 mid-speed MFP lineup

Existing models

Jupiter

Venus



Gaia

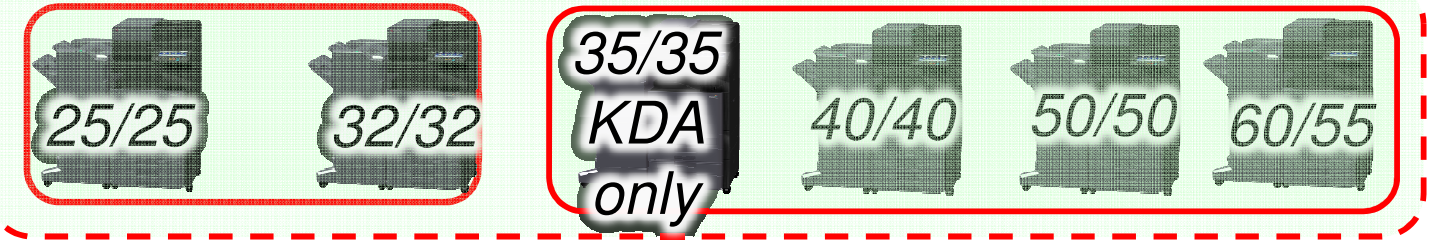
3 engine platforms

New platform

Low-end model

High-end model

Iris color

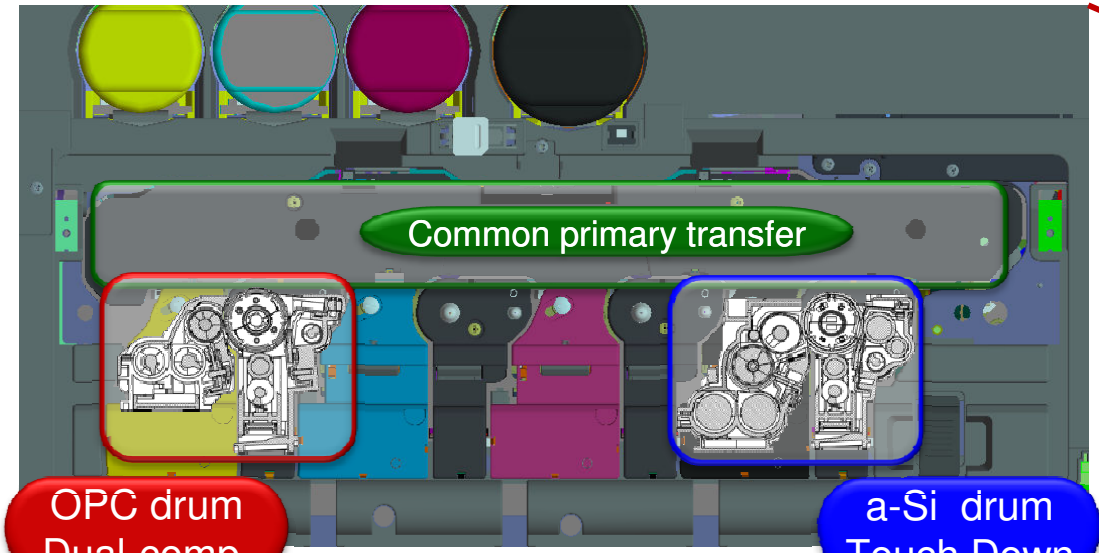


Iris mono

Deployed from color model
eliminating CMY related parts

Multi-engine design

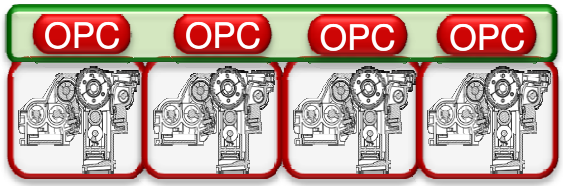
Multi-engine design



In Same Housing

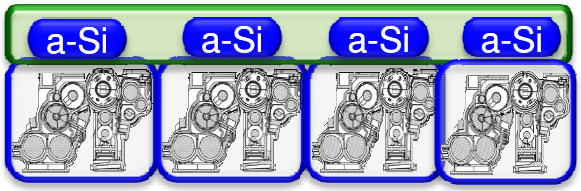
2 engines according to speed

Low-end



Low speed
Low print volume

High-end



High speed
High print volume

Main spec comparison (vs conventional

Spec Comparison

	Low-end model comparison			High-end model comparison	
Specification	Jupiter2 25/25	Venus2 30/30	Iris 25/25	Venus2 55/50	Iris 60/55
Print resolution	600dpi × 600dpi	600dpi × 600dpi	1200dpi × 1200dpi	600dpi × 600dpi	1200dpi × 1200dpi
Cassette size	A3-A5	A3-A5	Upper: A4R-A6 Lower: SRA3-A6	A3-A5	Upper: A4R-A6 Lower: SRA3-A6
Cassette weight	60-256g/m^2	60-256g/m^2	52-300g/m^2	60-256g/m^2	52-300g/m^2
Warm-up time (After power on)	30s	25s	18s	45s	17s
Recovery time (From sleep)	23s	23s	10s	45s	15s
First copy time	6.2s(BK) 8.2s(CL)	5.5s(BK) 7.3s(CL)	6.4s(BK) 8.5s(CL)	3.4s(BK) 4.7s(CL)	3.4s(BK) 4.4s(CL)
Output capacity	250	250	500	250	500
Storage	160GB	160GB	SSD-32GB HDD320GB（opt） *KDAstd(8GB)	160GB	SSD-8GB +HDD320GB（std）
TEC value	2040Wh	2820Wh	1130(120)/1140(230)Wh	5050Wh	3190(120)/3140(230)Wh
Operation panel	8.5inch	8.5inch	9inch	8.5inch	9inch

Free-stop tiltable touch panel: from upright to 75 degrees angle

Basic specifications

Model(color/mono speed)		Color 25/25	Color32/32	Color40/40	Color50/50	Color60/55	mono 40	mono 50	mono 60
Main Specifications		Copy / Print / Scanner (op FAX)					Copy / Print / Scanner (op FAX)		
CPU		Freescale QorIQ T1024 (Dual Core) 1.0GHz		Freescale QorIQ T1024 (Dual Core) 1.2GHz			Freescale QorIQ T1024 (Dual Core) 1.0GHz		
Memory		2GB(CPU),2GB(ASIC)					2GB(CPU),2GB(ASIC)		
WUT		18sec		17sec			17sec		
Recovery Time (from Sleep Mode)		10sec		15sec			15sec		
First Copy Time(BK/Color)		6.4s(BK) 8.5s(CL)	5.3s(BK) 7.0s(CL)	4.5s(BK) 5.9s(CL)	3.7s(BK) 4.8s(CL)	3.4s(BK) 4.4s(CL)	4.5s(BK)	3.7s(BK)	3.4s(BK)
Resolution		1200dpi×1200dpi					1200dpi×1200dpi		
Storage		SSD-32GB *KDA 8GB		SSD-8GB			SSD-8GB		
		HDD320GB(opt) *KDA(std)		+HDD320GB(std)			+HDD320GB(std)		
Energy Consumption (TEC) 120/230V		1130/1140 Wh	1600/1540Wh	2020/1950 Wh	2510/2500Wh	3190/3140 Wh	1890/1840Wh	2430/2410Wh	3060/3090Wh
Operation Panel		9inch					9inch		
Dimensions(W x D x H)		602 x 665 x 790 mm					602 x 665 x 790 mm		
Standard Paper Capacity		1150sheets					1150sheets		
Max Paper Capacity		7150sheets					7150sheets		
Cassette Paper Thickness		52-300gsm 52～300gsm (at Duplex 60～256 g/m2)					52-300gsm 52-300gsm 52～300gsm (at Duplex 60～256 g/m2)		
Cassette Paper Size		SRA3-A6					SRA3-A6		
Output Capacity		500sheets					500sheets		
Scan Speed (CIS Type DP)	Color/Mono simplex	80ipm(300dpi)		100ipm(300dpi)			100ipm(300dpi)		
	Color/Mono Dual	160ipm(300dpi)		180ipm(300dpi)			180ipm(300dpi)		
Toner Yield		BK: 20K Color: 12K	BK: 25K Color: 15K	BK: 30K, Color: 20K BK: 25K ,Color: 15K(for KDA 35/40)			35K		
Drum Yield		BK: 200K Color: 200K		BK: 600K Color: 600K			600K		

Newly implemented technology

New controller/ASIC

New ASIC
①Real 1200dpi
②Energy saver network proxy (standby) response system

Tube-type toner container

Toner supply with revolving toner container (agitating spiral removed)

New toner

①Energy saver(low melting point)

Eject

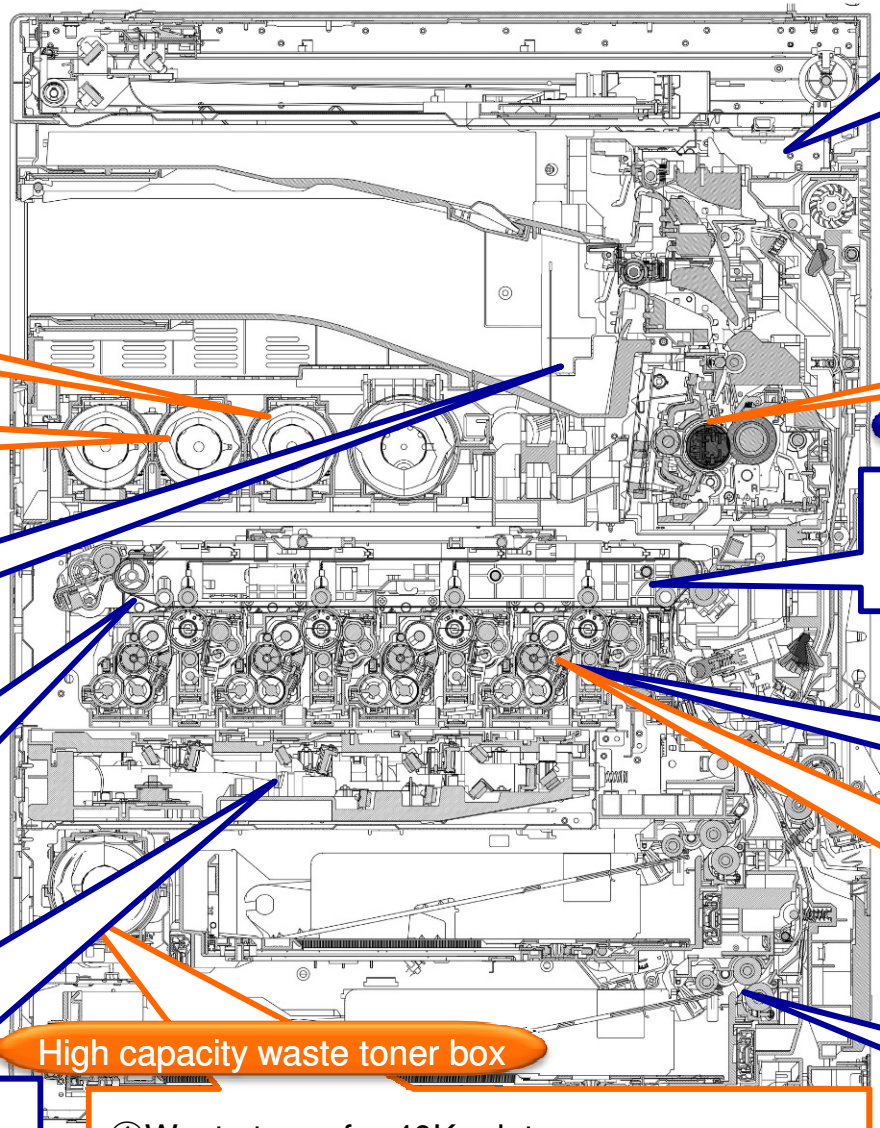
Paper visibility (widened space)
①500-sheet output
②Inner DF (option)

Primary transfer belt cleaning

Cleaning efficiency improved
①Cleaning bias + pre-brush

New LSU

①1200dpi LSU
②Single polygon motor (low noise)



High capacity waste toner box

①Waste toner for 40K prints
②Reuse of black toner container when empty

One-time jam removal

Easily opened cover for jam clearance
→ Easy jam paper recognition

Sliding IH fuser

①Energy saver:
fuser standby in 10s or less
②Long life of 600K

Primary transfer belt drive

Small diameter drive roller
①Curvature separation improved
(52g thin paper feeding)

Touch-down DV **High**

a-Si drum + touch-down developing system

Dual component Dvt **Low**

OPC + dual component developing system

Auto loading cassette

Cassette equipped with damper for auto loading

Quality Improvement Points

Quality Improvement Points

*Details explained in each related chapter

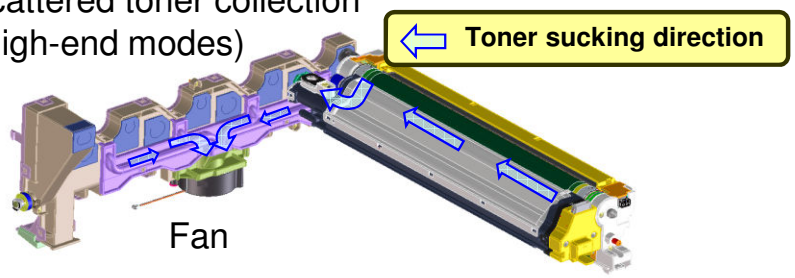
◆New implementation & quality improvement
①Toner contamination reduced
- Toner supply/waste toner collection located machine rear side
- Sucking fan collecting scattered toner from both ends of developer sleeve roller (High-end models only)

②Jam reduced/Jam clearance improvement
- Clutch conveying: Disused stepping motor (no jam by motor step-out)
- Paper creases reduced
- Removal cassette → Paper behind cassette is removable
- All-in-one right conveying cover: One-time jam clearance

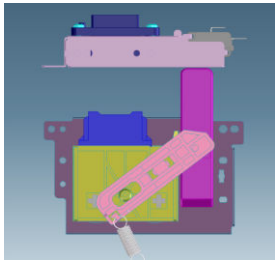
◆Setup improvement
- Slot-in reversing DP install
- AK, inner DF install(All-in-one unit)
- PF install (One-touch joint with main unit)
- DF install (Front access)

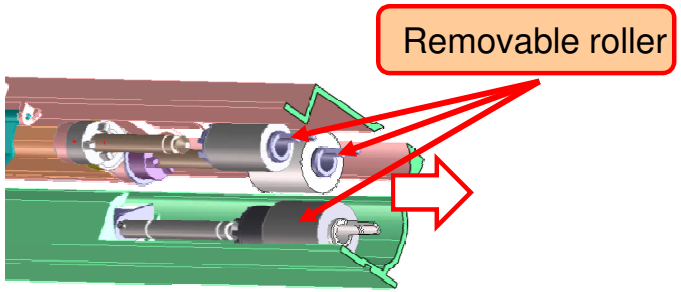
◆Maintenanceability improvement
- Feed: Front access primary feed
  One-touch removal secondary transfer roller
- Imaging: Front access primary transfer unit
  Drum/developer removable in any order
- Fusing: Unit release lever for removal
- Housing: Rear cover removal (reduced screws)
- Elec. parts: Easy access PWB, reduced wiring

Scattered toner collection
(High-end modes)



PF install lever





Newly implemented item

☐Print resolution

- Real 1200dpi with full-speed process
- Data process: Real 1200dpi: 1200dpi × 1200dpi →1200dpi × 1200dpi
- Simulated1200dpi : 600dpi × 600dpi →1200dpi × 1200dpi(converted)

☐New paper size

- SRA3 (320mm × 450mm) *Driver selection for PC output
- Cassette: ①A6R/envelop ②Duplex custom size

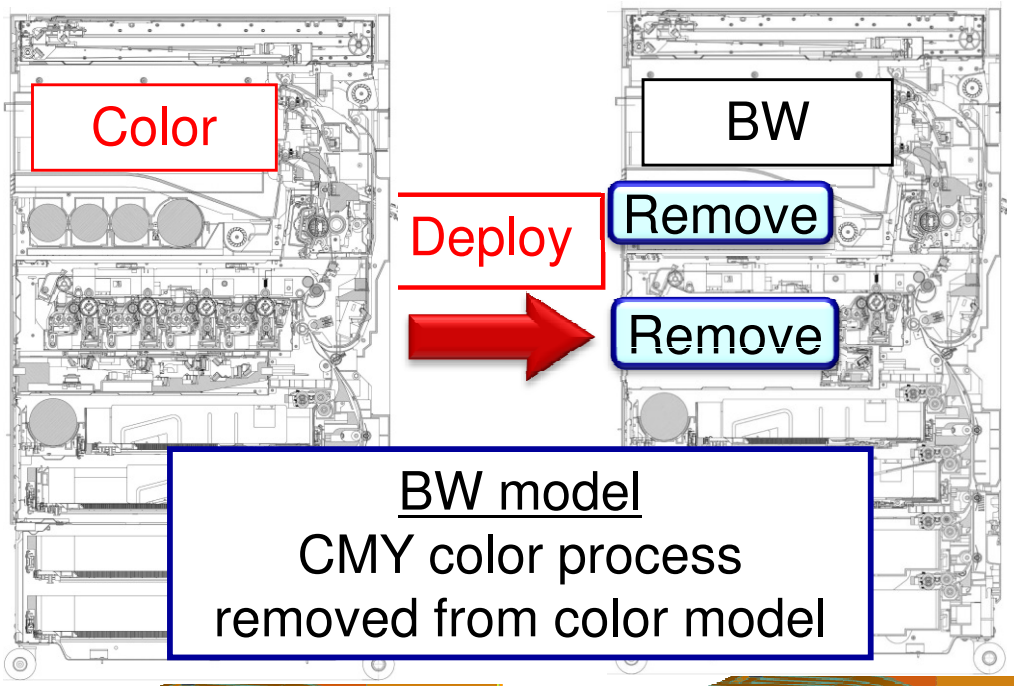
☐Compact operation pane;

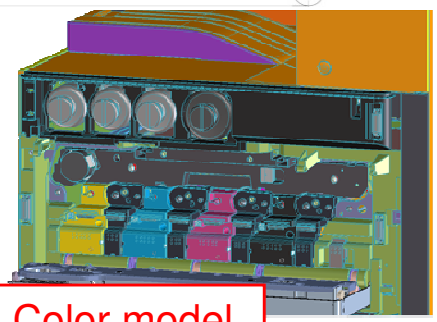
- Software numeric keys and simplified operation panel
  → Remove hardware keys (numeric/power/energy saver/color mode/FAX)
- Hardware function keys setting → Allocated to hardware keys (3)
- Power Off mode: Panel → by front side push switch to power off
- Option language selection → extended from 14 to 27 (select by maintenance mode)

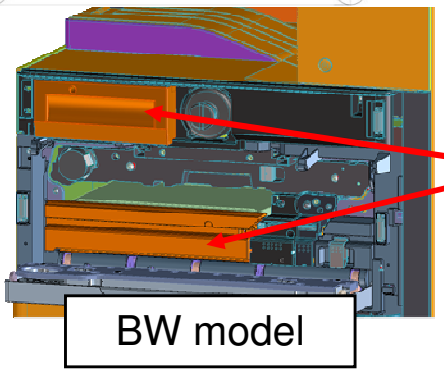
BW model configuration

Color model deployed to BW

Color model based BW model







Cover dedicate to BW model

Develop BW model basedon color model

- Common parts with color model (BK DV/DK, FK, TR)
- Deploy latest color model spec to BW
- Common maintenance procedures with color model

Remarks: Parts dedicate to BW

①LSU: removed CMY mirror/LD

②HVT, Engine PWB: Remove the color related HVT and control part.

③1st transfer unit: Unit removed the transfer roller for CMY.

④Main drive unit: Unit removed dev/drum/1st transfer drive part.

1-2.
Operation Panel Change

New operation: software keys

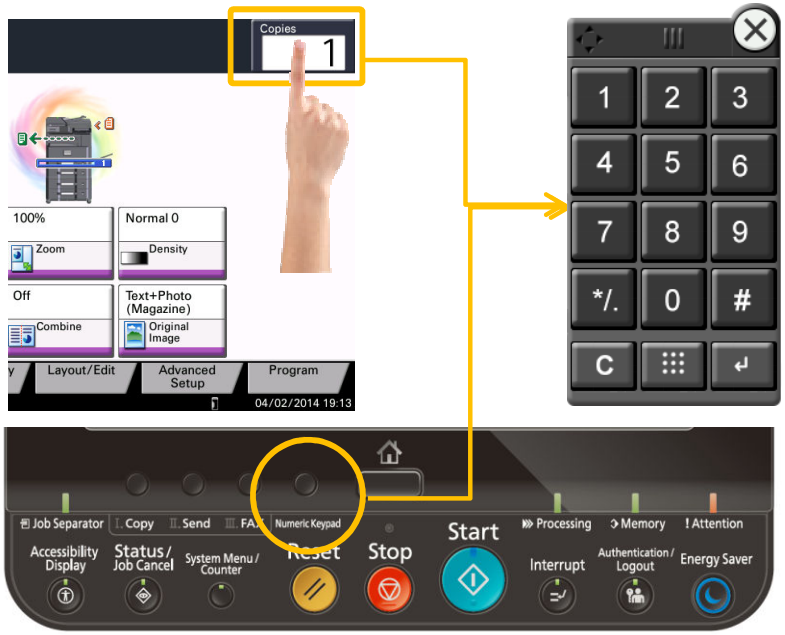
Software numeric keys

○Panel operation

Job settings are available from touch panel with software numeric keys
Press numeric keys on the operation panel or numeric display area to show numeric keys

○Optional hardware numeric keys

Numeric keyboard is prepared as an option

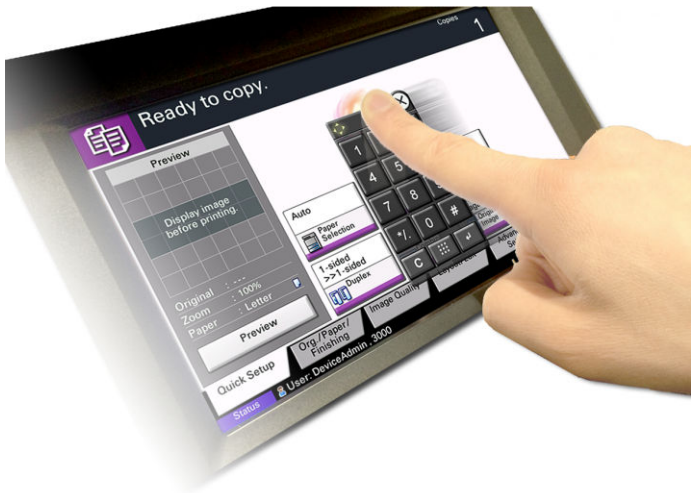


テンキーボードキー (“Numeric keypad” key)

Software key operability

○Consideration not to bother the display in operation

In case the numeric keys may cover input screen, numeric keys can be moved by dragging it.
(Zooming is not available)



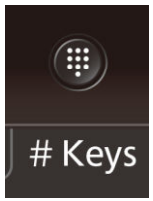
New operation: software keys

○Simultaneous display of numeric keys for COPY/FAX

- Setting is available to show numeric keys upon opening COPY screen. (System Menu → Common Setting → Numeri Key)　(For the case to often input number of copies at once)
- Numeric keys appears on FAX screen from the beginning.

○Optional numeric keypad

Install the optional numeric keypad and panel operation is available with hardware keys like the existing models.

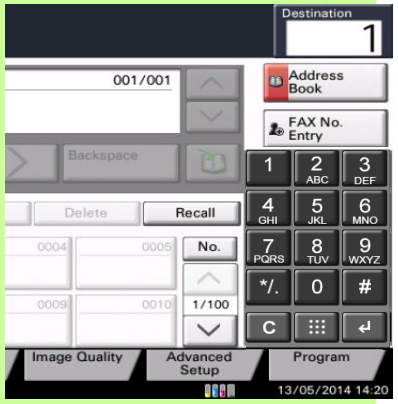


"Call Ten keypad Hardware key"

Software Numeric Keypad

Optional hardware numeric keypad

FAX TOP screen



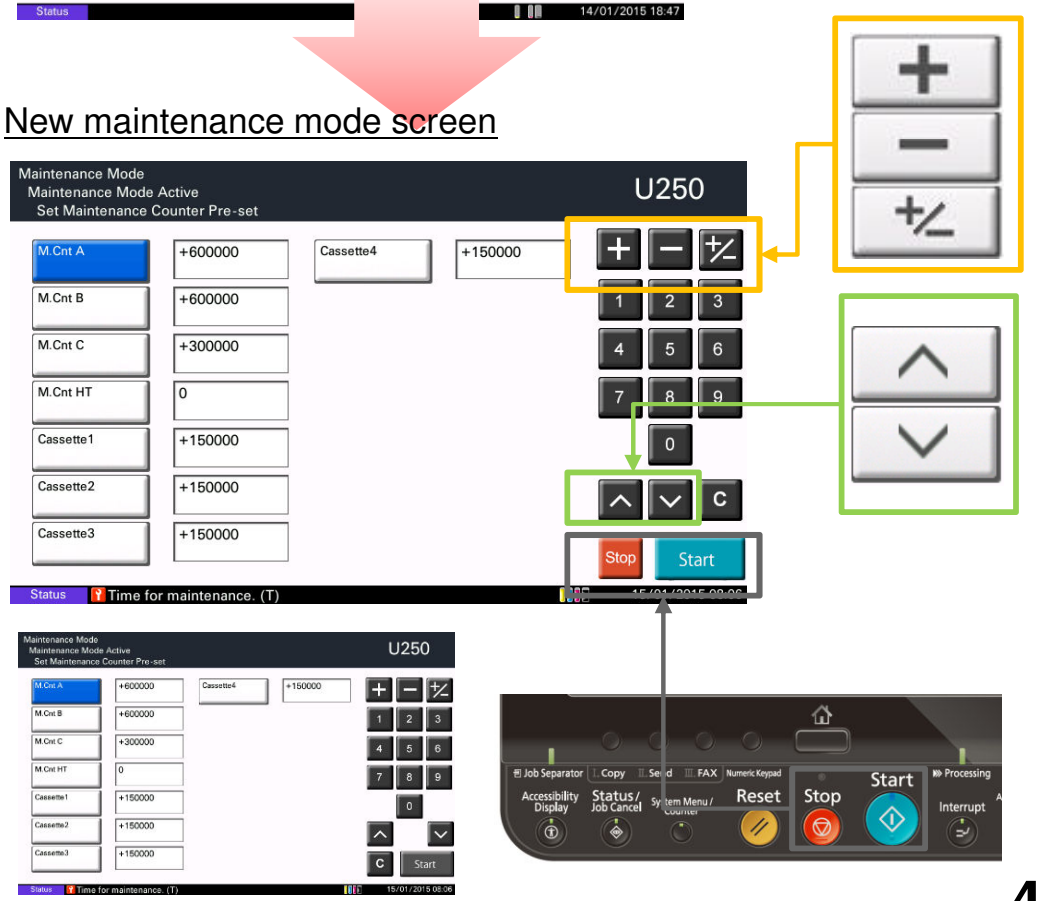
New function: Software numeric keys

Changed in maintenance mode

○Press numeric button or numeric screen to display numeric keys and enter into maintenance mode

Existing maintenance mode screen

New maintenance mode screen



Software numeric keys and software buttons of [Back] and [Execute] in the maintenance mode can operate all there (Stop/Start)

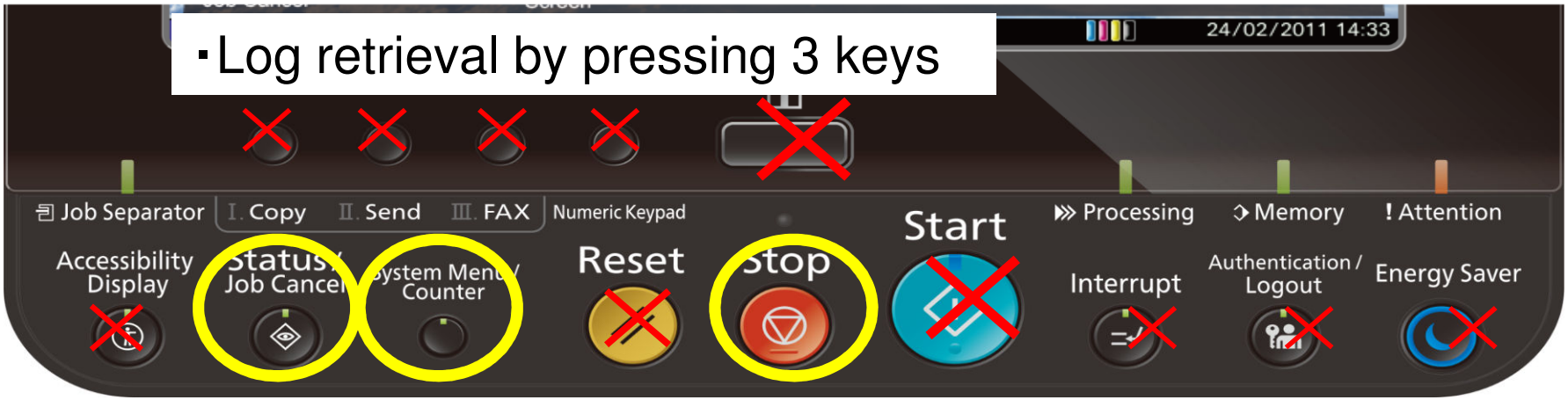
(When installing the optional hardware numeric keypad, this software numeric key still appears)

Retrieving Logs in Field

Change of filed log retrieval method

Conventional: press 4 keys (*,8,6,clear) simultaneously for 3 to 6s.
New: press 3 keys below simultaneously

Status/Job Cancel + System Menu/Counter + Stop



*During storing the Log, the “Memory” LED blinks, after completion, LED lights on (presently lights off) .

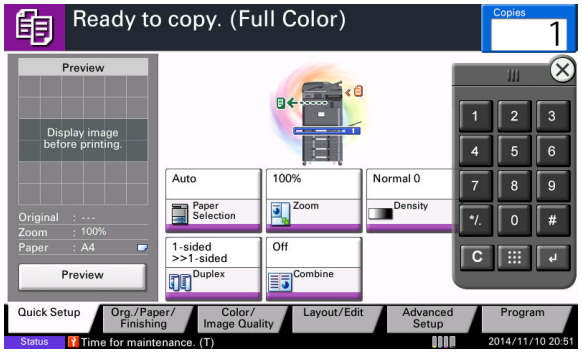
Log collection to the USB memory (about 3 mins)

Execute U964. during the log collection to the USB memory, the “Memory” LED blinks and after completion, LED lights on.

U201 Touch panel position adjustment

If touch panel press position shifts, U201 can be directly accessed without entering maintenance mode to adjust the position.

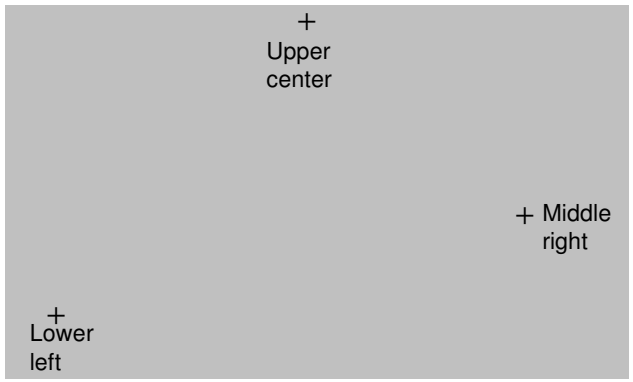
If software numeric keys are not effected because of touch panel position shift and maintenance mode cannot be accessed, execute U201 as follows.



<Step>

1. Touch panel adjustment screen appears by pressing multiple keys simultaneously as below.

   Press Home + Stop + Reset key for 3 sec.



2. Execute U201 Initializing the touch panel by using something fine-tipped.
   Select [Check] and press [Start] key.
3. Apply the tip to the intersections of 2 lines at 3 points on the operation panel
   *[+] number indicated : ±6
4. After completing the adjustment, turn the power off and on.
   ・When complete → Completed is indicated and power is turned off and on after executing U201.

From Hardware key to Software key

Change the hard keys to software keys as below.

	Hard Key	Conventional		New
①	**10 Key**	Hard key	▶	Software Key
①	**Clear**	Hard key	▶	Software Key
①	**Quick No. Search**	Hard key	▶	Software Key
①	**Enter**	Hard key	▶	Software Key
②	**Copy**	Hard key	▶	Flexible key(*)
②	**Send**	Hard key	▶	
②	**FAX**	Hard key	▶	
③	**Help**	Hard key	▶	Software Key
④	**Counter**	Hard key	▶	Software Key
⑤	**Black & White**	Hard key	▶	Software Key
⑤	**Color**	Hard key	▶	Software Key
⑤	**Full Color**	Hard key	▶	Software Key

Flexible key

Current Models

New Models

- ✓ Conventional: Function is selected with function switching key.
- ✓ New: Function is registered in the flexible keys and programs and HyPAS applications can be started up from the flexible keys

  HyPAS application starts up → Jobs set at each function is reset when starting up other function from the flexible keys.

- Flexible key is to register and start up functions such as COPY and SEND
- When changing the register contents, adhesive the blank label bundled with machine to the panel and write the newly registered name.

  (Up to 3) (Initial setting:①COPY ②SEND ③FAX)

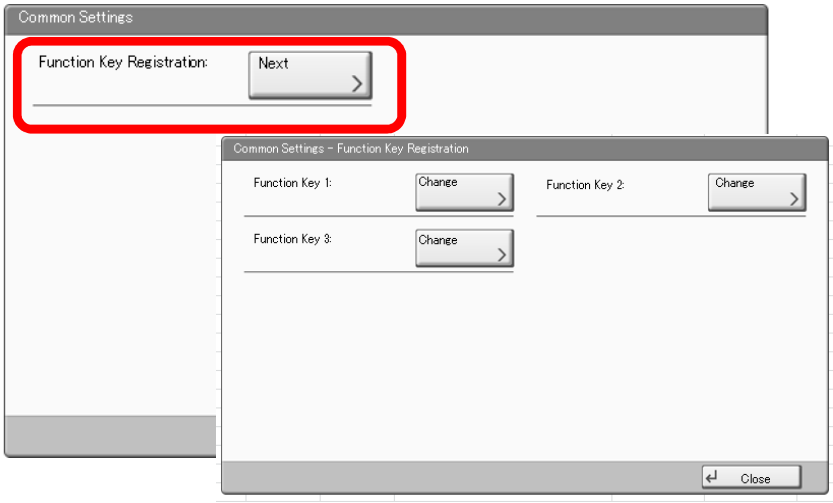
Flexible key

System Menu → Common Settings: Change from the initial functions is available at function key registration (Function key 1,2,3)

<Register Function key 1,2,3　Select items in [List] below>

COPY　*initial setting
SEND　*initial setting
FAX　*when FAX installed　*initial setting
Custom Box
Job Box
Removable Memory
FAX BOX　*when FAX installed

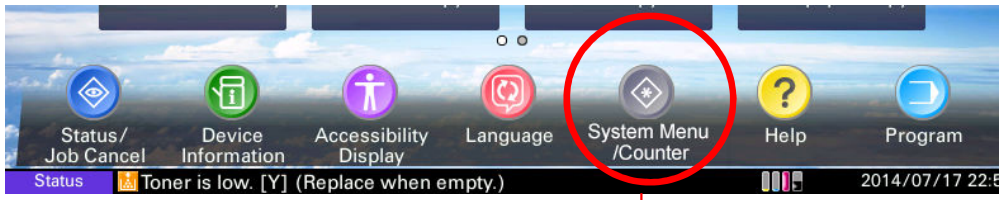
Program or Application register name
Internet Browser　*when it set to on
My Print
Send to me (mail) * when authenticated
Send to me (folder)*when using KNM
Send to Box (mail) *when authenticated
Send from Box (folder)* when using KNM
Fiery * when Print System installed

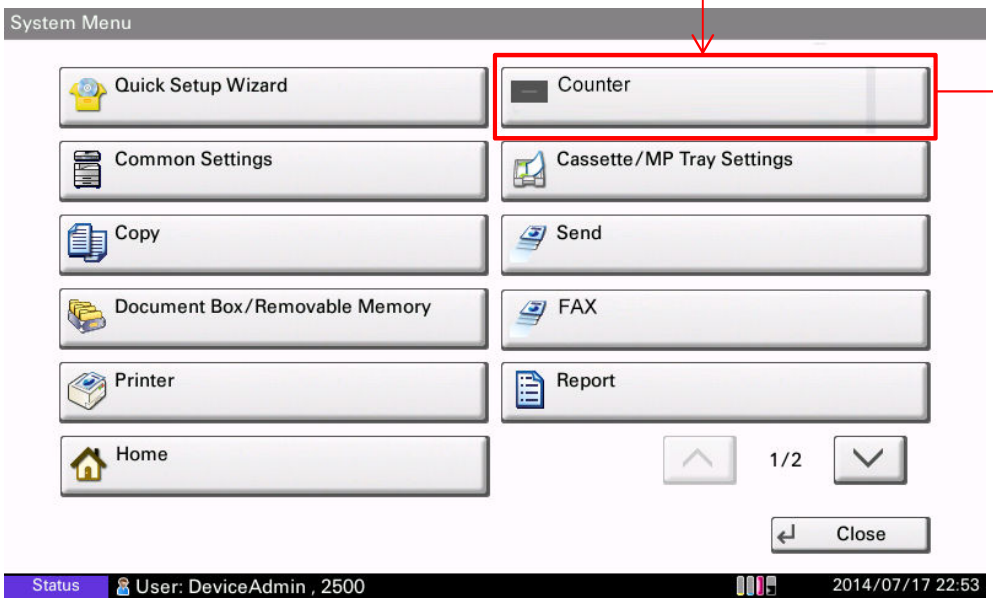


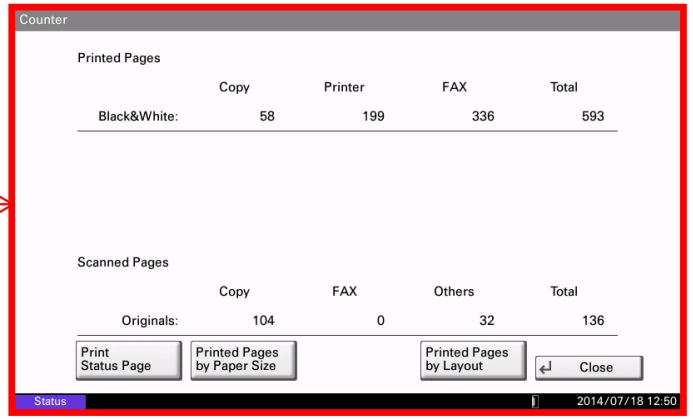
Counter Function

Hard Key	Alphard2		New
Counter	Hard Key	▶	Software key

Counter function is placed in a system menu (Upper right highest) Counters incorporated in System Menu







1-3.
Option Configuration

Enhancement units & options

Common enhancement units

DSDP DP-7110

RADP DP-7100

RADP DP-7120

PLATEN TYPE (E)

* 25/32 Only

Mailbox 100 x 7
MT-730（B）

Booklet
BF-730

Punch
PH-7

4000枚 DF
DF-7110

1000枚 DF
DF-7120

Job Separator
JS-7100
*KDA 25ppm standard

AK
AK-7100

Inner DF
DF-7100

Inner Punch
PH-7100/7110
7120/7130

A4 3000 PF
PF-7120

500x2 PF
PF-7100

1500x2 PF
PF-7110

Activation by license

Data Security Kit (E)
Data Security Kit (F)*KDA

UG-33

UG-34

Internet FAX Kit (A)

Scan extension kit(A)

Document tray DT-730（B）

Card reader (Local source)

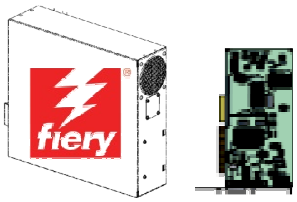
Common with High speed model

Common with new mono model

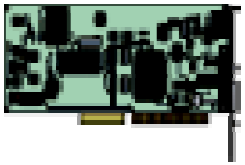
Dedicate

Optional item

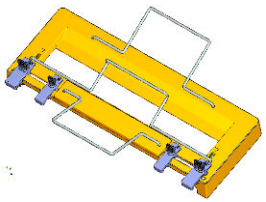
Changed option



Printing System (15) &
Printing System interface Kit (15)
*Interface kit PWB change for 1200dpi



FAX System (12)
*No FAX DIMM

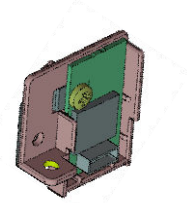


Banner Guide（B）
*SRA3 size support

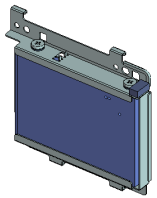
USB keyboard holder 10

New option

Hardware numeric key
NK-7100
NK-7110 (for KDA, number with alphabet)



IB-35 WLAN/Wi-Fi direct
*KDA standard



HD-12(320GB) (Low-end model) *KDA standard

Install optional HD-12 on condition below when activating Data Security Kit.
1. Security authentication IEEE2600 for HDD storage data is required
2.SSD life concerned storage data is overwritten

Enhancement units

Type	Description	Model	Base model
DP	DP(Reversing)	DP-7100	New
	DP(Simultaneous)	DP-7110	DP-772 based
	DP(Reversing)	DP-7120	DP-773 based *Low-end model only
DF	4K	DF-7110	DF-790 based
	1K	DF-7120	DF-770 based
	Punch (for 1K,4K DF)	PH-7	Common with existing model
	Booklet	BF-730	
	Mailbox	MT-730(B)	
	Inner DF	DF-7100	New inner install
	Inner punch	PH-71**	New installed in DF-7100
AK	Attachment	AK-7100	New For DF-7110/7120, inner install
JS	Job separator	JS-7100	New inner install *KDA 25ppm standard
PF	500x2	PF-7100	New
	1500x2	PF-7110	New
	3000side deck	PF-7120	New

DF Enhancement unit

★Finisher option

DF-7100(Inner DF)

DF-7120(1K DF) + AK-7100

DF-7110(4K DF) + AK-7100

Supplement:

*DF-7100: Staple standard, New punch unit option

PH-7100(inch) : 2-hole/3-hole

PH-7110(Japan) : 2-hole

PH-7120(metric) : 2-hole/4-hole

PH-7130(Sweden) : 4-hole

*For DF-7110/DF-7120 installation, AK-7100(Attachment Kit) required

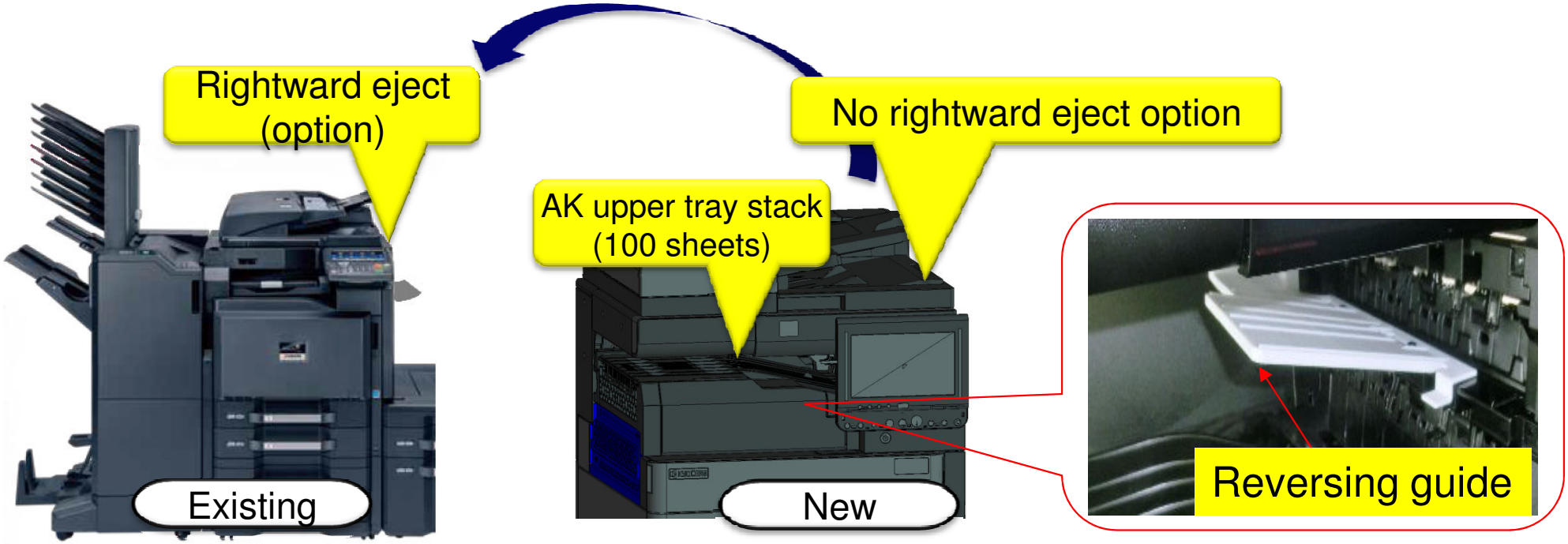
*DF-7110 /DF-7120 : Staple standard, Punch unit option

PH-7A(inch) : 2-hole/3-hole, PH-7B(Japan) : 2-hole

PH-7C(metric) : 2-hole/4-hole,

PH-7D(Sweden) : 4-hole

Eject Change



① <u>Support substituting rightward eject</u>
 ①Paper ejected on AK: 100 sheets stack (80g/m2)
 ②Unable to stack A3, 11x17 on AK
  *AK upper tray conveying distance 420mm (11X17 431.8mm)

② <u>Disused DF C tray (AK conveying path change</u>
 ①DF B tray eject when printing banner paper

③ <u>Inner reversing guide* standard at upper eject section</u>
 Guide for reversing A3 duplex, index paper eject

1-4.
Unit compatibility

Correction History

2016 6 24 ver1.2

P5 Primary transfer unit replacement precaution

For the upper model, the toner seal parts are added to prevent the toner from scattering into the front side of paper conveying section,.

P6 Primary transfer unit identification is added.

The unit to be installed at the model can be identified by top three digit number on the unit serial.

Low-end/High-end model Unit Compatibility

Color Model

Unit	For low-end model	For high-end model

Monochrome Model

Module Map

Item	Color – Low-end	Color – High-end	BW model
Drum	OPC 30mm diameter	a-Si 30mm diameter	
MC roller	OPC drum type	A-Si drum type	
Developer	Dual-component	Touch-down	
Primary transfer	Rubber belt + fur brush cleaning (CMYK) without toner seal	←with toner seal	← (BK only)
Fuser	Sliding IH fuser press roller 30mm diameter	Sliding IH fuser press roller 35mm diameter	
IH fuser	No Magnetic shielding plate by size, No center core	Magnetic shielding plate by size Center core equipped	
LSU	1 polygon motor + 2beam	1 polygon motor + 4beam (CMYK)	← (BK only)
Cassette 1	Common cassette supporting up to Legal size		
Cassette 2	Common cassette supporting up to SRA3 (Common PF: 500/550x2)		
Primary feed	Common for all cassettes *except 1500x2/3K PF, Feed roller 3 pcs		
Feed	Common paper conveying path		
2nd transfer	Common		
Container	Tube-type toner container BK, CMY toner/carrier filled CASS support		

Caution when installing the 1st transfer unit (upper model)

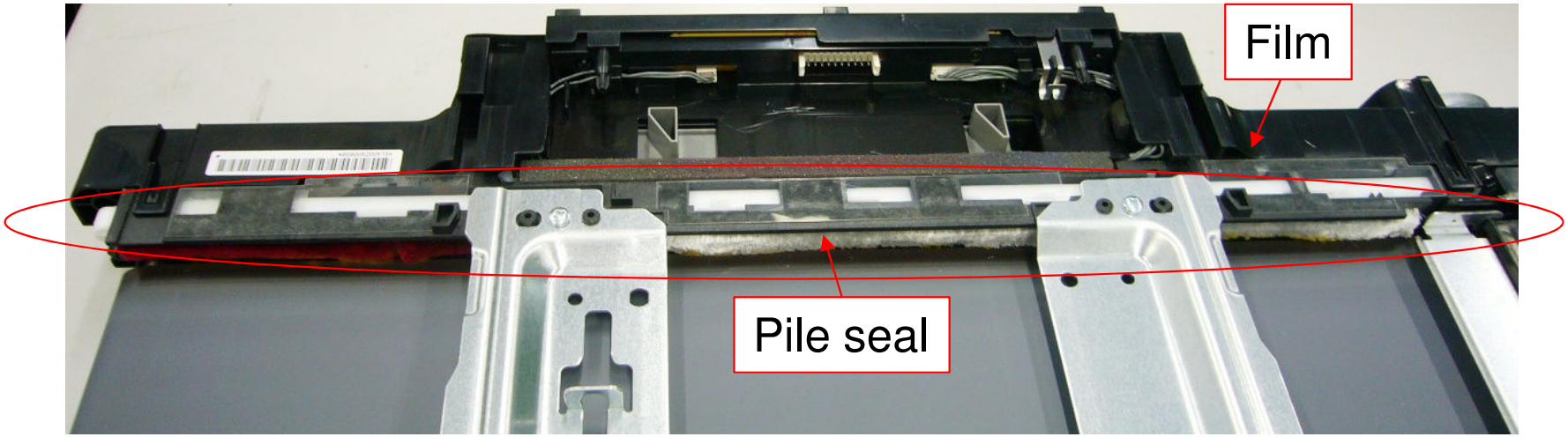
<Installation precaution: measure for toner scattering >(Upper model)

Below seal materials are added at the front side of 1st transfer unit for upper model to prevent the toner from scattering to the paper conveying unit.

1. Prevent the toner from upper surface: Add the films
2. Prevent the toner from front side of belt unit: Add the pile materials

Do not install the 1st transfer unit detaching from the color lower model to install at the color upper model.

* The RPS supply transfer unit are all for upper model including MK kit,

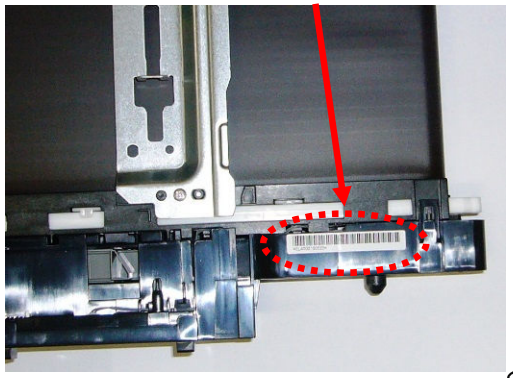


Model identifying for the 1st transfer unit

The model to be installed for the 1st transfer unit can be identified at the top three digit number on the unit serial number and the unit without no seal should not be installed at the color high model.

Model	Unit	
	Machine (Initial)	RPS / MK-Kit
Color Low	color without toner sheets	color with toner sheets
Color High	color with toner sheets	color with toner sheet s
Mono	mono with toner sheets	mono with toner sheets
Do not install "color without toner sheet" unit to the color high model.		

Unit serial for identifying



Top 3 digit of unit serial	Model	Name	RPS item code
E L 4	Color Low	TR-8550	NA
E M Z	Mono	TR-6500	302NK93030
F 4 W	Color high	TR-8550	302ND93150

For color low model

For mono model

For color high model

Module Map

Item	Installation Precaution
Drum MC roller	If wrongly install the one for OPC and another for a-Si drum, the image failure such a background, burr occurs after usage
Fuser unit	If wrongly install the unit for one for upper and another for lower model, C6410 unit uninstall error occurs.
1st feed unit	The 1st feed unit for 1500sheets x 2 PF and 3000sheets PF can not be installed at the other 1st feed units.

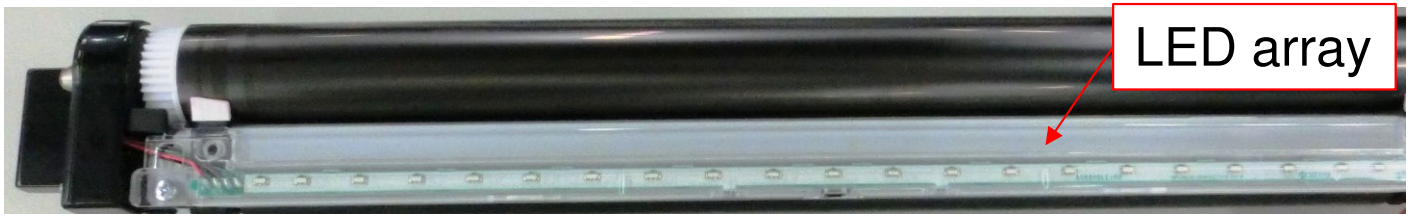
Change from existing models

Unit	Change
Drum (OPC) low-end	Side light (LED) erase, MC spiral sponge cleaner
Drum (a-Si) high-end	Low friction surface drum, MC spiral sponge cleaner
Developer (Dual-comp) low-end	Magnet roller (magnetic brush) directly contacts drum
Developer (Touch-down) high-end	Sleeve roller (toner) contacts drum
Primary transfer	Drive motor: Main unit drive unit Primary transfer roller : 3-color release →4-color release
IH fuser	Uniaxial roller fusing→ Sliding pad fusing
LSU	4-color individual LSU→ All-in-one LSU (Polygon motor:4pcs → 1pc) LD: 600dpi → 1200dpi, 2beams → 4beams (high-end)
Cassette	Loadable size: SRA3(lower), Duplex support for A6R, envelope and custom size, one hand handling of width stopper

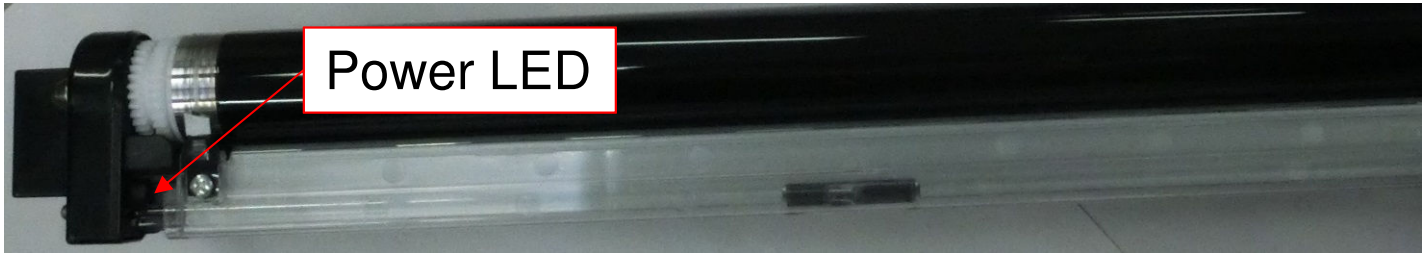
Drum unit High-end/Low-end Difference

Drum unit	Low-end model	High-end model
Life	200K	600K
Drum	OPC	a-Si
MC roller	For OPC	For a-Si
Eraser	Side light power LED(1pc) + light guide plate	LED array

a-Si Drum unit (High-end model)



OPC Drum unit (Low-end model)



Developer unit High-end/Low-end Difference

<Developer unit High-end/Low-end Difference>

Low-end: Dual component, No vibration motor

Developer roller surface material: Aluminum (no Alumite finish)

Developer roller diameter: 16mm

*After installing the developer unit and close the inner cover, it moves to contact the drum unit.

High-end: Touch-down development, Vibration motor equipped

Developer roller coat material: Urethane + Carbon + Titania

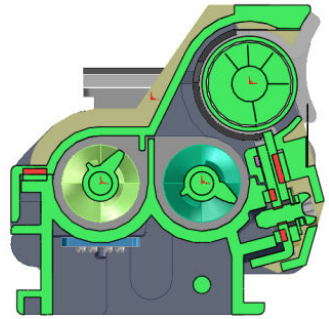
Leak protection: Coating resistance increased, Titania mixed for charge suppression

Developer roller diameter: 20mm

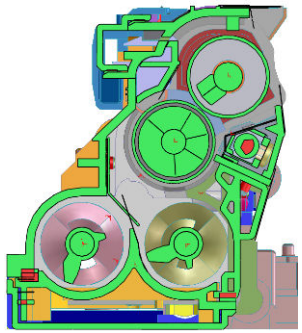
Toner collection duct (Upper part of developer)

* After installing the developer unit, press the button to make the developer sleeve roller contacts the drum.

DLP



Dual component developing

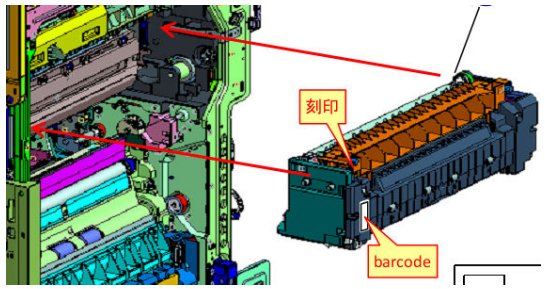


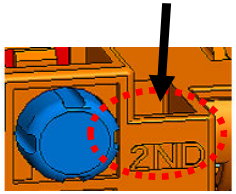
Touch-down development

Fuser unit High-end/Low-end Difference

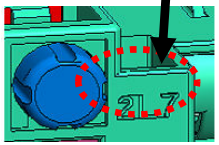
Fuser	High-end	Low-end	Remarks
Ni electrocasting belt	30mm		Minimum diameter to compose inner belt parts
Press roller	35mm	30mm	Securing necessary nipping width with press pad as flat as possible
Elastic material	Si rubber		
Press pad	Press pad		Securing necessary nipping width

<Distinction by engraving>

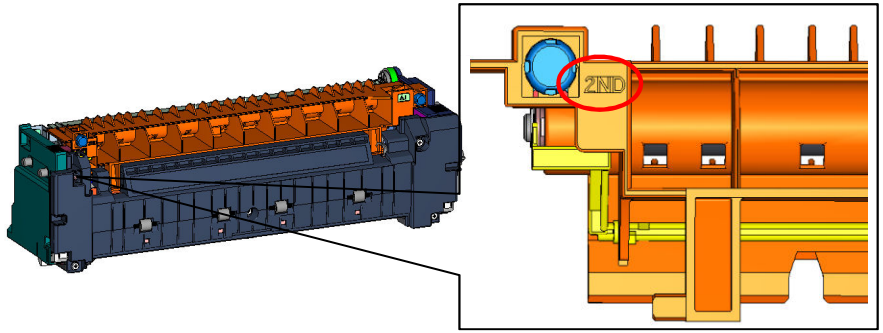




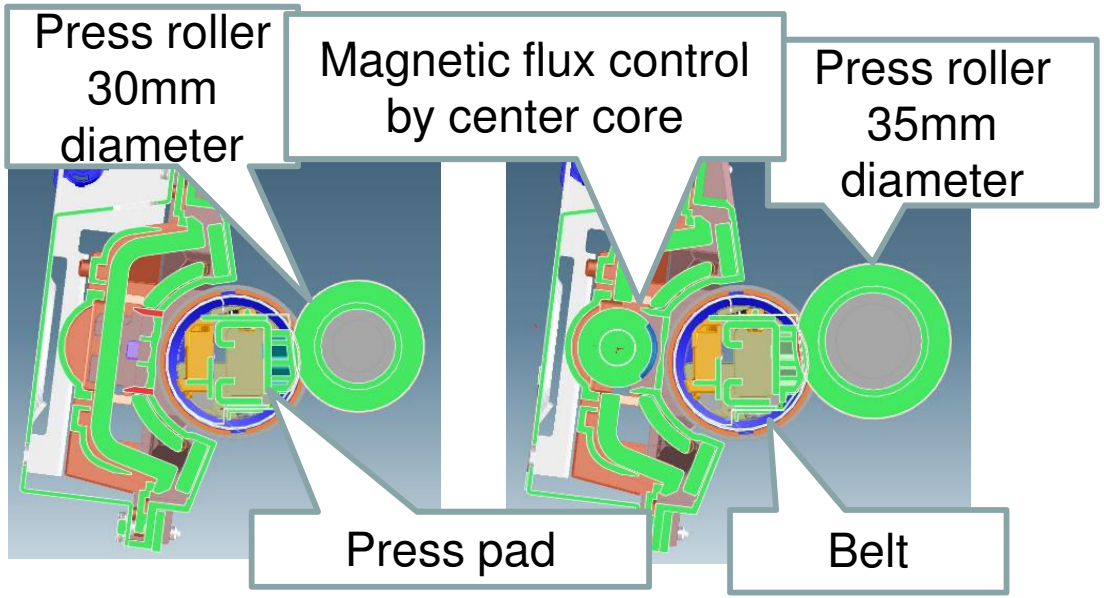
High
2ND



Low
2L7



Sliding IH fusing method



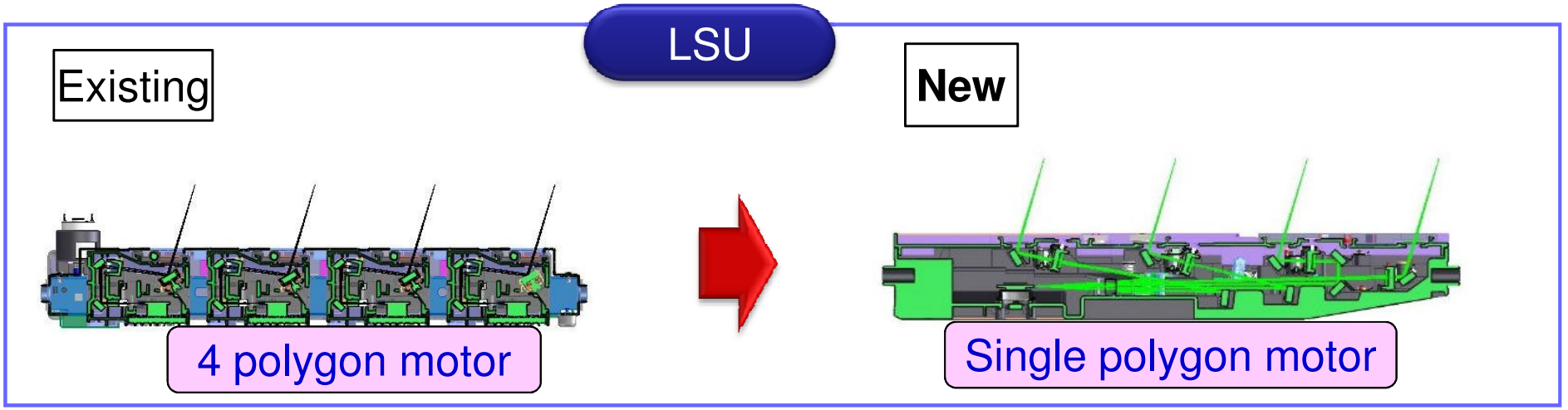
Low-end

High-end

LSU High-end/Low-end Difference

<LSU difference>

LSU: <High-end>, <Low-end>, <BW>



LSU	Color – Low-end	Color – High-end	BW model
APC PWB	LD for OPC drum	LD for a-Si drum	LD for a-Si drum
Number of PWB connectors	1pc	2pcs	1pc
LD 1200dpi	2beamx4 (CMYK)	4beamx4 (CMYK)	4beamx1 (BK)

EP Process Spec Difference

Process	Content	Item	Color – low-end	Color – high-end	BW model
Toner	Toner supply	Toner container motor	BK supply CW,	All color CCW	BK supply CCW
Develop	Developing method	Type	Dual-comp.	Touch-down	
	Developer bias	Developer bias	2 for BK and Color	4 for M,C,Y,K	K only
		Developer bias	DC	DC/AC	
			Single Bias	Dual Bias	
		Calibration (DV bias correction)	Vdc	ΔV (Difference between DV sleeve bias and Mag roller bias)	
	AC calibration	Bias leak	N/A	Applied	
	Vibration motor	Toner collection	N/A	Applied	
	Mag roller reverse drive	Toner collection	Applied		
Toner refresh	Toner applying control	Toner refresh threshold coverage (%)	1%	2%	
Drum	Drum/MC roller	Type	OPC	a-Si	
	Main charge control	MC method	DC	AC + DC	
		MC bias level	2 for BK, Color	4 for M,C,Y,BK	K only
	Drum refresh	Environmental table	Inside temp/humid Drum drive length	Inside temp/humid	
		Type	White streak/ Simple/Normal	Normal/Short/Long/from Sleep	
LSU	LD lighting	LD beam	2beams x4	4beams x4	4beams x1
		Half speed	2beams		
	Density correction	U119 (Drum class)	N/A	○	

2-2-1-1. Set Up Main unit

Correction History

2016 5 10 Ver 1.1

P7, <Common Settings – Paper set confirmation>

"original/paper setting" is added as follow

Common setting>original/paper setting>paper set confirmation

P21 Additional Setup Procedures depending on installation environment

High-end model: Standards for KDJ/KDAS/KDKR/KDCN/KDAU/KDTW

→ High-end / Monochrome model: All destinations are standards

2016 6 24 Ver 1.2

P15 Toner container Setting

Following sentence is deleted since improvement is made.

If the lock is not released when opening the front cover after selecting the above, press the lock cover by finger to push into the toner container and then the lock is released.

P31 MAC Address, Option Serial No. Indication

MAC address indication is added.

2016 8 26 Ver 1.3

P15 Toner container Setting Adding the following sentence.

Even if the toner container cover open operation (toner replace) is performed, no cover is opened during power off, machine's driving, displaying preparing printer.

P4 3. Load paper The following sentence is added.

Note: When the cassette error is displayed, please pull and insert not only the cassette also the 1st paper feed unit.

2016 10 11 Ver 1.4

P19 Setup Procedures 6) U928 → U927

P29 Note when Transporting Machine

Add the following message. Execute U002 factory setting.

Delete following message Toner cover lock release method

Setup Procedures

1. Note when installing the enhancement unit and option unit

   ①When not installing AK for DF and Inner DF

   Attach the eject tray in the inner eejct section

   ②When not installing PF

   Attach the lower right cover

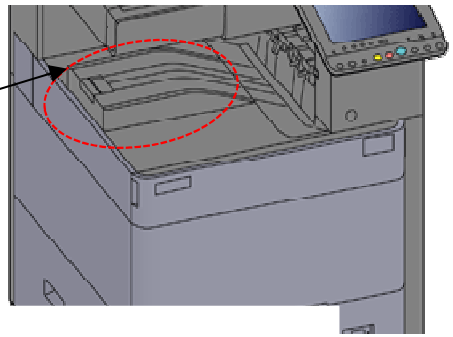
   *Where packed: same as inner tray

   ③When installing PF, attach the fall prevention parts. 2 at left and 1 at rear right

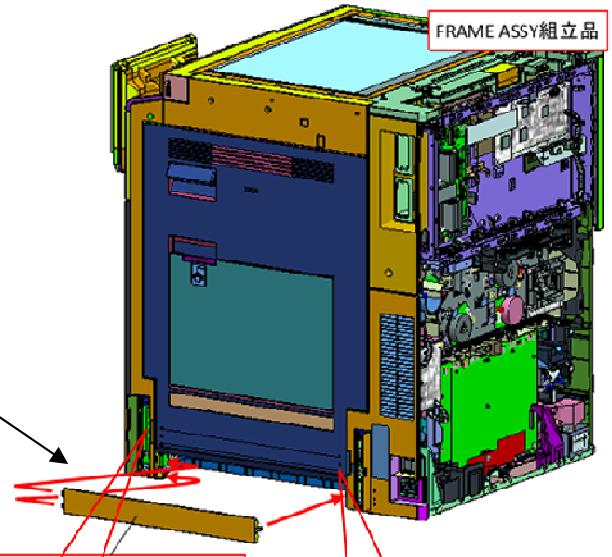
   (When installing side deck: 2 at left)

2. Release the optical lock

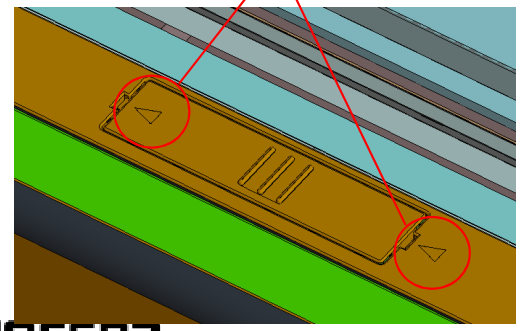
   Detach the optical stopper and reattach it by reversing it front and back.

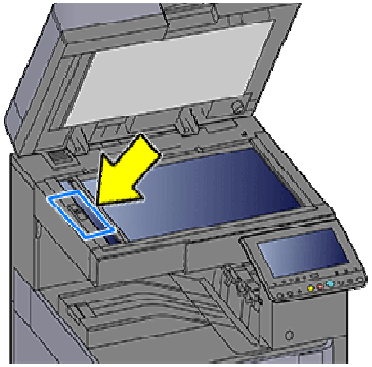


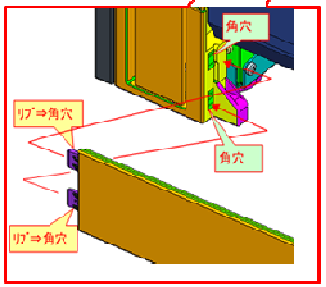
Fall prevention parts

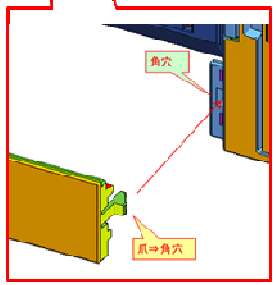


Face the arrows









Setup Procedures

3. Load paper

①Remove the cassette base stopper to release the base.

②Align the front cursor and backend stopper to the paper size.

*Upper cassette size: A6R – A4R, Letter R

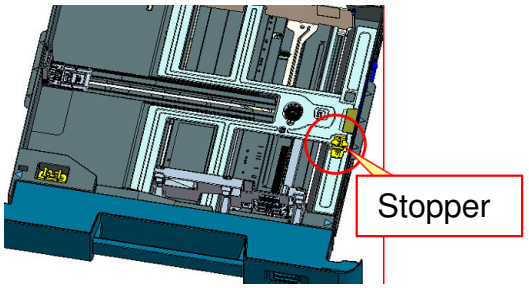
*Envelope level label is added.

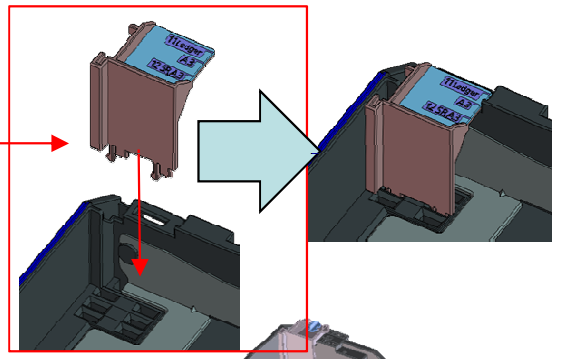
③Lower cassette size: SRA3, 12*18, A3 Ledger, B4

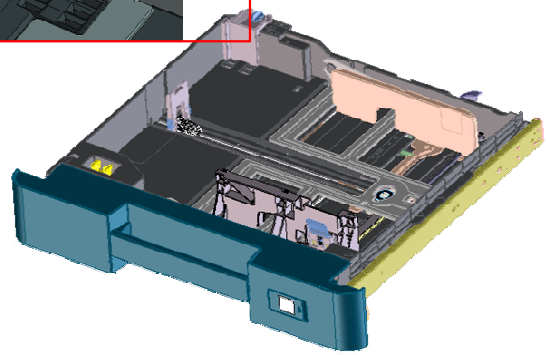
Move the large size backend guide.

④Open the cassette size cover lid.

Insert the paper size sheet.

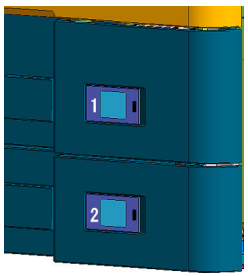




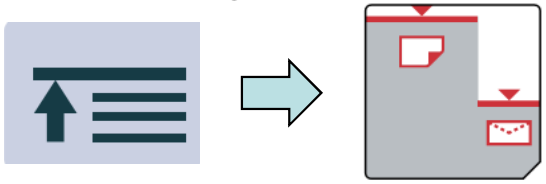


Note: When the cassette error is displayed, please pull and insert not only the cassette also the 1st paper feed unit.

Paper size sheet pocket



Paper level label (color change)



Paper Specification

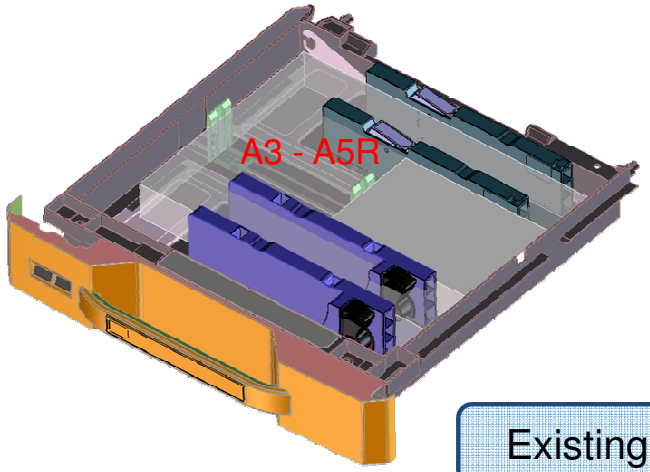
SRA3, loading postcard and envelope

Paper size		New	Conventional
Standard cassette PF(500*2)	MAX	SRA3/12*18(*1)	A3/12*18
	MIN	A6R/Statement Postcard, envelope	A5R/Statement
PF (1.5K*2/3K)		A4/B5/Letter	A4/B5/Letter
MPF	MAX	SRA3/12*18	A3/12*18
	MIN	A6R/Statement Postcard, envelope (90*148)	A6R/Statement Postcard, envelope (105*148)
Duplex	MAX	SRA3/12*18	A3/12*18
	MIN	A6R/Statement Postcard	B5E/Statement

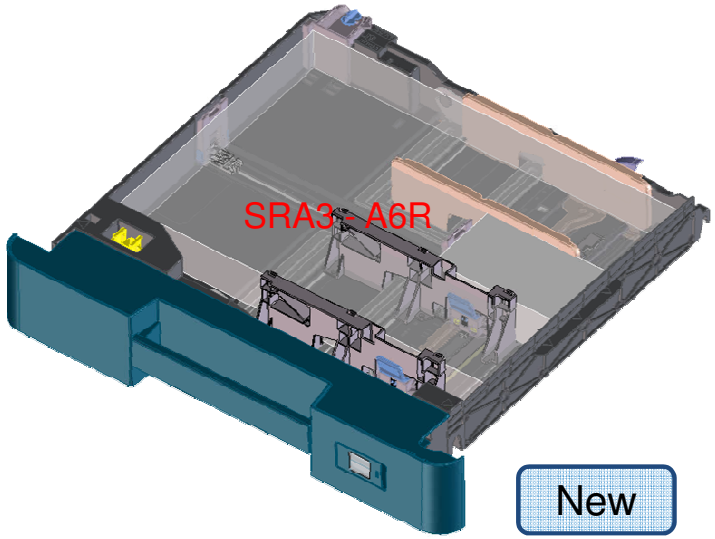
*1: For the upper cassette only, largest size is A4R/Legal

Paper weight		New	Conventional
Standard cassette PF(500)	MAX	300g/m^2	256g/m^2
	MIN	52g/m^2	60g/m^2
PF (1.5K*2/3K)	MAX	300g/m^2	256g/m^2
	MIN	52g/m^2	60g/m^2
MPF	MAX	300g/m^2	300g/m^2
	MIN	52g/m^2	60g/m^2
Duplex	MAX	256g/m^2	256g/m^2
	MIN	60g/m^2	60g/m^2

Size and weight spec improved



Existing



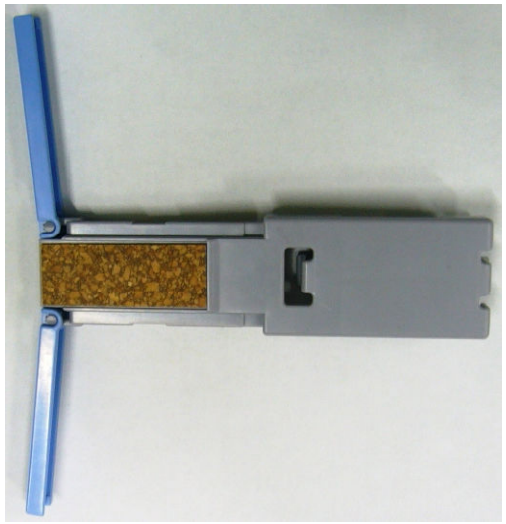
New

Setup Procedures

3. Loading paper or envelope

When loading envelopes in the cassette, attach the envelope support at the front side of the upper cassette to the cassette base.

Envelope support

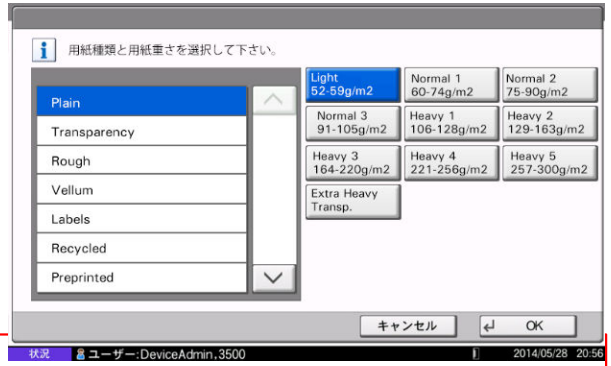


Attach to the cassette base

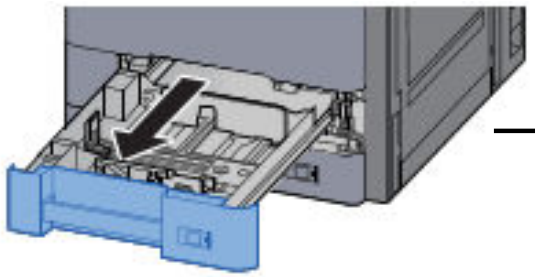
Paper setting UI improvement

▸Size, media type, weight indication when replacing paper

When pulling out the cassette or setting paper on MPF, paper setting screen shows size, media type and weight.



This indication On/Off setting is added in System Menu
<Common Settings – original/paper setting - Paper set confirmation> (Default: Off)
When changing paper, press [Change] to change paper setting.



①Size setting for the cassette opened

Next

②Media type + paper wight

OK

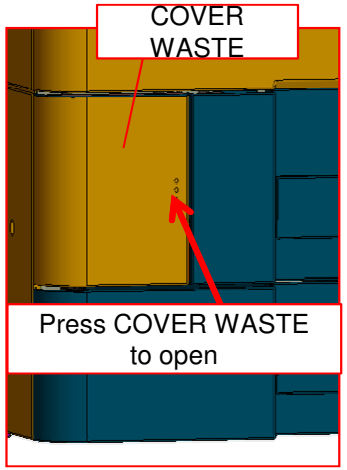
When pulling out the cassette or setting paper on MPF

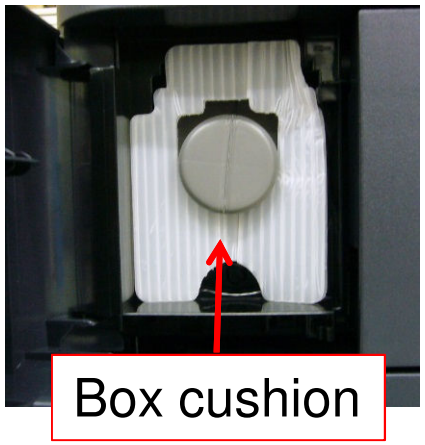
Setting confirmed

■Screen closed when installing the cassette

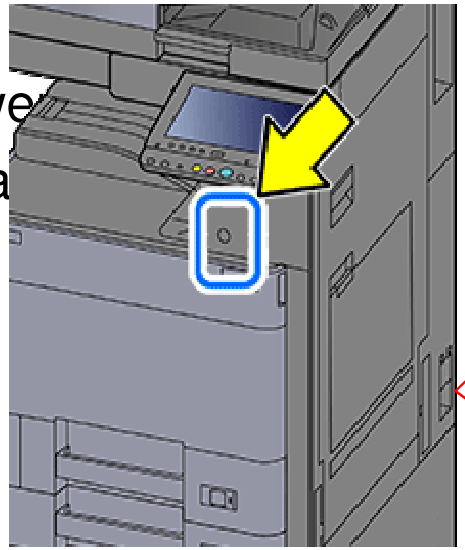
Setup Procedures

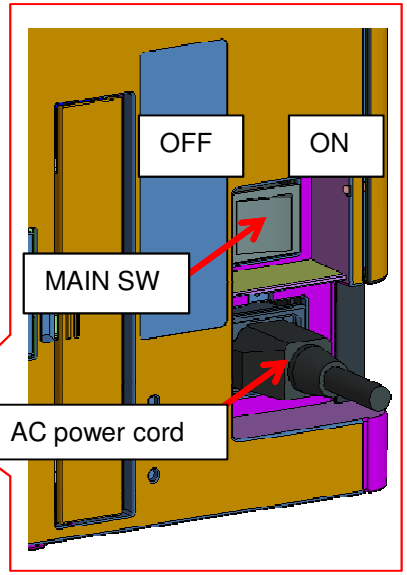
4. Detaching the waste toner box cushion stopper.
   ①Open the cover at the left side of the upper cassette.
   Press the protrusion on the cover at the right.
   ②Detach the waste toner box cushion stopper.
   * if the stopper is not detached, the waste toner box is not installed is displayed.





5. Connect the power cord and turn the power
   ①Press the main power switch at the rea
   ②Press the power switch under the operation panel.
   *For low end OPC model, it will take about 6mins for ready due to drum refer operation.
   (High end model: about 2mins)





Setup Procedures

6. Setting the toner container (tube type)

① Open the front cover after turning the power on and the toner container lock cover opens. If no toner container exists or no RFID is not detected

→ The toner container cover can be always unlocked and opened.

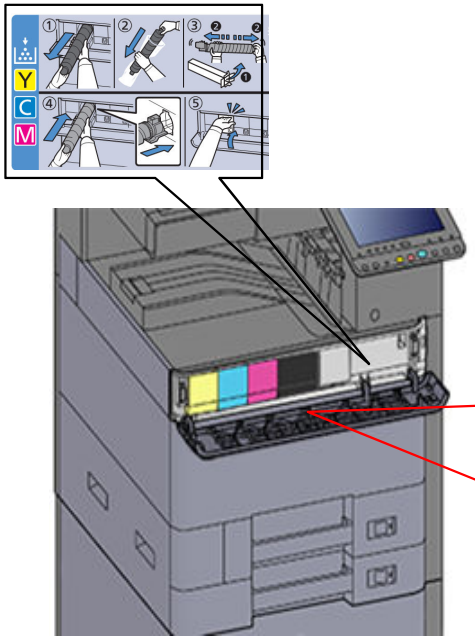
② Tap the toner container vertically and shake it horizontally.

③ Insert the toner container into the main unit while the toner supply vent facing down and toward rear side.

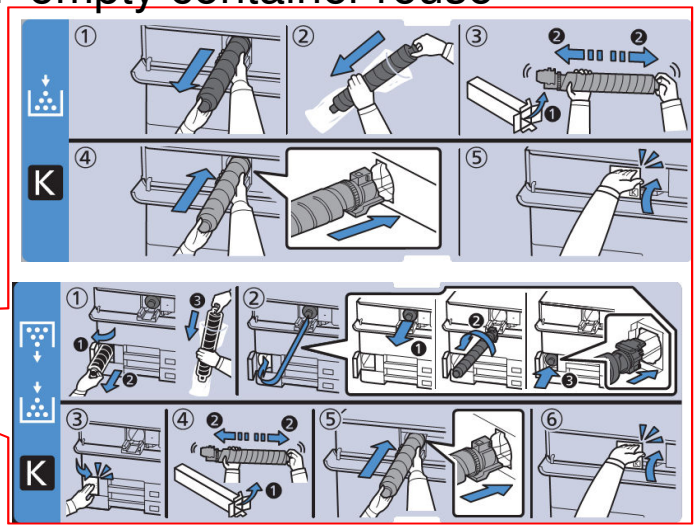
④ Check the direction of setting and setting change with “Operation sheet for BK toner replacement and empty container reuse” on the front cover.

Toner container

Toner supply vent



Operation sheet for BK toner replacement and empty container reuse



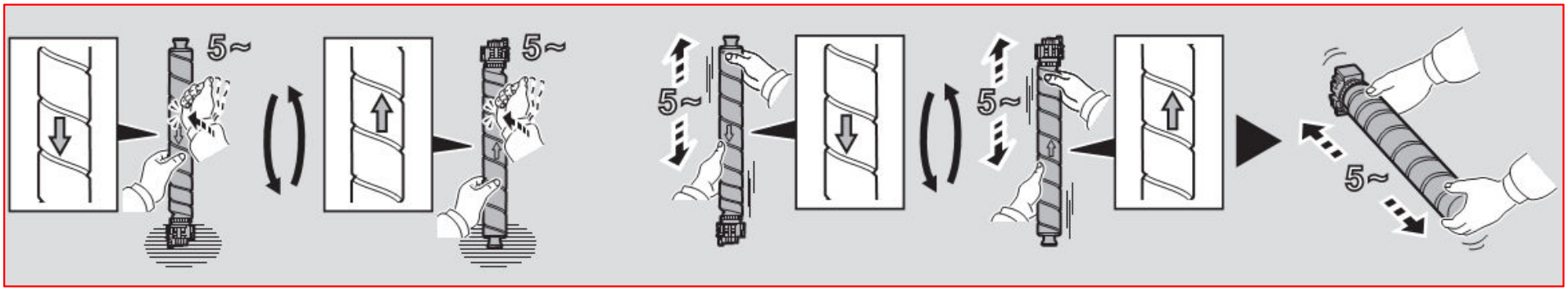
Toner Replacement Message

<Toner Replacement Message>

When toner is used up, the message below appears on the operation panel.

Prepare Kyocera Genuine Toner container
Shake well the toner container.
Open the front cover and replace the toner container. Refer to the leaflet bundled in the toner kit or operation guide.
Reference:
When closing the toner container cover without replacing the toner container, press [Open Toner Container Cover].

Before installing the new toner container, shake it well. (tap the toner container 5 times or more on the toner supply side to break the toner lump)



Consumables Spec Toner Kit

Color	TASKalfa 2552ci	Model
K	20,000 pages	TK-834x K
Y,M,C	12,000 pages	TK-834x Y/M/C

Color	TASKalfa 3252ci	Model
K	25,000 pages	TK-833x K
Y,M,C	15,000 pages	TK-833x Y/M/C

Color	TASKalfa 6052ci,5052ci	Model
K	30,000 pages	TK-851x K
Y,M,C	20,000 pages	TK-851x Y/M/C

Color	TASKalfa 4052ci,3552ci(KDAonly)	Model
K	30,000/25,000(KDA)pages	TK-852x K
Y,M,C	20,000/15,000(KDA) pages	TK-852x Y/M/C

BW	TASKalfa 6002i,5002i,4002i	Model
K	35,000 pages	TK-631x

Waste toner box WT-8500: 40K pages or more for color model (Color/BW print ratio: 3:7), 70K pages or more for monochrome model, at normal temperature and normal humidity

1) Color model KDC original print BW/color data 5% each
2) Monochrome model KDC original print BW data 6%

Consumables Spec

6052ci/5052ci	Japan	USA, Canada Latin America	Europe Mid East (incl. Saudi Arabia)	Australia, New Zealand	TA
Toner container(Bk:30k)	TK-8516K	TK-8517K	TK-8515K	TK-8519K	CK-8513K
Toner container(C:20k)	TK-8516C	TK-8517C	TK-8515C	TK-8519C	CK-8513C
Toner container(M:20k)	TK-8516M	TK-8517M	TK-8515M	TK-8519M	CK-8513M
Toner container(Y:20k)	TK-8516Y	TK-8517Y	TK-8515Y	TK-8519Y	CK-8513Y

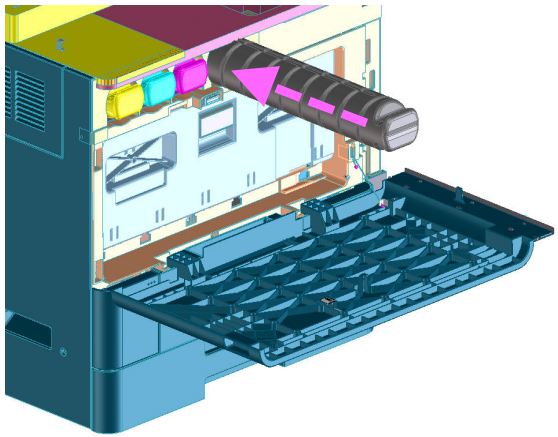
4052ci/3552ci(KDA)					
Toner container(Bk:30k *25K for KDA)	TK-8516K	TK-8527K	TK-8515K	TK-8519K	CK-8513K
Toner container(C:20k *15K for KDA)	TK-8516C	TK-8527C	TK-8515C	TK-8519C	CK-8513C
Toner container(M:20k *15K for KDA)	TK-8516M	TK-8527M	TK-8515M	TK-8519M	CK-8513M
Toner container(Y:20k *15K for KDA)	TK-8516Y	TK-8527Y	TK-8515Y	TK-8519Y	CK-8513Y

3252ci					
Toner container(Bk:25k)	TK-8336K	TK-8337K	TK-8335K	TK-8339K	CK-8512K
Toner container(C:15k)	TK-8336C	TK-8337C	TK-8335C	TK-8339C	CK-8512C
Toner container(M:15k)	TK-8336M	TK-8337M	TK-8335M	TK-8339M	CK-8512M
Toner container(Y:15k)	TK-8336Y	TK-8337Y	TK-8335Y	TK-8339Y	CK-8512Y

2552ci					
Toner container(Bk:20k)		TK-8347K	TK-8345K	TK-8349K	CK-8511K
Toner container(C:12k)		TK-8347C	TK-8345C	TK-8349C	CK-8511C
Toner container(M:12k)		TK-8347M	TK-8345M	TK-8349M	CK-8511M
Toner container(Y:12k)		TK-8347Y	TK-8345Y	TK-8349Y	CK-8511Y

Tube-type Revolving Toner Container

Tube-type revolving Toner container



Toner supply while revolving the toner container

The toner container revolution in CW breaks toner and conveys toner.→ Drive torque is reduced by disusing agitating parts

Container rotational speed 75.6rpm Single motor drive for 4 colors

*When the PI sensor in the middle hopper detects no toner, the toner container revolves to supply toner.

*Toner container storage caution

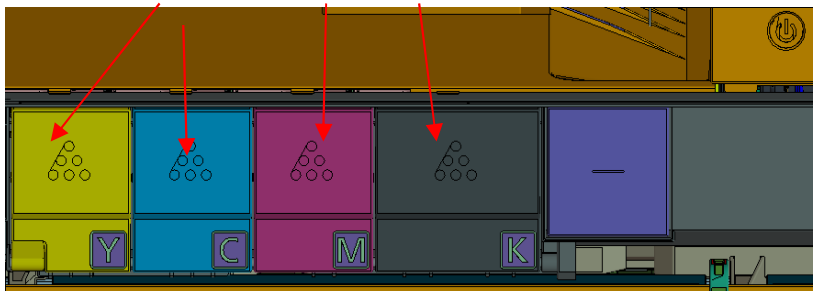
Do not store it by standing upright or toner gets one side and easily cake. Avoid direct sunlight and sudden temperature and humidity change. Keep under 40 degrees C.

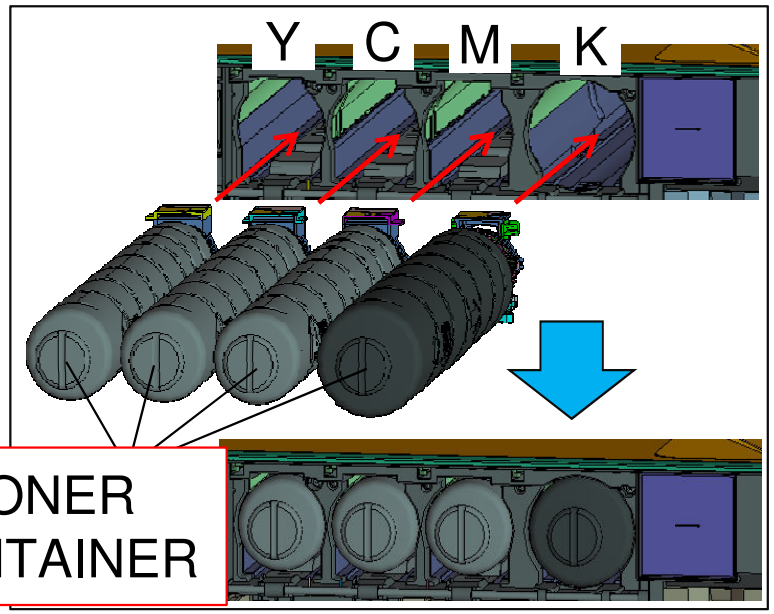
Toner is agitated and broken by the toner container revolution (No internal agitation mechanism is necessary)

Toner Container Setting

Color model

CONTAINER SHUTTER

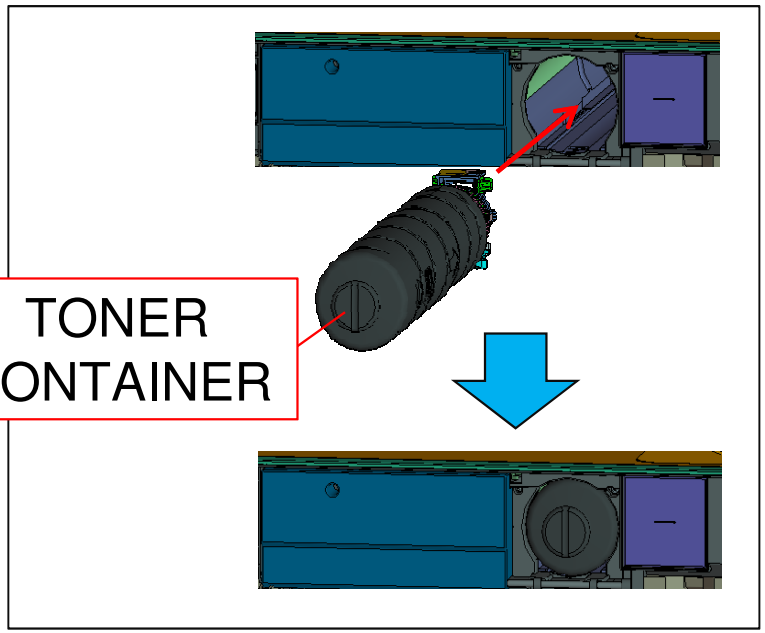




TONER CONTAINER

BW model

CONTAINER SHUTTER



TONER CONTAINER

Toner container Setting

Releasing the toner container lock cover (In case the lock cover is closed)

①Maintenance mode U033 Check Solenoid Operation

→ Container Cover (C/M/Y/K) Lock solenoid ON

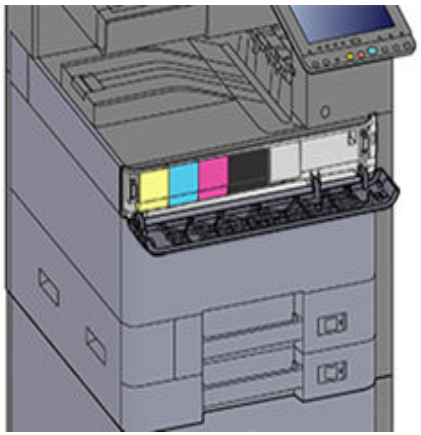
②If U159 Container Lock is set to OFF, Always OPEN (Default: Empty)

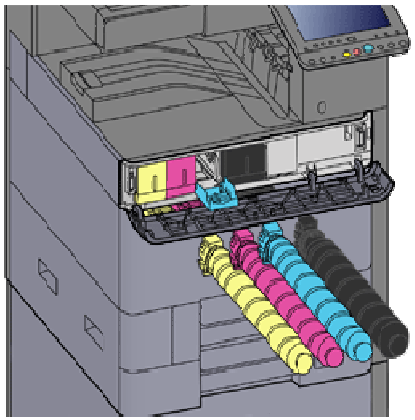
③ Select [Toner container cover] in [System Menu] → [Adjustment/Maintenance]

*U159 Container Unlock Display: If set to ON (Default: OFF, no lock release indication)

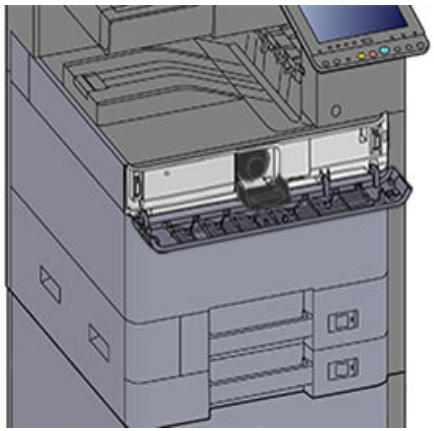
Note: When closing the container cover after releasing the lock. it is again locked.

*Even if the toner container cover open operation (toner replace) is performed, no cover is opened during power off, machine's driving, displaying preparing printer. (The lock is released when the solenoid is activated.)



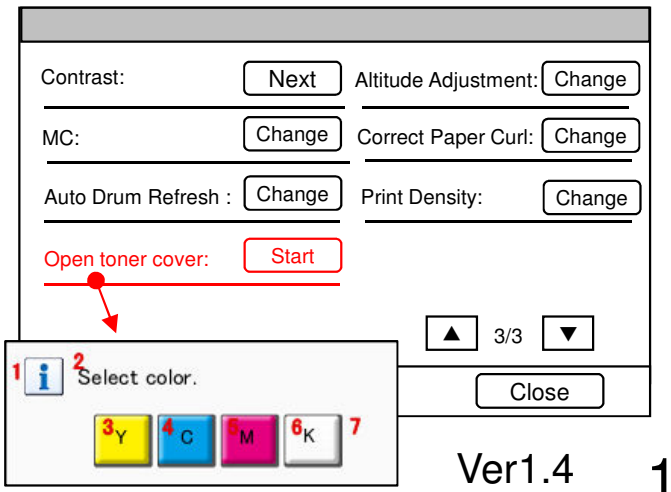


Color model



BW model

Adjustment/Maintenance



Setup Procedures

7. Select [Quick Setup] from [System Menu] for various settings.

<Added items in Quick Setup>

1) FAX setting: Indication of FAX transmission/reception unavailability at power-off

2) Network setting: Wired / Wi-Fi (IB-35)

①Wired setting → DHCP ON/OFF setting (Set IP address at DHCP OFF)

②Wi-Fi setting→ ①Turn Wi-Fi on.

②Select a connectable net work access point (AP) to connect from the list indicated

*Select AP set value (0-3) at WEP key index (Encrypted connection channel)

③Input WEP key of the access point (AP) (ex. 0123456789)

*Network key (password)

④DHCP ON/OFF setting (Set IP address at DHCP OFF)

After setting Wi-Fi to ON(enable), make sure to restart the network to effect the setting.

Reference: When using Wi-Fi Direct

Turn Wi-Fi Direct ON in the network setting. (Check device name)

Note: IB-35 hostname is same and WiFi and Wired cannot be used in the same network.

Setup Procedures

8. Optional language selection

1) Affix the language label bundled on the operation panel.

*Align the label to the protrusion in the center of the pane and affix it by justifying to the left and right top.

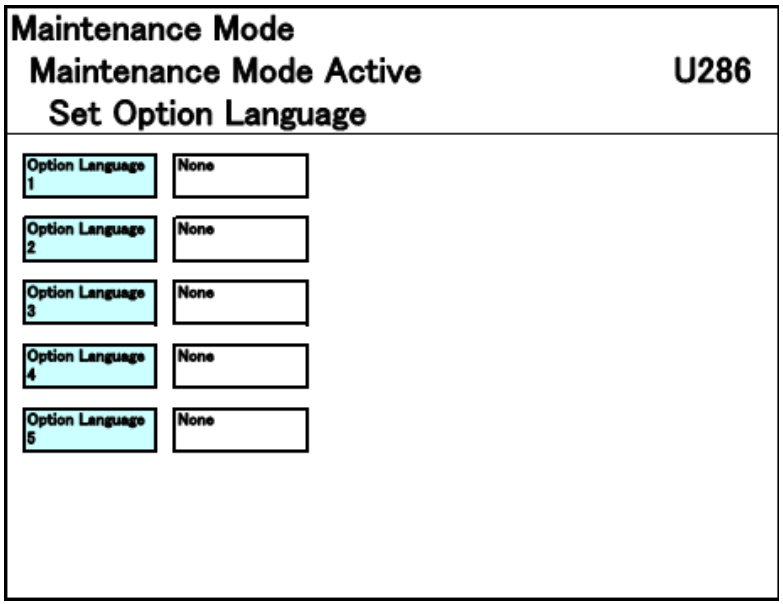
2) Select language to indicate from System Menu

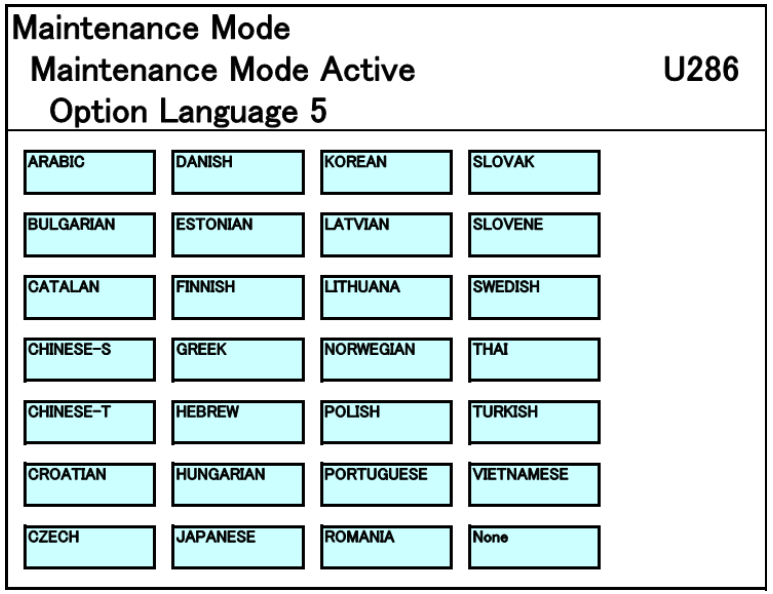
(Default:English,Germany,French,Spanish,Italian,Dutch,Russia,Portgee,Japanese)

*5 optional languages can be added in maintenance mode U286.

(Restart after adding the languages)

Language label





Extended option language support

[Option language old spec]

☐Number to register

1 language

☐Supported languages

15 languages

PORTUGUESE(Brazil)
PORTUGUESE
DANISH
SWEDISH
FINNISH
NORWEGIAN
POLISH
CZECH
TURKISH
GREEK
HUNGARIAN
ROMANIA
CATALAN
ARABIC
HEBREW

[New spec]

Unified to a single language software without optional language for a destination

☐Number to register 5 languages

*Select among supported languages below in maintenance mode U286

☐Supported languages

27 languages

PORTUGUESE(Brazil)
PORTUGUESE
DANISH
SWEDISH
FINNISH
NORWEGIAN
POLISH
CZECH
TURKISH
GREEK
HUNGARIAN
ROMANIA
CATALAN
ARABIC
HEBREW
S-CHINESE
T-CHINESE
KOREAN
LITHUANIA
CROATIAN
SLOVENE
SLOVAK
BULGARIAN
LATVIAN
VIETNAMESE
THAI
ESTONIAN

Setup Procedures

9. Executing maintenance mode U952 Maintenance Workflow

1) U464 Calibration: with auto color registration correction

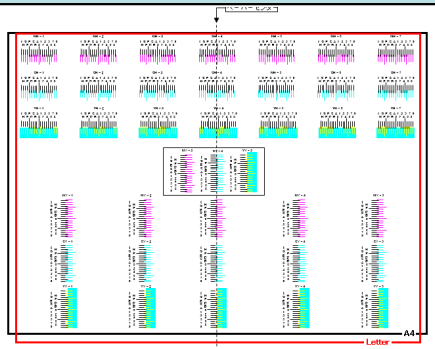
2) U469 Color registration adjustment (N/A for BW model)

Manual color registration correction:

①Correction with color shift auto read

②Detail mode: color shift amount manual input

Color registration test chart (Detail)



3) U410 Halftone auto adjustment

①Copy photo mode: AM (halftone) screen

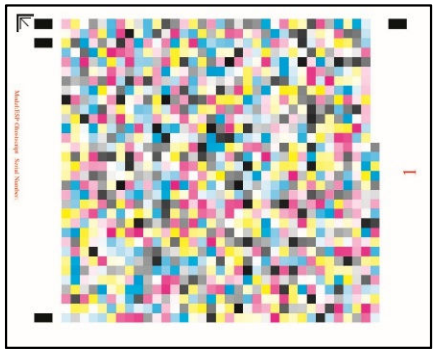
②Other than Copy photo mode: FM (error diffusion) screen

4) U000 Print Maintenance Report

5) U278 Set Delivery Date

6) U927 machine life count reset

Halftone auto adjustment chart



*Execute the above adjustments where no condensation occurs inside the machine (drum surface).

*Please do not execute above maintenance mode till the machine is ready. (Low end model: about 6mins, High end model: about 2mins)

Additional Setup Procedures depending on installation environment

Execute setting below depending on installation environment

High Altitude
①Normal(Default
②1001 - 2000m
③2001 - 3000m
④3001 - 3500m

1. High altitude environment: prevent light image
   - Setting from maintenance mode
   1) Low-end model
      ①U140 Altitude Adjustment (High altitude adjustment)
      ②U101 Primary transfer FB control Adjust 1stTransfer Voltage Output
         Execute “Force Execute”
      ③U464 Calib Execute Calibration
   2) High-end model
      ①U140 Altitude Adjustment (High altitude adjustment)*Change the fuser temp
      ②U140 AC Calib (Prevent Developer bias leak TD Developer)
         Calibration - Type 0 (Default) – All C,M,Y,K set to ON - Execute
         →Result: Developer image was generated.
         “-10” Lower Magnification value.
      ③U101 Primary transfer FB control Adjust 1stTransfer Voltage Output
         Execute “Force Execute”
      ④U464 Calib Execute Calibration

Additional Setup Procedures depending on installation environment

2. High humidity environment: Drum heater (Default: OFF)

When image deletion appears with drum condensation, execute drum refresh.

For the destinations of drum heater standard, ON/OFF setting is available in [System Menu] – [Adjustment/Maintenance] (linked with U339 setting)

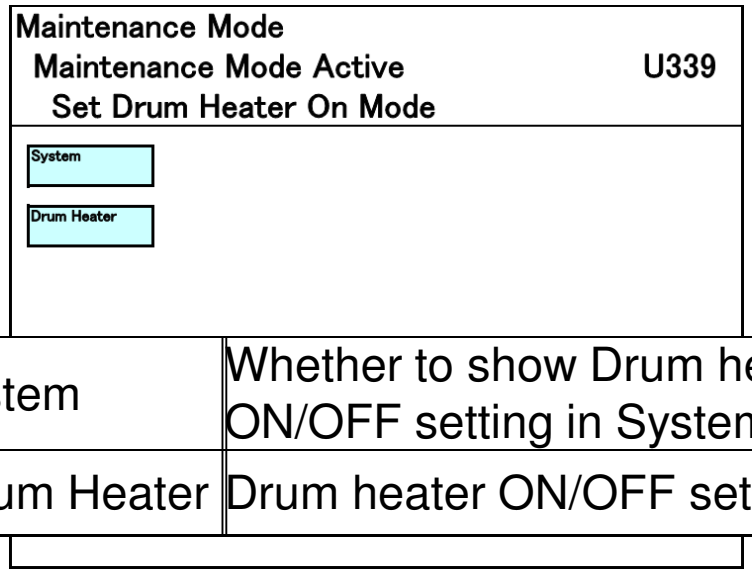
Low-end model: All destinations are standards

High-end / Monochrome model: All destinations are standards

① Maintenance mode: U339 Set Drum Heater On Mode

② System Menu: Adjustment/Maintenance → Drum heater

*Indicated when U339 System setting is ON



System	Whether to show Drum heater ON/OFF setting in System Menu
Drum Heater	Drum heater ON/OFF setting

<Machine state and Drum heater state>

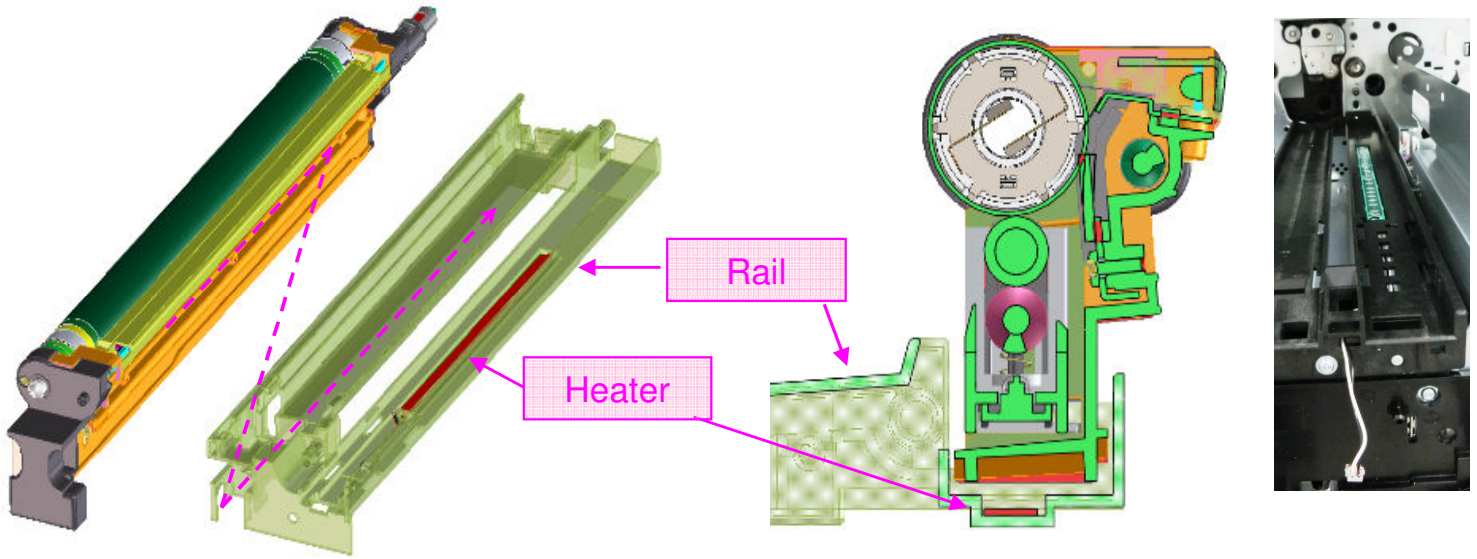
Machine state	Heater state
During WUP	OFF
Printing	OFF
Ready	ON
Manual drum refresh	OFF
Sleep mode	ON
OFF mode	OFF

Drum Heater

Drum heater

Shortening warm-up time at high humidity
a-Si Drum: prevent image deletion
OPC Drum: prevent pinhole and background image

Drum heater: ON at sleep & ready mode



*No auto drum refresh after recovering sleep is not executed (a-Si Drum installed machine) if the drum heater is on.

Heater temperature rise: Drum ambient temperature+3 degrees C
(reaching the temperature where no image deletion and no condensation are observed in 8 hours after heater on)
Heater power: 1W x 4pcs (for 4 colors) *1 for BW model
Heater location: under the imaging section
Heater PWB length: 200mm

Auto Drum Refresh（a-Si Drum model）

◆U148 Auto drum refresh time adjustment

0: Off, 1: Short, 2: Normal(Default), 3: Long

*When cassette heater is ON, changed to [Short]

<Drum refresh when recovering from sleep>

①Not executed when drum heater is ON.

*However, depending on U148 setting (Short, Normal, Long) Auto drum refresh is executed at power-up or recovery from Off mode

②If fuser temperature is 50 degrees C or more, drum refresh is not executed.

③If 3 hours or less since last time drive, drum refresh is not executed.

④ If 3 hours to 6 hours since last time drive, drum refresh is executed depending on the table at recovery.

*If Quiet mode is ON, above 3 hours is changed to 2 hours.

<Auto Drum Refresh Table>

	High-end (a-Si)				Low-end (OPC)			
Drum heater	No	No	Yes	Yes	No	No	Yes	Yes
Cassette heater	No	Yes	No	Yes	No	Yes	No	Yes
Control table	Normal	Short	No	No	Normal	Short	Drum heater ON	Drum heater ON

Auto Drum Refresh（a-Si Drum model)

◆ Drum Refresh Cycle at power-up or recovery from sleep (after 6 hours)
(Short/Normal(Default)/Long)

Control		Machine inside temperature (℃)										
		Ti＜10	10≦Ti＜15	15≦Ti＜20	20≦Ti＜22	22≦Ti＜24	24≦Ti＜26	26≦Ti＜28	28≦Ti＜30	30≦Ti＜32	32＜Ti≦34	34＜Ti
Machine inside Humidity (%RH)	Hi＜45											
	45≦Hi＜50											
	50≦Hi＜55											
	55≦Hi＜60									0/1/2	0/1/2	0/1/2
	60≦Hi＜65									1/2/2	1/2/2	1/2/2
	65≦Hi＜70							0/1/1	0/1/1	1/3/3	1/3/3	1/3/3
	70≦Hi＜75	1/1/1	1/1/1	1/1/1	1/1/1	1/1/1	1/1/1	1/2/2	1/2/2	2/3/3	2/3/3	2/3/3
	75≦Hi＜80	1/2/2	1/2/2	1/2/2	1/2/2	1/2/2	1/2/2	1/3/3	1/3/3	2/3/4	2/3/4	2/3/4
	80≦Hi＜85	1/2/3	1/2/3	1/2/3	1/2/3	1/2/3	1/2/3	2/3/3	2/3/3	2/3/4	2/3/4	2/3/4
	85≦Hi＜90	1/3/3	1/3/3	1/3/3	1/3/3	1/3/3	1/3/3	2/3/3	2/3/3	2/3/4	2/3/4	2/3/4
	90≦Hi＜95	2/3/4	2/3/4	2/3/4	2/3/4	2/3/4	2/3/4	2/3/4	2/3/4	2/3/4	2/3/4	2/3/4
	95≦Hi＜100	3/4/4	3/4/4	3/4/4	3/4/4	3/4/4	3/4/4	3/4/4	3/4/4	3/4/4	3/4/4	3/4/4

◆Table at recovery (at power-up or recovery from sleep (3 to 6 hours)

Regardless of machine inside temperature, if machine inside humidity:
70%≦Hi＜90%: 1cycle, 90%≦Hi＜100%: 2 cycles

Auto Drum Refresh（OPC Drum model）

◆U148　Auto drum refresh time adjustment (Auto drum refresh mode)

1: Short, 2: Normal, 3: Long

*Unable to set it to OFF prevents, prevent drum pinhole at high humidity

*If cassette heater is ON, drum refresh mode is changed to [Short].

1) Drum refresh when recovering from sleep

Drum refresh is not executed on conditions below,

① If fuser temperature is 50 degrees C or more,

② If 1 hours or less since last time drive,

2) Drum refresh at first power-up after delivery or drum replacement

Executed at power-up after setup or new drum replacement.

(prevent horizontal white streaks from MC roller bleed and apply toner to cleaning blade edge)

Auto Drum Refresh（OPC Drum model）

◆Drum refresh cycle: executed at environment below (each 1 cycle)

Simple refresh: Half time of normal drum refresh after toner is applied to drum

Refresh setting	Machine inside temperature Ti[℃]	Machine inside humidity Hi[%RH]		
		No or White streaks prevention aging	Simple refresh	Normal refresh
Normal	Ti ＜ 30	Hi ＜ 85		85 ≦ Hi
	30 ≦ Ti ＜ 34	Hi ＜ 65	65 ≦ Hi ＜ 75	75 ≦ Hi
	34 ≦ Ti ＜ 36	Hi ＜ 50	50 ≦ Hi ＜ 65	65 ≦ Hi
	36 ≦ Ti	Hi ＜ 45	45 ≦ Hi ＜ 55	55 ≦ Hi
Short	Ti ＜ 30	Hi ＜ 85		85 ≦ Hi
	30 ≦ Ti ＜34	Hi ＜ 75		75 ≦ Hi
	34 ≦ Ti ＜36	Hi ＜ 65		65 ≦ Hi
	36 ≦ Ti	Hi ＜ 55		55 ≦ Hi
Long	All range			All range
Heater ON	Ti ＜ 30	Hi ＜ 85	85 ≦ Hi	
	30 ≦ Ti ＜34	Hi ＜ 75	75 ≦ Hi	
	34 ≦ Ti ＜36	Hi ＜ 65	65 ≦ Hi	
	36 ≦ Ti	Hi ＜ 55	55 ≦ Hi	

Auto Drum Refresh（OPC Drum model）

◆ U148 White streaks prevention at recovery from sleep

White streaks prevention aging (White Line Aging) (OPC) 0: OFF(Default), 1: ON

If white streaks from drum factor* appears, turn [White streaks prevention aging] ON

*If MC roller contacts the same point of drum for a long time of no operation,長 discharge bi-products adhere drum surface.

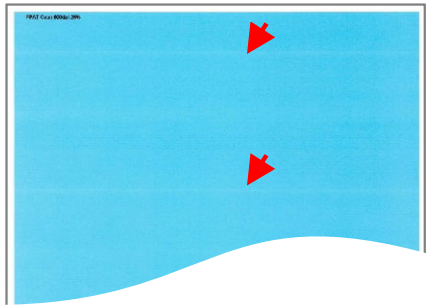
<Operation at the setting ON>

After finishing a job on condition below, Drum refresh is executed about 20s.

①U120 Drum drive length counter

(Developer temperature less than35 degrees C: 150m (equivalent to 500 pages print), 35 degrees or more: 75m)

②If Developer temperature exceeds 35 degrees C during a job, Drum refresh is executed before executing the next calibration.



Auto Drum Refresh（OPC Drum model）

◆ U148 Drum cleaning setting (grinding time)

Drum cleaning time setting (grinding time) (OPC) 0 (default)～255 sec

Under the low temperature, a white powder of toner can be attached on the main charger roller more easily. So, to clean the white powder, applying the drum aging operation periodically after JOB end.

* In case of high coverage printing, the charger roller surface becomes more affected by a white powder, the interval of aging will set more shorter.

<Drum cleaning operation (drum moving distance)>

Inside of machine temperature[℃]	Ave printing ratio [%]	Drum moving distance [m]
Higher than 18℃	No operation	
Below 18℃	Less 20%	60m
	Higher than 21%	30m

150m : Continuing 500sheets printing drum moving distance

Note when Transporting Machine

If Machine is moved after setup, follow up the below.

1. Take out all the color toner containers.
   Toner cover lock release
   ・Execute maintenance mode U002 Factory Setting
   When turn OFF/ON the power message is displayed, open the front cover. So, the toner container lock cover will be opened.
   *Do not stand the toner container box in order to prevent the toner from staying at one side.

2. Take out the waste toner box.
   Or apply cushions so that the box does not move.

3. Lock the optical carriage.

4. Take out paper from the cassette and lock the base plate.

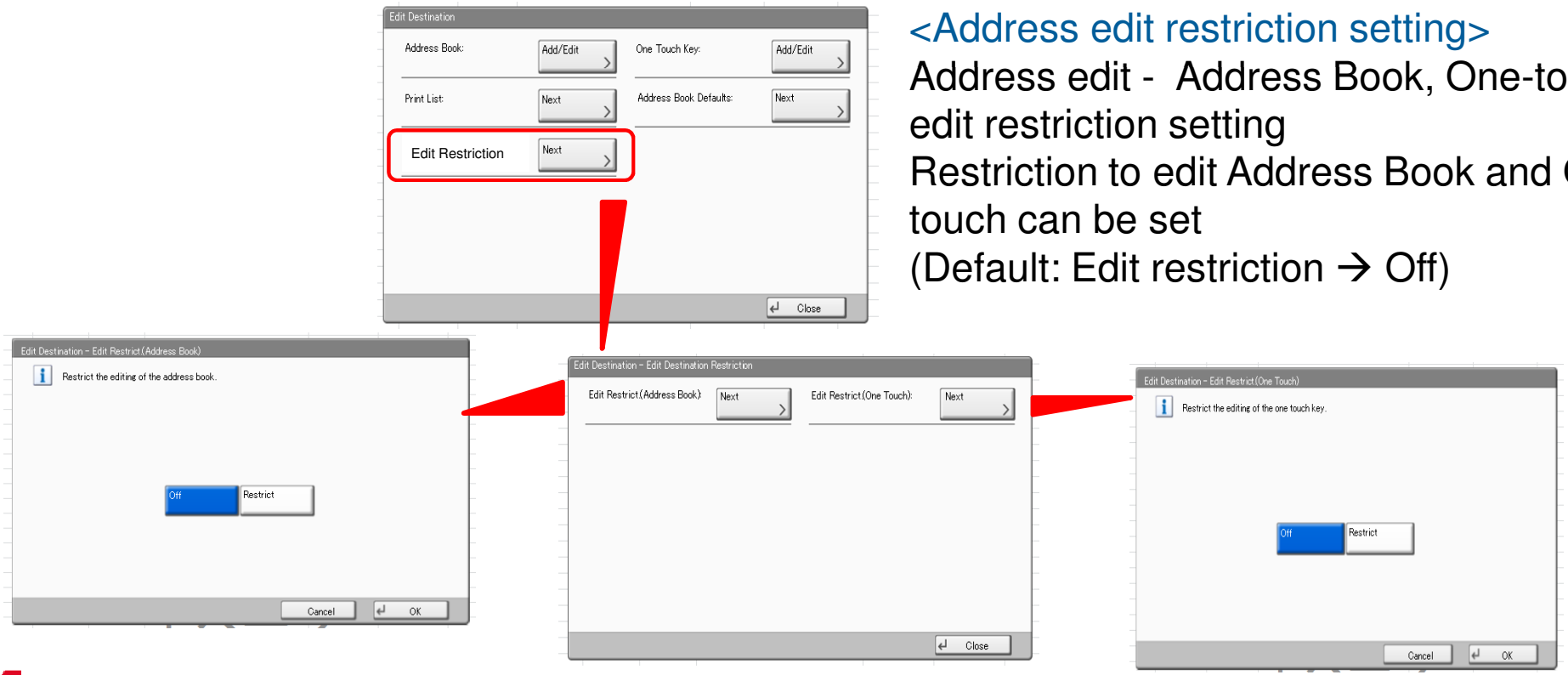
Editing Address Book and One-touch

Address Book and One-touch can be edited by other than Administrator

Address Book and One-touch editing: Restriction setting added.

Edit by other than Administrator is available on the Command Center RX.

*Only Administrator can change the setting of editing right.



<Address edit restriction setting>

Address edit - Address Book, One-touch edit restriction setting

Restriction to edit Address Book and One-touch can be set

(Default: Edit restriction → Off)

MAC Address, Option Serial No. Indication

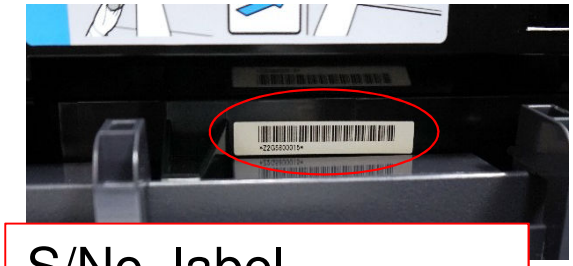
U230 Display Option Serial No.

Optional enhancement serial Nos are indicated: PF,DP,DF (Serial number is eliminated from the rating label) When an optional unit is installed, the following devices indicate the optional unit serial No.

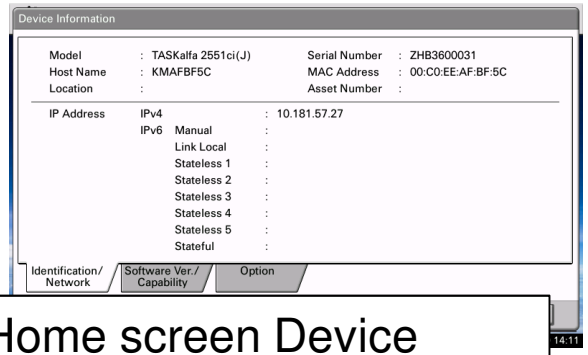
1)U000 Maintenance Report, 2)Device Information on Home screen

3) KNV, CCRX, TDRS, KFS

*Main unit serial number is indicated on the label at the upper right frame that is accessed by opening the upper front cover.



S/No. label
after open the cover



Home screen Device information

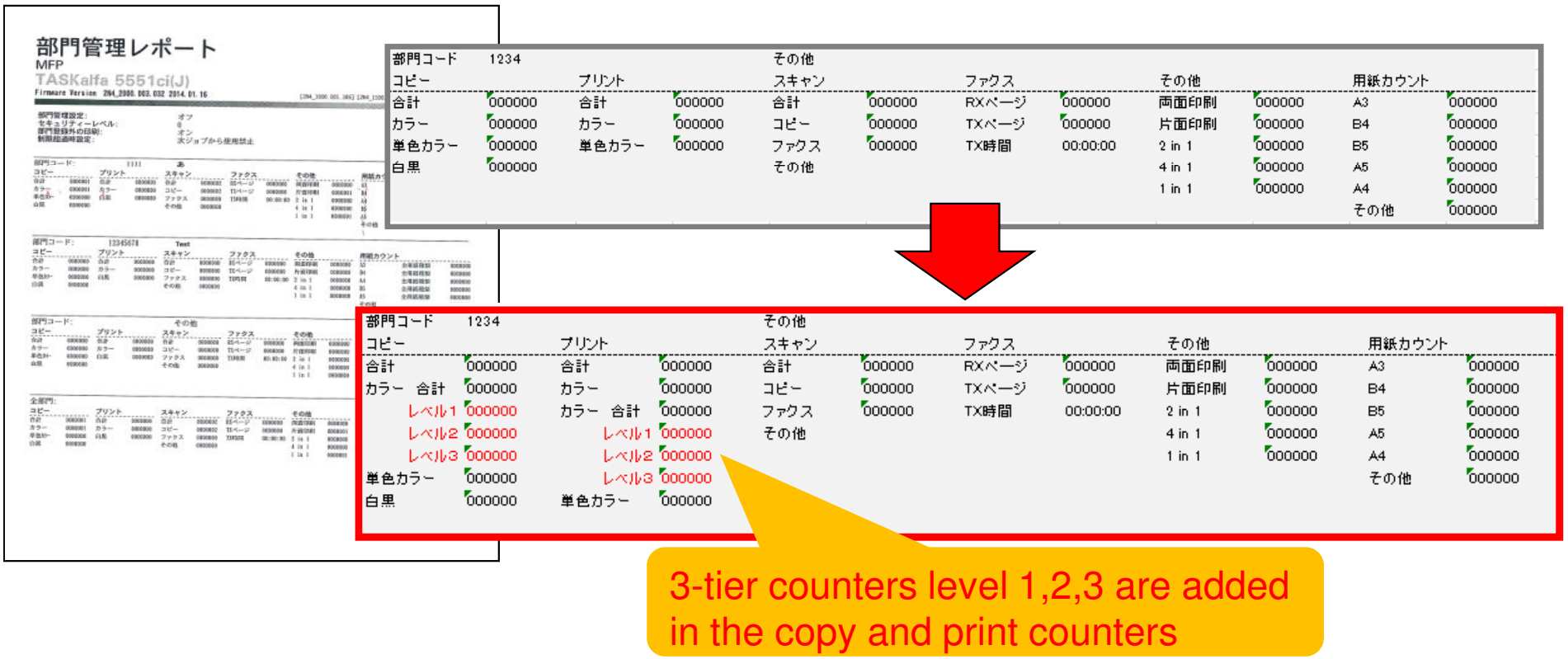
Label on outer carton

<How to check the MAC address>

The label of MAC Address on the machine is eliminated. Instead of this elimination. The label of MAC address is put on the outer carton. And it can be checked on the device/wired icon on the home screen. (KDA model has two MAC Address for Wired and Wi-Fi.)

3-tier Color Coverage Counter in Accounting System

- 3-tier Coverage Counter is added in the Account System counter.
  - Color copy counter
  - Color print counter



KYOCERA Document Solutions Inc.

Additional Items in Status Page

Old

Status Page
TASKalfa 356ci
04/07/2015 01:03

Paper Settings
MP Tray Size/Type: Letter/Plain
Cassette 1 Size/Type: Legal/Plain
Cassette 2 Size/Type: Legal/Plain
Cassette 3 Size/Type: Letter/Plain

Group Settings
None

Print Settings
Copies: 1
Default Media Type: None
Resolution: 600 dpi

EcoPrint
Status: Disabled

Device Common Settings
Sleep Level:
.....
.....

New

Status Page
TASKalfa 6052ci

Machine No

04/07/2015 01:03
Z2C5300007

Firmware Version 2ND_2000.001.124 / 2015.04.06
[2.1.5] [2ND_F000.001.002]
[2ND_1000.001.105][2ND_1100.001.007][2ND_7000.001.124]

Firmware Version

Paper Settings
MP Tray Size/Type: Letter/Plain
Cassette 1 Size/Type: Legal/Plain
Cassette 2 Size/Type: Legal/Plain
Cassette 3 Size/Type: Letter/Plain

Group Settings
None

Print Settings
Copies: 1
Default Media Type: None
Resolution: 600 dpi

EcoPrint
Status: Disabled

Device Common Settings
Sleep Level:
....

Product Library (DVD)

DVD Installer

①Connect to the main unit and install the driver.

Product Library maintenance items

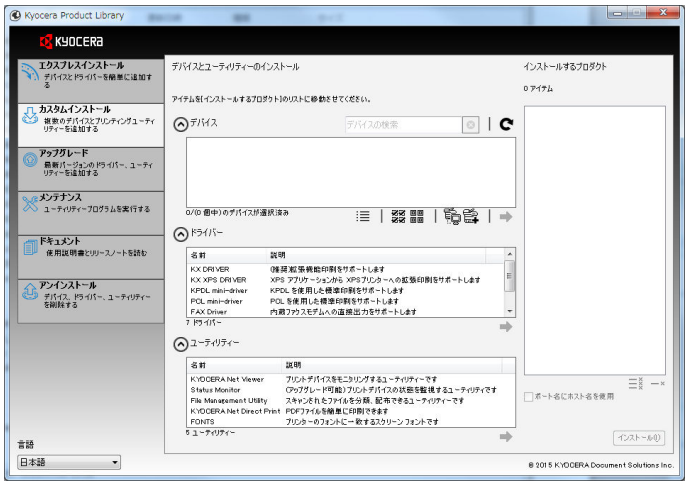
①Optional printer components

②Quick Network Setup

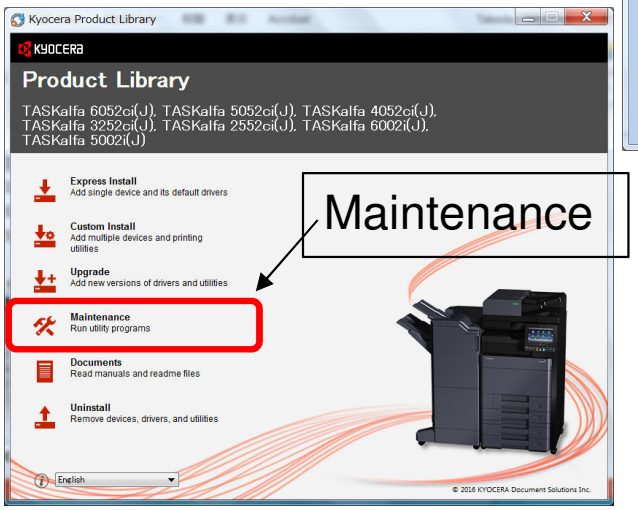
③Wi-Fi Set Up Tool: For Wi-Fi connection.

When using Setup Tool, once setup the wired network connection and change the wireless setting (Wi-Fi, Wi-Fi Direct) to on in System menu of the main unit.

KX ver 6.1



KX ver 6.3 Installer



2-2-1-2. Toner Container Lock Mechanism

Correction

2016 5 10 Ver 1.1

P4 Toner container lock mechanism

Release fixing method is changed due to change of shape in the release lever.

Toner container replacement lock

Container replacement lock mechanism

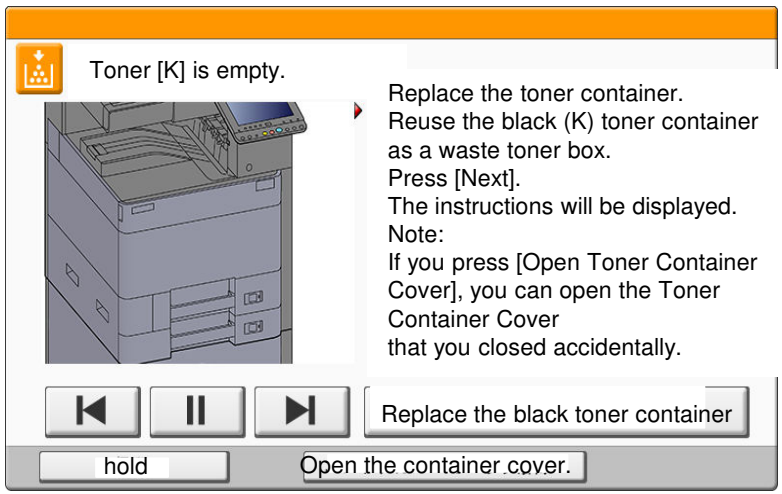
Lock cover is applied to toner container

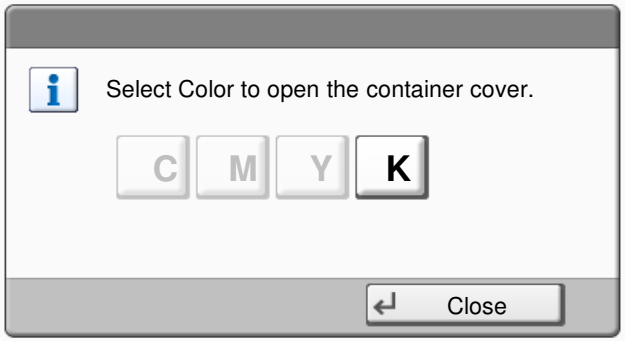
Lock mechanism is added to open toner container cover at toner empty detection (U159 Container Lock Default: Empty)

Toner container can be replaced after toner empty indication and toner container lock cover is opened. Toner container with toner residual inside cannot be replaced.

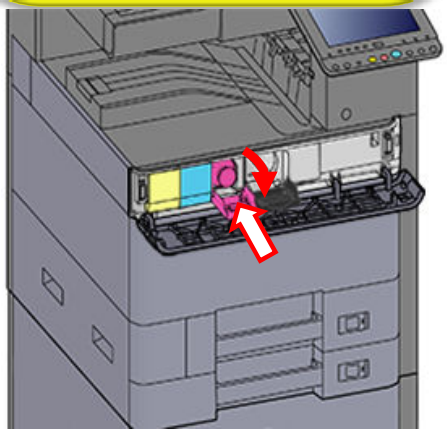
*Press cover open button on the toner replacement display to release the lock.

Note Service Call Error Occurs → Lock release button appears on the display
No toner container (No RFID detection) → Always Unlocked





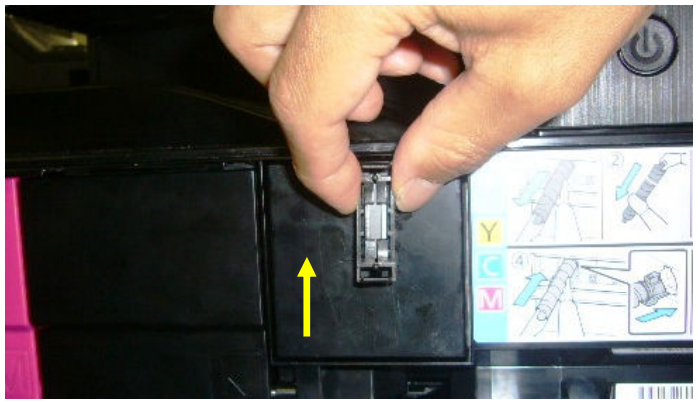
Cover opens at no toner detection



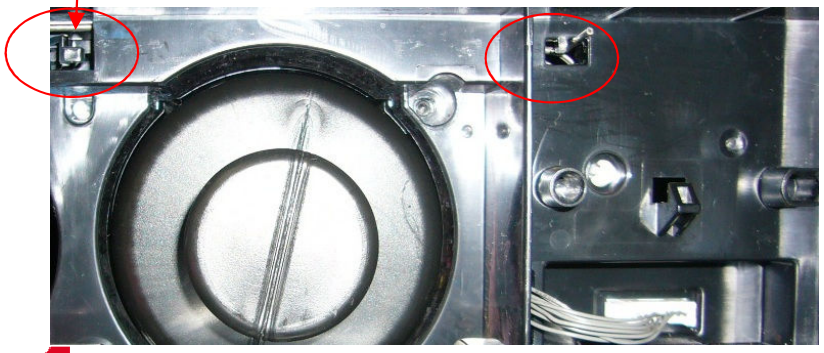
Toner container lock mechanism

■ Manually release the lock mechanism

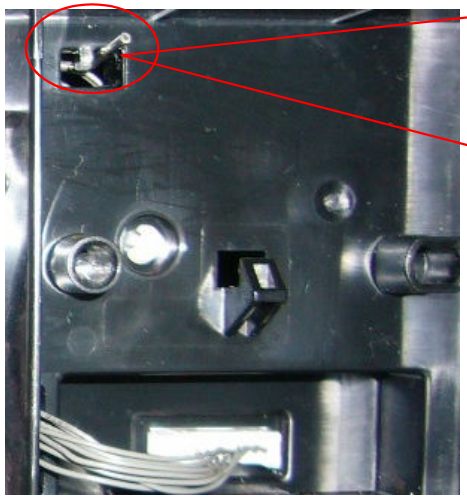
Apply a magnet to the center of the cover and slide it upward to release the cover lock.



This claw is linked with release lever to open the container cover

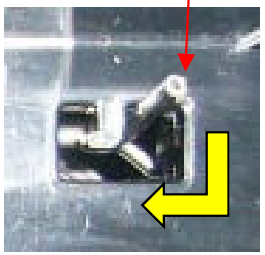


The lever position after removing the cover

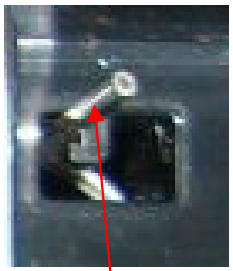


(Container cover lock condition)

Lower this lever and slide it left side (container cover open)



Lever position : Container cover lock positon



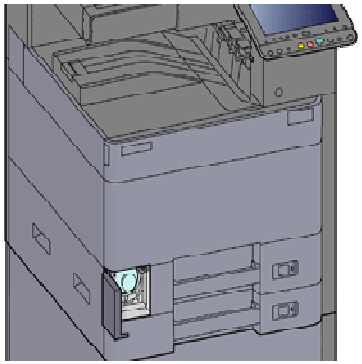
Container cover always open

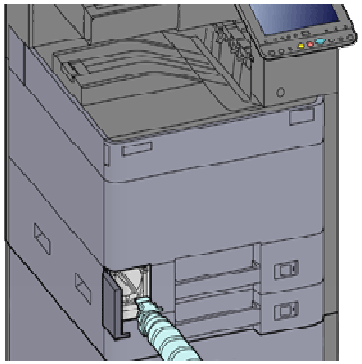
Shifting this lever to left and lift up (keep it this position) → Container cover is always opened.

Waste toner box setting

<Waste toner box setting procedures>

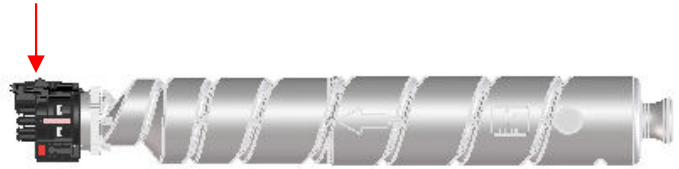
1. Open the waste toner box cover.
2. Insert the waste toner box with the waste toner shutter facing up.



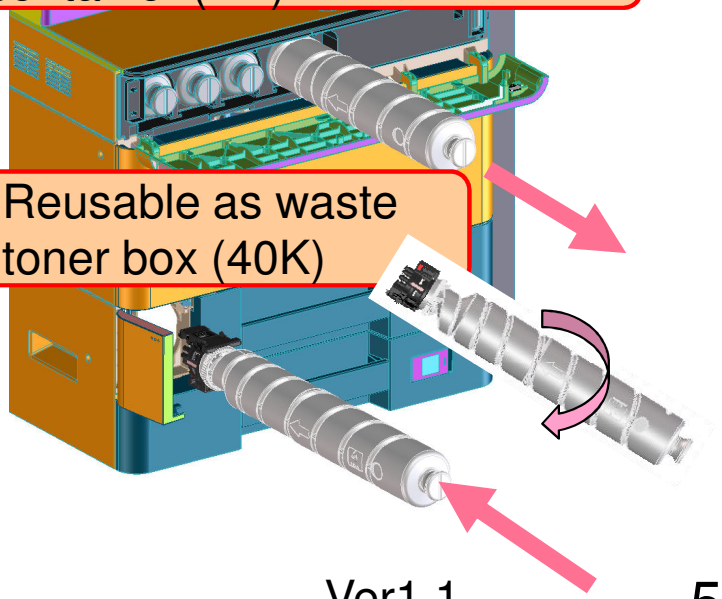


Waste toner box (dedicated supply)*Color: gray

Waste toner shutter



Tube-type revolving toner container (BK)



Besides the waste toner box (color: gray) as the dedicated supply, empty BK toner container can be reused as waste toner box.
*When reusing empty BK toner container as waste toner box, rotate it 180 degrees to insert since directions of toner supply and waste toner collection are up-side-down.

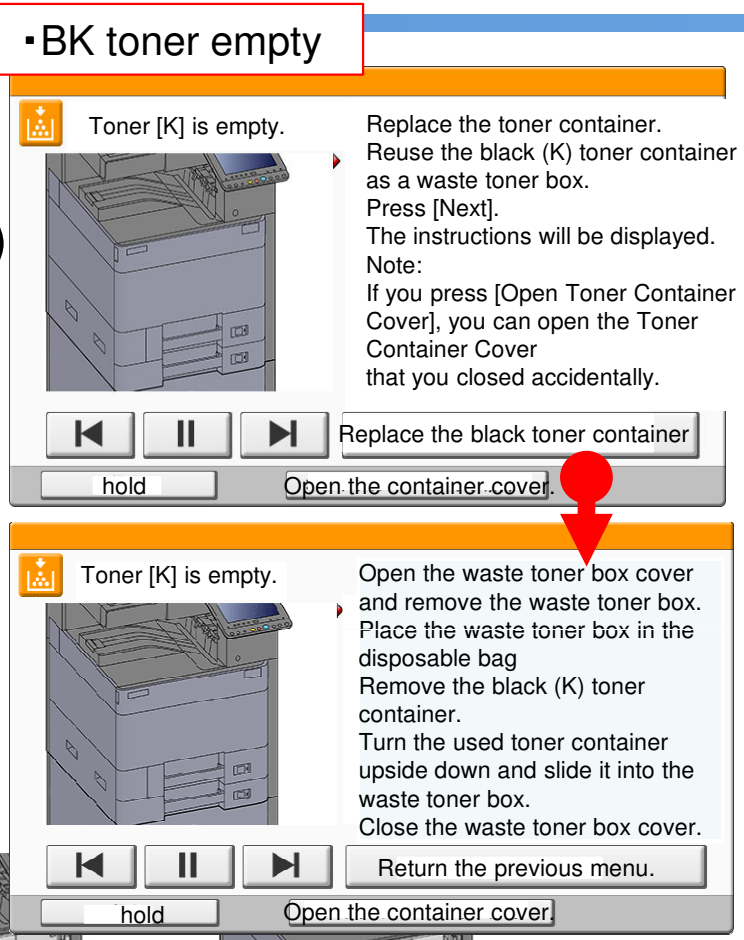
Reuse of BK empty toner container as waste toner box

<Empty BK toner container reuse procedure message>

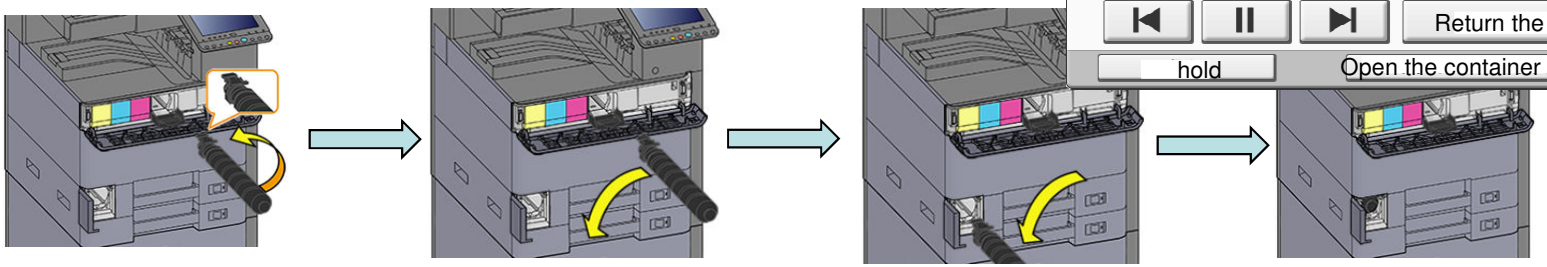
*When reuse enabled (Only TA Disabled)

(Empty BK toner container is reused as waste toner box)

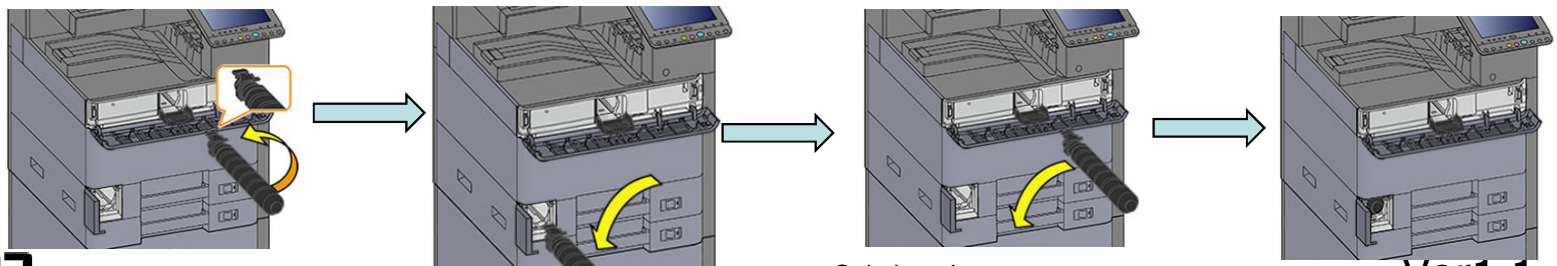
1. “TONER EMPTY BK” and “Replace Waste Toner Box” are indicated.
2. Open the front cover and the toner container cover can be opened.
3. Take out the empty BK toner container and rotate it 180 degrees. Then, insert it into the waste toner box space.



Color model



BW model



Reuse of BK empty toner container as waste toner box

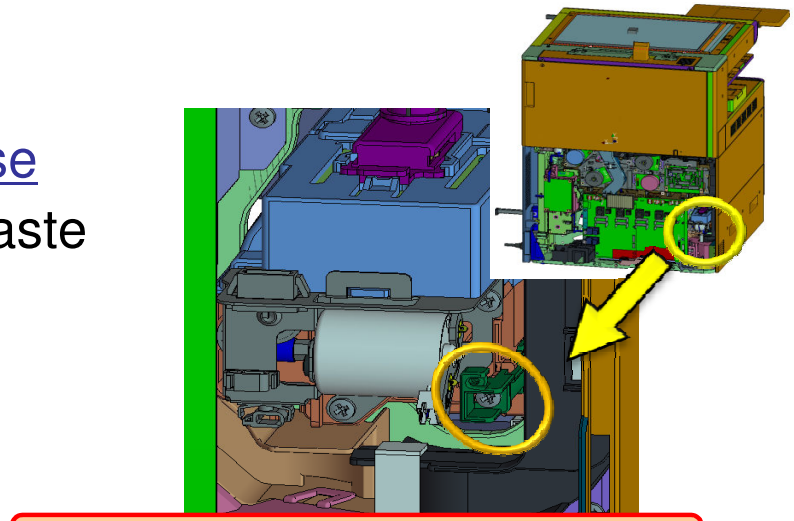
<Disabling reuse of empty BK toner container as waste toner box>

Disable toner container reuse

1. Container insertion stopper mechanical lock release

Install the screw(M3x8) for the lever next to the waste toner motor at the machine rear lower right side

*No screw is fixed



toner container reuse lever

2. Reuse procedure message indication

*Waste toner box replacement message appears when BK toner is empty

①U159 Set Toner Container Function → Waste Box Setting Message: ON → OFF (default: TA)

*When selecting ON (Enable reuse), waste toner amount exceeds Waste Toner Level, print is stopped until the waste toner box is replaced

Empty BK toner container/waste toner box replacement message

Display of procedure to reuse empty BK toner container as a waste toner box (U159 Waste Box Setting Message set to ON)

■ Condition to indicate Waste toner box replacement message

(1) BK toner empty is detected,

(2)Actual waste toner box is heavier than [Waste box weight threshold*(%)]

*U159 Waste Box SettingのWaste Toner Level set value

(Setting indicated when Message set to ON)

■ Condition not to indicate replacement message

(1) Toner empty detection (RFID detection) is released

*When installing the same toner container

(2) Waste toner box weight does not exceed the threshold,

■ Operation during Replacement message *Indicated again after power off/on

Print job is stopped and released after replacing the waste toner box.

*Send job such as FAX is available.

■ [Checking the waste toner box] indication

Indicated when the waste toner box cover is opened during replacement message

*Waste toner weight check: indicated 5-20s, takes 30s for accurate weight check

(Replacement message disappears after replacing the waste toner box)

Reuse of BK empty toner container as waste toner box

- Waste Toner Level setting change when U159 Waste Box Setting Message is ON

  When toner empty is detected if waste toner in the waste toner box is less than the amount as specified in U159 Waste Toner Level, no waste toner replacement message is indicated and no job is stopped. (If more than the specified amount, waste toner replacement message is indicated)

  Color model: +20%(Default), +10%, 0

  BW model: +50%(Default), +40%, +30%, +20%, +10%, 0

  (Power OFF/ON appears after changing the setting)

The weight threshold of toner in the waste toner box is changed for the action below.

①Waste toner box replacement message is indicated at BK toner empty detection

②Print job is stopped

U159 Set Toner Container Function

U159 set item	Comment
Container Lock	Container lock setting
Container Unlock Display	Toner container lock indication ON/OFF in [System Menu] → [Adjustment/maintenance]
Waste Box Setting	Setting reuse of toner container as waste toner box

Container Lock	Set cover lock release timing and disabling lock
Off	Disable lock → Lock cover opens when opening front cover
Low	Enable lock: Lock cover opens at toner near-end detection (U136 set timing)
Empty (Default)	Enable lock: Cover lock opens with toner replacement message *If lock release timing is set to Empty, toner low message is not indicated (Notified via Event Mail, SNMP, SNMPTrap)

U159 Lock		Panel indication		Cover action		
Default	Set	Toner Low	Toner Empty	Normal	TonerLowDetect	TonerEmptyDetect
	Low	Yes	Yes	No	Open	Open
◎	Empty	No	Yes	No	No	Open
	OFF	Yes	Yes	Yes	Open	Open

Waste Box Setting	Comment
Message	Setting to indicate message to replace waste toner box with BK container Message option: ①Off, ②On (Waste Toner Level variable)
Waste Toner Level	Setting waste toner amount to indicate message/job stop Color model: 20%(Default).10%,0 BW model: 50%(Default),40%,30%,20%,10%,0

Reuse of BK empty toner container as waste toner box

Only empty BK toner container can be reused as a waste toner box

*Color toner container cannot be installed as a waste toner box

①New BK toner container without history of use

→ Unable to install as a waste toner box

②BK toner container installed as a a waste toner box or waste toner box supply

→ Unable to install as a BK toner container for toner supply

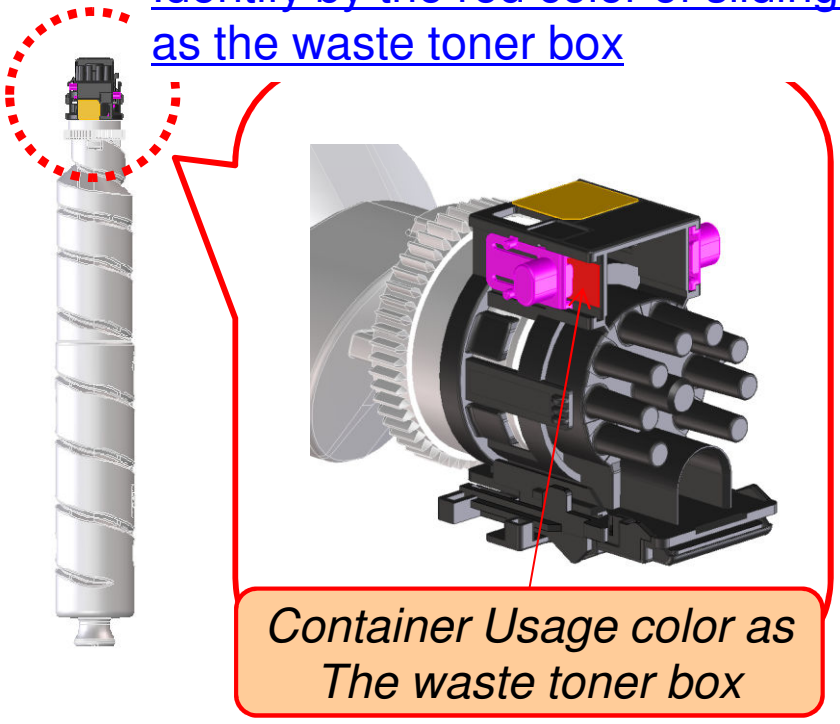
Compatibility	Use as waste toner box	Use as toner container for toner supply
New without history of use BK toner container (Black in appearance)	N/A	Possible (removable at toner empty detection)
Used BK toner container (Black in appearance)	Possible	Re-installable(removable at toner empty detection
Used waste toner box	Possible (re-installable)	N/A
New waste toner box (Gray in appearance)	Possible	N/A
Color toner container	N/A	Possible（to applicable color）

Reuse of BK empty toner container as waste toner box

BK Toner container Usage Identification Method

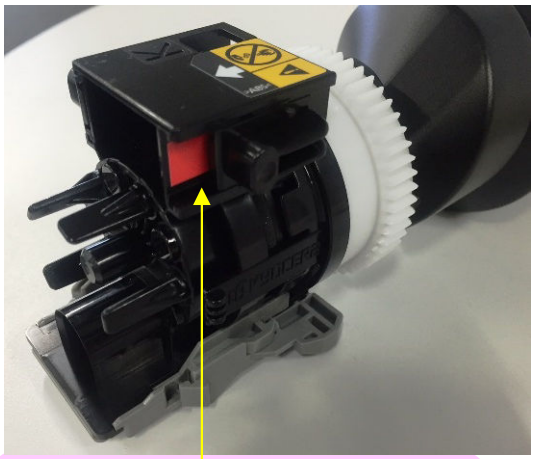
After installing the BK toner container, the condition of toner container will be changed to the waste toner box. For identifying it, the identification red color parts is visible on the BK toner container.

Identify by the red color of sliding parts as the waste toner box



Container Usage color as The waste toner box

During using as toner supply



During using as waste toner collection

Toner container replacement operation sheet

Operation sheet for toner container replacement or BK toner container reuse

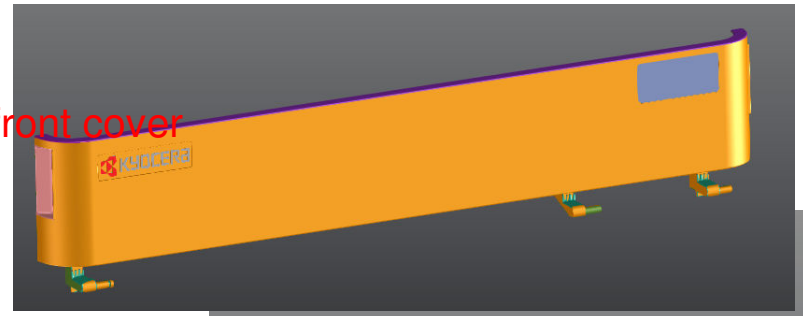
Front side of the operation sheet (at ex-factory)

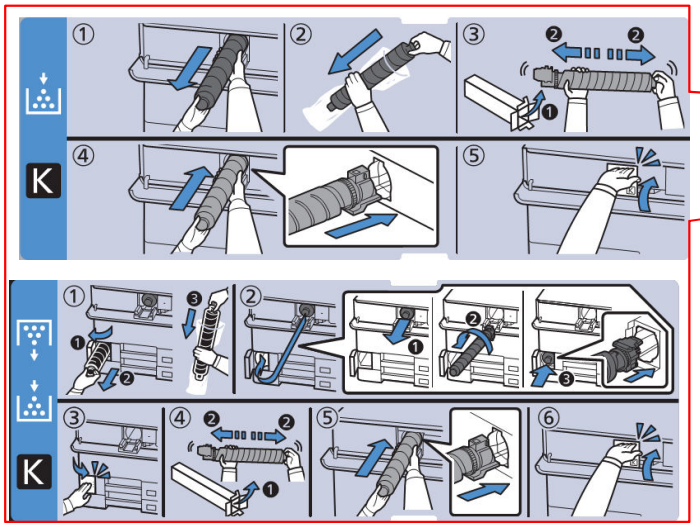
TA: Empty Do not explain that BK toner container is reused as a waste toner box.

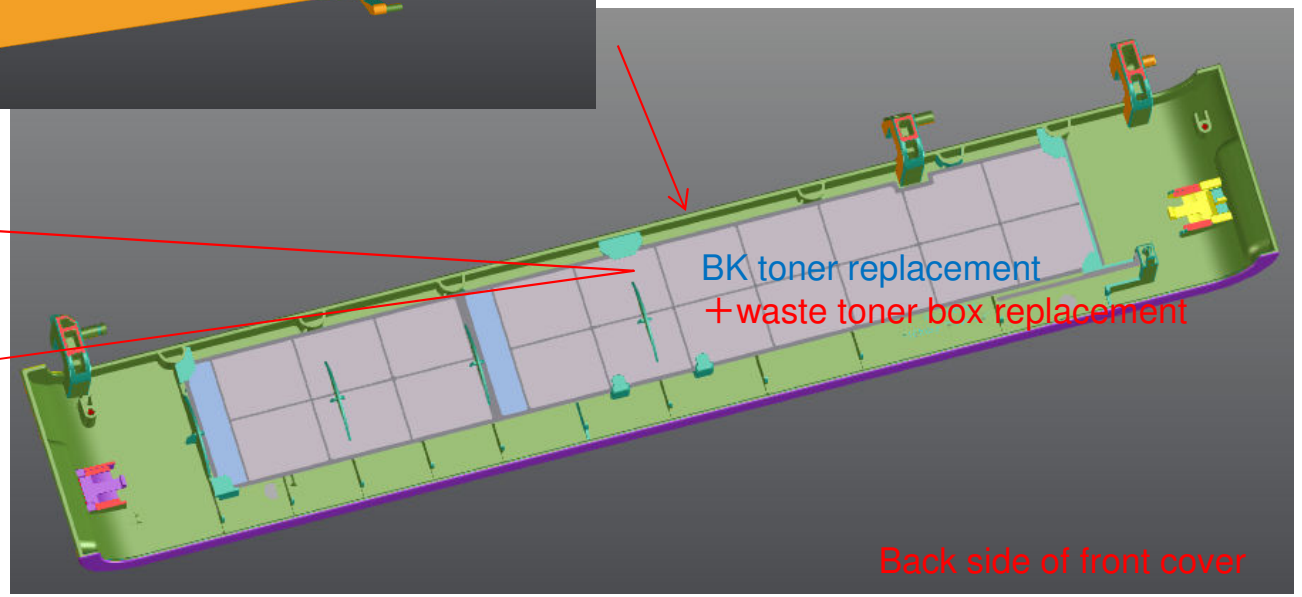
Other destinations: Empty BK toner container is reused as a waste toner box.

Depending on application of empty BK toner container, apply side of sheet.

*Operational illustration changes by side of sheet.







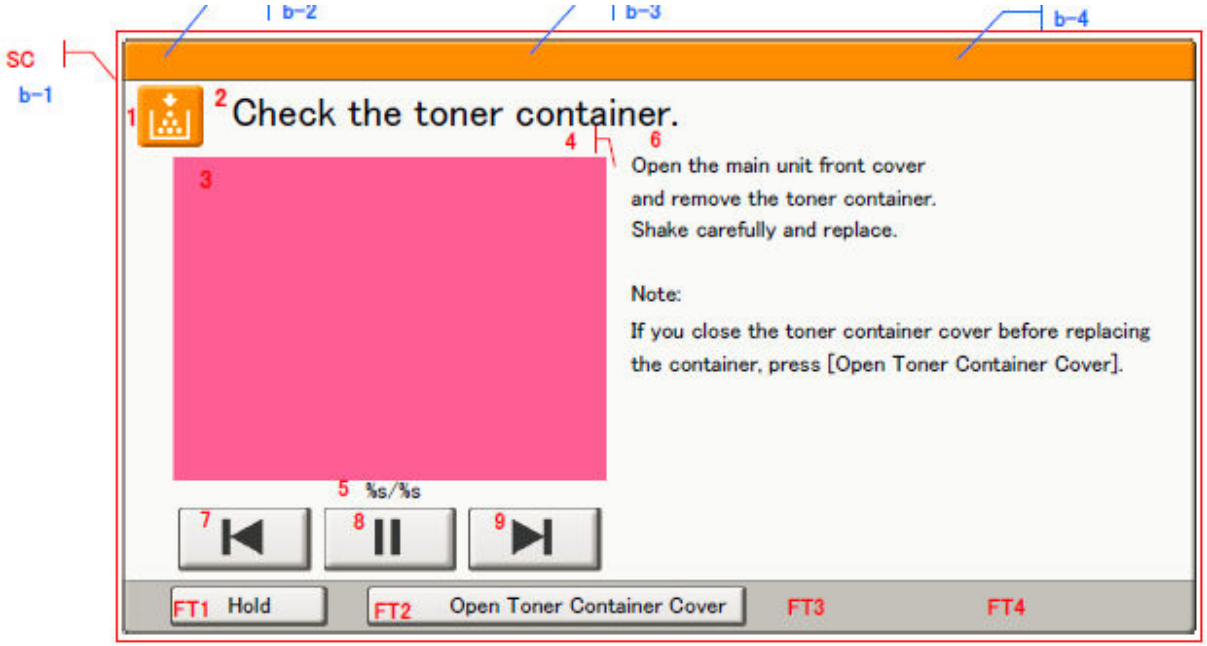
Ver1.1

Checking toner inside the toner container

Container check (Shake the Toner Container)

Although toner is residual inside the toner container (Genuine toner and 50% use or less), simple hopper toner empty is detected, [Check the toner container] message is indicated on the operation panel.

Release the toner container lock and take out the toner container to shake it to agitate toner inside.



No toner container message

If the toner container is not installed, or the different model's toner container is installed, the message below is indicated

"The toner container is improperly installed"

1) When detected, print is disabled as well as the toner destination error.
   *Existing models allow print
2) Color of the toner container is not identified.
3) Indication timing: power-up, recovery from sleep, container cover open/close
4) If detection connector disconnected, "C7320: toner container detection connector error" appears
   *Check connection between the engine PWB and toner container agitation drive unit

<Color model message>

The toner container is improperly installed.
The toner container is improperly installed or not installed.
Open the front cover and install all of 4 toner containers correctly.

<Non-genuine toner message change>
"Unknown toner installed." → "Non-genuine toner is installed."

*In case of different destination container (RFID detection) "Unknown toner installed PC" is displayed.

2-2-1-3
Power Off Setup

Correction

2016 5 10 Ver 1.1

P10, Sleep Recovery Operation

User operation DP original set, ANY key input Energy Saver X → O

IB-35 network Energy Saver O → X *2

Added as followings

*1 Due to panel message for power off, Momentarily recovers and enter into plug-in Off mode

*2 After installation, automatically exchange the mode from energy saver to quick recovery.

Power switch, software, shutdown

Power switch *Push switch under the operation section（Energy Saver)

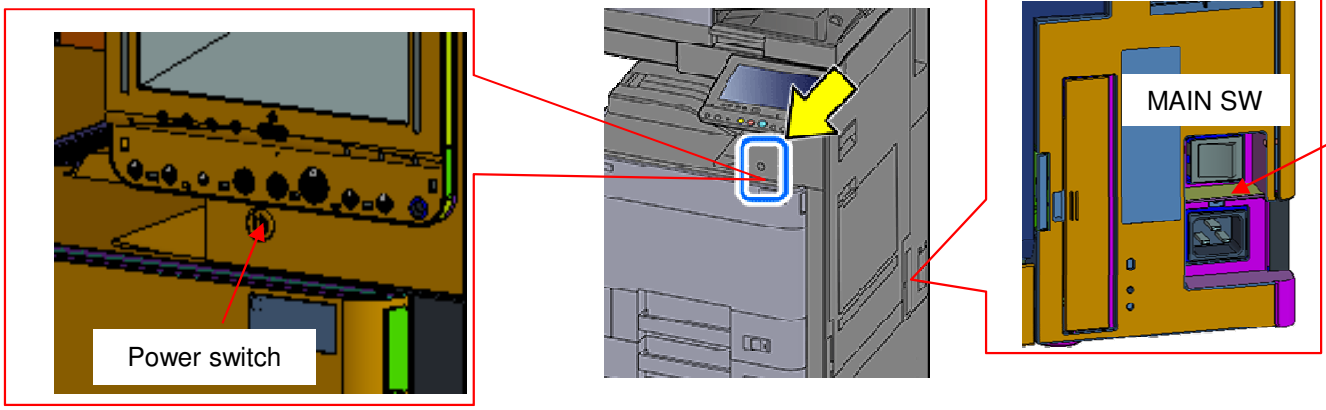
Power switch under the operation unit is to executes software start-up and shutdown. (After turning the power switch off, supplied power becomes 0.5W or less.)

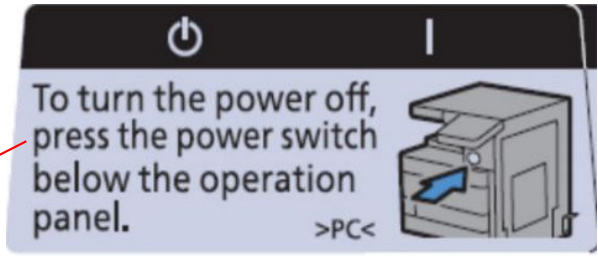
*Power switch on/of is watched by the main PWB (with energy saver software). When the switch is pressed, after HDD/SSD saving operation to avoid data damage, it enters Off mode.

*If directly turning the main switch off at the machine rear left side, memory cannot be saved and it becomes cause of data damage. Start-up time is longer than normal for HDD memory check.

Only when panel lock-up or service call error occurs and it cannot be recovered with the front side power switch turning off and on where the power switch is not detected due to software overflow, turn the power off with the main power switch. (same as disconnecting the power cord)

*Even when the machine is in sleep, press the power switch and confirm the energy saver LED turns off. Then, turn the main power switch off.





Main power switch label

Power switch, software shutdown caution message

Machine front side power switch power off: check power shutdown indication

When turning power off, FAX cannot be received and caution message appears.

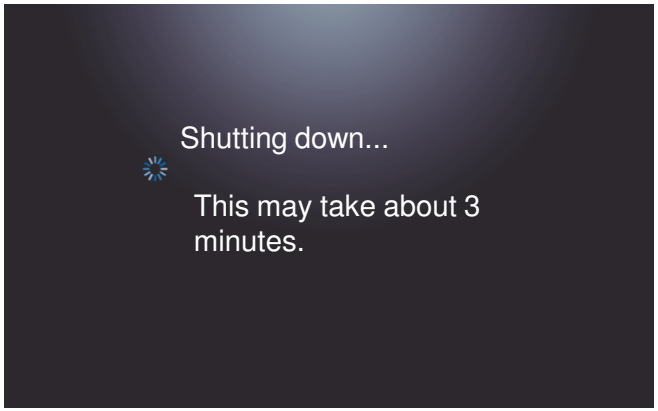
Added in System Menu and FAX Quick Setup Wizard

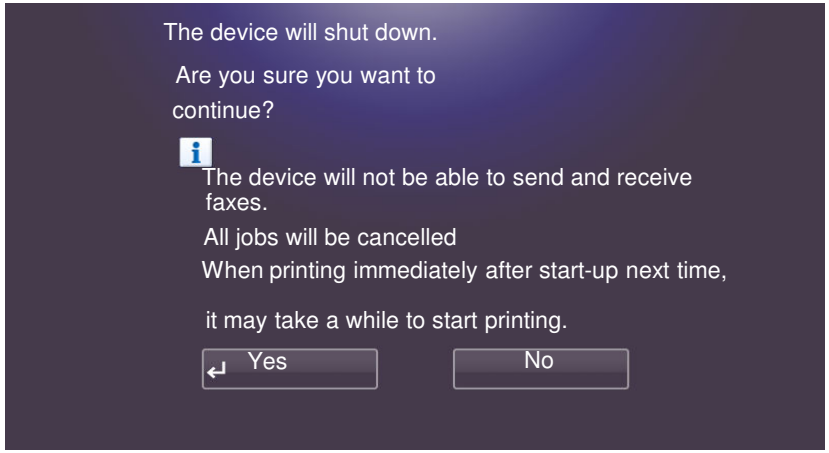
When turning power off, FAX disconnection message appears and select [On(Default)/Off].

[The device will shut down. Are you sure you want to continue? [Yes] [No] (The device will not be able to send and receive faxes.]

*Power shutdown confirmation indication is added in System Menu (Date setting)

Display	Description
Power off message	Shutting down･･･
Power off confirmation screen (Yes/No) whether to show	Quick Setup in System Menu: added in FAX setup
Power off confirmation screen	Indicate confirmation of unable to send and receive faxes





Power shutdown (power switch off)

*1. Shutdown confirmation: [On] (Default)
*2. If FAX installed, FAX disconnection caution message appears

Press power switch

[Setting] Confirm shutdown *1

Yes

Are you sure you want to continue? All jobs will be cancelled *2

No

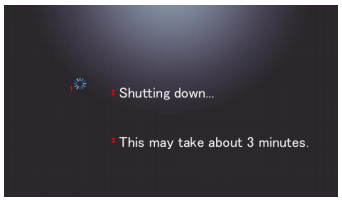
No

Yes

Remaining jobs are cancelled
①FAX resumes after power off/on
②Shutdown log remains

Indicate dialog in process

Time **max.3min.**



Indicate dialog in process

Power shutdown

Normal state

Power switch caution

[Caution 1] If the power switch is pressed during Firmware Update/system initialization/URDS (FAX remote diagnostic)/ Data Sanitization

1. The function in process is continued even if pressing the power switch.
2. Power is turned off after the process is complete.

If unable to turn the power off with the energy saver software (start-up/restarting/ Data Sanitization), pressing the power switch is ignored.

ex.) Start-up or Data Sanitization

- Energy saver software is not start up and cannot turn the above off.

ex.) Restarting

- Energy saver software cannot cancel restart.

<Note>

When error (jam, etc.) or service call error occurs, pressing the power switch turns the power off.

If the energy saver software controlling the power switch locks up, use the main power switch to turn the power off and on.

Power switch caution

[Caution 2] If the power switch is pressed while jobs are in process or in pause,

Power-off job cancel is executed.

①All jobs are cancelled before power shutdown.

②FAX TX/RX job data remains and resume at next time start-up.

③Power shutdown log remains.

*Avoiding damage from power shutdown during access to documents (HDD/SSD/NAND memory saving)

*Avoiding jam from power shutdown while paper exists in the paper conveying path.

<Note> If the main power switch is pressed without pressing the power switch, next time start-up takes more time to recognize SSD (9s for 8GB) (Welcome panel display time will be long) Total start-up time is longer than normal further with CheckDisk.

[Caution 3] If the power switch is pressed during Low Power/Sleep,

After returning the panel display to standby, power is turned off and the energy saver LED is turned off. Power is turned off while indicating the power-off transition message.

*If recovering to Ready, power is off after Ready.

Energy Saver Related Changes

Power consumption at Energy Saver mode

- Off mode: 0.3W
- Sleep mode: 0.9W(120V) 1W(230V)
- (If changing initial settings: 7W)
- Low power mode: 40W
- Standby mode: 40W

Energy Saver key Unified energy saving key

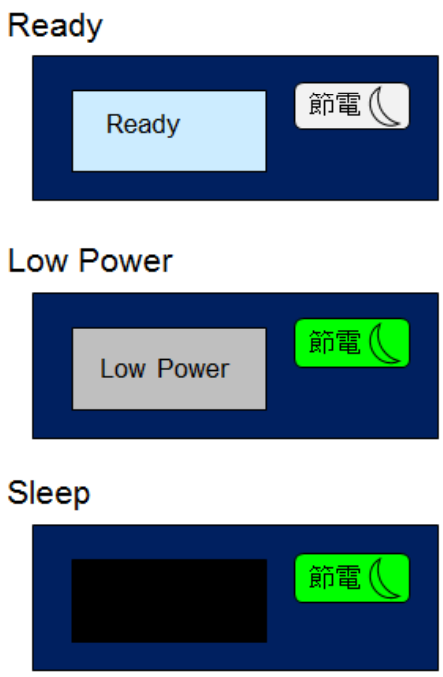
Energy Saver key only: Transition to sleep

Power key is deleted from the operation panel.

Before: Low power and sleep are distinguished by energy saver LED.

New: Low Power (timer transition) is indicated

1) Low Power is indicated on the display during low power mode
2) Energy saver LED is lit during sleep (Old: Off)
   *Do not turn the main power switch off when it is lit.
3) Press Energy Saver key during Low Power and Sleep to return to Ready state



Energy Saver Related Changes

<Changes from existing models>

1) Front side power switch

When pressing the power switch, the machine enters into Off mode and the entire operations are stopped.

2) Power is supplied to the engine CPU and memories only to limit power consumption during sleep.

*Engine CPU during sleep is controlled as the normal operation but CPUの System Clock Frequency is lowered to limit power consumption.

3) Additional sensors for sleep recovery

①Platen/DP open/close ②DP original detection (when setting original, recovery to Panel Ready state)

- The engine CPU watches sensors to detect for sleep recovery and to send to the main PWB. Sensor watch during sleep: sensor power is periodically turned on and off.

4) Print via USB (device) is available.

Sleep Recovery Operation

Recovery trigger	Operation	Recovery action	Quick Recovery	Energy Saver	PlugIn Off mode
User operation	Energy Saver Key-in	Sleep recovery	○	○	×
	Press Power SW	Power-up	×*1	×*1	○
	Key-in, Press Touch Panel	Sleep recovery	○	○	×
	DP original set, ANY key input	Sleep recovery	○	○	×
	IC card touch/USB keyboard	Sleep recovery	○	×*2	×
Timer recovery	FAX timer TX, Weekly timer	FAX TX, power-up	○	○	×
User action	MP tray paper set/cassette loading, front cover close	Engine status update	○	○	×
Network Job	Network Print Job	Print action	○	○	×
	Network FAX, IFAX TX	FAX TX	○	○	×
USB Job	USB(Device) cable connection	VBUS interruption	○	○	×
	USB Print Job	Print action	○	○	×
Fiery Job	Fiery data receipt	Print action	○	× *2	×
FAX TX/RX	Ringer detection	FAX RX	○	○	×
	Ring/F-NET detect/ FAX/TEL auto switch /URDS execute	FAX RX	○	× *2	×
	Fax timer TX/Fax Forward	FAX TX	○	○	×
Wired LAN network	Packet receipt unable proxy response	Network response	○	○	×
	Command Center access	Network response	○	○	×
IB-35 network	Packet receipt unable proxy response	Network response	○	X *2	×
IB-50/IB-51 network	Packet receipt unable proxy response	Network response	○	-	×

*1 Due to panel message for power off, Momentarily recovers and enter into plug-in Off mode

*2 After installation, automatically exchange the mode from energy saver to quick recovery.

Cassette Heater (Option)

Optional supply for cassette heater

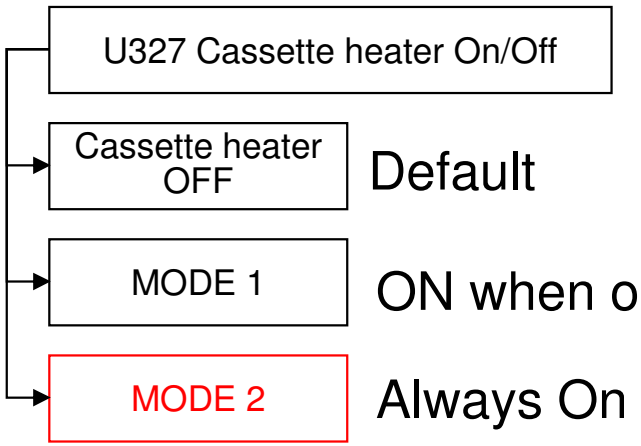
Reduce the paper creasing due to the paper damp under high humidity environment.

Measure for ejected paper curl

ON/OFF control for cassette heater

1. **During the main power switch OFF: Always ON**
2. Mode1 : during sleep or stand by: ON when outer humidity higher than 65% during driving: OFF *every 15 min during sleep or every 1 min during stand-by, the power turns on to check the humidity (DF relay on sound)

   * when heater is OFF, every 2 hours, humidity is checked.



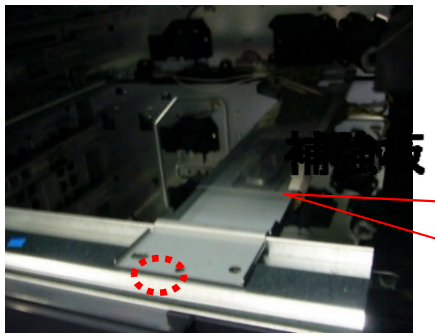
Heater for main unit, PF, side deck: 15W x 1pc each

Engine PCB controls the cassette heater by DRM HEATER REM signal (5V0 power supply: On during power save mode

Install the Cassette Heater

<Install the cassette heater>

1. Place the cassette heater ass'y with mount on the front and rear part of machine frame after detaching the cassette.
2. Fix it with one screw at machine front.

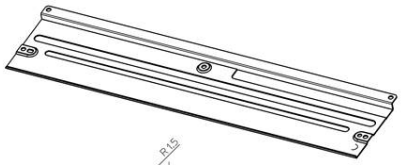


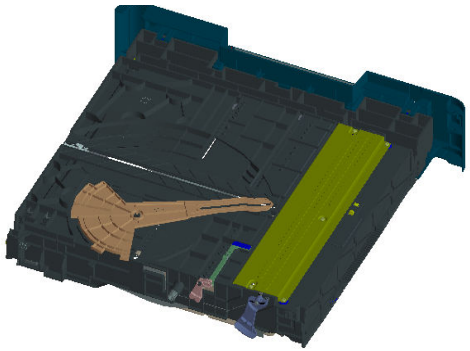
Cassette heater ass'y

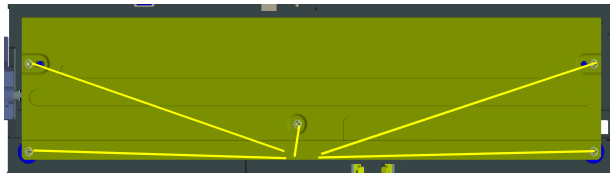
3. Install the reinforcement plate at back side of the lower cassette.

Back side of lower cassette

Reinforcement plate





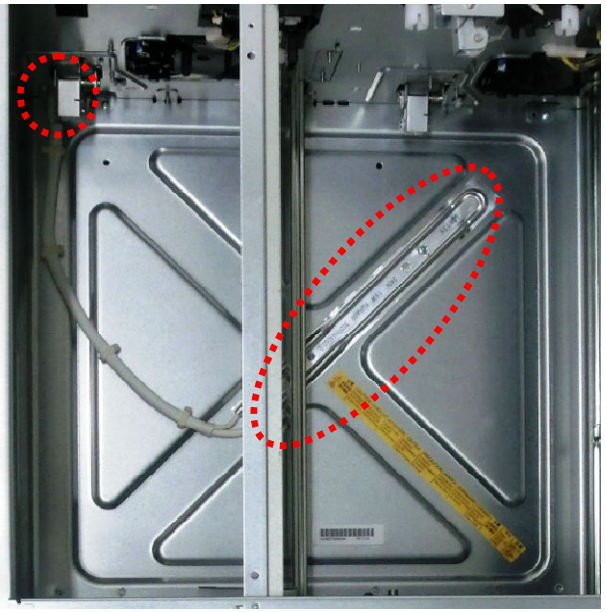


Fixed by 5 screws

Install the Cassette Heater

<Install the cassette heater to PF>

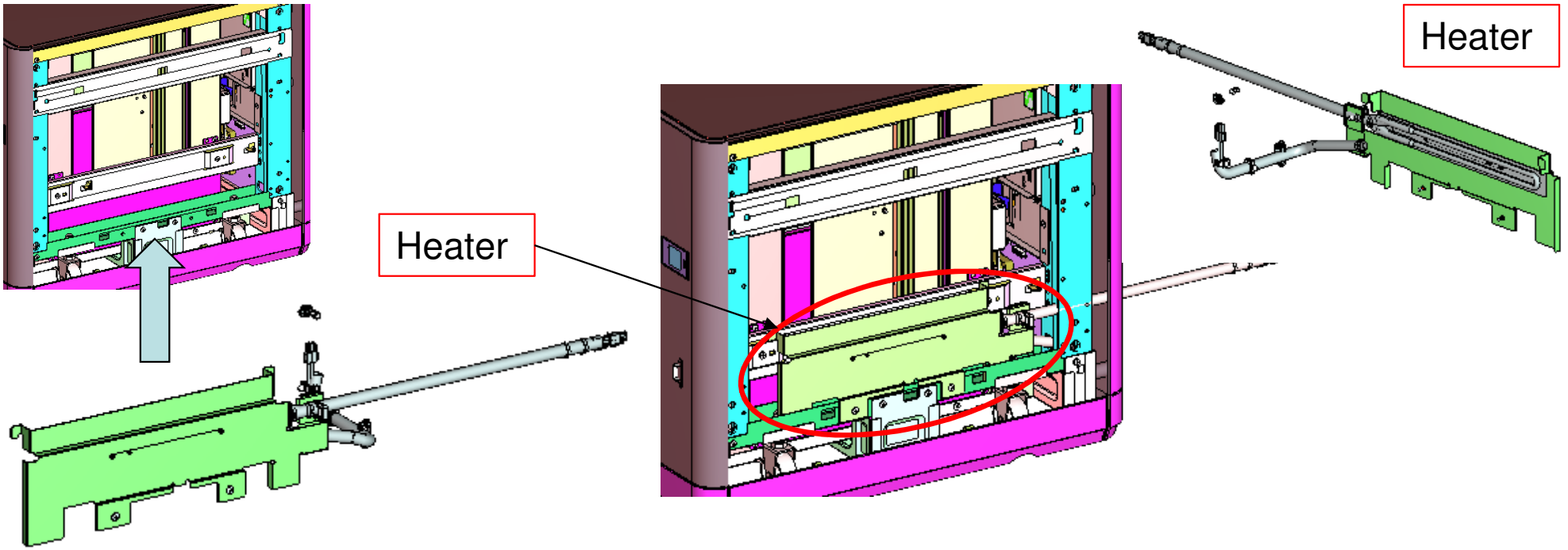
1. Place the heater on the base of PF and fix it two screws.
2. Connect the cable and fix it 4bind to PF base.
3. Affix the yellow cation label.



Install the paper heater for Side Deck

<Install the paper heater to 3K side deck>

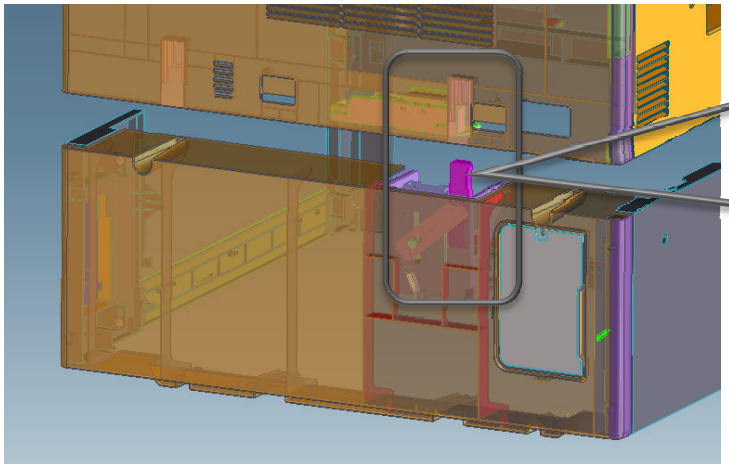
1. After Remove the rear cover of PF, remove the right cover while sliding to rear to release the hooks.
2. After fixing the heater on the mount by screws, install it at the side of PF (fixed by two screws)
3. Connect the heater cable to PF and install the wire saddles
4. Install the connector to main unit after detach the PF cover.
5. Connect the paper plug between the PF and main unit.



PF Set Up

PF Set Up

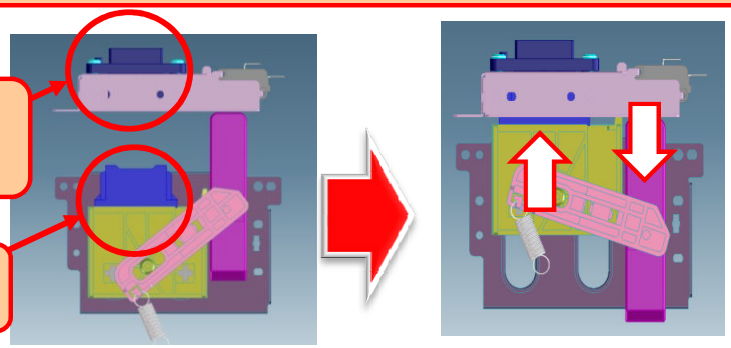
Main unit-PF connection: Drawer and one touch lock at rear

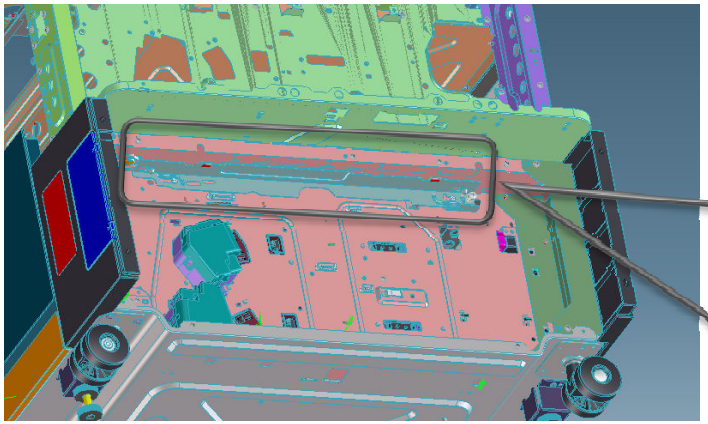


Auto connection after install into the main unit

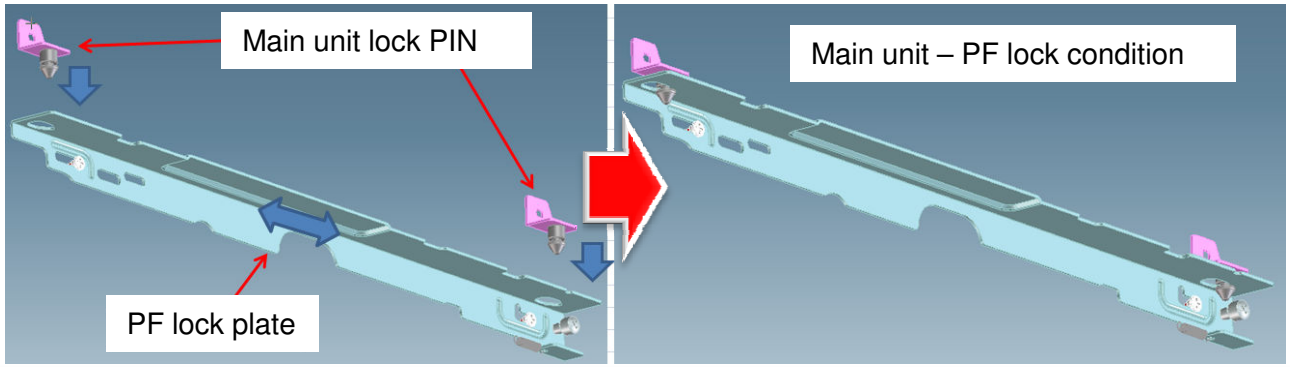
Main unit drawer

PF drawer





Main unit – PF one touch lock at rear



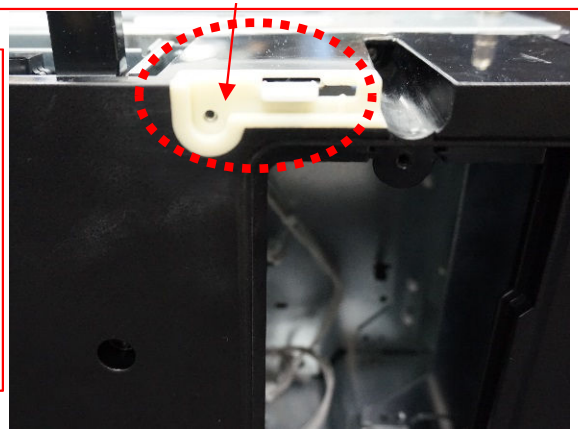
PF Set Up

<Procedure>

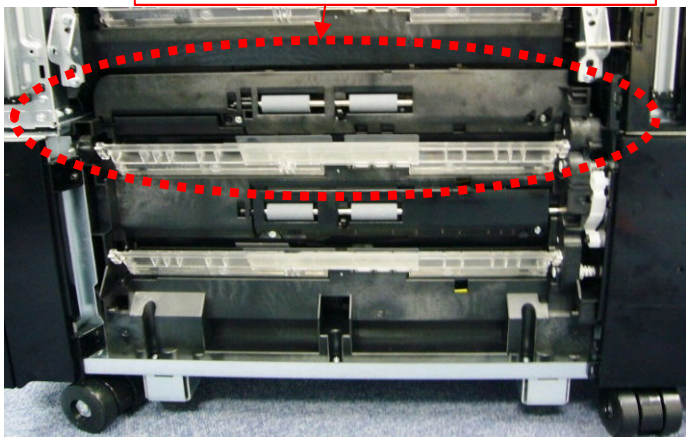
1. Open the PF conveying cover.
2. Place the main unit to PF.
3. After the positioning Pins are aligned at machine rear, the drawer is connected. * Auto drawer connection by the difference height of pins and drawer.
4. After jointing the PF and main unit, fix them by one screw at upper part of PF rear cover.
5. Detach the lower cassette from the main unit and fix them by two pins at the front.
6. Install the machine fall down prevent plates. (Left side: two locations at front and rear, Right side: rear one location at rear)
7. Adjust the registration and center after feeding each cassettes.

When detaching PF from main unit, release the joint part of drawer to shift the release plate after remove the screw.

Fix it by one screw at PF rear



Middle conveying unit



2-2-2-2.
3K Side Deck Set Up

Revision History

2016 8 26 ver1.3

P5 2. Joint to the main machine Correct the illustration of Film attaching

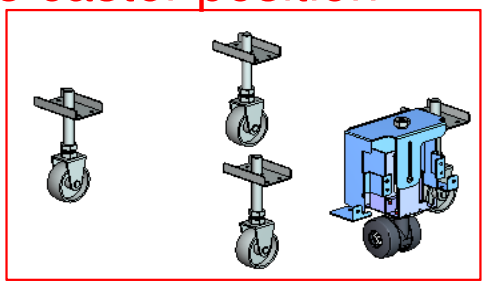
3K Side Deck Set Up

1. Adjust the height of PF to be lower for jointing with the main body. (no need for Mercury3.)
   1) Remove the PF front cover and detach the lower front cover (2screws)
   2) Loose the screws to move the front side caster up and down.
   3) Remove the rear / right cover (slide to rear side) and left plate
   4) Turn the side of PF to be top.
   5) Loose the nut of 4 caster lock with a spanner and adjust the height of caster till 18mm from frame. (use the paper conveying guide film (18mm width) to check the position: 18mm width film can be inserted and then turn the caster one round and make sure this film can not be inserted.) *The caster should be directed to the machine side.
   6) Fix the front side of caster screws.

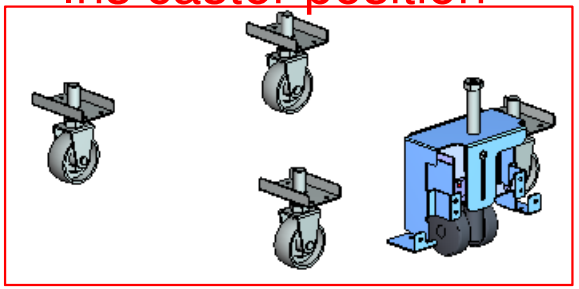
   * Check the front and rear height of main machine is leveled.

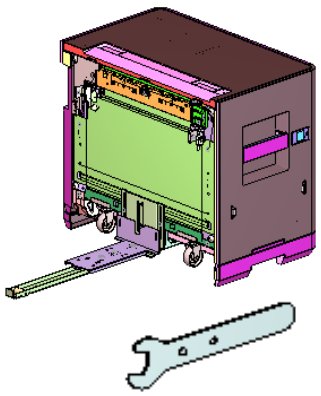
   *The height of main machine (Iris) is lower 3cm comparing with Mercury 3. (Length of caster becomes shorter.)

Mercury3 caster position (default)



Iris caster position





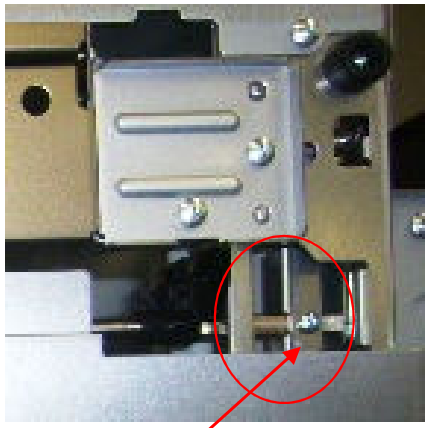
3K Side Deck Set Up

2. Joint to the main machine

2-1. For the PF side

Adjust the lock lever position to the machine width (no need for Mercury3)

1) Pull out the paper drawer.
2) Remove a fixed screw for lever shaft and shift the shaft to front (right) side
3)Change the direction of front / rear lock levers to be turned a half
4) Shift the left side lever to machine rear side after removing a screw.
5) Turn the shaft of lever and make the lever position come to the lock position with main machine.



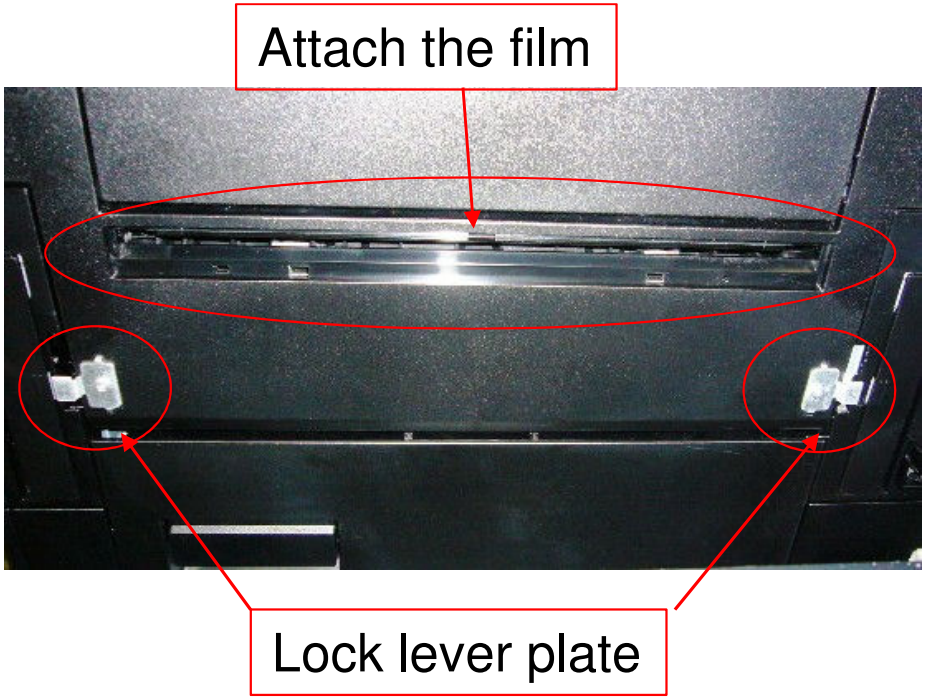
Remove a fixed screw for lever shaft.

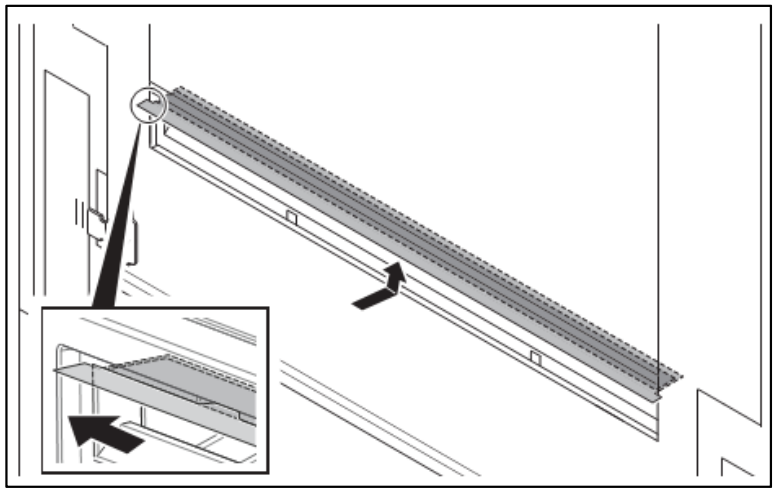
Turn the lever 180degree to change the direction of lever.

Shift the shaft to front (right) side.

3K Side Deck Set Up

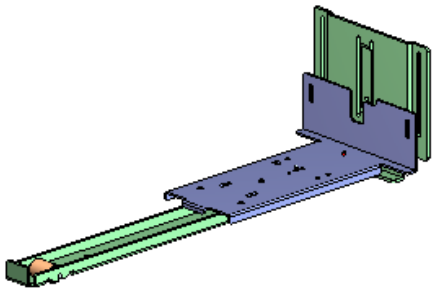
2. Joint to the main machine
   2-2 For main machine
   1) Install the lock levers (differs from one for Mercury 3) at front and rear covers. (one screw each)
   2) Remove the paper entrance cover.
   3) Peel off the film of both sided tape from 18mm paper conveying guide film (original for Iris) and attach it to align with the upper side edge of paper entrance.
   4) Install the safety sw on plate.

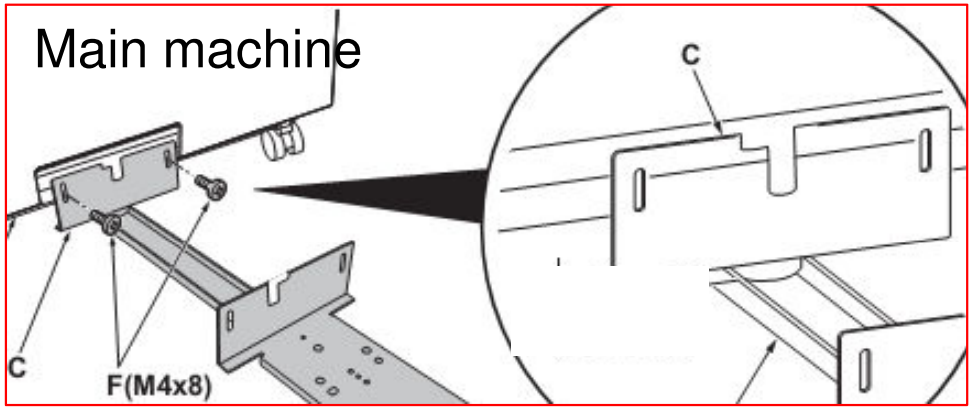




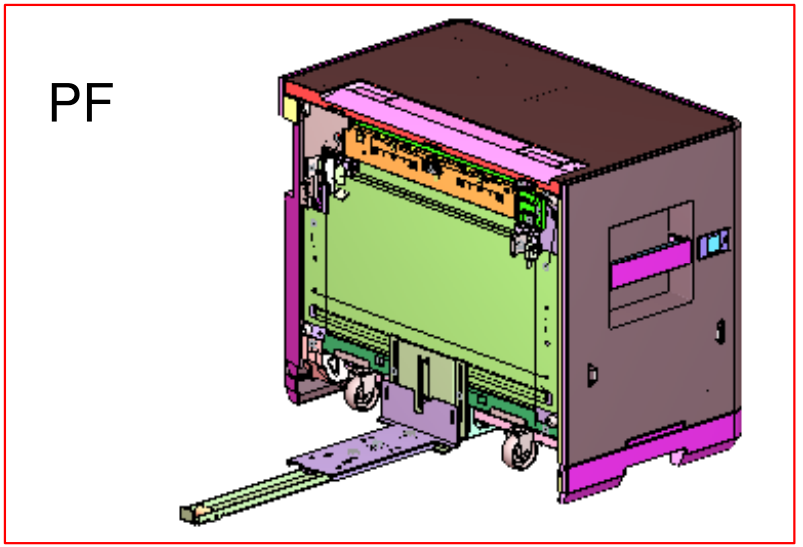
3K Side Deck Set Up

3. Install the rails
   Main machine side 1) Install the slider guide.
   PF side 2) Install the slider.
   Main machine side 3) Install the right lower cover.





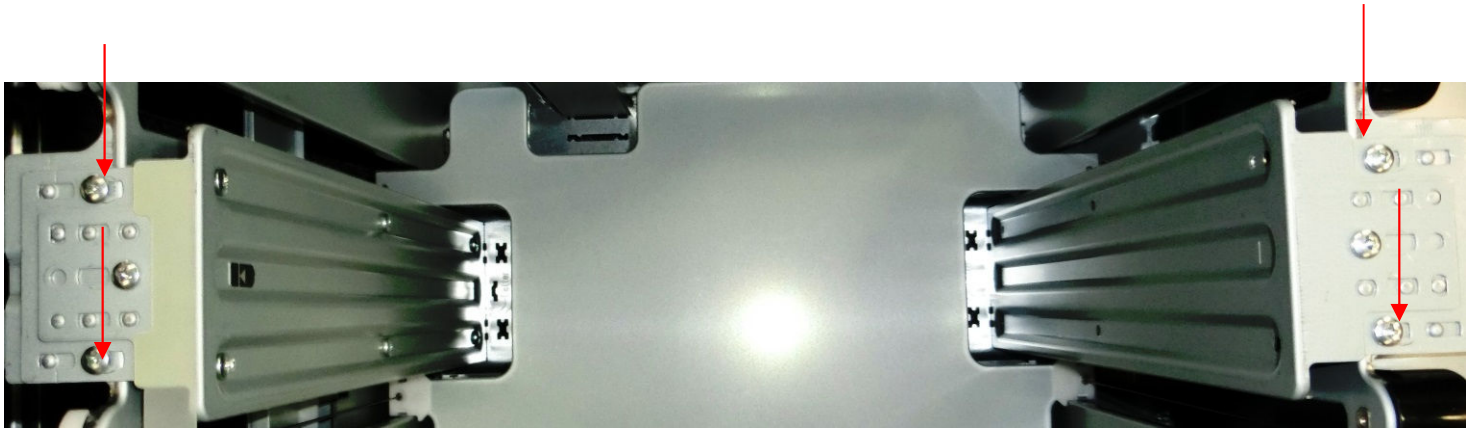
After placing the small base slider on the large base slider, insert the sliders under the main machine. Fix the slider with screws which comes to center of line.



Fix the slider with side deck while checking the clearance with floor.

3K Side Deck Set Up

4. After connecting the cable, joint the side deck with main machine.
5. Set Paper.
   Make sure to check the front and rear of paper is guided by the plate without any clearance. If this clearance is a large, it causes the paper skew feeding.
   Please re-adjust the paper guide plate according to the paper size.



2-2-2-3.
DP Set Up

Revision History

2016 8 26 ver1.3

P4 2.DP Set Up

DP cable wiring method is changed.

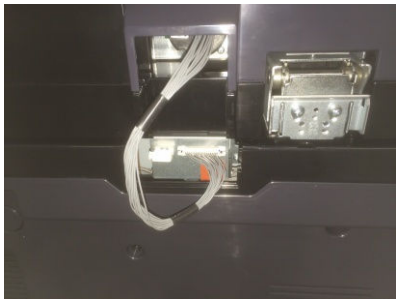
DP Set Up

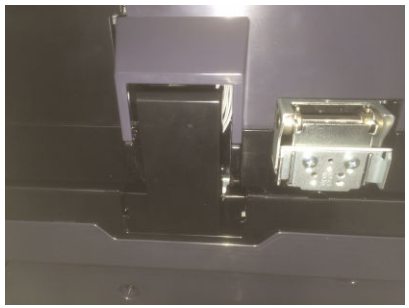
DP Installation

1. Insert the DP hinge part into the main machine (DP-7100,DP7120)

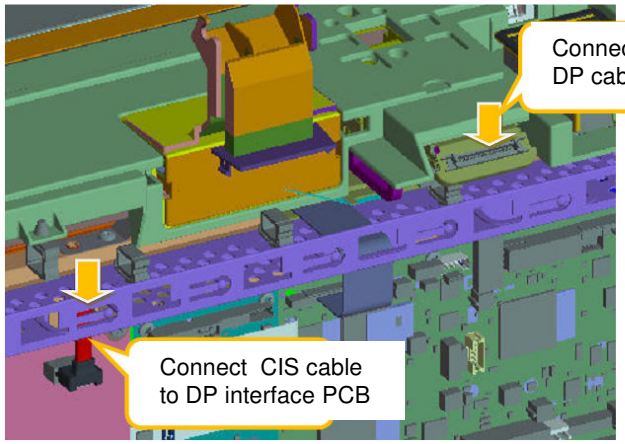
Insert the DP hinge into the ISU holes

2. Connect the interface cable





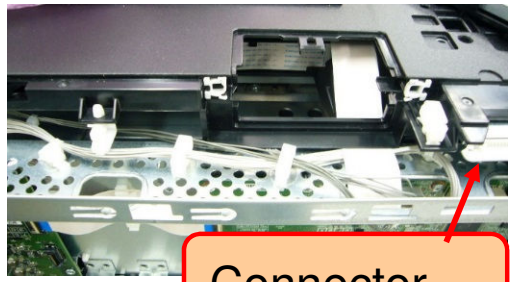
DP-7110



1) Insert the DP interface cable to the ISU connector

2) Install the interface cable cover of which hooks fit into the ISU

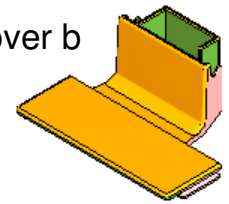
DP Set Up



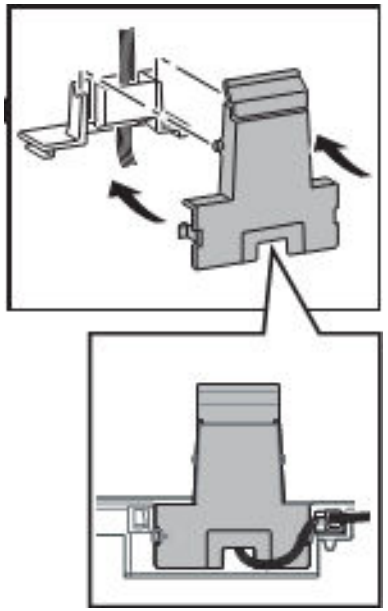
<Install DP into the main machine>

1.Insert the DP hinges to ISU holes.
For DP-7110, hook the hinges into the pins and fix it by screws
2.Slide the upper rear cover to left side after loosen a screw.
3.Remove the rear top cover (2screws) and connector cover.
4.Insert the DP cable into the cable cover b and insert this cover into the main machine.
5.Install the cable cover a over the cable cover b.
6.Pass the DP cables from the cutout at lower part of Cable cover a and connect the DP cable to ISU connector after fix it with the cable saddles..
(DP-7110: Install the DP relay PCB)

Cable cover b

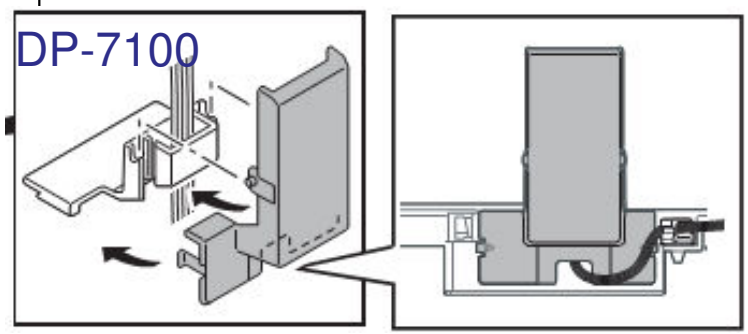


DP-7120

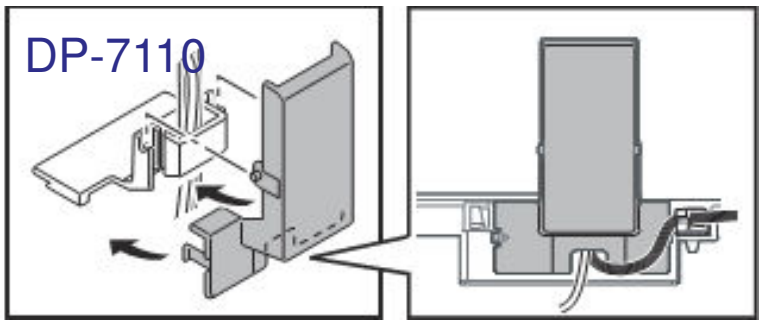


Pass the DP cable from the cutout at lower part of Cable cover a

DP-7100



DP-7110



DP-7110 Install the DP relay PCB

<Install DP into the main machine>

7.Return the rear top cover. For DP-7110, remove the panel cut part from cover.

8. Install the screw seal cover at left hinge. Install the angle regulated plate at right hinge.

9. Close the DP after place the original plate on the contact glass.

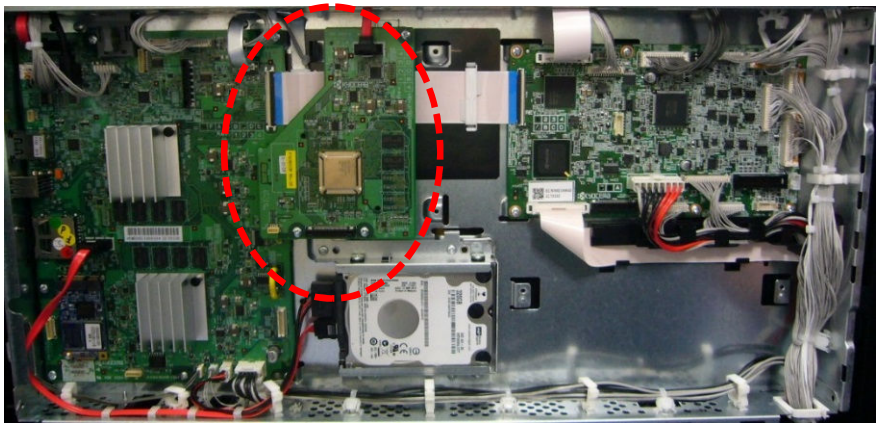
10. After test print, if the original is skewed, adjust the right hinge front/rear position after open the lid.

11. Attach the black seals on the holes of hinges.

12. Perform the maintenance mode with the adjustment chart(registration/center)

<DP-7110: Install the DP replay PCB>

1. Remove the upper rear cover. (one screw)
2. Connect the DP relay PCB onto the main PCB and fix it by three screws.
3. Connect the CIS SATA cable to the DP relay PCB.
4. Put the SATA cable into two cable saddles.



DP adjustment items

Item to be adjusted	Adjustment method
Registration:±2.0mm	Adjust U071 (0.0863mm/step)
Center Simplex：±2.0mm Duplex：±3.0mm	Adjust U072 to correct the image start position
Right angle ±2.5mm/375mm	Adjust the height of left hinge to be even from front to rear
	Adjust the front/rear position of the right hinge
Magnification Whole length ±1.5%	Adjust U070 to change the DP scanning speed.

AK Set Up (Install 1K, 4K DF)

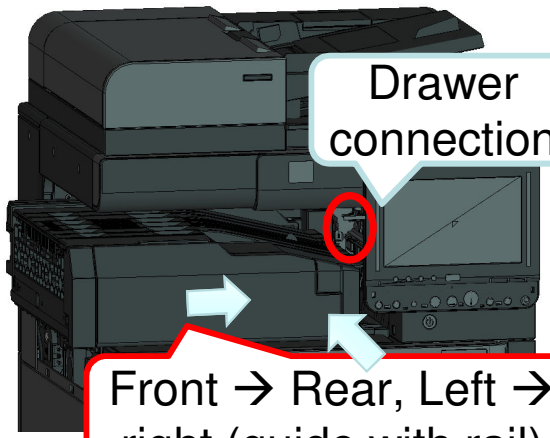
AK set Up

When install the DF, remove the reverse guide or Job separator.
Then install the AK for conveying paper as a bridge.

<Common method for AK and Inner DF>
Remove the left cover and upper tray

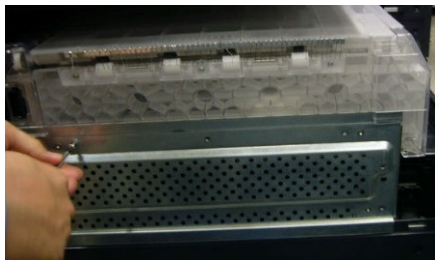
<Common method for AK and Inner DF>
Remove the paper full detection part (one screw at front)

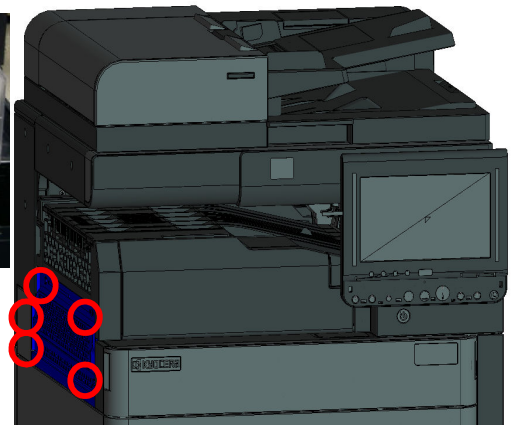
Install the rail



Drawer connection

Front → Rear, Left → right (guide with rail)





AK fixing plate with main unit (fix with 5screws)

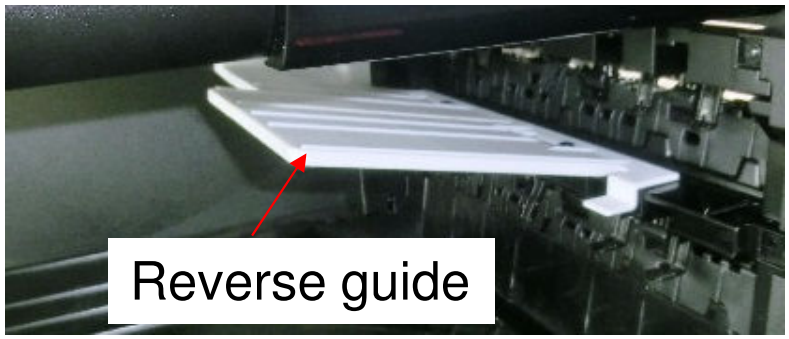
4K,1K DF Set Up

1 AK install procedure

<First procedure>

Remove the reverse guide.

- For KDA 25ppm model, Job separator
- Need to be removed.



Change the setting of U211 Set Enhancement Connection
Inner Job Separator: ON→OFF

<AK-7100 install procedure>

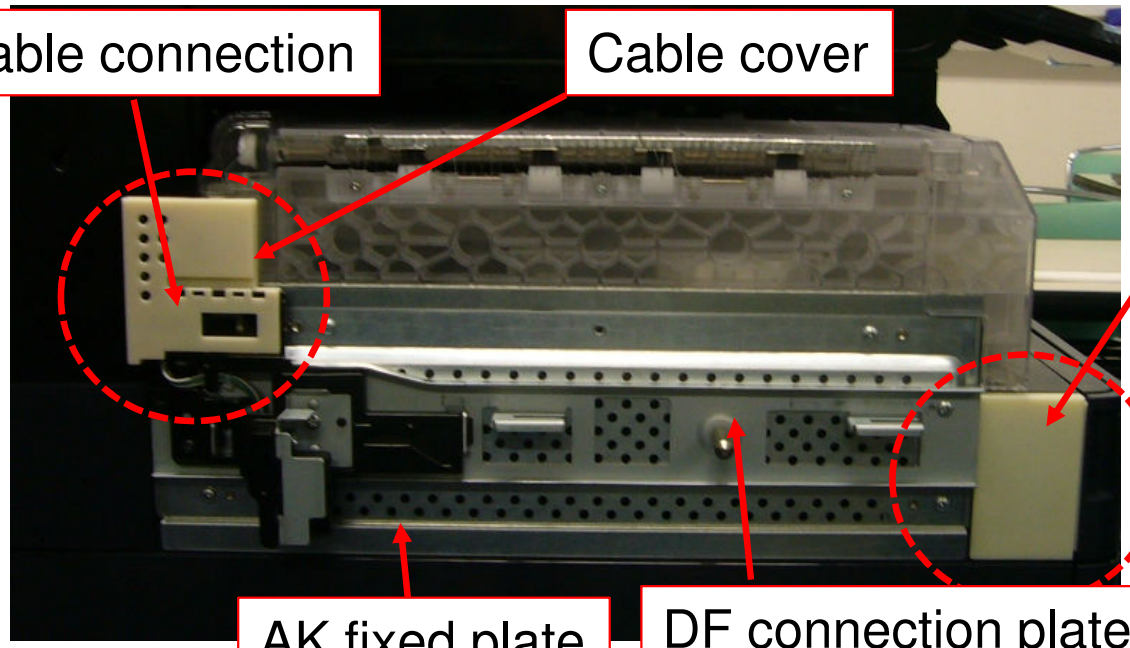
1. Remove the drawer cover at inner part of right rear.(remove one screw)
2. Remove the lower part of ejection actuator part (one screw at front)
3. Insert the rail at the inner right lower part.
4. After inserting the AK unit from front to rear at machine inner part, slide it the right.

4K, 1K DF Set Up

2 Main unit side: DF connection plate installation

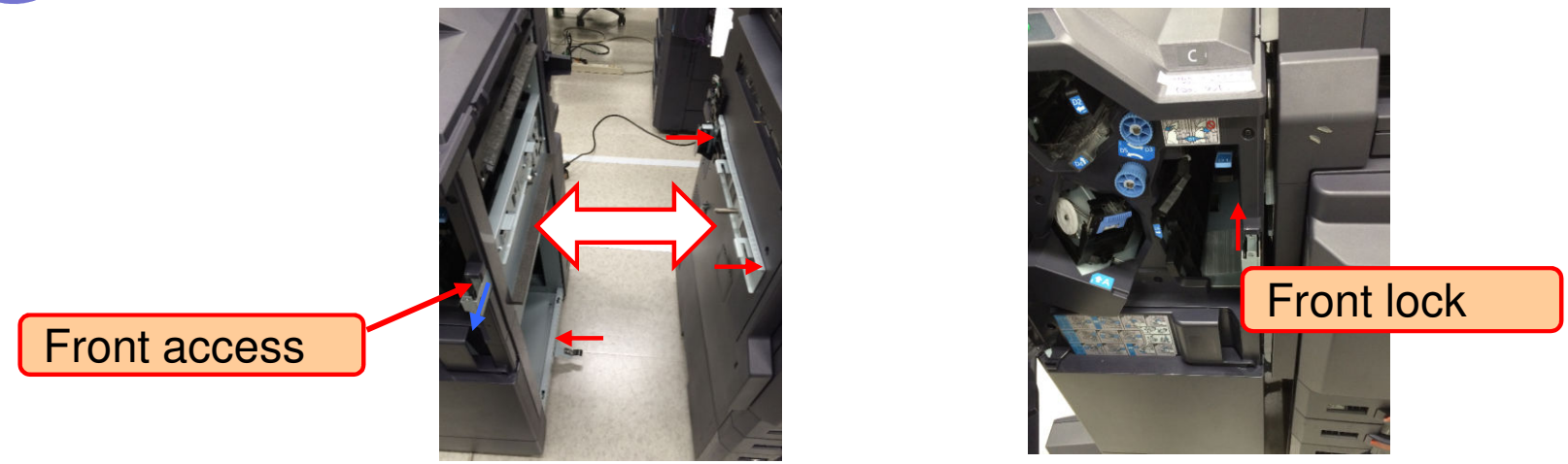
<Set up for main unit after AK installation>

1. Install the AK bundled cover at front
2. Install the AK bundled fixed plate to the left side of AK. (5 screws fixed from lower rear side to lower front)
3. Install the DF bundled connection plate (two screws M4 x12) *The connection plate is common item.
4. Connect the cable and install the cable cover.



4K, 1K DF Set Up

3 4K, 1K DF main unit connection



< DF connection with main unit>

1. Install the AK bundled earth plate lower part of DF frame.
   Fix the earth plate lower side of hole (B marking side)
   (Caution) DF bundled earth plate is for Mercury3, Zeus3.
2. Open the DF front cover and remove a screw for the joint lever. Then pull the lever to front.
3. Join the DF to match the pins of DF connection plate.
   Check that the AK paper ejection and DF paper entrance is same height.
   * If it is difference, adjust the height of DF.
4. Fix a screw for the joint lever after push into the DF.

2-2-2-5.
DF-7100 Inner DF Set Up

Correction

2016 5 10 Ver 1.1

P7,P8 Punch holes center position adjustment

These pages are added.

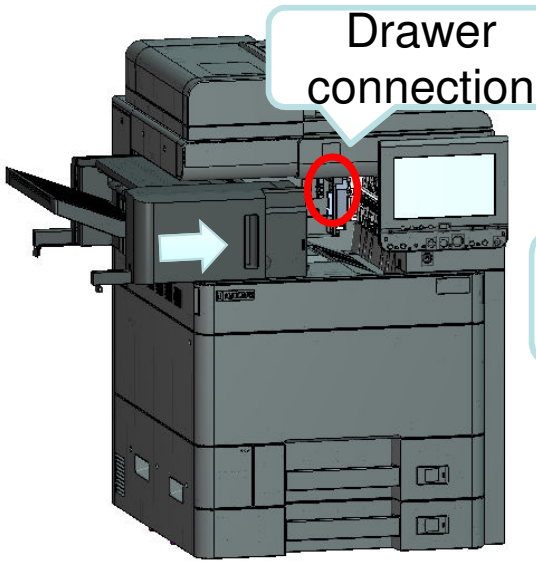
DF-7100 Inner DF Set Up

Inner DF set Up

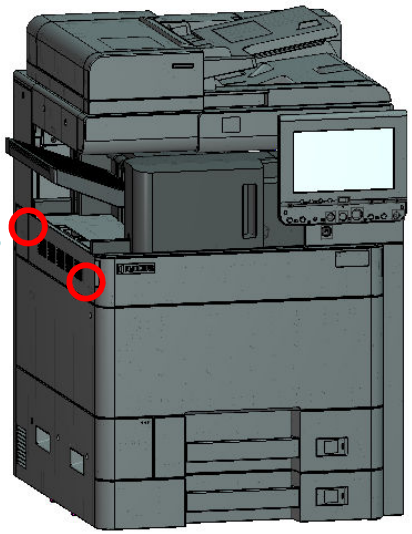
When install the inner DF, remove the reverse guide or Job separator.

<Common method for AK and Inner DF>
Remove the left cover and upper tray

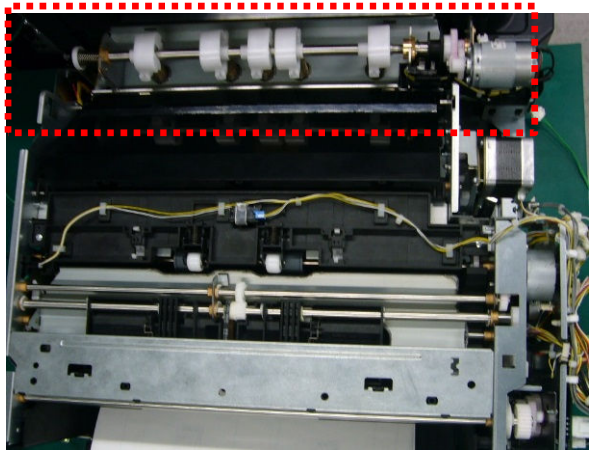
<Common method for AK and Inner DF>
Remove the paper full detection part (one screw at front)



Fixed with two screws



Punch unit



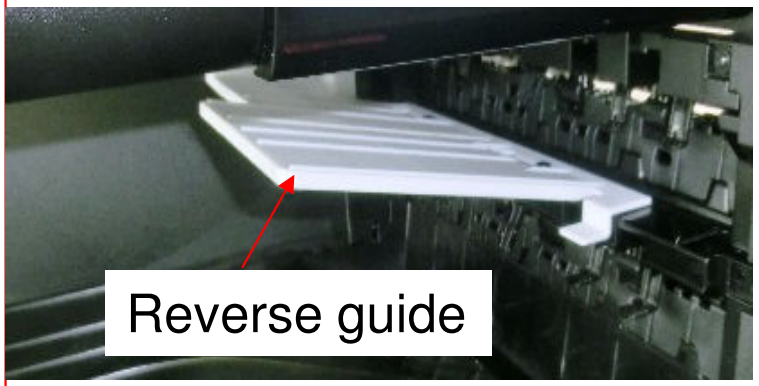
DF-7100 Inner DF Set Up

<First procedure>

Remove the reverse guide.

- For KDA 25ppm model, Job separator
- Need to be removed.

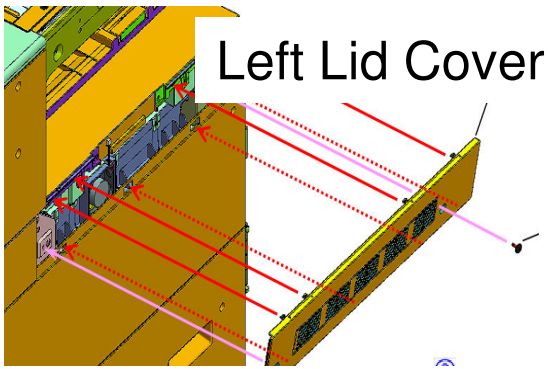
Change the setting of U211 Set Enhancement Connection Inner Job Separator: ON→OFF



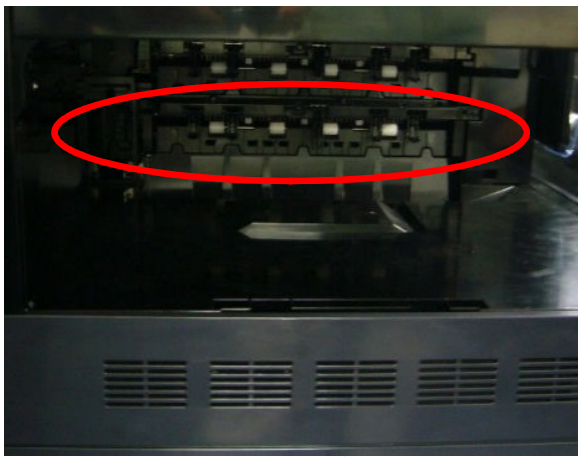
1. Open the front cover, remove the left lid cover after releasing the hooks from front lower side while lowering the cover. (two screws, each four hooks upper/lower part of cover)

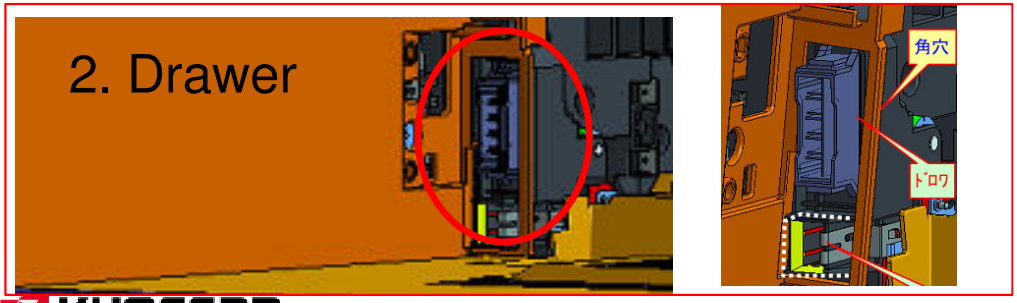
2 Remove the drawer cover at inner part of right rear.(remove one screw)

3 Remove the lower part of ejection actuator part (one screw at front)



3. Lower part of paper eject section



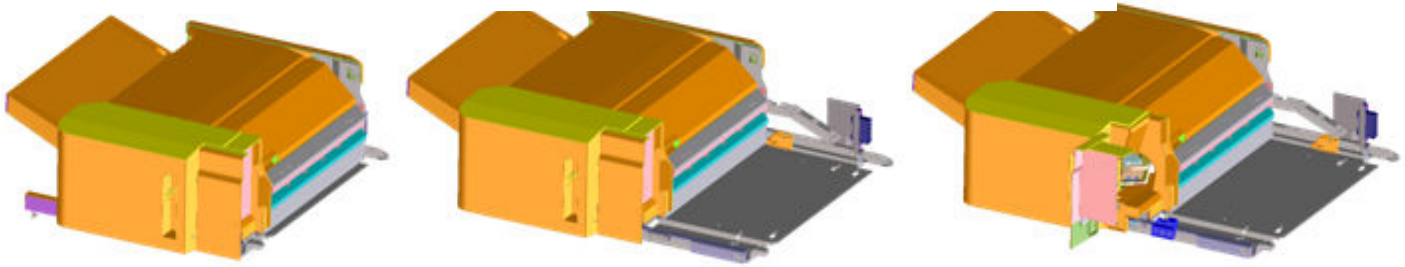


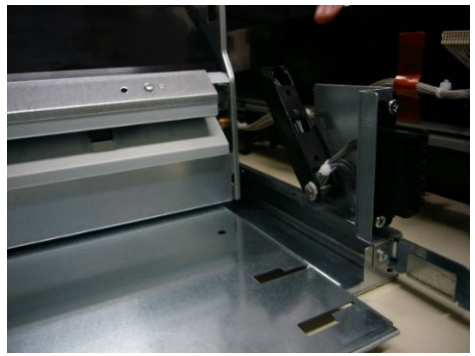
DF-7100 Inner DF Set Up

Inner DF set Up

4. Lift up the front and rear base of DF by both hands.
5. After inserting the DF into inner part of machine from the front to rear end, slide it to the left direction. *The leading of front and rear rails of DF comes into the main unit receiver and connect with the drawer.
6. Fix the left side of DF (two screws)
7. Open the front cover and install the left upper cover.

* When detaching the DF, lift up the DF tray and release the hooks of left upper cover from lower front side, then remove the DF fixed screws.



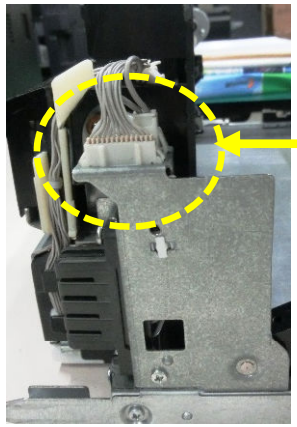


DF-7100 Inner DF Set Up

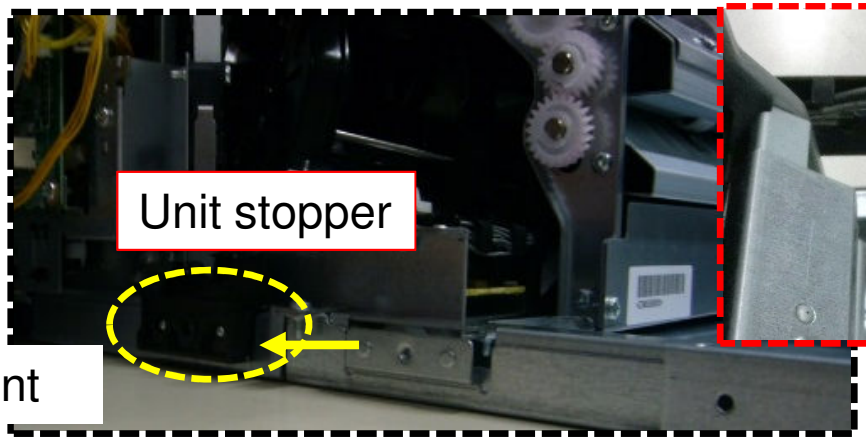
Install Punch Unit

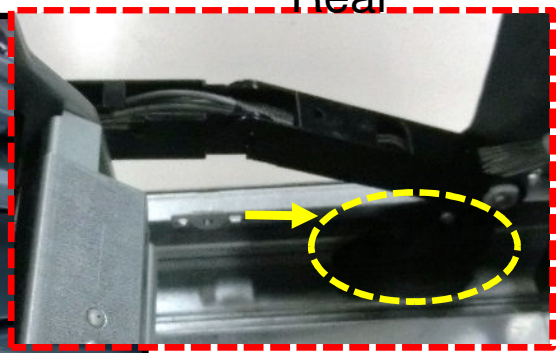
After detecting the paper trail edge, stop the feeding and punch at bottom of paper.

1. Place the Punch unit on the holes of DF mount aligning with four hooks of punch unit base.
2. Shift the Punch unit to rear and fix it by one screw at front. (Adjust the center. Normally set it at middle position of line marking)
3. Connect the two cables of punch unit to DF connectors.
4. Remove the DF unit stopper (one screw) at front, install it to left side after opening the stapler cover.
5. Remove the stopper at rear of DF and install it to left side.
6. Install the punch waste tank.
7. Install the front punch cover. (one screw) after adjust the center



Connect two cables at rear

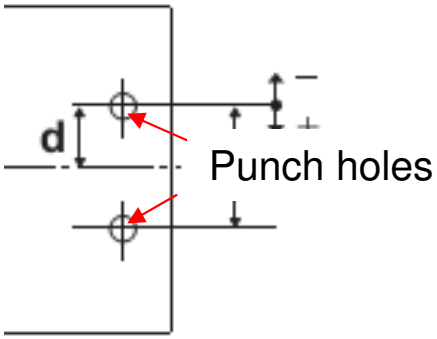




Punch holes center position adjustment

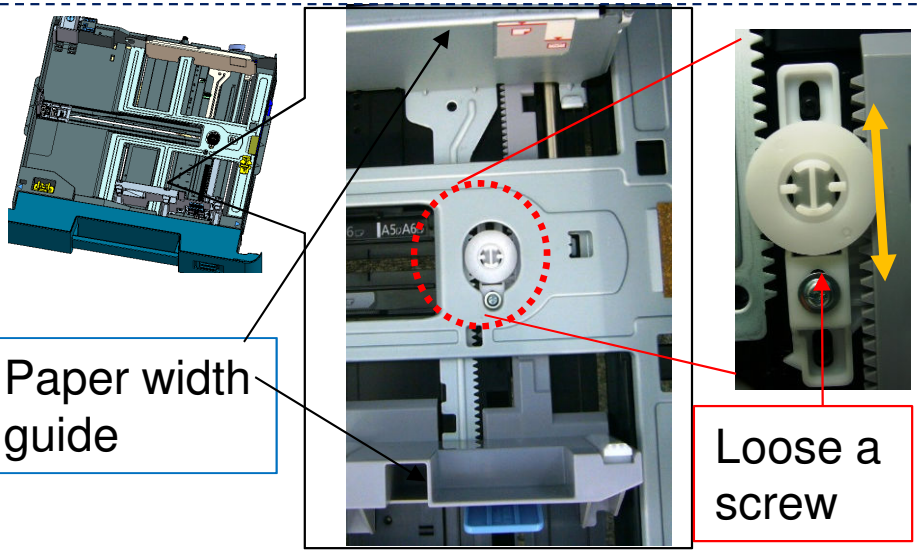
<Punch center position adjustment>

1. Set a paper on the MP tray and execute the test print with the punch mode. If the front and rear punch holes are shifted one side, move the punch unit to the opposite position of holes to be the center position and fix the unit by one screw.
2. Feed the paper from each cassette and check whether the punch holes are shifted to one side.



In case of punch holes shifted to one side

Loose one screw which fix the pinion gear (it is to set the center position of the paper width guides in the cassette) and move the gear to opposite direction from shifting direction of punch holes.



* If the punch holes position are shifted to one side, the corner of Letter R size paper may fold or J421X may occurs because the leading edge of paper might be caught by the punch holes of unit .

Punch holes center position adjustment

<Punch center position adjustment>

3. When change the center position of the paper width guide in the cassette, execute the U034 to adjust the image center position.

2-3-1-1.
Set Up OPTION

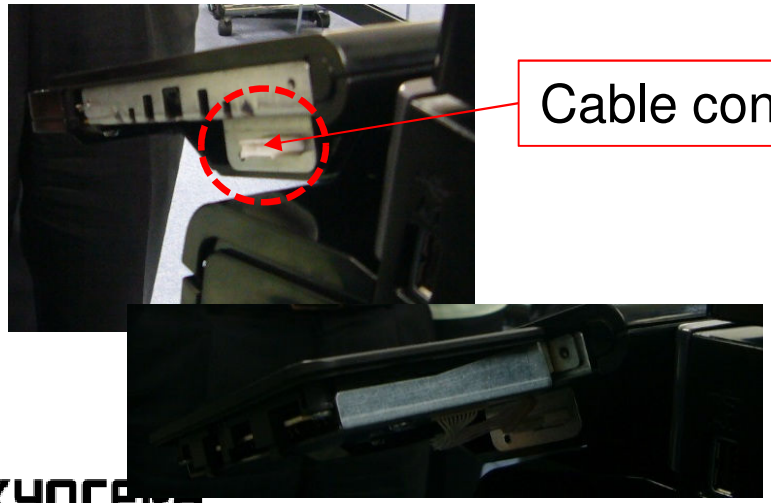
Install the Ten Key unit

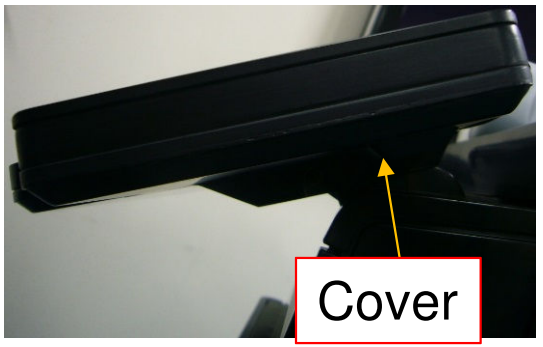
<Ten key unit installation>

1. Remove the lower left cover for the operation panel (one screw)
2. Connect the cable.
3. Install the Ten Key Unit to the operation panel. (two screws)
4. Install the Ten Key Unit Cover (two screws)
5. Attach the bundle packed optional language label for “Clear / Quick No. Search / Enter”.

*When installing FAX, attach “ABC” label on the upper part of Ten key.

* NK-7110 (for KDA): “ABC” is already printed.

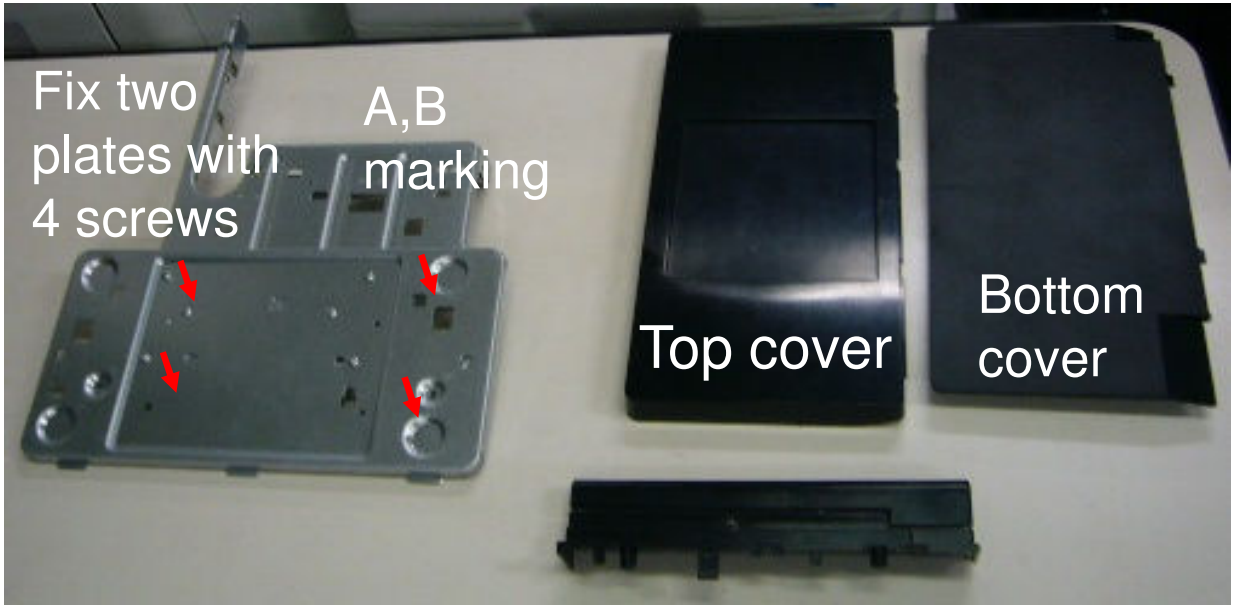




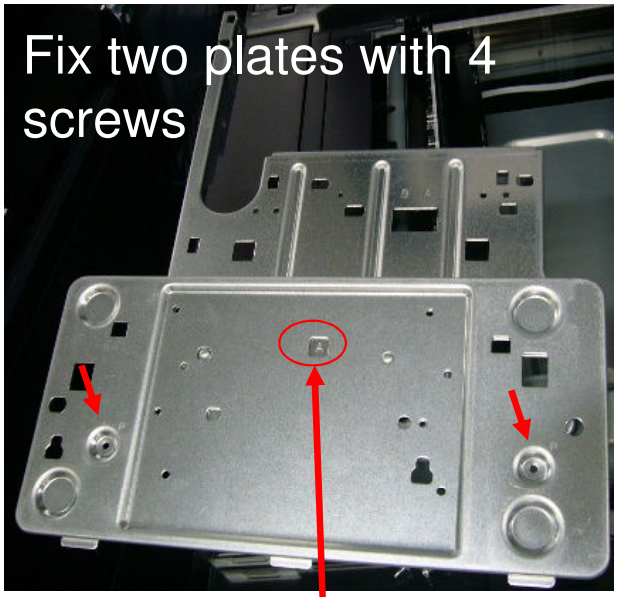
Install USB key board

<Assembling the USB key board stand>

1. Pick up two metal plates from box. (One plate has A and B carved mark at the center part. Another plate has hole at center part)
2. Put two plates together to see “B” mark on a hole of center part.
3. Fix two plates with 4 screws.
4. Slide the bottom cover to the bottom part of plates and fix it with two tapping screws.
5. Install the top cover on the top of plates



<USB keyboard stand>



When put two plates for stands together, a carved mark of A or B can be seen on this hole.
A: Tomcats, B: Iris position

Install the lower cover Fix it with two tapping screws

Install USB key board

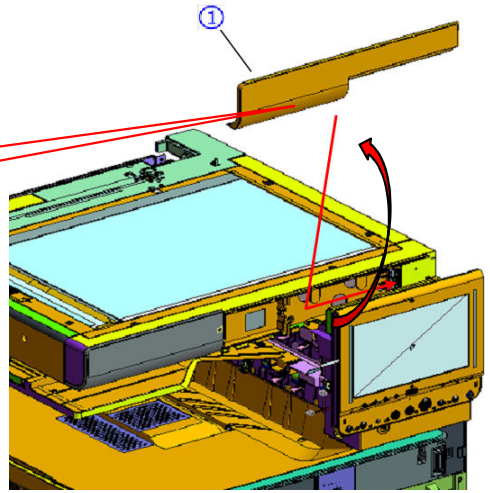
1. Open the front cover.
2. Remove the upper left cover (two screws) while releasing four hooks from front side to be lower the cover.

3 Remove the scanner upper right cover.
Use the finger to release three hooks at bottom center part of cover
Lifting up the bottom part of cover to turn upward while upper part of cover used as leverage.

4. Remove the panel top cover (one screw).
5. Remove the scanner left front cover. (remove one screw and slide it to left side while releasing the hook at bottom part of cover)

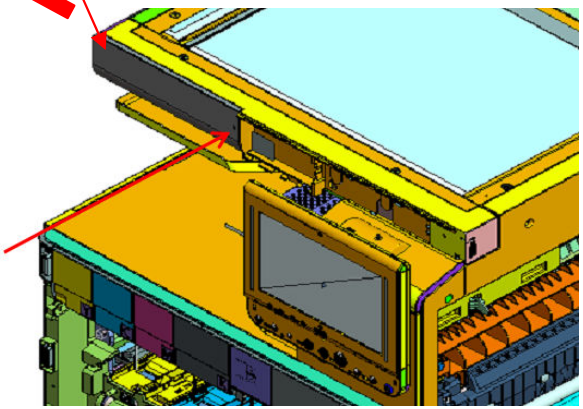
Insert the finger into center lower part of cover to release the hooks and open.

Scanner right front cover



Scanner left front cover

Screw



Install USB key board

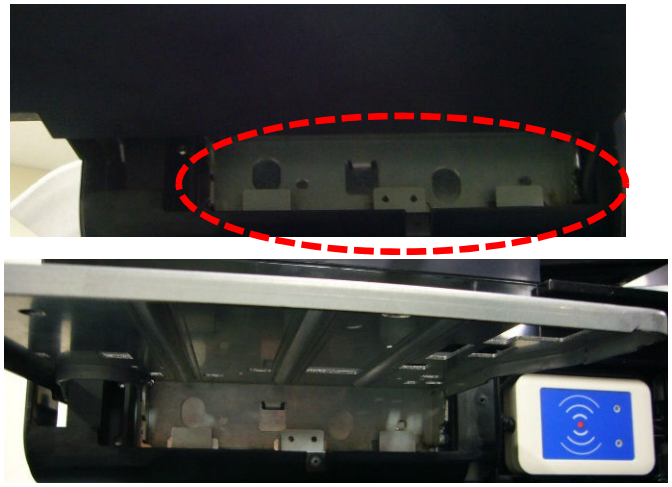
6. Install the USB keyboard stand ass'y to the main machine.

   Front side: Hooking, Left side: Fix it two screws.

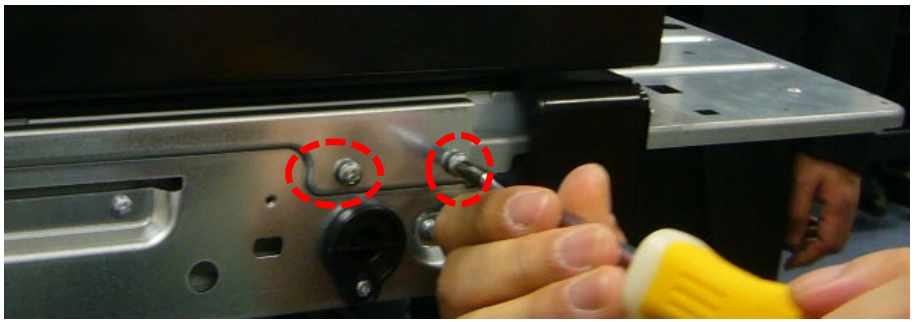
7. Install the board holder bottom cover.

8. Install the board holder top cover.

Hook it to the front scanner part



Fix it left side of scanner unit with two screws.

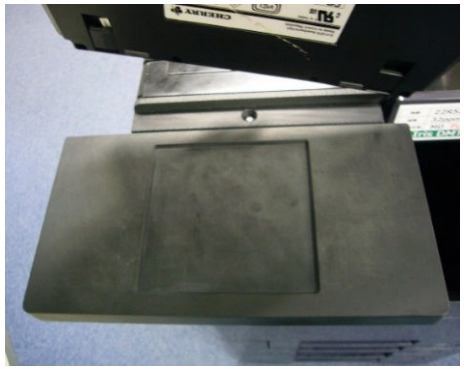


Install USB key board

9. Attach the bundled magic tapes to the back side of USB key board and top of USB key board stand and place the USB keyboard on the stand.
10. Bind the USB keyboard cable with two cable cramps and insert it to the main machine receiver.
11. Connect the cable to the lower part of USB terminal at right side of scanner.

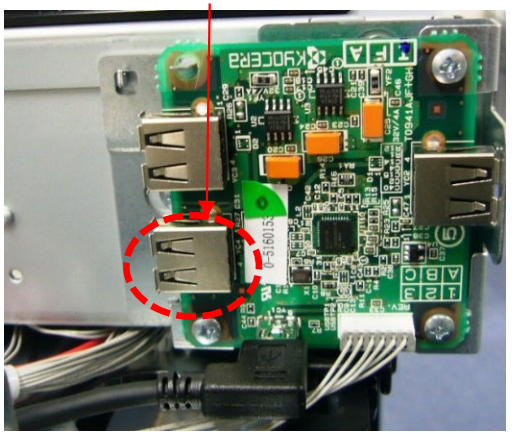
    Check that the cable does not come to behind of USB terminal "prevention of damage of PCB connector".
12. Put back the scanner covers.

Attach the magic tapes bundled with box.



Fix the key board

Connect the cable to USB-HUB PCB

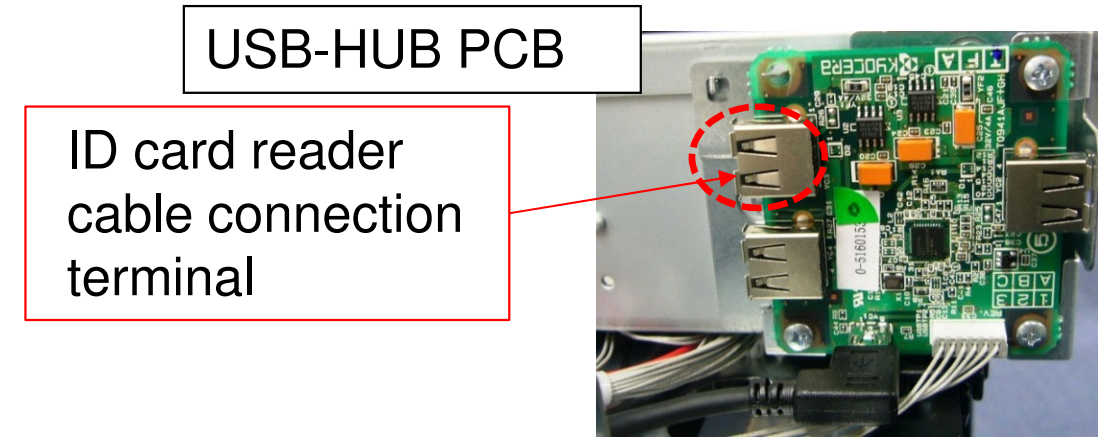


Install ID card reader

<Install procedure>

1. Remove the scanner upper right cover.
   Use the finger to release three hooks at bottom center part of cover
   Lifting up the bottom part of cover to turn upward while upper part of cover used as leverage.
2. Remove the panel top cover (one screw).
3. After binding the ID card reader cable with cable cramp, insert the main unit receiver. * If necessary due to the thickness of card, add the spacer behind reader.
4. Connect the cable to the lower part of USB terminal at right side of scanner.

   Check that the cable does not come to behind of USB terminal "prevention of damage of PCB connector".
5. Attach the ID card icon label comes with machine on the scanner front right cover.
6. Put back the scanner covers.



JS-7100 Job Separator Set Up

Job Separator

*KDA 25ppm model: standard

JOB Separator: JS-7100 Option * Install at the inner part of machine

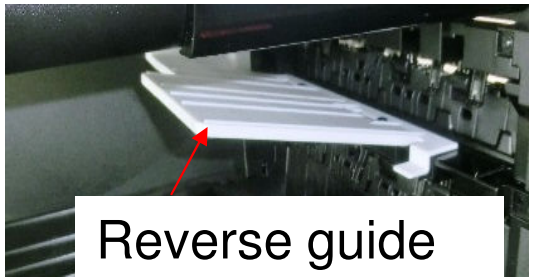
Before installing the Job Separator,
detach the reverse guide.

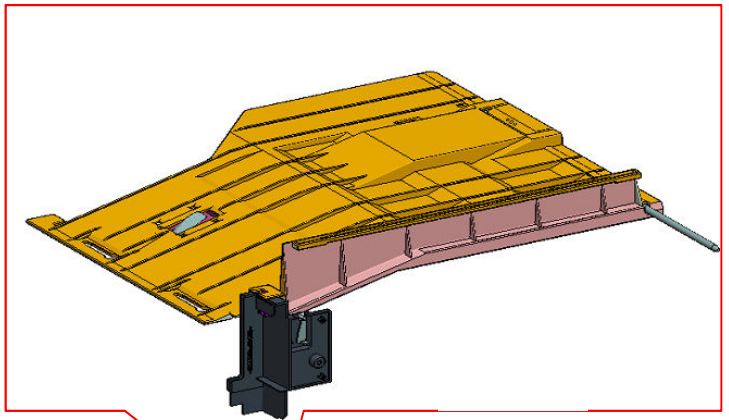
Insert the Job Separator from the machine front.

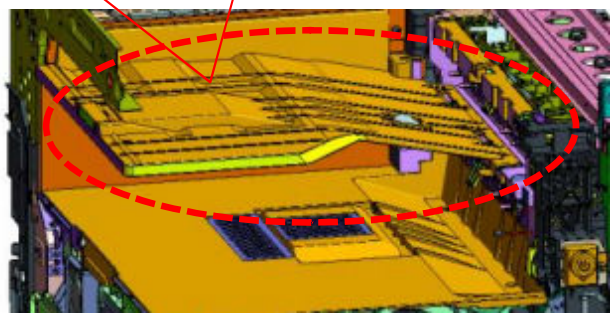
1)Tray right side: Insert along with eject guide.

2) Tray left side: Insert the shaft of tray to a hole of machine rear

3) Change the setting of U211 Set Enhancement
Connection: Inner Job Separator: OFF→ON





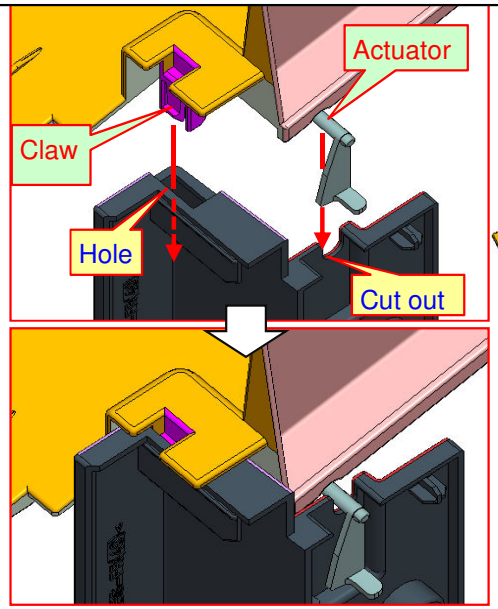


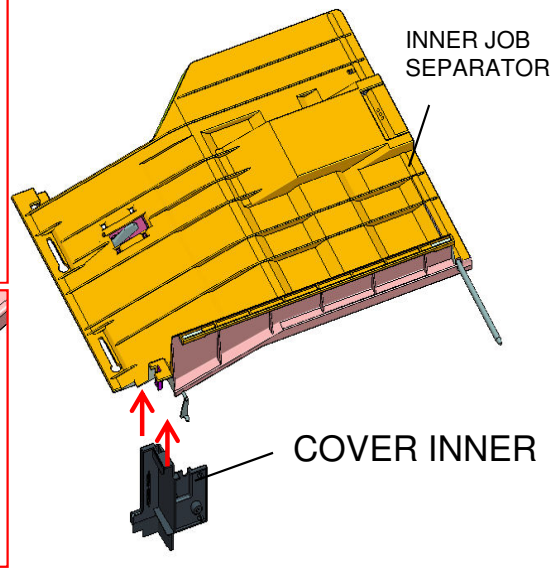
JS-7100 Job Separator Set Up

<Procedure>

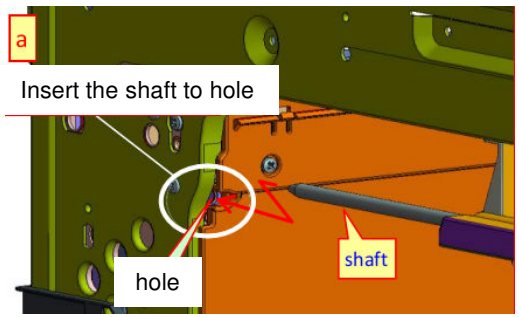
1. Remove the drawer cover at inner right rear (one screw) after detaching the reverse guide.
2. Install the inner cover to the job separator. *While inserting the actuator to the cutout of cover, insert the claw of tray into the hole of cover.
3. Insert the job separator tray from machine front.
   1) Left: Insert the tray shaft to hole of machine rear frame.
   2) Right: Along with the eject guide, insert the tray after insert the boss of back side of tray at into two holes.

2.Install the inner cover

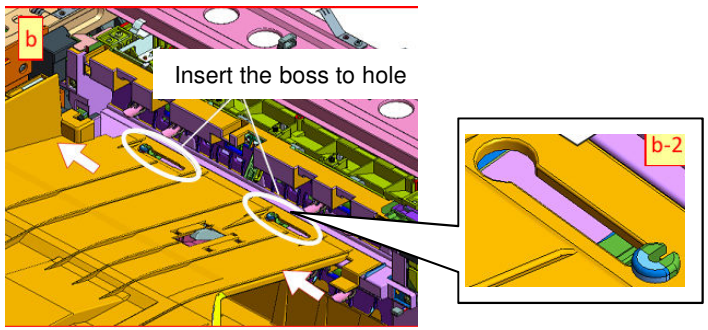




3-1. Left



3-2. Right



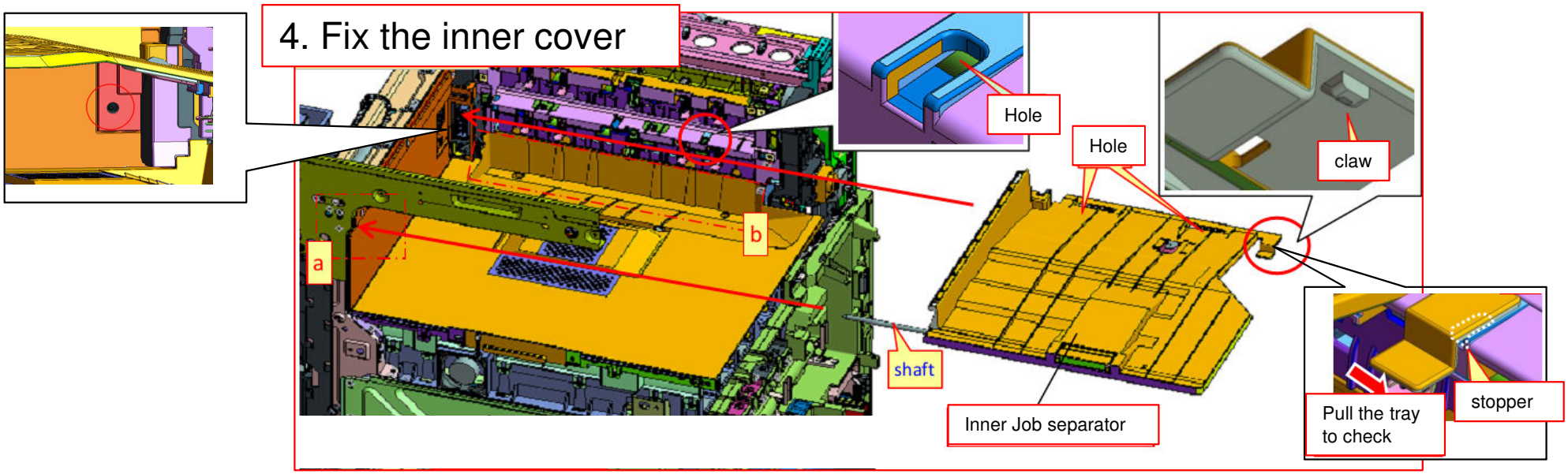
JS-7100 Job Separator Set Up

2) Right: Check to fix it by the claw at front after insertion.
   * Set the tray into the machine till the tray actuator sensing the PI sensor at machine rear. (Detect the paper on tray → Panel LED on during sleep, stand by)

4. Fix the Inner cover. (one screw)

5. Change the setting of U211 Set Enhancement Connection

   Select the Inner Job Separator and set ON.



2-3-1-3.

Install HD-12

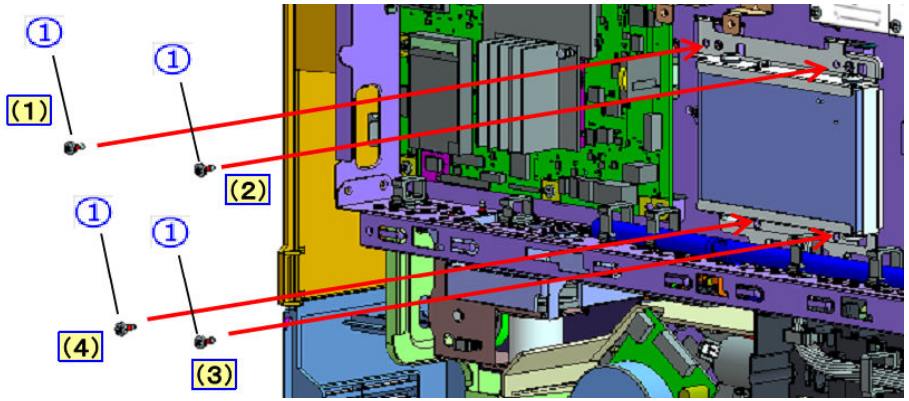
(Lower segment model: except KDA)

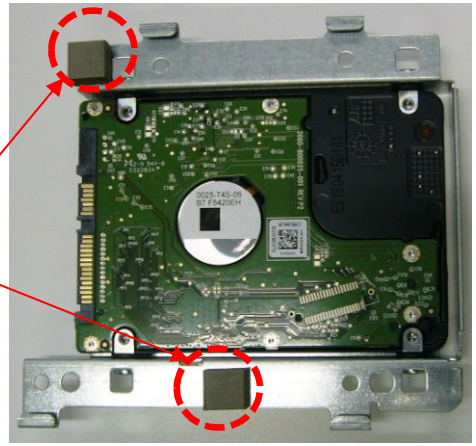
Install HD-12 (Low segment model: except KDA model)

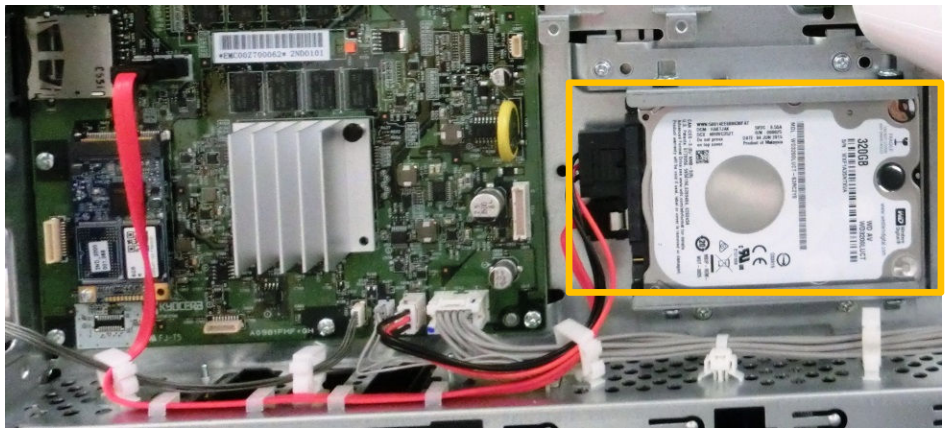
HDD：Low segment model Option (except KDA model)

< HD-12 install procedure>

1. Remove the upper rear cover. (remove one screw and slide it left side.)
2. Check whether two gaskets on the HDD mount for EMI regulation or not.
3. Install the HD-12 to the main unit (4 screws)
4. Connect the cables to HDD and Main PCB.
   Main PCB: SATA data cable→YC2,
   Power supply cable 3P→YC32
5. Fix the cable with two cable saddles and four stoppers.







Install HD-12

When new HD-12 is installed, after power on, the data transfer from SSD to HDD.

Data transferred from SSD to HDD

1)HyPAS Application usage area, 2) User Box area, 3) Job Box area, 4) Job Retention Box area, 5) Printer usage area, 6) Fax related Box area, 7) Job Log area,

When the data security kit is activated, the following items are transferred addition to the above

8) Data Base usage area, 9) User Usage fixed size area, 10) FAX log area, 11) Fax Image area

<Caution>

Secondhand HDD or HDD has been Full formatted by U024 is installed, the automatic data transfer from SSD to HDD is not possible

Display during transferring SSD data to HDD	Panel screen	Memory LED
Power ON	Welcome	Off
HDD format, Data transfer (system area)	Welcome	Blinks
Application activation	TASKalfa	Blinks
Data transfer (user setting area))	TASKalfa Data transfer message	Blinks
Data transfer completed	TASKalfa	Off
Application activation (continue)	Ready	Off

2-3-1-4.
Set Up IB-35

Correction History

2016 10 11 Ver 1.4

P10 IB-35 Set Up

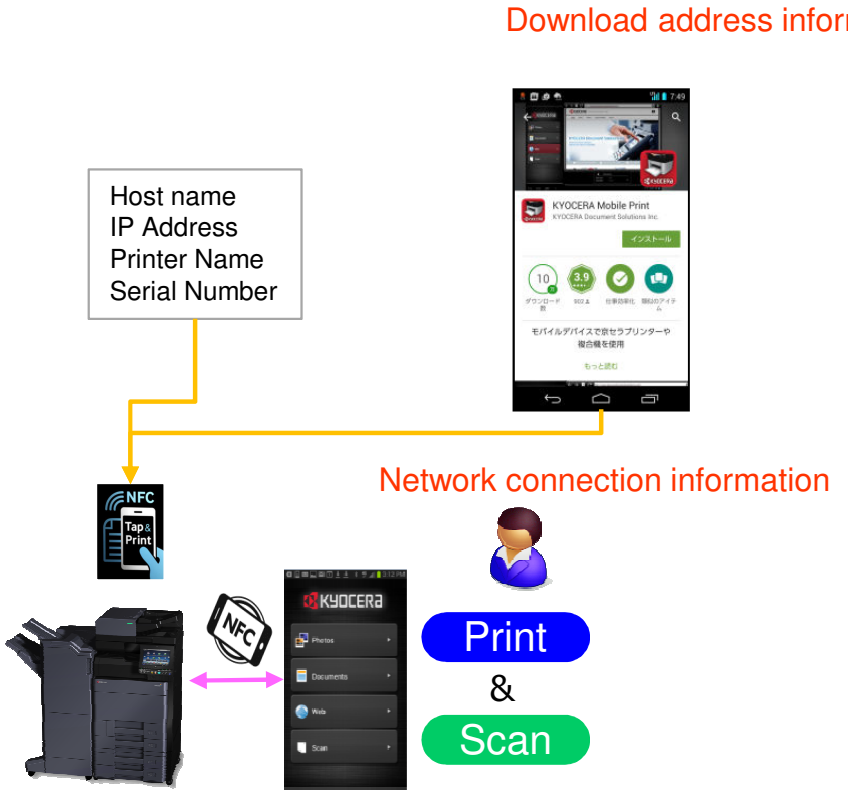
Add the following items 3. Input the password to connect the Wi-Fi Direct.

IB-35 (Wi-Fi, Wi-Fi direct)

NFC/IB-35 Wireless LAN option (Wi-Fi & Wi-Fi direct) *IB-35 KDA model standard

・Wi-Fi (with AP),　Wi-Fi direct (without AP: Connection is possible without access point)

When the mobile application activated mobile device (Android) is touched to the NFC tag on the upper part of operation panel, it can be connected to IB-35 (Wi-Fi direct)



Connect with IB-35 Wi-Fi Direct if AP is not avaiable.

After activating the Mobile Print of mobile device, automatically connected when touch the Android mobile device is touched to NFC tag.
*Turn on the Wi-Fi direct setting by System of System menu.

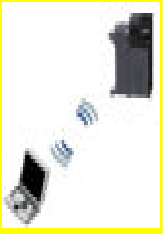
IB-35 (Wi-Fi, Wi-Fi direct)

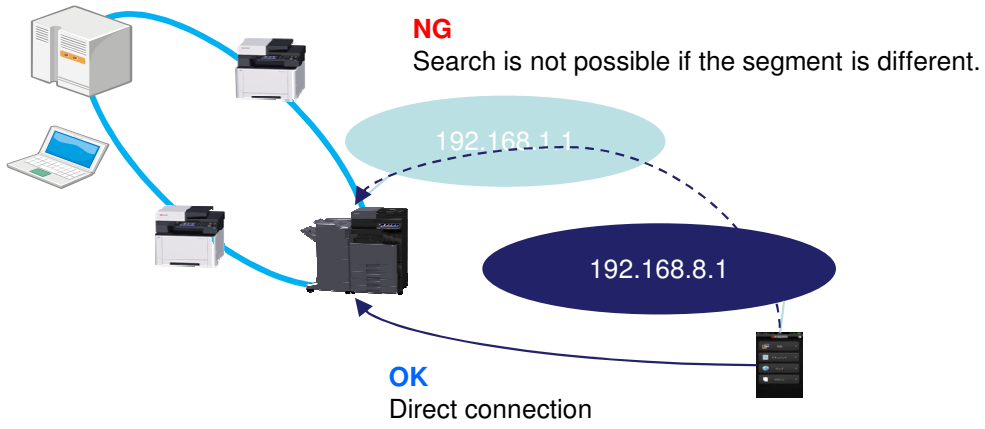
○IB-35 Wi-Fi Direct

- Print or Scan is possible from the application of Mobile Print v1.7/ My Panel v1.1.2 by IB-35 Wi-Fi direct connection under standalone environment even if the mobile device is not connected to the network.(Even if the wireless LAN network segment is differed, the connection is possible by Wi-Fi-direct)

*The Guest account should be set if the User other than authentication objects.

*Under the BYOD（bring your own device) environment, when using Wi-Fi direct, the printer name will be listed on Air Print.

Applicable standard	802.11b 11Mbps	802.11g 54Mbps	802.11n 150Mbps
Operation mode	Adhoc 	Infrastructure 	WiFi Direct 



<Connection Priority>

Wired Network IP → Wi-Fi Network IP → Wi-Fi Direct

Difference between IB-51 and IB-35

IB-35

1) Same 2.4GHz communication method as Wi-Fi module in the market and directly connected with the mobile device
2) One main unit (one host name) has two interfaces (wired and IB-35 Wi-Fi)
3) Against one host name, two IPv4 addresses for wired and IB-35 Wi-Fi
   * When both Wired and IB-35 Wi-Fi make an effect and are connected to the same LAN/ network , the overlap error of the host name occurs.
4) IB-35 Wi-Fi Direct: Max three devices can be connected.

IB-51

1) IB-51 has the original host name (other than one for the main machine) * access to another host from the client PC on the network.

*Available to use both IB-51(long distance) and IB-35 (short distance)

	IB-35 Wi-Fi approved	IB-51 Wi-Fi not approved
Application standards(IEEE)	802.11 b/g/n	802.11 b/g/n
Wi-Fi Direct	○	×
Channel to be used	1~13ch available	1~11ch fixed
Communication distance	30m	100m
Communication speed	20[Mbps] (communication distance :1m)	84[Mbps] (communication distance:1m) *limited by e-KUIO communication speed

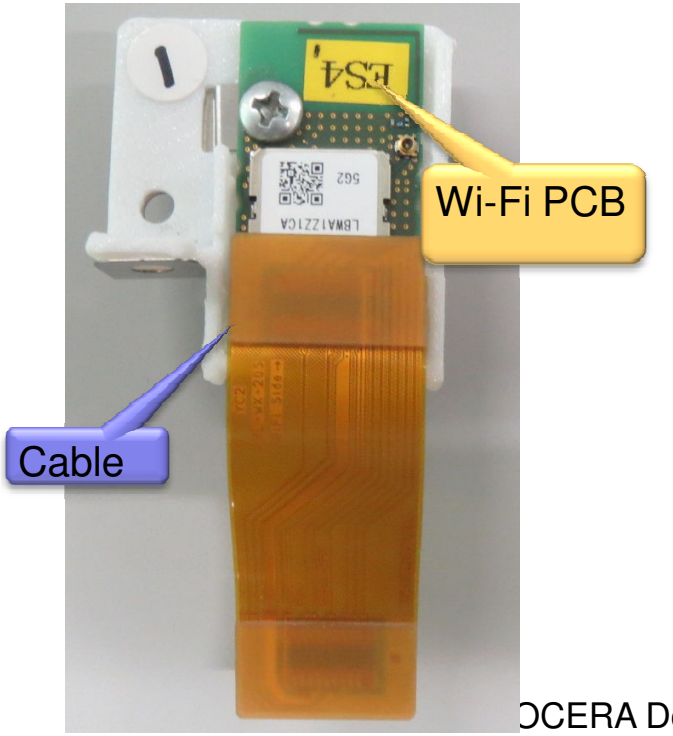
IB-35

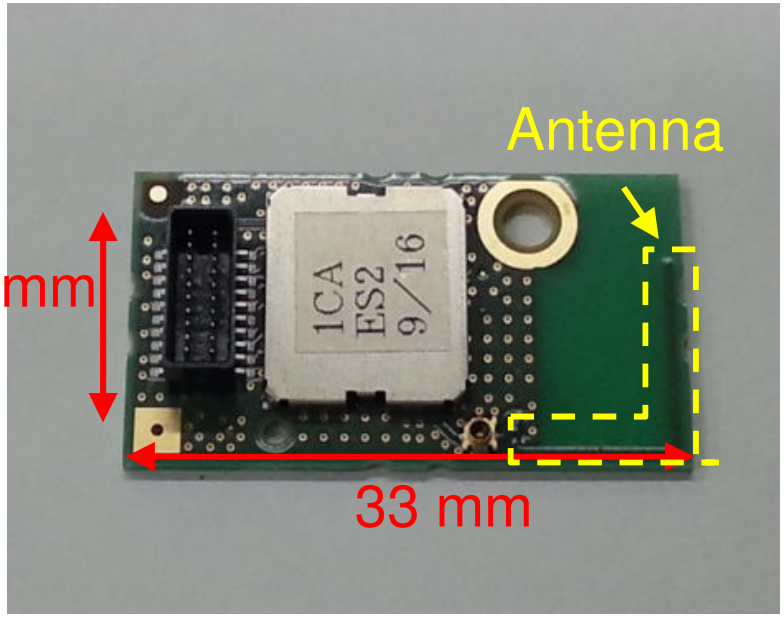
IB-51

IB-35 Specification

■ IB-35 Specification

Base Band IC : Broadcom made BCM43143
Antenna : 2.4GHz band 1 × 1 Single Band
Interface : SDIO (transmission speed: operation clock 25MHz) for Wi-Fi module
Power source : +3.3[V] (supply from the main PCB)
Wi-Fi standards : IEEE 802.11b/g/n
Communication distance : About 30m
Communication speed : About16Mbps * in case of Main unit to AP distance 30m

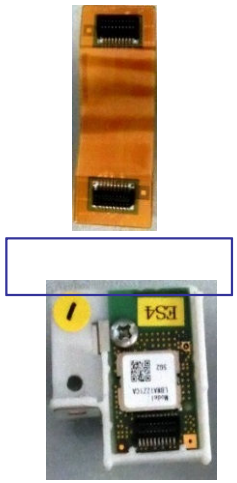




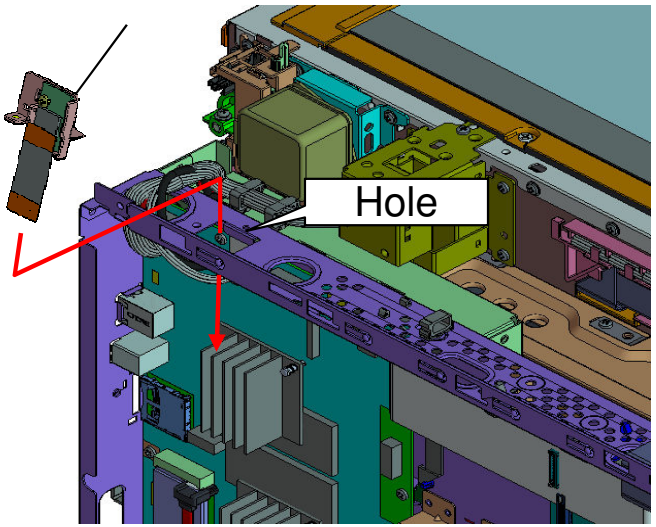
Install IB-35 (Option, KDA standard)

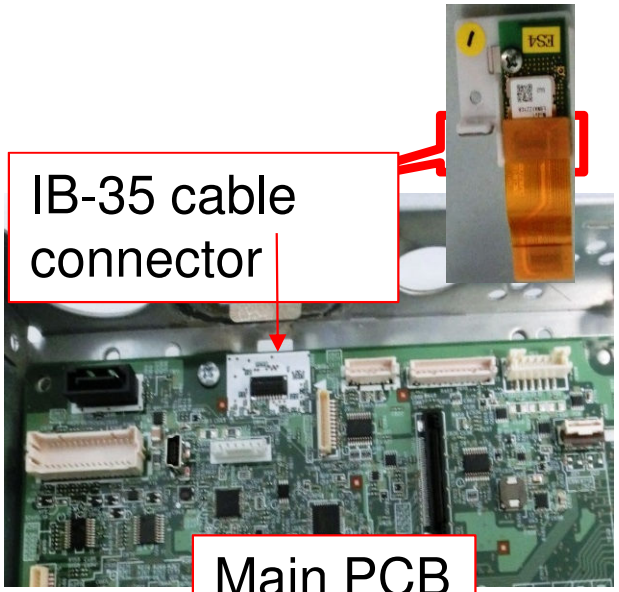
<IB-35 installation>

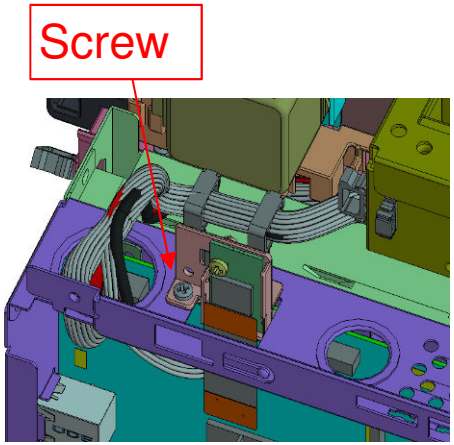
1. Connect the bundles FPC cable to IB-35 PWB.
2. Slide the upper rear cover to left and remove the rear top cover (two screws)
3. After Inserting the IB-35 cable into the hole of top part of main PCB and connect it to the main PCB
4. Fix IB-35 with a screw from upper direction.



IB-35







Connection of Wi-Fi, Wi-Fi Direct

MFP main unit (IB-35): Function such as the access point (DHCP server function)

<Common Wi-Fi connection method>

1,.Search the Wi-Fi access point from the clients side

Connect to select the SSID “Direct-xxKMxxxx” in the Wi-Fi setting of system menu.

2. In case of the clients has WPS connection

Connect to press the WPS button in the Wi-Fi setting of system menu.(Connection is possible when pressing same time)

3. When setting of Persistent Group in CCRX is OFF

At Wi-Fi direct connection, reserve the connection with invited condition and after pressing the Yes (connection permission), it is connected. . *In case of On setting, connection check is done at first time (default)

4. Software install from DVD

- When using the instant printer, scanner, FAX driver of Air Print application, installation of software from DVD is not required.
- When Air Print application is not used, or in case of Mac OSX version which can not use the Air Print, software should be installed. *If it is not installed, the print is possible since operating as normal Post Script printer.

IB-35 Set Up

<Infrastructure mode >
The Wi-Fi connection mode through the access point. するモード

< Wi-Fi Direct mode>
Wi-Fi connection mode that is directly connected without connect to access point.

< Channel of Wi-Fi LAN >

・It is necessary to use same channel when the data is communicated between same Wi-Fi LAN devices.

・In order to prevent the radio wave interfere, it is necessary to use the different channel number between the access points located near places.

IB-35 Set Up

1. The protocol which has the Available Network can not be used when all of Wi-Fi, Wi-Fi Direct are “Not Available” condition
2. WEP Key Index setting (0 -3) at Wi-Fi connection *WEP: data encryption
   *Since the setting of the WEP Key Index is 0 to 3, if the access point for connecting to the wireless LAN is 1 to4, set 1→0, 2→1,3→2,4→3

   Set the WEP Key when Wi-Fi LAN security setting is Open.
   (Set the WEP Key (network key) for encrypting the communication data.)
   *When WEP Key is not set, it can be connected with all devices which has the wireless LAN function, it is a risk of stolen and destroyed data by the other users.
   • In case of Infrastructure communication
   “WEP Key Index” should be set according to the access point of the connected wireless LAN. (refer to the manual of wireless LAN access point)
3. Input the password to connect the Wi-Fi Direct
   During initially connecting with the mobile terminal, when the password input screen is displayed, select the device information icon on the home screen at the main unit, input the Password of the Wi-Fi Direct at the option tab. (Also, this password is listed on the network status page.)

Name Resolution and restriction Wired/Wi-Fi connection

When both Wi-Fi (IB-35) and wired LAN is functioned

Install failure (error) for KX driver occurs if using the host name. * Phenomenon default name resolution setting environment

When the same host name is used for the wired and Wi-Fi connection at same LAN environment

If the user uses the name resolution, same host name should not be used between wired and Wi-Fi connection

If the name resolution for IP address done by the NetBIOS and DHCP or DNS server under the network, perform below since the both interfaces are used at same time, it might occur communication error.

1) Restrict the interface to be used under NetBIOS by the CCRX protocol setting. (NetBIOS is effective at wired side, not effective at Wi-Fi side *Necessary to be check the restriction for the user usage)
2) Divide the network to be connected to Wired or Wi-Fi
3) Use only one connection
4) Use the Host Name Extension to prevent same name usage
5) Divide LAN and Domain by FQDN

Do not use the name resolution, use the IP address or MAC address

Only use the fixed IP address (do not use NetBIOS, DHCP, DNS)

Note when connecting with IB-35

During connecting to Wi-Fi Direct, please note the following.

When using the Wi-Fi direct function with the mobile application such a My Panel, recommend to restrict the sending function by GUEST approval setting using the local authentication function in case of any . users can access to this MFP.

Restrict the sending function of mobile device to the persons are not allowed to use it among the internal company.

It is a possibility to connect to Internet by LTE/4G from the mobile terminal and scan the documents using Wi-Fi Direct function. Therefore, please restrict the sending function for the guest user who is not allowed to scan the documents.

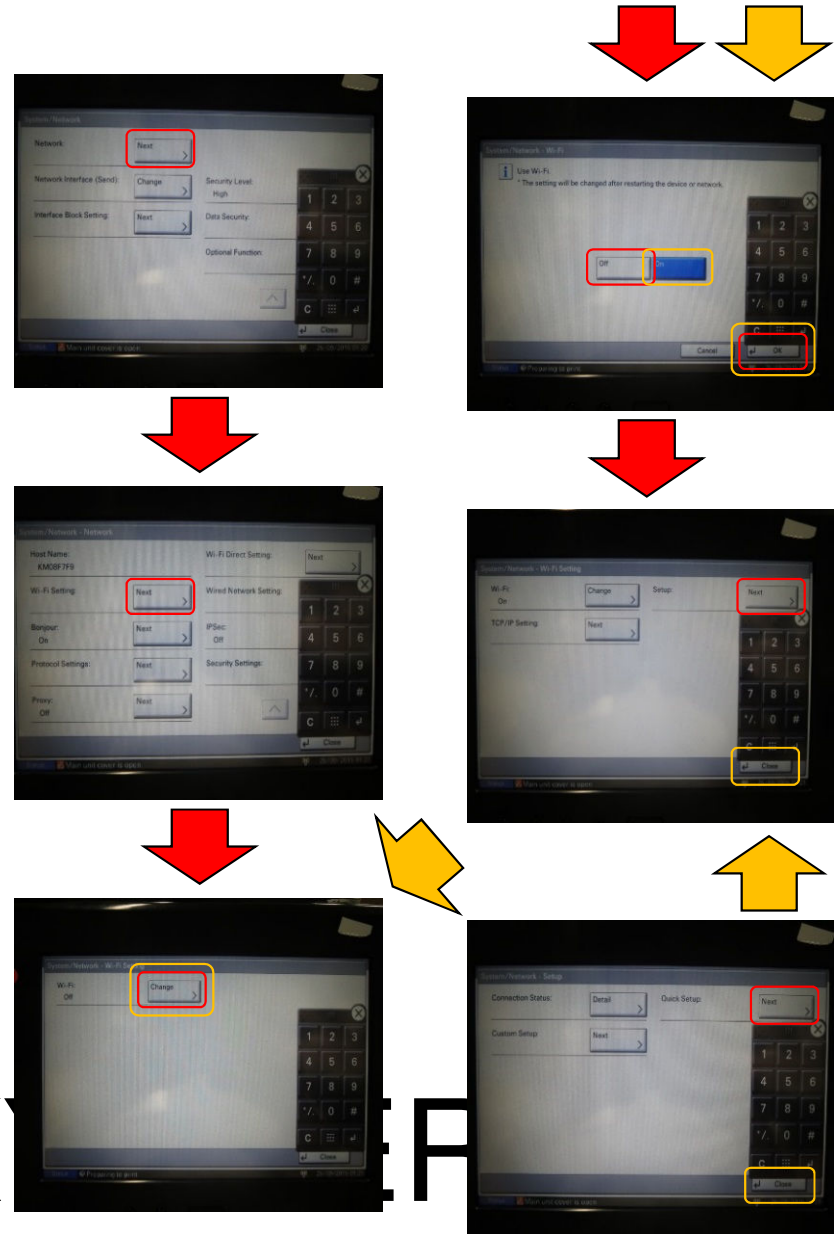
IB-35 Wi-Fi Set Up

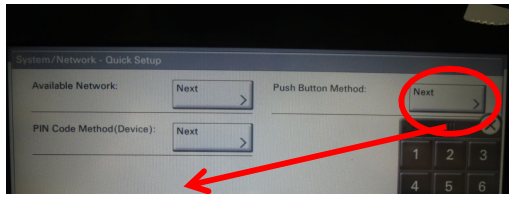
Wi-Fi setting OFF → ON

1) Select the Network →Next
2) Select the Wi-Fi Setting →Next
3) Select the Wi-Fi → Change
4) Select “On”
5) Press “OK”

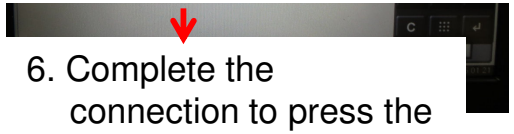
Wi-Fi Quick Set Up

1)Select the Network →Next
2)Select the Wi-Fi Setting → Next
3)Select the Setup → Next
4)Select the Quick Setup → Next
5)Select the Available Network → Next
6)Select the AP (access point) to be used.
7)Input the AP connection channel (usually 0) and password.





5. Select “Push Button Method”



6. Complete the connection to press the AP and device button

Wi-Fi Direct Setting (System/Network Setting)

Network

- Wi-Fi Direct Setting — * No display without Wi-Fi（IB-35)
  - Wi-Fi Direct
    - Off
    - On
  - Device Name — * No display if setting of Wi-Fi Direct is Off.
    - Key board input screen
  - IP Address ※only display — * No display if setting of Wi-Fi Direct is Off.
  - Auto Disconnection — * No display if setting of Wi-Fi Direct is Off.
    - Off
    - On
      - Day：0～99 / Hour：0～23 /Minute：0～59

◆ Timer setting of auto disconnection for Wi-Fi Direct connection

When the mobile device is located near MFP/Printer , once connected, connection is kept to be connected. So, the connection can be disconnected by this timer setting.

→ This function is operated when the mobile device locate away from MFP/Printer and communication of Wi-Fi Direct is not possible.

ON : Auto disconnection
OFF : No Auto disconnection (default)
Timer : Time setting
1) Hour 1 to 999hours default:24
2) Minutes 0 to 59 min. default 00

System/Network Setting

Wi-Fi Setting * No display if no IB-35 is installed
- Wi-Fi
  - Off / On
- Setup *No display if Wi-Fi setting is Off.
  - Connection Status :Connected/ Disconnected, Network name (SSID): GUEST
  - Quick Setup
    - Available Network
      - Access point listed screen(Refresh button), AP selection →Connection button → WEP key input screen
        - WEP Key Index * Disable if the selected AP security is other than WEP
          - 0 / 1 / 2 / 3
    - Push Button Method: OK button → PUSH start → Connecting → Connected display
    - PIN Code Method (Device) OK button → Connecting → Connected display
      - Access Point input screed for displayed PIN code
  - Custom Setup (connection button)
    - Network Name(SSID) default: GUEST
      - Key board screen
    - Network Authentication
      - Open / WPA2/WPA-PSK / WPA2-PSK / WPA2/WPA-EAP / WPA2-EAP
    - Encryption
      - Disable
      - WEP----- WEP Key Keyboard input screen
        WEP Key Index
        - 0 / 1 / 2 / 3

2-3-1-7
Setup Printing System (15)

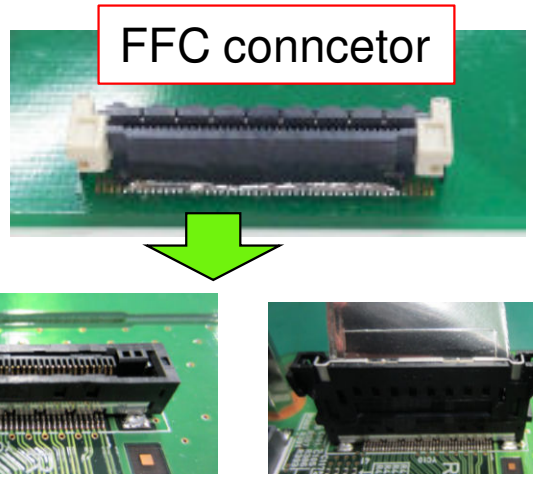
Changing point from Printing System

Printer controller Interface PWB	Printing System 13→ 15	Fiery(Except 25ppm model)
	Printing System Interface Kit 15	

<Changing points other than software>）>

◆Interface Kit(B)⇒Printing system Interface Kit 15

Specification change → Real 1200dpi
Easy connection → Change the FFC connector to two pieces type from flip



◆Print interface PWB

- For 1200dpi: Two lanes image data can be transfer to Video ASIC

- Sleep

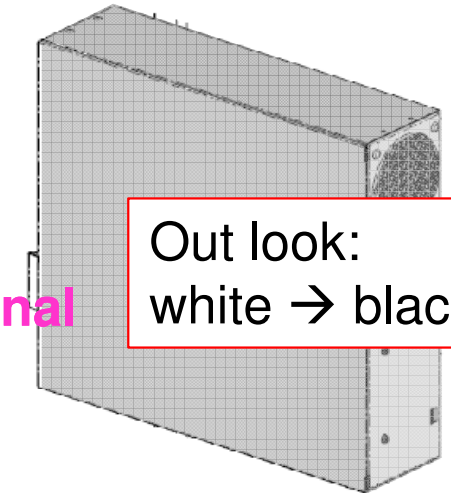
1) During sleep mode in the main machine, the fiery print controller is full-active.
   * The power of the print interface PWB turns on during sleep mode (quick recovery) in the main machine
2) When the main machine power turns off, the fiery controller becomes sleep.

◆No interchangeability of the print controller between old and new

Printing System KIT contents

Printing System 15

1) Fiery E100 system



Fiery3 H/W original

Out look:
white → black

2) AC cable
(120V)

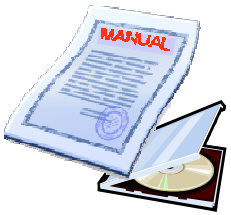
4) DV cable

7MOUNT screws

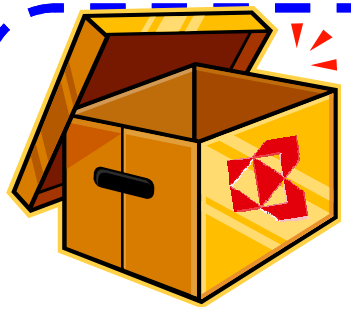
3) AC cable
(200V)

5) LAN cable

6) Manual, DVD

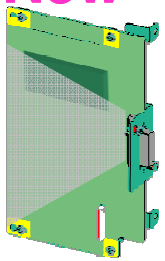


Printing System Interface Kit 15

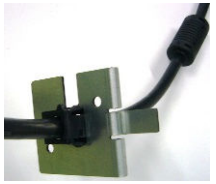


PACKING MATTER

New



FIERY Interface PWB

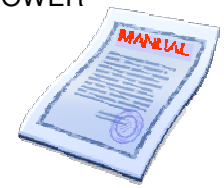


Interface cable, Bushing, Fixing plate, x2 screws

TP-FLAT SCREW 3X8 SR(BLACK) x2
Nut plates for screws (x2)

WIRE FIERYBB POWER

MOUNT CONTROLLER B
Earth plate+ screws
(2pcs)



PRITED MATTERS

New

WIRE FIERYBB DATA
(for IRIS only)

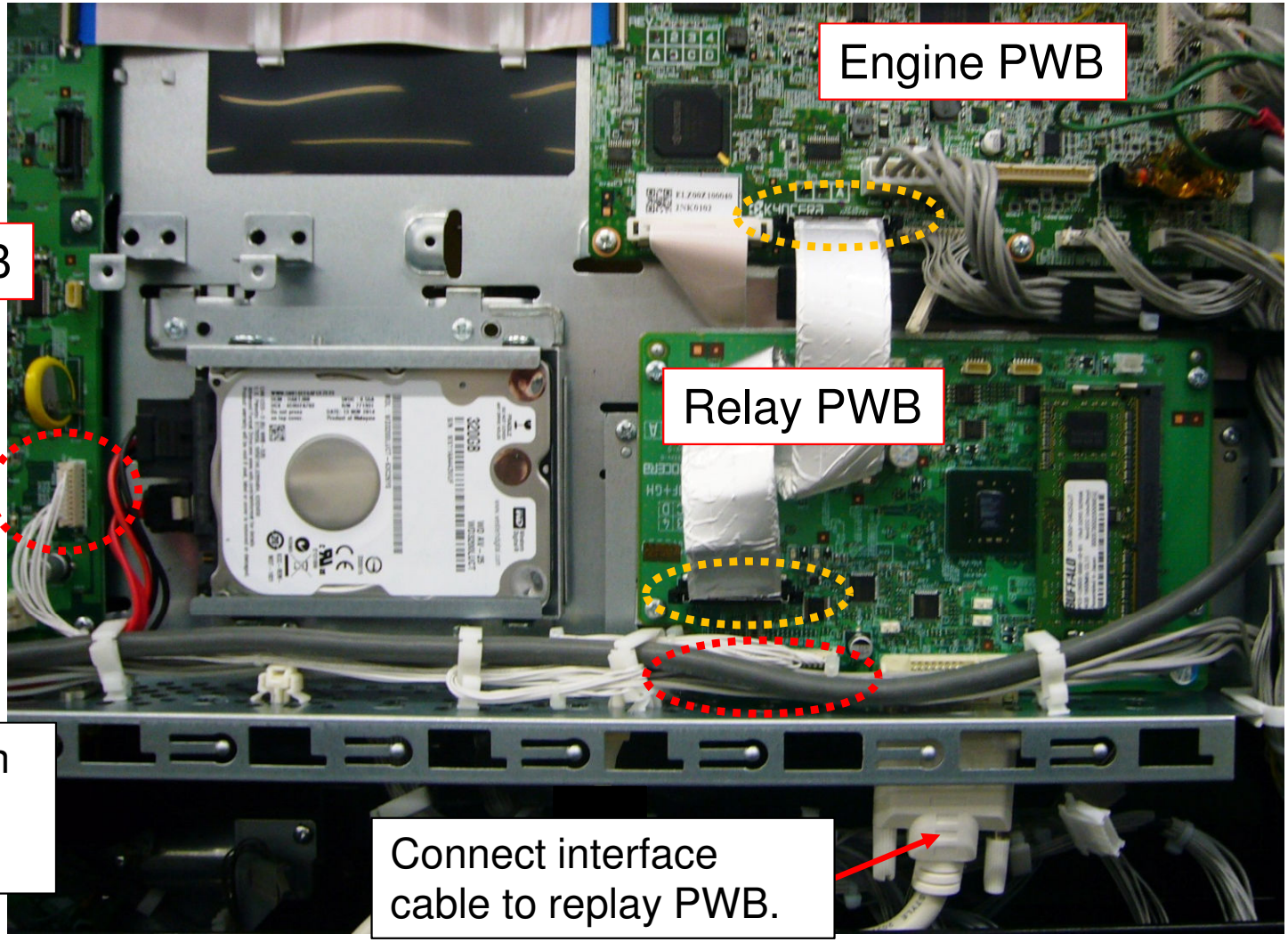
For Iris	Q'ty	For Mercury3	Q'ty
M3x8	(2)	M3x8	2
		washer	4
FIERY stay screws	(2)	FIERY stay screws	4
Bush fixing plate	1		
Bush	1		
Bush plate fixing screw	2		
NUT plate	2		
FIERY stay screws	2		

Print System (15) Set Up

WIRE FIERY

1) DATA cable : Connect between the engine PWB and the relay PWB

2) Power cable : Connect between the main PWB and the relay PWB

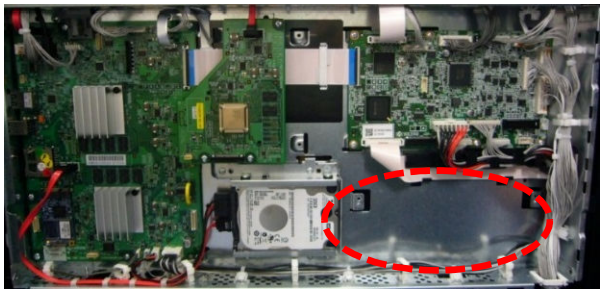


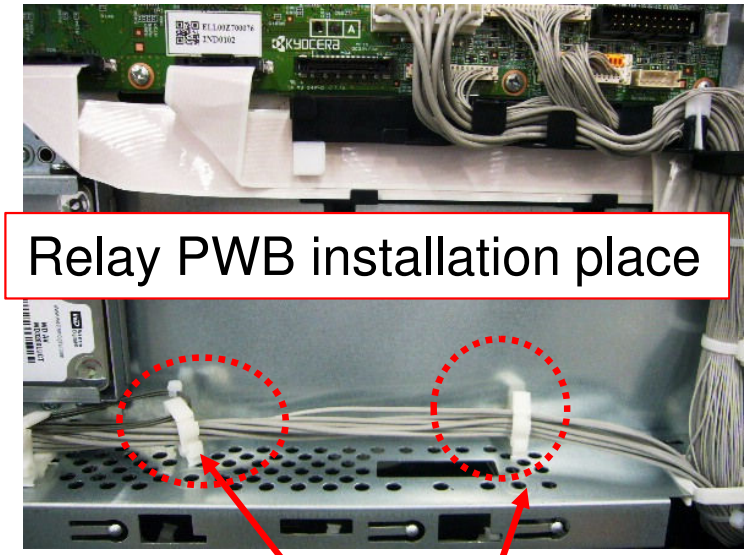
Print System (15) Set Up

<Fiery installation procedure>

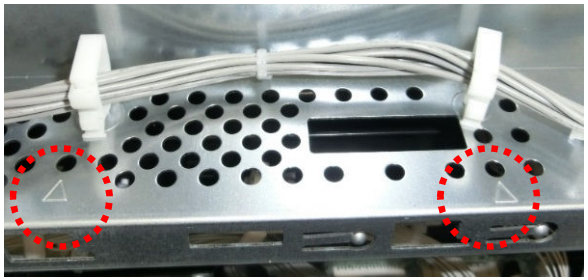
1.Install the replay PWB

1) Remove three cable clamps at the right lower of controller Box.
2) Install the relay PWB at the controller Box open space. (two screws)
3) Install two cable clamps to the △ marking places.





Relay PWB installation place

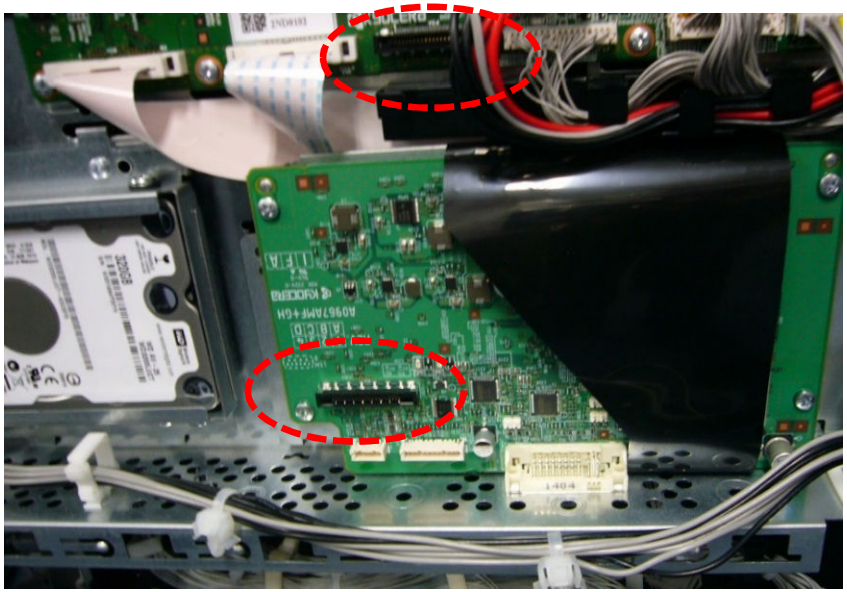


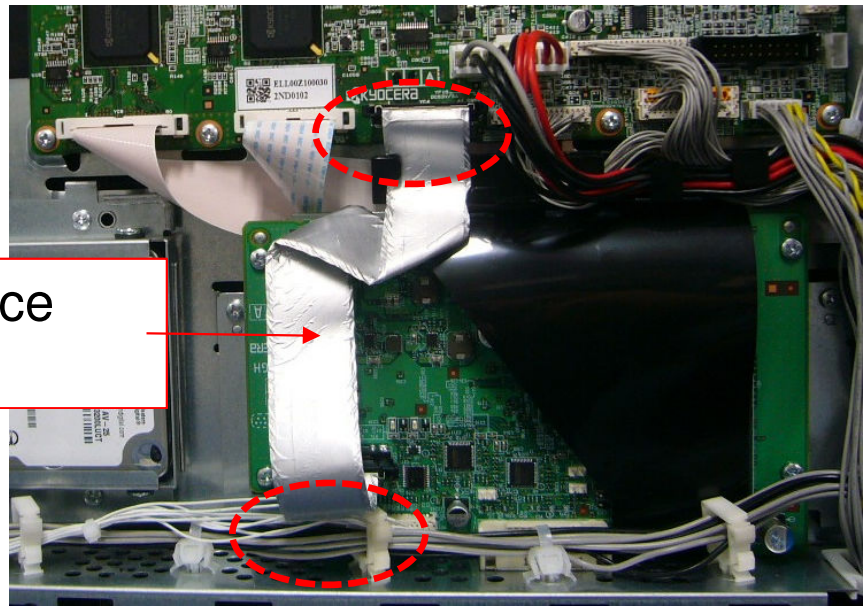
Move the installation location of cable clamps to the△ marking places.

Print System (15) Set Up

<Fiery installation procedure>

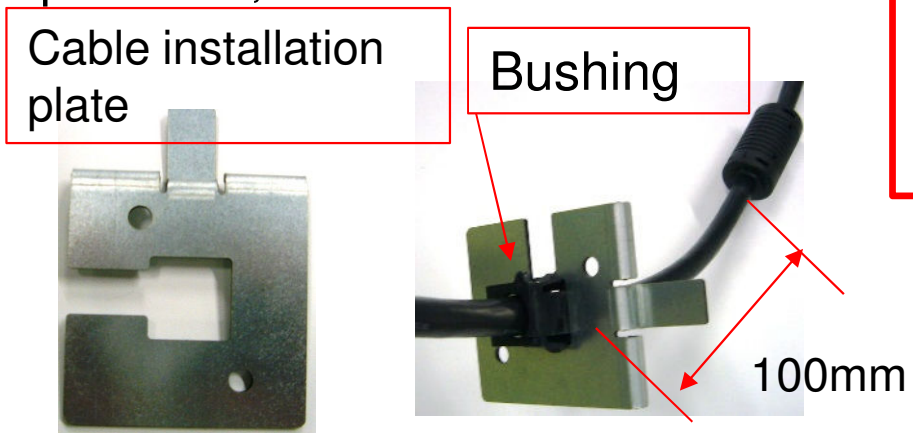
2. Connect the shield data cable to the engine PWB and normal power supply cable to the main PWB.

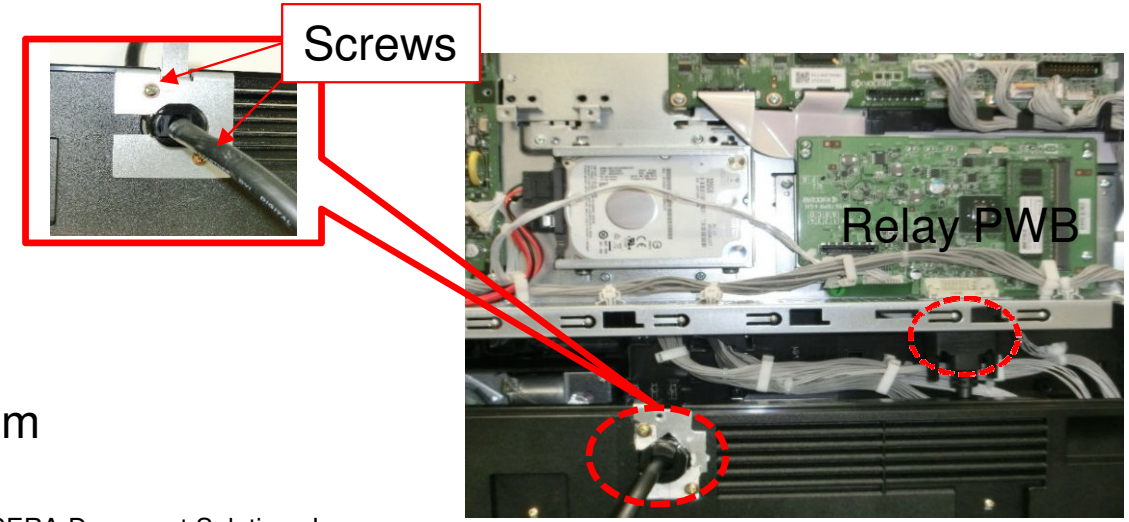




Print System (15) Set Up

3. Insert the bush into the interface cable at 100mm from core to rim of bush and insert the bush to the cable installation plate.
4. Install two nuts plates at behind of lower rear cover.
5. Install the interface cable with bush and plate at the lower rear cover. (two screws)
   * When detaching the lower rear cover, remove this cable plate first.
6. Install the lower rear cover with the interface cable. (Insert the left lower projection of cover first and then insert the lower part of cover into the frame.)
7. Connect the Fiery controller interface cable to the relay PWB.
   * After connecting the cable to the connector at lower part of relay PWB and fix it with two screws
8. After aligning the height of edge for lower rear cover with left and right covers positions, fix it two screws.

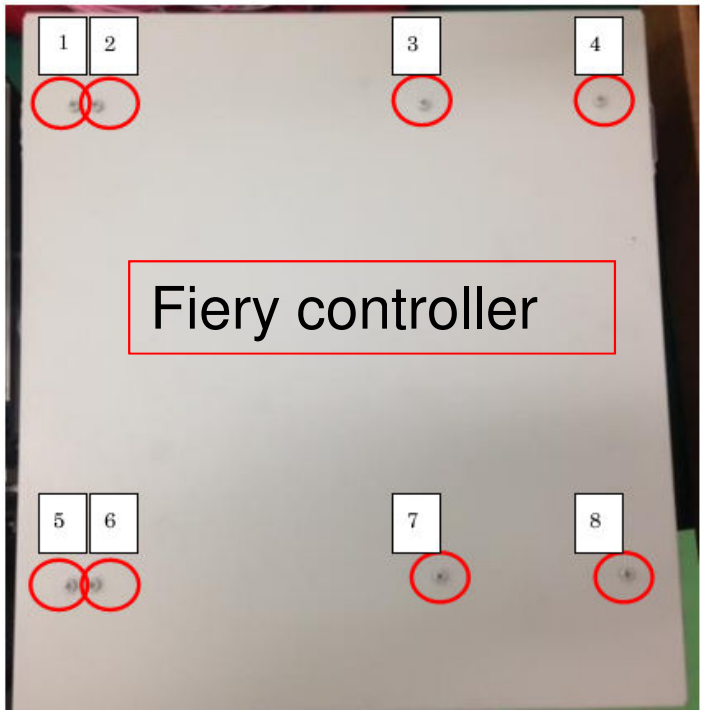




Print System (15) Set Up

9. Fix the earth plate to each rail for Fiery controller with one screw.
10. Install two rails on the Fiery controller.
    1)Remove six black screws (3mm) for fixing controller cover and fix two rails by four bundled silver screws (4mm).
    *Remove 1,2,4,5,6,8 black screws (3mm length) and install two rails with four bundled silver screws (4mm length, lock type)

Fix the earth plate with one screw

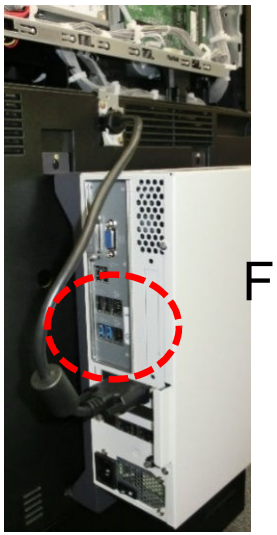


Rail

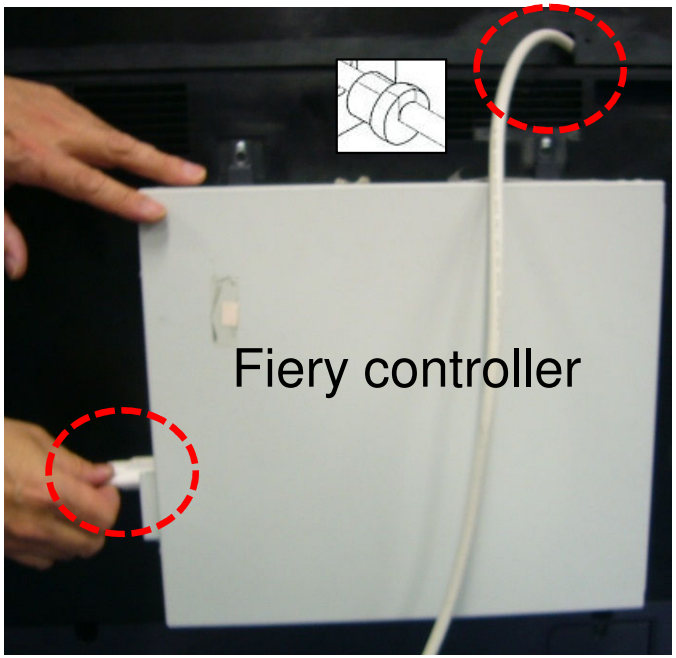
Print System (15) Set Up

11. Loose tightening two fixing screws of the printer controller at two locations of lower rear cover.
12. Insert the lower part of Fiery controller unit into the lower part of lower rear cover cut outs.
13. Tighten two screws at the lower rear cover after inserting them into the holes of rails for Fiery controller unit.
14. Install the upper rear cover. (When installing the printing system, the upper rear cover should be detached first and then detach the lower rear cover.)
15. Connect the interface cable to Fiery controller.

Fiery controller



Fiery controller



2-4-1
Operation: New Function

- **New Function**
  - **Support 1200dpi**
  - **Inter sheet, Chapter Function**
  - **Check TX File Size**
  - **IB-35 Wi-Fi, Wi-Fi Direct/NFC Tag: Improve connectivity**

- **Expansion/Addition of present function to prevent from making mistake**
  - **Preview screen: Display actual image of second page (back page)**
  - **Proof Copy Mode: Prevent miscopy**
  - **Skip scan for the blank original**

Correction History

2016 10 11 Ver 1.4

P7 **Improvement point for the Copy Function (Proof copy)**

Delete the following System Menu → Common → Function Defaults → Proof copy → ON/OFF

Add the following for Proof Copy

Proof copy is not possible at the following setting.

1.Set Auto for the original direction

2.At continuous scanning, set the job built

3.At Form overlay, set the scan new scan

4.Set OFF at the auto rotation is OFF.

5.Select the auto/dual/single color at the color selection.

Improvement point for the Copy Function

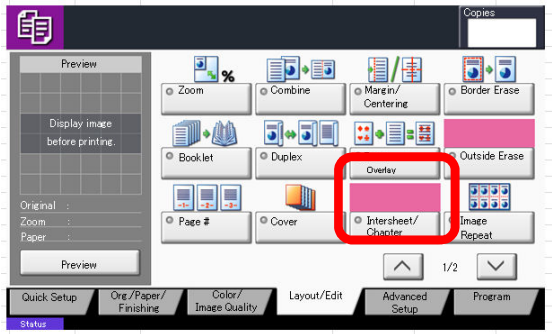
<Copy Function>

- Cover, Inter sheet, Chapter: 3 types of modes available

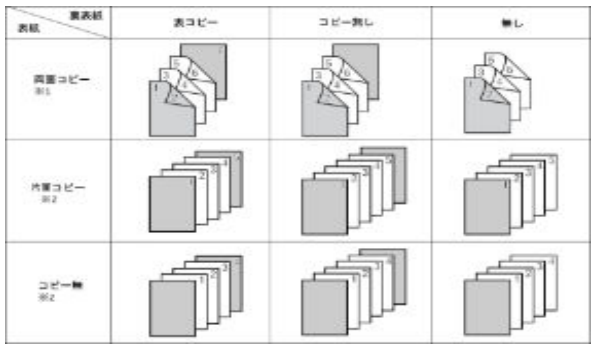
Inter sheet: Set to Insert slip sheet in the multiple positions with only one scan, and print on the front page.
* Possible to set the feeding drawer (Cassette1 to 5, Bypass) and the Cover mode at same time.

Chapter: When making duplex copy, make the front page of each chapter front page and copy

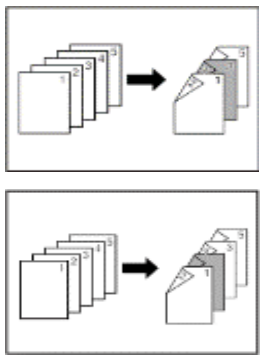
- Possible to set from page 2 to page 998
- No. of Chapter: Specify the Chapter up to 100 positions



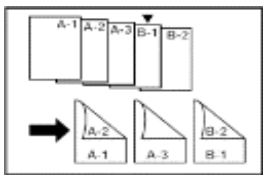
○カバーモード



○インターモード

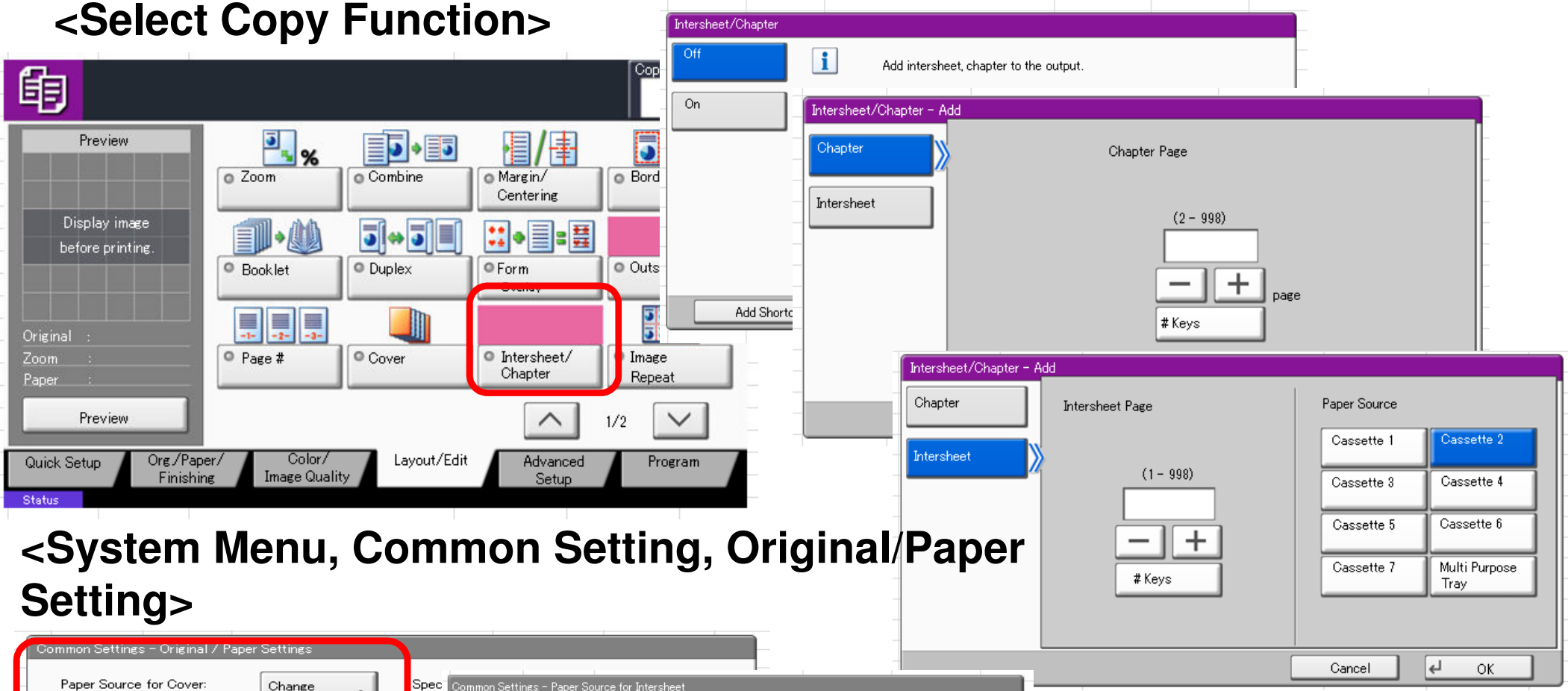


○チャプターモード

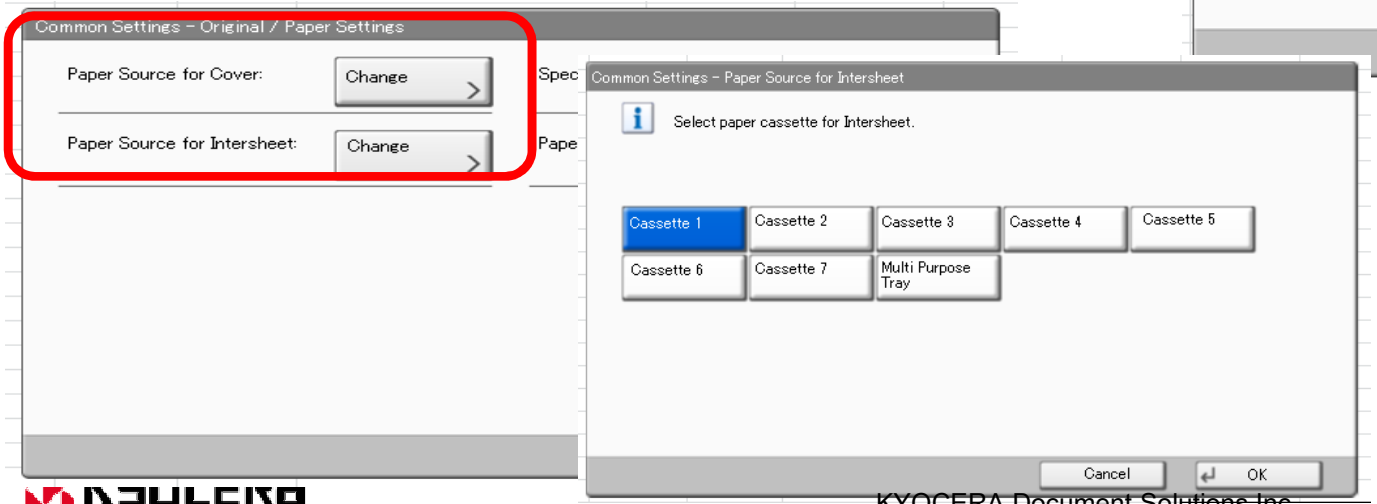


Inter Sheet/Chapter Setting Display (Type of the function, Page, Feeding drawer)

<Select Copy Function>



<System Menu, Common Setting, Original/Paper Setting>



Chapter Function

1	Set Chapter Function (Insert Chapter)
	Set Chapter for edit layout of Copy Function * Register Shortcut/Call/Delete
	Cover page of the printer driver/Chapter Setting for Inter sheet setting
2	Specify the location of the Chapter
	When setting the Chapter, possible to specify 100 positions between the page 2 to the page 998
3	JOB operation when specifying the Chapter
	Possible to copy as a front page for the front pager of each Chapter (Print on the front page which is specified) Note: When skipping the blank page, skipped page is also counted as a page
4	Register Chapter setting
	Register the Chapter setting on the Program (Maintain the specified page setting)
5	Restriction to operate when setting the Chapter
	Preview screen, Job Build

Improvement point for the Copy Function

<Copy Function>

- Support for both side preview (Duplex)

Old: Preview is displayed only the front page

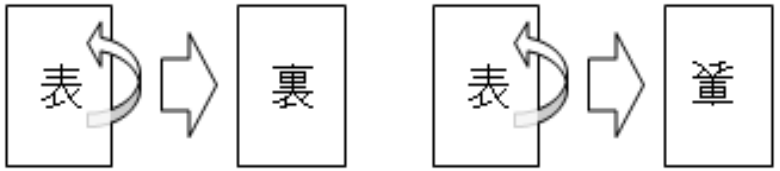
New: Back side of the Duplex print is displayed as well (Prevent miscopy as checking the image before the print is made)

For the Duplex printing, preventing to print like the “drawing 2”, back side of the page can be previewed

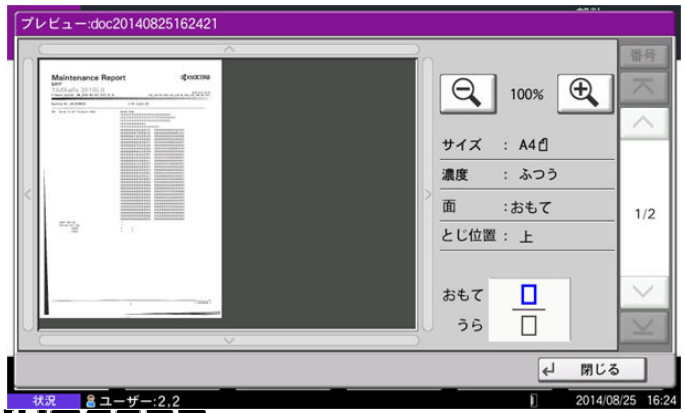
	Possible Preview Function
1	Copy Function
2	Box Print Function (Applicable Box: User Box)

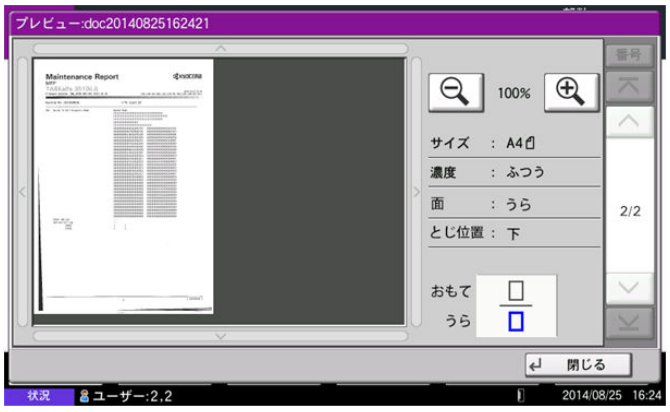
“Drawing 1” **“Drawing2”**

Check the image by Preview Function for Duplex Print



In case of Duplex Print, Display both front and back side of preview

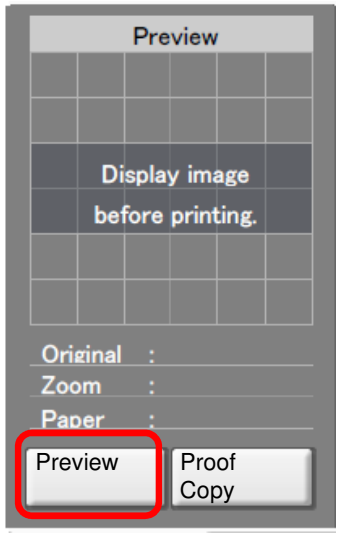


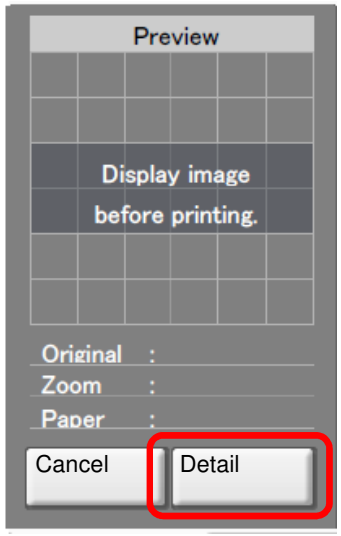


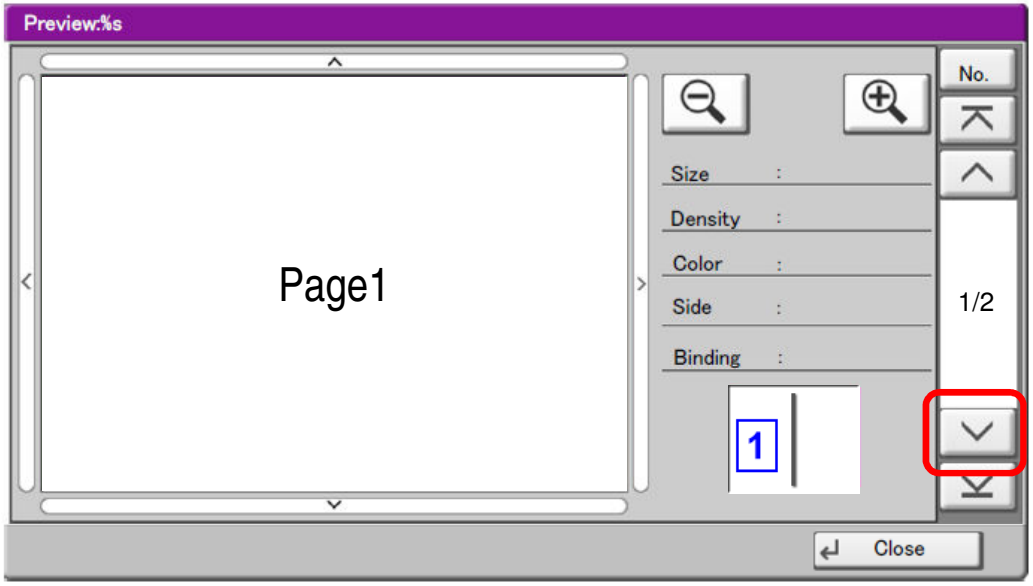
Press [Preview] and Scan Duplex original and press [Detail]

Preview Function (Duplex Print)

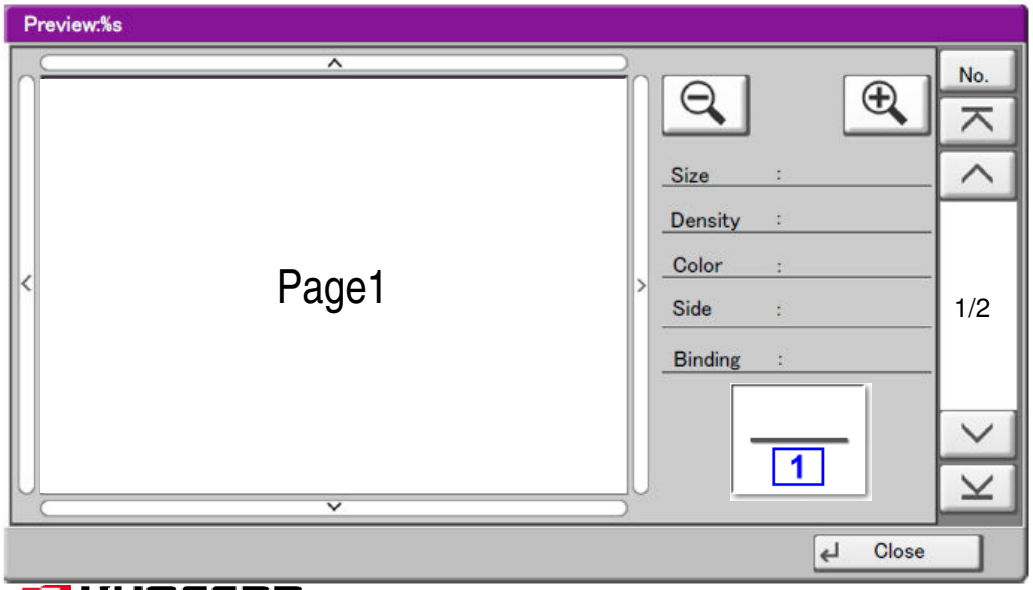
◆ Duplex Copy (Left/Right Binding) * One sided copy → Display only one page

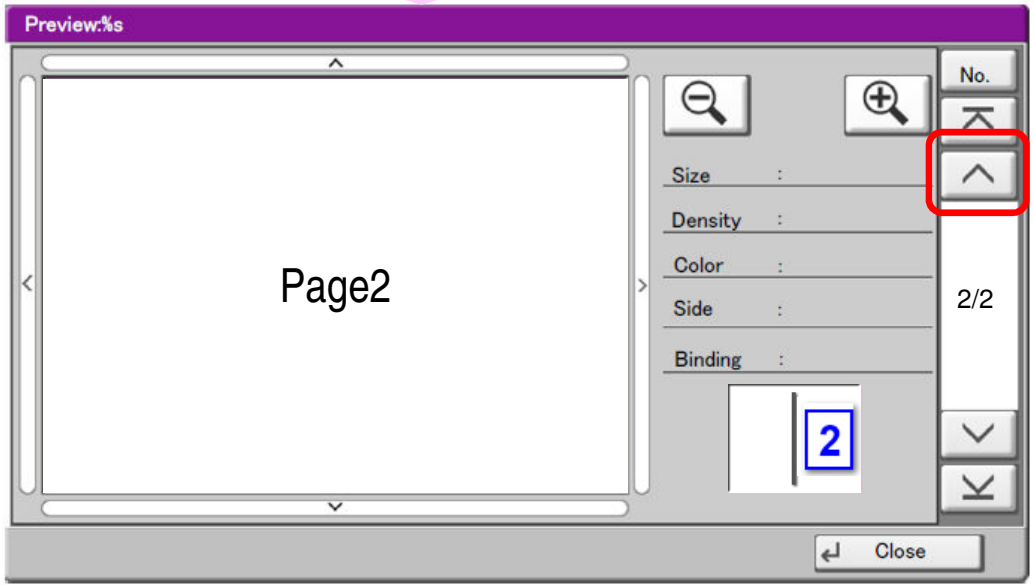






◆ Duplex Copy (Top/Bottom Binding)





Improvement point for the Copy Function

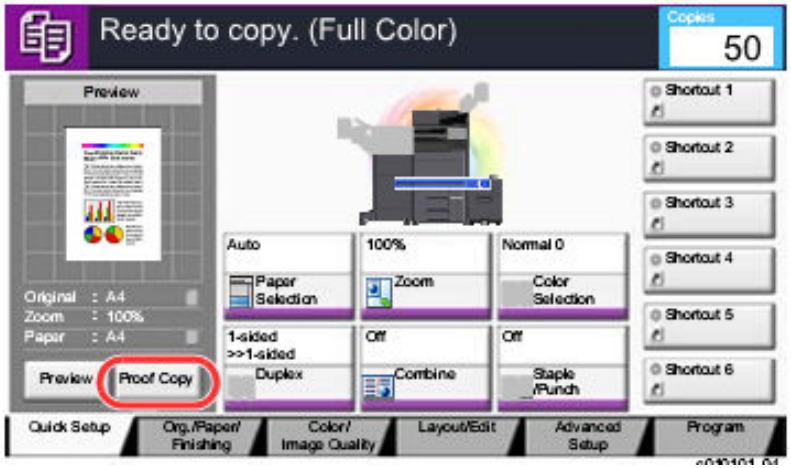
<Copy Function>

Proof Copy

Output one copy before making multiple copy and check the output then, continue to copy rest of them (Possible to prevent miscopy)

Proof copy is not possible at the following setting.

1. Set Auto for the original direction
2. At continuous scanning, set the job built
3. At Form overlay, set the scan new scan
4. Set OFF at the auto rotation is OFF.
5. Select the auto/dual/single color at the color selection.



Proof Copy:
1. Place the originals. Press [Proof Copy] after selecting the functions. One copy is printed for confirmation. 2. Press the Start key for remaining copy.
If you want to change the settings, change settings and press Start key.
You can also print a proof copy after changing settings.
Press Start key to start other printing.

Improvement Point for the Scan Function

Scan Function

- A file size change is possible after checking TX file size by below setting.

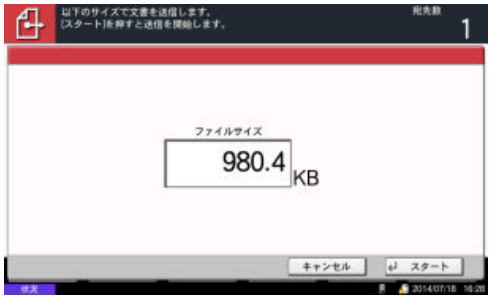
Present condition: After checking TX file size, only selection is [Cancel] or [Start]

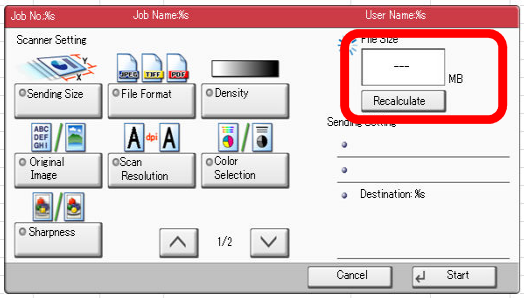
In case if you want to change the resolution, it is necessary to scan the original again

New condition: After checking the TX file side, it is possible to change the setting

After change the setting, press [Recalculate] to update the file size.

Setting: Send screen → Advanced Set Up → File Size Confirmation → ON

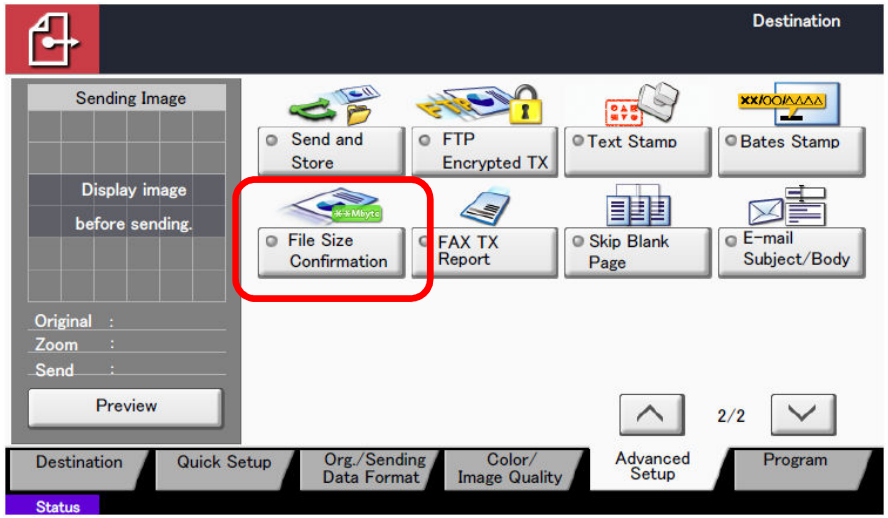


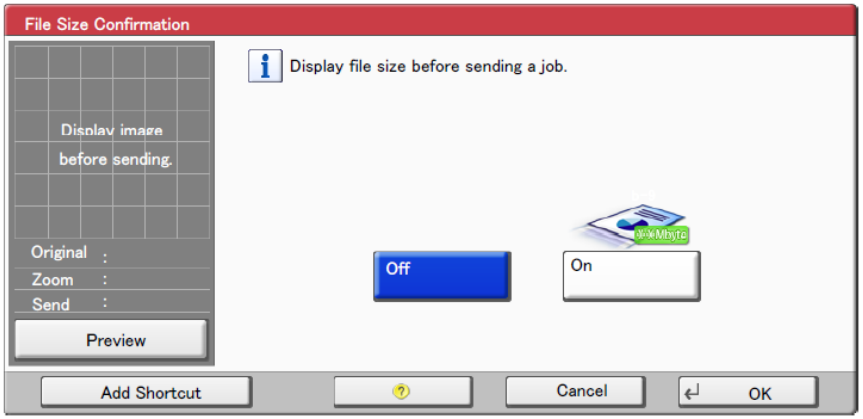


Screen Display

[Recalculate]
After changing the setting, press [Recalculate] to update the file size.

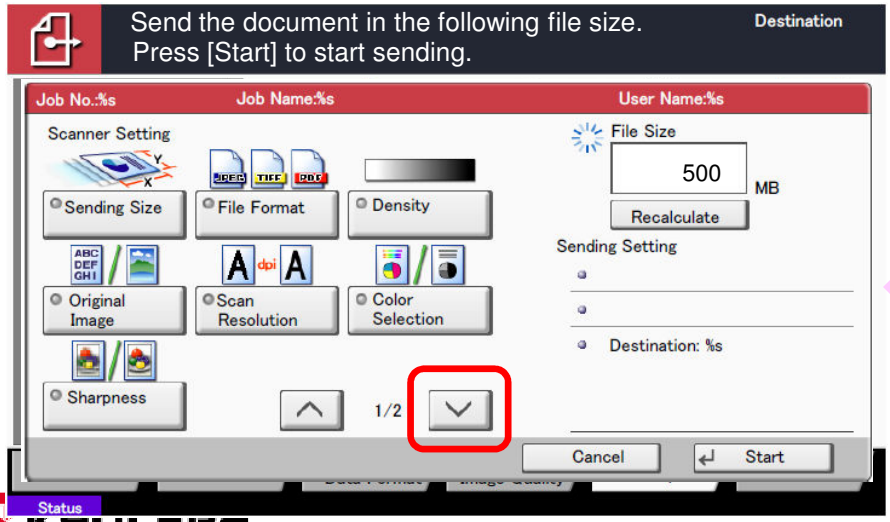
Display TX File Size

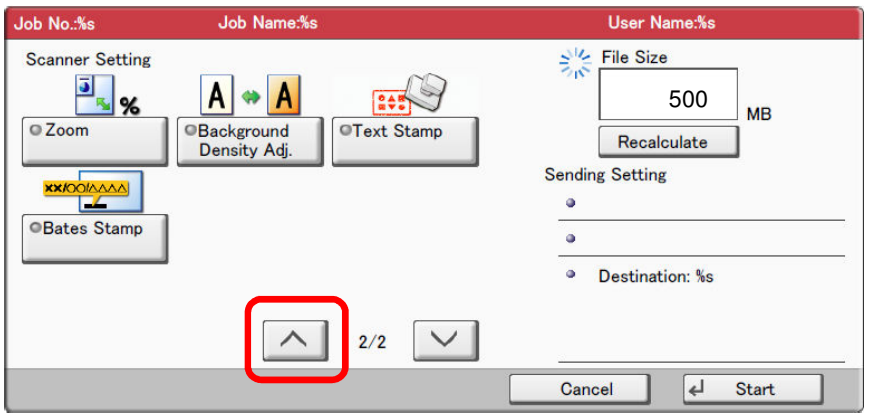




Start

After finish scanning the original

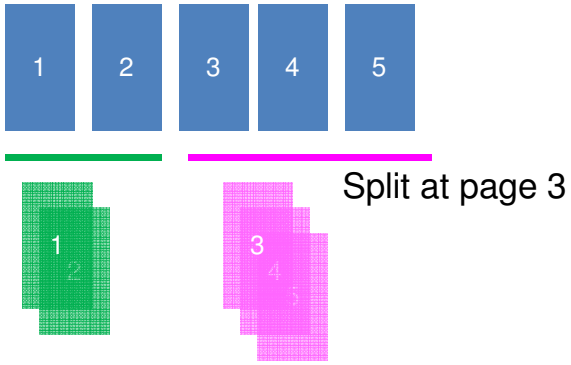




Improvement Point for the Scan Function

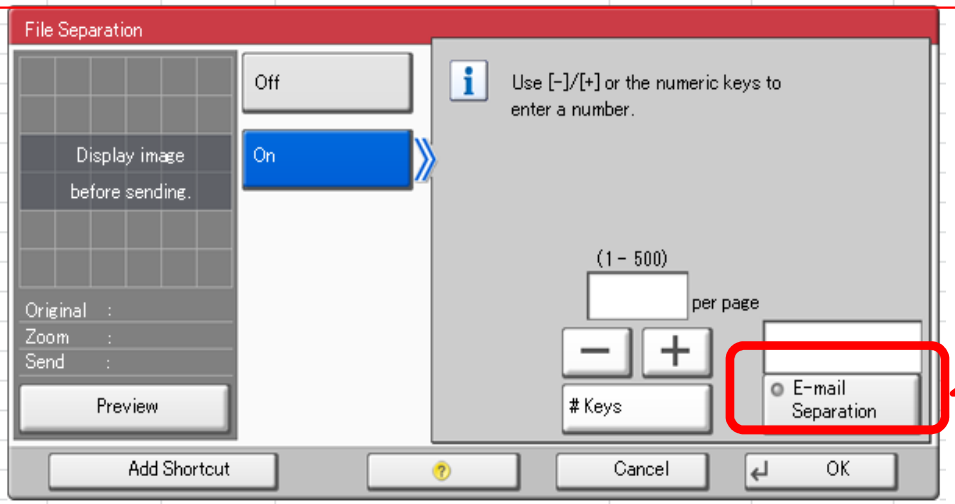
Scan Function

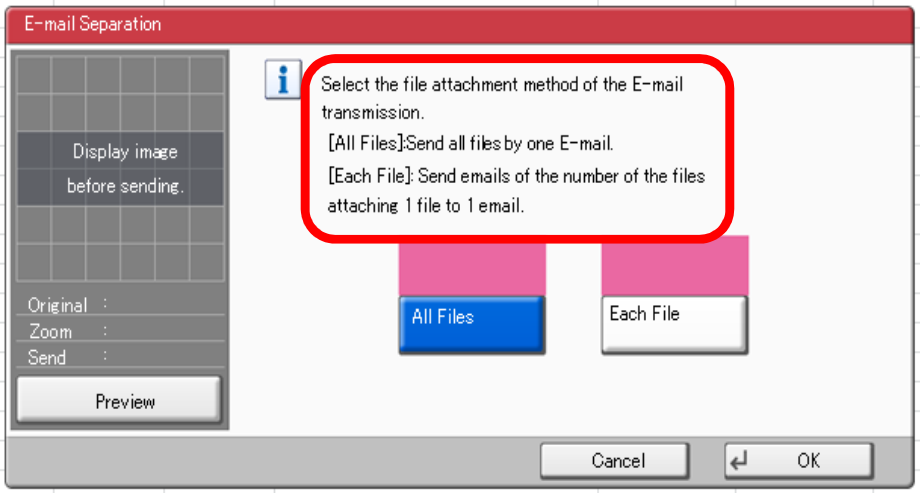
- Possible to separate the file by specified page
  Present condition: Only separate the file by each page
  New condition: Add the setting to separate the file by each specified page
- Mail split TX by specified JOB
  Add the setting to separate the mail by each specified JOB



Mail separation TX (Set the file attachment method when sending the mail)

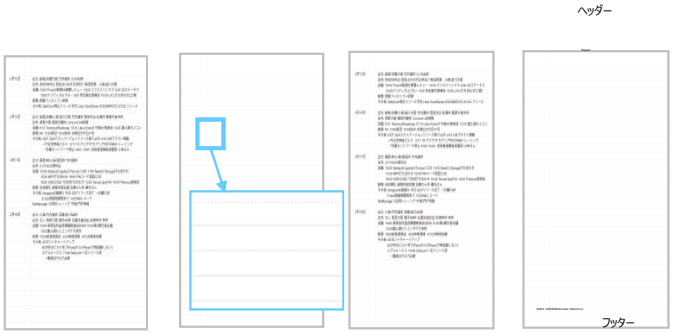
1. [All Files]: Send all files by one mail
2. [Each File]: Attach one file for one mail and send the mail which is same number of the files





Improvement Point for the Scan Function

Scan Function



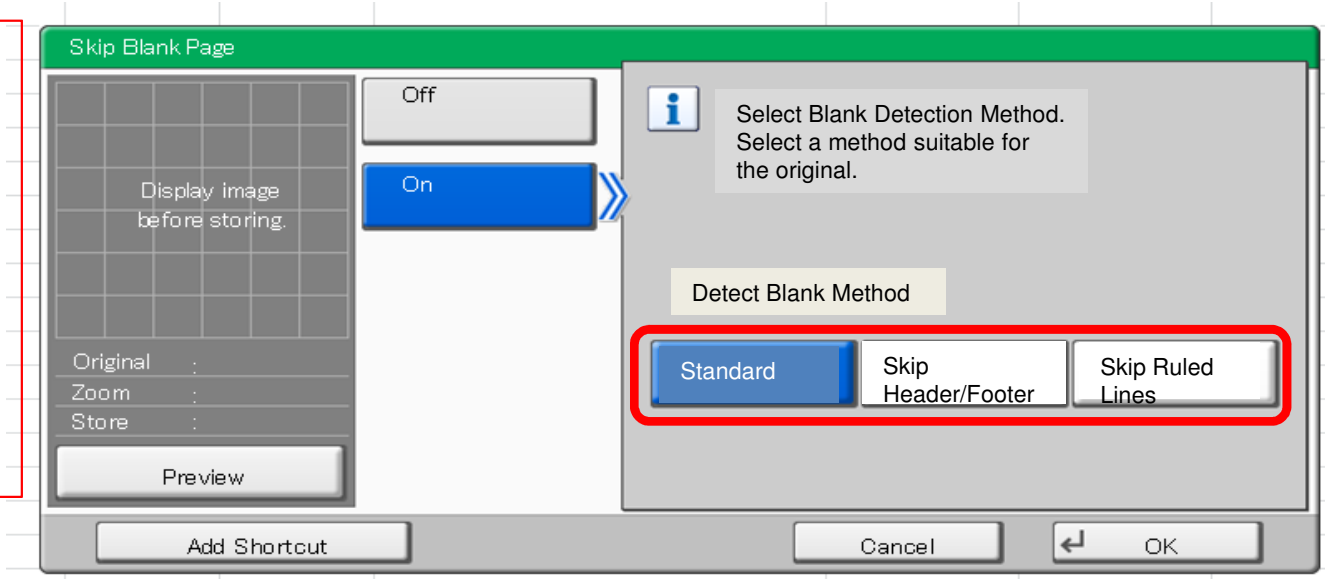
☐ Skip Blank Page when sending the file

Present condition: Skip Blank Page at Copy only
New condition: Skip Blank Page at Copy, Send

☐ Skip blank page

Add the detection of the original that has a back side image/ruled line on the note together with the present blank paper detection
* Select “Standard”/”Skip Header/Footer”/”Skip Ruled Lines”

Select the blank detection based on the original
<Blank page detection setting>
1. Blank page + Ruled Lines: Skip Ruled Lines on the note
2. Blank page: Default setting
3. Blank page + small amount of letters: Skip Header/Footer



Improvement Point for the Scan Function

Skip blank page

In case if the original is the blank page, skip to make copy and send
<Setting> : Copy, Send/Save, Job Menu
[Advanced Set up] → [Skip Blank Page] → [ON/OFF(Default)]
In case to select [ON},
Blank page detection level: Select from “Standard”(Default)/”Skip Header/Footer”/”Skip Ruled Lines”

1. Standard (Default): The original that has the image with small letters or thin pencil line, then this will be judged as not the blank page though, the paper that the coating has the color or back side of the image on the front page will be judged as the blank page
2. Blank Page + small amount of the letters: small amount of letters like used at the Header/Footer will be judged as the blank page
3. Blank Page + Ruled lines: The ruled lines (Equally spaced line) on the campus note will be judged as the Blank page (small letters or thin pencil letters might be judged as the blank page by false detection)

<System Menu> Change individual setting for Copy and Send/Save

[Common] → [Function Defaults] → [Skip Blank Page (Copy), Skip Blank Page (Send/Save)] → [ON/OFF]

Improvement Point for the Report Function

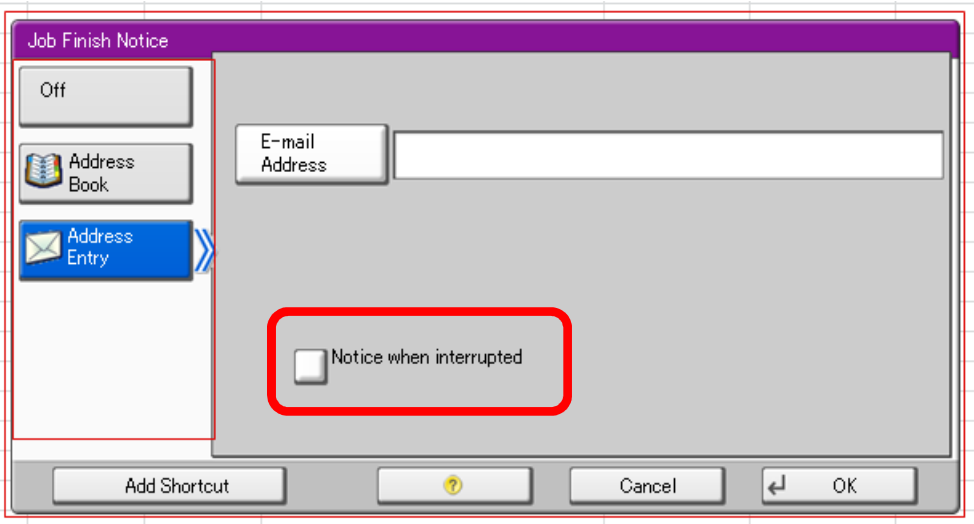
Report Function

☐ Notice by mail when interrupted the JOB

Even if the JOB is interrupted, notice will be given by the mail that JOB is interrupted (Add JOB interruption message)

Present condition: Only notice when JOB is finished.
No notice when JOB is interrupted
New condition: Set JOB interrupted notice
In case if the JOB is interrupted as the paper empty occurred during the print JOB, send the interruption message by the mail

Present function provides Notice by the mail when Copy/Send/Print/Save JOB is finished
In addition to this, it will be possible to provide the notice when the JOB is interrupted
Notice destination should be input directly or select from the address book



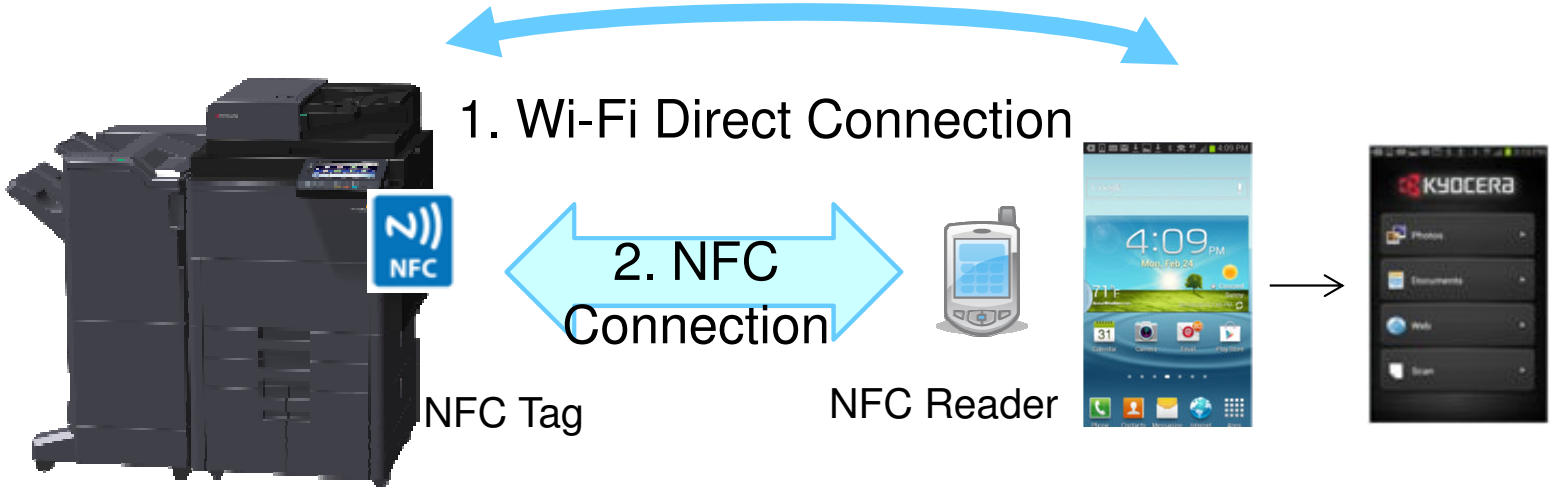
2-4-2

NFC

(Near field radio communication)

Utilization of NFC Tag

NFC Tag is standard on the operation panel



Once NFC is connected, Kyocera Mobile Print App. will start up

1. Obtain necessary information for IB-35 Wi-Fi Direct connection
   Tap the Android tablet/smart phone to the MFP, the machine name, IP address, SSID, Wi-Fi password, etc. that are stored in the MFP NFC tag will be transferred
2. Based on the obtained information through the app. of the tablet/smart phone, connect to IB-35 directly (Wi-Fi direct connection)

   * Support OS for NFC connection is Android only (NFC reader is not built in the iOS)

NFC (Near Field Communication) = Near field radio communication is limited to 10cm and possible to make data communication once Tap the device to the MFP

NFC Tag

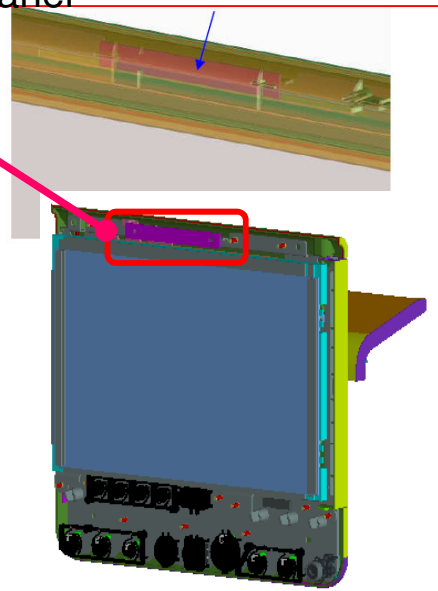
SSID registration between IB-35 Wi-Fi module and tablet/smart phone can be done by NFC tag at once (Simple setting when making Wi-Fi Direct connection)
* SSID: Registered name for recognizing the access point of Wireless LAN

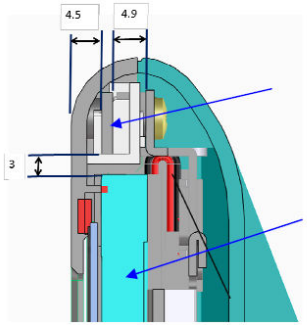
IB-35 Wi-Fi Module is 2.4GHz communication method which is same as Wi-Fi module available/sold in the market, and it has the function to make direct connection with tablet/smart phone
*IB-51: not possible to make direct connection

Tap the tablet/smart phone on this position as NFC PWB is built in this position

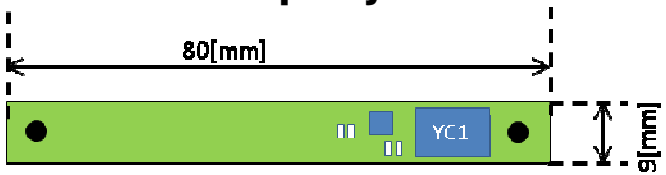
NFC PWB is built in at upper part of the operation panel

NFC PWB





NFC PWB: External form (80.0x9.0 [mm])
Material: Glass Epoxy PWB



NFC Tag Operation

<NFC Setting>:

1. Set NFC ON by the System Menu → System/Network setting
   * After setting ON, icon will be displayed that NFC is effective
2. Writing the information to NFC is done by the I2C communication between MFP and NFC PWB
   * Writing the information from the application to NFC tag is not available
3. The information stored in the NFC tag is the stored information in the MFP (set by the system menu)
   * once the information is updated in the MFP, the information stored in the NFC tag will be updated automatically as well

<Communication establishment with NFC tag and writing the NDEF message>

In case if NFC setting is ON, communication will be established once the MFP is started

1. <u>In case if Wi-Fi setting is ON, and also NFC setting is ON</u>
   After network is started, write NDEF (NFC Data Exchange Format) message to NFC tag
2. <u>In case if Wi-Fi direct setting is ON</u>
   After network is started, obtain the setting value which is necessary for Wi-Fi direct connection and NDEF message will be written
   NFC: (Near field radio communication)
   NDEF (NFC Data Exchange Format): Common data format to NFC tag

NFC Tag

- Contents of NFC Tag

Register the below tag information in NFC tag which is necessary to make Wi-Fi Direct connection

- IP Address
- Printer Name
- SSID
- WPA Password
- Password

- Write automatically in NFC tag Update machine information

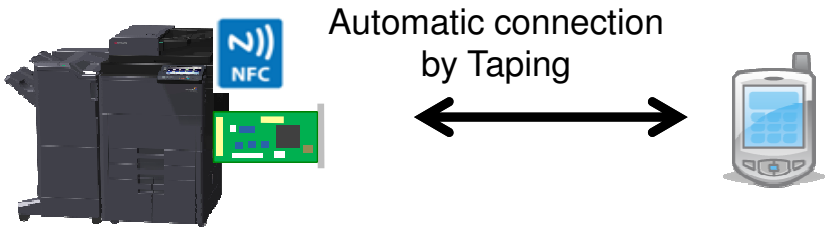
The machine is communicated with NFC tag through I2C

1. Change NFC tag information by the machine
2. Changed contents will be written to the tag automatically

- Writing false error to NFC tag

1. Failure to write NFC tag
2. Perform retry
3. Failure to write with retry
4. Display the error (possible to use the machine itself)

- Tap to make connection to Wi-Fi connection automatically

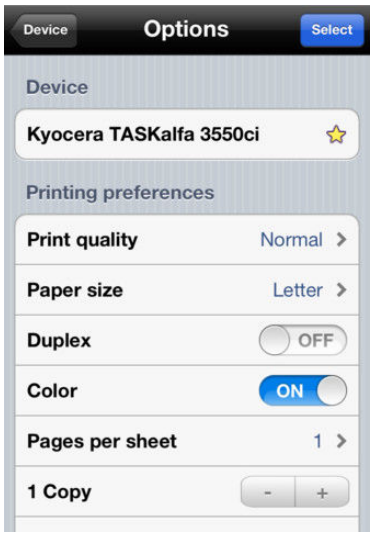


1. Tap to NFC tag
2. Obtain necessary information for Wi-Fi direct connection
3. Setting for Wi-Fi direct connection will be done automatically

NFC Tag Operation

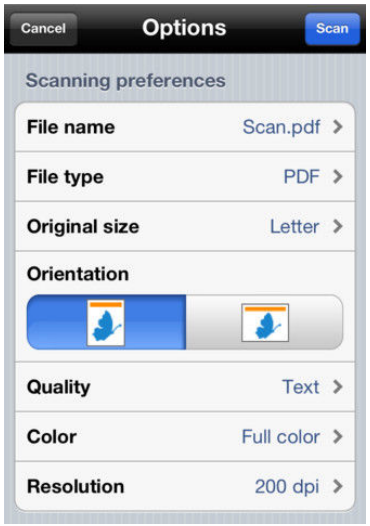
■ When it is possible to connect with IB-35 Wi-Fi Direct

- Print the document by tapping the mobile device on the NFC tag
- Scan the document by tapping the mobile device on the NFC tag



Tap to Print

1. Select document through Mobile App.
2. Tap the NFC tag
3. Mobile App. is sending the document to the printer that has the IP address stored in the NFC tag



Tap to Scan (Pull type)

1. Place the original on the MFP
2. Select Scan function through Mobile App.
3. Tap the NFC tag on the machine
4. Send scan command to MFP that has IP address stored in the NFC tag

NFC Tag Operation

Mobile side (tablet/smart phone) has to install Apps (My Panel, Mobile Print) beforehand so that it will be possible to use IB-35 Direct

In case of the Print

1. Select the document that wants to print from the application and arrange necessary setting
2. Tap the mobile device to NFC tag
3. Print data will be sent from the mobile device to the MFP and Print

In case of Send (Pull type)

1. Place the original on the MFP
2. Select Scan function through application and arrange necessary setting
3. Tap the mobile device to NFC tag
4. Perform scan through MFP and send the data to the mobile device

Support App.	Copy	Scan	Fax	Print	Network Setting
Kyocera Mobile Print	-	○	-	○	○ (Connect)
Kyocera My Panel	○	○	○	○	○ (Connect)

	NFC Operation
1	Tap to Print
2	Tap to Scan (Pull type)
3	Set NFC ON/OFF
4	Auto written to NFC tag
5	False writing error to NFC tag
6	Tap to connect to Wi-Fi Direct

2-4-3
Data Security Kit

Note when installing Data Security Kit

When installing Data Security Kit, please note the following

1. Check if the environment is secured for the security that the machine will be installed
   * The condition that the security is secured;
   a. The machine is installed that the room provided with the entry limit so that user can be specified
   b. When unbox the machine, there is no marks that the tape is removed before (No falsification of the internal system by removing tapes illegally)
2. Change the password (ID) for accessing to the maintenance mode
   To secure the security more, perform U010 (Set Maintenance Mode ID) and change 8 digit password (ID)

U010 Setting item	Content
New ID	Input new 8 digit ID
New ID (Reconfirm)	Input new 8 digit ID (Repeat for confirm)

* 8 digit New ID has to be the combination of 0-9, *,#. It is necessary to include “*” or “#” to new ID

U010: Method for password reset

In case if password which is changed by U010 is forgotten and wants to reset, the following will be the method to reset

1. Inform the affected machine serial number to KDC QA Mr. Nakagawaji
2. KDC QA will provide you the certificate file (Expiration period: 1 month)
3. Store the certificate file in to USB Memory
4. Insert USB Memory to the affected machine
5. Input Default password of the maintenance mode
6. The maintenance mode will start and input/change new password with U010

* Certificate file has the expiration period

Data Security Kit

Once Data Security Kit is installed, the security function will effective to SSD and HDD
Encryption: HDD, SSD = same level (AES256)
Overwrite: HDD – 3 times or 1 time overwrite
SSD – 1 time overwrite (this is not complete overwrite (overwrite of theoretical area)
Once DSK is installed, HDD failure disconnection operation will not be performed

<Affected models for the Security Authenticated>

Model	Storage	Region	CC Certificate (ISO15408)	IEEE2600	FIPS140
Color Lower positioned models	SSD(Std.)	other	✓	N/A	N/A
	SSD(Std.)HDD(Opt.)	other	✓	✓	N/A
	SSD(Std.)HDD(Std.)	KDA	✓	✓	N/A
Color Higher positioned mode/Mono Model	SSD(Std.)HDD(Std.)	All	✓	✓	N/A
Data Security Kit (F) ON	SSD(Std.) Encrypted HDD	KDA GSA	N/A	N/A	✓(HDD only)

Data Security Kit

1. Setting to change stored location for the FAX image data

-Before Data Security Kit is installed (FAX image data is stored in SSD)

- When Data Security Kit is installed, Stored location of the FAX image data will be changed to HDD

- After Data Security Kit is installed, it is possible to change the stored location to SSD by the maintenance mode U671 (Change FAX Storage) However, IEEE2600 (ISO15408) is nonconformity

* In case to perform U002 (Factory default), this setting value will be kept.

- FAX image data which is stored to SSD will be protected by encryption

Data Security Kit

2. When changing the stored location for the FAX image data by U671, please note the following

- All data which were saved before change will be deleted

→ Perform U671 after taking back up the FAX image by U026 SSD

→ When changing, the message “the data will be deleted” will be displayed.

Data Security Kit

After the change, this will be out of security standard (IEEE2600.01/Common Criteria (ISO/IEC15408) (under evaluation for the certification so it is still nonconformity) Therefore, when changing the stored location of FAX image, please explain to the user this will be nonconformity of IEEE2600.

* IEEE2600.01 is limited to the HDD data management only with HDD is installed

* When starting the Data security Kit(F) for KDA, even if the stored location of FAX data is changed from HDD to SSD by U671, this will be applied for the certification of FIPS140-2

Note when starting Data Security Kit (E)

- In case to replace the Main PWB

C0660 occurs → Perform U026 Flash → Perform U004 → Power OFF/ON → screen to input encryption code (Repeat until correct encryption code is input)

*Encryption code: Password that input when Data Security Kit is started

1. Input correct Encryption code → Power OFF/ON → Auto encryption format screen → Power OFF/ON → Normal start up

2. Input different encryption code (in case if the password is forgotten) → Press “Force continue” button → Force format will be possible → Auto Encryption format screen → Power OFF/ON → Normal start up

* Before Force format is performed, alert will be displayed)

Note when starting Data Security Kit (E)

If Encryption password is forgotten

=Encryption code will not matched so that stored data can not be recovered =

Make recovery on HDD by force format using new Encryption key

* By performing Force format, without replacing HDD to new one, it is possible to use HDD (HDD will be Encrypted with new password)

Note when starting Data Security Kit (F) (KDA)

<Note when replacing Main PWB if Data Security Kit (F) is installed>

When replacing the Main PWB, input Encryption password which was input at the time of initial installation of Security Kit, then, it will be possible to continue using HDD for the Data Security Kit (F)

<Procedure to replace the Main PWB>

1. After replacing the Main PWB, turn on the power → C0660 → Perform U026 Flash → Perform U004 → Power OFF/ON → Encryption code input screen (Repeat until correct Encryption code is input)
2. Re-input Encryption code which is input at the time of the installing the security kit.

   * If the Encryption code is different, it will not be possible to access to the HDD

   (HDD lock condition) not locked by the password for the recovery

Note when starting Data Security Kit (F) (KDA)

In case if the password is forgotten, (Encryption password input at the time of Data Security Kit (F) installation (For releasing HDD lock, stored into Main PWB) it is not possible to release the lock of HDD so that it is not possible to access to HDD (it is not possible to communicate between Main PWB and HDD)

* Replace with new HDD which is not locked by the password for the recovery

Process when the problem occurs with Data Security Kit(E)(F)

<Process for Data Security Kit (E) (F)>

●HDD Failure

C0640 → U024 to initialize (if you can't solve the problem)

→ Replace HDD

→ Password is set to HDD automatically + display auto Encryption format screen

→ Power OFF/ON → Normal start up condition

●SSD Failure

C0680 →

→ Replace SSD

→ Auto Encryption format screen

→ Power OFF/ON → Normal start up condition

●In case if SSD from different machine wrongly

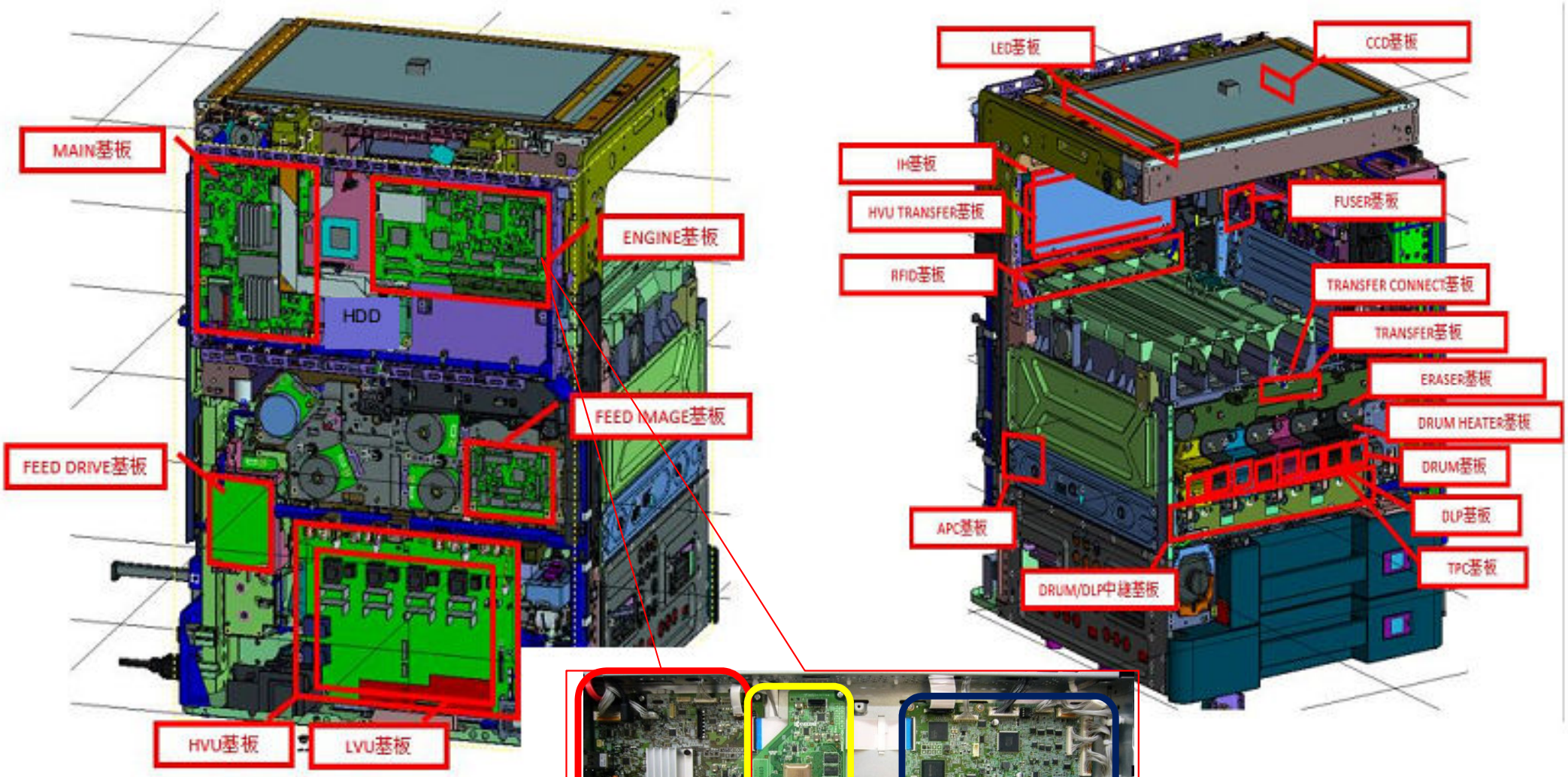
It is possible to perform U004 however, C0660 can't be cleared therefore, install correct SSD

New Service Call

New Call		Factor	Action
0660	HDD Encryption Key Error	C-call as it is not possible to access to HDD by the Authentication mismatch When replacing Main PWB, different Encryption password is input or SSD from the different machine is installed	After performing U004 (Write serial number), input correct Encryption password
0670	HDD Encryption Key Error	When overwrite HDD data, check and verify can't match with retry of 5 times Overwrite has done so security risk is low. However, overwrite can' be done correctly for some part of HDD so that the error is detected	Replace HDD under security reason For the temporary life extension, perform U024 (Full format) * Avoid some part of HDD which can't overwrite correctly

3-4
Electrical components

Location of each PWB



Controller Box

Function/Composition of each PWB

Main PWB

Main CPU x 1pc, Controller ASIC x 1pc, DDR3-SDRAM：4GB
PMIC (IC for Energy saving control)
SSD: Upper model/Mono model: 8GB, Lower model: 32GB (Except KDA version)
(SSD: Upper/Lower/Mono model → 8GB for KDA version)
Wi-Fi Module (IB-35): Option (Standard for KDA version)
HDD: 320GB, Upper/Mono (Standard), Lower model (Option)
(Upper/Lower/Mono model: Standard for KDA version)
Controller control, Image process, Panel control, Energy saver control, LAN/USB I/F

Engine PWB

CPU x1pc
Video ASIC: Upper model x 2 pcs, Lower/Mono model x 1 pc
Scanner ASIC x 1pc
Engine control, Scanner control

HVU PWB (Main)

3 types of PWB: Upper/Lower/Mono model
Electrical charge, Developing bias output

Function/Composition of each PWB

Feed Image PWB
3 types of PWB: Upper/Lower/Mono Feed ASIC x 1pc
Mainly, connect developing related drive

Feed Drive PWB
Only one type
Feed ASIC x 1pc
Mainly, connect conveying drive

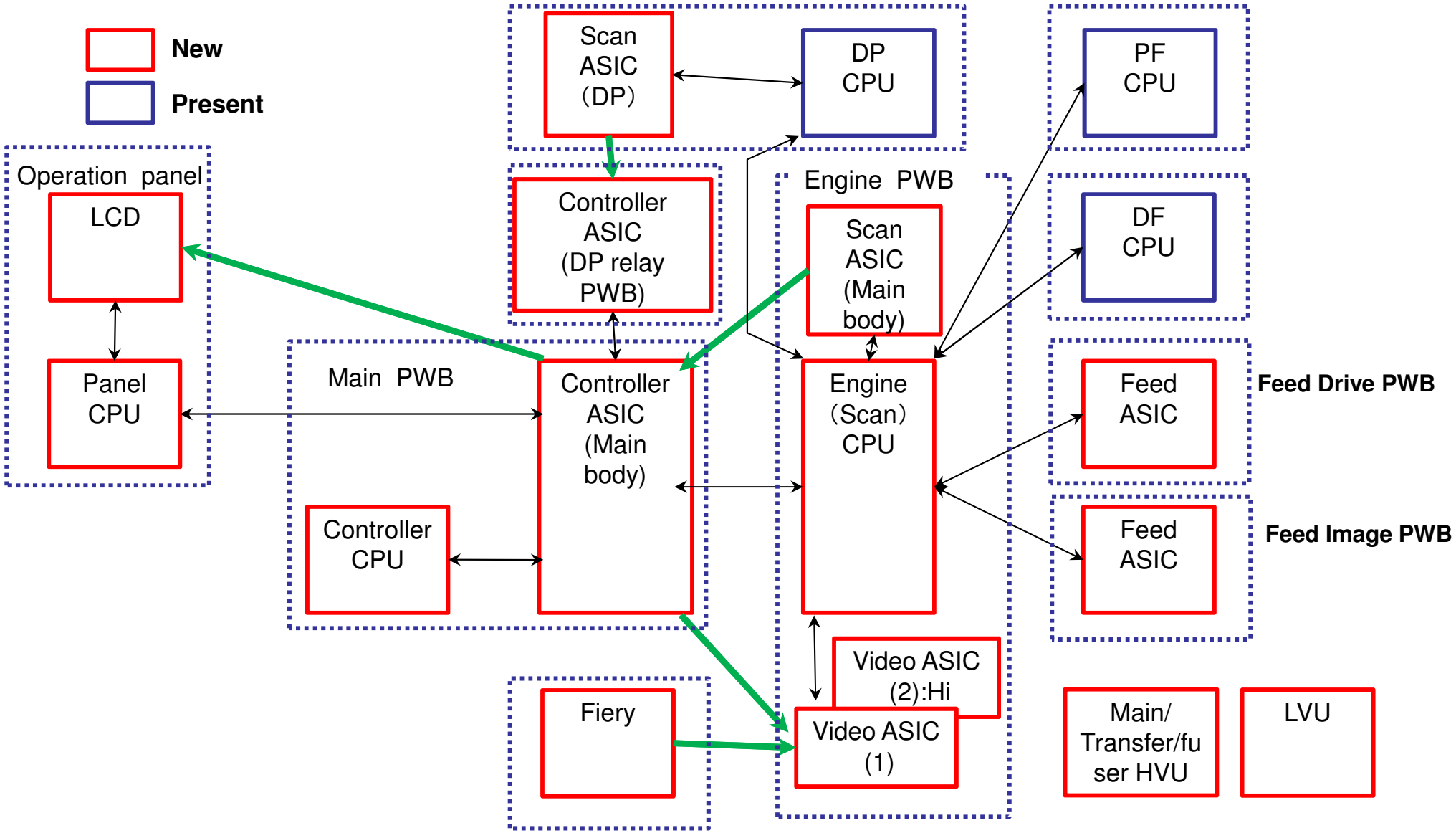
IH PWB
2 types of PWB: 100V/200V
Output control CLK from Engine
IH_CPU → Power monitor IC

Panel Main PWB
Only one type
CPU x 1pc
Control touch panel

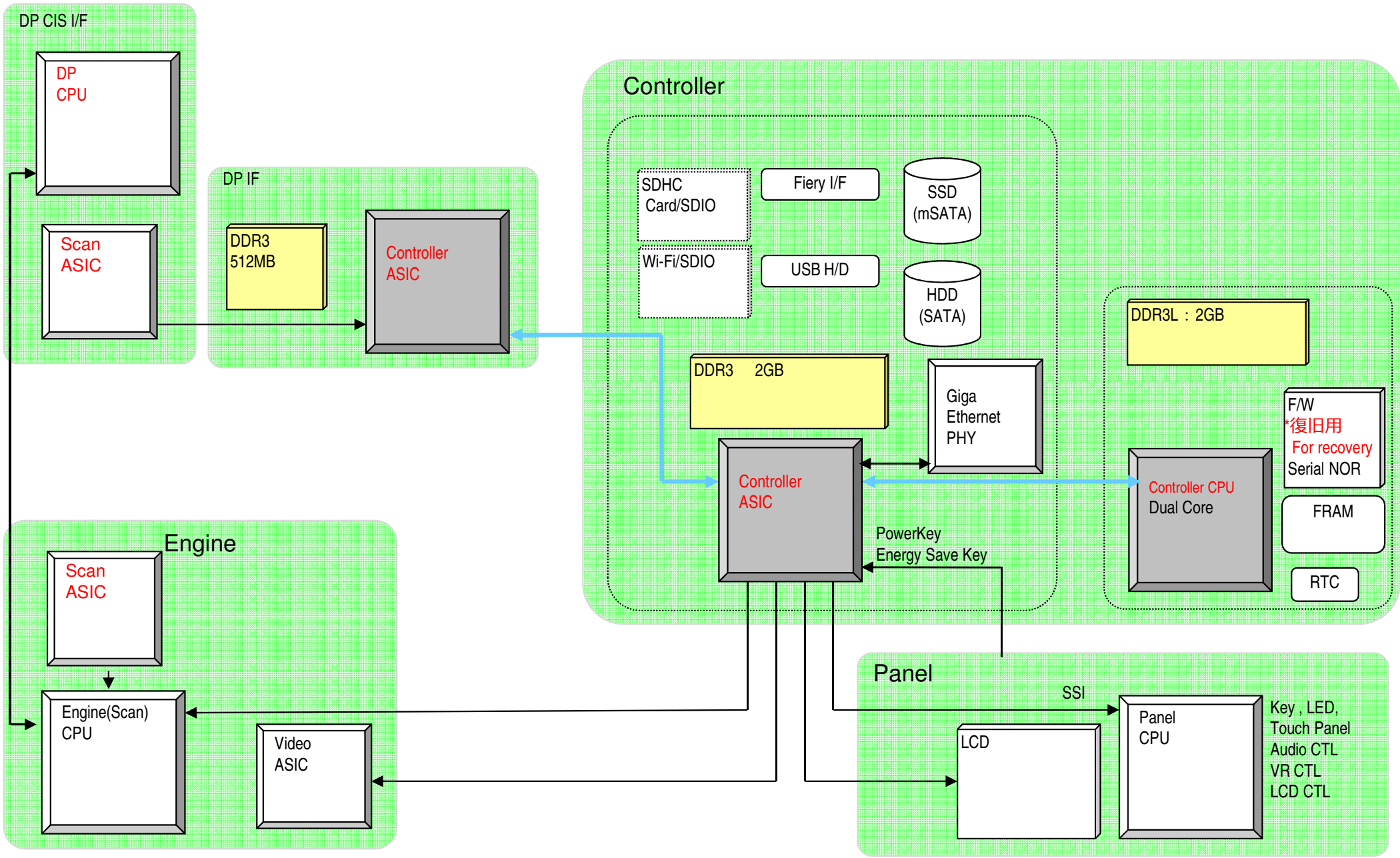
LVU PWB
4 types of PWB: 100V/200V/Common for Upper &Mono/Lower
DC power supply generation (24V, 5V), Cassette heater control

Electrical component PWB control (Whole composition)

■ New ASIC, CPU composition (System that possible to use for lower model to upper model)



Controller System Design



Engine PWB Composition

■ Engine PWB Composition

Scanner function is adopted in the Engine PWB and discontinue ISC PWB

Old version: Scanner control is done by ISC PWB (Scanner related control PWB)

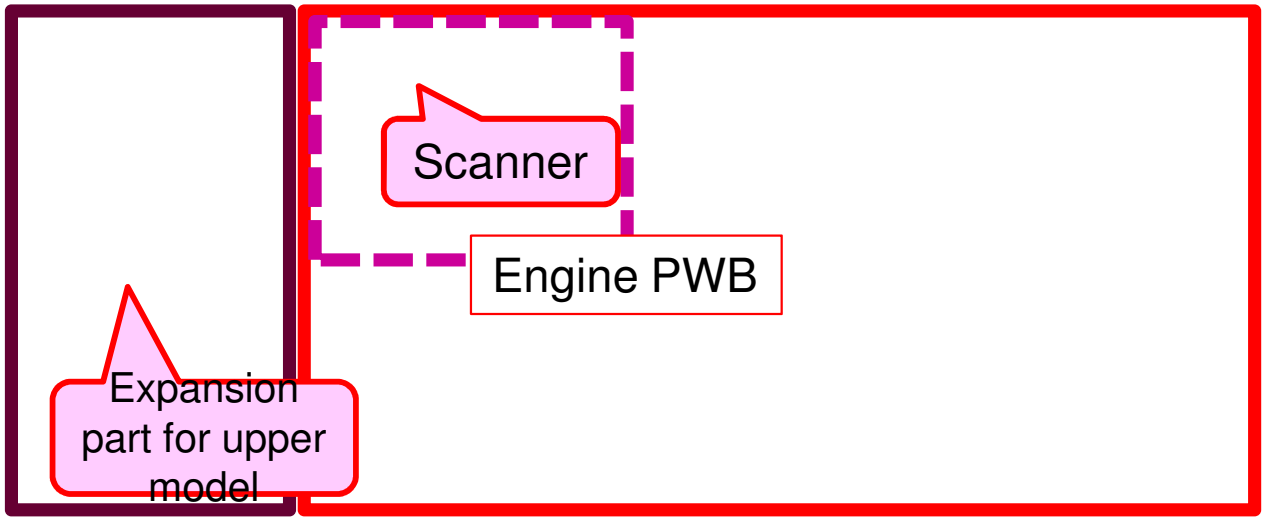
New version: Scanner control is one by Engine CPU (Disuse ISC PWB)

1. Reduce Scanner CPU, Control optical carriage motor drive by the Engine CPU
2. Adopt IH CPU in the Engine CPU (disuse IH CPU and adopt power supply monitor IC)

*In order to realize high accuracy power supply control, power supply monitor IC is built in the IH control PWB

4. Install Feed ASIC in both Feed Drive PWB and Feed Image PWB

<Change external form of Engine PWB: increase additional function difference between upper model and lower model> (Make less wiring, smaller PWB)



Engine PWB Motor Speed Feedback Control

Motor Speed Feedback Control

<Drive control for Drum/Primary transfer belt>

Old version: CPU control for the motor control PWB

New version: Discontinue the motor control PWB and control by the Video ASIC on the Engine PWB

Control primary transfer belt/Drum/Developing motor by the Video ASIC on the Engine PWB
(Input control signal from Video ASIC on the Engine PWB to Feed Image PWB)

1. DC brushless motor that control the drive by the Engine PWB
   a. Polygon Motor
   b. Developing Motor
   c. Drum Motor
   d. Primary Transfer Belt Motor

   By using Feedback function of the Video ASIC to adjust the speed that matches to the target frequency (FG Pulse which is embedded in the Brushless motor is monitored by the Video ASIC)

2. Brush motor that control the drive by the Engine PWB
   a. LSU Cleaning Motor
   b. Waste toner Motor

Engine PWB CPU Control Item

<Engine CPU>

1) Detection Sensor output during sleep mode

To recover from Sleep mode, monitor by the Engine CPU during the sleep mode

1. Paper coming out to the Job separator/2. Paper coming out to the upper AK/3. Front cover OPEN/4. Set the paper on the MPF

2) Regist Sensor/Regist Clutch (Leading edge related device)

To avoid occurrence of the delay for the sensor detection or clutch drive timing, control the drive start timing by the Engine CPU directly

3) Fuser thermistor

Fuser control: Reading the temperature info. from the thermistor

* In case if the CPU input on the fuser thermistor is high, stop the IH control mechanically

Fuser IH PWB: IH heating control by the Engine CPU

4) T/C Sensor

Change the clock (Hz) of sensor output by T/C

* T/C sensor is input to the Engine CPU

5) ID Sensor

During the calibration, output front and back of P wave/S wave for the ID Sensor from the Sensor * Reading the ID Sensor: Engine CPU input

Feed Drive PWB, Feed Image PWB

Feed Drive PWB, Feed Image PWB I/O ASIC

- Less wiring: New serial communication function is embedded and reduce number of harness/length of the wire
- Improve productivity: Reduce the load of CPU as the Motor control function is embedded

Feed ASIC is embedded on the FEED DRIVE PWB & FEED IMAGE PWB, and control the below.

1. Drive feed/conveying related motor to the Stepping motor/Brushless motor/etc.
2. Relay for the AD converter or FAN for the Clutch/Solenoid/Analog converter

FEED DRIVE PWB

1. Brushless Motor
   a. Fuser, b. Feed, c. Agitate toner container, d. Primary transfer unit cleaning
   * Fuser for the upper model/Feed motor → increase torque
2. Fuser separation motor drive circuit

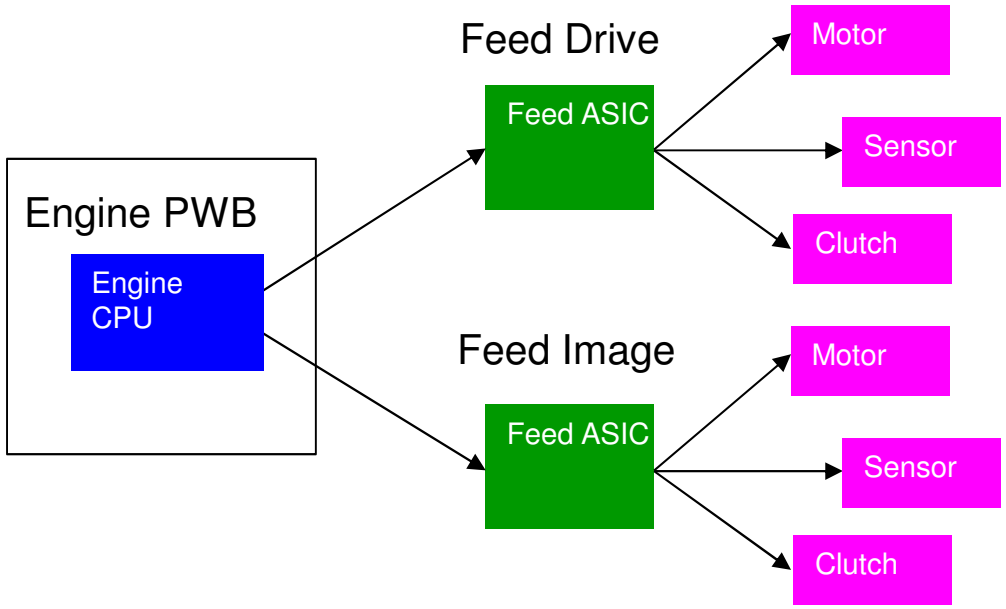
FEED IMAGE PWB

1. Brushless Motor
   a. Drum motor, 2. Primary transfer/BK Developing motor, 3. Developing motor (lower model: 1, upper model: 2)
   Output control signal from the Engine PWB (Video ASIC) that has speed control unction to FEED IMAGE PWB
2. Primary/Secondary transfer separation motor * Primary transfer separation and secondary transfer separation is done by same motor

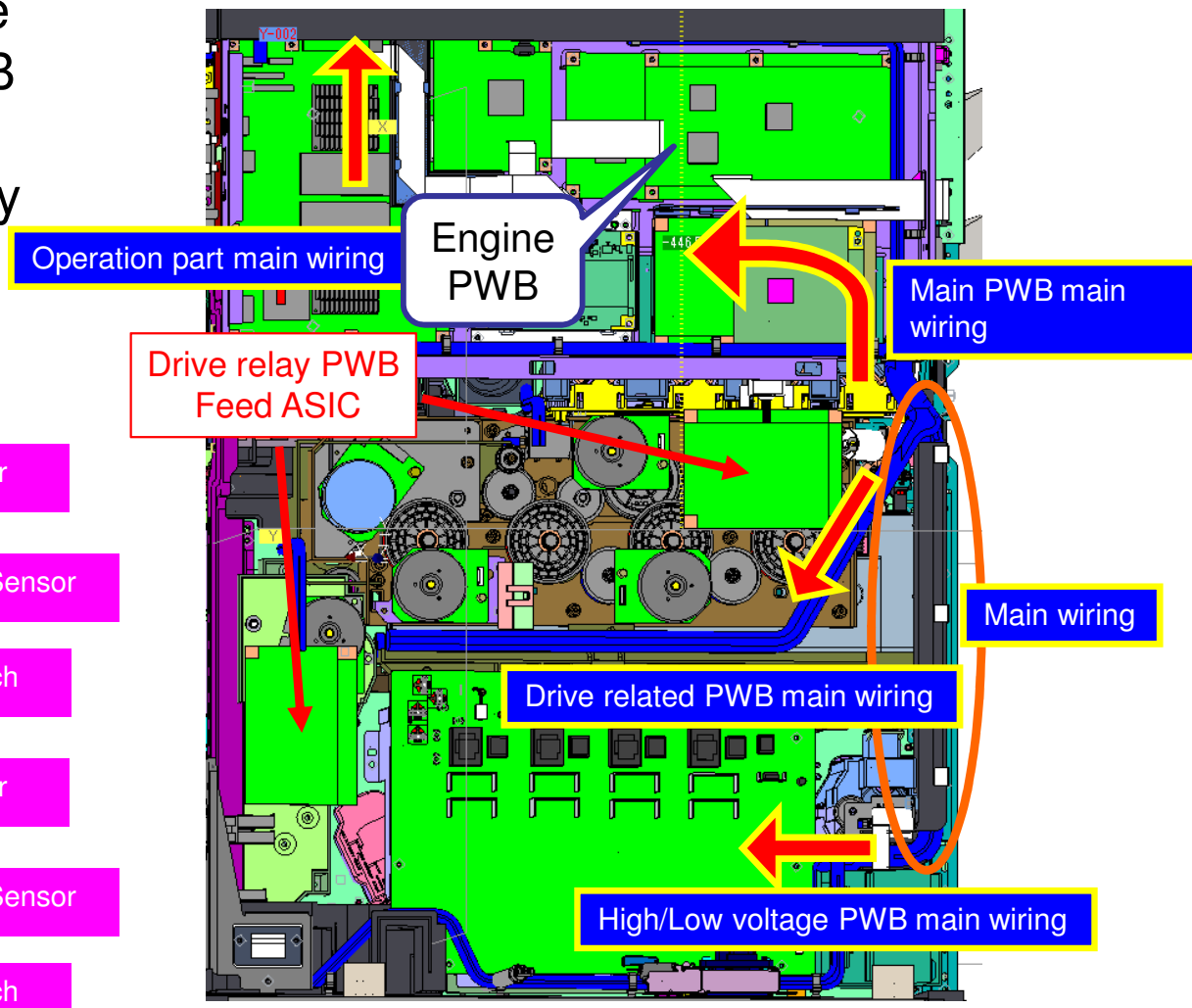
Feed Drive PWB, Feed Image PWB

Less wiring by the new serial communication

Feed ASIC is configured to the drive relay PWB for both Feed Drive PWB and Feed Image PWB
Reduce the cable between PWBs by the serial signal



Wiring layout is configured as the Main wiring makes bulk wiring and then make branching



Feed Image PWB: Difference among Upper/Lower/Mono model

<Difference for Feed Image PWB among upper/lower/mono model>

The below control circuit is embedded in the FEED IMAGE PWB, therefore, Feed Image PWB is different among Upper/Lower/Mono model

- IH Core Motor (Drive by the Feed Image PWB)

  IH Core Motor, IH Core HP Detection Sensor: Embedded in Upper/Mono model → Control the temperature increase for the edge of the fuser roller by IH Core Motor, IH Core HP Detection Sensor

- Developing Cooling FAN

  Developing Cooling FAN: Embedded in Upper/Mono model

- Toner Supply Motor/Rotate Detection/Remaining amount detection

  The Circuit of the Motor, Sensor for the Color: Not necessary with Mono model

- Developing Vibration Motor

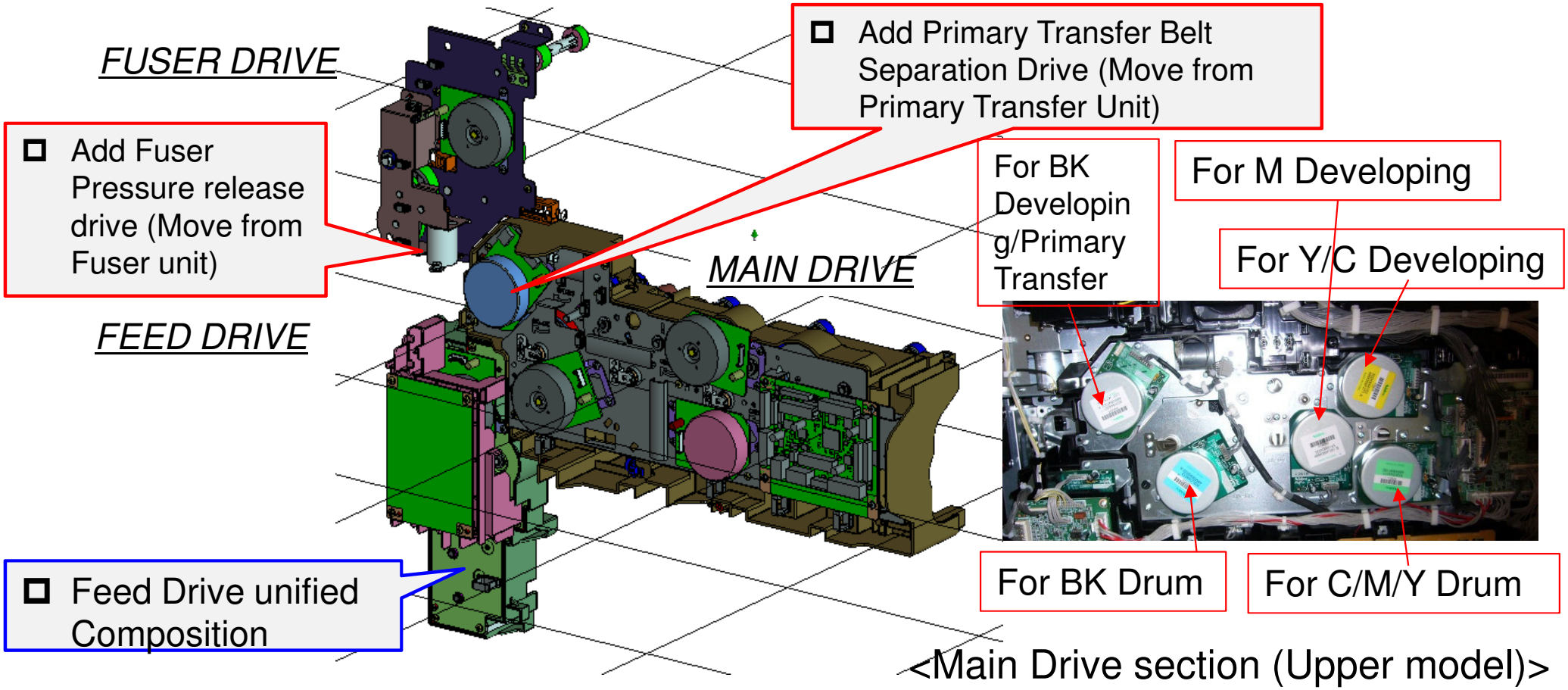
  Vibration Motor: Embedded in the upper/mono model which are touch down developing system

Compatibility of the PWB

PWB	Unit	Compatibility		
MAIN		Upper	Lower	Mono
ENGINE		Upper	Lower	Mono
FEED IMAGE		Upper	Lower	Mono
FEED DRIVE		Common		
PANEL MAIN	Operation	Common		
OPERATION	Operation	Common		
CCD	ISU	Common		
LED	Optical Lamp	Upper	Lower	Common with Upper
HIGH VOLTAGE MAIN		Upper	Lower	Mono
HIGH VOLTAGE TRANSFER		Common with Color		Mono
LOW VOLTAGE 100		Upper	Lower	Common with Upper
LOW VOLTAGE 200		Upper	Lower	Common with Upper
IH 100	100V	Common		
IH 200	200V	Common		
DRUM DLP CONNECT		Upper	Lower	Mono
HIGH VOLTAGE FUSER		Common		

3-7-1
Drive Section

Changes in Drive section related



<Main Drive section (Upper model)>

Primary Transfer Belt/Drum/Developing Motor

Control from Engine PWB Video ASIC. Input each control signal from Engine PWB to Feed Image PWB

Primary Transfer Belt/Developing BK Motor

Input FG Pulse which is embedded in the Brushless Motor in the Engine PWB Video ASIC and adjust the speed to the target frequency by ASIC feedback mode function.

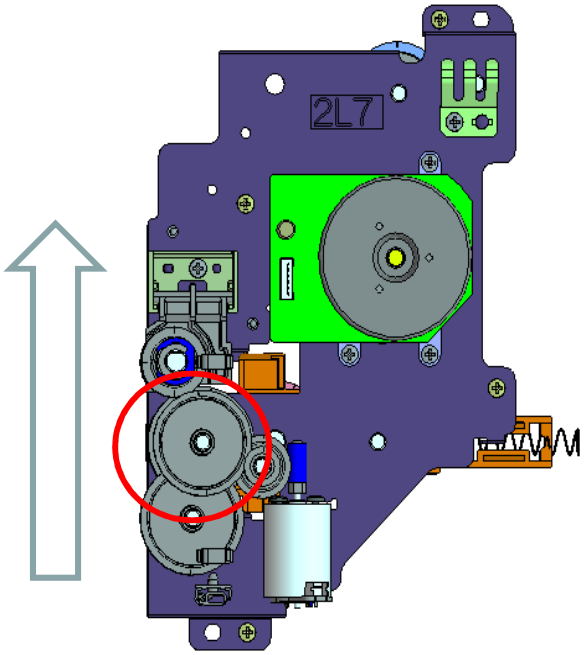
Drive Section Composition

<Unit Drive Composition & Motor Composition in the Unit>

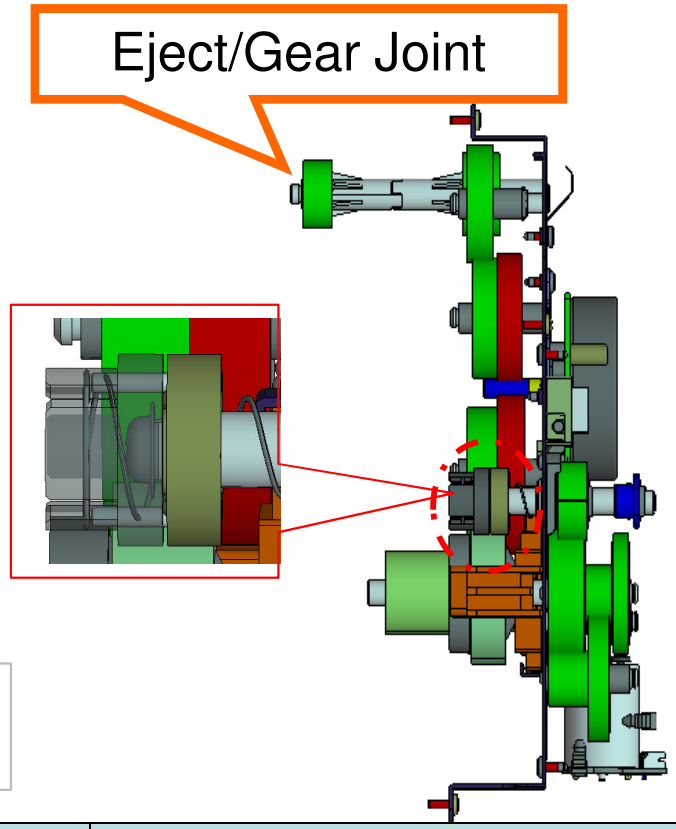
Unit	Drive Item	Name of the Motor	Rating
MAIN Drive Unit	Drum	a-Si Color Drum (Upper Model)	1pc x 30W
		a-Si BK Drum (Upper model)	1pc x 20W
		OPC Color Drum (Lower Model)	1pc x 20W
		OPC BK Drum (Lower model)	1pc x 20W
	Color Developing	Color –DLP Y/C, TD (Upper model)	1pc x 30W
		Color –DLP M, TD (Upper model)	1pc x 20W
		Color-DLP, Dual component (Lower model)	1pc x 20W
	BK Developing/Primary Transfer	BK-DLP/TRANS	1pc x 30W
	Belt Separation	Belt Separation Motor	
FUSER Drive Unit	Fuser	Fuser Motor	1pc x 20W
	Fuser Pressure release	Fuser Pressure Release Motor	
FEED Dive Unit	Feeder1 & 2, Vertical conveying, Registration, Secondary Transfer, DU, MPF	Feeding Motor	1pc x 30W
Container Drive Unit	Toner Agitation	Agitation Motor	1pc x 10W

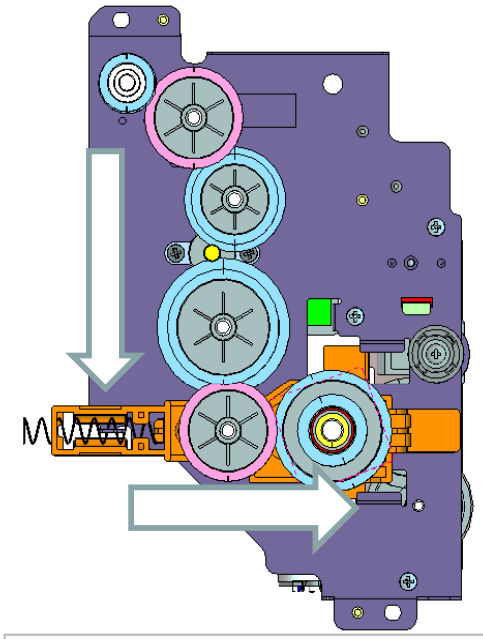
Fuser Drive section

Add Fuser Pressure Release Drive to the machine main body side
(Move from Fuser section)



Transition of Fuser Pressure Release Drive





Transition of Fuser Unit Drive

Item	Drive Joint Method
Fuser	Gear Joint
	Drive is released when processing JAM
Fuser Pressure Release	Coupling Joint
	Joint is released when removing Fuser Unit

3-7-2
Cooling Section

Correction

2016 5 10 Ver 1.1

P4 FAN Operation No.13 Container Fan and following remark2 is added.

*Remark 2When BK Dev temperature is higher than Ta, the Fan rotates.

The following is deleted. ~~System Menu, Adjust/Maintenance, Silent mode: After completing the JOB, the fuser control and drive time can be set for quick warm up.~~

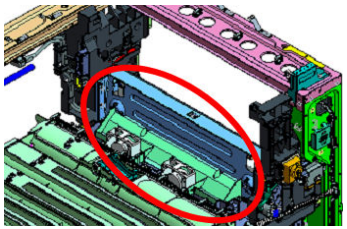
P5 Position of the FAN No13 is added.

P9, Cooling FAN for supporting Fuser Edge excess temperature increase

The fig of this page is added to P6. So, this page is deleted from this document.

Cooling FAN: The flow of the Wind

IH Coil Cooling FAN:
2 pcs (Lower model), 3pcs (Upper model)



Exhaust air at Fuser/Eject section
Cooling IH PWB

Cooling IH PWB

FAN

IH PWB

Cooling Paper

Cooling IH Coil (Omit steam)

Toner Thermal insulation

FAN

Cooling Developer
(upper model)

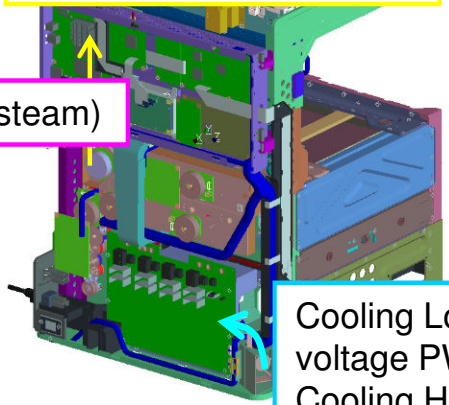
FAN

FAN

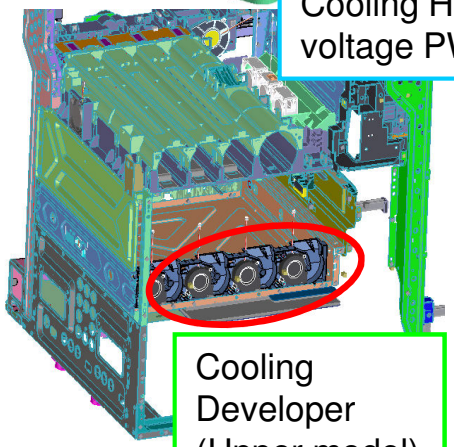
FAN

FAN

Cooling Controller PWB
Cooling Drive



Cooling Low
voltage PWB
Cooling High
voltage PWB



Cooling
Developer
(Upper model)

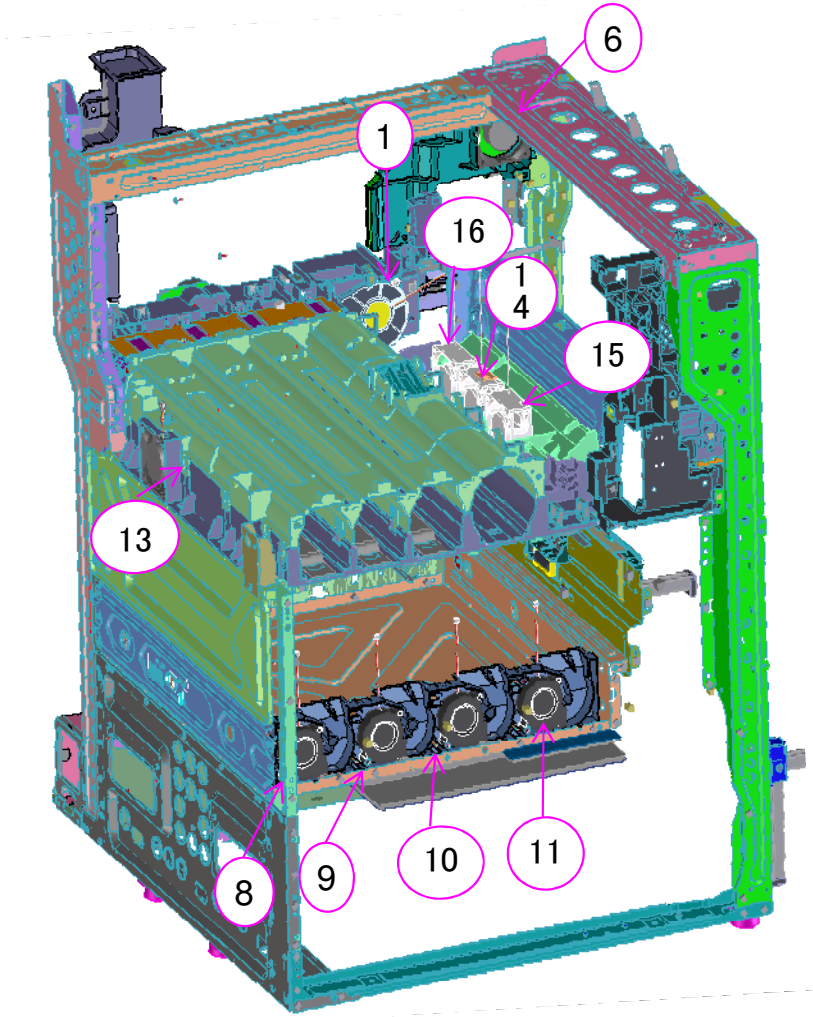
FAN Operation

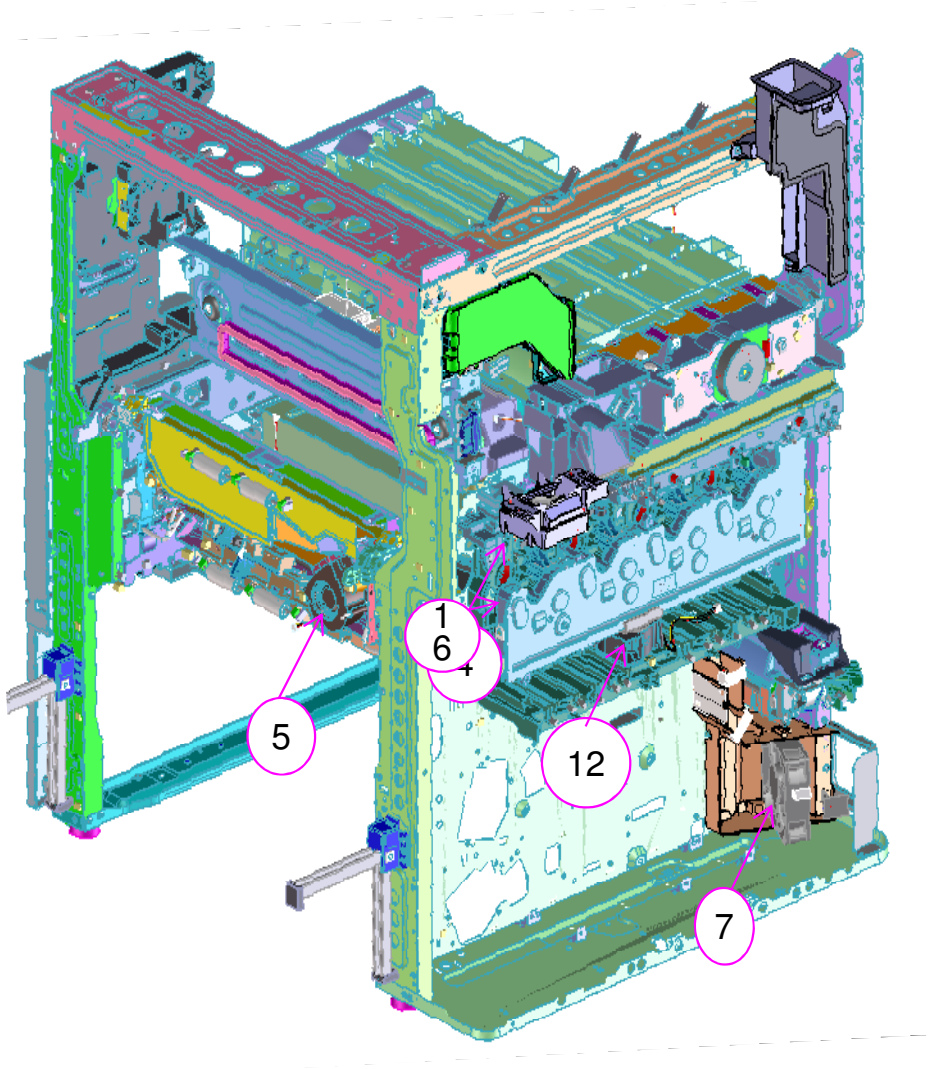
No.	Name	Install Position	Model Composition			Start up		PRINT		READY (Normal		Energy Save Mode/Sleep	
			Upper	Lower	Mono	Ta＞15	15≧Ta	Ta＞15	15≧Ta	Ta＞15	15≧Ta	Ta＞15	15≧Ta
1	IH PWB Cooling FAN	Main Body	○	○	○	Full Speed	Full Speed	Full Speed	Full Speed	Remark1	Remark1	×	×
4	Main PWB Cooling FAN	Main Body	○	○	○	Follow Main PWB Control							
5	Fuser Edge Cooling FAN	Conveying Unit	○	○	○	Follow Fuser PT control							
6	Eject Cooling FAN	Main Body (Rear)	○	○	○	Full Speed	Full Speed	Full Speed	Full Speed	Remark1	Remark1	×	×
7	LVU Cooling FAN	Main Body	○	○	○	Full Speed	Full Speed	Full Speed	Full Speed	Remark1	Remark1	×	×
8	Developing Cooling FAN1	Main Body Left Front	○	×	×	×	×	Remark2	Remark2	Remark2	Remark2	×	×
9	Developing Cooling FAN2	Main Body Left Front	○	×	×	×	×	Remark2	Remark2	Remark2	Remark2	×	×
10	Developing Cooling FAN3	Main Body Left Front	○	×	×	×	×	Remark2	Remark2	Remark2	Remark2	×	×
11	Developing Cooling FAN4	Main Body Left Front	○	×	○	×	×	Remark2	Remark2	Remark2	Remark2	×	×
12	Toner Absorb FAN	Main Body (Rear)	○	×	○	In conjunction with BK Drum Drive, operate with Full Speed. Stops at same time as BK Drum Drive Stops							
13	Containerr Cooling FAN	Main Body Left	○	×	○	×	×	Full Speed	Full Speed	×	×	×	×
14	Eject Paper/IH Coil Cooling FAN1/2	Main Body	○	○	○	In conjunction with BK Drum Drive, operate with Full Speed. Stops at same time as BK Drum Drive Stops							
15	Eject Paper/IH Coil Cooling FAN3	Main Body	○	×	×	In conjunction with BK Drum Drive, operate with Full Speed. Stops at same time as BK Drum Drive Stops							
16	Container/Hopper Cooling FAN	Main Body (Rear)	○	×	○	Full Speed	Full Speed	Full Speed	Full Speed	Remark1	Remark1	×	×

- Remark1: Transfer belt drive continues for more than 1 minute → Full speed for 1 minute after drive stops → Stops after that
- Remark2::When BK Dev temperature is higher than Ta, the Fan rotates.

* Ta = Outside Thermistor Temperature

Position of the FAN

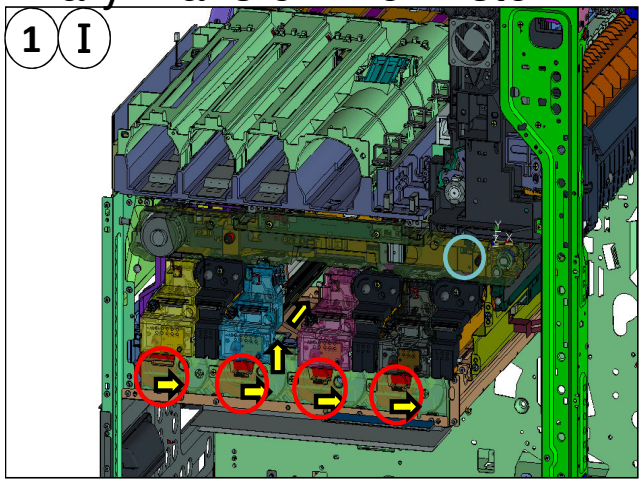




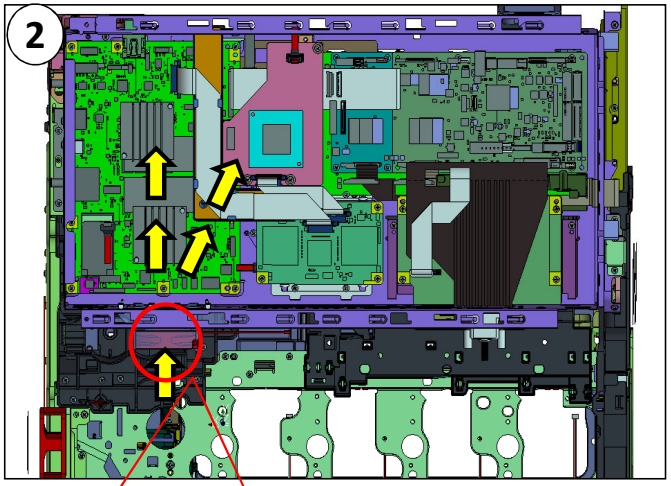
Check Air Path/Sensor

○: FAN, ○: Sensor, ⇒: Air Direction

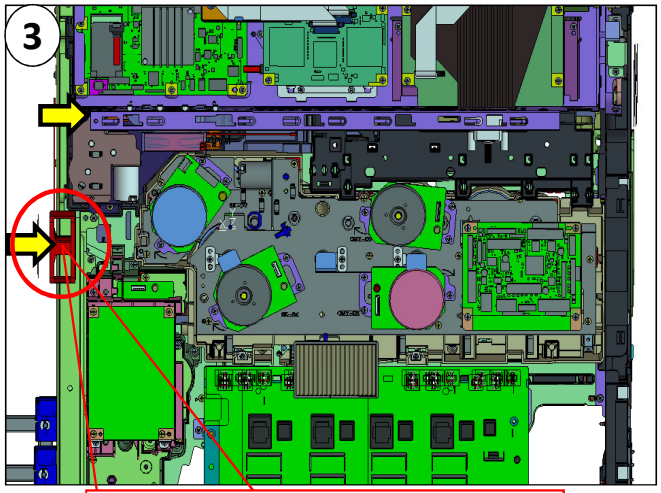
Front of the machine
Cooling Developing
(4ps: Upper model)
Primary Transfer Thermistor



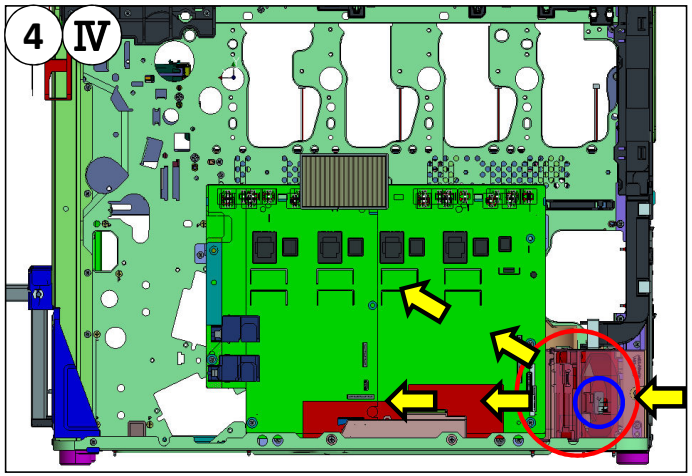
Cooling Main PWB



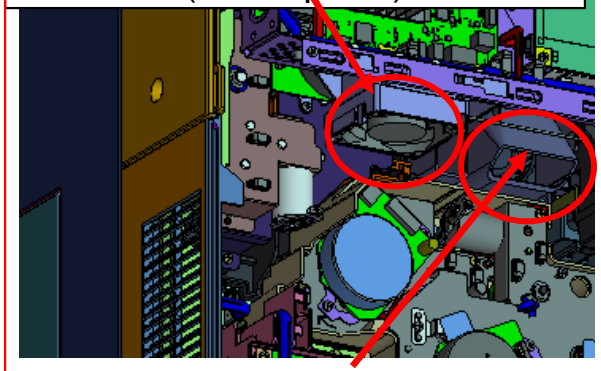
Cooling Fuser Edge (Inside of Conveying section)



Cooling Power Supply PWB,
Outside Thermistor

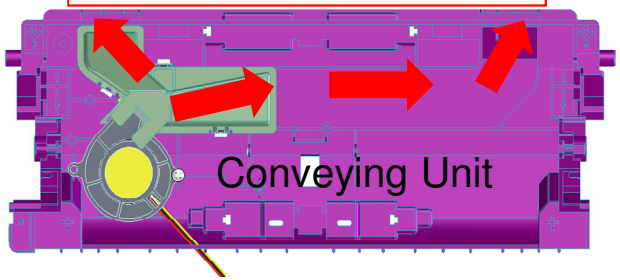


MAIN PWB Cooling FAN (Absorption)



IH PWB Cooling FAN (Absorption)

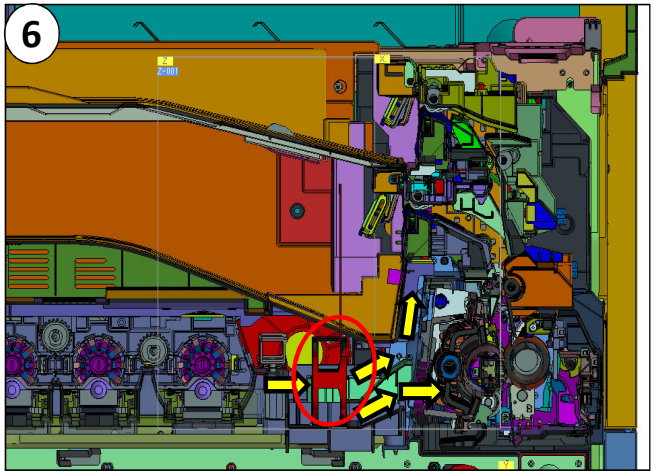
Cooling FAN Duct



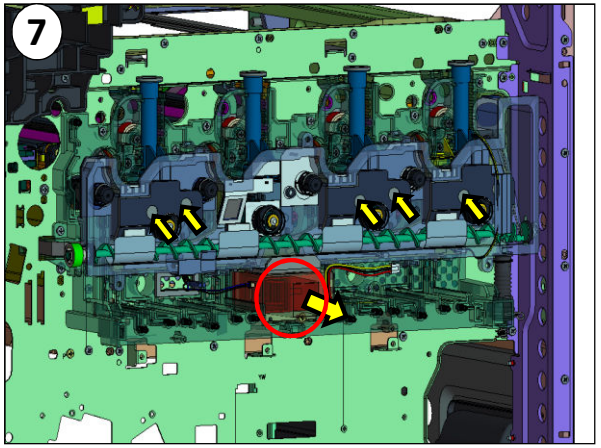
Check Air Path/Sensor

○: FAN, ○: Sensor, ⇒: Air Direction

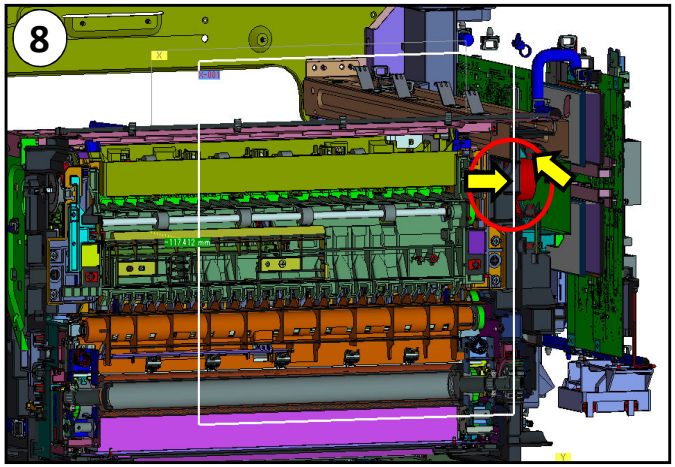
Machine inside, IH Coil, Cooling eject paper (2 pcs)



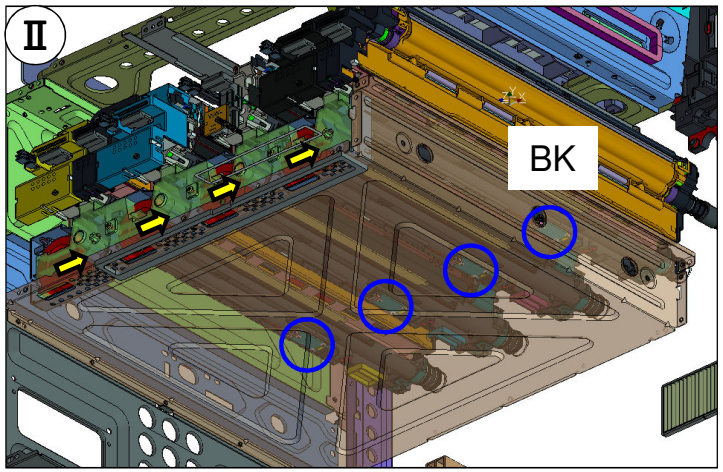
For Toner Absorption (Upper Model)



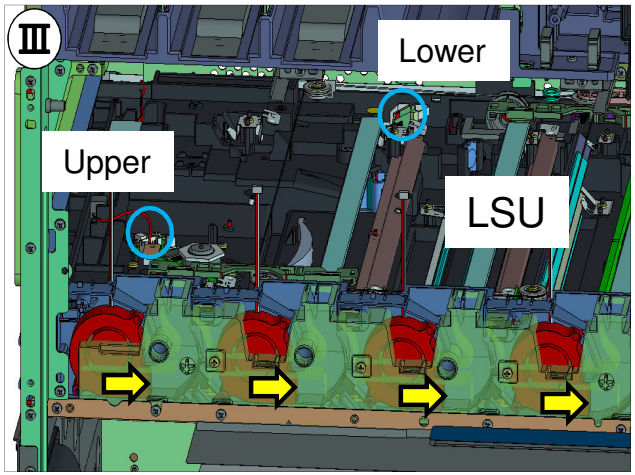
Cooling Eject Section



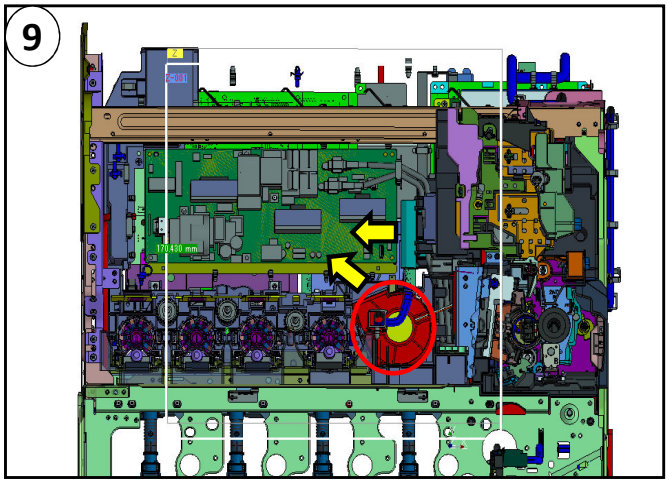
Developing Unit (BK): Thermistor (Toner container sensor)



LSU: Thermistor



Machine inside, Around Exit section + IH PWB



Temperature/Humidity Sensor

Function of each Thermistor

1. Primary Transfer machine inside Temperature Thermistor

Detect Temperature of Primary Transfer Roller and adjust the Peripheral velocity of the Belt matching to the temperature increase (Same control as present model)

Primary Transfer Bias FB Control

2. Developing (BK) machine inside Temperature Thermistor

Drum refresh operation

In case the temperature inside of developing unit increases and exceed the threshold, shift to the cleaning mode (Interrupt printing)

* Interrupt the Print operation at over 45 degrees C and start cooling, and re-start printing at below 44 degrees C

3. LSU machine inside Temperature Thermistor

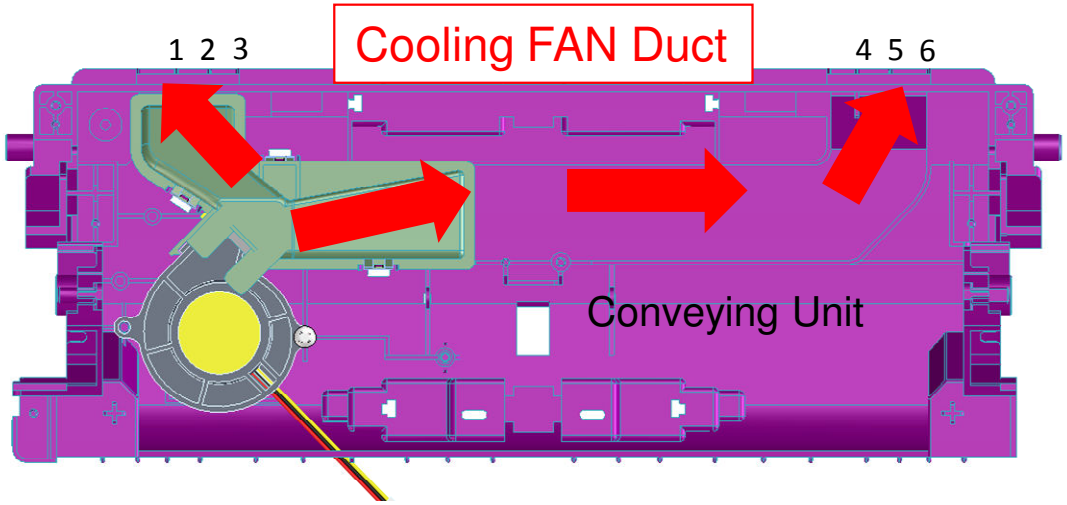
Perform Color registration adjustment by the temperature sensor in the Polygon Motor section (For Color Model)

4. Machine Outside Temperature Thermistor

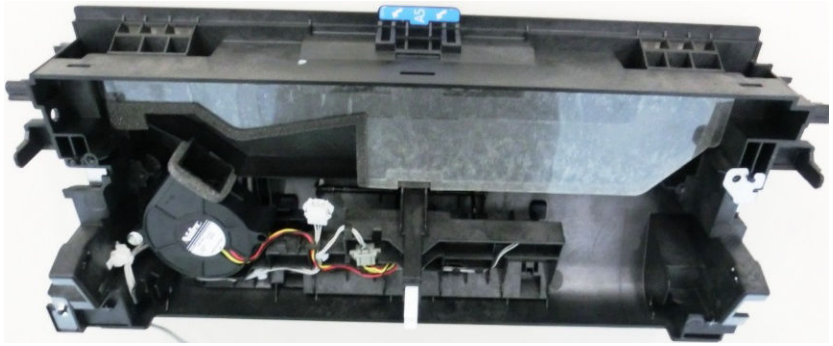
Calibration, Primary Transfer Bias FB Control, FAN Control, Cassette Heater Control

Cooling FAN for supporting Fuser Edge excess temperature increase

- Support for edge excess temperature increase by cooling air (Duct FAN at Duplex Conveying section)



Control for excess temperature increase at non-paper passing section
Upper: Center core + Edge Cooling FAN
Lower: Only Edge Cooling FAN



Cooling by the Fuser Edge (Both side) FAN

When detecting 220 degrees C on Fuser Edge Temperature, FAN will be ON

* Preventing the parts from getting damage when making continuous copy with small size which makes the non-paper passing section increasing the temperature

Reference: Fuser control temperature during the Print: 180 degrees C (60PPM) to 155 degrees C (Low model) * Normal2

3-8-1a

Feeding/Cassette/ MPF Section

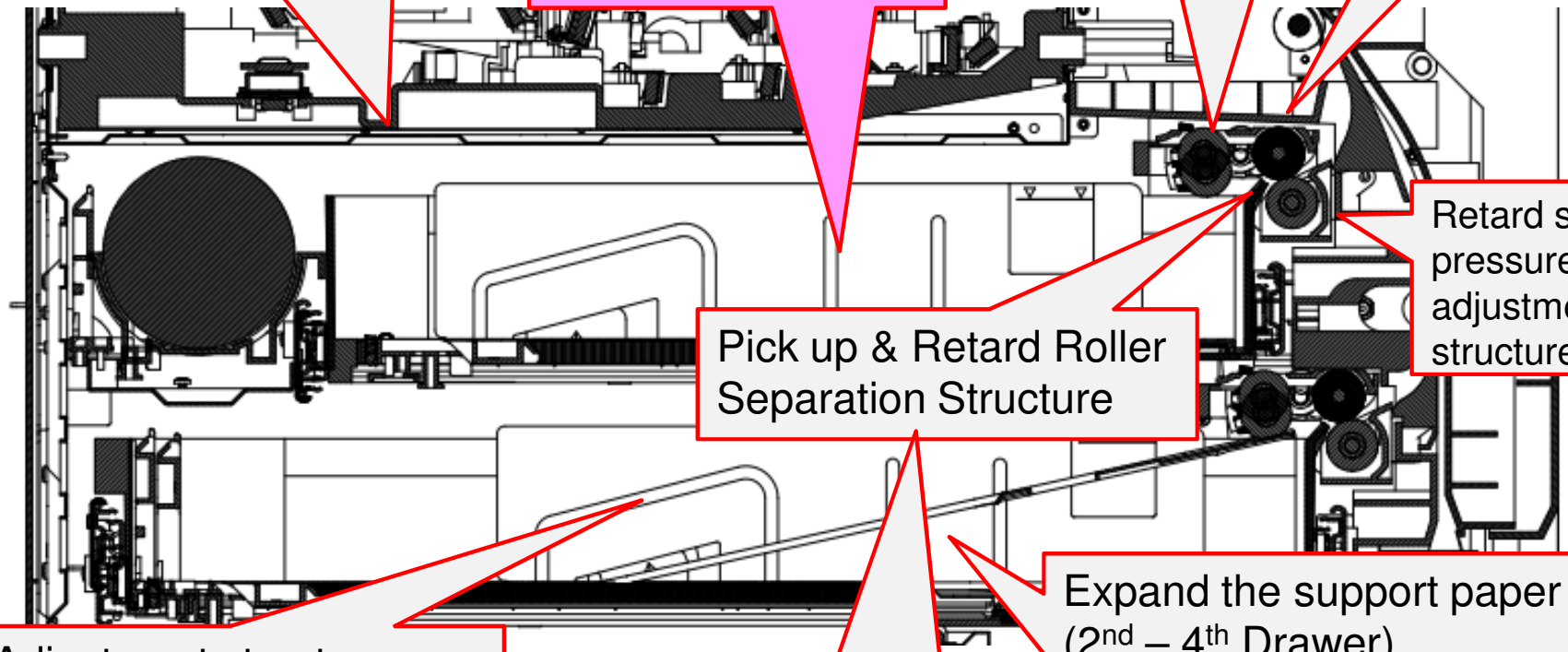
Improvement & Change points for Paper Feeding Cassette

Slider auto pulling: Soft close by the dumper → Improve the shock when inserting the cassette forcibly (strongly)

1st drawer paper size:
Max A4R/Legal

Make Pick up roller smaller(φ16)

Unit front removal & only replacing roller (300K)



Retard spring pressure adjustment structure

Pick up & Retard Roller Separation Structure

Guide Adjustment structure:
Cursor pitch 0.5mm (Present pitch: 1mm)
Width adjustment lever (Front cursor x 3) → Improve Skew

Improve Cursor operation capability
Possible to operate by one hand

Expand the support paper size (2nd – 4th Drawer)
Max. size: SRA3/12.56inch
Min. size: Post card/Envelope

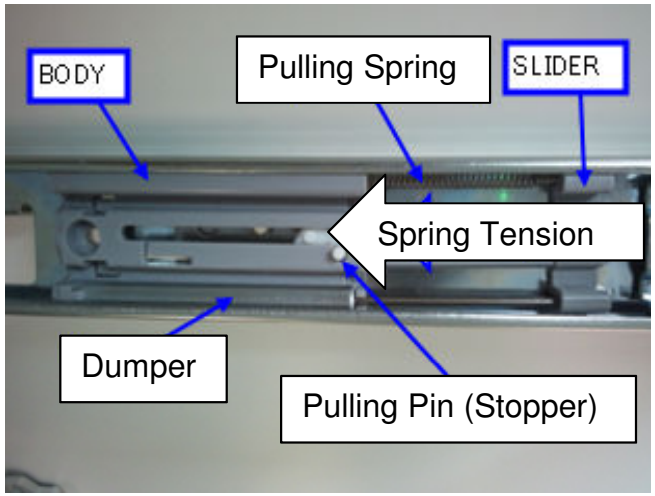
Improvement & Change points for Paper Feeding Cassette

Adopting Auto pulling (soft close) slider

Absorb the shock when inserting the cassette strongly, auto pulling material is embedded

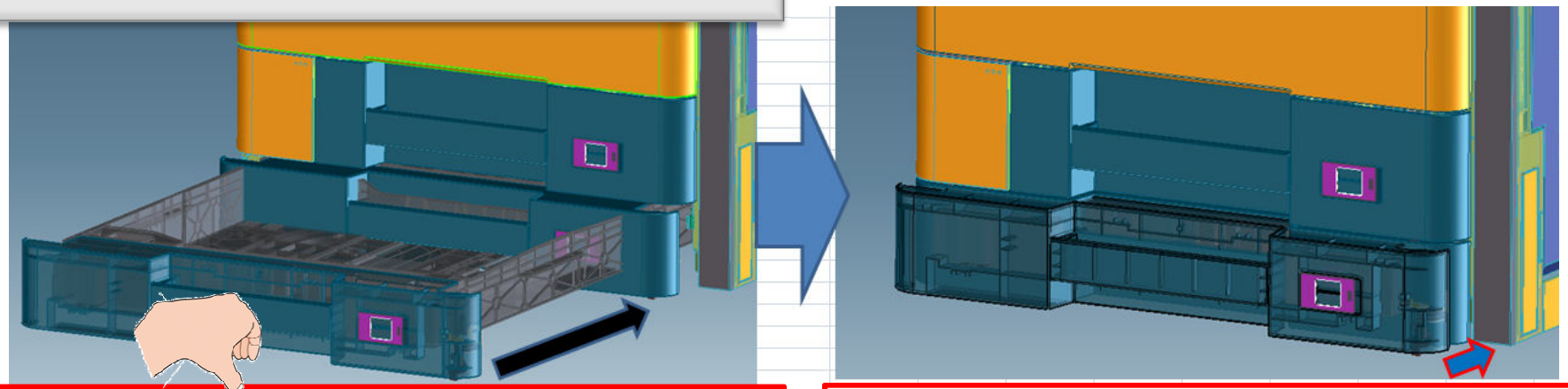
Absorb dumper shock

Pulling composition



- Pulling the Slider
  1. Release hook lock by pulling pin
  2. Pulling the cassette by spring tension
  3. Pulling speed is buffered by the load of the dumper

Feeding cassette semi-auto pulling in



Push the cassette towards the end manually

Last 40mm will be automatically pulled in

MPF Paper Auto Detection

<MPF Multi Width Detection Sensor>

1. MPF Width Detection PWB

Detect the paper width by the resistance value change based on the cursor position of MPF

2. Width detection by the rotary resistance positioning sensor

Based on the paper width, once cursor is moved, positioning sensor rotates in conjunction with cursor movement

Positioning sensor output the width change by converting to the voltage (Voltage changes depending on the angle of rotation)

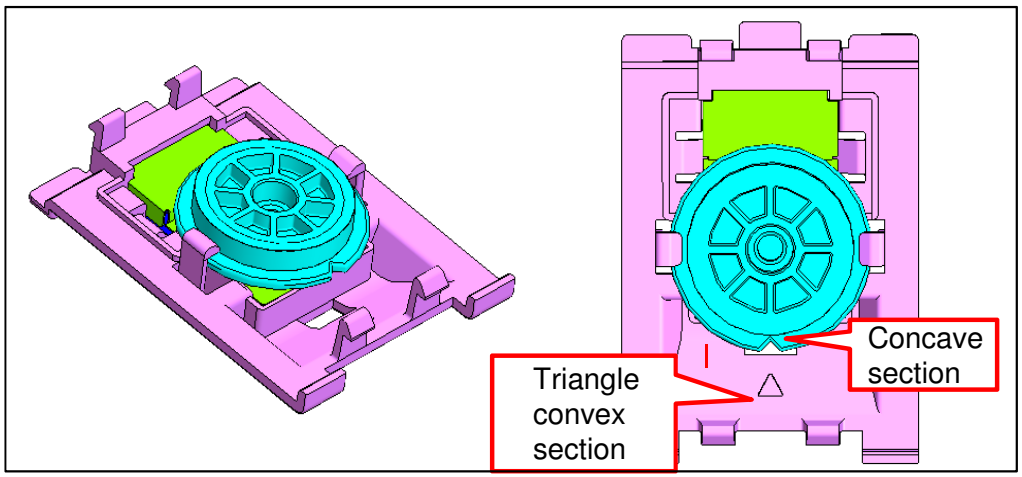
3. The flow of the sensor output

MPF width detection PWB (Output analog value data that the resistance is divided based on the paper width) → Feed Drive PW (Output AD converted data) → Engine PWB (Engine CPU)

◆ Note when performing assembly or disassemble

It is necessary to adjust/match the hole of Pinion gear and volume resistance

Turn the gear clockwise until convex section for the position of the Engraved triangle and concave section of the gear matches



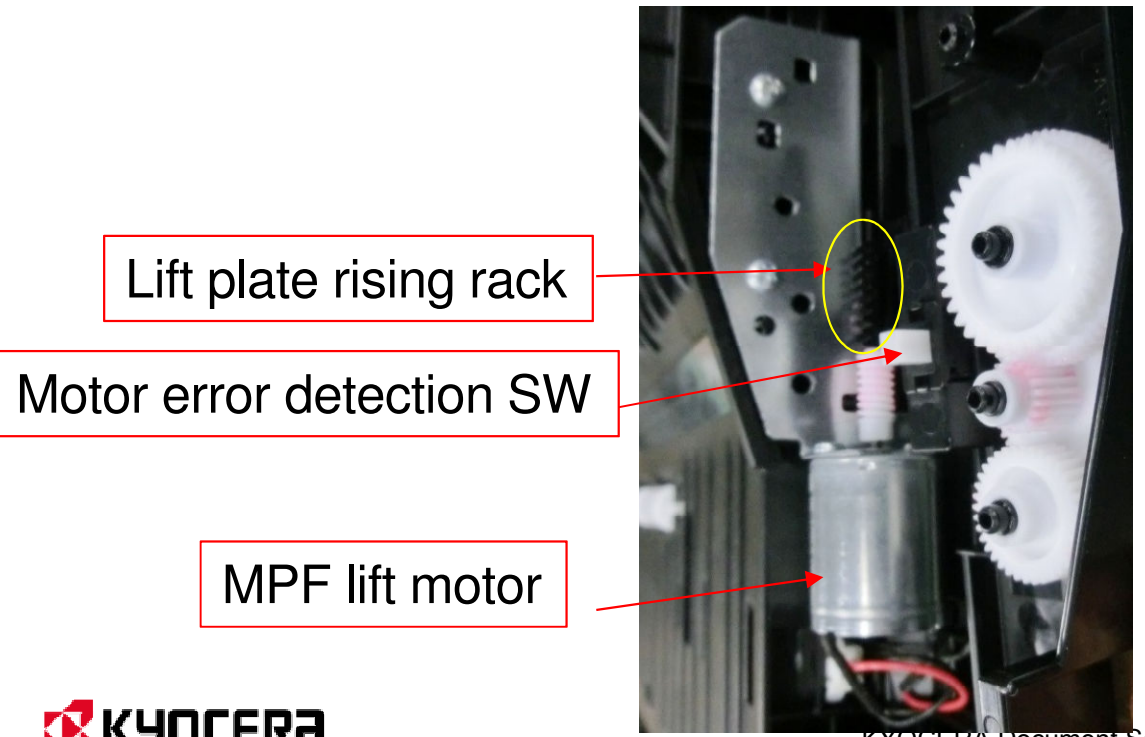
MPF Paper Lift Motor (MPF Drive)

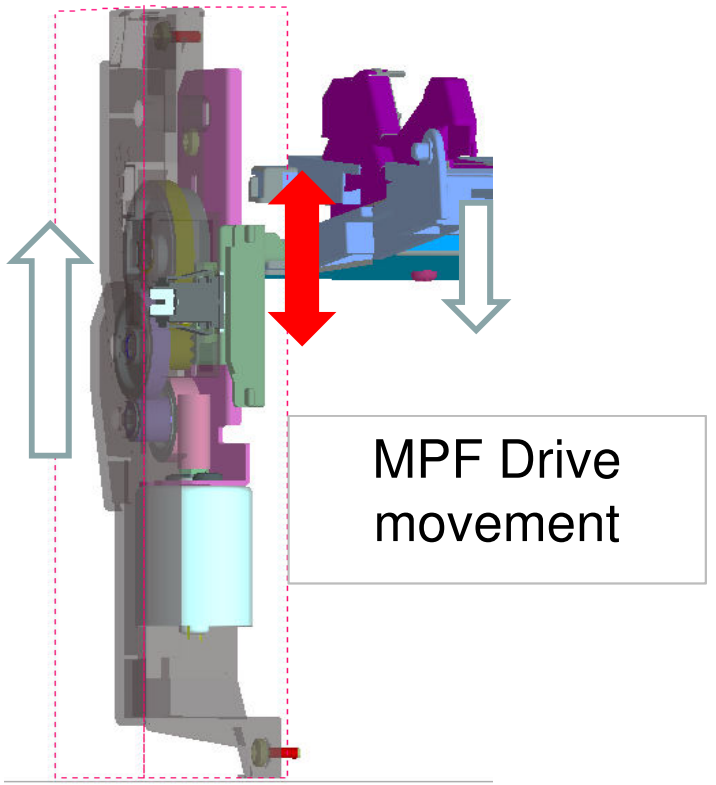
<MPF Paper Lift Motor>

1. Move lift plate rising rack upwards by rotating the lift motor
2. Move up MPF paper lift plate (Spring is available at the bottom part) which is held by the rack
3. Once the paper on the MPF tray up turn on the upper limit detection SW, rotation of the lift motor stops

<C1000 Detection>

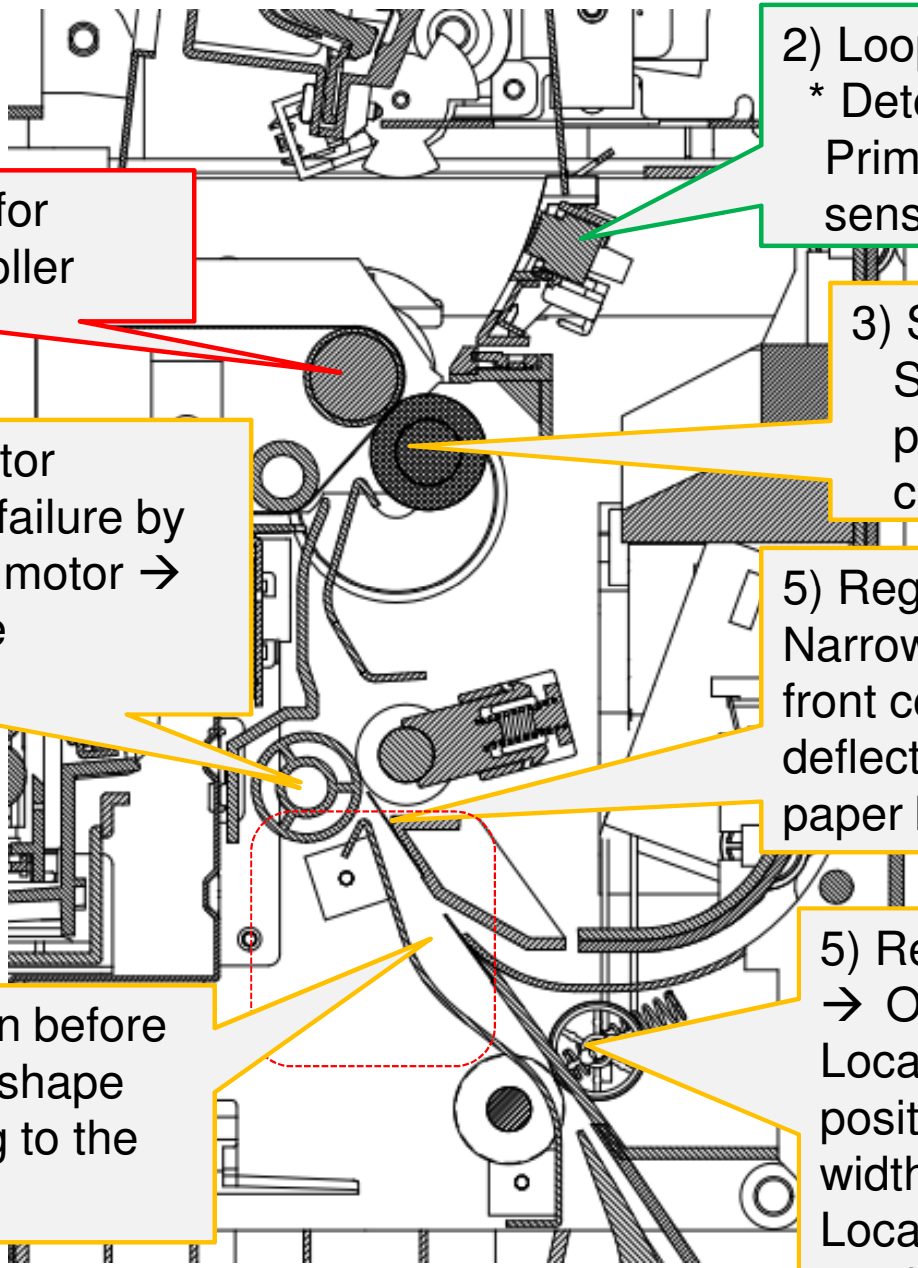
In case if the lift motor does not stop and rack continues to move, C-call will be detected by pushing the push SW * C-call also occurs by the connector connection failure (2 positions: Connection between Conveying Unit and machine main body SW)





3-8-1b
Registration/Transfer (Conveying Unit)

Improvement on the Registration/Transfer section (Conveying Unit)



1) One touch removal for Secondary Transfer Roller

2) Loop sensor → Reflective sensor
* Detect paper sticking JAM at Primary transfer belt, improve sensor reply capability

3) Secondary Transfer Roller Separation at 4 color for the primary transfer roller released condition

4) Disuse Stepping Motor Support for conveying failure by the stepping out of the motor → Use clutch for the drive transmission

5) Regist crease reduction layout 1
Narrow down the gap for the regist front conveying route * Eliminate deflection of front & back of the paper before going into regist

Stable paper Deflection before registration → Guide shape that conveys let along to the regist front guide

5) Regist crease reduction layout 2
→ Optimize roller width/quantity
Locate 2 rollers in the center position and → optimize roller width/quantity
Locate 2 rollers in the center section and convey the paper spread to both edge (Preventing

Improvement on the Registration/Transfer section (Conveying Unit)

Improve registration varies

1. Improve varies of the Paper leading edge (Inhibit varies of clutch OFF timing caused by the regist sensor)

   Inhibit varies of paper leading edge timing that Regist sensor detection and regist clutch control can't be done with the Engine PWB directly

   (Control signal: Through Feed Drive PWB) * Clutch & Solenoid except Regist: Control drive by Feed Drive PWB (ASIC)

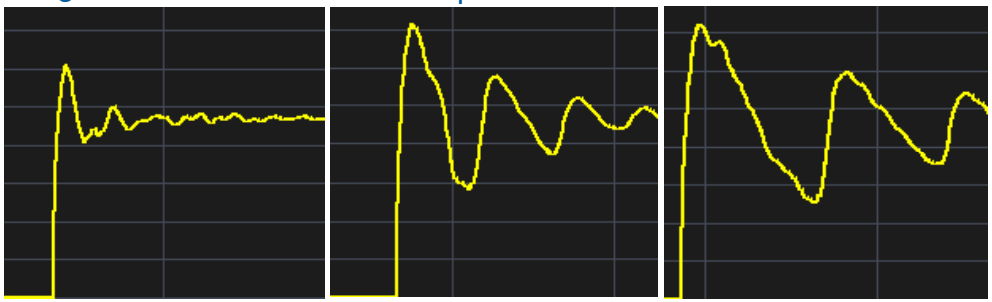
2. To make stabilize the rotation of the regist roller, and control varies of paper deflection (upper model) Install limiter for impact absorption on the regist roller shaft (Make stable Roller rotation) * When doing the secondary feeding, once shaft movement is not stable, leading edge timing gets varies

Improvement on the Registration/Transfer section (Conveying Unit)

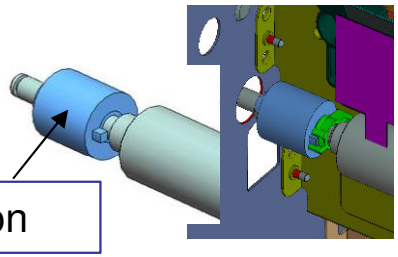
Improve registration varies

When starting regist roller, shaft movement gets unstable depending on the paper type or Load fluctuation

Pulling side ← Paper → Deflection side



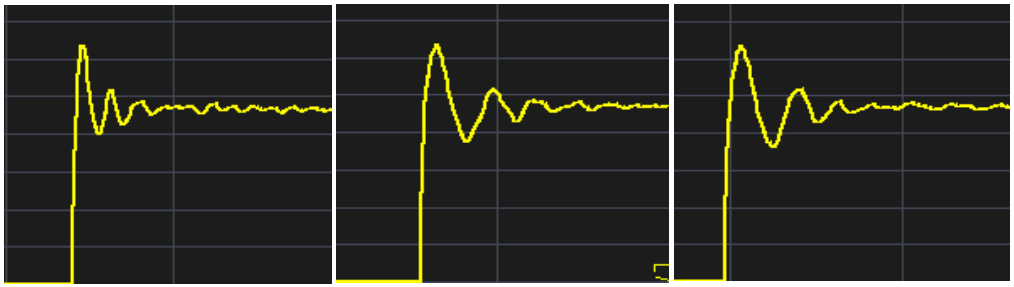
Horizontal axis: Time, Vertical axis: No. of regist Roller rotation



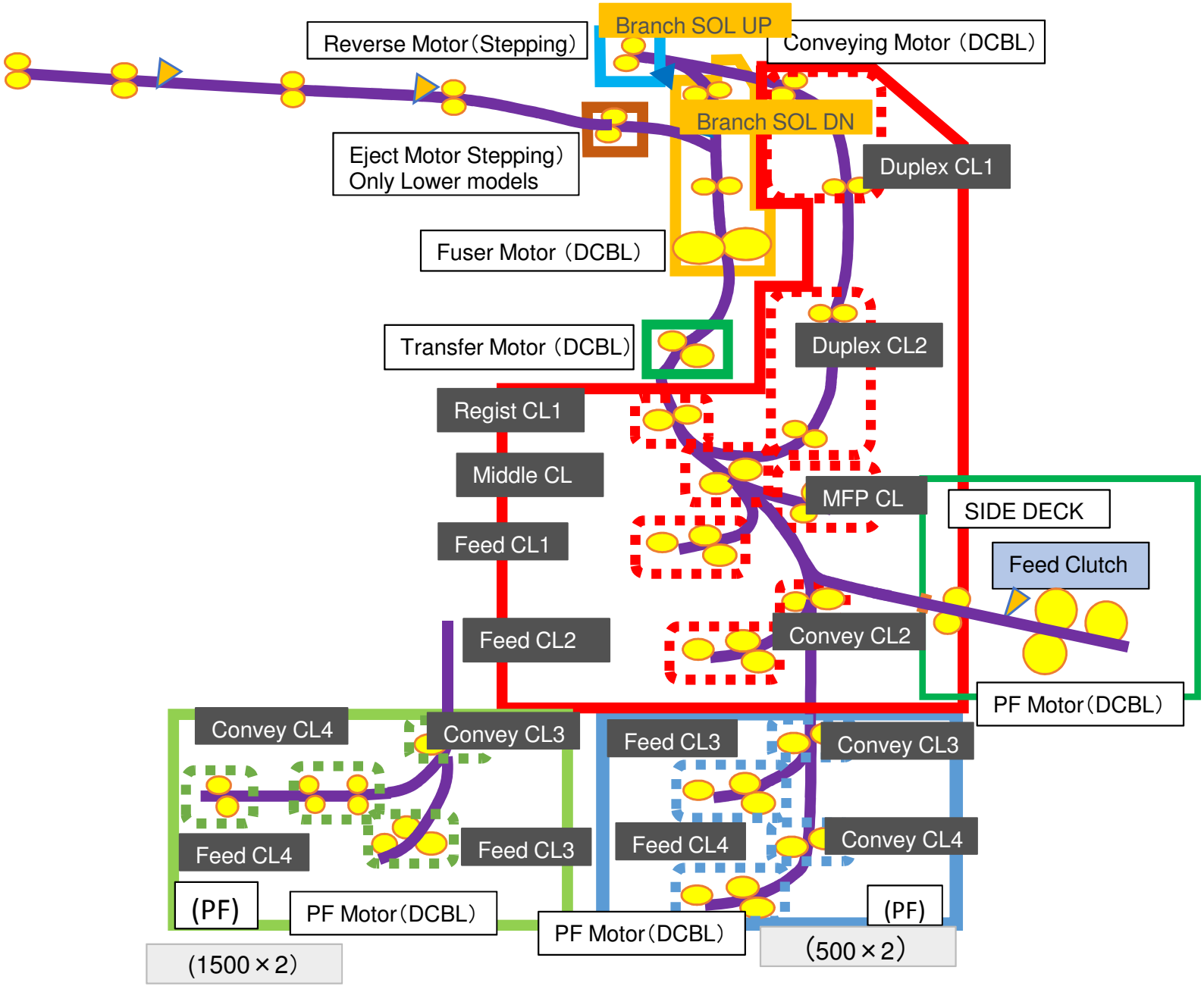
Limiter for shock absorption

Give load on the regist roller shaft to make shaft movement stable

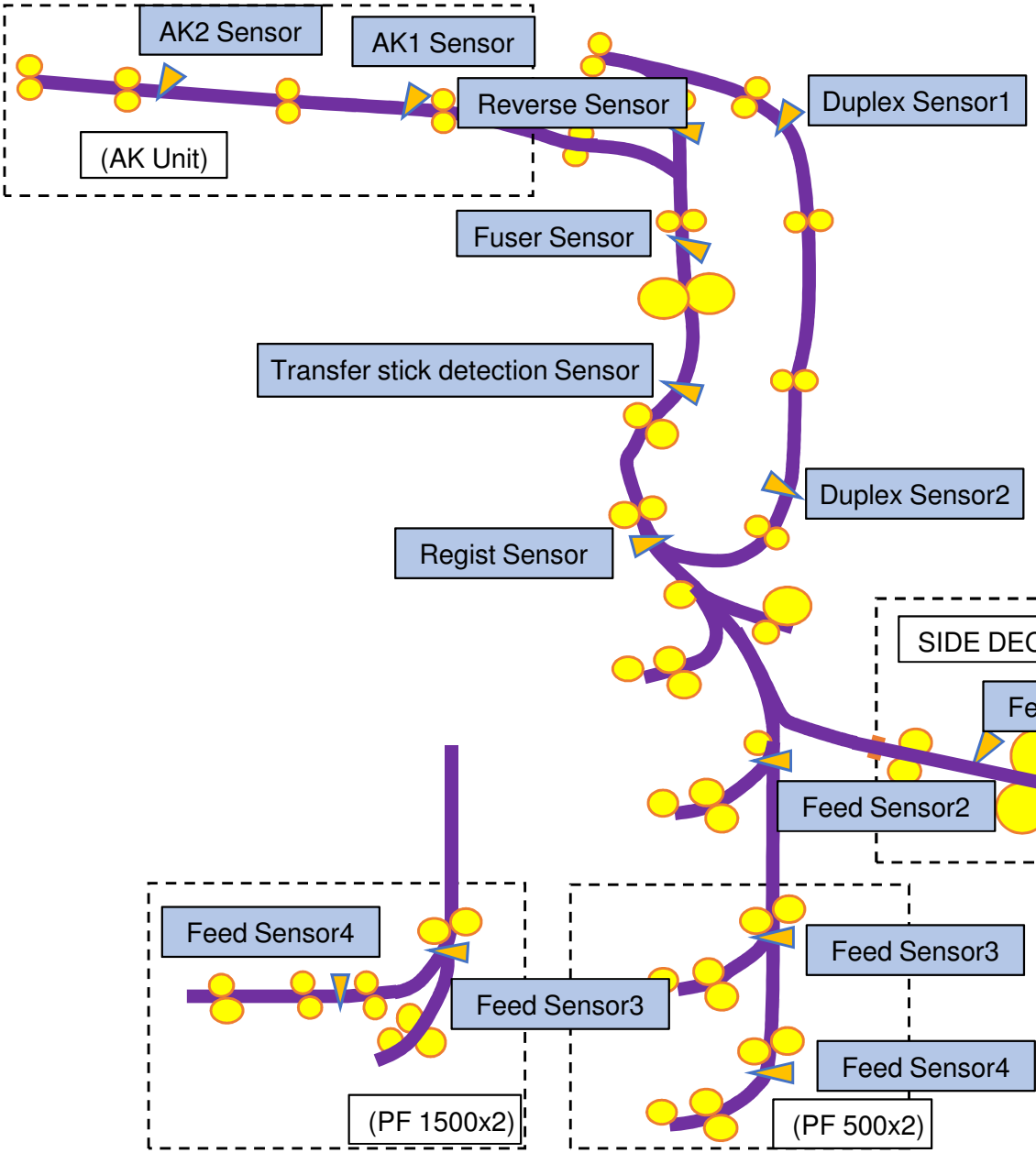
Pulling side ← Paper → Deflection side



Drive Composition



Convey Sensor Position



Cassette related Sensor

- Cassette Lift Upper Limit Detection Sensor
- Cassette Paper Presence Sensor
- Cassette Paper Remaining Detection Sensor
- Cassette Paper length Size Detection Sensor
- Cassette Paper Width Detection Sensor
- Cassette Presence Sensor

MPF related Sensor

- MPF Lift Upper Limit Detection Sensor
- MPF Lift Lower Limit Detection Sensor
- MPF Lift Paper Width Detection Sensor
- MPF Paper Presence Sensor
- MPF Lift Paper Length Detection Sensor
- MPF Tray Pull out Sensor

JAM Detection Timing

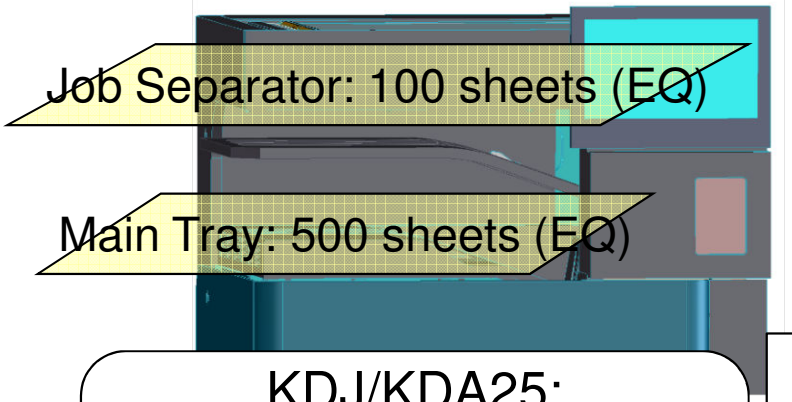
Paper Position	Detection Start Timing	Detection Finish Timing	JAM Clear Condition
MPT	MPT Feed Start	Regist Sensor ON	Machine Right Side Cover, Re-set the Paper
Regist	Regist Sensor ON	Transfer Stick Detection Sensor ON	Machine Right Cover
Transfer	Transfer Stick Detection Sensor ON	Fuser Eject Sensor ON	Machine Right Cover
Fuser	Fuser Sensor ON	Finish Eject/Reverse Sensor ON	Machine Right Cover
Reverse	Reverse Sensor ON	Finish Eject/Switch Back Start	Machine Right Cover Only
Duplex1	Switch Back Start	Duplex Sensor1 ON	Machine Right Cover
Duplex2	Duplex Sensor1 ON	Duplex Sensor2 ON	Machine Right Cover
Duplex3	Duplex Sensor2 ON	Regist Sensor ON	Machine Right Cover
CASS1	CASS1 Feed Start	Regist Sensor ON	Cassette1, Machine Right Cover
CASS2	CASS2 Feed Start	Feed Sensor2 ON	Cassette2, Machine Right Cover
Feed1	Feed Sensor2 ON	Regist Sensor ON	Cassette2, Machine Right Cover
CASS3	CASS3 Feed	Feed Sensor3 ON	Cassette3, PF Right Cover
Feed2	Feed Sensor3 ON	Feed Sensor2 ON	Cassette3, PF Right Cover
CASS4	CASS4 Feed	Feed Sensor4 ON	Cassette4, PF Right Cover
Feed3	Feed Sensor4 ON	Feed Sensor3 ON	Cassette4, PF Right Cover

Obtain the each sensor information by cover OPEN/CLOSE, and JAM will be released if all are OFF (Except no paper feeding JAM is detected)

3-8-1c
Paper Eject Section

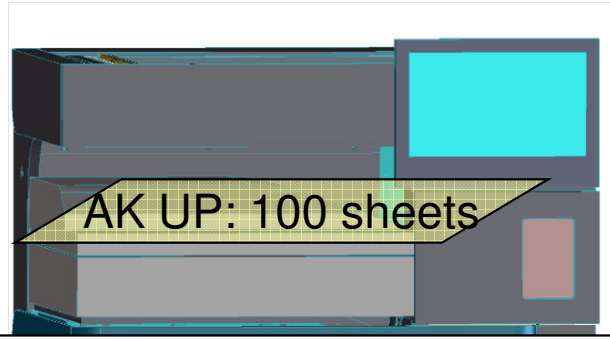
Paper Eject Section

Large Capacity Stock



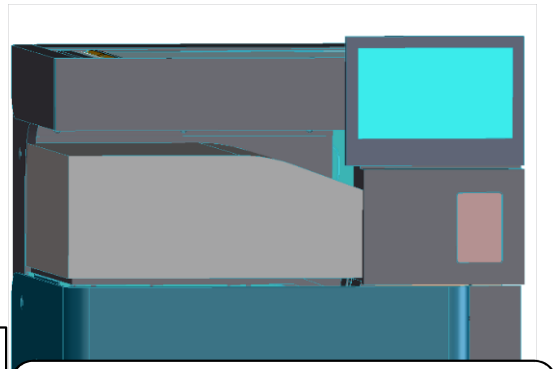
KDJ/KDA25:
Job Separator: Standard
Other region:
Reverse Guide: Standard

AK Installed (For DF)



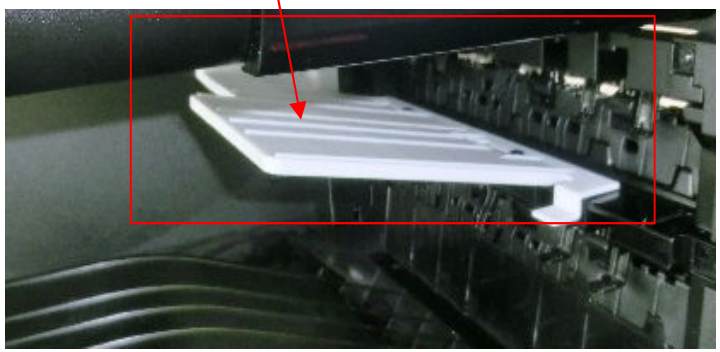
When AK is installed (DF installed)
100 sheets stock on AK UP
*A3, 11x17: Stack Not Possible

Inner DF Installed



Inner DF Tray
500 sheets (EQ) Stock

Reverse Guide
When making A3 Duplex, Guide for Reverse

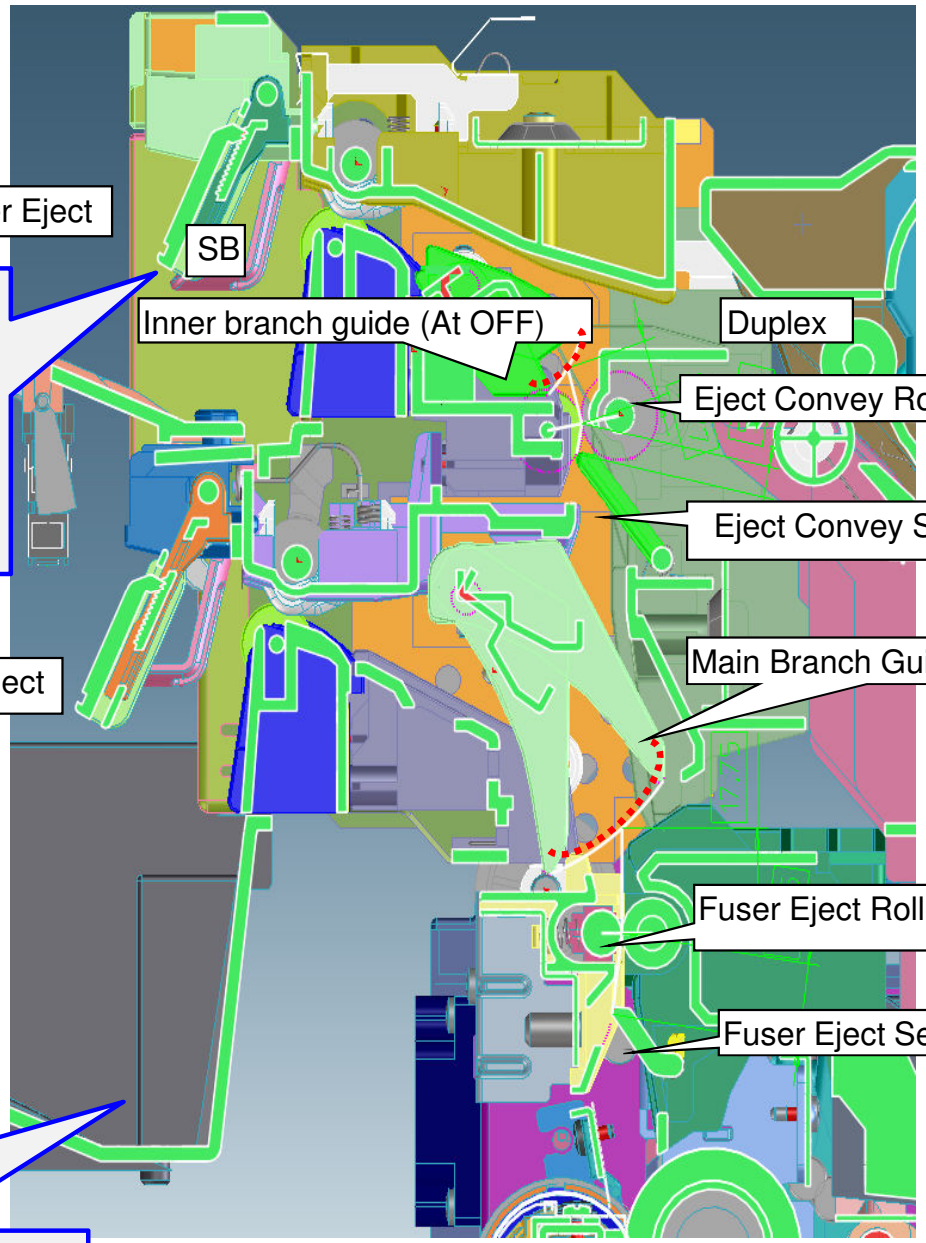


<Stop printing after paper full is detected>
After the paper is stocked until the paper full detection position for the eject SW actuator, stops after continue to print A4 (about 4 sheets) is printed to detect full continuously

Paper Eject Section

Eject Roller Drive
Upper model: Synchronize with Fuser Motor Drive
Lower model: Eject Motor Drives itself

Inner Eject (Standard)
JS: 100 sheets Stock (80g)
*JS: Paper presence detection sensor available
As FAX RX display is necessary (Standard)



Solenoid		Convey direction
Main Branch Guide	ON	Inner, SB direction
	OFF	Main Eject
Inner Branch Guide	ON	Duplex
	OFF	Inner Eject

Main Eject Stock: 500 sheets equivalent (80g paper)

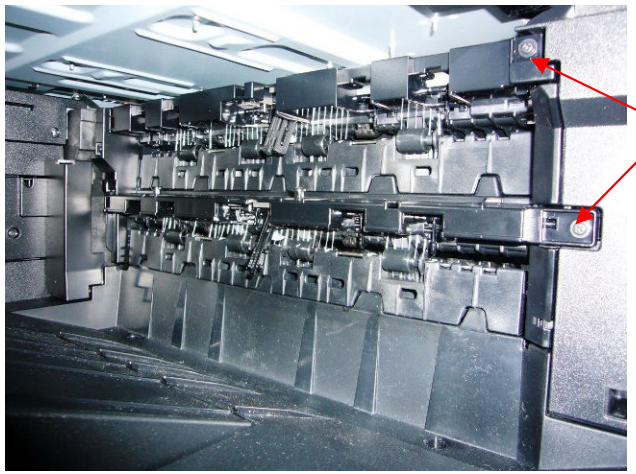
Paper Guide, Expansion actuator for paper curl (service parts)

For paper curl, paper guide and extension actuator supplied as service parts

When exit paper detection error occurs due to the paper curl, please install below service parts into the upper, lower exit actuator section.

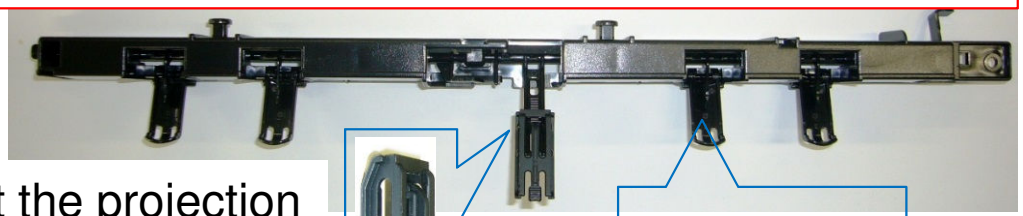
1. Paper guide (Guide Exit Overflow 302ND28320 x4pcs): Install them to upper or lower exit section.(Put the hook of guide to the projection)
2. Expansion actuator (Attachment Act: 302ND28190 x1pc): Install it at the center part of actuator (Insert the boss into a kerf part) * Paper full detection actuator is 10mm expandable according to paper curl condition.

Paper Exit Parts (without guide and expansion actuator)

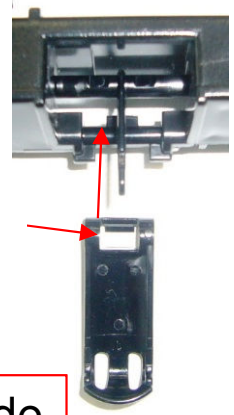


Removal of exit actuator parts: Remove 1 screw and pull it front side.

Exit actuator part after installing 4pcs of guide and 1pc of expansion actuator. *Photo from front



Put the projection into a kerf of this expansion actuator.



Put on this hook part for a projection so that a guide moves toward to exit.

Paper guide

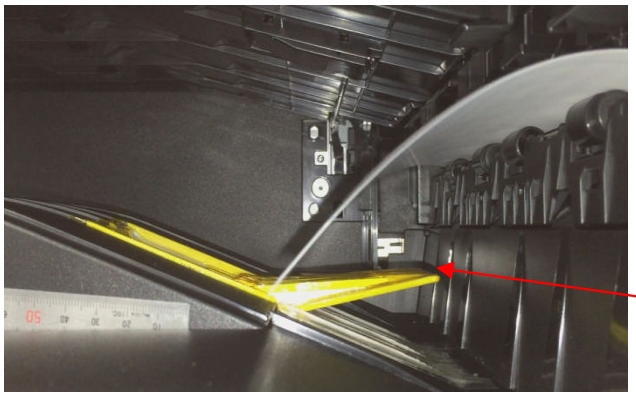
Envelop Tray (Support for curling when ejecting the envelop, thick paper Duplex)

Phenomenon

1. When feeding the envelop, the envelop curls up on the tray which leads the stock order changes. (In case t feed the envelop that has moisture gets curled up at the eject section) → depending on the moisture level of the paper, curl up occurs
2. Thick paper with Duplex curl up: CC160g paper/A4/Duplex

Action

When printing thick paper with Duplex or envelop which has moisture, and if curl up occurs to occur stock capability failure, open the envelop tray for the inner tray to stock



Envelop Tray

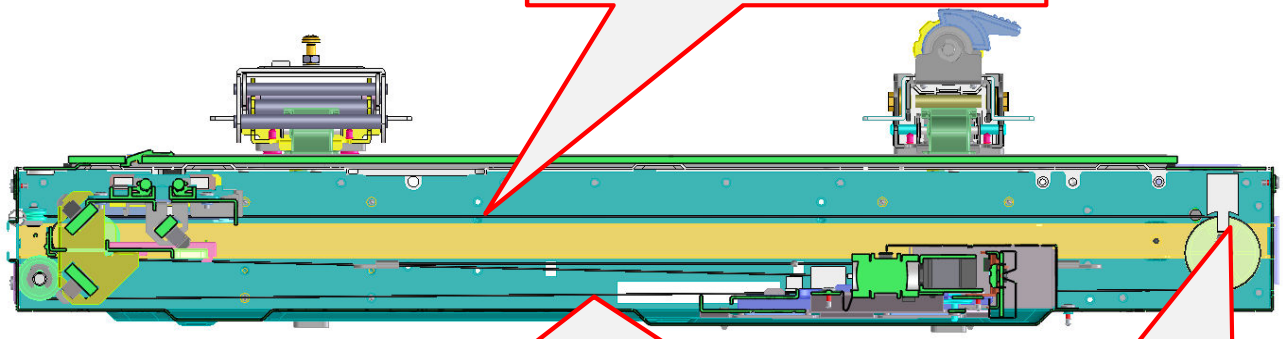
Moderate the landing angle of the curled up leading edge of the paper to solve the problem of curl up

Open Envelop Tray

3-8-2a

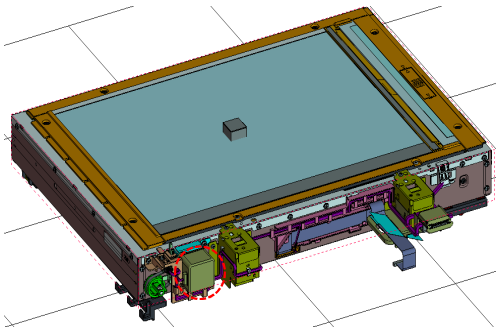
ISU

Change points on ISU

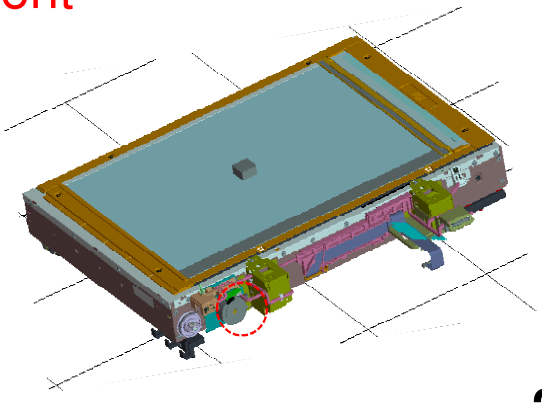


<ISU: Difference between Upper model and Lower model>
Optical Motor Drive (Stepping Motor) → Motor Torque is different

Upper Model:
Hybrid type Motor



Lower Model:
Permanent magnet type Motor

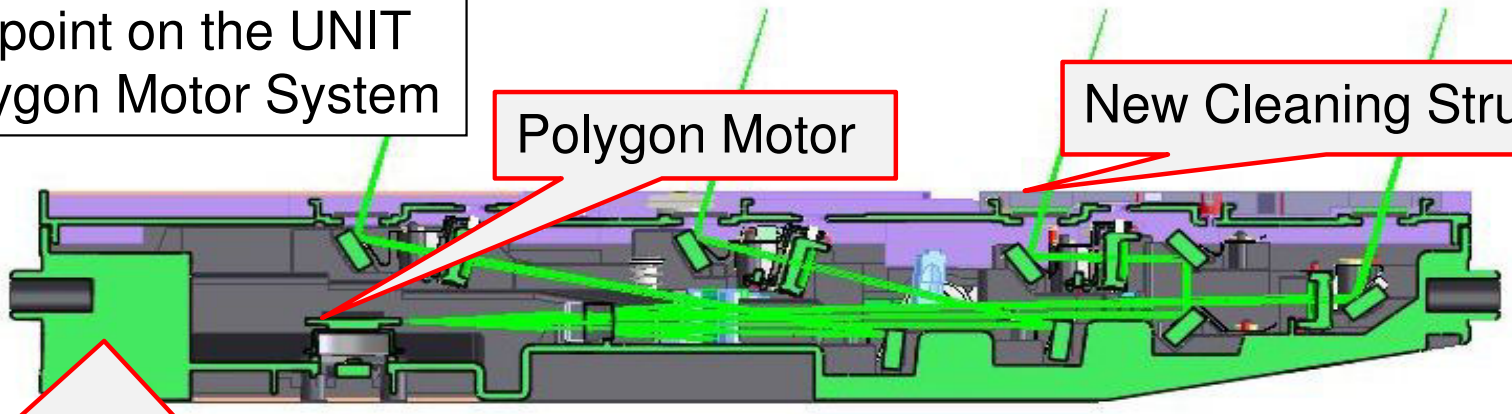


3-8-2b

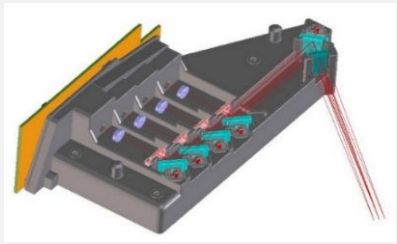
LSU

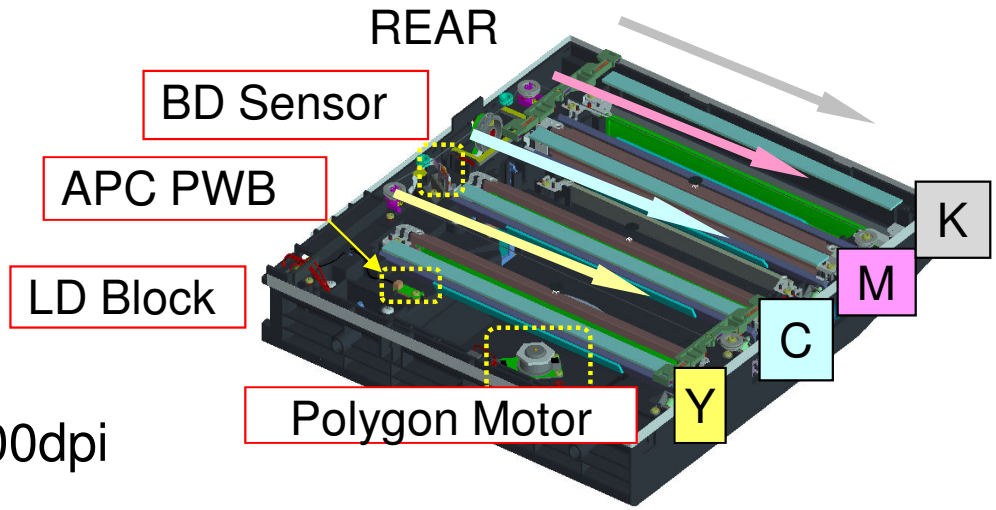
LSU Composition

Changed point on the UNIT
1pc x Polygon Motor System

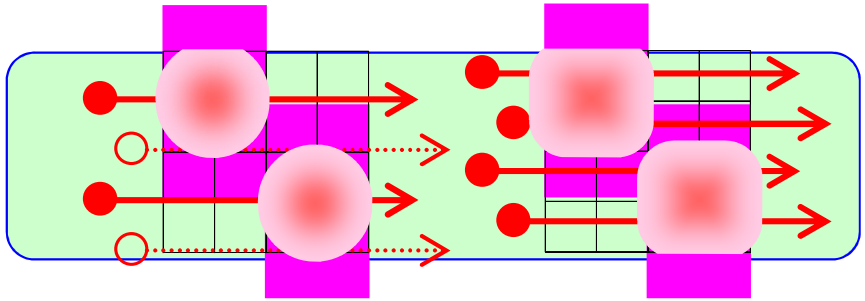


APC PWB 4 color unified
1200dpi
2 Beam (Low model)
4 Beam
(High/Mono Model)
LD installed





600dpi: Forming one Pixel by 4 dots of 1200dpi



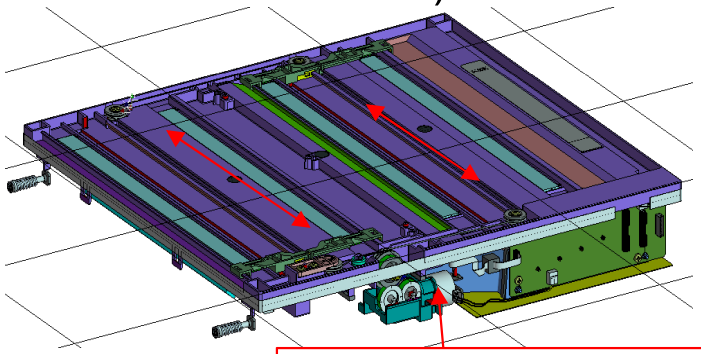
Previous system

Synthetic system

LSU Slit Glass Cleaning

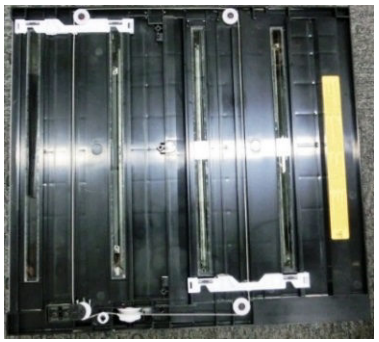
LSU Slit Glass Cleaning

Clean the toner or foreign substance on the dust proof glass
Move cleaning pad by the wire drive
(Si rubber pad reciprocate to the main scan direction) → →Lower height, reduce cleaning time, Noise reduction (U474 or System menu (Adjustment /Maintenance)

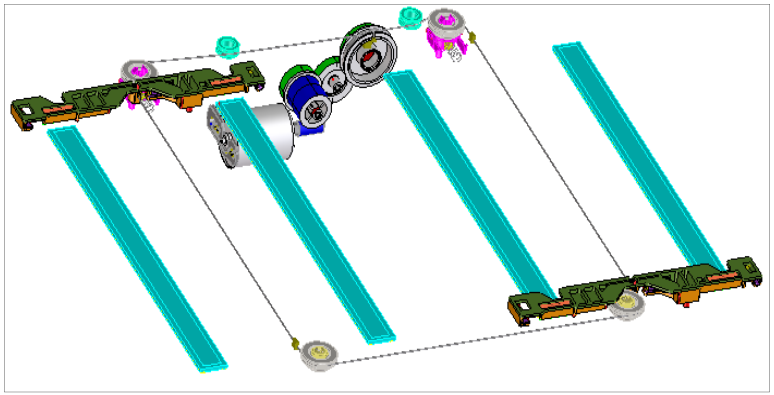


LSU Cleaning Motor

LSU for Color	LSU for Mono



* Mono model also has the cleaning structure installed



LSU Cleaning Motor Reverse Operation (Drive by Engine CPU)

After motor stop is detected by the current, switch the motor rotation direction and operate the cleaning pad reverse direction

Name of Motor	Control Device	Control Signal	Direction of rotation	Lock Detection
LSU Cleaning Motor	Engine PWB	LSU_CLN_MOT_REM	LSU_CLN_MOT_PHASE	LSU_CLN_MOT_LOCK
	Video ASIC	L:BRAKE / H: Drive	L:CCW / H:CW	L: Lock Detection

3-8-3a

Toner collection in the Machine

Measure for the Toner contamination inside of the machine

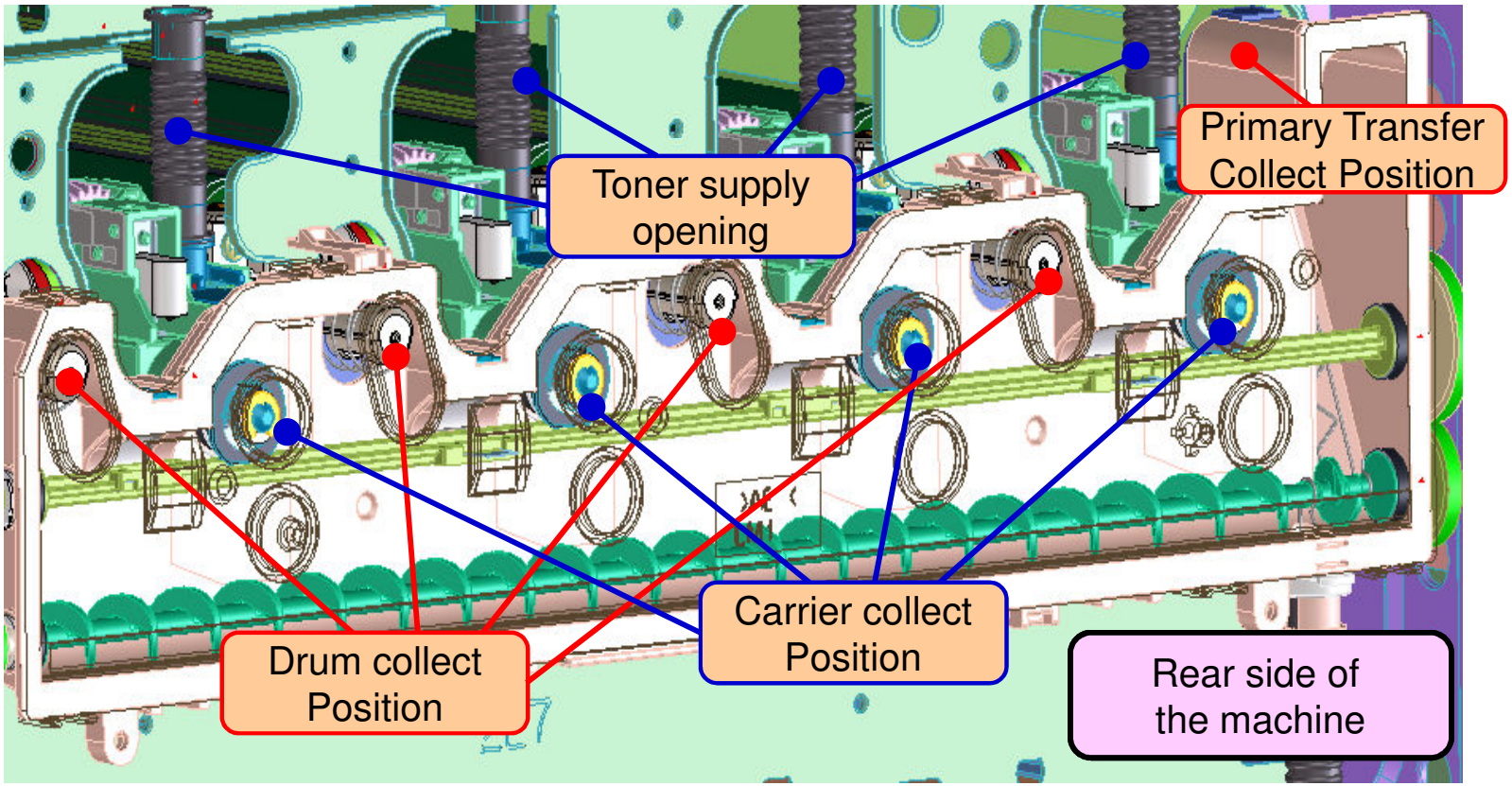
ECOSYS TASKalfa

Measure for the toner contamination

All Rear Joint

Install the toner joint construction to the rear side of the machine to prevent from toner contamination

Toner supply opening, Primary Transfer/Drum/Developing Unit toner disposal opening was aggregated to the rear side of the machine



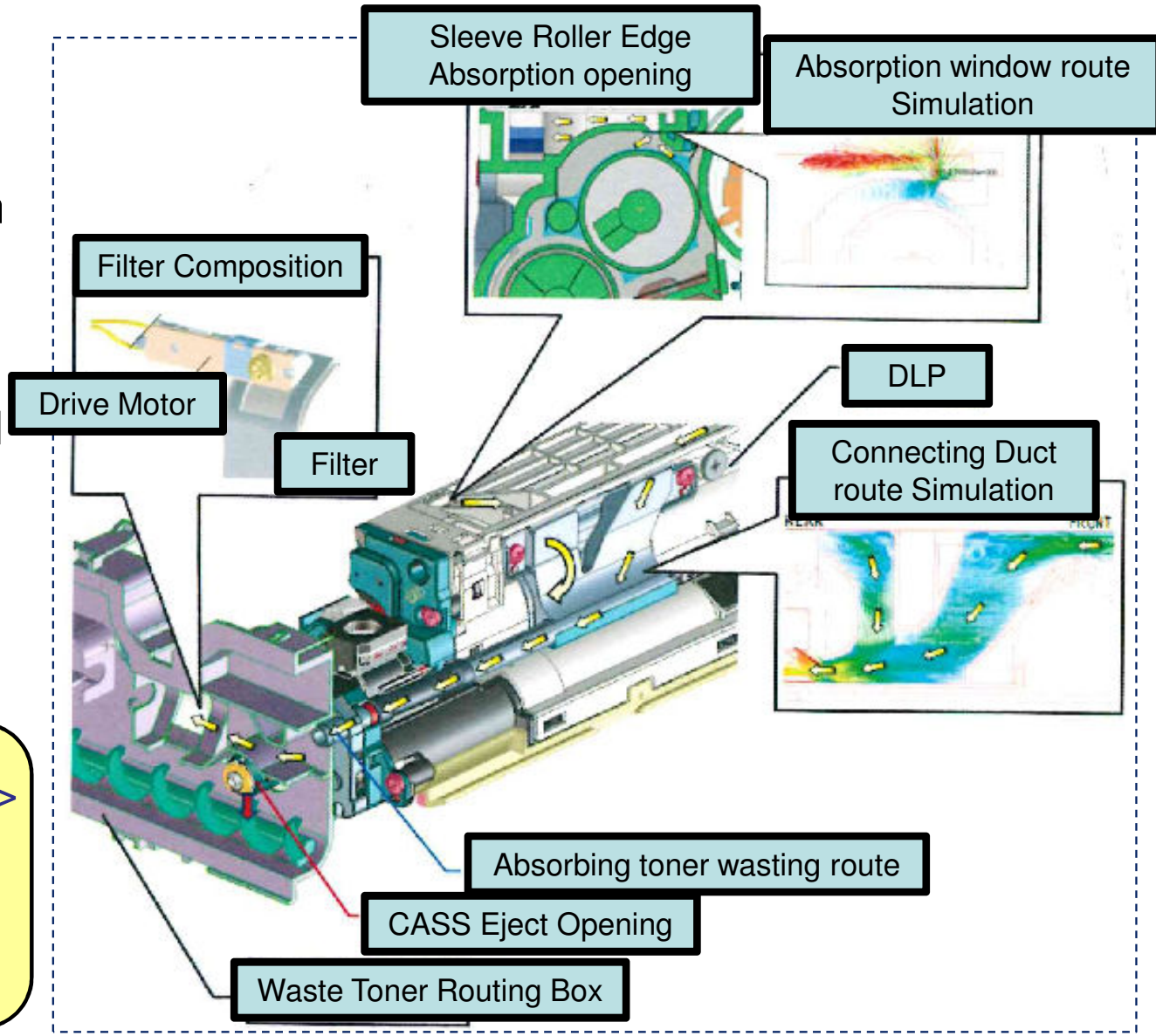
Developing Unit: Collection of the scattered toner (Upper Model)

Scattered toner absorbing collection

After stop developing drive, absorb the scattered toner from both edge of the developing sleeve roller by fan

The scattered toner is collected by the air absorption through the filter to waste toner routing box that the main drive unit installed

<Scattered toner collection path>
Developing Sleeve Roller
→ Waste toner routing box
→ Waste toner box



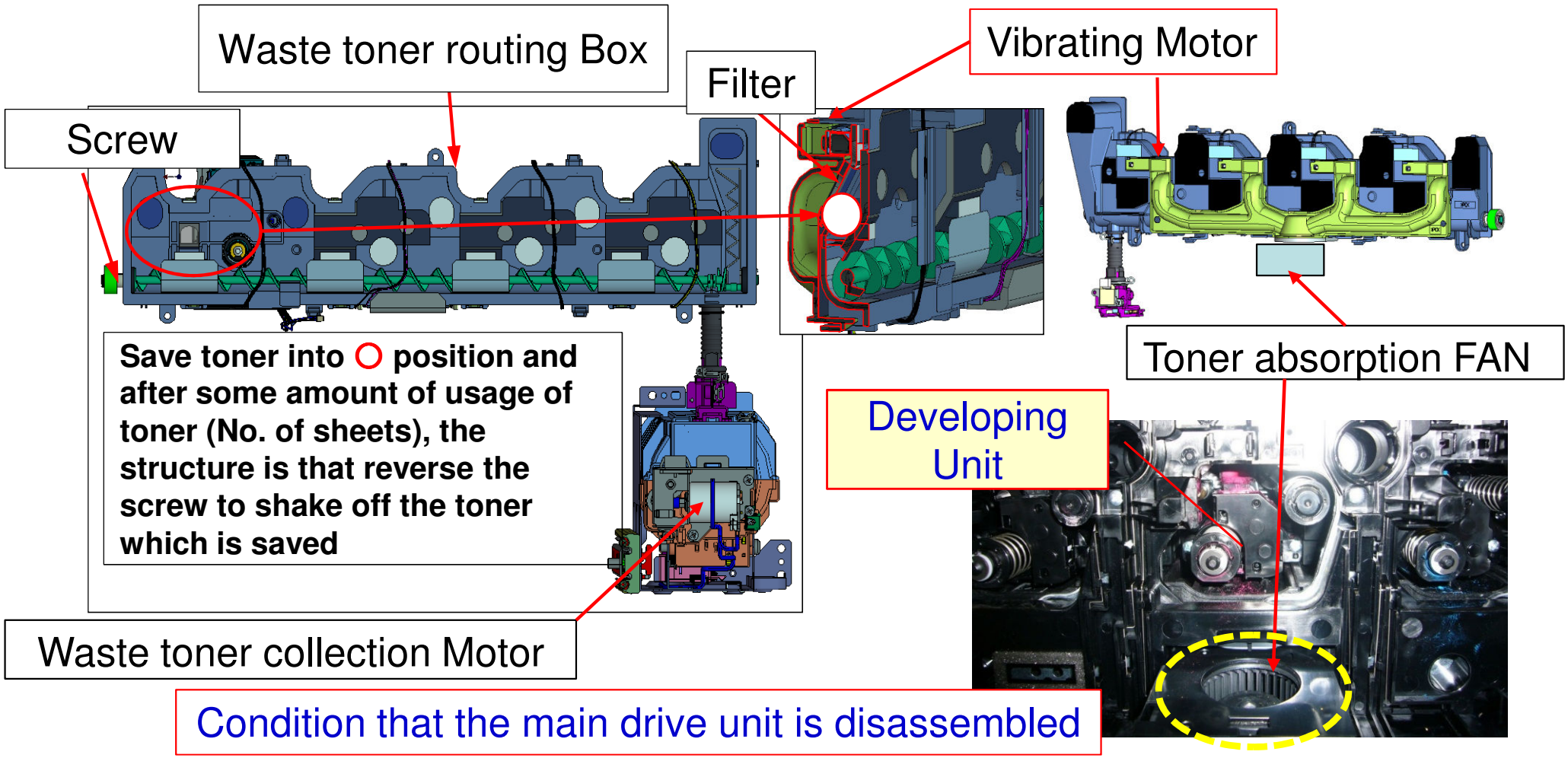
Developing Unit: Collection of the scattered toner (Upper Model)

[Filter Cleaning Structure]

Install the filter in the air duct of the waste toner routing box to absorb the scattered toner by fan

1. Sticking toner on the filter is shaking off by the vibration motor regularly to prevent clogging
2. Prevent toner dirt on the outside of the machine by the rear cover filter

Developing Unit: Collection of the scattered toner (Upper Model)



Developing Drive: Measure for Toner Dropping Image

<Measure for Toner Dropping from developing unit>

Vibration motor to prevent accumulation of scattered toner is installed (Upper model)

Prevent toner accumulation which leads to the toner dropping

1. When calibration is finished, repeat vibration motor 0.3 sec. ON/0.5 sec. OFF for 6 times and developing drive reverse rotation 0.8 sec.
2. Operate every continuous 250 sheets (below 40 degrees C) 100sheets (over 40 degrees C)
3. After Vibration, perform developing unit reverse rotation 0.8 sec. and collect toner

<Drive construction to make developing drive time shorter which is minimum required>

1. Stop the color developing at the Monochrome mode
   DLP (COLOR): Support by the exclusive motor
2. Stop developing drive alone
   DLP (COLOR): Support by the exclusive motor
   DLP (BK): Magnetic clutch is installed
   (Separate from Primary Transfer Belt)

3-8-3b

Toner Supply Mechanism

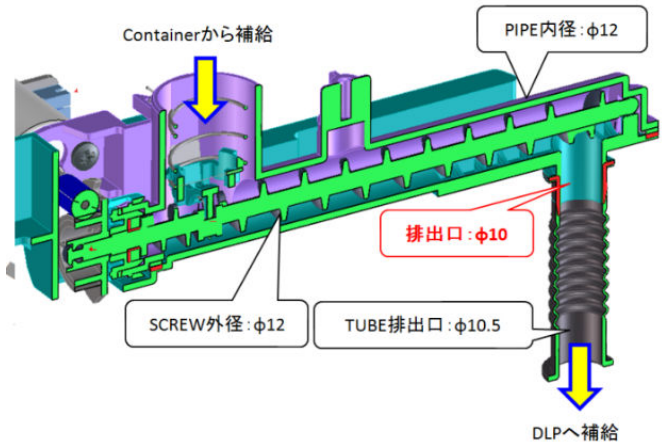
Toner Supply Middle Hopper

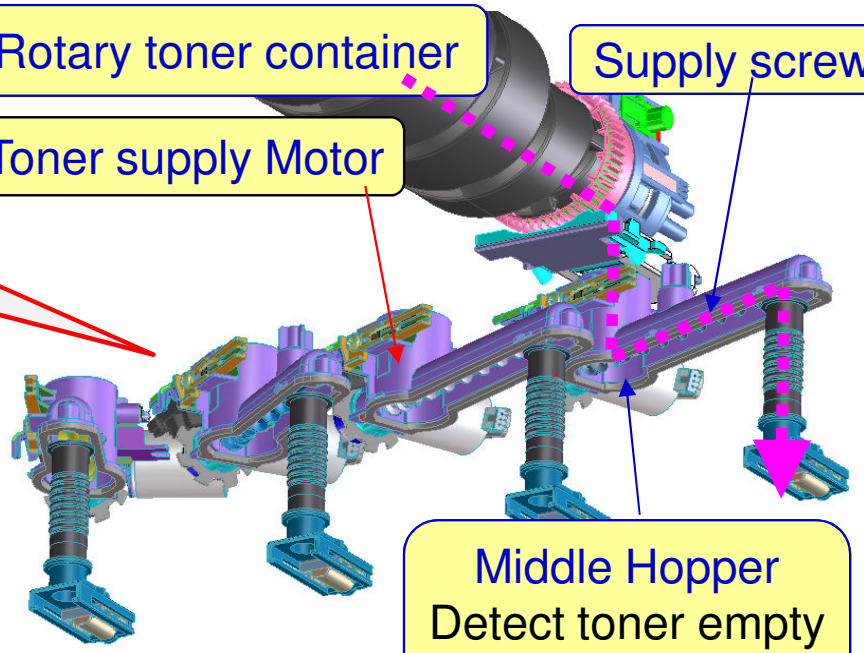
Toner supply mechanism: Container + Middle Hopper

1. Supply the toner from the toner container to the Middle Hopper
2. Detect toner empty by the sensor in the Middle Hopper
   * when empty is detected, container drive will be ON and toner will be supplied
3. Toner supply motor: reduce uneven supply by fine and quantitative supply
4. Detecting the amount of rotation for the toner supply screw, improve accuracy of the toner supply amount detection or toner gauge

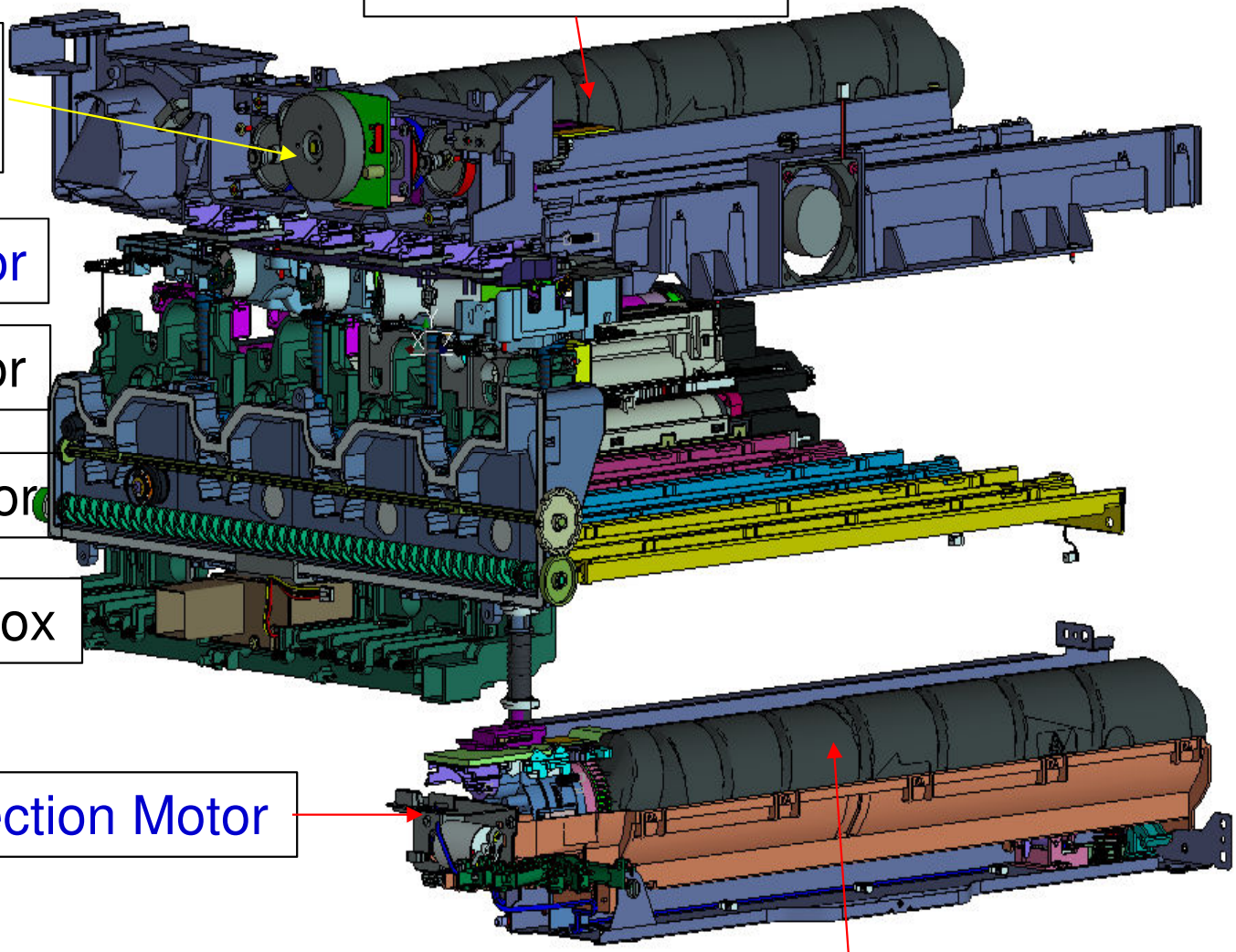
Control pulse count for the amount of the rotation on the supply screw

Fine supply and make toner gauge high accuracy



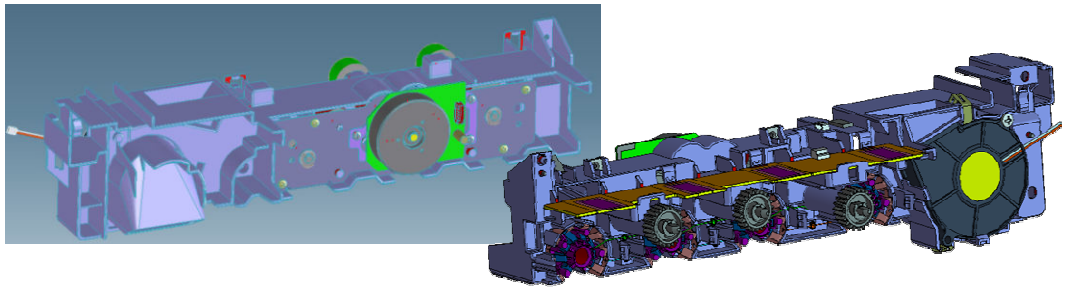


From Toner Supply to Collection Drive

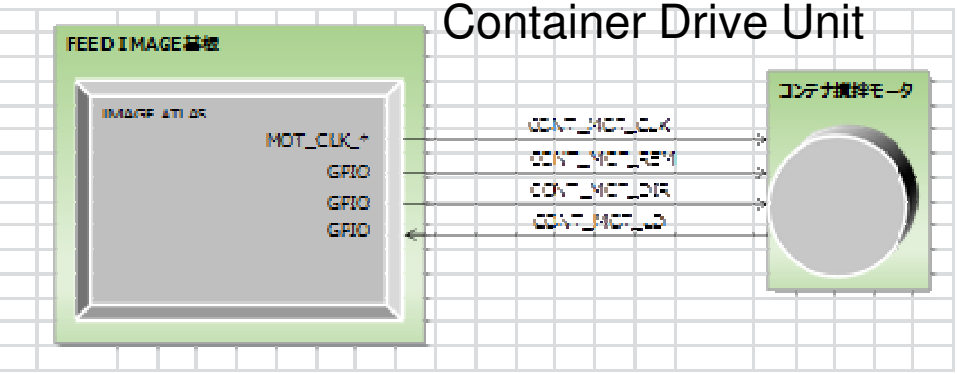


Container Agitation Motor

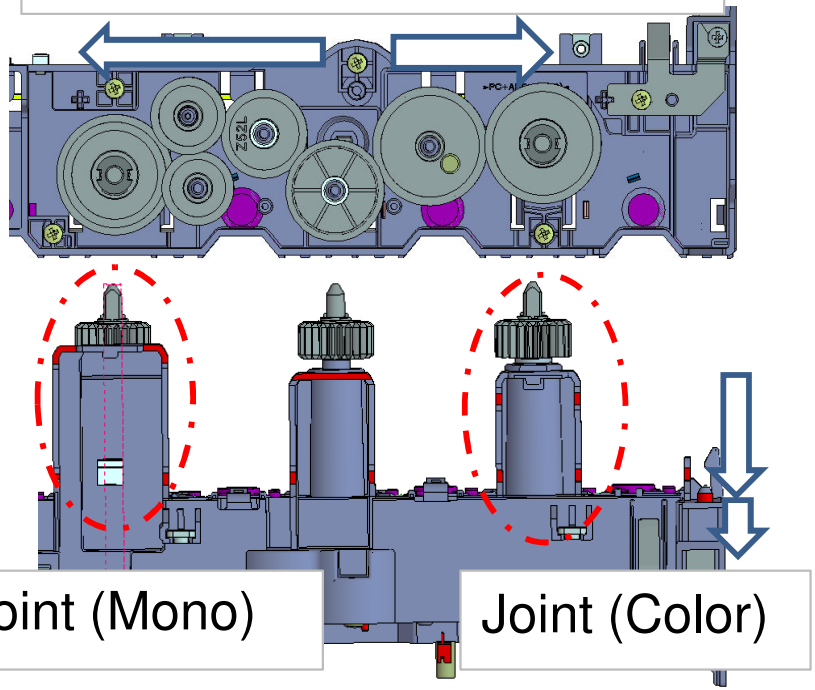
Depending on the rotate direction of the motor (1pc), switch BK container drive only or 4 color container drive



Container Drive Unit



Container Drive Direction



Control Device	Control Signal	Detail	Logic
IMAGE FEED PWB	CONT_MOT_CLK	Container Agitating Motor CLK Signal	—
ATLAS	CONT_MOT_REM	Container Agitating Motor REM Signal	H: Drive, L: Stop
	CONT_MOT_DIR	Container Agitating Motor DIR Signal	CONT_MOT_DIR H:CW, L:CCW
	CONT_MOT_LD	Container Agitating Motor LD Signal	H: Error, L: Normal

* W/CC is rotate direction seeing from Axis of rotation

Toner Empty Control (Toner Empty)

Toner Empty Control (Toner Low/Toner Empty)

Toner Empty Display: Detect by the toner sensor during the developing drive
Middle Hopper Empty: After being detected by the toner remaining amount detection sensor in the toner middle hopper, toner will supply

<Detect Toner Empty>

1. In case if T/C does not recover even some amount of time passed after the toner force supply
2. The time the toner remaining amount detecting sensor for the middle hopper detects empty

* Detect middle toner hopper empty before toner low which is set by U136
  Toner low detection: Middle hopper empty
  Toner end display: after toner low shows, 200% or 40 pages

Toner Empty Control (Toner Empty)

< Toner empty release operation>

Toner remaining detection sensor for the middle hopper pass through → Hopper Empty (Does not pass through → release hopper empty)

* After driving the container agitating motor, check if middle hopper is empty every one second

After releasing middle hopper empty, perform toner force supply

* Even timeout time (about 30 sec.) for the container agitating motor passed and still pass through, keep the middle hopper empty

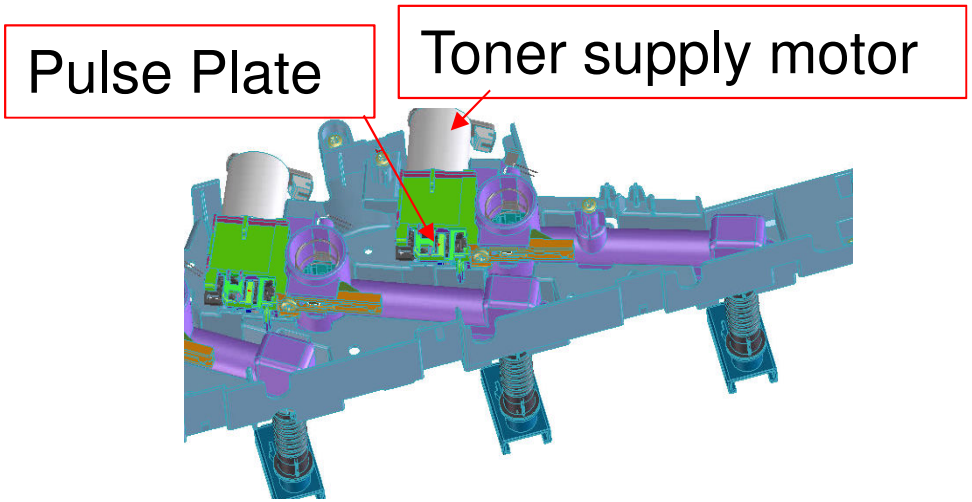
Toner Supply Motor Error Detection

Toner Supply Motor (BK) (C) (M) (Y) Drive: Control by the Feed Image PWB (ASIC)

<Error Detection: C7301/2/3/4 (Hopper Motor Error>

Adopt Pulse plate + PI Sensor on the toner supply motor shaft and if the motor does not rotate, the sensor can not detect the rotation of the pulse plate then the error will be detected (Feed Image PWB)

When toner supply motor drives,
If the PI sensor can not detect pulse for 2 seconds, stop the toner supply motor drive and wait for 0.1 sec.
If pulse can not be detected even drives 3 times continuously, display C730X (rotate detection error)



Toner Supply Motor Error Detection

Toner Supply Motor (BK) (C) (M) (Y) Drive: Control by the Feed Image PWB (ASIC)

U135: Note when performing force supply motor ON

1 sec.: do not continue to perform as this might be the factor for the toner block at the bottom of middle hopper

After performing 1 sec., check the change for T/C with U155 (if toner is supplied, supply motor is rotating)

Name	Cotrol PWB	Signal	Rotate Direction	Lock Detection
Toner Supply Motor (BK)/(C)/(M)/(Y)	Feed Image PWB	TNMOT_BK/C/M/Y_REM L: BRAKE / H: Drive	L Fixed: CCW	No motor lock detection * Pulse sensor detection

3-8-3c
Toner Supply Control

Changes for the Toner Supply Control

Changes for the Toner Supply Control

Item	Present Model	New
Supply Timing	Supply for T/C Value (It might be varies to detect for the toner sensor output after the toner consumption)	T/C Value + Supply Print coverage (Supply consumed toner amount at same time)
T/C Sensor	Voltage Value	frequency
Middle Hopper	None	Available (Hopper Empty)

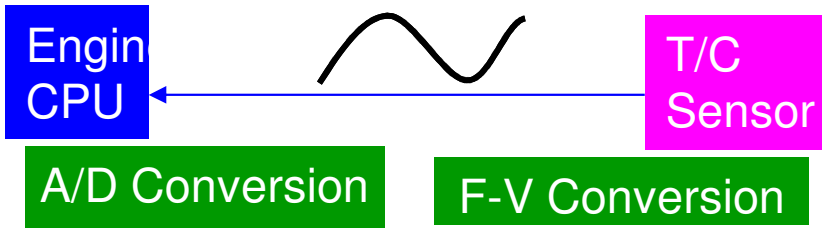
New Toner Supply Control

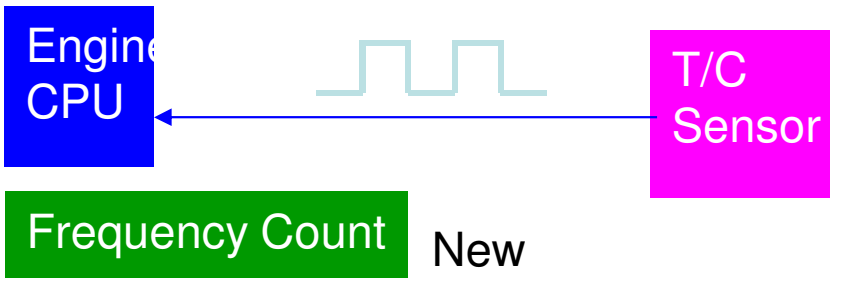
Control Item	Outline	Contents
Toner Supply	Toner will be supplied based on the print coverage	Calculate print coverage by each color/each page and supply same as its consumption from next page
Toner Force Supply	Toner will be supplied until T/C gets recovered	In case if output value of T/C sensor become lower than the lower limit, toner will be supplied until T/C go over the target value for 2 times continuously
Correct Target Value	Based on the result of the Calibration, change the T/C Target Value	Depending on the Bias setting Vdc that has set by the Developing Bias Calibration, change the target value (+/- 0.25%)

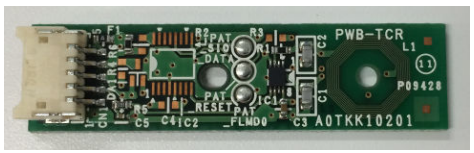
Toner Detection Sensor

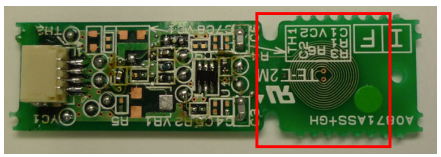
Toner Sensor for Frequency fluctuation Detection

■ Detect Voltage → Frequency Count





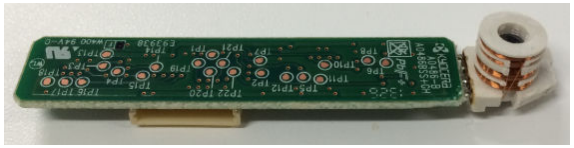




● Change detection method for T/C change
Magnetic Density Detection → Frequency detection (Change sensor output)

Present) T/C change = Voltage change
Magnetic permeability change convert to the voltage in the sensor and CPU will make A/D conversion for the voltage change, and Detect

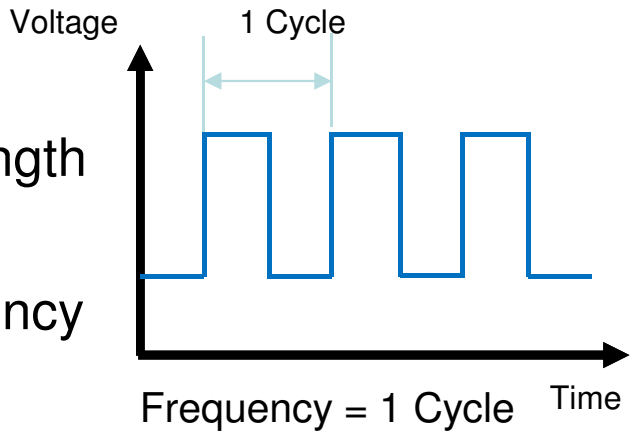
Present Sensor



New) T/C Change = Cycle Fluctuation
Based on the Frequency (Cycle) change, T/C will be detected
* Using Oscillation phenomenon by the coil and condenser, proportion of T/C will be recognized by the frequency (If T/C is high, frequency is also high)

T/C Sensor Control

T/C Sensor Control



Voltage waveform oscillated from T / C sensors is a rectangular wave, the frequency of a rectangular wave (length of one period) is changed by T / C

1. Increase T/C → Shorten the period → Increase Frequency
2. Decrease T/C → Longer the period → Decrease Frequency

* in case if T/C changes 1%, frequency will change about 2KHz. By the frequency change, detect T/C value

<Detection method for the frequency change>

1. T/C value* for the Specific criteria on the Sensor PWB at the factory is saved in EEPROM (In the T/C Sensor)

   * Standard T/C value: Save the Standard value that the carrier initial setting has not done in the factory

2. When printing, calculate the difference value between T/C sensor output value and EEPROM Standard value then, calculate T/C level

* Even Oscillating frequency is different, Frequency change value is almost same as T/C change

T/C Sensor Control

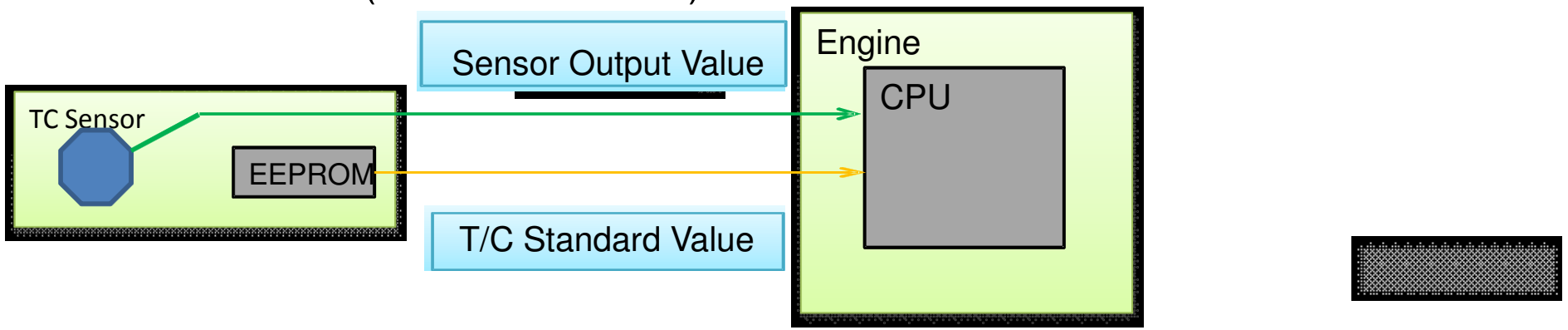
T/C Sensor Control

<U131: Toner Sensor Control Voltage>Setting

Toner Sensor Control Voltage Setting (Manual Adjustment)	CONTROL BK/C/M/Y
Toner Sensor Control Voltage Setting (Auto Adjustment)	T/C Sensor Wave number Standard value BK/C/M/Y
Toner Sensor Control Voltage Setting (Mode)	0: Auto Adjustment (Environmental correction) / 1: Manual Adjustment

T/C Sensor Control

(EX for T/C Calculation)
Sensor Output Value: 4406
Sensor Standard Value (In the EEPROM): 4400



(Sensor Output) – (Sensor Standard Value) = 4406 – 4400 = 6 (Different Value
(Changed value from the standard value)

<T/C Conversion Table>

Different Value	Equivalent T/C Value	Fluctuation frequency
12	10%	4 kHz
6	9%	2 kHz
0	8% (Standard Value)	0 kHz
-6	7%	-2 kHz
-12	6%	-4 kHz

7%: Lower model Standard value

<U155: Toner Sensor Output> Display

Toner	Contents of display
Sensor C/M/Y/K	Different between toner sensor output and standard value

T/C Sensor Error Judgment

<C7101/2/3/4: Toner Upper/Lower Limit Sensor Error BK/C/M/Y>

In case if the detection value of T/C sensor exceeds the upper/lower limit value of supply control, stop the toner supply to the developing unit

In case if count value to use for T/C calculation is not within +100 - -1,000 against standard value (stored value in EEPROM), C-Call will occur as the sensor error

* Target value is the specific value of the sensor PWB, judgment for C-Call is done by the difference between present output value and standard value

Condition of C-Call (Example)

Condition	Difference between the target value and count value (U155: Toner Sensor Output Value (Select Toner))	Count Value (EX) No. of signal clock in 2ms U132
C-Call Detection	100	4600
Upper Limit (Stop supply)	6	4506
Target	0	4500
Lower Limit (Force supply)	-12	4488
No DV condition	-60	4440
C-Call Detection	-1000	3500

U132: Supply Toner Forcefully

Supply C/M/Y/K	Toner Supply Level C/M/Y/K
Sensor C/M/Y/K	Toner Sensor C/M/Y/K Output value *Display after finish supply forcibly
Execute	Toner will be installed

U147: Set Toner Apply Mode

Set Toner Apply operation and upper limit print coverage by U147

Deteriorated Toner apply operation performing timing:

1. In case continuous print continues more than 24 sheets, perform between the paper in the JOB
2. In case accumulated no. of print reaches 12 sheets, perform after finishing that JOB

   * U147: Possible to change the timing (Interval number)

U147: Permission to perform

Mode	Contents
mode 0	Do not perform
mode 1	Perform (Default)

U147: Set upper limit print coverage (threshold to perform)

Model	Default	STEP	Setting Range
25	1.00%	0.10%	0% - 1.0%
32	1.00%	0.10%	0% - 1.0%
40	2.00%	0.10%	0% - 2.0%
50	2.00%	0.10%	0% - 2.0%
60	2.00%	0.10%	0% - 2.0%

3-8-3d
Developing Unit

Correction history

2016 5 10 ver1.1

P4 Improve the productivity at high coverage print is Newly added

2016 10 11 ver1.4

P4 Improve the productivity at high coverage print is newly added.

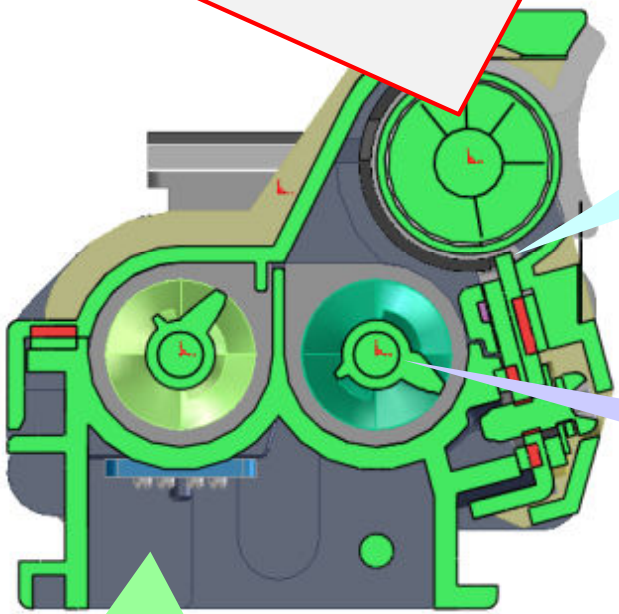
Developing Process

[Lower Model] Dual Component

[Upper Model] Touch Down

- Adopt Dual Component light contact developing

Stabilize developing capability (Density decrease, Uneven density, Excess toner concentration at the trailing edge) Delete Developing Sleeve Roller

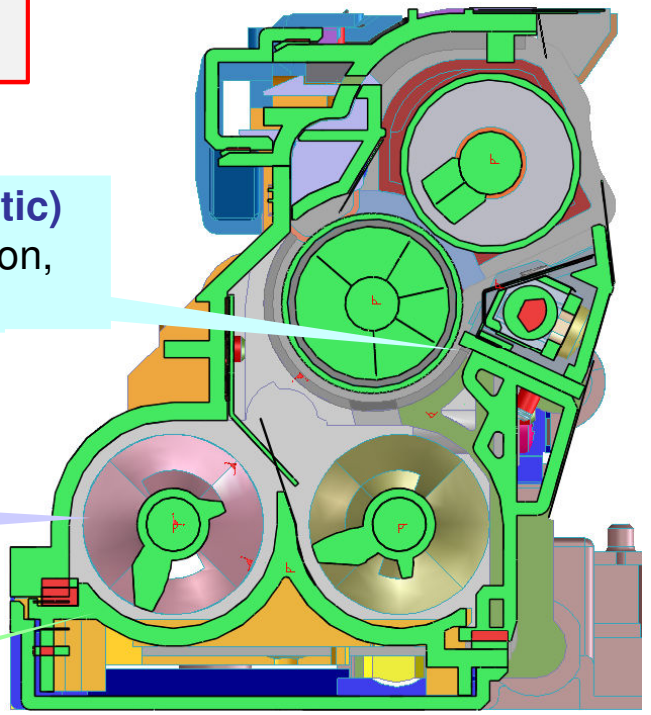


Magnet Roller

Low stress regulation (Low Magnetic)
Prevent toner/carrier from Deterioration,
Stabilize developing capability

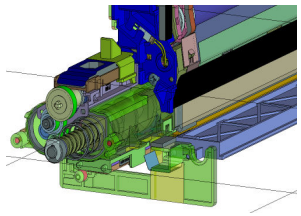
Agitation related

Cass System
Long life, Control calibration



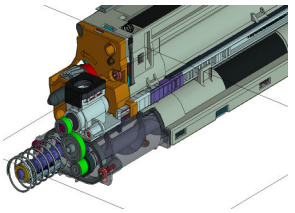
Toner Supply

Toner supply control based on the print coverage standard
Control back ground, High coverage printing followability
Adopt frequency output T/C Sensor



- CASS System

Install carrier in the container and throw out the carrier which overflow in the developing unit from the edge of the screw



Improve the productivity at high coverage print

Improve the productivity at a high coverage print（A high coverage printing followability ）

→ Due to the adaption of a new toner, a continuous printing is possible without delaying the paper feeding interval even if 80% of a high print coverage original is used. (a free from a adhesion of toner to the developing roller.

■ Adapt a new toner

Prevent the adhesion ingredient (a wax, a pigment) from sticking to the developing sleeve roller because the toner is like a shell structure to push an adhesion ingredient into its inside, and to cover with a capsule.

■ Change the coating material on the developing sleeve roller

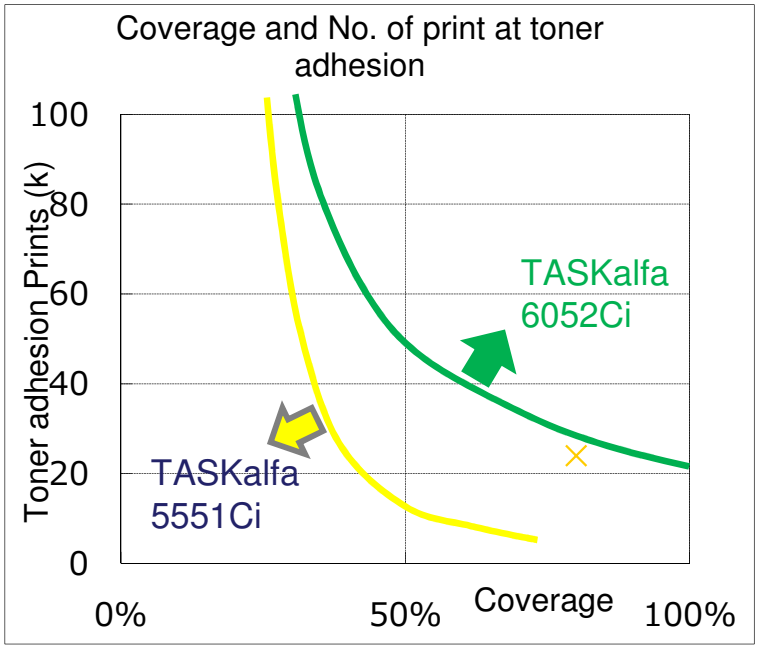
Increase the durability and as well as controlling the toner adhesion.

■ Result of the test of toner adhesion to the developing roller during a high coverage printing

Test 1) 50k prints with 45% coverage: No adhesion

Test 2) 23k prints with 80% : No adhesion.

Ref) In case of the current model, in case of printing coverage 80%, a productivity ir reduced to 50% and toner adhesion occurs at 20k prints.



Pressing force Mechanism for Developing Roller and Drum

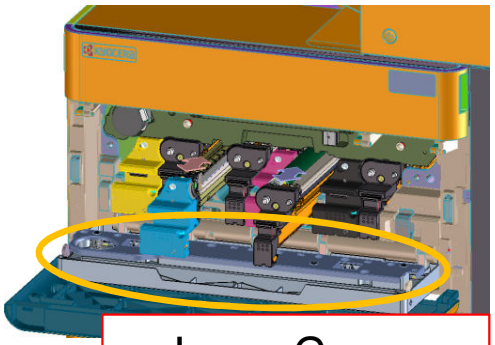
- Developing Press mechanism (Contact with Drum)

Lower Model: By open/close the inner cover, lower part of the inner cover and pressing cam are interlocked and move then, developing roller is released from the drum

* Inner cover open/close and interlock drive section: 45 Helical Gear interlock

Upper Model: After inserting the Unit, press front side lever of developing unit and contact drum and developing roller

* There is a pressing lever in the developing unit. When removing developing unit, return the lever and separate

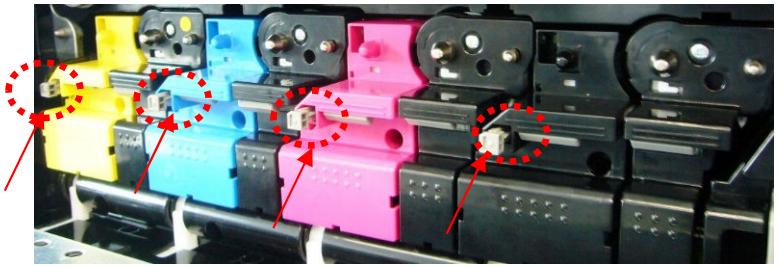


Inner Cover

Lower Model: Front side

Interlock Mechanism

Upper Model: Developing Unit Front Side



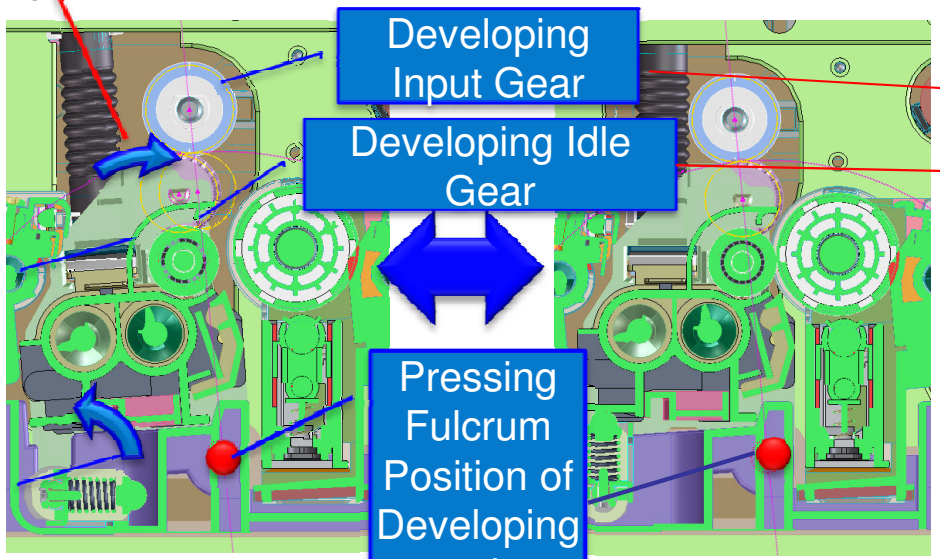
Pressing Lever

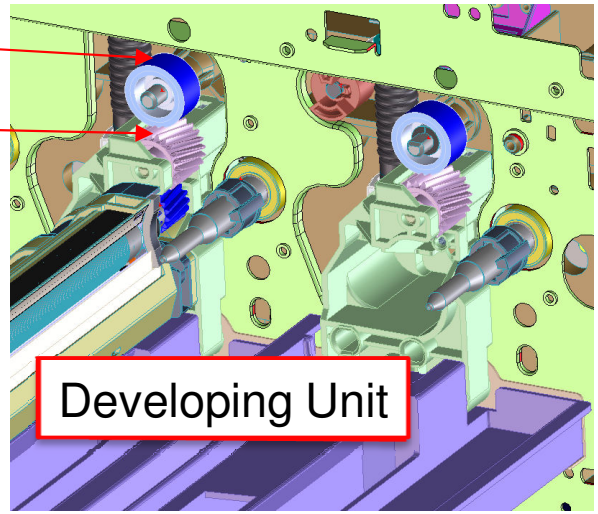
Separate developing unit from Drum (Developing Drive): Lower Model

Developing Drive

Synchronized with open/close of the inner cover, once developing unit is pressed, idle gear moves to the arrow direction

Separate from Drum Contact with Drum





Developing roller rotates to center the pressing fulcrum of the developing unit by pressing cam and then, pressed to Drum

The faint vertical lines at front and rear blank edge area on SRA3 paper (no imaging area)

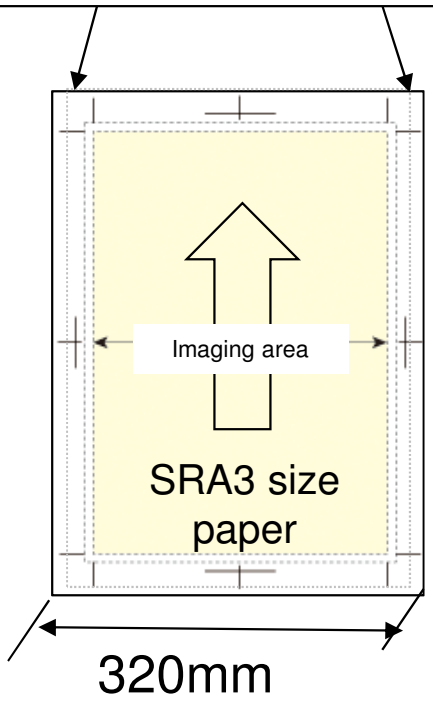
Phenomenon

- When feeding the SRA3 size paper (paper width 320mm), the vertical faint lines appears at the front and rear out side of imaging edge area. (the out side of registration marks for deign work)

Cause

- The floating toner outward the image developing area width (311mm) on the developing roller will attract to the drum and transfer. When the SRA3 (320mm in width) paper of which paper width is wider than the developing imaging area is fed, a floating toner just appears as a faint lines at the 3.5-4.5mm position from the both front and rear edge of the paper

The faint lines caused by a floating toner from both edge of developing roller appear at 3.5 to 4.5 mm from the paper front and rear paper edge



Handling

- SRA3 (450*320) is the paper width that a registration cut marks to align the mark for design work cutting can print on the paper blank area (no imaging area).These faint lines appear at the out side of these cutting marks only and it is not in the imaging area. Therefore, it does not have any problem in actual design work and does not admit the malfunction.

Ref. SRA3 printing effect imaging area: 309x402mm

3-8-3e
Waste Toner Box

Correction

2016 5 10 ver1.1

P5　Below “when the collecting amount is 80%” is deleted.

if it is actually not full, ~~when the collecting amount is 80%,~~

P11 Waste Toner Collection Motor　Following sentence is added.

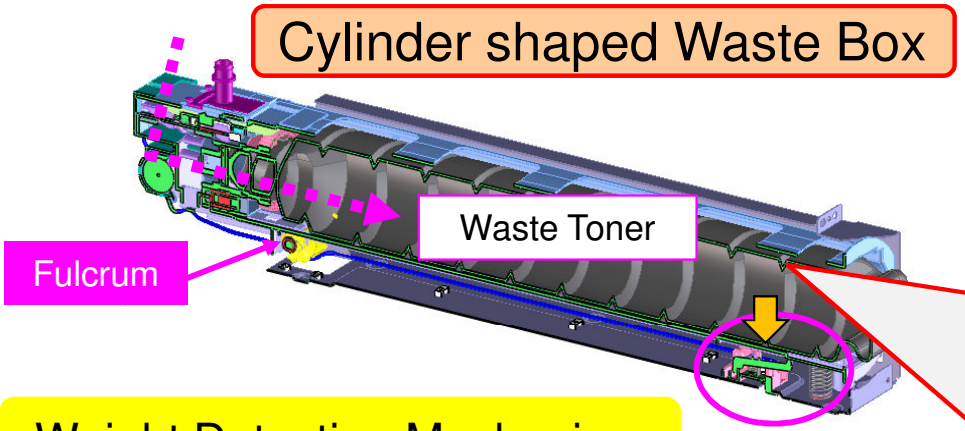
*If the cable to the waste toner box unit is stretched, the waste toner box unit at rear is lifted up and causing to operate the machine without the waste toner box or early full detection of waste toner.

Waste Toner Box Weight Detection

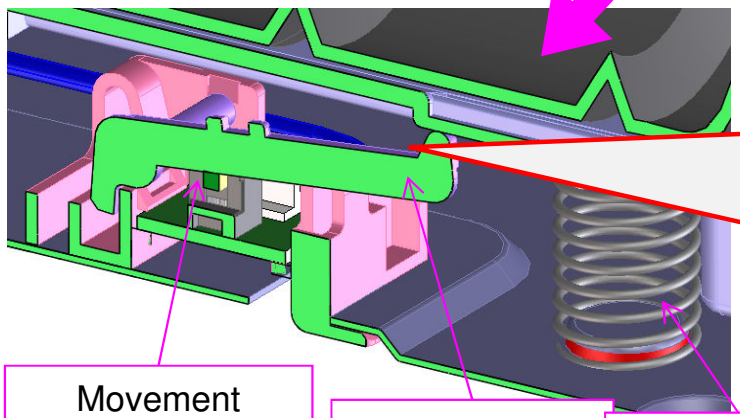
Waste toner Box Weight Detection

Waste toner Weight Detection → Moving Amount Detection Sensor + Actuator

Cylinder shaped Waste Box



Weight Detection Mechanism



1. Waste toner collection capacity (40K)
   Collect waste toner from center section of the bottle by rotating
2. Full Weight Detection
   Stop rotation of the bottle and detect full by the weight of the bottle (Including the weight of the carrier as well)
   * After stop the rotation of the bottle, detection operation for 30 sec. and display "Measuring" on the panel

3. Set Waste Toner Near Full Detection (10 to 90%: Increments of 10%)
   Set to Display Near Full Detection/Notice timing
   (System Menu → Common Setting → Waste Toner Box Full Detection)
   U155: Display waste toner amount by the level display (after detect operation, perform U155 again to display)

Waste Toner Box Weight Detection

Waste toner Box Weight Detection

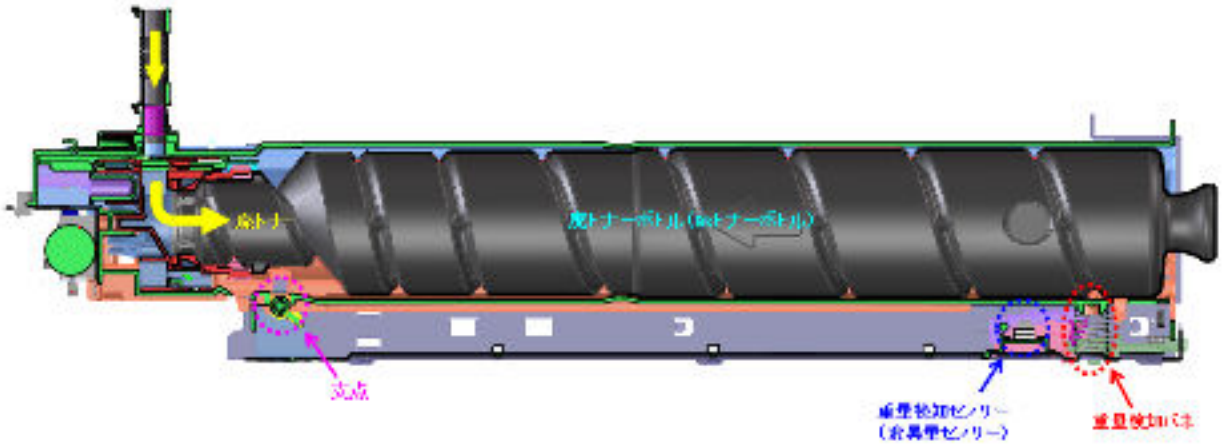
- Whole waste toner box rotates so that the spiral groove of the bottle surface send the waste toner to the front side to collect. * Rear side Fulcrum: if the waste toner amount increases, sink the front side Waste toner box rotational speed: 27rpm (Rotate Counterclockwise direction)
- Output the contraction amount of the spring which varies by the load of the waste toner bottle to the Engine PWB CPU by detecting the position with moving amount detection sensor (measure when rotation stops)

Waste Toner Box Weight Detection

Waste toner Box Weight Detection

As there might be the possibility that the waste toner gathers at the front side to detect full even if it is actually not full, to open/close the cover to cancel the toner full detection and rotate the container for 20 seconds (5 sec. ON, 3 sec. OFF, 15 sec. ON, 3 sec. OFF) so that the toner will be even condition in the container.

To consider the collection amount of the carrier, in case even if the collection capacity of the box is less than half and the carrier stuck at the front side of the machine, it might be possible to detect the full. (as collection amount for the toner only is more, box will be full so that full detection will be done with some margin)

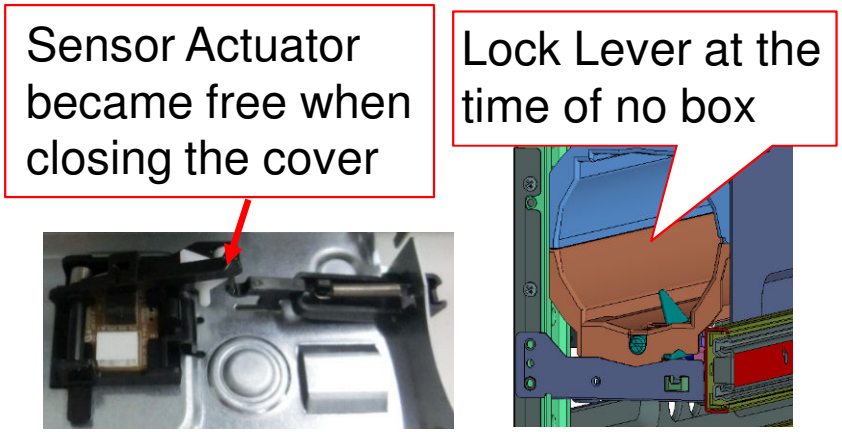


Waste Toner Box Weight Detection

Waste Toner Box Weight Detection

Perform the following detection Engine CPU) by the light shielding level position of the multistep output transmission PI sensor which is located at the front side of the waste toner box

1. Weight of the waste toner (at the time of stop rotation of the container)
2. Waste toner is available or not (at the time of Cover Open → Close)



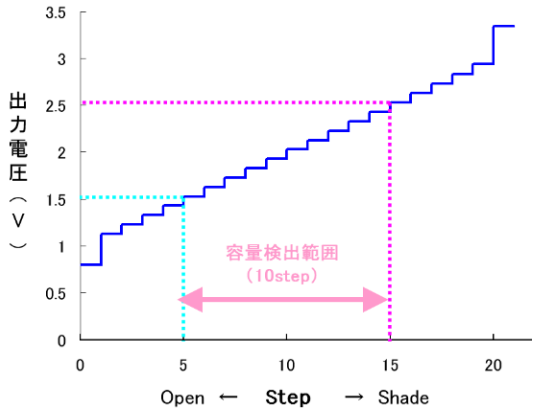
No Waste Toner Box Detection	Level 0 - 4	Waste Toner Box Tray raised up to transmissive entirely
Near Full Detection	Level 5 - 14	Possible to set by the System Menu (10 - 90%)
Full Detection	Level 15 - 20	Force light shielding by the Waste Toner cover Actuator
Weight Detection Sensor Error Detection	Level 0	Alarm by no change of the sensor output + Dot Count

Waste Toner Box Weight Detection

Waste Toner Box Weight Detection

<Detect collection amount of the Waste Toner by the Sensor Output Value>

Sensor Output Voltage moving amount



	センサー出力			CPU入力電圧			A/D変換（12bit）			A/D変換（8bit）			A/D（8bit）		N	状態
N	min	typ	max	min	typ	max	min	typ	max	min	typ	max	範囲			
0	0.70V	0.70V	0.90V	0.695	0.700	0.905	821	848	1125	51	53	70	0	38	0	異常
1	1.12V	1.10V	1.16V	1.117	1.100	1.160	1324	1337	1445	82	83	90	39	53	0	
2	1.22V	1.20V	1.26V	1.216	1.200	1.262	1441	1459	1572	90	91	98	54	83	1	満杯
3	1.32V	1.30V	1.36V	1.314	1.300	1.363	1558	1581	1699	97	98	106	84	91	2	カバー開
4	1.42V	1.40V	1.46V	1.413	1.400	1.465	1675	1703	1826	104	106	114	92	98	3	
5	1.52V	1.50V	1.56V	1.511	1.500	1.566	1793	1825	1953	112	114	122	99	106	4	
6	1.61V	1.60V	1.66V	1.609	1.600	1.667	1910	1948	2080	119	121	130	107	114	5	
7	1.71V	1.70V	1.76V	1.708	1.700	1.769	2027	2070	2207	126	129	137	115	121	6	
8	1.81V	1.80V	1.87V	1.806	1.800	1.870	2144	2192	2334	134	137	145	122	129	7	
9	1.91V	1.90V	1.97V	1.905	1.900	1.972	2261	2314	2461	141	144	153	130	137	8	
10	2.01V	2.00V	2.07V	2.003	2.000	2.073	2379	2436	2588	148	152	161	138	144	9	ボトル
11	2.11V	2.10V	2.17V	2.101	2.100	2.174	2496	2558	2715	156	159	169	145	152	10	有り
12	2.20V	2.20V	2.27V	2.200	2.200	2.276	2613	2681	2842	163	167	177	153	159	11	
13	2.30V	2.30V	2.37V	2.298	2.300	2.377	2730	2803	2969	170	175	185	160	167	12	
14	2.40V	2.40V	2.47V	2.397	2.400	2.479	2847	2925	3096	177	182	193	168	175	13	
15	2.50V	2.50V	2.58V	2.495	2.500	2.580	2965	3047	3223	185	190	201	176	182	14	
16	2.60V	2.60V	2.68V	2.593	2.600	2.681	3082	3169	3350	192	198	209	183	190	15	
17	2.70V	2.70V	2.78V	2.692	2.700	2.783	3199	3291	3477	199	205	217	191	198	16	
18	2.80V	2.80V	2.88V	2.790	2.800	2.884	3316	3413	3604	207	213	225	199	205	17	
19	2.89V	2.90V	2.98V	2.889	2.900	2.986	3433	3536	3731	214	221	233	206	213	18	
20	3.20V	3.30V	3.30V	3.195	3.300	3.305	3798	4024	4131	237	251	258	214	221	19	ボトル
													222	251	20	無し
													252	255	20	

Error

Box Full

Box Available

No box

Error Detection for the Waste Toner Weight Detection Sensor

<Error Detection for the Waste Toner Weight Detection Sensor>

In case if the condition of the Sensor output value is less than 0.7V which continues for more than 500msec (10msec x 50 times), or connector of the Waste Toner Weight Detection Sensor is disconnected

Display C7970 (Weight Detection Sensor Error) and stop printing

The way to check at the time of the Sensor Error

The Sensor has a problem if full detection display can not be released with no drive at all even open and close the cover operation is done at the time of full display

In case if the Weight Detection Sensor is normal and Full Detection Sensor is detected Full, drive operation is done by open/close the cover

* Press Cover Waste Open/Close Detection SW by left opening the cover and check if the Waste Toner Box rotates to the counterclockwise direction

U155: Waste Toner Box Weight Detection Calibration

When replacing the Weight Detection Spring (Waste Toner Box A'ssy), perform U155: Calibration

<The procedure for setting the Waste Toner Box Threshold>

Preparing item: New Empty Waste Toner Box

1. Remove Waste Toner Box
2. Goes into the maintenance mode U155 and close the COVER WASTE

Register the weight without the waste toner box.

3. Press [Calibration] and check the display [None] at the side of [Waste Toner] then after that, press [Start] key
4. Insert empty waste toner box and close COVER WASTE

Register the weight of New (empty) waste toner box.

5. Again at U155, press [Calibration] and check if the display shows [Empty] at the side of the [Waste Toner] then after that, press [Start] key
6. Remove empty waste toner box and install waste toner box, and close COVER WASTE
7. The value at the side of None/Empty is updated and check if the [OK} is displayed at the side of [Execute] * In case if the error code is displayed at the side of [Execute], retry from the first beginning (The error will display when the detection weight of the waste toner box is opposite at new box → no box.)

U155: Waste Toner Box Weight Detection Calibration

U155: Output Display for the Toner/Waste Toner Sensor related

U155: Setting Item	Explanation
Waste Toner	Display 0 → 1 when Waste Toner Full is detected
Toner	Display the difference between Toner Sensor Output and Control Target Value
Calibration	Perform Calibration for the Waste Toner Weight Detection Sensor Setting

Calibration	Explanation
Waste Toner	Set for the output level of the waste toner weight detection sensor Select the below to perform the Calibration (Standard Weight Detection) 1. "None" (Remove the Waste Toner Box) 2. "Empty" (Insert Empty Waste Toner Box)
None	Adjustment Value (Remove the Box and Sensor Output with no Box)
Empty	Adjustment Value (Sensor Output with the empty waste toner box is installed)
Level	Waste toner accumulation amount (%) * Stop detection by left the cover open. In case if it is closed, rotate the waste toner box (30 seconds) and detect the weight. During the detection, 255 is displayed and after 30 seconds, goes into the maintenance mode again to display the accumulated amount
Execute	Perform the Calibration * Perform when replacing the spring for the waste toner box weight detection

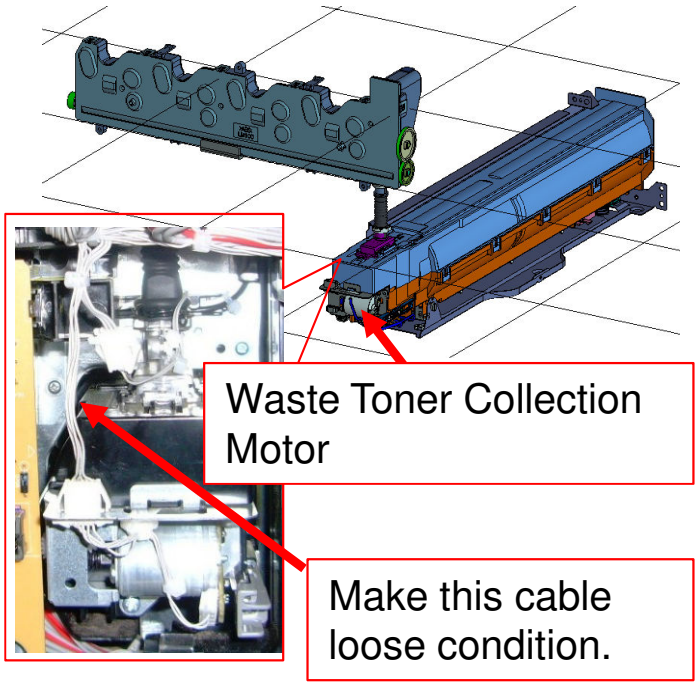
Waste Toner Collection Motor

Lock for the Waste Toner Collection Motor and Detection of Waste Toner box disconnected:
Same signal but detect with the different timing (Input Engine CPU)

1. Detect waste toner box disconnected by the current value at the start up the machine

if the box is disconnected by the current value at starting up the motor

Detection is done only when start up the machine and once normal operation is recognized, finish detection of disconnection and perform lock detection



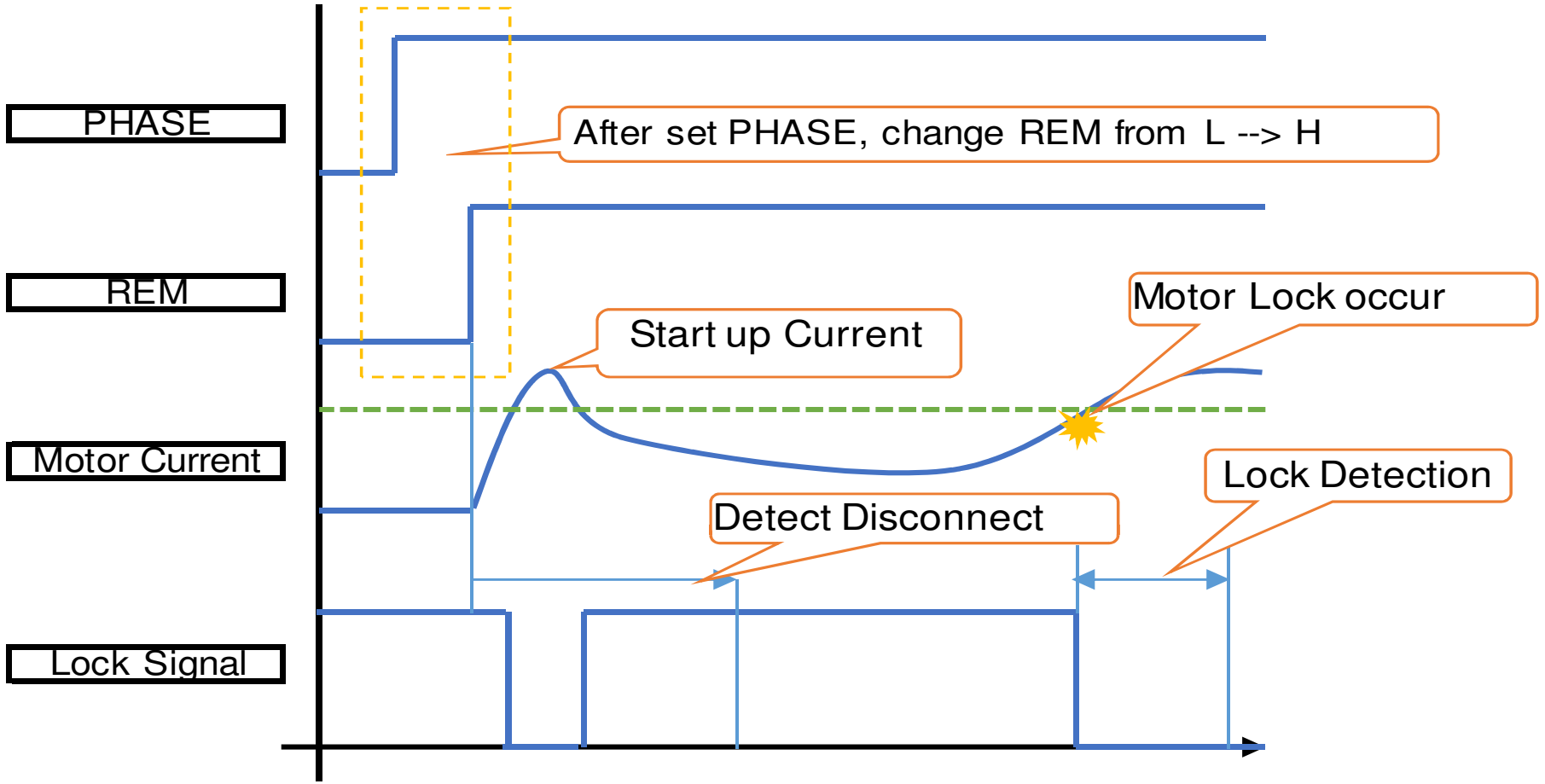
*If the cable to the waste toner box unit is stretched, the waste toner box unit at rear is lifted up and causing to operate the machine without the waste toner box or early full detection of waste toner.

2. Motor Lock Detection (C2810)

Once the current exceeds the threshold, lock signal became H level

* Motor normal start up: In case if the motor start up current at the machine start up exceed the look detection threshold, the lock signal became Low level

Waste Toner Collection Motor



<Waste Toner Collection Motor Control related Signal>

Name of the Motor	Control Device	Drive Remote Signal	Direction of Rotation	Lock Detection
Waste Toner Collection Motor	Engine PWB	WTNR_MOT_REM	WTNR_MOT_PHASE	WTNR_DET L: Lock Detection
		L: BRAKE / H: Drive	L: CCW / H: CW	* Input Lock Signal only in the Engine CPU

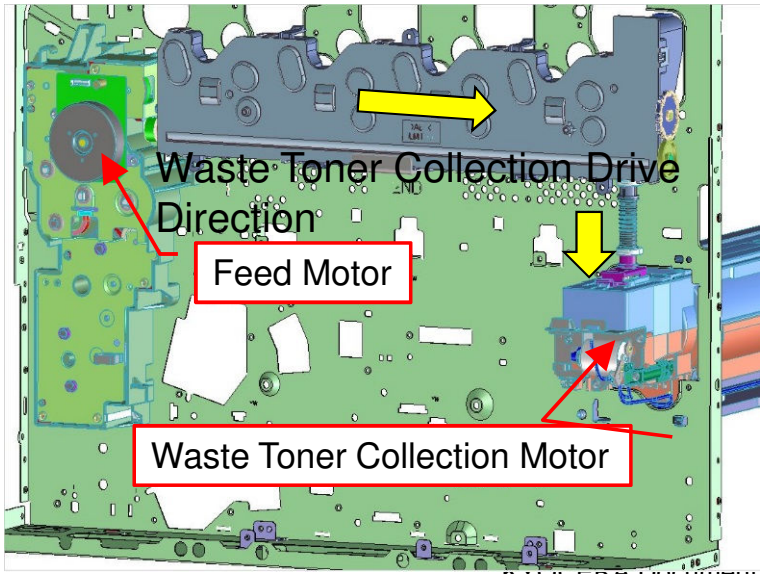
Waste Toner Related Drive

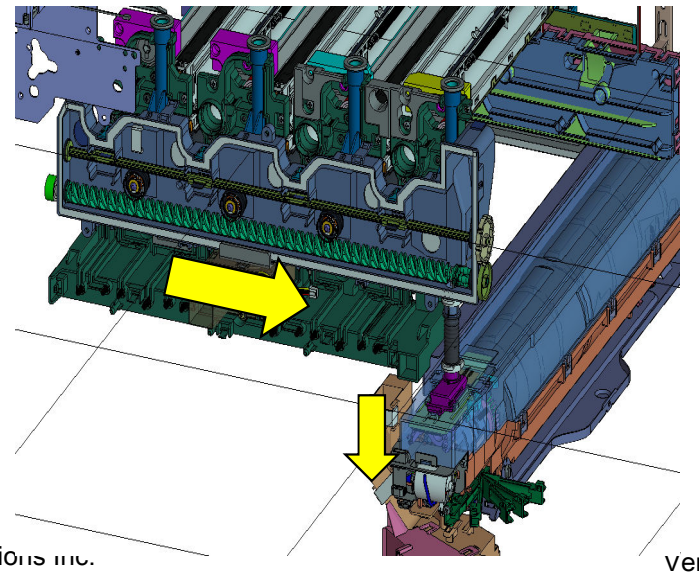
<Mechanism for the drive that collect/convey the waste toner>
Waste Toner Collection Motor Drive Timing
Feed Motor drives conjunction with Waste Toner Collection Motor
* Drive/Direction of rotation is controlled by the Engine PWB
(When driving the Drum Motor, Developing Motor, Primary Transfer Belt Cleaning Motor, Waste Toner will be thrown out)

1. Feed Motor (Convey the Waste Toner which is thrown out from each unit to the collection section)
2. Waste Toner Collection Motor (Collect the Waste Toner into the Waste Toner Box)

<Operation>

1. When the Waste Toner Collection Motor Drive stops, perform Full Detection of the Waste Toner Box
2. In case if Feed Motor drives, the Waste Toner Collection Motor also drives

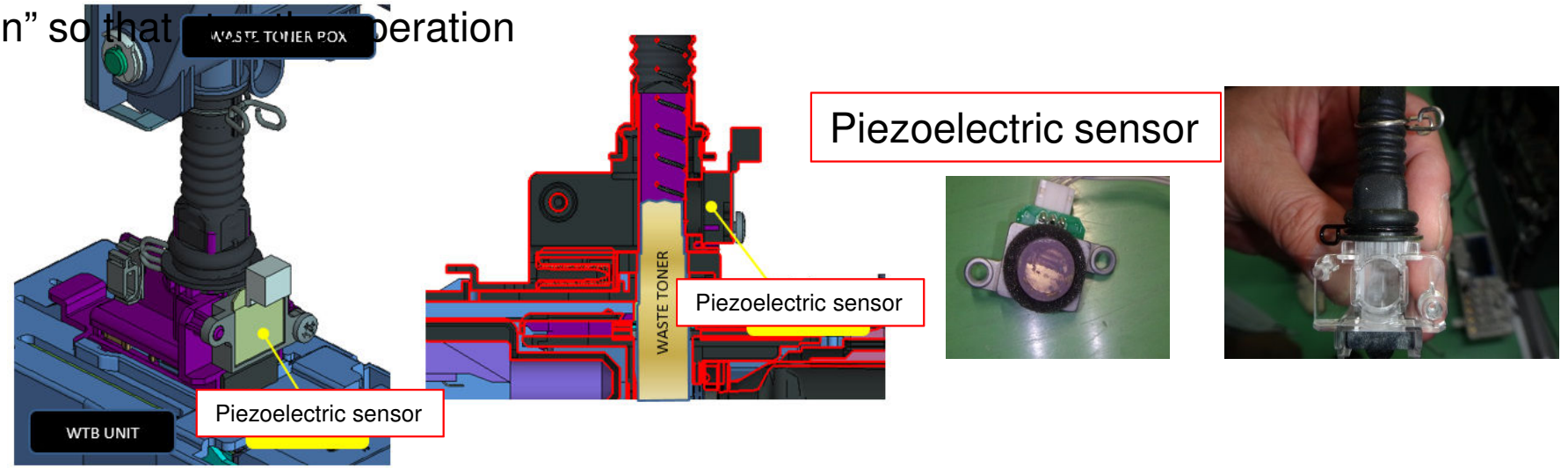




Waste Toner Full Detection

Waste Toner Lock Detection Sensor (Piezoelectric sensor) * Connect to the Feed Image PWB
Equipped at the joint box aperture between the waste toner collection and main drive unit side toner collection section (Damage of the Weight Detection Sensor, Error Detection for the clogging of the Waste toner at the waste toner box aperture, etc.)
*C7980 Waste toner overflow (Piezoelectric sensor error)

1. Detection Timing: At the time of Feed Motor Drives
   In case the Sensor detect the High level for 180 sec. continuously, display “Waste Toner Full”
   (Consider the false detection by the sticking the toner on the surface of the sensor)
   C7980: Waste toner piezoelectric sensor full error is detected 4 times (2min interval) in succession
2. The way to recover: If setting the empty box to recover the toner full condition, open/close the Waste Toner Cover to recover
3. Note: In case if the connector or the Sensor is disconnected, the condition will be “Full Detection” so that [illegible]peration



3-8-4
Drum Unit

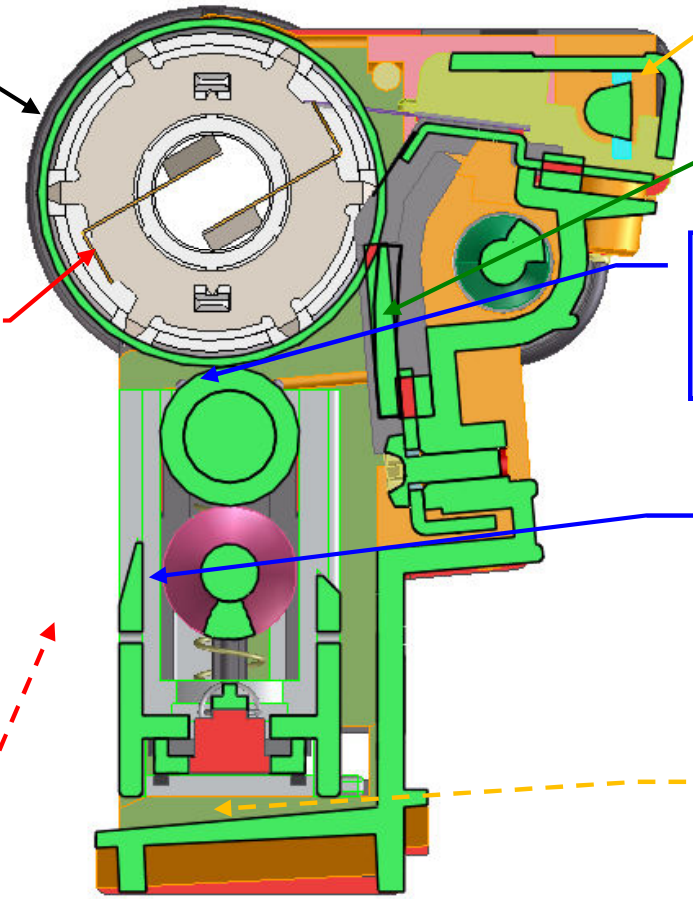
OPC Drum Unit (Lower Model)

Change points in Module
- Adopt Charge CL Sponge, Adopt Side Erase, Disuse Drum Shaft
- Disuse Charge CL Drive, Change Drum Thrust Drive Mechanism

- OPC Drum
Durability: Life 200K sheets

- Drum Thrust: Thrust cycle (0.5mm width) 527 round of Drum = 1 reciprocating
(Present model: 17 round of Drum = 1 reciprocating)
Improve performance for the Main scan direction uneven color, Improve performance for the dash mark

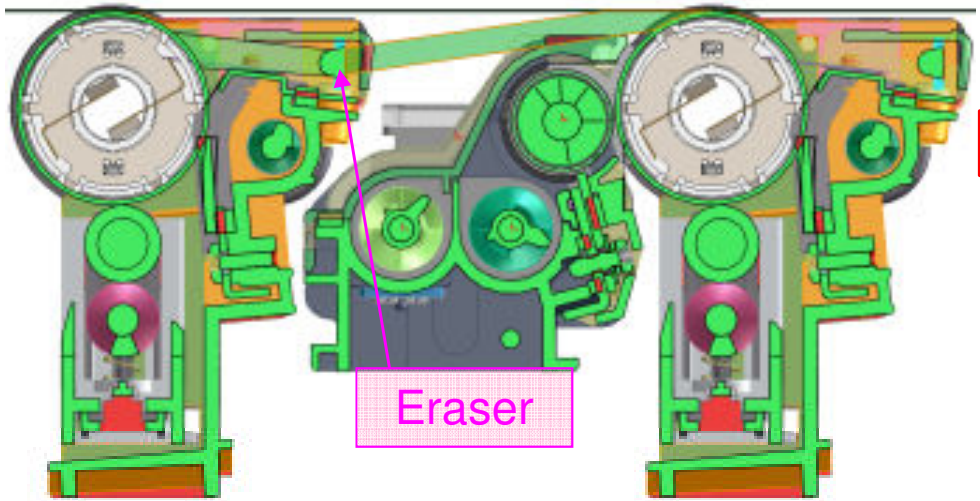
- Exposure: Support for 1200dpi

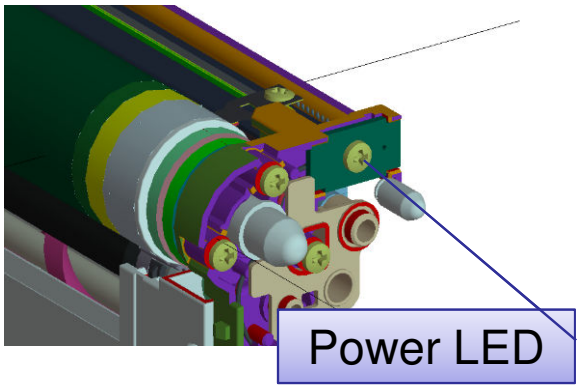


- Eraser (Main, Front of Transfer) Power LED + light guide plate
- Cleaning Blade
- Charge Roller (DC Charge)
Change charge width (322mm) ← support for SRA3
- Spiral shape
Sponge cleaning roller
Improve cleaning performance
Follower drive (Not necessary to drive)
- Drum Heater
Measure for the Pin hole

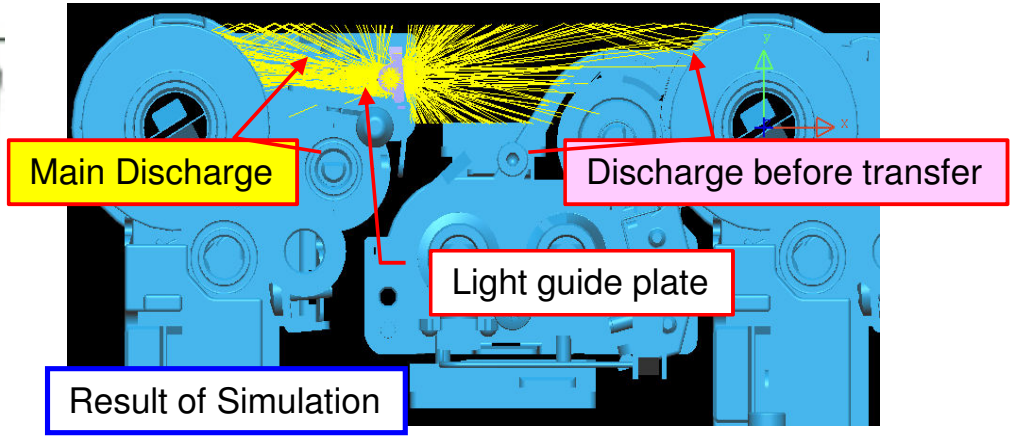
OPC Drum Erase PWB (Lower Model)

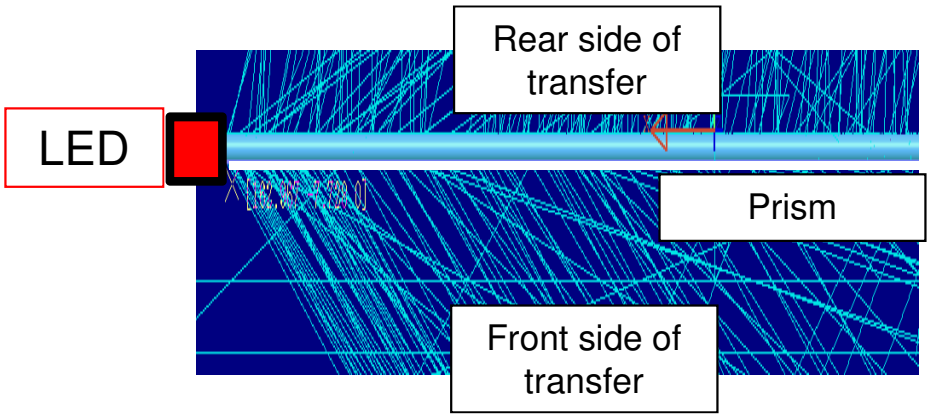
Side Light Discharge for OPC





Measure for the ghost image





Eraser

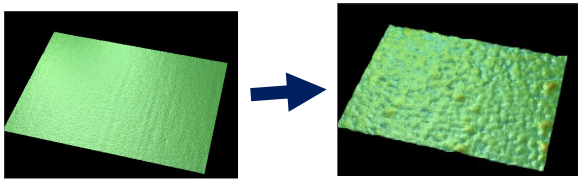
The light of a power LED to be mounted to the side Prism spread with a slit through the light guide plate and discharge by whole exposure of the Drum

a-Si Drum Unit (Upper Model)

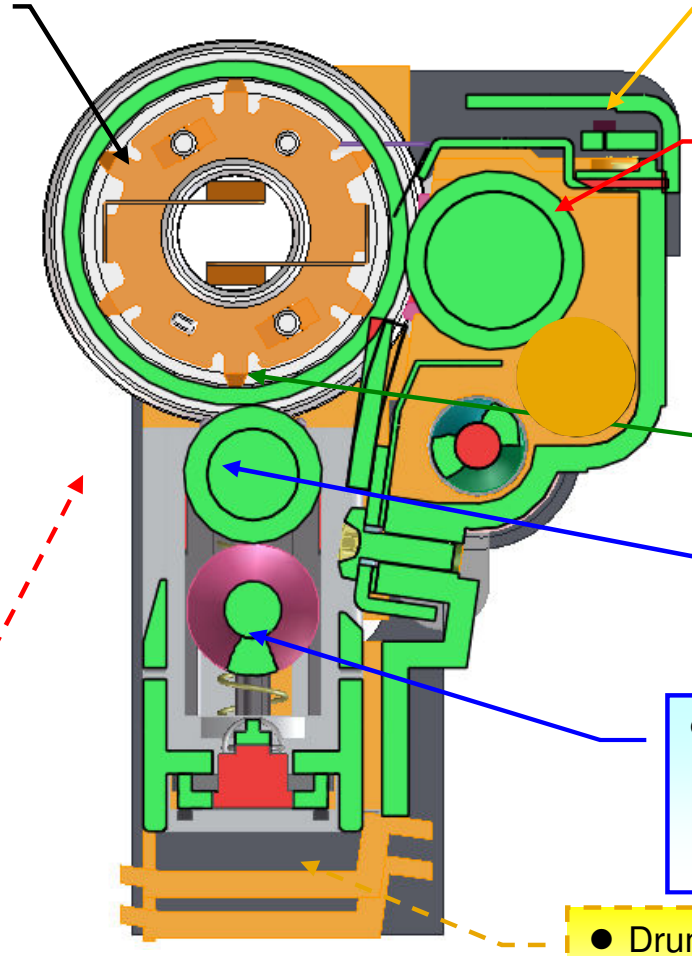
Change points of Module: Adopt Charge CL Sponge, Disuse Charge CL Drive

a-Si Drum
Low abrasion Drum (Roughened Photoreceptor)
Durability: Life of 600k sheets
Reduce load of the blade by increasing roughness of the surface

Drum Surface



- Exposure: Support for 1200dpi



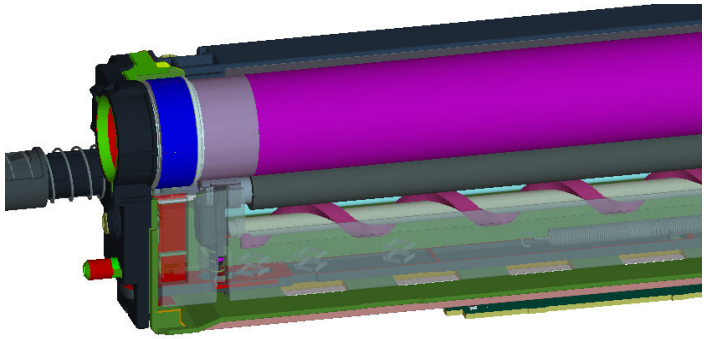
- Eraser

Scraping System
Toner layer regulation roller method
Linear velocity: 1.20 times
Scraping roller

- Cleaning Blade
- Charge roller (AC + DC Charge)
  Adhesive bi-layered (Improve durability)
- Spiral shape sponge
  Cleaning roller
  Improve cleaning performance
  Follower drive (Not necessary to drive)
- Drum Heater
  Measure for the image flow
  For all destinations

New Charge Cleaning Roller

New Charge Cleaning Roller

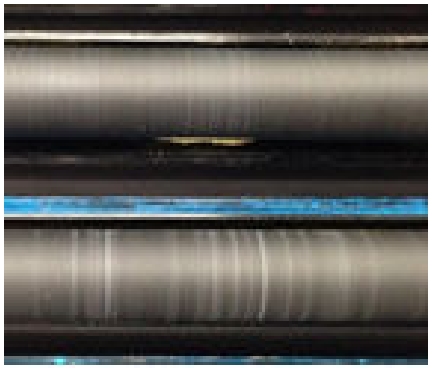


Improve charge roller cleaning performance
Fur brush → Change to the Sponge Roller (Spiral shape cleaning roller)
Prevent charge roller from contamination: Prevent from Uneven whiteness, sticking external additives of the toner
Foaming roller system: Improve cleaning performance by rotating the sponge roller rotating by the charge roller → Control Jitter image (Different from fur brush, it is not necessary to make rotation drive so that contact area with charge roller is not much)

Durability evaluation: After printing 600K (Color 55ppm model),
Sponge roller performance is;
contamination of the charge roller compare with present Electrostatic flocking brush is reduced

Spiral shape sponge roller

Electrostatic flocking brush (present MP specification)



3-8-5
Primary Transfer Unit

Primary Transfer Unit

Change Points:

1. Make the flame smaller
2. Belt Drive/4 Colors Drum Separation Drive/Sensor is embedded in the machine main body

High Image Quality

Bias Apply System: Control constant current → Control constant voltage with resistance feedback (Control charge up of the toner and reduce uneven transfer) * Improve the problem like white spot on the second side of the duplex, grainy image)

Reliability

Measure for the Belt Skew: Skew stop rubber (Space saving)

Thin paper (52g) separation: Make the drive roller small to make Curvature separation

Long Life * 600K Unit replacement

Belt cleaning: Conductive nylon + Bias pre-brush (+apply) to collect remaining toner

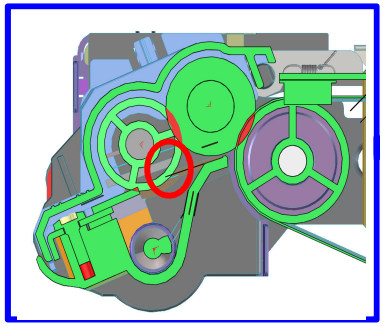
Service Capability

Front Access

Individual Unit removal

(4 color drum separation mechanism)

Bias + Fur brush



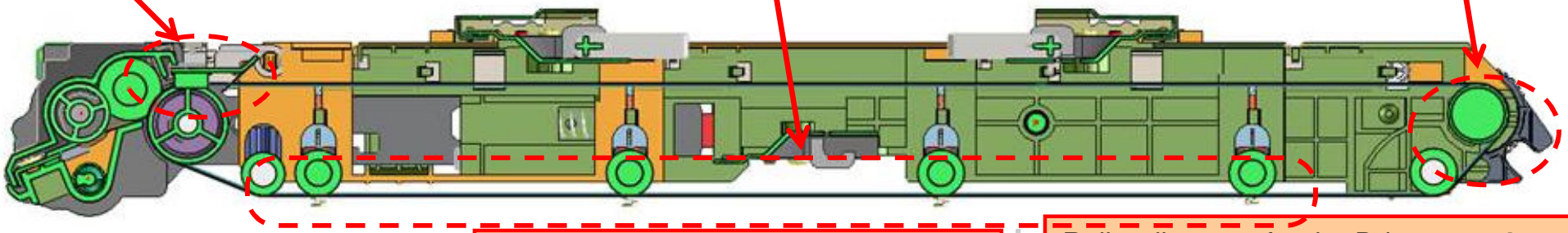
Lower seal: Prevent toner scattering. Paper dust and toner which accumulate in the red circled position drops to the screw section by their own weight

Primary Transfer Unit

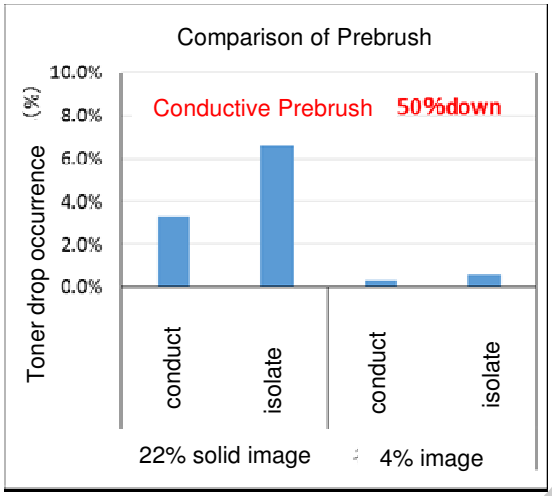
Pre-Brush Voltage apply

Release Primary Transfer 4 color/make it smaller

Make Drive roller smaller

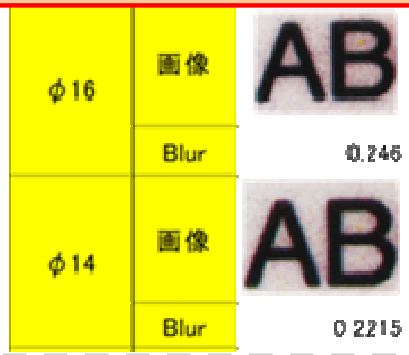


Material of the Brush: Insulation PET → Conductive Nylon
Bias: ・Insulation → 350V
(Increase cleaning capability, improve toner drop by the positive charge of the transfer remaining toner) measure for the minus toner cleaning



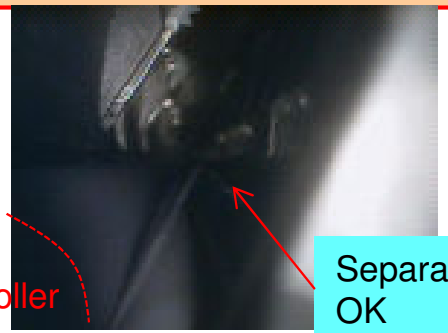
Release system (Improve unit install capability)
3 color release → 4 color release

Make smaller (Primary transfer roller φ16 → φ14
(Improve composite scattered image in the character)

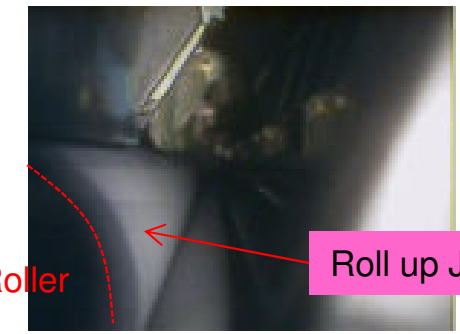


Enlarged image of the 4 point Font

Roller diameter for the Drive: φ24 → φ18
Make smaller to improve separation capability of the thin paper (52g)
Paper spec.: 60g to 256g → 52g～300g



Φ18 New



Φ24 Old

Primary Transfer Unit (Reduce toner dropping)

<Phenomenon>

When making high print coverage continuous print, the toner accumulate on the Primary Transfer Belt Toner Cleaning Fur Brush and if exceed some fixed amount, the toner leaks on the belt that makes to drop the toner on the image

<Improvement>

To prevent the toner from accumulating on the fur brush, make the brush high speed rotation to collect the toner when developing unit is not operating (prevent the toner from dropping when generating the image)

To increase the rotation speed for the fur brush, release the accumulated toner in the brush on the belt by centrifugal force to clean the brush

<Operation timing>

Perform same timing as LSU slit cleaning

Limit the toner amount on the brush and reduce the cleaning failure

* Carrier circulate the time which is 2 rounds of the developing unit

* Operate when the LSU cleaning is operated through System Menu as well

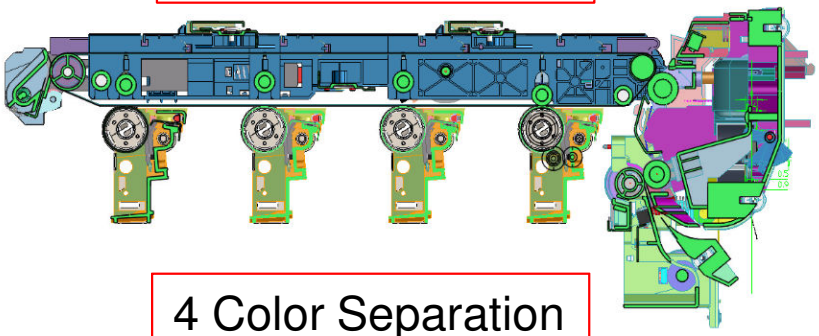
Drive Transmission (3 Color/4 Color Drum Separation)

Color Drum 3 Color Separation → 4 Color Separation (Improve maintenance capability)

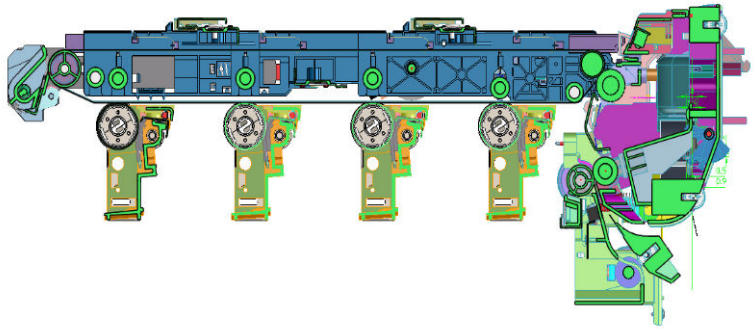
<Primary Transfer Roller separate from the Drum>

1. At 3 Color Separation (Print BK)
   → Shift 3 Color Primary Transfer Rollers to upper direction and release the belt from the drum
2. At 4 Color Separation
   (At Off mode, At Unit removal)
   → Release BK + all Color Primary/Secondary Transfer Rollers
   (Release pressure of second transfer roller
   → Same timing as 4 Color Drum separation

3 Color Separation



4 Color Separation

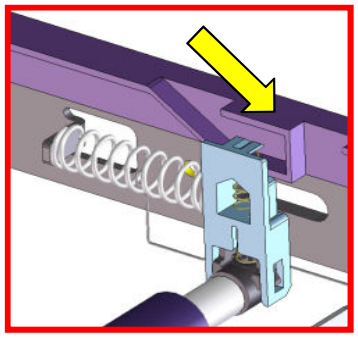


3. Separation Drive (Motor/Transmission Gear): Inside of the main drive unit * Primary/Secondary Transfer separation uses same motor, perform the tension between drive roller and passive roller (Primary/Secondary Transfer Separation Motor: Drive by the Feed Image PWB)

Separation from Primary Transfer Belt Drum/Secondary Transfer Roller

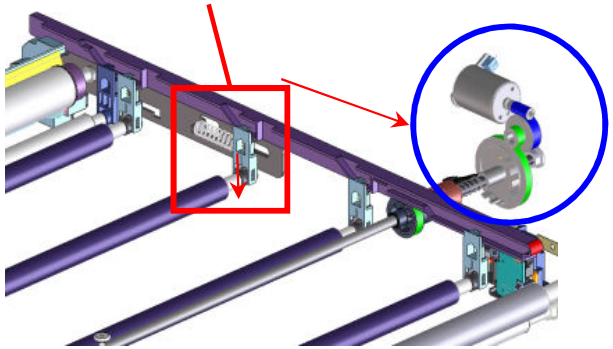
Transmit separation drive by the left/right link bar

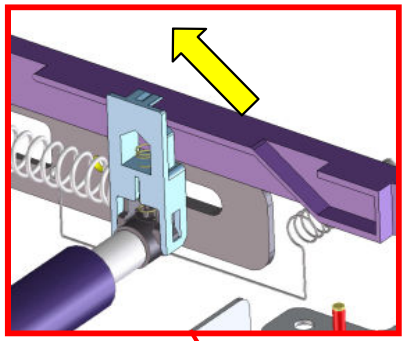
1. Motor → Worm gear → Gear → Transmit the drive by the Coupling connection
2. Rotational motion of the Motor gear moves the link bar by adding the wheel gear on the slider and move horizontal direction
3. Move front/back Bush of the primary transfer roller to the upper direction at same time
   → Move primary transfer roller/back up roller to the upper direction
   Lift up Rib which is created at transfer roller bush by the slope slider



Pressing condition for 4 Color Primary Transfer Roller

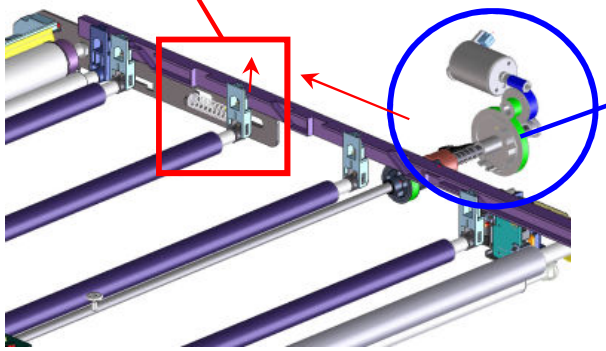
Press/Separation Drive

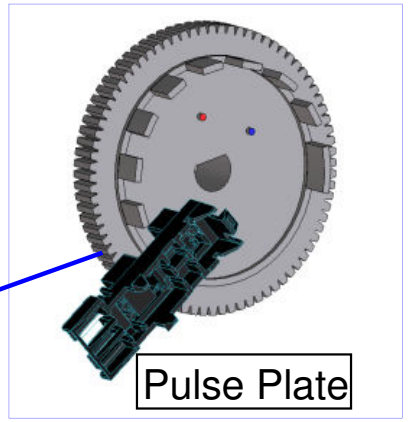




Separate Belt from Drum

4 Color Drum separated condition





Detect press/separation position by the pulse plate

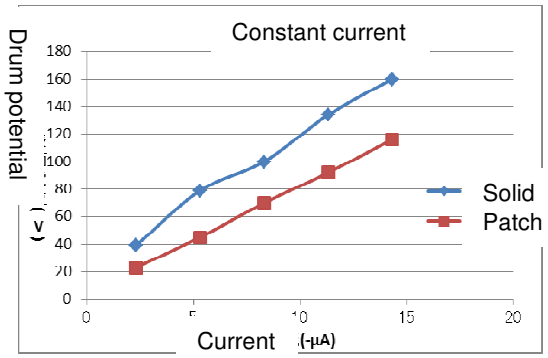
Primary Transfer Constant Voltage Feedback Control

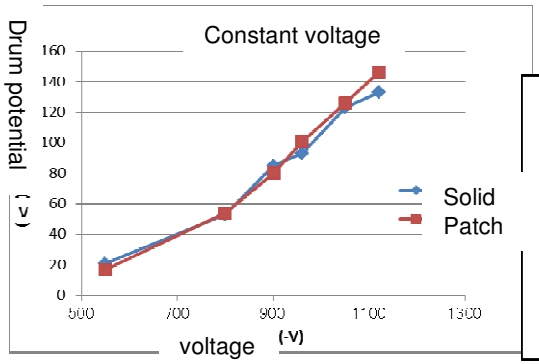
Adopt Constant Voltage Control System

Control Constant Current → with Constant voltage control resistance feedback
(Control charge up of the toner and reduce uneven transfer)

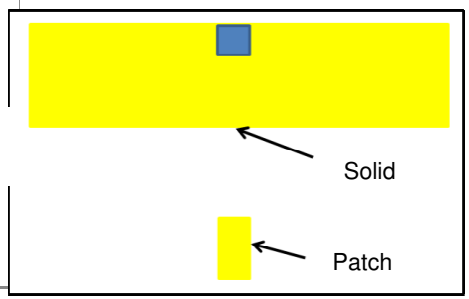
Constant Current Control: As applied electric field fluctuates depending on the image size, the toner image charged up on the large area section which is the factor for the grainy image

Constant Voltage Control: Perform optimal applied voltage control by providing a feedback circuit which detects impedance of the transfer nip





Advantage to have Constant voltage



When applying constant voltage, toner charge amount between big size and small size will have no difference

As Primary transfer voltage can set low, it will be possible to reduce second transfer current as well

→ Solve the problem of grainy image caused by the transfer factor

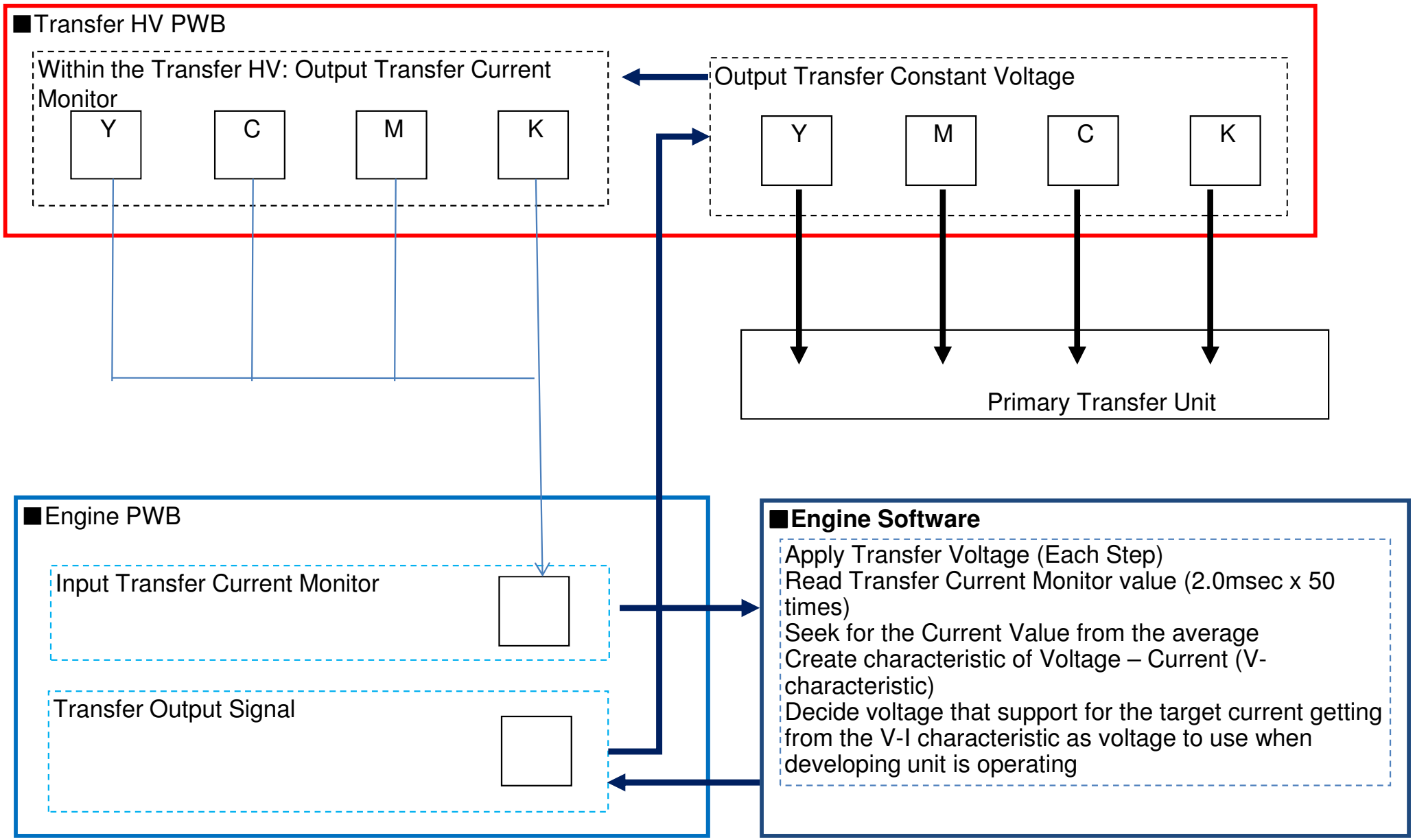
Primary Transfer Constant Voltage Feedback Control

Primary Transfer Feedback Control:

Constant Current Control (Old) → Constant Voltage Control (New)

Once Transfer Roller Resistance, Drum Thickness, Temperature/Humidity are changed, characteristic of the Voltage/Current will change, therefore, obtain the Transfer Current Monitor value when developing unit is not using. Then, optimal voltage will be decided by the characteristic of the Voltage/Current of that value when developing unit operates. * Control Timing: when replacing the Primary Transfer Unit, machine inside temperature changes more than 3 degrees C during the print, when printing more than 5K, perform after the JOB

Primary Transfer Constant Voltage Feedback Control



U101: Adjust 1st Transfer Voltage Output

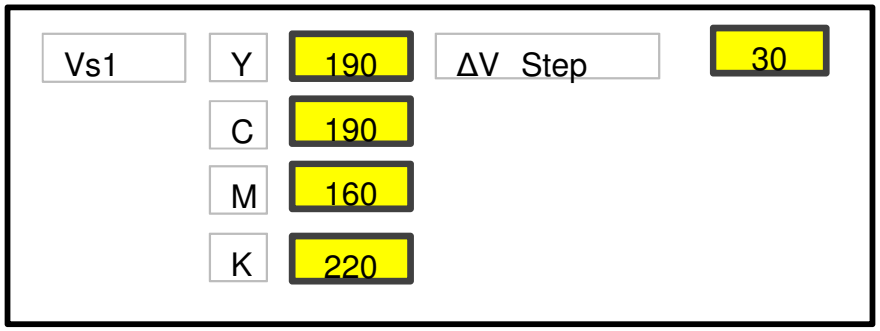
U101: Adjust 1st Transfer Voltage Output

U101 Setting	Explanation	Setting
Voltage	Primary Transfer Apply Voltage: After Calibration is performed, changeable	Below
Altitude Adjustment	Adjust Primary Transfer Value when installing to High altitude location	1st side/2nd side
Current	Set Primary Transfer Control Current Value that will be the target	Target/Target 2nd
Final Current	Primary Transfer FB Final Control Current Value	Target/Target 2nd
Prohibit Reflection	Set Primary Transfer FB Prohibit Reflection	ON/OFF
Force Execute	Execute Primary Transfer FB Calibration	Execute
Surround Correct	Set Primary Transfer FB Prohibit Environment Correction	ON/OFF

Voltage Setting Value	Explanation	Setting Value
Target	Decide output voltage by the Calibration	C/M/Y/K
Step	Apply Step Voltage (Changeable voltage value during the Calibration)	After applying the Voltage, in case if the current value is higher/lower against the target based on the current measurement result, setting value should be matched up to the target based on the setting value step by up and down the setting value (Default: +30)
Value	Primary Transfer Final Apply Voltage (Front side)	
Value 2nd	Primary Transfer Final Apply Voltage (Back side)	

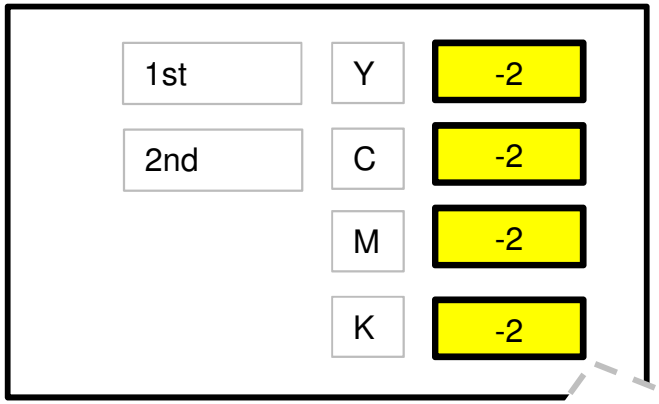
U101: Adjust 1st Transfer Voltage Output

Voltage Target: Measuring Voltage setting screen/ Step



Vs1	Y	1900[V]
	C	1900
	M	1600
	K	2200
ΔV Step		300

High Altitude Location



I target(high) Difference value for the high altitude mode	1st Side	Y	-2[μA]
		C	-2
		M	-2
		K	-2
	2nd Side	Y	-2
		C	-2
		M	-2
		K	-2

Against I target, display added value in case of High altitude location
Half, ¾, B/W are as a result of the linear velocity proportional

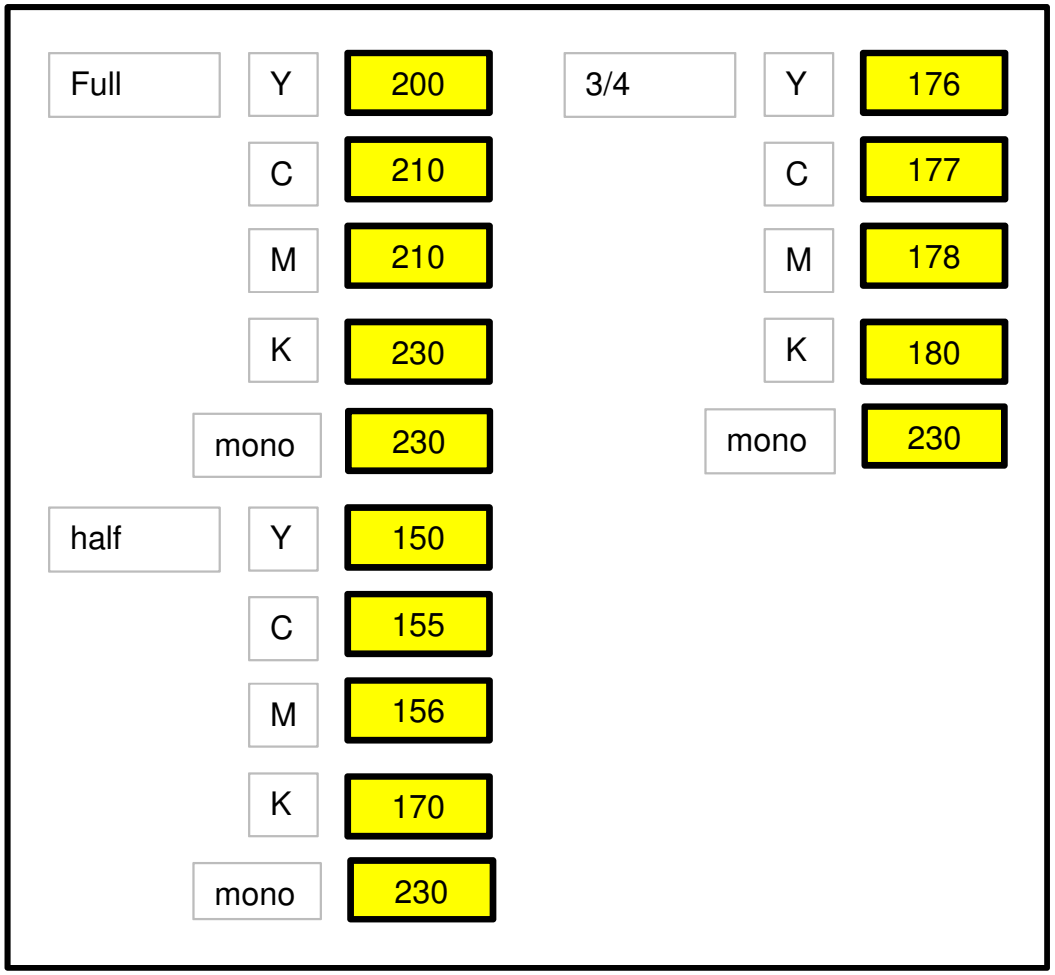
U101: Adjust 1st Transfer Voltage Output

Voltage Apply Voltage Display

Front side

Back side

Value/Value 2nd Voltage



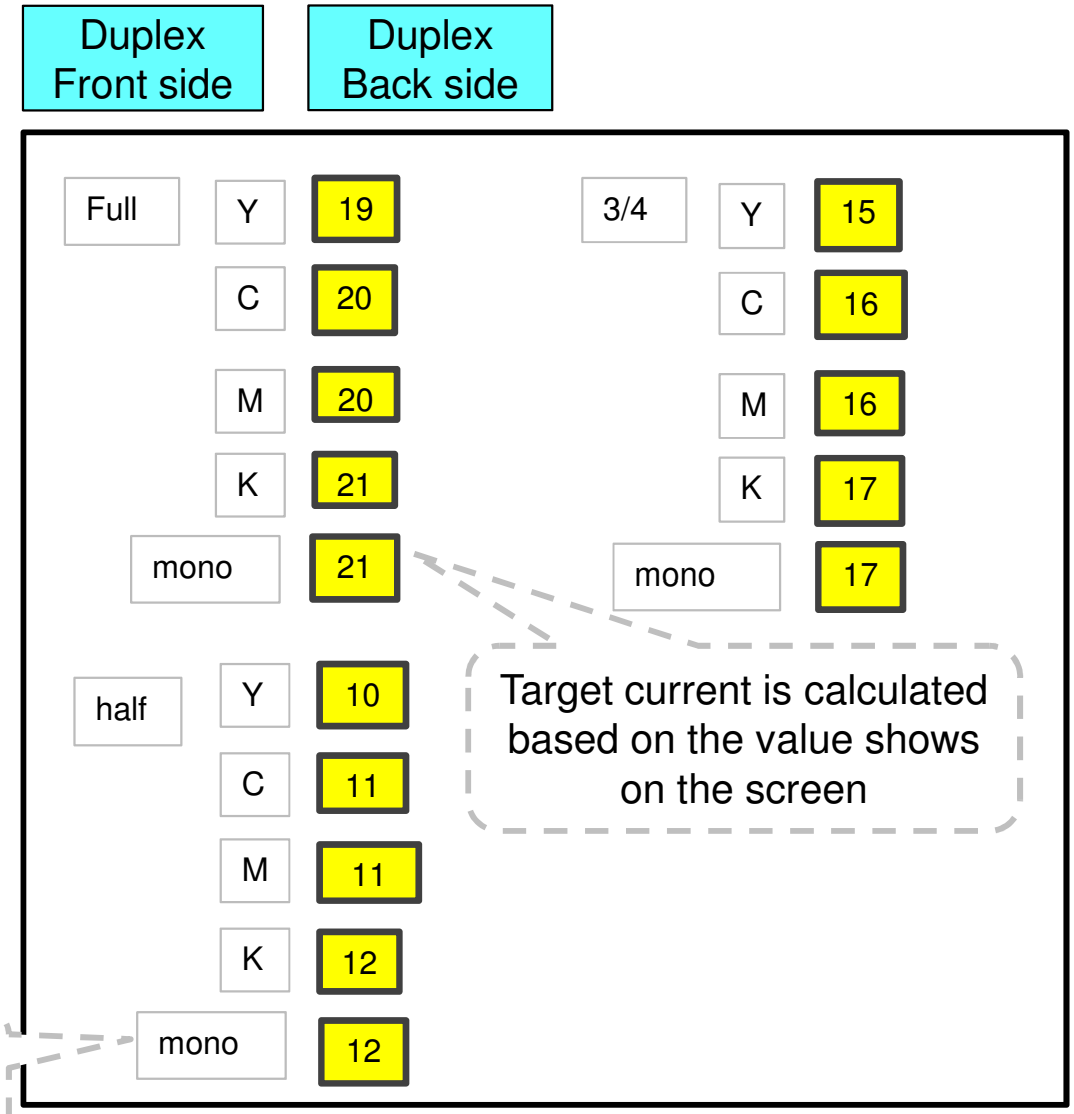
Full	Y	Display the result of Calibration [Unit: 1000V]
	C	
	M	
	K	
	mono	
half	Y	
	C	
	M	
	K	
	mono	
3/4	Y	
	C	
	M	
	K	
	mono	

U101: Adjust 1st Transfer Voltage Output

Current → Target/Target2
Target Current Setting Screen

In case Surround Correct is ON (Auto), decide Target Current by performing Environmental correction that input value should be as the N/N current value
In case of OFF (Manual), input value should be as the target current

Display the target current for Monochrome mode



3-8-6
Fuser Unit

Correction history

2016 5 10 Ver 1.1

P16,17, Silent Mode (Fuser temperature maintaining time adjustment)

The control is not available. So, eliminating from this document.

2016 6 24 Ver 1.2

P16 Fuser High Voltage PWB (Support for Electrostatic Offset) is transferred from the electric explanation

P17,18 Measure for the fuser static offset image are added.

Item number of Parts Belt Charger Ass'y is corrected. It should be 302ND94810 and not 302ND4810

P19 Handling when a trailing end image skews is added

P20 Adjust the fuser height to correct the skew feeding is added

Improvement points for the Sliding Belt IH Fuser

<Sliding Belt IH Fusing System>

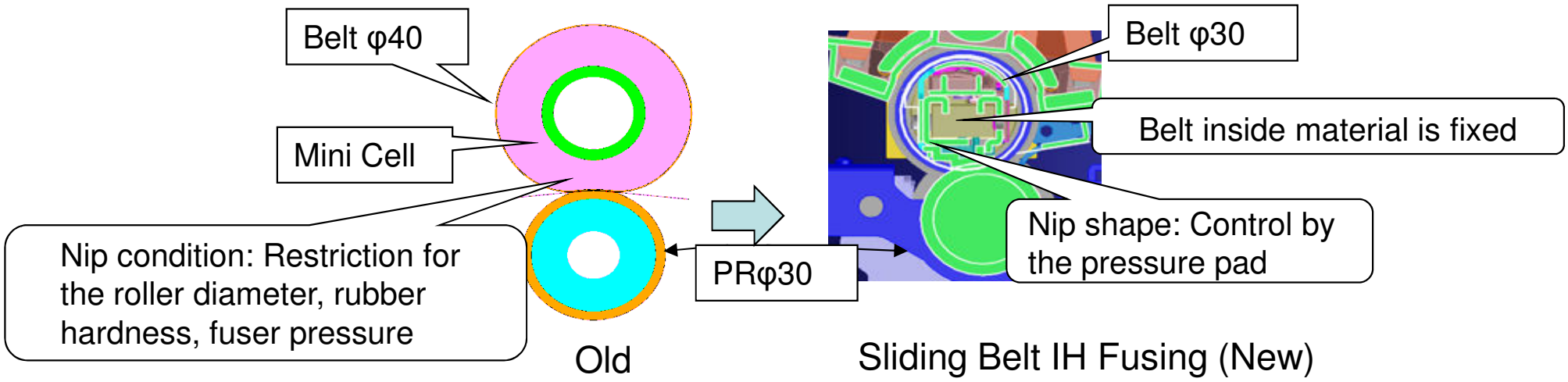
New IH Fuser: Heating section is configured with the pressure pad which locates at inside of the belt

1. Reduce the TEC value to support Energy Saving
   (Reduce the fuser drive time during the waiting time and Power consumption)
   a) Heat roller → Pressure Pad
   * Low heat capacity: Reduce heat capacity (heat loss) at heat roller side
   b) Change rubber material for the press roller to foam material which effects high thermal insulation → Reduce warm up time, improve energy saving performance (make the roller temperature goes up faster)
2. Nip formed by the pressing pad that does not rely on the roller outer diameter
   a) Make fuser belt smaller diameter → Improve paper separation performance
   b) Enlarge fuser nip width → Reduce paper crease, grainy image, Image deterioration
3. Long life: Measure for the Fuser Belt, bearing damage

Improvement points for the Sliding Belt IH Fuser

<Sliding Belt IH Fusing System>

New IH Fuser: Heating section is configured with the pressure pad which locates at inside of the belt



Sliding Belt IH Fuser Configuration

Lower Model: 25/32ppm, Upper Model: 40/50/60ppm

Fuser Edge section excess temperature increase control

1) Magnetic field shielding by the rotation type of Center Core (For Upper model)
2) Cooling the PR edge section by the FAN

Ni Fuser Sliding Belt: creating the hard fuser nip shape and sliding rotation for only fuser belt (drive from pressure roller) Φ30 (Common)

Release pressure by the eccentric cam
3 steps of the pressure release setting (Set the load of pressurization and depressurization in the spring)

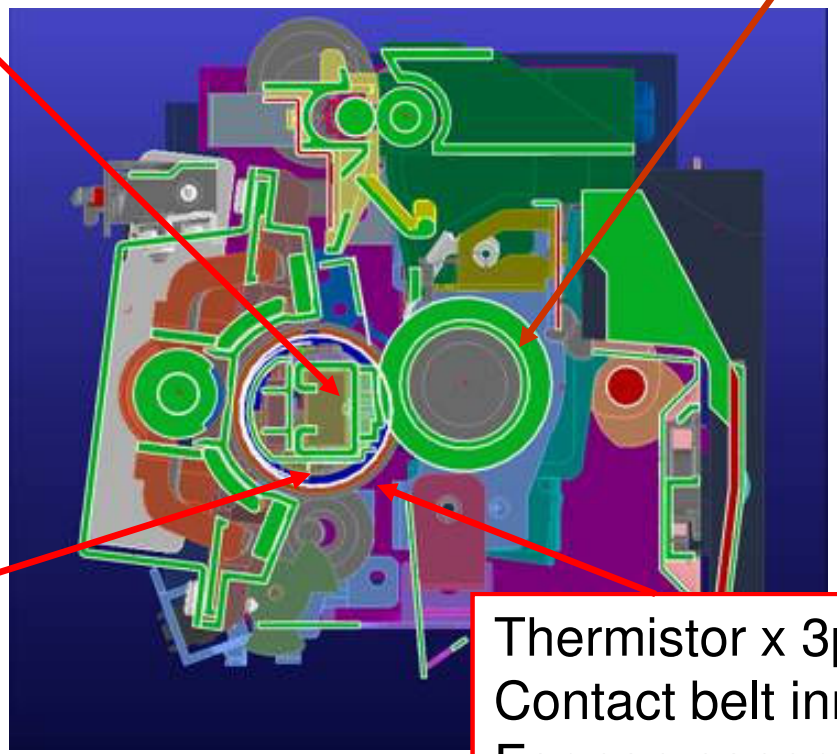
Fuser belt rotation detection Mechanism: The edge of the belt is gripped by the gear and detect the rotation of the belt

Sliding Belt IH Fuser Configuration

Lower Model: 25/32ppm, Upper Model: 40/50/60ppm

[Sliding sheet: Pressure Pad]
Belt inner surface and the sliding
Impregnation of the Lubricant (Si Oil)
Nip forming, Paper conveying

[Pressure Roller]
Lower model: φ30
Upper model: φ35

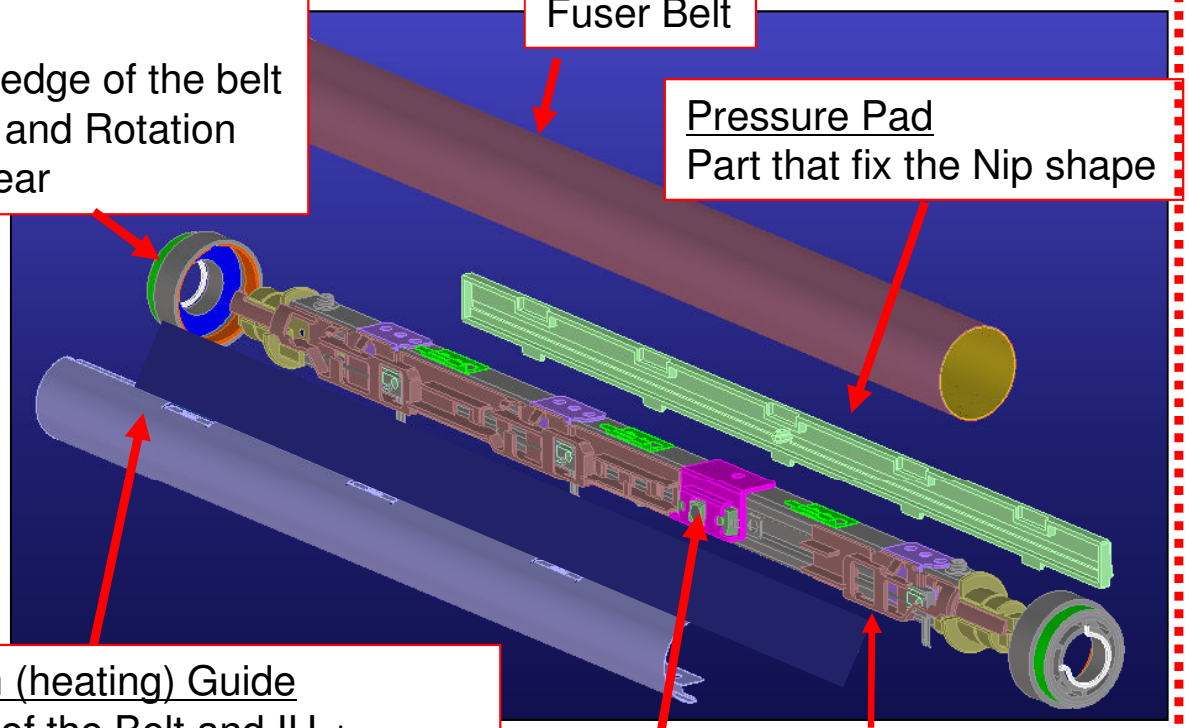


Thermostat x 1pc
Opposed to the inner surface of the belt guide

Thermistor x 3pcs
Contact belt inner surface
For non paper passing edge section x 2 positions/For Main control

Fixing belt internal structure

Fixing belt internal structure



Fuser Belt

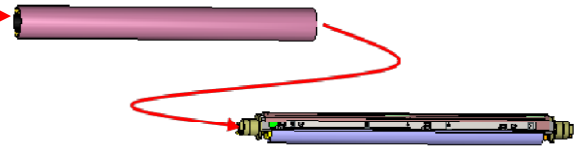
Belt Cap
Holding the edge of the belt (Protection) and Rotation detection Gear

Pressure Pad
Part that fix the Nip shape

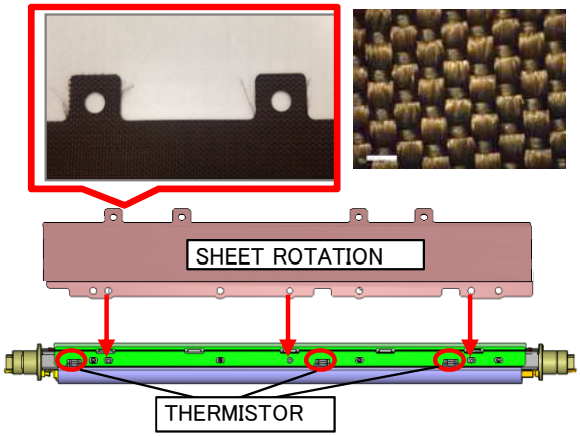
Belt tension (heating) Guide
Positioning of the Belt and IH + Auxiliary heating of the belt
Material: SUS t0.2
Stabilization of the belt trajectory
Catch of the leakage magnetic flux
Absorbing the magnetic flux passing through the belt (Ni), the magnetic material to generate heat on the belt
* Fixed against pressure stay

Pressure Stay

Thermo cut
Operating in the abnormal heat generation of the belt tension guide → Measure for abnormal stop at the time of belt damage



Fluorine fiber

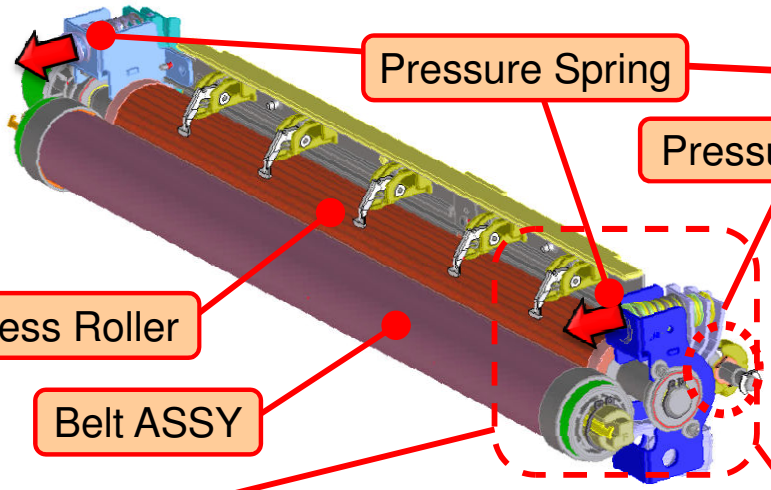


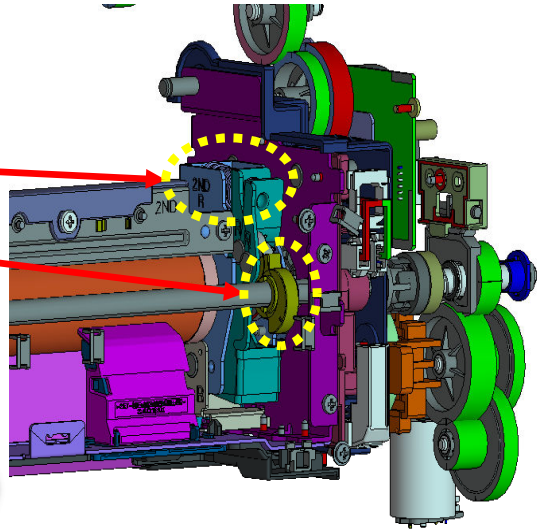
Belt Tension (φ28)

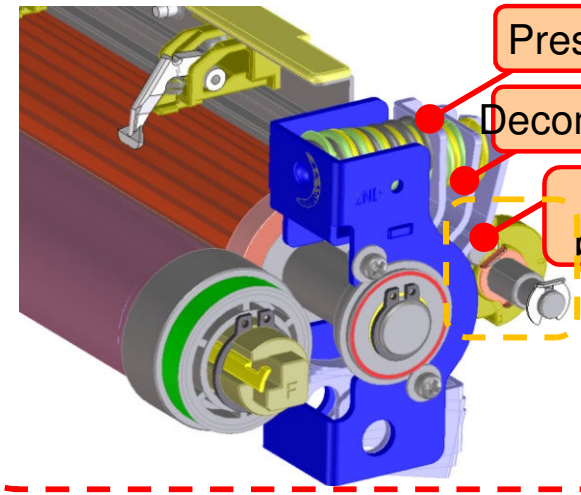
Pressure Stay

Fuser pressure release structure

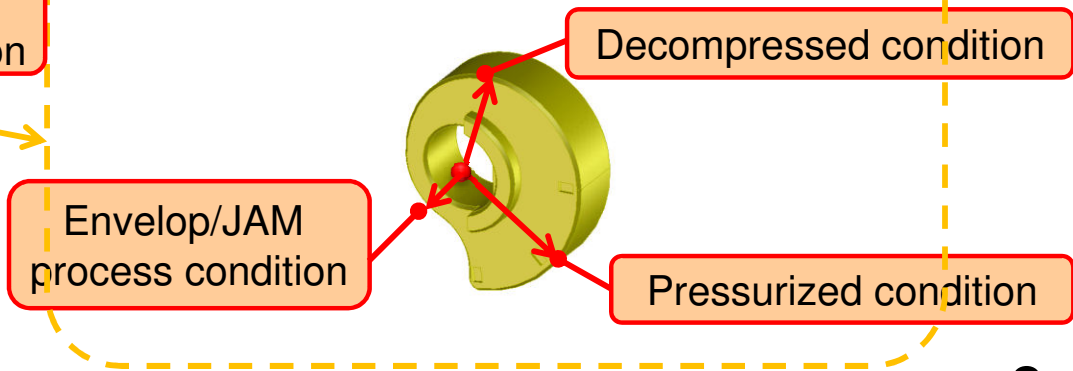
3 steps of the pressure condition → In addition to the pressurization and decompression, creating the Envelop/JAM processing pressure to improve JAM process capability





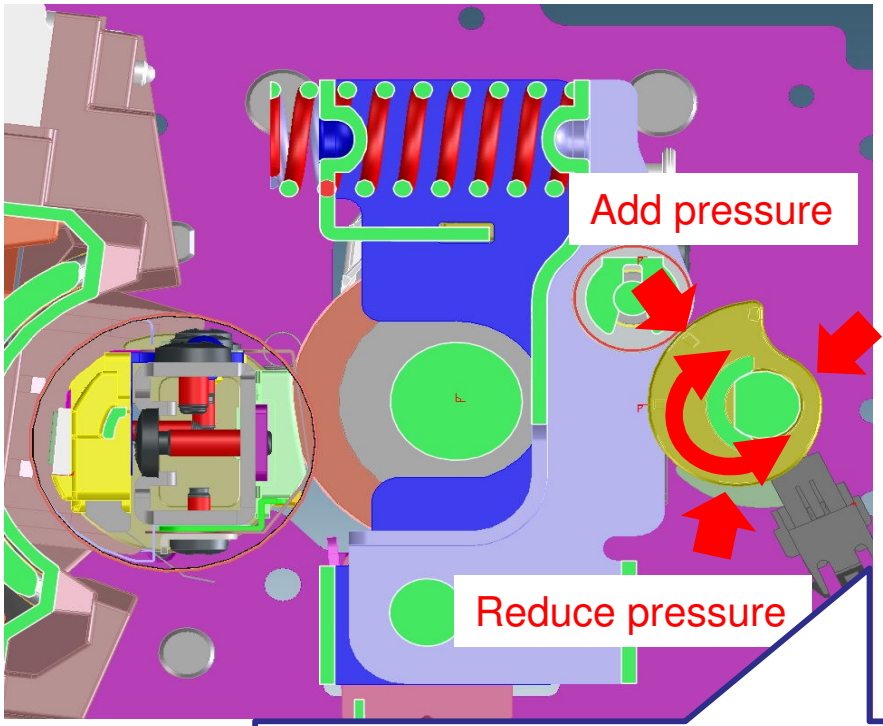


- At normal printing → Pressurized condition
- At waiting period → Middle pressurized condition
- Envelop printing/JAM process → Decompressed condition



Pressurization mode

3 Steps Pressure Release



- **Add pressure (Stop by the HP detection)**
  When feeding the paper and detecting HP
  *** PI Sensor ON and stop after 0.4sec**

Timer: 1.5sec

- **Reduce pressure (Middle pressurized condition)**
  At Ready condition

Timer: 1.5sec
* After HP detection

Timer: 3sec

- **Envelop/JAM process**
  Envelop printing, JAM/Error/Cover open

<C6610: Error Detection for the Fuser pressure release detection sensor>

1. From start adding the pressure operation and PI sensor does not turn ON even 6.0sec passed
2. From start reducing the pressure operation and PI sensor does not turn OFF even 3.0sec passed
3. Detect 200ms of lock signal for the fuser pressurized motor

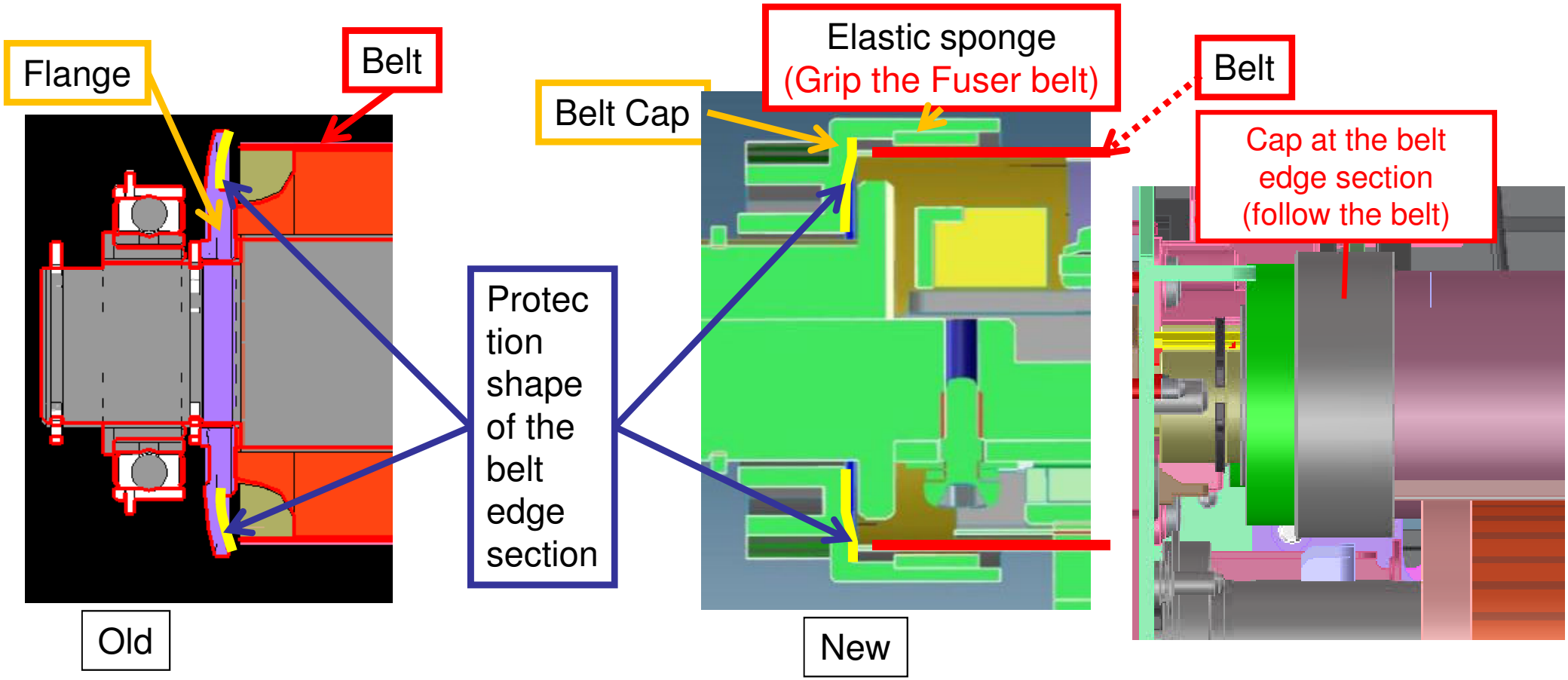
Fuser Belt: Long life (300k → 600K)

Measure for the Belt breakage: In case if the crack occurs in the edge of the fuser belt, the position of the crack is the starting point and the belt will be worn out

Present model → In order for not to get the crack at the edge of the fuser belt, the shape is to protect the edge of the fuser belt

New Model → Same protection shape and protect in a configuration to receive the edge of the belt surface all around
Follower rotation against the belt
(Insert sponge between Belt and Belt Cap and Belt Cap rotate together with the Belt so that the edge of the Belt will be protected)

Fuser Belt: Long life (300k → 600K)



IH Fuser Safety Design

1. IH Control PWB

   Control IGBT for IH Coil Drive by the Engine PWB through Photo coupler (IGBT control → Engine CPU)

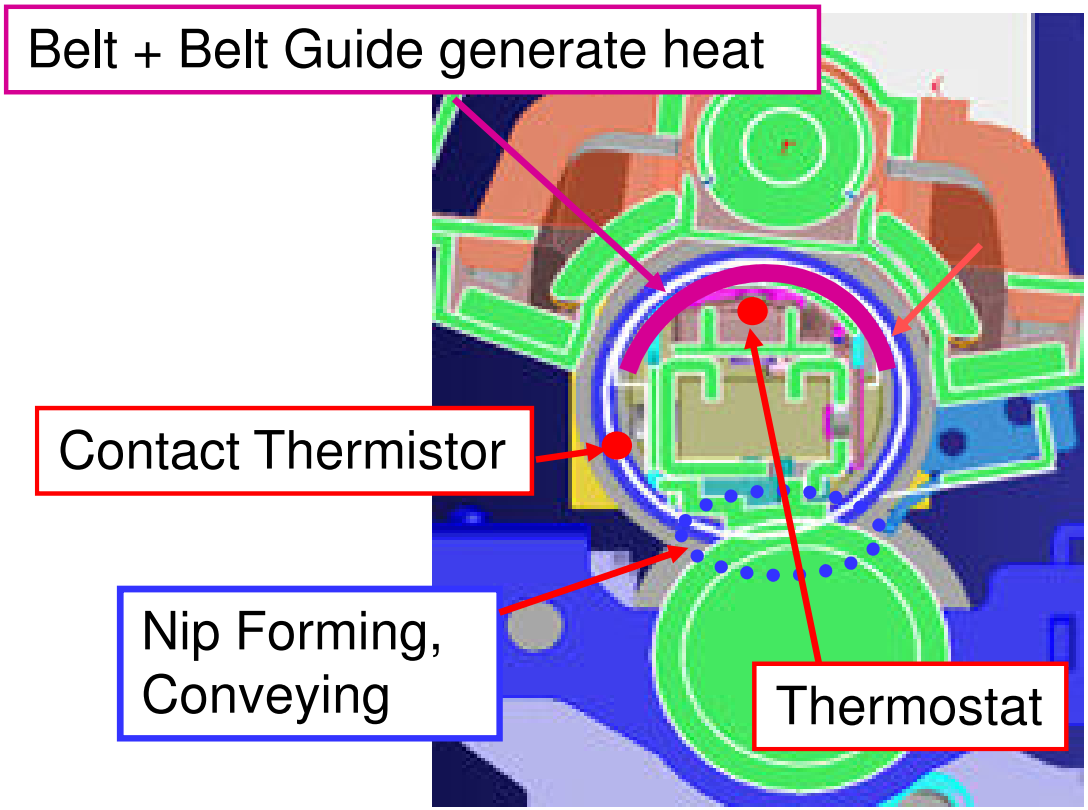
   The circuit structure is to cut off the power of the Photo coupler by the thermo cut in the fuser unit

2. Thermistor for the roller center temperature monitoring to feedback the temperature control

   Non-contact thermistor (present) → Use Contact Thermistor

   * Contact position is the guide inside of the belt and possible to detect the temperature with high accuracy

IH Fuser Safety Design



C6740: IGBT Thermistor High Temperature Error

In case of the value of the IGBT temperature data that obtained from the Power Management IC detects more than 110 degrees C to 117.5 degrees C for 1 sec. continuously Cooling failure (accumulation of the dust) for the FAN that cools the IH control PWB IGBT

C6760: Excess Current Error

In case if input current value detects more than 20A (for 100V version) or 10A (for 200V version) for 200msec continuously, the failure of the IH PWB

Measure for thin paper separation capability at the fuser section

Phenomenon

If the four-color composite solid image of 30mm width at the leading edge of the thin paper/52g paper is printed, the paper stick to the fuser guide and become accordion JAM (J420X) or wavy paper (High humidity environment: In case if the paper gets high moisture content)

Factor

Fusing force of the toner is stronger than the hardness of the paper, the paper might curl hard at the time of separation

Measure

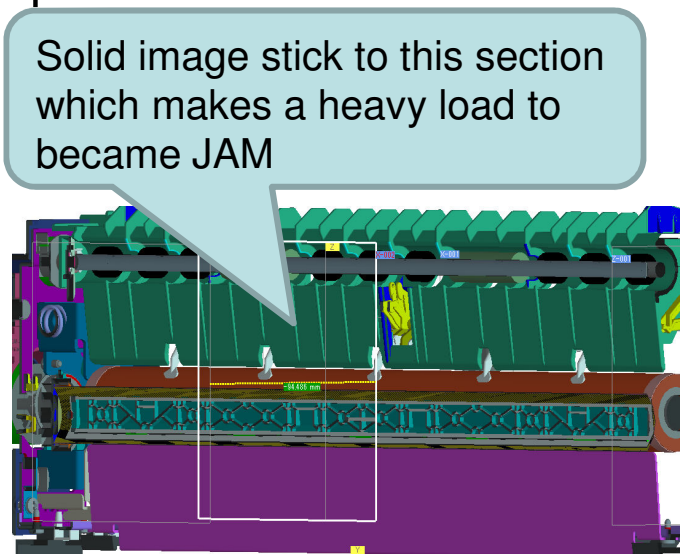
<Measure when J420X occurs>

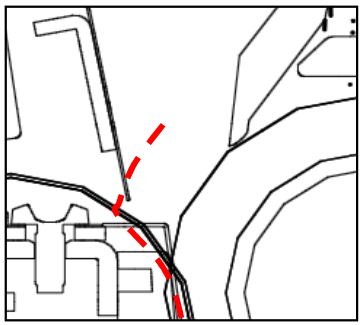
In case if solid image of 30mm width at the leading edge of the thin paper (less than 55g paper),

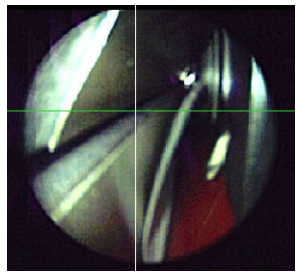
Change "paper type" at the System Menu → Cassette/MP Tray Setting → Cassette X → Media Type → Custom 7

And also

Change "paper weight" at the System Menu → Common Settings → Original/Paper Settings → Media Type Setting → Custom 7 → Paper Weight → Light (52-59g/m2)







Measure for thin paper separation capability at the fuser section

In case if JAM 420X occurs, select Custom 7 (Cassette Media type) and Light (52-59g/m2) (Paper weight)

Measure for the separation of thin paper, the leading edge margin 3mm

* Custom 7: Thin paper setting, this is the mode for supporting fuser separation failure by reducing the conveying speed and fuser temperature (after changing the setting, [Adjusting] is displayed until the fuser temperature goes down)

(Fuser temperature will be reduced up to 115 degrees C and control with half speed

* Normal condition: Normal 1 (Thin paper) → Full speed)

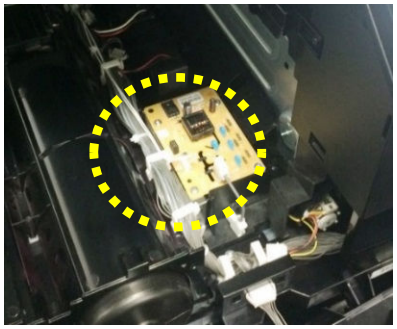
Note: As lowering the fuser temperature, it is necessary for the waiting time of a few tens of seconds to several hundred seconds until secondary paper feed starts

Fuser High Voltage PWB (Support for Electrostatic Offset)

Phenomenon

- Depending on the paper, half image appears at second round of fuser belt as image offset

Fuser High Voltage PWB



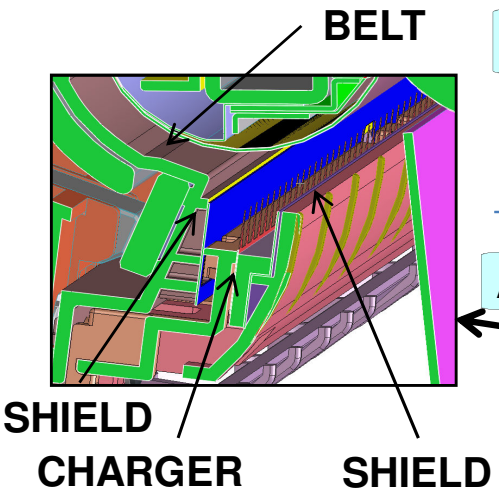
Factor

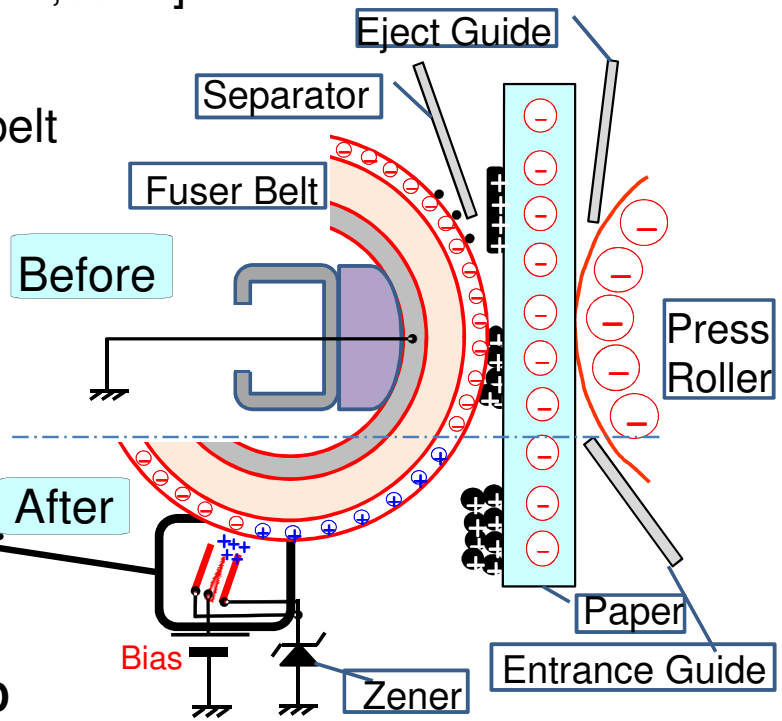
- PFA tube on the surface of the fuser belt is charged by the friction charge with the paper, pull up the toner on the surface of the paper → After feeding Solid + White band continuously, print half image, then offset occurs only on the white section
  (Belt charge amount [solid section.: -100V], [White section: -1,000V]

Support

- As applying Bias, the electrical field occurs between fuser belt and the paper, then control that the fuser belt pull up the toner * the method to apply bias:
  1. Discharge by the needle

<u>Add Fuser Belt Charger</u>
Install High Voltage Electrode lower position of the IH unit
Supply the charge to the belt and eliminate the potential difference

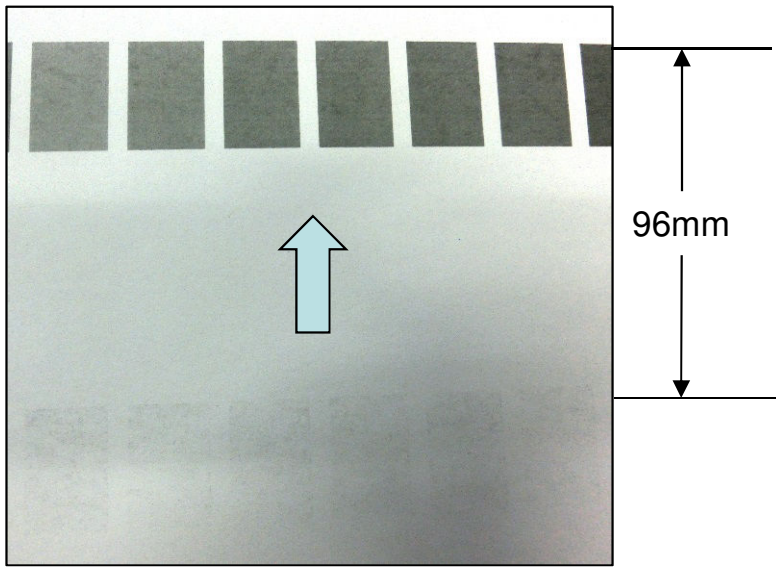




Measure for the fuser static offset image

< Phenomenon>

If there is a solid or halftone image on paper, when paper is separated from the fuser belt, a positively charged toner is attracted to a minus charged fuser belt and causing the offset image about 96mm interval when a fuser belt rotating 2nd round.



Offset image

<Cause>

The surface of fuser belt is charged minus by paper static during feeding.

<Measure>

Apply the positive bias to the fuser belt surface to control the adhesive of toner.

*To compensate the reduction of charging effectiveness due to attraction of a toner material to the charger needles during a long usage, increase the applying current step by step according to the U167 Correction value.

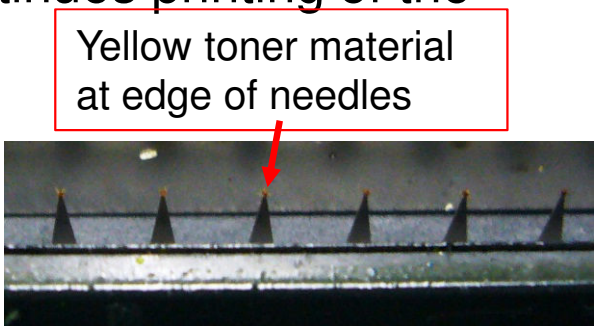
* This bias value can be changed by U193 Bias (default: lower end model 50 (5μA). However, increasing this value too much, attraction of a toner material is increased and the fuser offset image easily occurs after a temporary recovery .

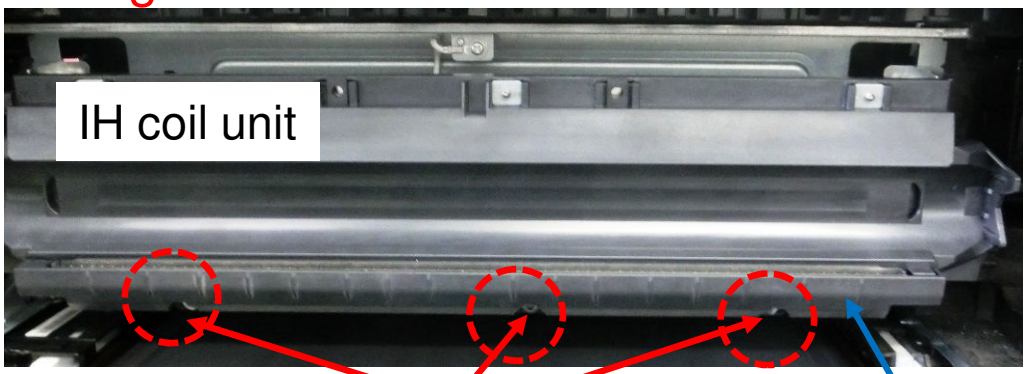
Measure for the fuser static offset image

<Measure for static offset image at a solid or halftone printing>

Toner material (yellow) attaches and accumulates to the tip of fuser charger needles when printing a large amount sheets with the high coverage color original. When accumulation of toner material is increased, the bias applying effectiveness to the fuser belt is decreased and a offset image might appears during continues printing of the solid or halftone image.

If the offset image at fuser belt interval (96mm) can not be eliminated during solid or halftone printing, replace the Parts Belt Charger Ass'y (302ND94810) and clear the U167 Correction (correction fuser counts = coverage x a number of printed images)





<Replacing procedure>

Fuser charger needles ass'y

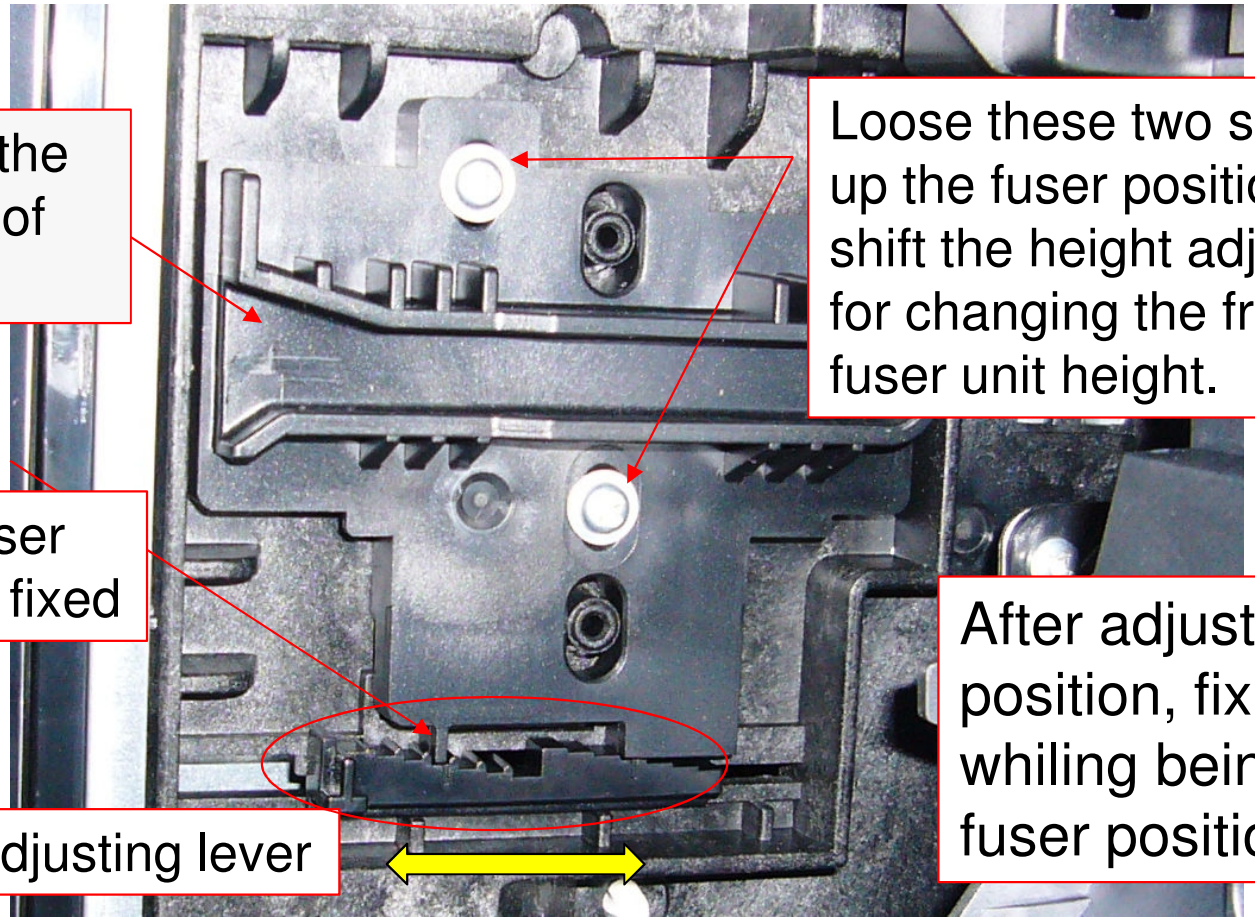
1. Remove the Fuser unit.
2. Remove 3 screws for the fuser changer needles ass'y at lower part of the IH coil unit.
3. After replacing, clear the U167 Correction (bias compensation count)

Handling when a trailing end image skews

<How to handle when a trailing end image is skewing>

Re-install the fuser unit. * Insert the positioning pins at left and right of unit straight along with the guides at the front and rear frames and check that the left and right of unit is securely locked

Front frame after detaching the fuser unit



Guide to insert the positioning pins of front side fuser

Loose these two screws and lift up the fuser positioning guide to shift the height adjusting lever for changing the front side of fuser unit height.

Front side fuser unit height is fixed

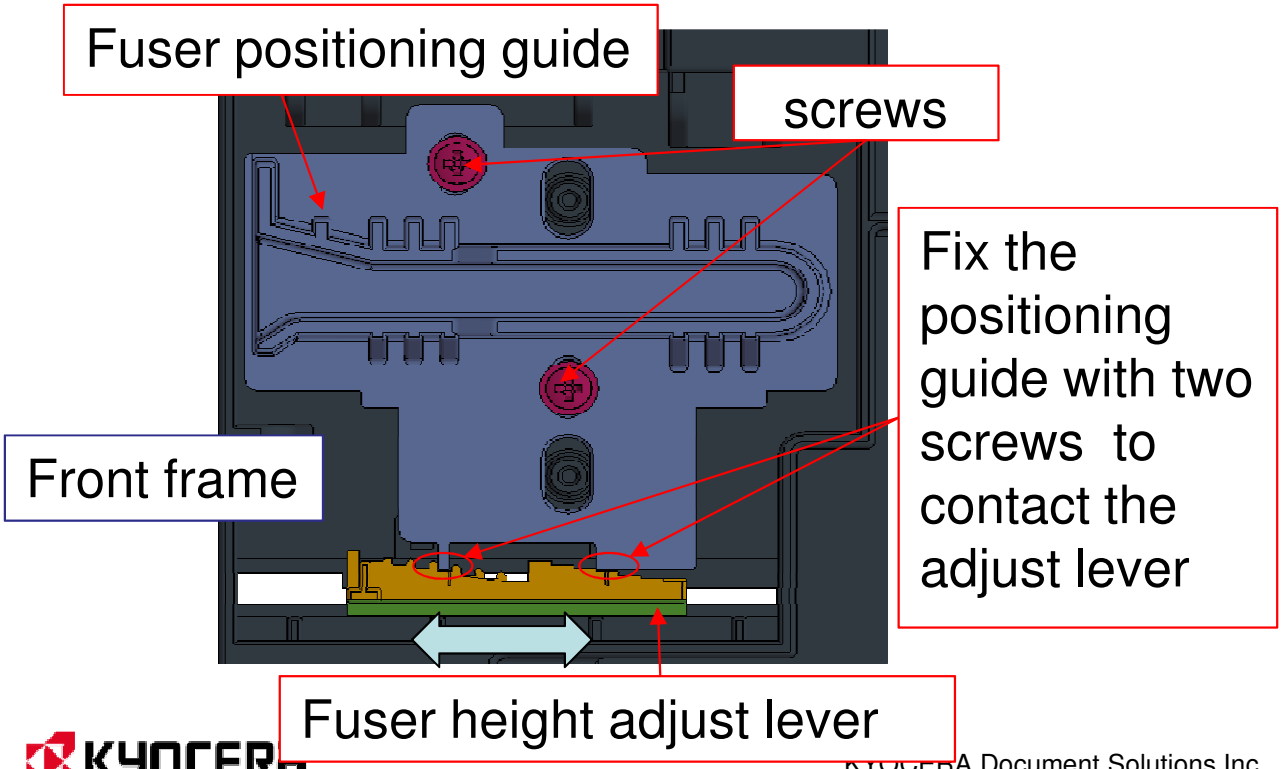
After adjusting the position, fix the screws whiling being lower the fuser positioning guide.

Fuser height adjusting lever

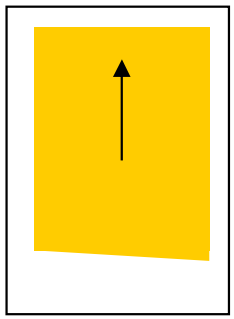
Adjust the fuser height to correct the skew feeding

<Adjusting when a training end of image is skewing>

1. Detach the fuser unit.
2. After loosing two screws to fix the fuser positioning guide at the front inner frame, lift up the positioning guide to shift the fuser height adjusting lever.
   *Amount of change:
   When a rear side of image is shorter One step Up: +0.5mm increase
   When a front side of image is shorter One step down: +04mm increase
3. Fix the screws after being lower the fuser positioning guide to contact with height adjusting lever.



<Trailing End Skew Image>



When a image at the front is shorter. slide the adjusting lever toward to the inside of machine.

3-9-1

FAX System

20160229

FAX DIMM → Save (Store) in the SSD/HDD

<Changed point compared with the present model>

1. When setting up, it is not necessary to install FAX DIMM to the Main PWB
   * New FAX System: DIMM Memory is not bundled
2. Change storage location of the FAX RX image (SSD is bundled as the Standard Storage location)
   FAX DIMM → SSD (In case Data Security Kit is installed, it will be HDD)
   (Note) FAX Storage location in case Data Security Kit is installed:
   → HDD (IEEE 26000 Authentication, Support for Common Criteria Certificate)
   * It is possible to change the storage location to SSD by U671 (Clear FAX Back Up Data) (However, it will be Nonconformity to IEEE2600 (ISO15408)
   U671 Change FAX Storage: Select HDD → SSD

Old: **FAX DIMM** 12MB (Option: 128MB)

New: **SSD/HDD** (*) 128MB (No option)
(*) …When using Data Security Kit

FAX related Maintenance Mode

<U671: Clear FAX Back Up Data>

3. U671: Change FAX Back Up Data Clear

* As storage location of the FAX RX image data changes from FAX DIMM to SSD

1. "RESERVATION CLEAR" → Deleted
2. "RECOVERY FAX DIMM" → "RECOVERY FAX Storage"

In case if SSD is installed to the different model (same series of the model), perform when printing the FAX image data ("Complete" will display after finished)

3. "FAX DIMM CLEAR" → "FAX Data CLEAR"

Perform when C0650 occurs (after finish clearing the image, return back to the original screen

4. New: "Change FAX Storage"

* Display when Data Security Kit is operating, possible to change the storage location of the FAX image (HDD/SSD)

Note when replacing Main PWB (FAX related)

1. When replacing Main PWB

When replacing Main PWB, install SSD that was used with old Main PWB to New Main PWB

FAX RX Image which is stored in SSD will be transferred

2. When replacing MFP (machine itself with FAX installed)

The procedure to install SSD from old MFP to New MFP

1. C0650 occurs at the power ON
2. Clear C-Call with the Maintenance Mode U671 (Clear FAX Back Up Data)
   * U671: Perform FAX Data Clear

C0650: FAX image storage device (HDD or SSD) pair check error

Measure: Perform U671 FAX Data CLEAR

C0650: C-Call depending on the data in the storage not in the device

(This C-Call occurs even the storage location changes from DIMM to SSD)

FAX related Maintenance Mode

<The way to go in the Maintenance mode when the FAX RX document is kept retention>

If the FAX RX image is remaining (Except the image in the FAX BOX), when turn ON the machine, the print JOB for the FAX RX document starts

It is not possible to go in the maintenance mode when JOB is performing

In case to perform the maintenance mode (necessary to go in the maintenance mode at time of the repair), turn the Power ON without installing the FAX board so that the machine will start without FAX RX document print JOB operation

→ EX: In case of the condition that the Engine PWB got damaged which can not print but wants to export FAX image

<Changed points for the FAX related Maintenance Mode>

1. U024: FAX RX image will be cleared with Full Format

   SSD format can be done individually separated from HDD

   When performing Full Format, as FAX image is stored in SSD/HDD,

   the message to delete [FAX Image] will be displayed on the screen is added

   * FAX Image will not be deleted with Data Format

3-9-2

DP:

DP-7100/7110/7120

Revision History

2016 7.27

P7 DP original width detection sensor replacement: DP-7100

The convex position of the triangle engraved location is changed to the engraved concave position of the cover

P8 DP original width detection sensor replacement: DP-7100

No.3 Marking of matching position between cover and gear is changed.

DP Line up

	Upper Model	Lower Model
DP-7110 Duplex simultaneous Scanning Type	270 Sheets Stack (175) Scan Speed (S/D) 100/180ipm (80/160)	270 Sheets Stack (175) Scan Speed (S/D) 80/160ipm (80/160)
DP-7100 New High Speed Mechanical Reverse Type	140 Sheets Stack (100) Scan Speed (S/D) 80/48ipm (75/45)	140 Sheets Stack (100) Scan Speed (S/D) 80/48ipm (75/45)
DP-7120 Low Speed Mechanical Reverse Type		50 Sheets Stack (50) Scan Speed (S/D) 48/15ipm (48/15)

( ) Specification for the present model

DP Specification

		High Speed Mechanical Reverse DP-7100	Duplex Simultaneous DP-7110	Low Speed Mechanical Reverse DP-7120
Original Size		A6R - A3	A6R - A3	A5R - A3
Paper Thickness	Single sided	35 - 160g/㎡	35 - 220g/㎡	45 - 160g/㎡
	Duplex	50 - 120g/㎡	50 - 220g/㎡	50 - 120g/㎡
Scan Page / Scan Speed	Single sided	80ipm 520mm/sec	100ipm 520mm/sec	48ipm 245mm/sec
	Duplex	48ipm 520mm/sec	180ipm 520mm/sec	15ipm 245mm/sec

Model		Engine Speed (ppm)	DP Scan Page (ipm) Duplex Simultenous DP (Color 300dpi)	
			Single Sided	Duplex
Color	Mercury2	70/70	120	200
		65/65	120	200
	Venus2	55/50	80	160
		45/45	80	160
		35/35	70	100
		30/30	70	100
	Jupiter2	25/25	70	100
Mono	Zeus2	80	70	100
		65	70	100
	Gaia2	55	50	80
		45	50	80
		35	50	80
	Tomcat	35	50	80
		30	50	80

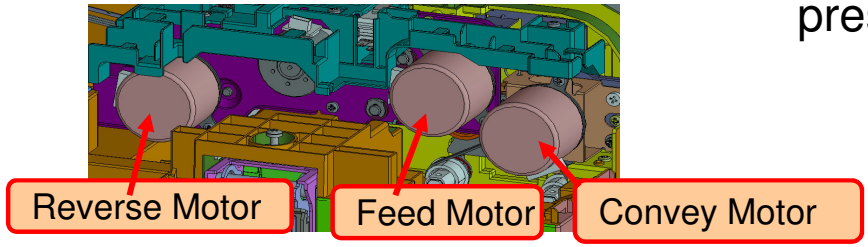
Model		Engine Speed (ppm)	DP Scan Page (ipm) Duplex Simultenous DP	
			Single Sided	Duplex
Color	Mercury3	80/70	120	220
		70/65	120	220
	Iris	60/55	100	180
		50/50	100	180
		40/40	100	180
		32/32	80	160
		25/25	80	160
Mono	Zeus3	80	120	220
		70	120	220
	Iris Mono	60	100	180
		50	100	180
	Tomcat2	40	80	160
		32	80	160

Quality Improvement Points

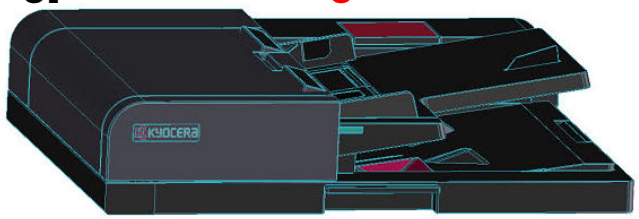
High Speed Mechanical Reverse Type

New

Newly equipped & Quality improvement
[Weight Saving] 14.5kg (DP-772) → 9.5kg
[Energy Saving] Adopt Inner rotor brushless DC Motor



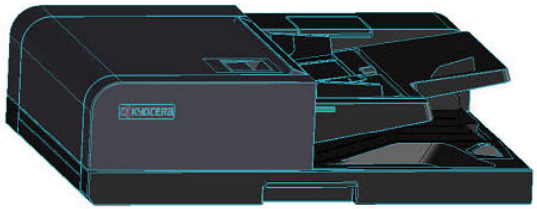
[Quiet]
Change branch guide, reverse pressure release drive method (Solenoid → Stepping Motor
[Measure for original size false detection]
Change original size detection method
PWB + Pin → Rotary resistance
[Measure for black line in the image when scanning] Ink removal guide



Duplex Simultaneous Type

Diversion of Present model

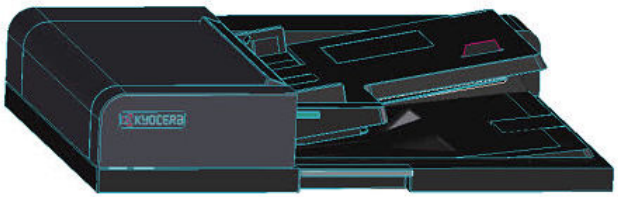
Newly equipped & Quality improvement
[Unified Design]
Change exterior design
Change scanning page (Adjust by the present Linear velocity



Low Speed Mechanical Reverse Type

Diversion of Present model

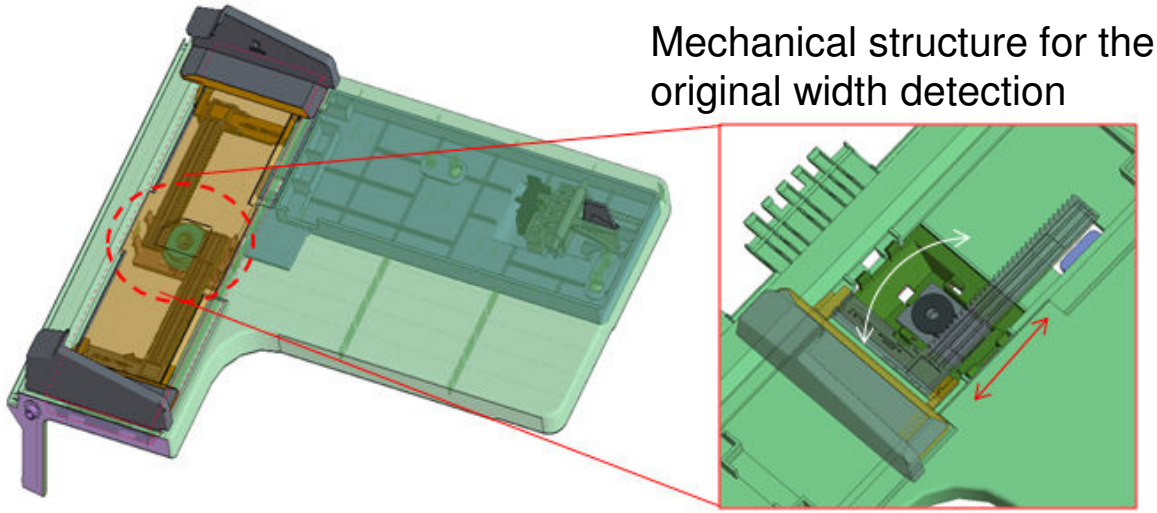
[Unified Design]
Change exterior design
Change interface line
D-sub → Connector



Original Width Detection: DP-7100

Original Width Detection
The Voltage value for the [Volume resistance] that installed at the center section changes in conjunction with the movement of the original side cursor
Using this mechanism, scan the position of the original side cursor and decide the width direction of the original size by measuring voltage value

Mechanical structure for the original width detection



Original side cursor

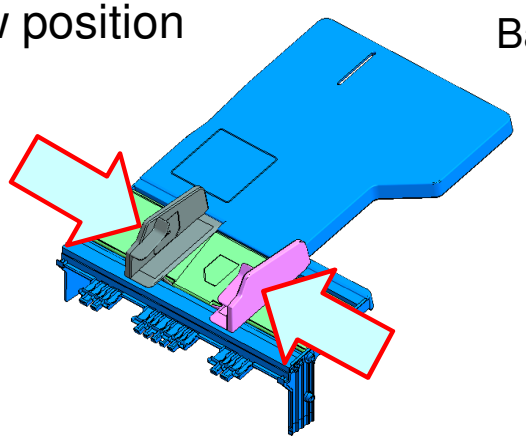
Width size false detection
Detection failure caused by the dust or other foreign substance contamination, sliding with the terminal → Rotary volume type sensor
* support for DP-7100

DP original width detection sensor replacement: DP-7100

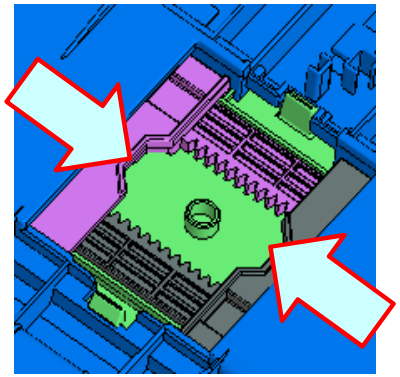
<The procedure for replacing the original width detection sensor>

After moving the original side cursor to the most narrow position, install original width detection sensor. Until the engraved concave position of the cover and concave position of the gear matches, rotate the gear to the clockwise direction

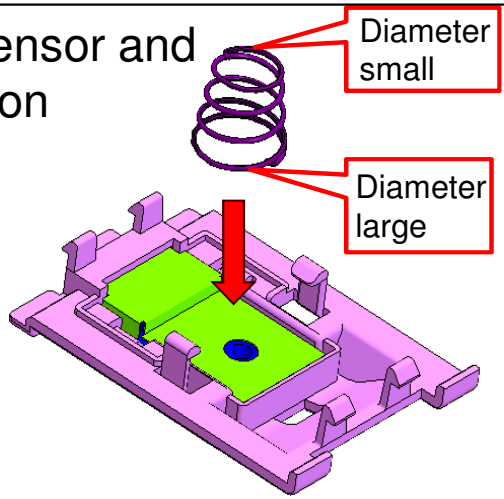
1. Set the original side cursor to the most narrow position

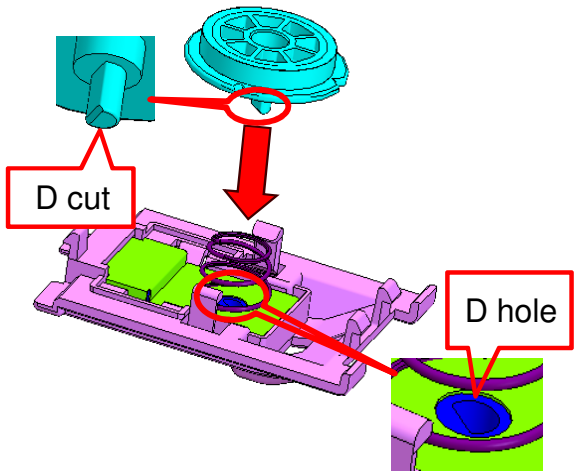


Back side of original table



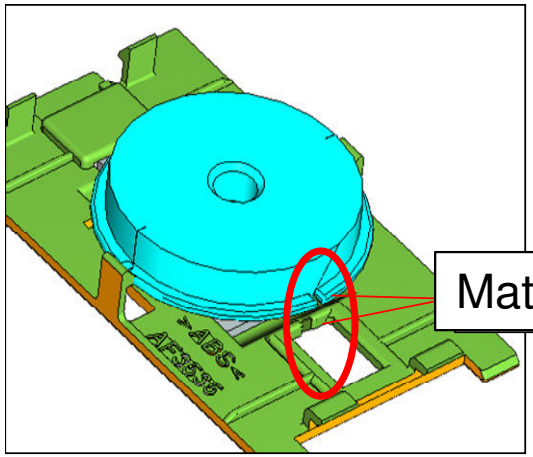
2. Replace the original width detection sensor and install spring, gear to the original location as showing on the right drawing



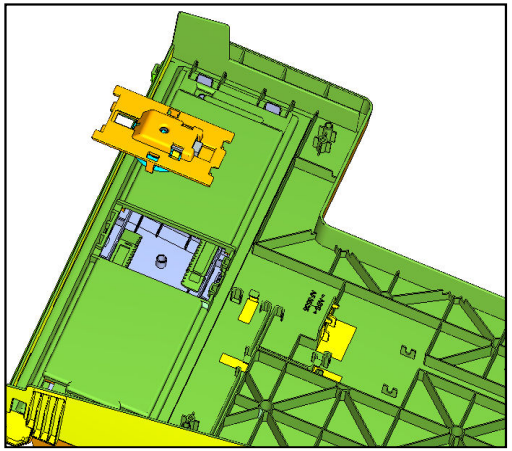


DP original width detection sensor replacement: DP-7100

3. Until the engraved concave position and concave position of the gear matches, rotate the gear clockwise direction



4. Set the original table to the original position



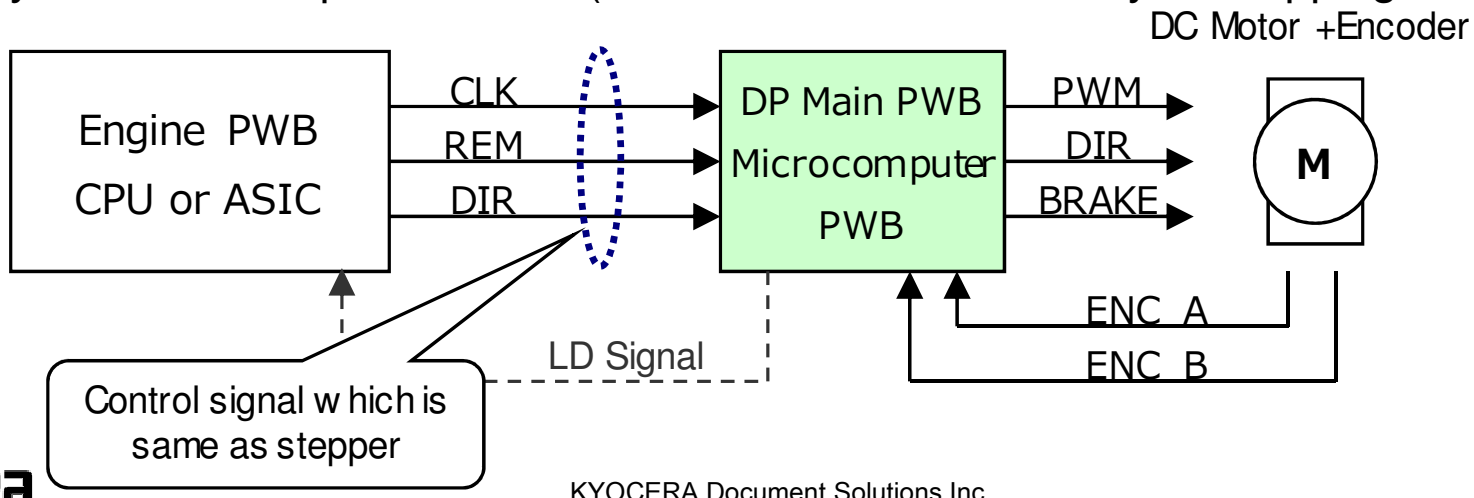
Drive Motor

Item	Motor type	Remarks
Lift Motor	Stepping Motor	Excitation method: 1-2 Phase excitation Rotate direction: Switch control (CW: Lift goes up, CCW: Lift goes down)
Branch Motor	Stepping Motor	Excitation method: 2 Phase excitation Rotate direction: CW fixed (CW: Branch Guide Drive, CCW: Unused)
Feed Motor/ Eject Motor/ Convey Motor	Inner Motor	Microcomputer control

<DC Brushless Motor with Encoder (Inner Motor)

Control the motor by the no. of pulse which coming from the encoder installed on the drive shaft of the motor

Using the location detection function of the motor, control there should not be any error with the target CLK by the microcomputer control (DC motor drives same way as stepping motor)

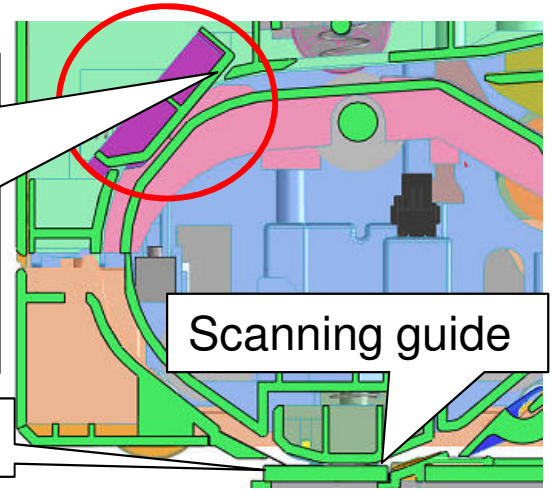


Install the guide for removing the foreign substance (New): DP-7100

Guide which is the measure for DP scanning original black line

To reduce the black line caused by sticking the foreign substance on the glass, remove the half dry ink on the surface of the original by moving the guide (In case if the guide does not move, not contact to the surface of the original which can't remove)

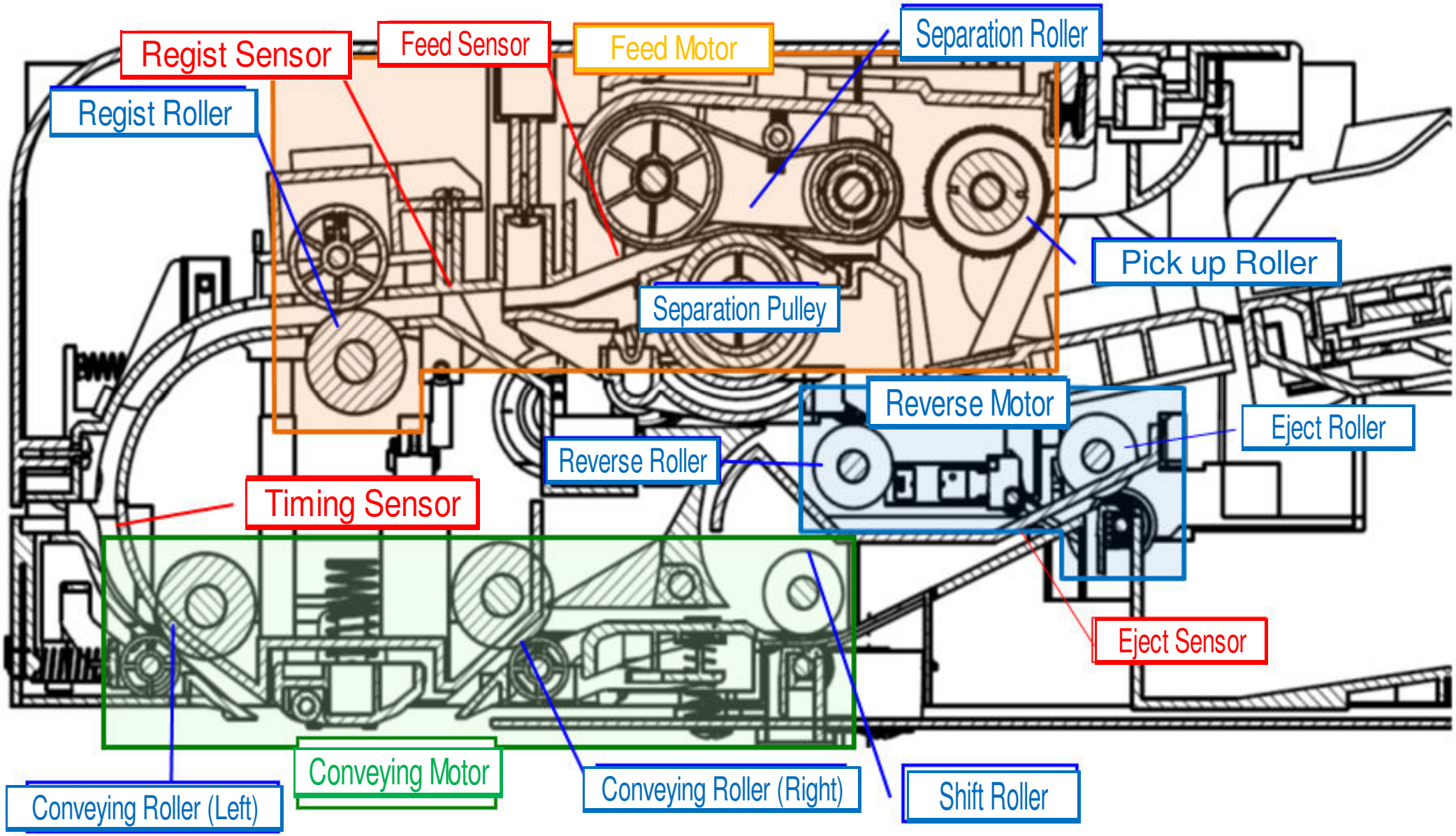
Remove Half dry ink/correction fluid by rubbing the surface of the original with this movable guide (spring running in the upper fulcrum)



<Measure to reduce the occurrence of the copy black line>

	Measure for the black line		Contents
1	Move scanning position	Scanning position, Move amount, No. of times, 0.85mm x 3 times	Scan the foreign substance stuck on the glass surface at the avoiding position
2	Optimize the gap between scanning guide and DP glass	Gap of the scanning guide: 0.8mm+/-0.1	Remove foreign substance stuck on the glass surface
3	Attach scraping film on the glass surface at the upper side of the scanning section	Film thickness: 0.5mm	Scraping the ink, etc. stuck on the original and prevent foreign substance from stuck on the glass
		Film leading edge position to Scanning position	* Note: If the film attachment position makes too close to the scanning position, the light amount will go down and density will change
4	(New) Install the guide for removing the foreign substance before the scanning position	Guide shape, gap between the guides: 2mm, level surface section: 10.2mm, Guide pressure: 0.25N	Remove the foreign substance on the original by the guide

Duplex reverse: DP-7100
Device configuration

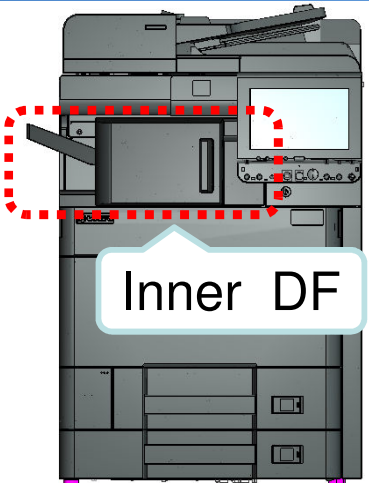


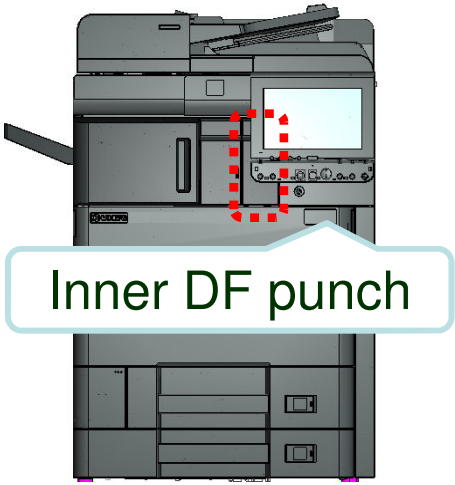
3–9–3
Inner DF

DF-7100 Inner DF

New Inner Finisher

1. Multi-position staple standard
2. Elevating eject tray to stack paper
3. Punch unit option





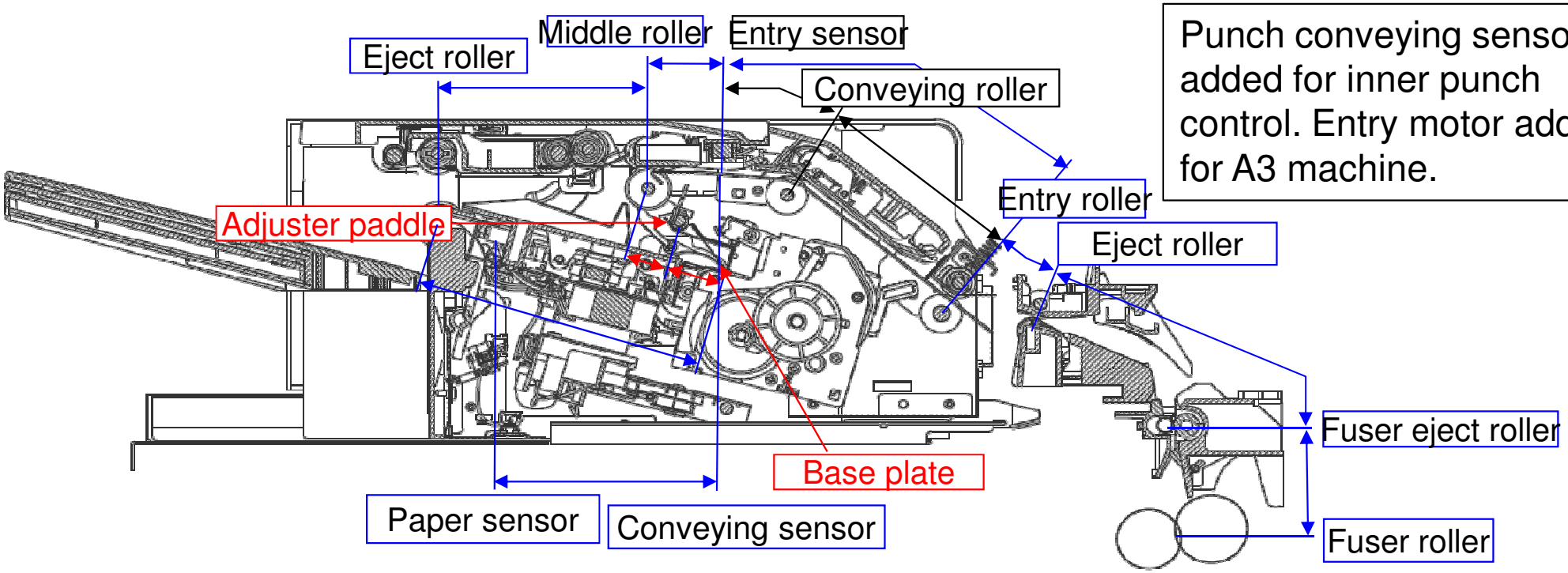
Inner DF DF-7100 specification	
Paper size	SRA3-A6R12x18-5.5x8.5 (Finished: A3 - B5) Postcard Envelope
Paper weight	52-300g/m^2 (106～300 g/m2 cover only)
Tray capacity	500 sheets (298mm length or more: 250 sheets) 80g/m2
Staple volume	A4/Letter: 50 sheets A3/Ledger : 30 sheets (90g/m2)
Staple position	2 at center, 1 bottom edge (angle) 1 top edge (flat) *single motor front/rear movement/rotated movement
Inner DF punch (option) specification for DF-7100 : PH-7100/7110/7120/7130	
Punch number	2-hole, 2/3-hole, 2/4-hole
Paper size	A3-A5R
Paper weight	52-300g/m^2

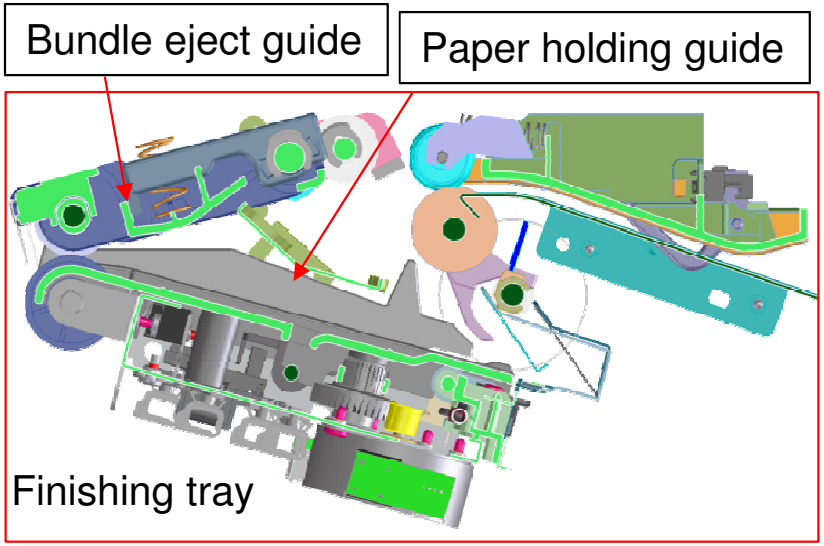
DF-7100 Inner DF operations

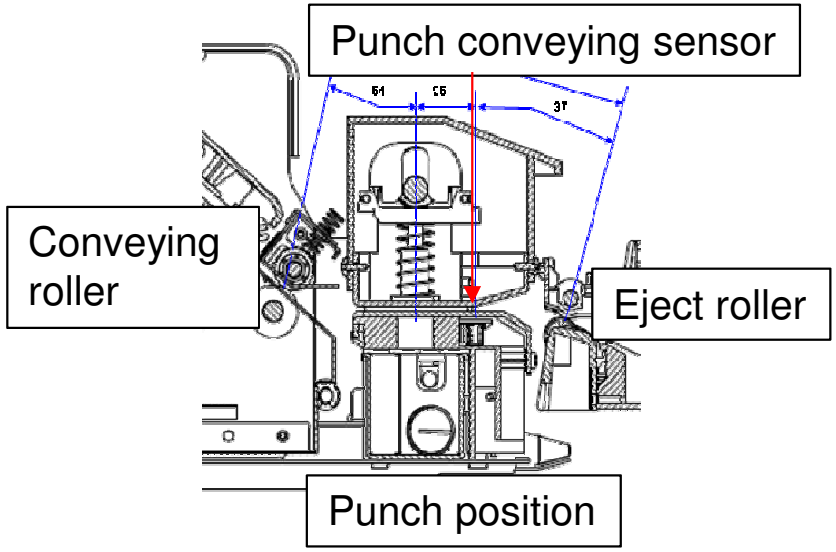
Paper conveying	Convey paper to finisher tray	Paper size: A3-A6R Paper weight: 52-300g/m2 (106-300 g/m2 for cover only)	Paper entry by middle roller
Paper stack	Stack paper on finisher tray	Stack capacity: 50 sheets (90g/m2)	After paper trailing edge passing by the middle roller nip, ①The eject roller and paper holding guide is lowered ②Hold paper trailing edge in paper stack direction with paper holding guide
			Switch back paper to paper tray with the eject roller (reversing rotation)
Paper adjust	Adjust paper at paper stack	Adjustment (aligned to staple side edge)ｽ ①Vertical shift 1.5mm or less ②Side shift 1.5mm or less	Adjust paper at paper receptacle with adjustment paddle (paper feed direction)
			Adjust paper with side registration cursor (front/rear) (paper width direction)
Finish (staple)	Shift paper stack to staple position	Shift: max 16.95mm (when shifting B5R to edge staple position))	Shift paper stack to staple position with side registration cursor (front/rear)
	Staple paper stack	Staple position: single staple (front/rear) (Corner staple: front only) Staple volume: 50 sheets(90g/m2) Corner angle:30	Single electric stapler moves to staple position (front/rear and rotated movement)
			Single motor front/rear movement and rotated movement
Finish (sort)	Sort paper stack	Shift: 30mm (15mm each front/rear)	Shift paper to front/rear with side registration cursor (front/rear)
Paper eject	Stack eject: eject stapled or sorted paper stack to stack tray	Stapled paper stack is ejected (50 sheets) Sorted paper stack is ejected (10 sheets)	Ejected by eject roller

Inner DF Cross-section view

Punch conveying sensor added for inner punch control. Entry motor added for A3 machine.





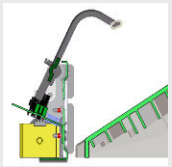
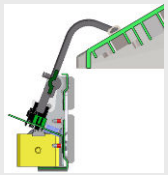


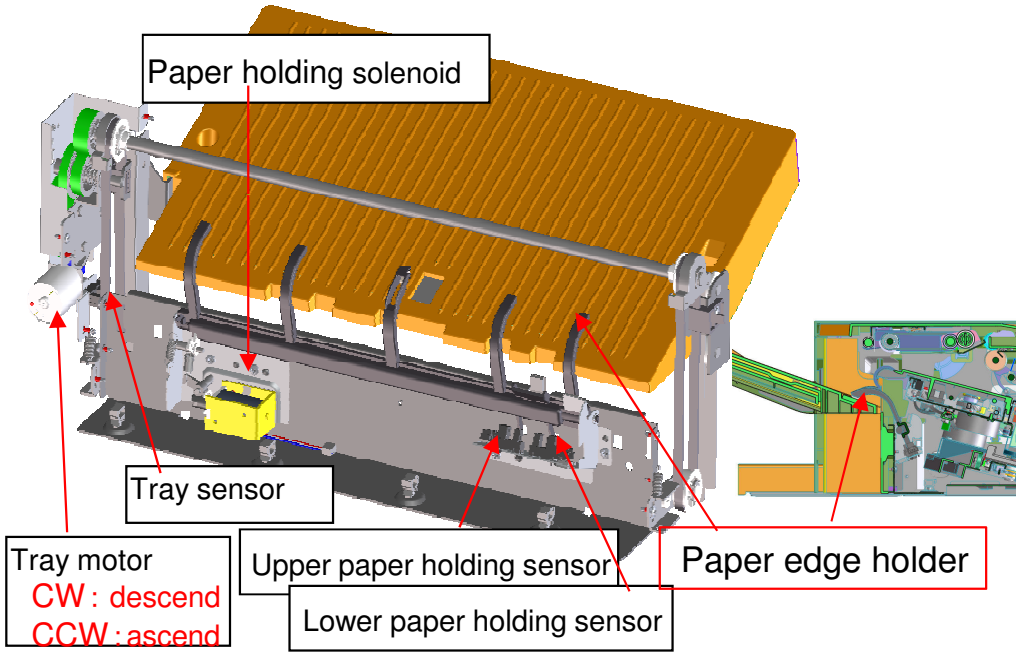
Inner DF tray operation

The tray will descend and ascend by the tray motor during paper ejection

After turning on the paper hold solenoid, the tray full display at below condition.

1. When the job starts, the lower paper hold sensor turns OFF.
2. During the job, the lower paper hold sensor turns ON to OFF.
3. The job end after exceeding 300counts (soft) in case of paper length longer than 298mm (A4R, Legal)

Paper holding solenoid	Paper holding sensor		Basic operation
	Upper	Lower	
OFF at power on	OFF	OFF	
 ON at eject standby 	OFF	ON	Tray Descend: Till Upper paper holding sensor ON
	ON	ON	Base position *Tray motor stop
	ON	OFF	Tray Ascend: Till Lower paper holding sensor ON



*Tray motor will stop when the tray sensor turns on during tray descent (prevent the over run.)

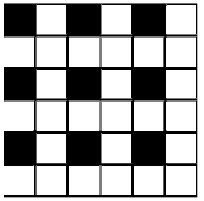
3-10
Calibration

Calibration configuration

<Purpose of calibration>

Purpose: Correct each color's halftone density

Maintain single dot low density reproduction



25% pattern

Calibration
1) Solid density adjustment
2) Halftone correction

<Calibration configuration>

①Toner thick layer/developer bias calibration ・・・ Solid density control

・Adjustment parameter:

Developer bias gap ΔV（Vmag-Vslv）*Touchdown developing (High)

Developer bias（Vslv） *Dual component developing (Low)

:

②Light power calibration ・・・Low density control

・Adjustment parameter: LSU light power exposure

③I/O calibration ・・・ Total halftone correction

・Adjustment parameter: LUT table (table referring to output color data corresponding with input color data)

Calibration type

Control item	Outline
Developer bias calibration (High density reproduction)	Adjust developer bias Vslv (for OPC drum machine)
Developer bias toner thick layer calibration (High density reproduction)	Fix developer bias Vslv and adjust ⊿V（Vmag－Vslv) (for a-Si drum machine)
Light power calibration (Dot reproduction)	Adjust light power(LSU laser power)
I/O calibration (AM: line screen, FM: error diffusion screen)	Maintain halftone as established at U410 automatic halftone adjustment (While complementing LUT table, maintain color table obtained by halftone adjustment)
Color registration correction	Color registration is adjusted as to meet with BK image position

Short Calibration

<Shorten calibration time>

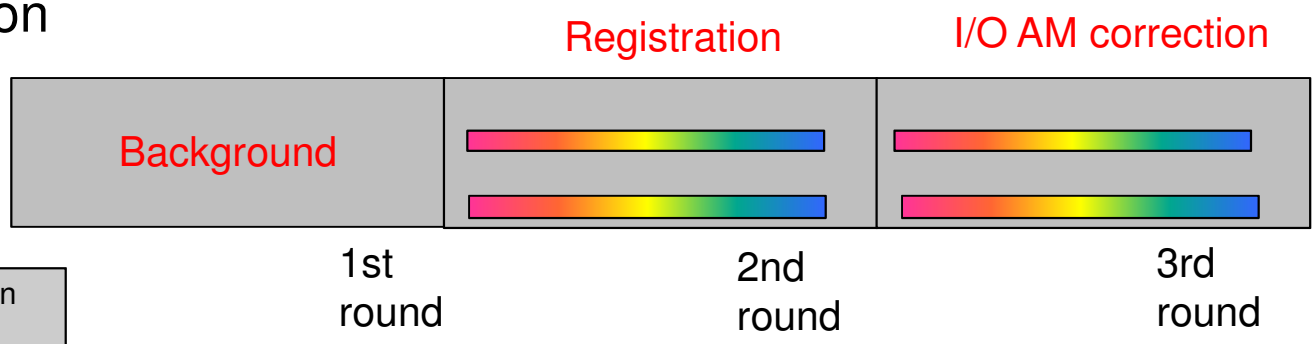
1. Short Calibration： If accumulate developer drive time is 1000images equivalent., executed after job finish. Bias and light power calibration are not executed)

*Full Calibration is executed at the next timing after the calibration error.

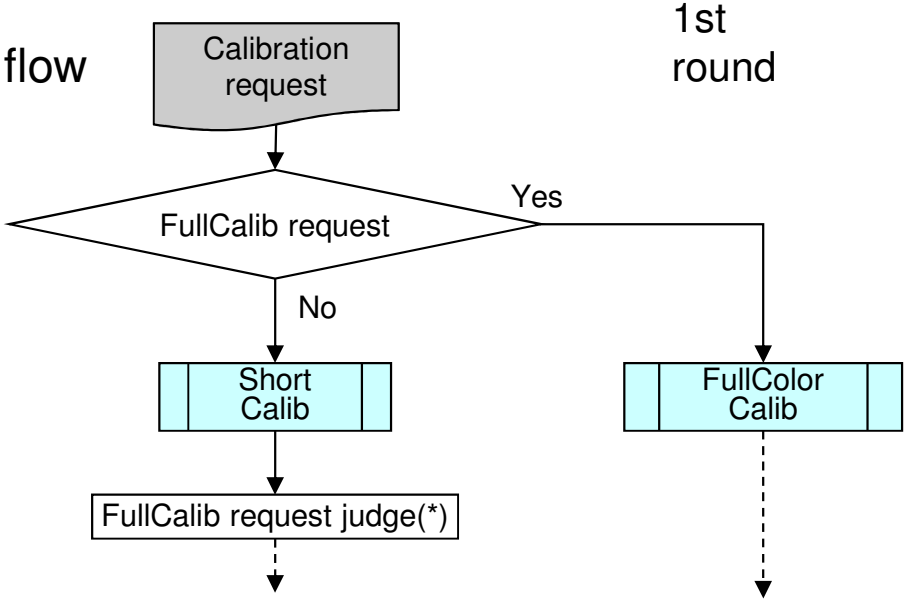
2. Calibration after power-up：

Warm-up Calibration（Bias＋Light power）+ Full Calibration

○ New simple calibration



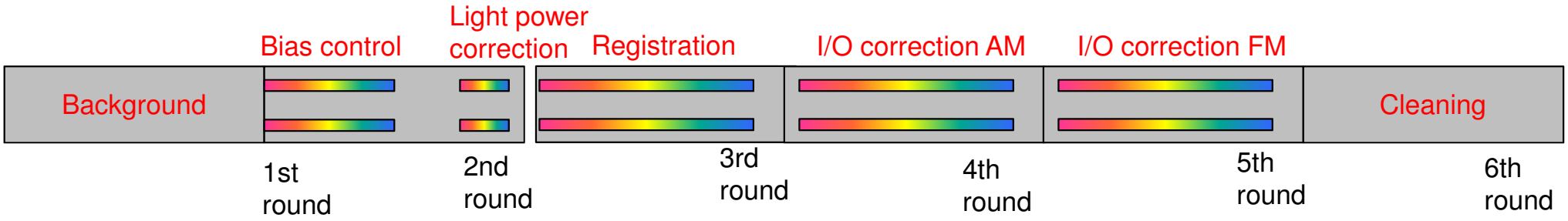
・Calibration flow



*FullCalib request judgment
- ・Large density change
- ・Unit replacement
- ・Recovery from toner end
- ・Large environment change
- ・Left long time

Full color calibration

○ Full color Calibration (same as conventional model)



<Full color calibration executing timing>

1. Leaving time at sleep exceeds the specified time when recovering sleep.
2. Power on after drum, developer or primary transfer unit.
3. Short calibration is executed after calibration error (detected CTD density is low) occurred at last time short calibration.
4. Recovery for toner low, toner empty.

<Full color calibration executing condition at print finish>

1. Color developer drive time is more than the specified.
2. Color developer drive time is more than half of the specified and BK developer drive time is more than the specified.
3. Machine inside temperature change since last time color registration correction

Full color calibration

Full color calibration is executed with the settings below.

Mode	Leaving time at sleep	Developer drive time after last print (25/32/40/50/60ppm)	Machine inside temp. change since last color regist adjustment	Continuous developer drive time for calibration during print (25/32/40/50/60ppm)
Short	120[min]	Equivalent to 250 pages print (600/469/375/300/273 [sec])	10℃	Equivalent to 500 pages print (1200/938/750/600/545 [sec])
Normal	480	Equivalent to 500 pages print (1200/938/750/600/545[sec])	10	Equivalent to 1000 pages print (2400/1875/1500/1200/1091[sec])
Long	480	Equivalent to 1000 pages print (2400/1875/1500/1200/1091[sec])	10	Equivalent to 1000 pages print (4800/3750/1200/2400/2182[sec])
Maintenance mode	U464 Leaving Time	U464 Time interval	U467 Timing-LSU Temp	U464 Timing
Setting range	0-480 (in 120 min. increments)	0-9999	2-10 degrees C	60-9999

Calibration type

Full color calibration

○: Done ×: No

	Bias	Toner thick	light power	I/O（AM）	I/O（FM）	Regist
Full color calibration (OPC)	○	×	○	○	○	○
Full color calibration (a-Si)	×	○	○	○	○	○

Short calibration

	Bias	Toner thick	light power	I/O（AM）	I/O（FM）	Regist
Full color calibration (OPC)	×	×	×	○	×	○
Full color calibration (a-Si)	×	×	×	○	×	○

Warm-up calibration (executed when fuser temp. is 50 degrees C or less)

	Bias	Toner thick	light power	I/O（AM）	I/O（FM）	Regist
Full color calibration (OPC)	○	×	○	×	×	×
Full color calibration (a-Si)	×	○	○	×	×	×

4-3
Maintenance Procedures

Correction History

2016 5 10 ver1.1
P3,P30,P34 TASKalfa 3252ci/2552ci
1)MK-8335C is deleted
2)The contents of MK-8335D are changed ,
3) MK-8335D → MK-8335E
2016 6 24 ver1.2
P20.P21 Secondary transfer roller assembly replacement
Replacement procedure is changed from a roller to assembly including the guide.
P37 Cleaning
Cleaning of Paper separation needles/Static removal sheets are added.
2016 8 24 ver1.3
P30 DP roller replacement DP-7100
Correct the model name DP-7100→ DP-7120, DP-7110/7120 → DP-7100/7110
Correct the item code 302MV80510 → 302MV94150

Maintenance Kit

TASKalfa 6052ci/5052ci/4052ci /3552ci (KDA only)

MK-8515A (Drum BK, Developer BK, Fuser, Primary transfer, Secondary transfer roller, Feed rollers, Filter2pcs) 600K
MK-8515B (Drum CMY, Developer CMY) 600K

TASKalfa 3252ci/2552ci

MK-8335A	(Drum BK)	200K
MK-8335B	(Drum CMY)	200K
MK-8335D	(Fuser, Developer BK, Transfer, Feed rollers, Filter1pc)	600K
MK-8335E	(Developer CMY)	600K

TASKalfa 6052i/5052i/4052i

MK-6325(Drum, Developer, Fuser, Primary transfer, Secondary transfer roller, Feed rollers, Filter2pcs) 600K

Maintenance Kit

	TASKalfa 2552ci	TASKalfa 3252ci	TASKalfa 3552ci (KDA only)/4052ci	TASKalfa 5052ci	TASKalfa 6052ci
			TASKalfa 4002i	TASKalfa 5002i	TASKalfa 6002i
Drum unit	200,000 Image		600,000 Image		
Developer unit	600,000 Image				
Fuser unit	600,000 Image				
Primary transfer unit	600,000 Image				
Secondary transfer roller	600,000 Image				
Ozone filter	600,000 Image				
Dust filter	600,000 Image				
Feed roller	300,000 Image				

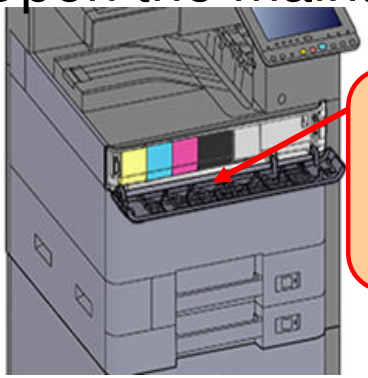
Developer, Drum, Primary transfer belt unit Replacement

Open the front cove for maintenance

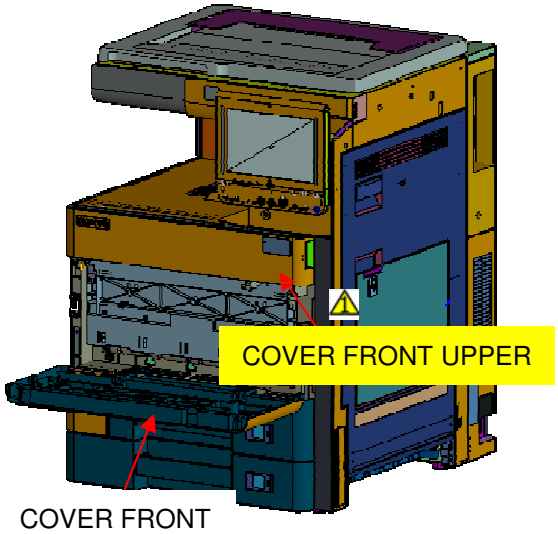
Primary transfer, Drum and Developer unit removal

Open the right conveying cover and maintenance front cover.
(Right side lock)

1. Open the toner container front cover to 10 degrees toward you (maintenance front cover is unlocked)
2. Open the maintenance front cover.



Open the toner container front cover to 10 degrees and release the maintenance front cover lock



Individually remove the primary feed, drum and developer unit

1) Releasing the pressure of the developer unit to the drum
   Developer lock lever operation (High-end model)
   Open the inner retainer (Low-end model)
2) Primary transfer unit separation → Open the conveying cover

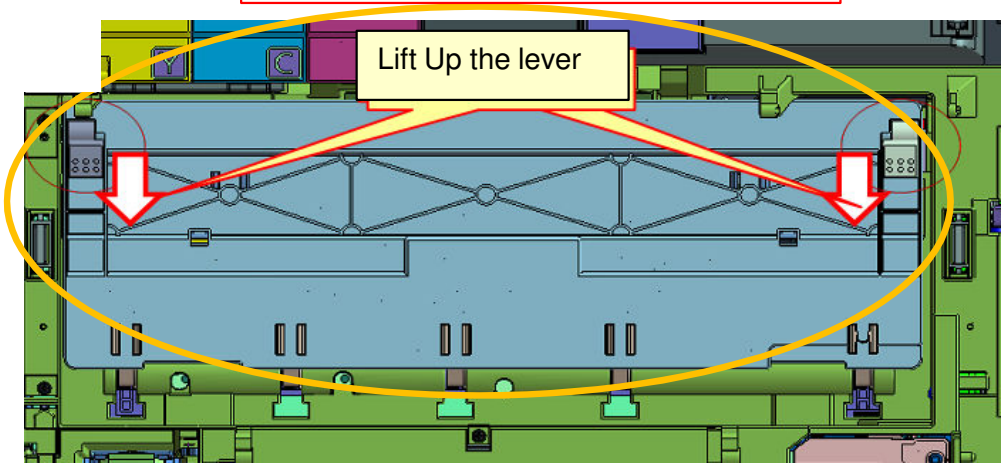
Open the inner retainer

Release the inner retainer lock

1. Open the right conveying cover to separate 4 of the primary transfer rollers from the drums.
2. Lift up the left and right side lock levers of the inner retainer and open the inner retainer.

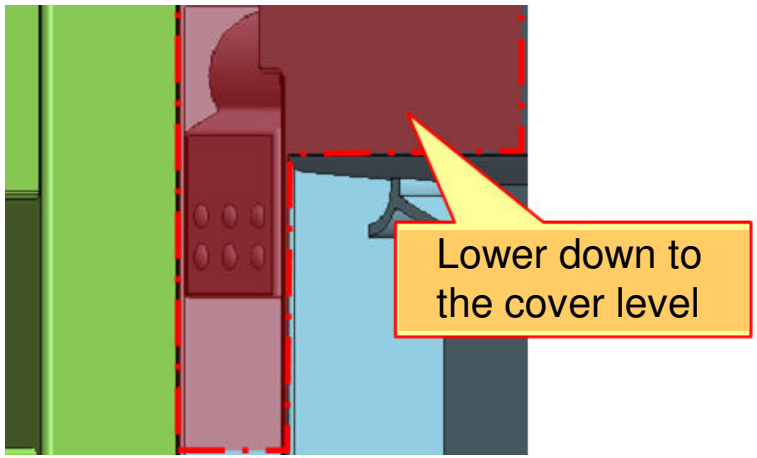
*When closing the inner retainer, lower the levers to lock. (lower down to the cover level)

Left and right side lock of the inner retainer



Inner retainer

Closing the inner retainer



Primary transfer unit removal

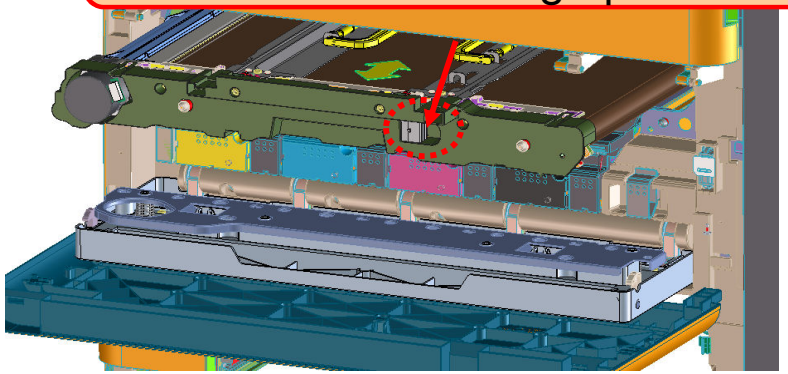
Pulling out the primary transfer unit forward

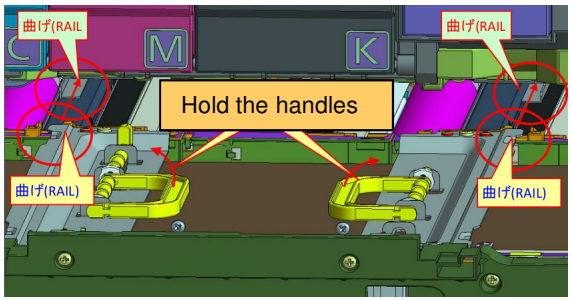
Primary transfer unit front access →Easy unit removal (3 actions)

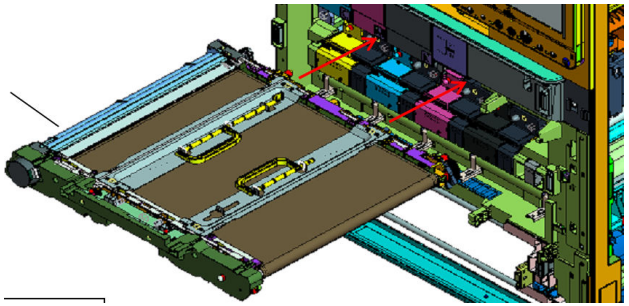
1. Open the right conveying cover and separate the primary transfer rollers from the drums.
2. Release the lock of the unit by the lever operation and pull the unit horizontally from the front side.
3. Lift up the unit handle and remove the unit from the main unit guide rails (no securing screws)

*When installing the unit, hold it with one side handle and front side frame and align 2 bent parts of the unit to the main unit bending. (Keep it from bowed forward)

Release the lock with this lever and pull out the primary transfer unit.
Remove it while lifting up the handle.



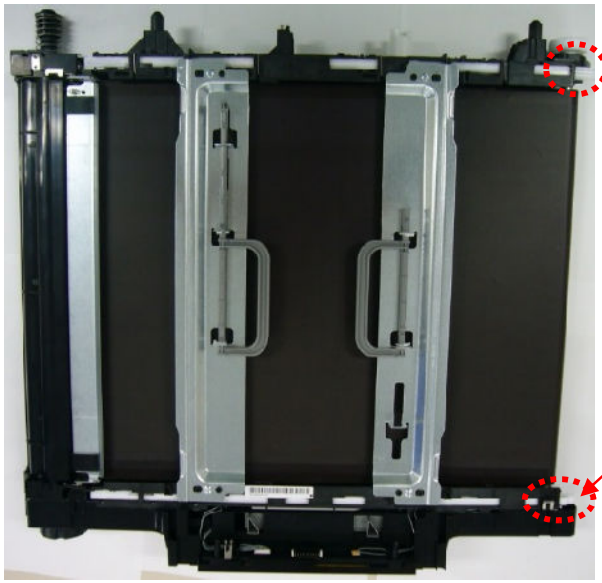




Primary transfer unit removal

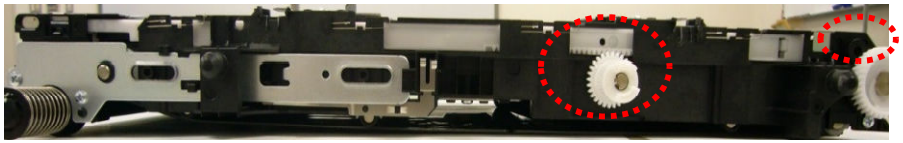
Separating the primary transfer rollers from the drums

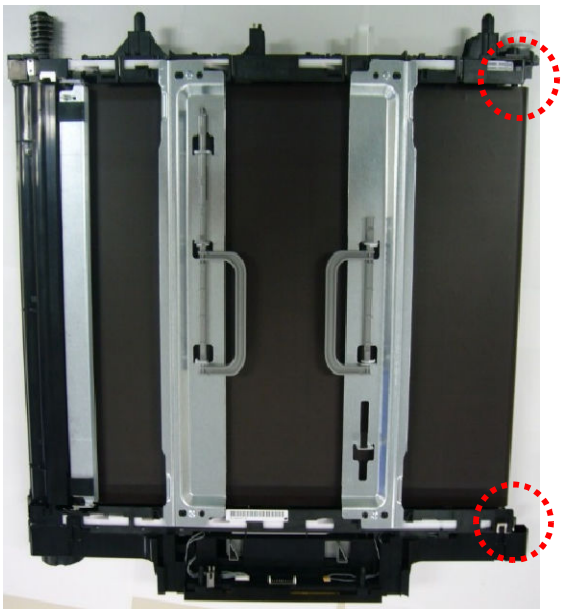
Rollers separated



If this lever protrudes, the primary transfer rollers are separated from the drums

Rollers pressed





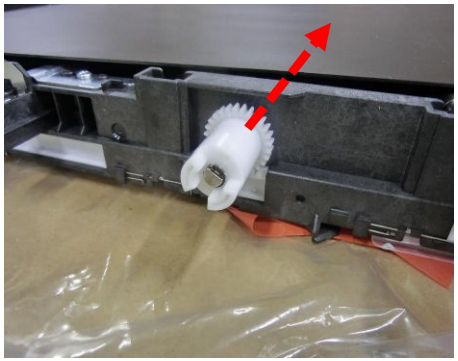
RPS Primary transfer unit unpacking precaution

Check after removing the fixing tape and material

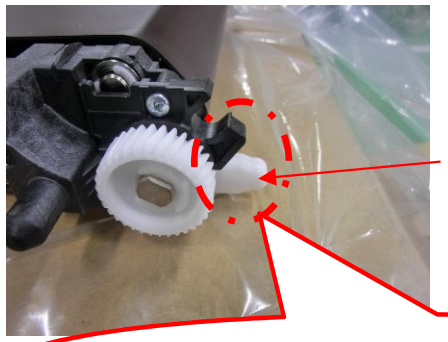
- After removing packing materials tapes, if the roller from drum releasing lever comes out from unit frame, the unit can note be inserted into the machine. So, please turn the gear to make the lever comes to flash with as frame edge. *Also check that the BK 1st transfer roller should be same height location as other CMY colors roller.

Packing material

Roller release lever

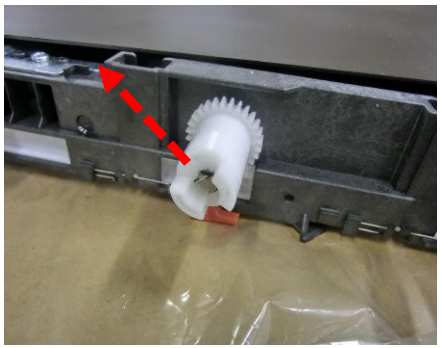


Lever position is changed by gear rotation



Roller release lever

* Unit can not be inserted into machine when this lever comes out from unit frame

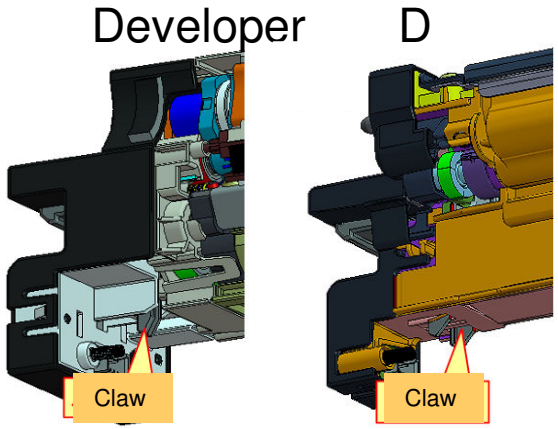


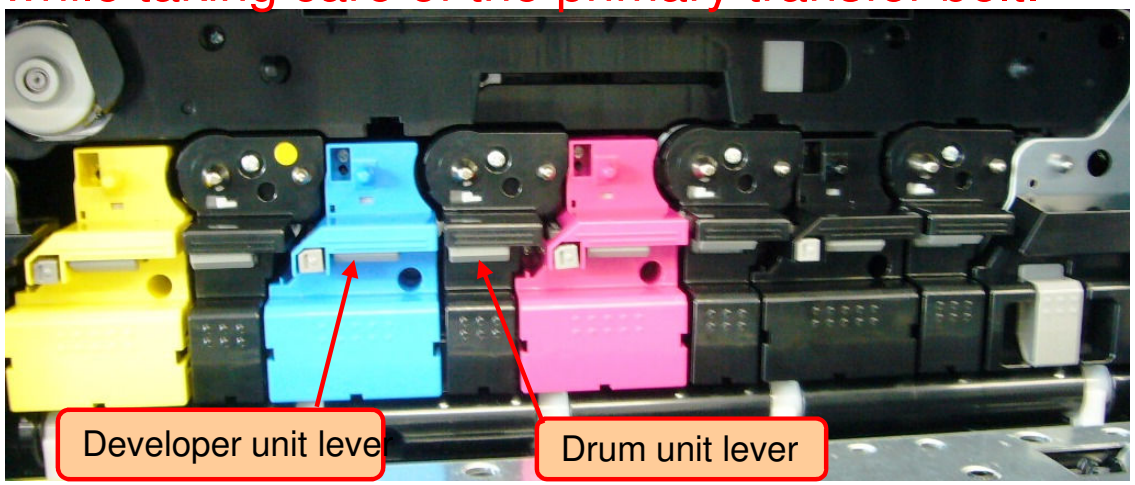
Turn the gear to move the lever to roller release position.

Developer and drum unit replacement

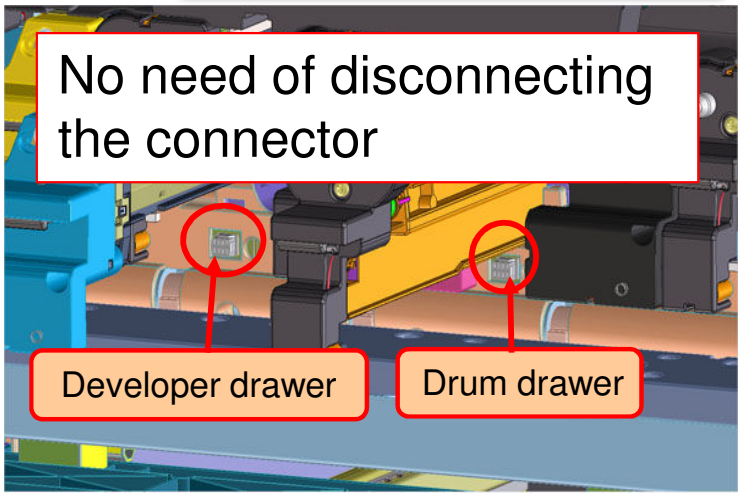
Individual removal of the drum and developer unit

1. Open the right conveying cover and separate the primary transfer rollers from the drums.
2. Open the inner retainer by releasing the lock with the left and right side levers.
3. Release the drum and developer unit lock (hook) by picking the levers under the handle. Pull out the unit while picking the lever. *Reattach the Y drum unit (yellow label affixed) to the Y position. *Detach/reattach the drum unit horizontally while taking care of the primary transfer belt.





Drawer connector



Drum and developer unit removal *Drum replacement: OPC 200K , a-Si 600K

Any of each color unit can be removed individually. (No phased removal with the drum)

Note when replacing the developer unit

Developer unit installation

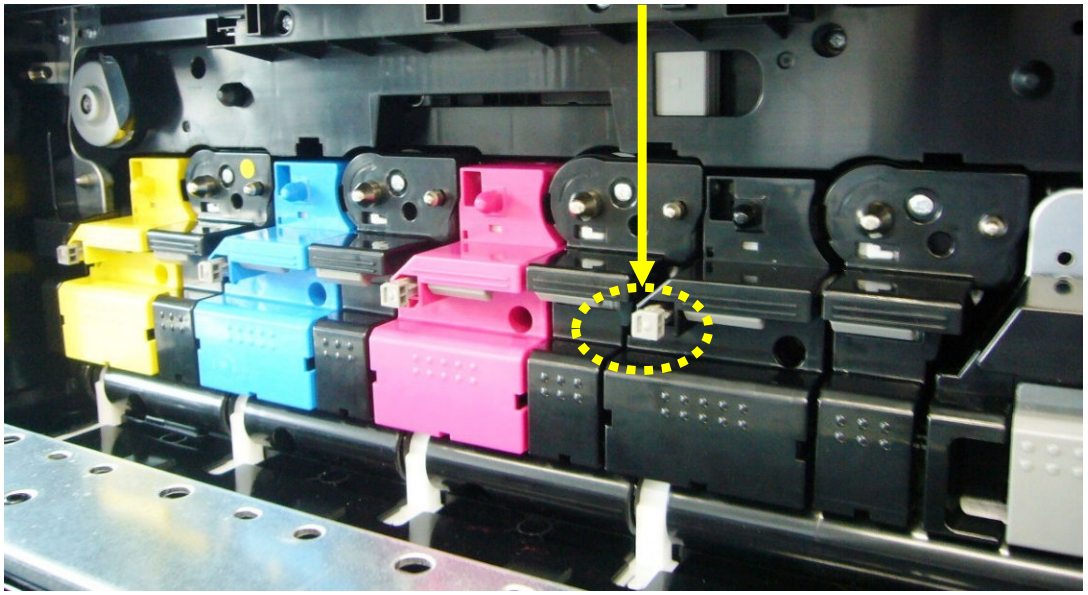
<High-end model developer unit>

After inserting the developer unit and drum unit, press the lever so that the developer roller contacts the drum. (If omitting to press the lever, toner is not developed to the drum and the color is blank when printed)

*Do not insert the developer unit while pressing the lever.
The drum is damaged by the developer roller.

* After pressing lever, please do not insert the drum unit.

Press the lever after setting the unit



Note when replacing the developer unit

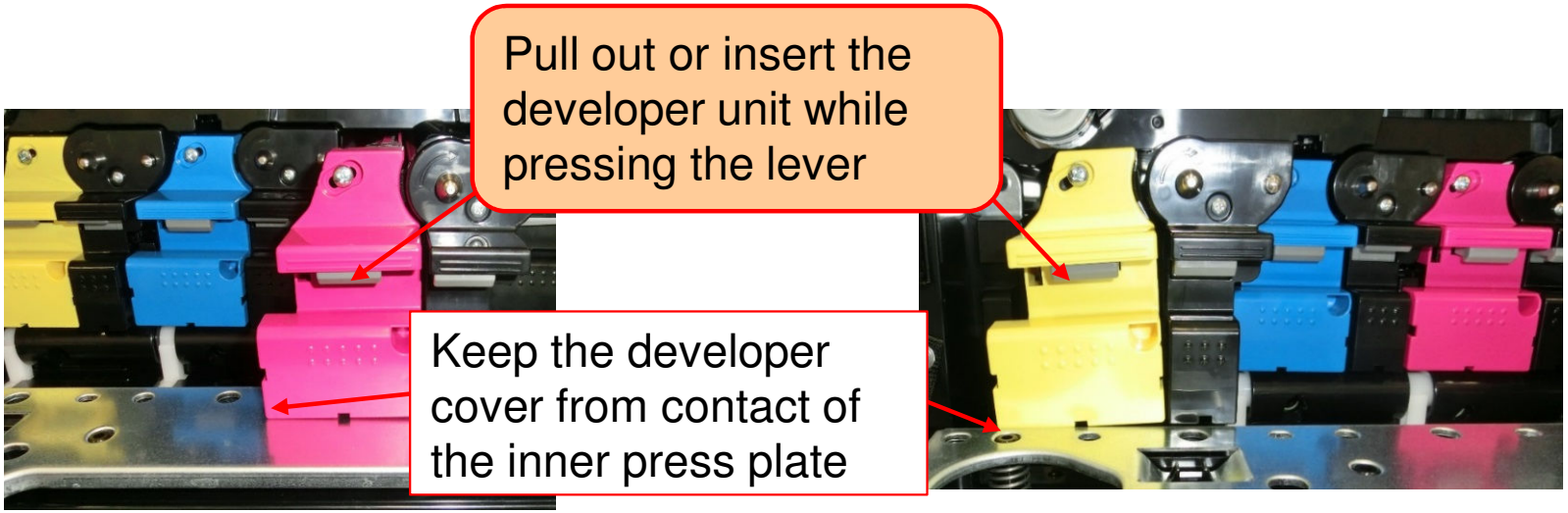
Developer unit installation

<Low-end model developer unit>

Contact between the drum and developer is released at the same time of releasing the inner cover. The developer cover tilts.

*Press the release lever when pulling out or inserting the developer unit so that the developer cover does not tilt.

*Keep the developer cover from contact of the inner press plate.



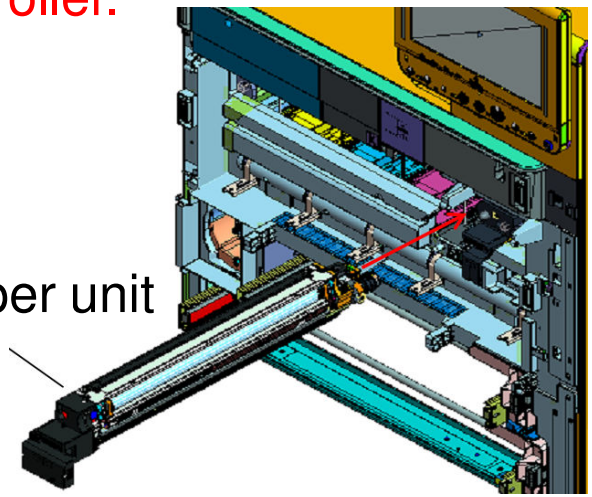
Developer and drum unit replacement (BW model)

Individually removing the drum and developer unit

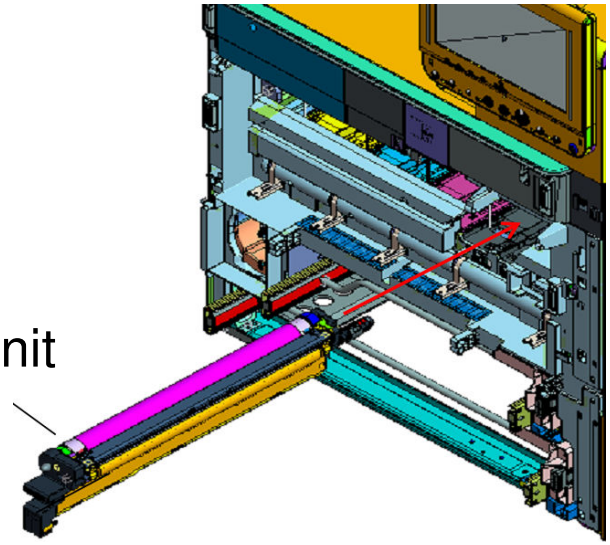
1. Open the right conveying cover and separate the primary transfer rollers from the drums.
2. Open the inner retainer by releasing the lock with the left and right side levers.
3. Release the drum and developer lock (hook) by pulling the levers under the handle and pull out each of the individual unit.

*For the installation, install the drum unit first and then the developing unit. After inserting them, press the lock lever to set the position of developer roller.

Developer unit



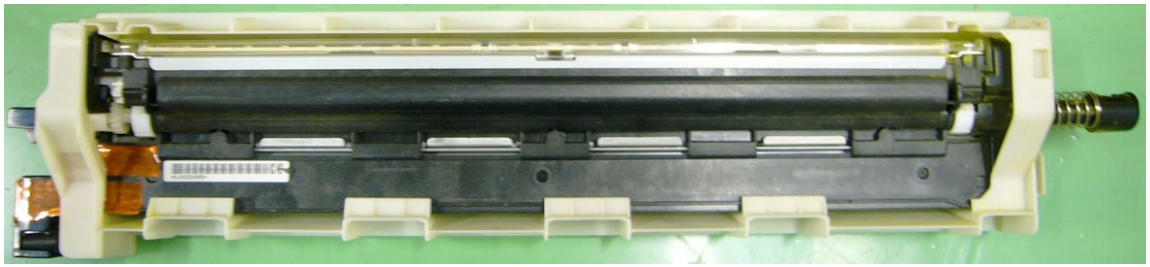
Drum unit

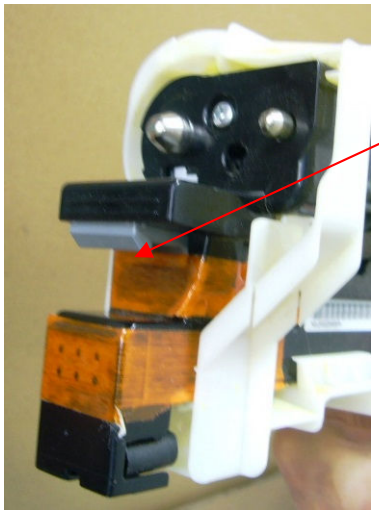


Service parts drum unit

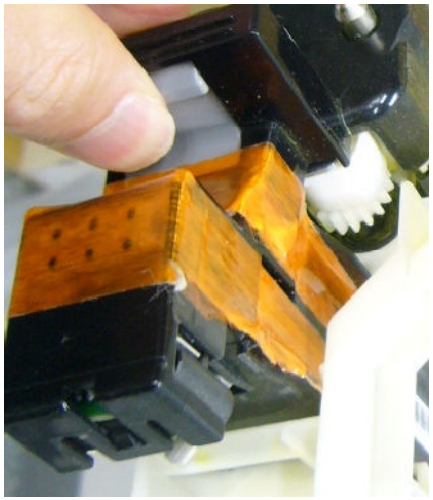
Pull out the drum unit with the drum protection cover.

Release the lever and pull out the drum





Release lever

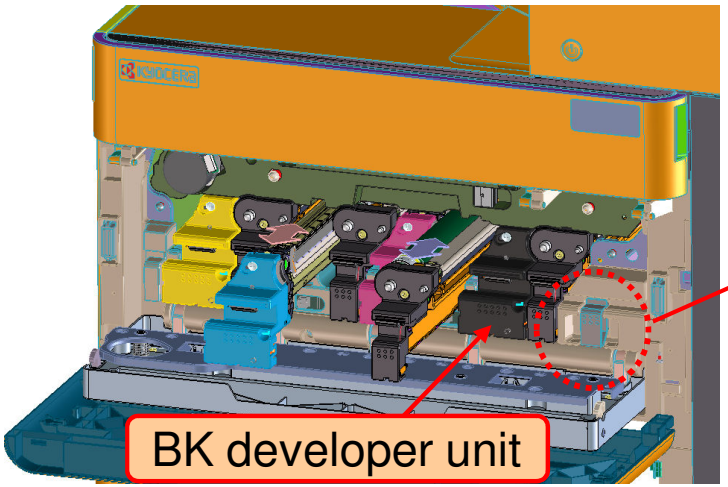


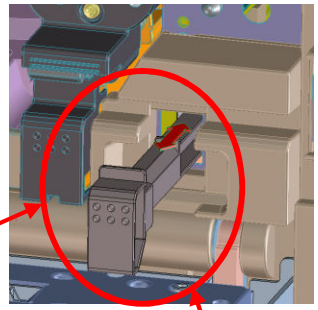
Cleaning the paper dust cleaner

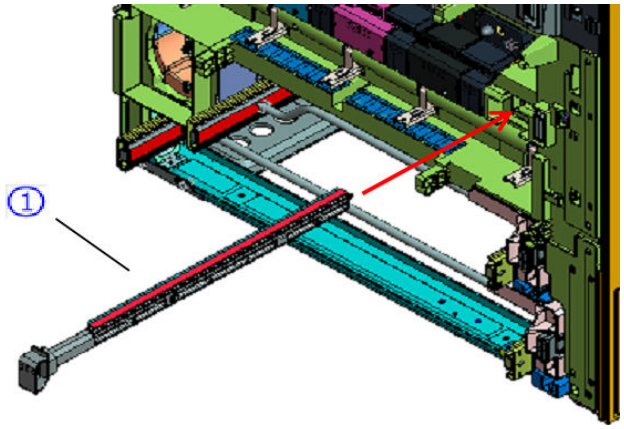
Paper dust cleaner removal

Paper dust cleaner

1. Open the inner retainer.
2. Pull out the cleaner to clean it while lifting up the lever.
   *The lever is at the right side of the BK developer unit.







No securing screw: Lift up the lever to pull out

ID sensor Shutter

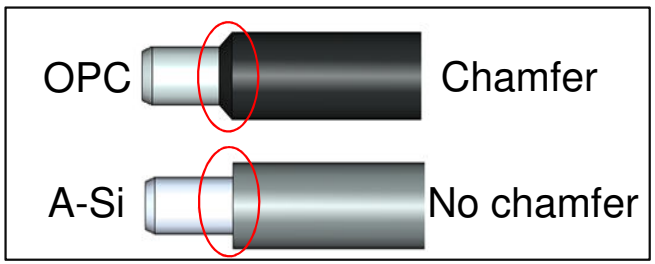
Automatic shutter with the ID sensor solenoid (U033 ID sensor)

Individually replacing the MC roller（Reference）

<In case of replacing the MC roller individually>

1. Remove the drum unit.
2. Release the elastic resin hook at the MC unit front side and lift it up.
3. Remove the MC unit from the drum unit from the drum surface to the release position (release lever protrudes)
   *The MC roller is different between for OPC drum and for a-Si drum (Incompatible)
   Distinction: The edge of MC roller

MC roller distinction

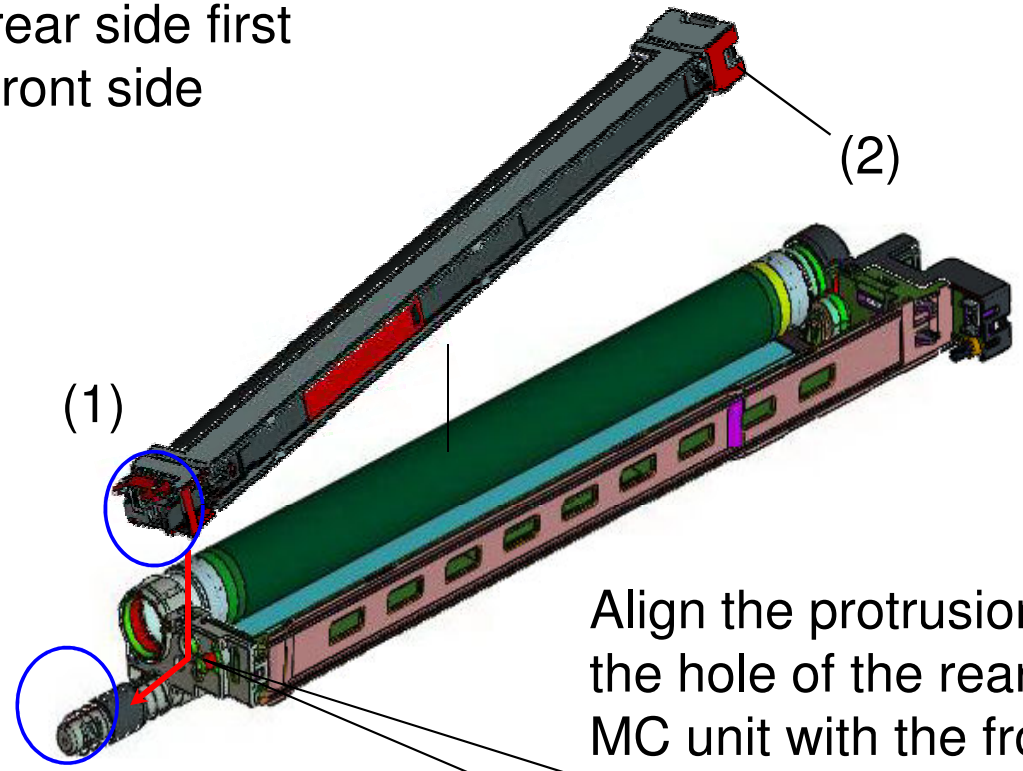


MC roller installation（Reference)

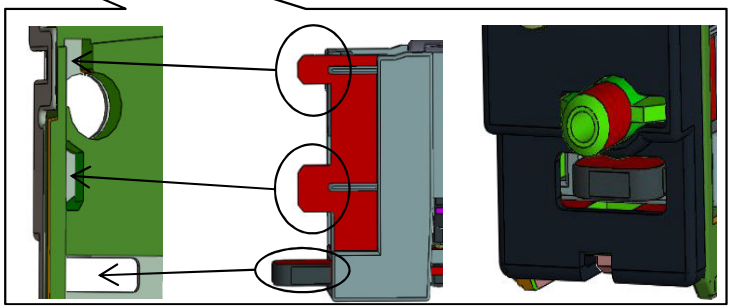
Order of assembly

(1) Insert the rear side first

(2) Insert the front side



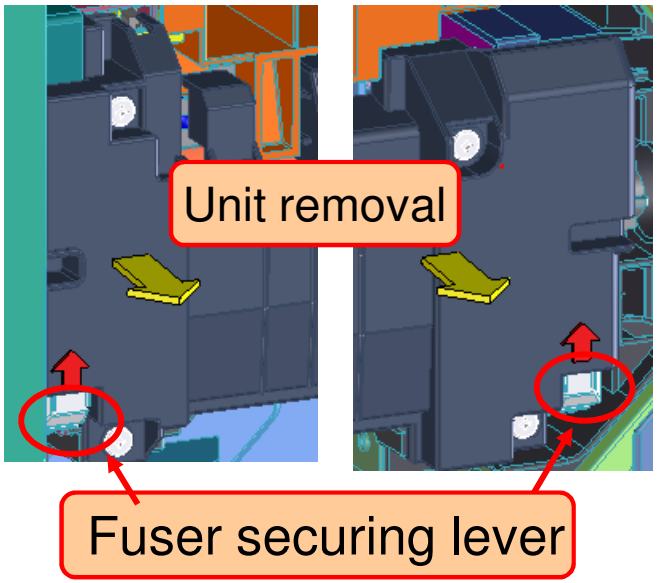
Align the protrusion of the MC unit to the hole of the rear frame. Secure the MC unit with the front side hook



Fuser unit removal

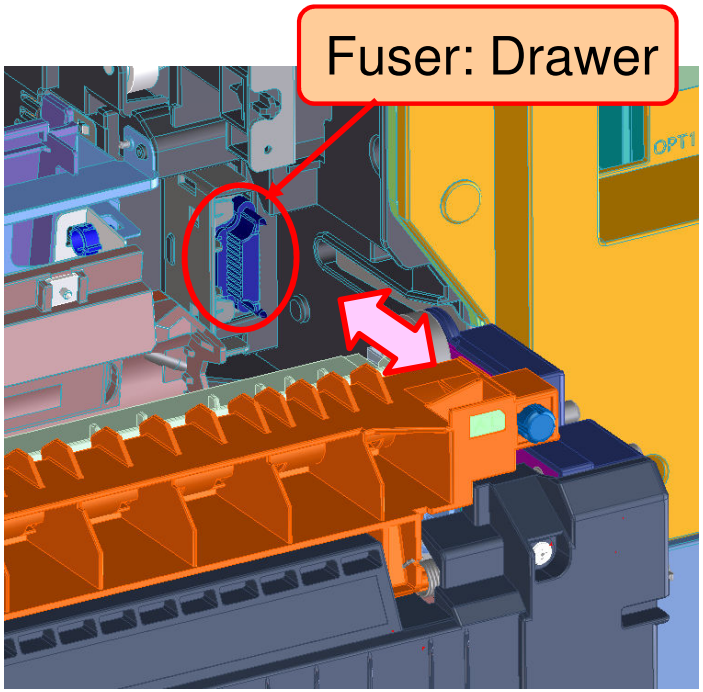
Removal by releasing the lever

No screw securing the fuser unit
Push up 2 levers at the front and rear side of the unit to release the lock (Drive joint from the rear side)
*When installing the unit, align the left and right side pins to the main unit guide rails to push up the release lever.



Drawer connector

No need of action to disconnect the connector (Rear side of unit: Drawer connector connection)



The fuser pressure is released when opening the right conveying cover

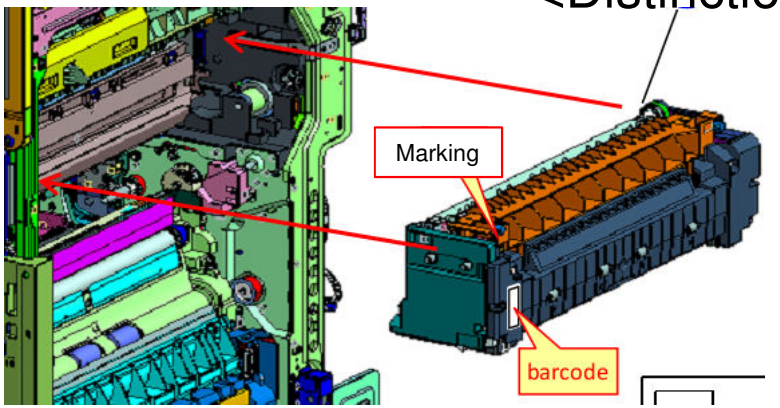
Fuser unit replacement

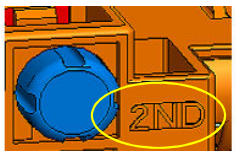
1. Fuser unit positioning
   The positioning pins are placed at the both ends of the unit.
   (Positioned between the main unit and the metal plate securing the fuser belt and press roller)
2. Securing the fuser unit
   Prevent dropout with the snap-fit. (Drive joint: toward the engagement)
   Press the lever to release the locks at the both ends of the fuser unit (no securing screw)

Phenomenon when the fuser unit lock is not properly fixed.

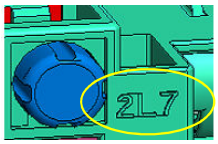
1. At rear: C6600 fuser belt no rotation error occurs due to no driving force.
2. Front: Image right angle failure due to skew feeding.

<Distinction of the unit by engraving>

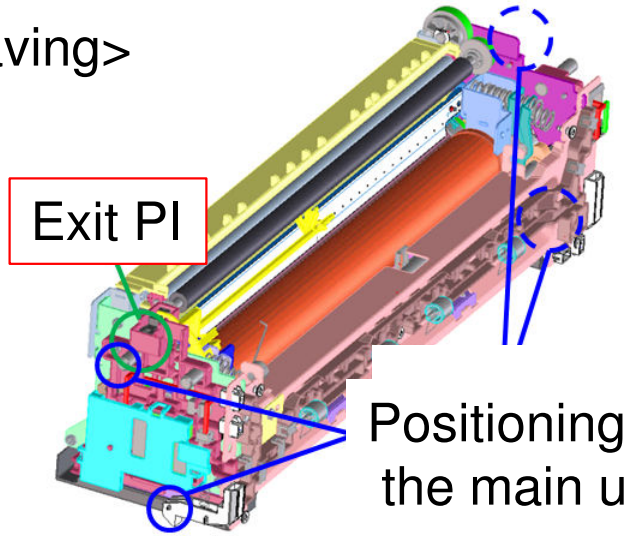




High-end



Low-end



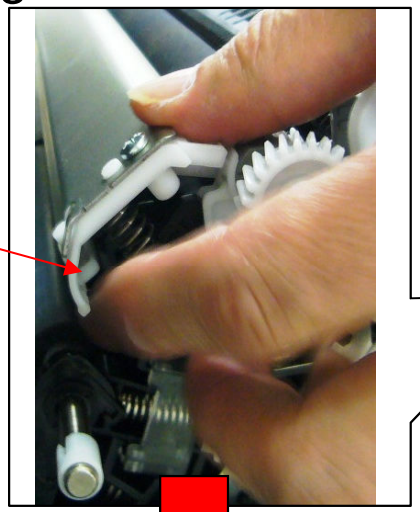
Secondary transfer roller assembly replacement

Simplifying the Secondary transfer roller removal → No screws

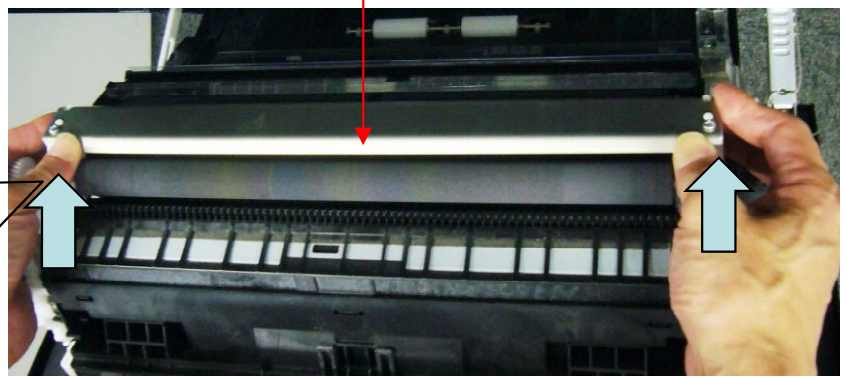
*Front/rear roller shaft: securing the bushings by snap-fit & shaft holders

1. Press the front and rear edge part of 2nd transfer guide to release the lower part of hooks and lift up the guide.

Press down the transfer guide and release the lower part of hooks and lift up.

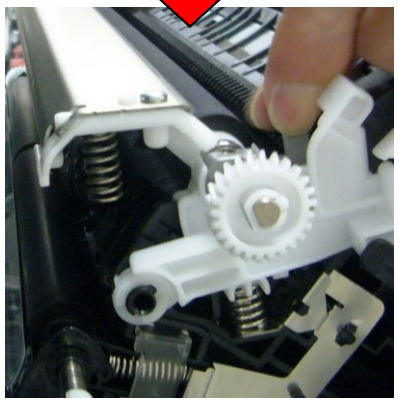


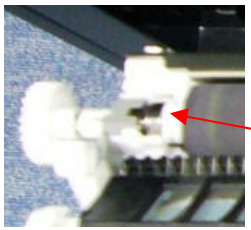
Secondary transfer roller



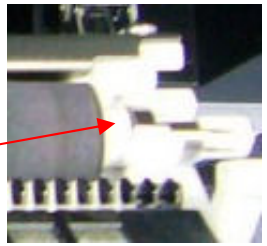
Press down the edge of transfer guide

Lifting up the transfer guide while remaining the roller and detach the whole after releasing the claw of gray color lever





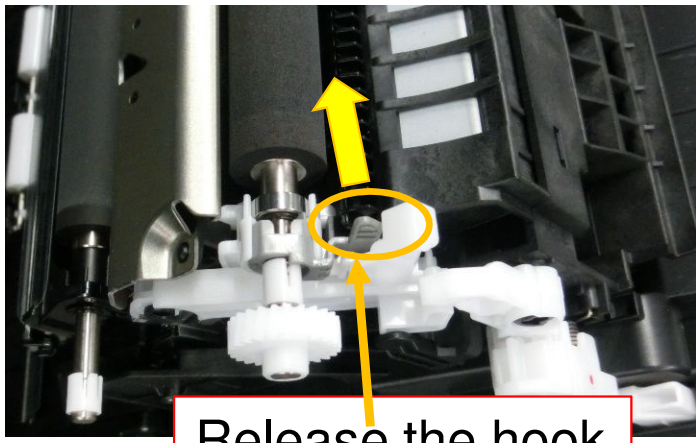
Shaft pressing receivers



Secondary transfer roller assembly replacement

2. Release the gray hook at the front side of the secondary transfer roller.(toward the rear side)

3. Lift up the hook. Shift the secondary transfer roller toward to the front while detach the rear side of bearing and lift them up. * The secondary transfer roller can be detached with the transfer guide.



Ref: Procedure to remove the 2nd transfer roller only

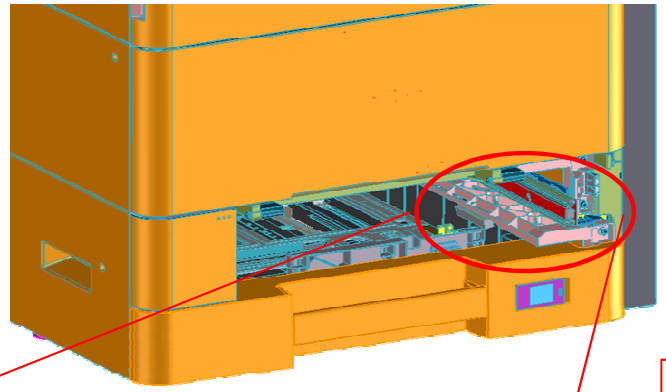
1. Lift up the front and rear 2nd transfer guide to release the roller holders (see below fig.)
2. Execute above procedure 2 and 3.

Condition to be lifted up the 2nd transfer guide (be care of the spring at back of guide.)

3 primary feed rollers replacement

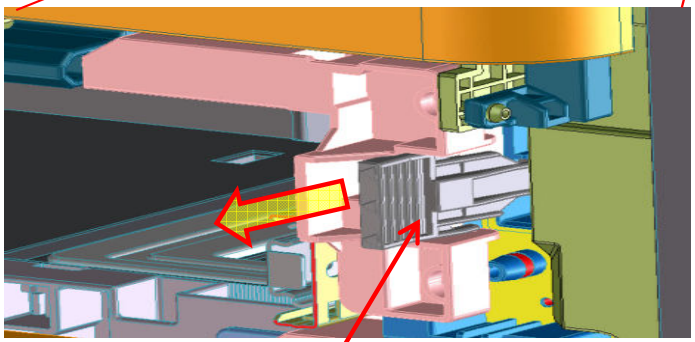
Primary feed roller replacement

Release the primary feed unit lock and pull it out after pulling out the cassette



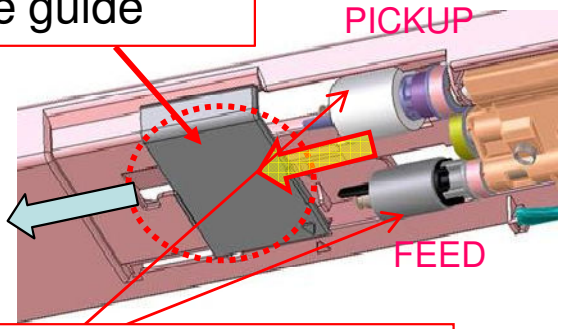
Main unit, PF cassette and deck feed rollers replacement timing: at every 300K per cassette

Feed roller removal



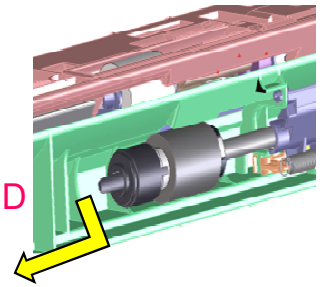
One-touch removal with the lever operation

Shift the small size guide



One-side hold
Remove the roller only

<u>Retard roller removal</u>
Slide the roller and release the hook to pull out



*When inserting the primary feed unit, make sure to do it slowly with the cassette pulled out (when inserting it, take care not to be caught up by the release lever for the retard roller gapping)

Primary feed unit adjustment

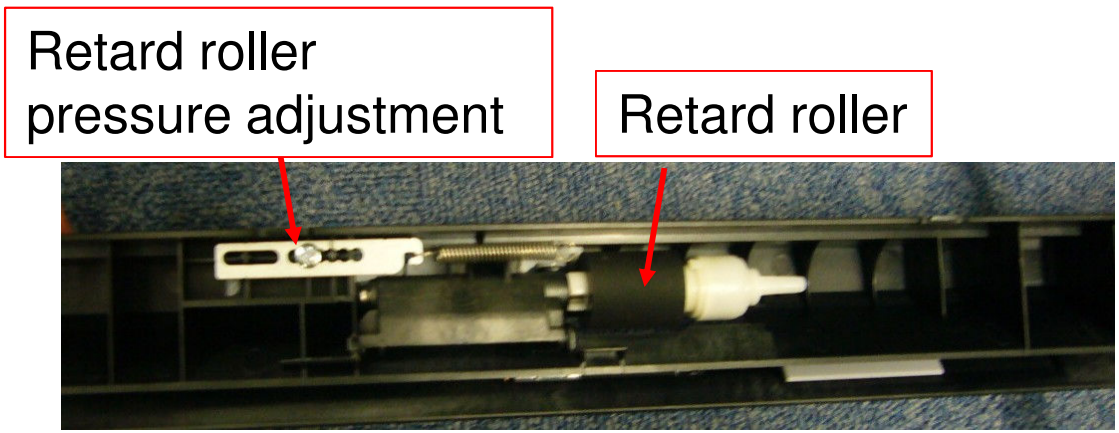
Retard roller pressure adjustment

① Multi-feed

→ Increase the pressure (Slide it leftward)

② Paper leading edge curl at the roller

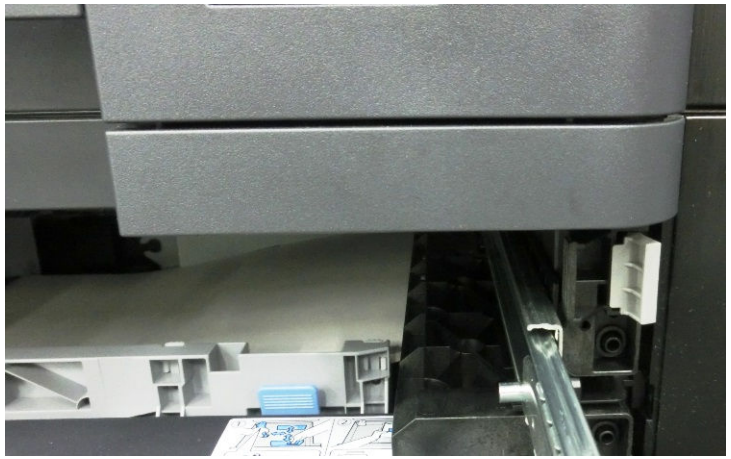
→ Decrease the pressure (Slide it rightward)

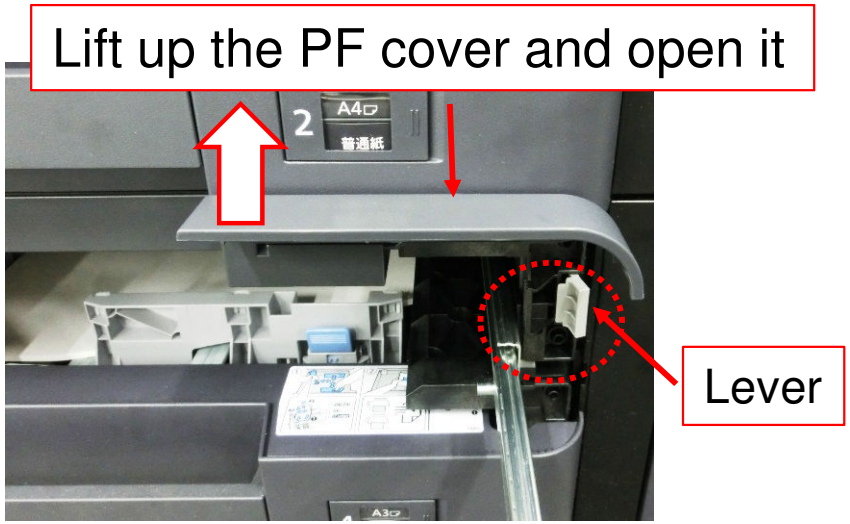


PF upper cassette primary feed roller replacement

Primary feed roller replacement

1. Pull out the PF upper cassette.
2. Open the PF cover by lifting it up.
3. Release the lever and pull out the PF upper cassette primary feed unit.





Pull out the PF primary feed unit

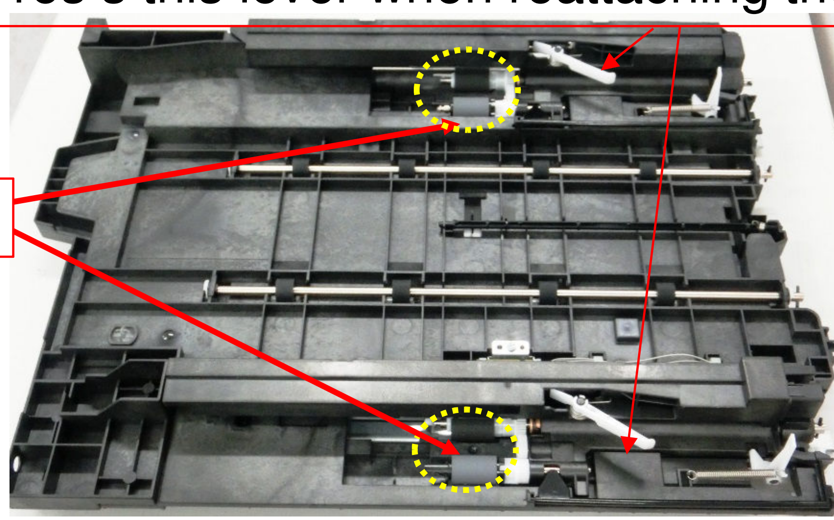
3K PF feed roller replacement

3K PF primary feed roller replacement

1 … nit.

2. Pull out the left and right decks.
3. Detach the stopper plate of the PF upper side deck conveying unit (1 screw)
4. Pull out the deck conveying unit and detach it while lifting up diagonally upward.
5. Turn over the deck conveying unit and release the hook of the feed roller to detach from the shaft.

*When reattaching the conveying unit, take care of the rear lever. Insert the conveying unit while pressing the rear lever. (Avoid the interference with the deck frame)



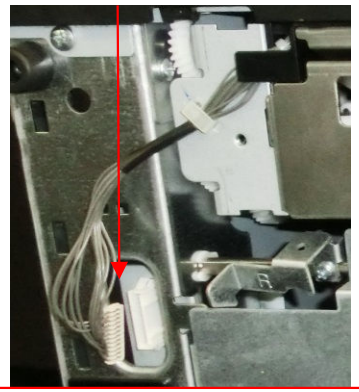
Side Deck feed unit removal

Side Deck feed unit removal

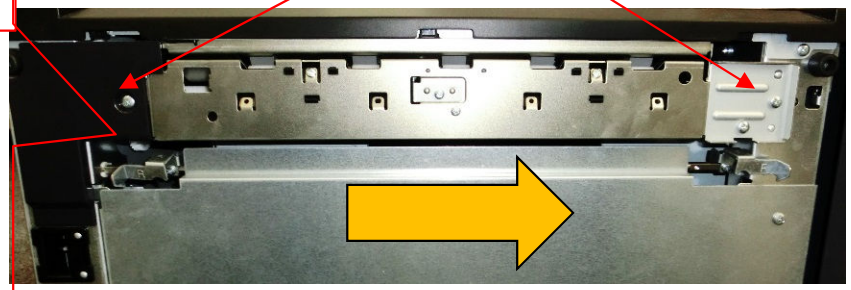
<Procedure>

1. Pull out the deck.
2. Detach the rear cover of the side deck feed unit (1 3x8 screw) and disconnect the connector.
3. Remove the screw (1 3x8 screw) of the side deck feed unit and take out the unit by moving it toward you to release the pin at the rear side.

Cable connection

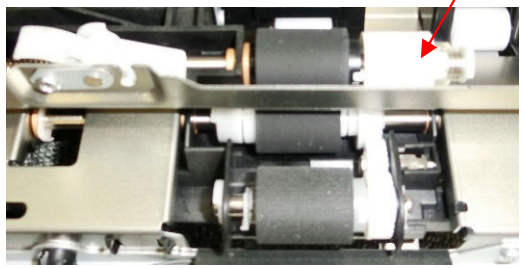


Screw



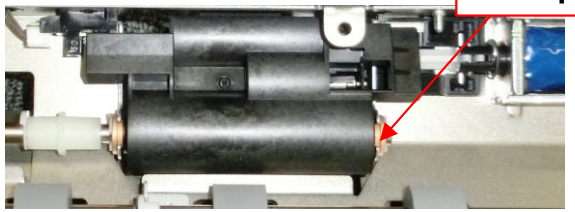
Retard roller

Stopper



Feed roller assembly

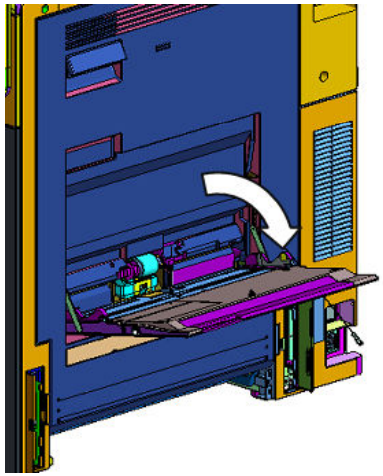
Stopper

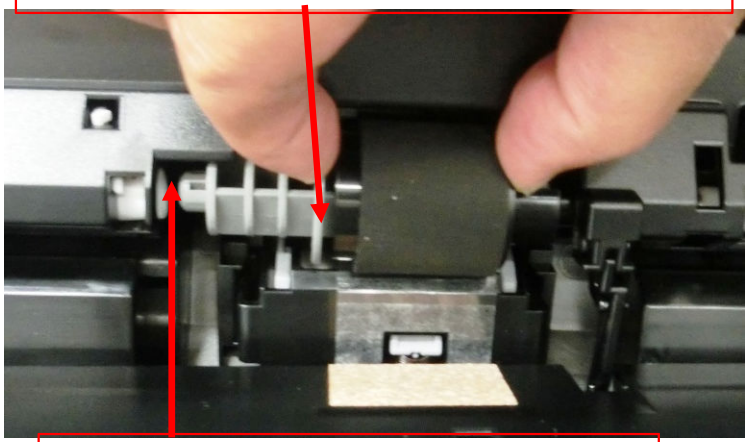


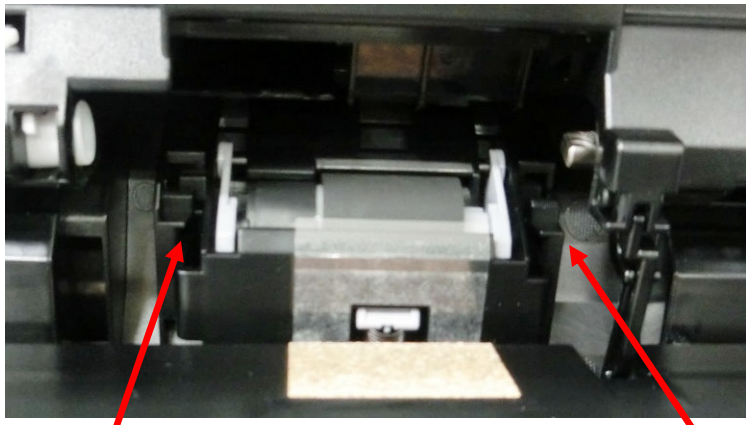
MPF feed roller replacement

MPF feed roller replacement

1. Open the MP tray.
2. Catch the left side flange of the feed roller by fingers and slide the shaft to the left and remove it.
3. Release the hook of the retard roller assembly by catching the both ends of it and pull it toward you.





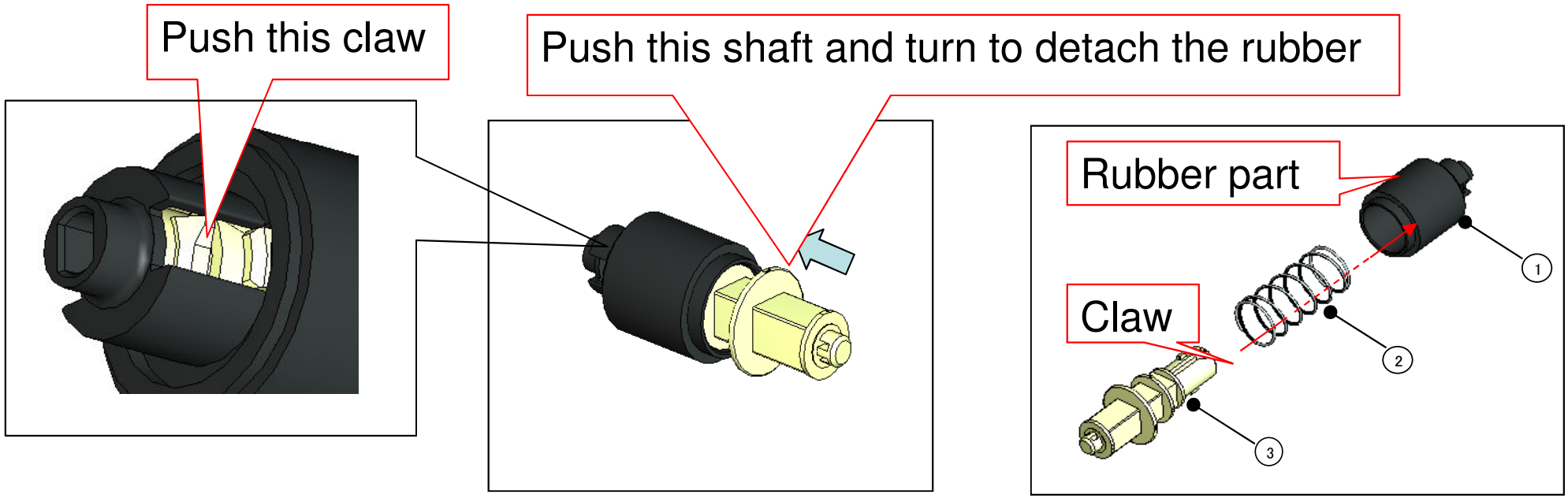


MPF feed roller replacement

MPF feed roller replacement

Replace only rubber part of the feed roller.

* Push the claw to release the lock while turning the roller shaft after pushing. The rubber part can be detached.



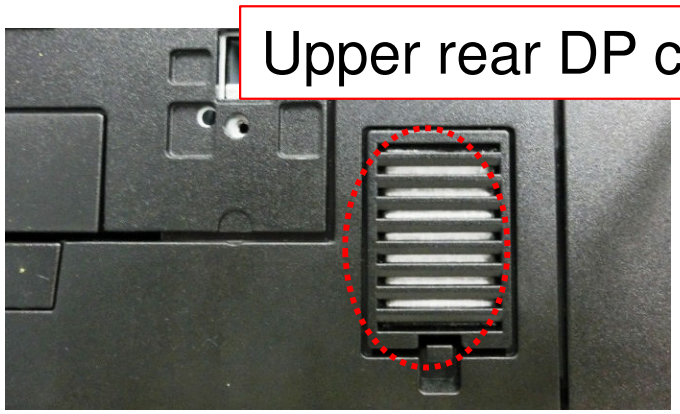
Filter replacement（2 points)

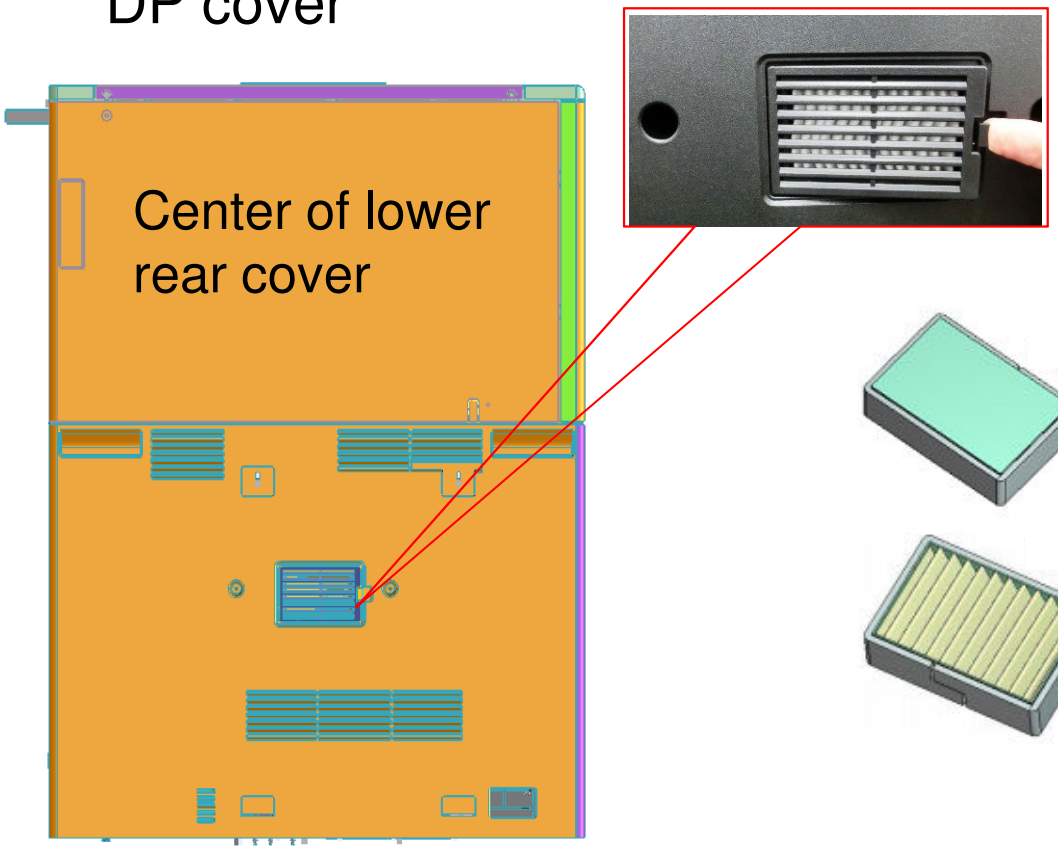
Filter replacement

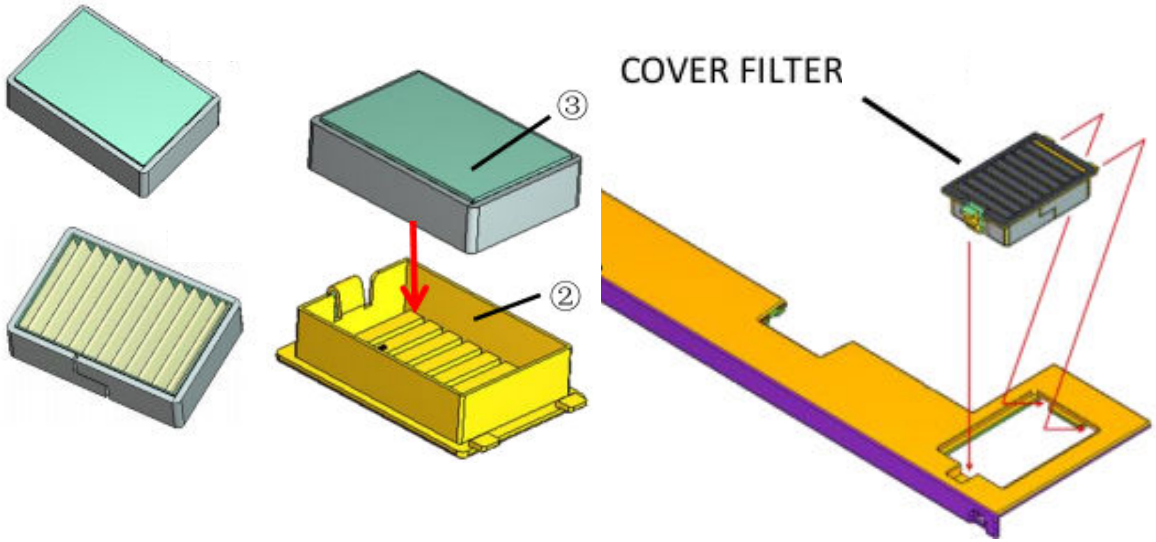
Replace 2 filters as below.

1. Center of the lower rear cover
   *High-end model only
2. FILTER TOP : Right side of the upper rear DP cover

View from the machine top







DP roller replacement DP-7100

DP roller replacement

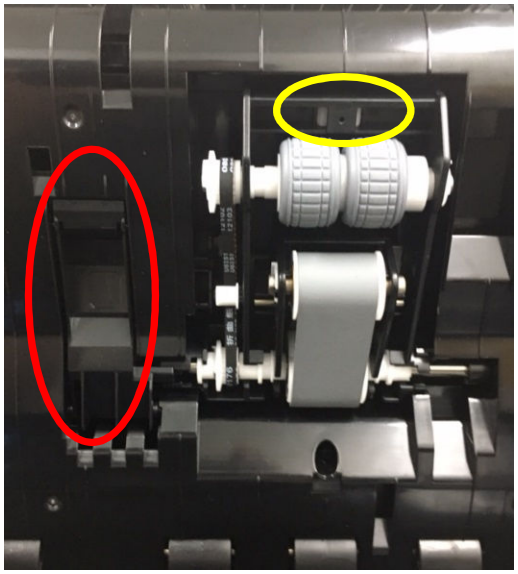
<Replacement procedure>
1. Open the DP top cover.

Replace the feed roller unit

2. Open the right side holder (red circle part).
3. Release the hook (yellow circle part) securing the feed roller and remove it.

Replace the separation roller

4. Take out the separation roller cover.
5. Remove the stopper and then remove the separation roller.



DP-7120 below 3items replaced at 300K
①Guide Retard Ass'y SP 302MV941510, ②Retard Roller Ass'y SP 302F909171, ③Parts Paper Feed Ass'y SP 302MV94141
DP-7100/7110:below 3items replaced at 300K *Same as conventional model
①Pulley Separation 303LL07190, ②Belt PF 303LL07531, ③Pulley LF 303M407480

[Color Low-end model] Maintenance work at every 200K/600K

1. MK kit replacement

Replace MK kit A(BK Drum)/B（CMY Drum) at every 200K

① Replace Drum unit → U930 MC roller counter clear

② U251 Maintenance kit A, B counter clear

Replace MK kit D (BK Developer)/E (Color Developers) at every 600K

① 1 filter (Upper rear cover)

② Developer unit

③ Primary transfer unit

④ Fuser unit

⑤ Secondary transfer roller → U127 Transfer counter/drive time reset (2nd Trans)

⑥ U251 Maintenance kit D/E counter clear

2. Image adjustments after replacing MK kit

① U469 Belt Speed Initialize

② U464 Calibration

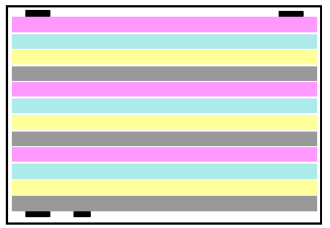
③ U469 Color registration correction (Print Detail Chart → Input shifted number)

④ U410 Automatic halftone adjustment (Print Chart → Table scan)

[Color high-end model] Maintenance work at 600K

1. MK kit A (BK Developer/BK Drum), B (Color Drums/Color Developers)

①2 filters
②Developer unit
③Primary transfer unit
④Drum unit → U930　MC roller counter clear
⑤Fuser unit
⑥Secondary transfer roller → U127 Transfer counter/drive time reset (2nd Trans)
⑦U251 Maintenance kit A/B/C counter clear

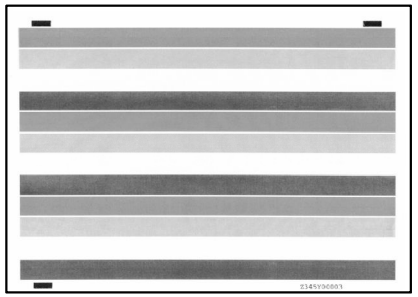


U412 density adjustment chart

2. Image adjustments after replacing MK kit

① U119 Drum setup
　　*Register Drum sensitivity data to adjust the LSU laser power
② U140 AC Calibration(Developer bias setting*Developer leak prevention)
③ U469 Belt Speed Initialize
④ U464 Calibration
⑤ U469 Color registration correction (Print Detail Char → Input shifted number)
⑥ U412 Density adjustment (when Drum replace) (Print Chart →Table scan)
⑦ U464 Calibration　*Execute after U412
⑧ U410 Automatic halftone adjustment (Print Chart →Table scan)

[BW model]　Maintenance work at 600K



U412 density adjustment chart

1. MK kit replacement
   - ①2 filters
   - ②Developer unit
   - ③Primary transfer unit
   - ④Drum unit
   - ⑤Fuser unit
   - ⑥Secondary transfer roller → U127 Transfer counter/drive time reset (2nd Trans)
   - ⑦U251　Maintenance kit A/B counter clear
2. Image adjustments after replacing the MK kit
   - ① U119 Drum setup (U930 MC roller counter cleared automatically)
   - ② U140 AC calibration　(Developer bias setting*Developer leak prevention)
   - ③ U469 Belt Speed Initialize
   - ④ U464 Calibration
   - ⑤ U469 Registration initialize
   - ⑥ U412 Density adjustment (when drum replaced) (Print Chart) → Table scan
   - ⑦ U464 Calibration　*Execute after U412
   - ⑧ U410 Automatic halftone adjustment (Print Chart → Table scan)

U952 Maintenance Workflow

No.	Item	Maintenance mode		Color low-end	Color high-end
1	MK-A	U119	Drum setup	—	○
		U930	MC roller counter clear	○ (BK)	○
		U140	Developer AC bias adjustment	-	○
		U469	Belt Speed Initialize	-	○
		U127	Secondary transfer counter clear	-	○
		U464	Color calibration	○	○
		U469	Color registration correction	○	○
		U412	Density adjustment	—	○
		U464	Color calibration	—	○
		U410	Automatic halftone adjustment	○	○
		U251	Maintenance counter clear	○	○
2	MK-B	U119	Drum setup	—	○
		U930	MC roller counter clear	○ (CMY)	○
		U140	Developer AC bias adjustment	-	○
		U464	Color calibration	○	○
		U469	Color registration correction	○	○
		U412	Density adjustment	-	○
		U464	Color calibration	—	○
		U410	Automatic halftone adjustment	○	○
		U251	Maintenance counter clear	○	○

U952 Maintenance Workflow

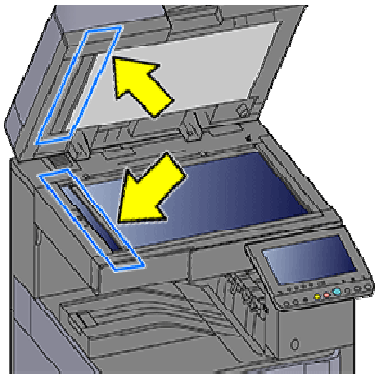
No.	Item	Maintenance mode		Color low-end	
3	MK-A,MK-D (BK DV, Fuser, 1st/2nd Transfer) MK-B,MK-E (Color DV,DK)	U930	MC roller counter clear	○	When replace MK-A,B
		U469	Belt Speed Initialize	○	When replace MK-D
		U127	Secondary transfer counter clear	○	When replace MK-D
		U464	Color calibration	○	
		U469	Color registration correction	○	
		U410	Density adjustment	○	
		U251	Maintenance counter clear	○	

No.	Item	Maintenance mode		BW model
4	MK	U119	Drum setup	○
		U140	Developer AC bias adjustment	○
		U469	Belt Speed Initialize	○
		U127	Secondary transfer counter clear	○
		U464	Calibration	○
		U469	Registration initialize	○
		U412	Density adjustment	○
		U464	Calibration	○
		U410	Density adjustment	○
		U251	Maintenance counter clear	○

Cleaning

<Main unit>

1. LSU slit glass cleaning (auto cleaning at the time of developer or drum replacement)
2. Paper dust cleaner cleaning
3. Registration, conveying guide/roller, duplex/eject roller, reversing guide cleaning
4. Machine inside imaging section cleaning



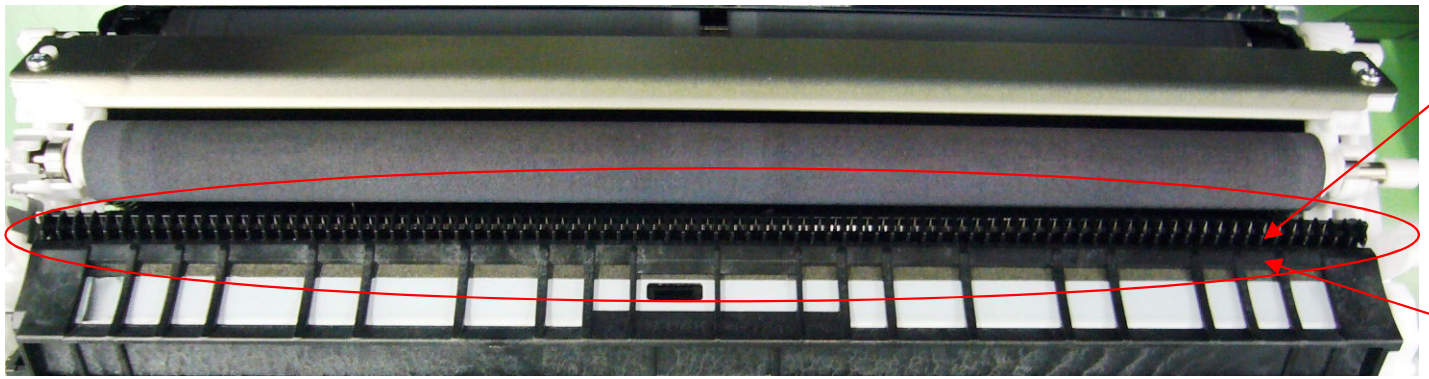
<Optional enhancement units>

1. DP scanning slit glass cleaning (where black lines generated)
   DP conveying roller, path and guide cleaning
2. DF conveying guide cleaning, punch dust disposal

Cleaning

<Main unit>

1. LSU slit glass cleaning (auto cleaning at the time of developer or drum replacement)
2. Paper dust cleaner cleaning
3. Registration roller, Paper separation needles/Static removal sheets, conveying guide/roller, duplex/eject roller, reversing guide cleaning
4. Machine inside imaging section cleaning



<Optional enhancement units>

1. DP scanning slit glass cleaning (where black lines generated)
   DP conveying roller, path and guide cleaning
2. DF conveying guide cleaning, punch dust disposal

4-5-1
Rear Cover Removal

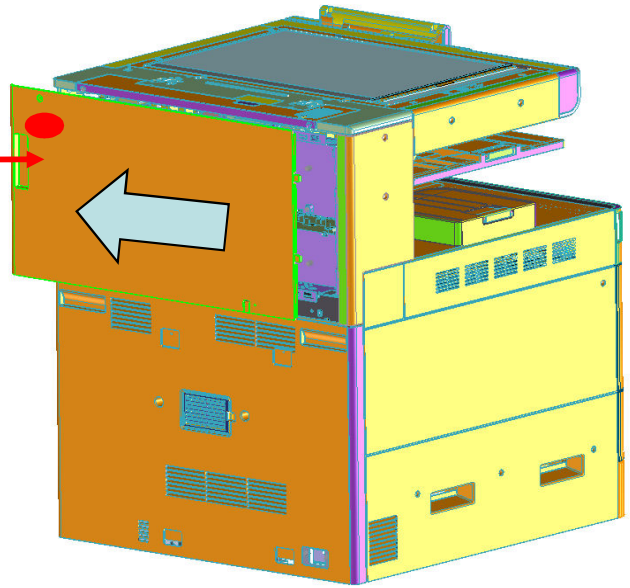
Rear Cover Removal

Upper Rear Cover Removal

1. Remove the screw at the upper left corner of the upper rear cover.
2. Slide the upper rear cover to the left and remove it.

* Confirm the inner ribs are not deformed when reattaching the cover, and slide the cover while aligning the ribs to the holes.

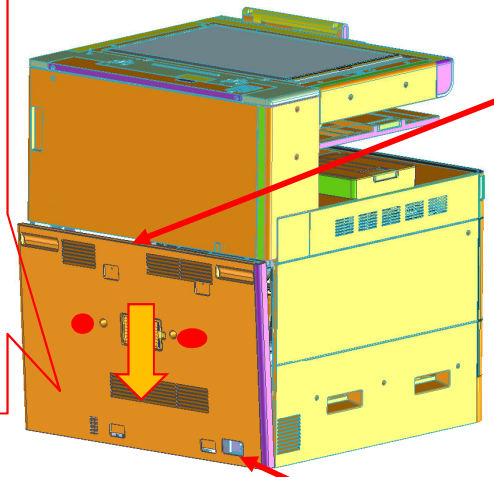
Slide the cover with shield plate to the left to remove



Lower rear cover removal

Lower rear cover removal

Remove lower left hook of lower rear cover



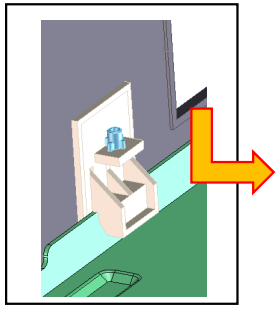
Cover's overlap

(Fixed)

(Lowered)

<Cover slide mechanism>
Cover overlap released by sliding the cover

1.Remove2 center screws at the lower rear cover.
2. Pull down the lower rear cover from its upper side and open it toward you.
3. Remove it while releasing the hook at lower left and 2 hooks at the lower part.



Lower the cover at 2 points of lower elastic hooks and open it toward you.

4-5-2

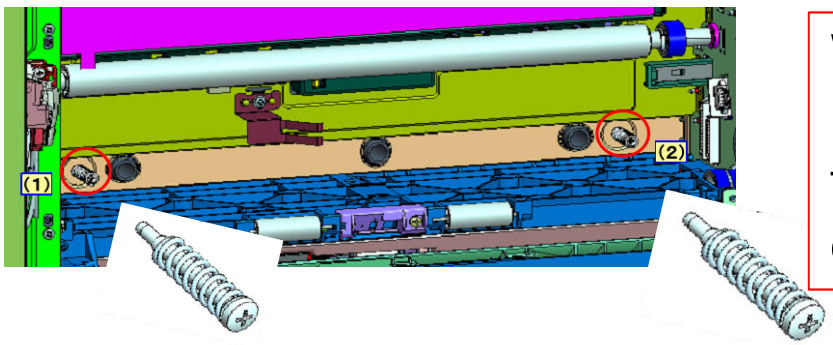
LSU Replacement

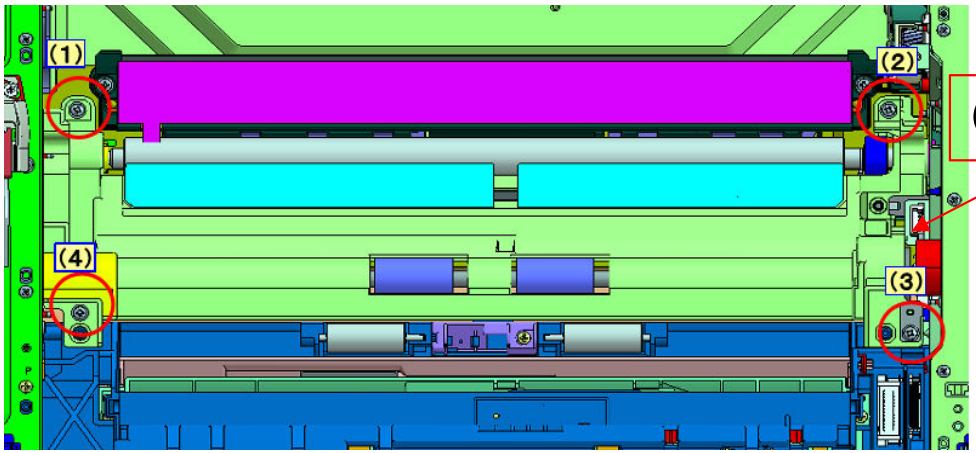
LSU Replacement

LSU replacement

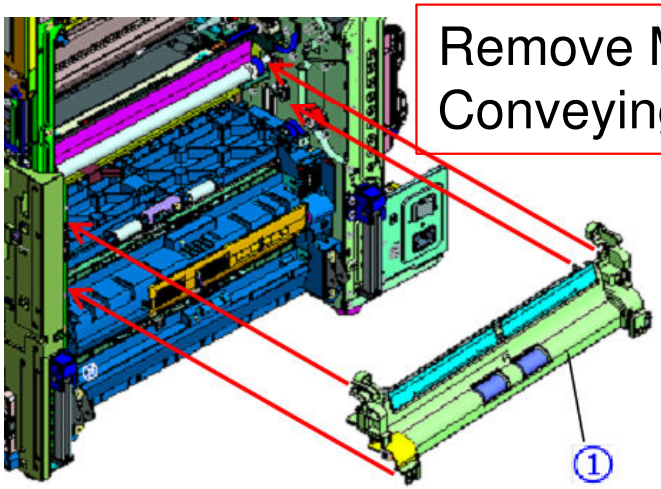
Machine right side

1. Open the right conveying cover.
2. Take out the paper dust cleaner (open the inner retainer)
3. Take out the middle conveying guide. (4 screws, 1 connector)
4. Remove the fixed pin (with spring) (2 points)

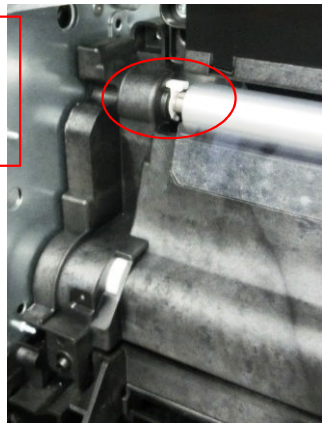




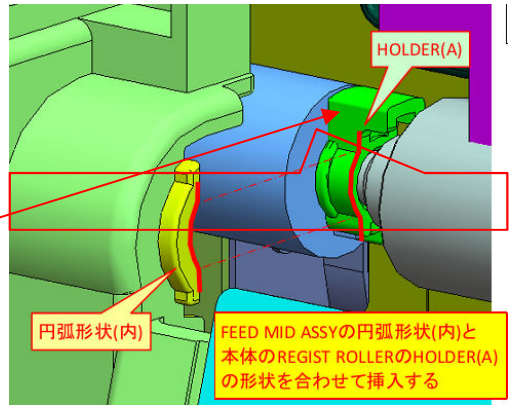
Connector



Remove Middle Conveying Guide



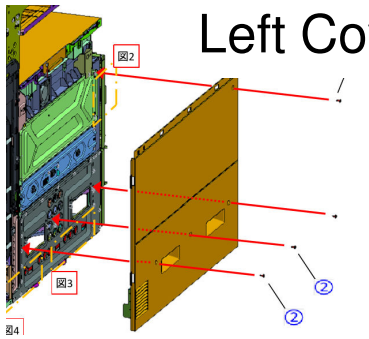
When reattaching the guide, insert the torque limiter into the cutout of the cover (High-end model)

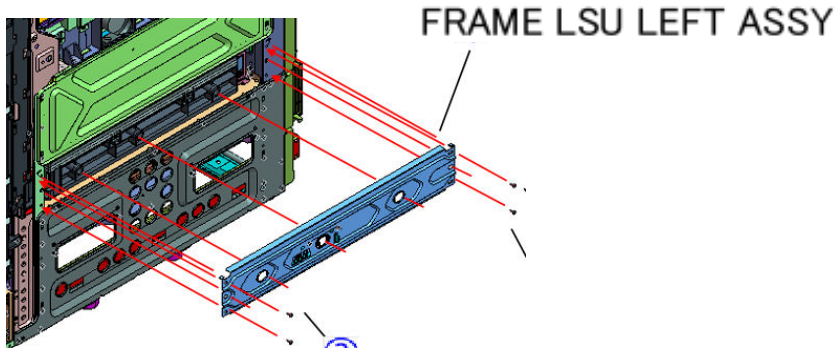


LSU Replacement

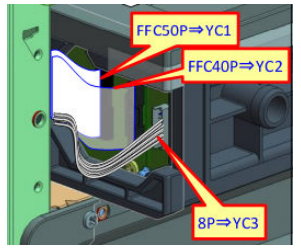
Machine left side

1. Detach Left Cover (4 3x8 screws)
2. Detach Left LSU Frame. (4 3x8 screws)

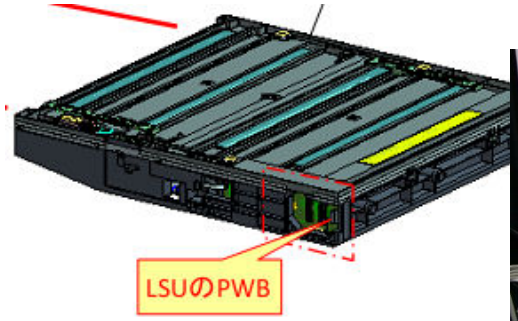


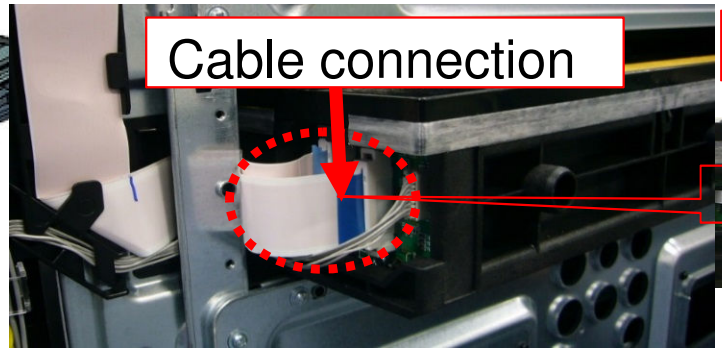


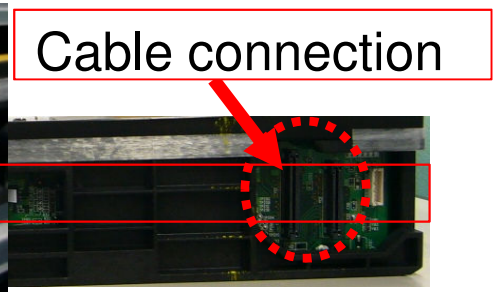
3. Slightly pull out LSU and disconnect FFC cable (1: Low-end/BW model, 2: High-end model) and 1 connector.
4. Take out LSU.

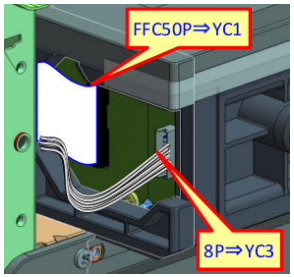


High-end







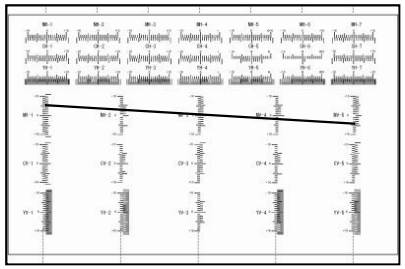


Low-end/BW

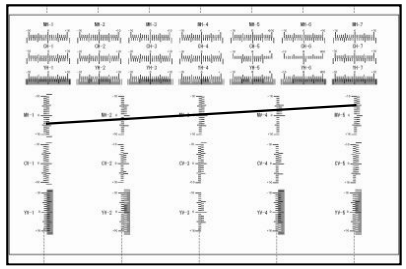
Image Adjustment LSU Replacement

<Image position adjustment after LSU replacement>

1. Execute U464 Calibration.
2. Print Test Chart at U469 Color Registration Adjustment (Detail).



[Rotate in CCW to correct]



[Rotate in CW to correct]

3. Color registration, LSU skew adjustment

3-1 Open COVER FRONT for maintenance.

3-2 Rotate the LSU skew adjustment screw by using a hexa-wrench. of 5mm width (11/3dot adjusted per click)

①Rotate CW: Front side image moves upward in reference to BK position. (Rotate CW for negative position shift)

②Rotate CCW: Front side image moves downward in reference to BK position. (Rotate CW for positive position shift)

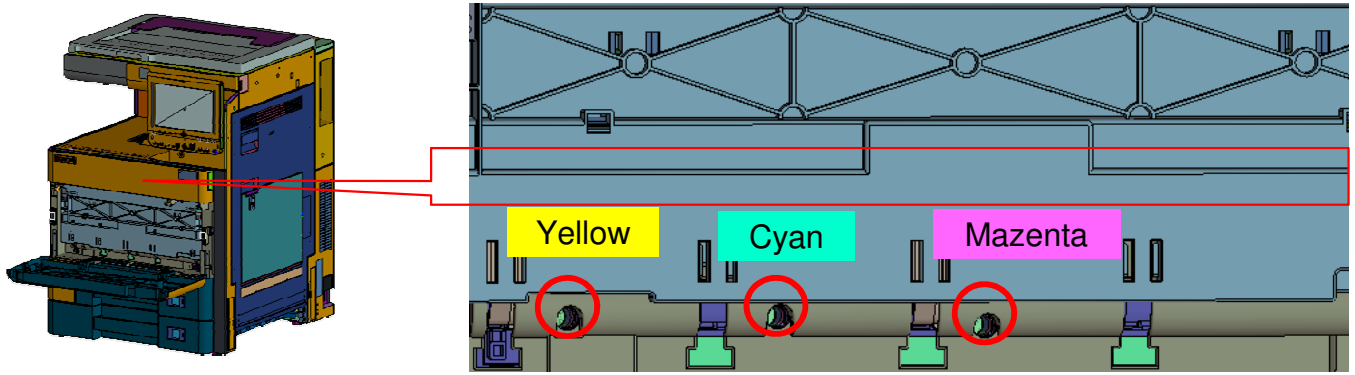


Image Adjustment LSU Replacement

4. Execute U464 Calibration.

   After adjusting the mirror angle, execute Color Registration Adjustment to レジスト update the setting.

5. Execute U469 Color Registration Adjustment.

   1) Execute Color Registration Adjustment (Auto)

      Print Test Chart in U469 and scan it.

   2) Check the color registration shift with Color Registration Adjust (Detail)

      Input the color registration shift in reference to BK position in the operation panel (execute after adjusting the skew manually)

6. Execute U119 Drum setup. (Only for color upper and monochrome models)

   Save the new LSU laser correction data in the engine PWB.

7. Corrective measures for the color unevenness in the drum shaft direction

   ① Execute U412 Uneven Density Adjustment
   (Only for color upper and monochrome models)

   ② Execute U464 Calibration

   ③ Execute U410 Halftone Adjustment

4-5-3
Drive Unit Replacement

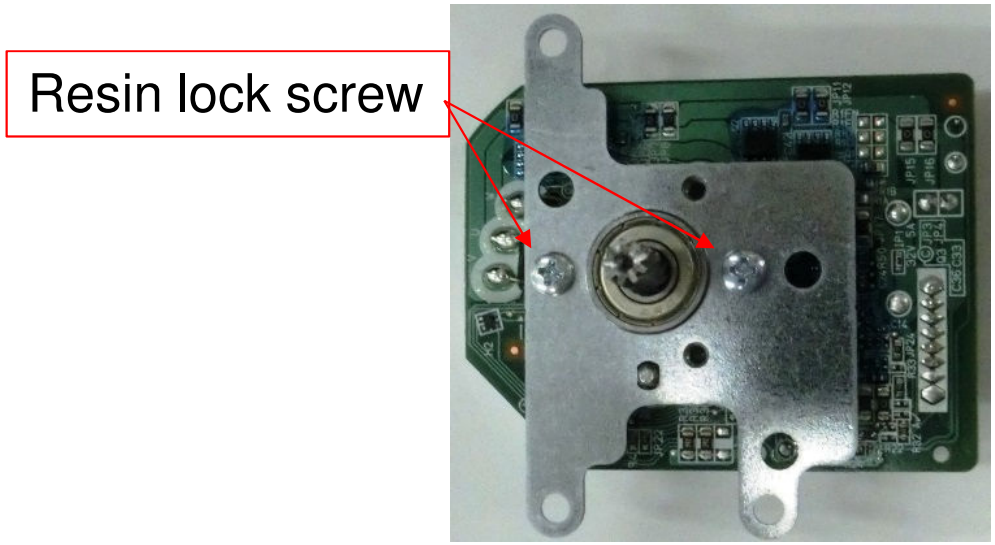
Note when replacing the container/ drum/developer drive motor

<Note when replacing the container/drum/developer drive motor>

Drive motor secured to the mounting plate with resin lock screws is supplied as service parts.

Replace the motor with the mounting plate.

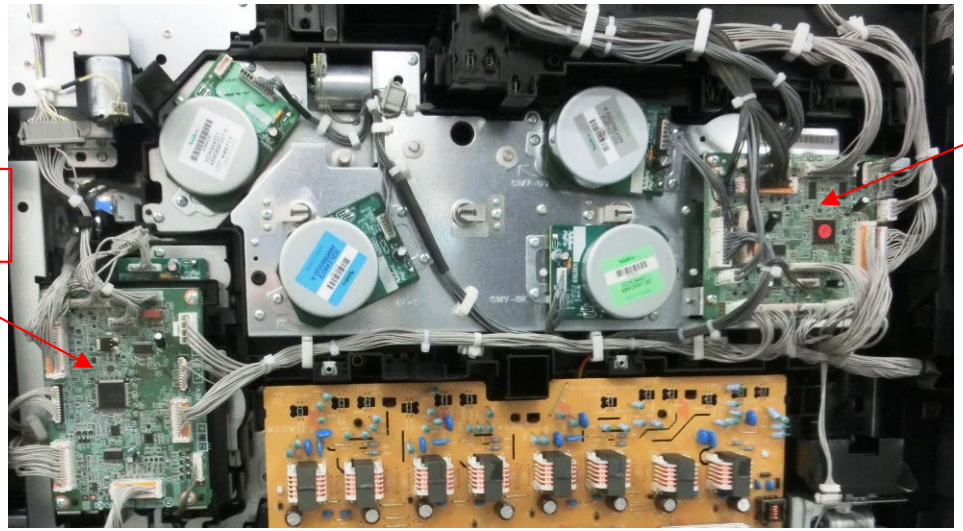
*Screws once secured are not able to make resin lock and the loose fix may cause the motor dropout.



Main Drive Unit Replacement

Main Drive Unit Replacement

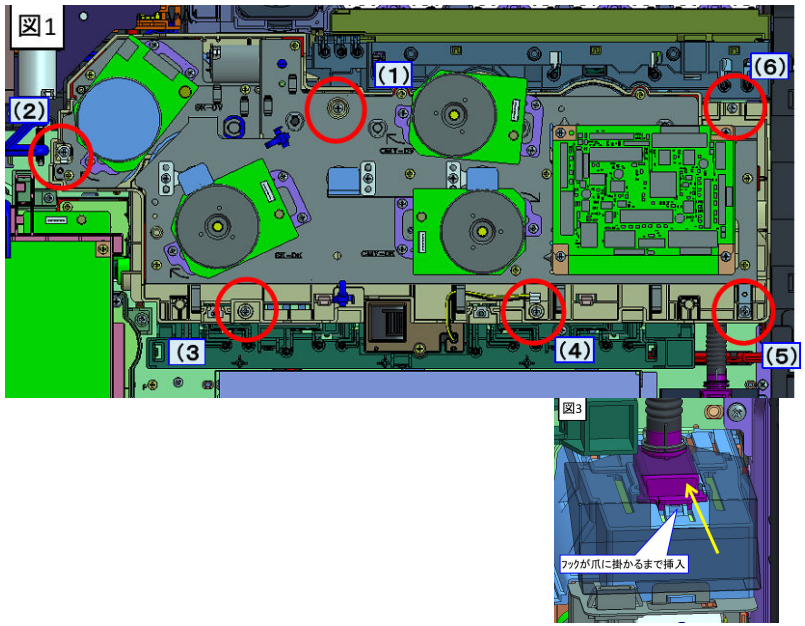
1. Disconnect cables.
   ①Disconnect the cables at the FEED IMAGE PWB.
   ② Disconnect the cables at the FEED DRIVE PWB.
   *Release the cable bind at the drive unit from the frame and detach it with the cable

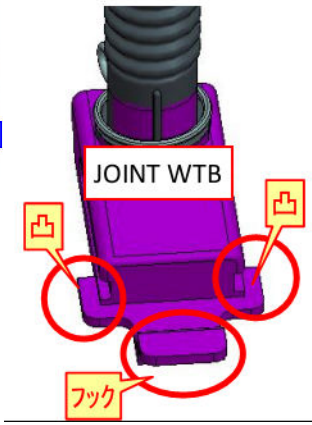


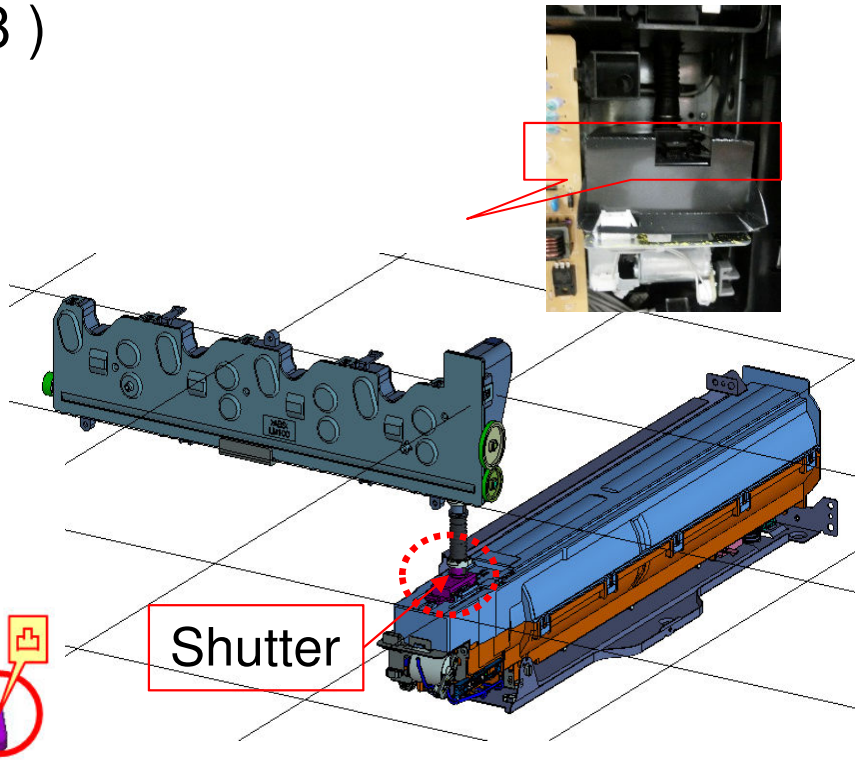
Main Drive Unit Replacement

Main Drive Unit Replacement

2. Release the hook of the waste toner tube joint shutter at the lower right side of the drive unit and detach the shutter.
   *If omitting to fit this joint shutter, the waste toner box full (C7980) is detected or waste toner spiral locks up.
3. Detach the main drive unit (6 screws 3x8)

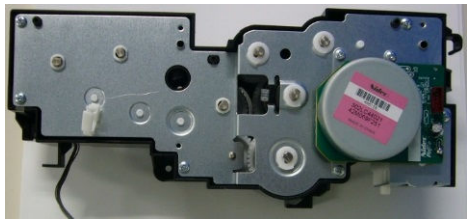




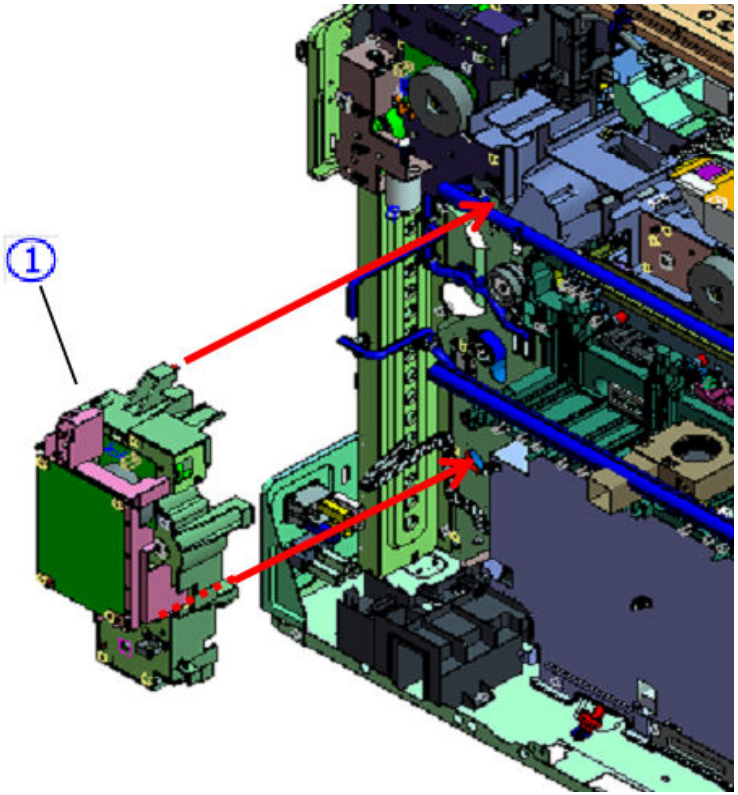


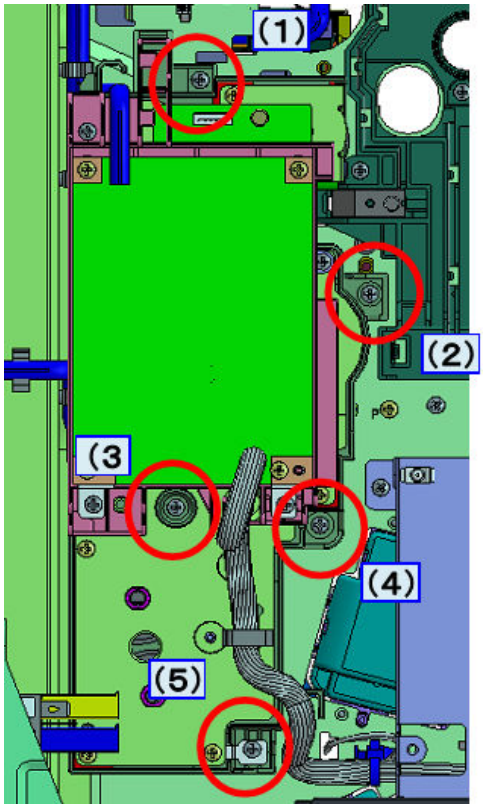
Conveying Drive Unit Replacement

Conveying Drive Unit Replacement

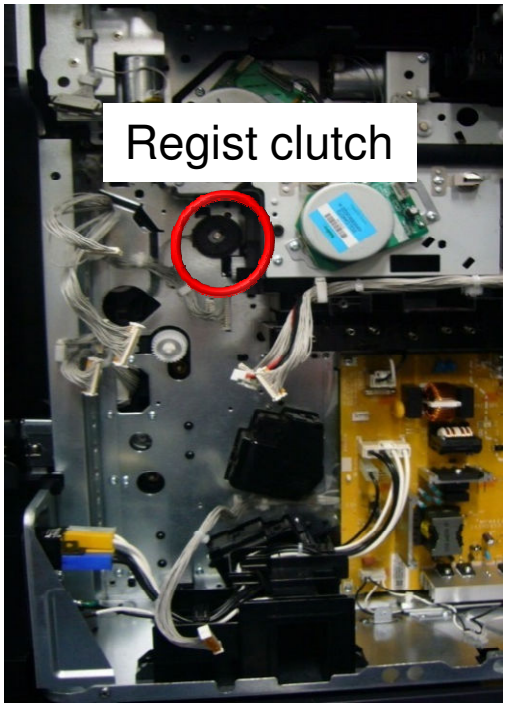


1. Disconnect the cable from FEED DRIVE PWB.
2. Detach Feed Drive Unit. (5 3x8 screws)





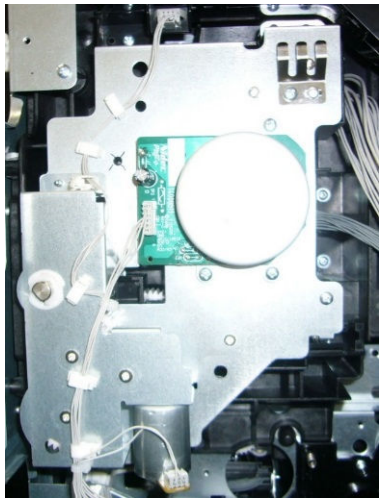
<Regist clutch>
Replace after detaching the conveying drive unit

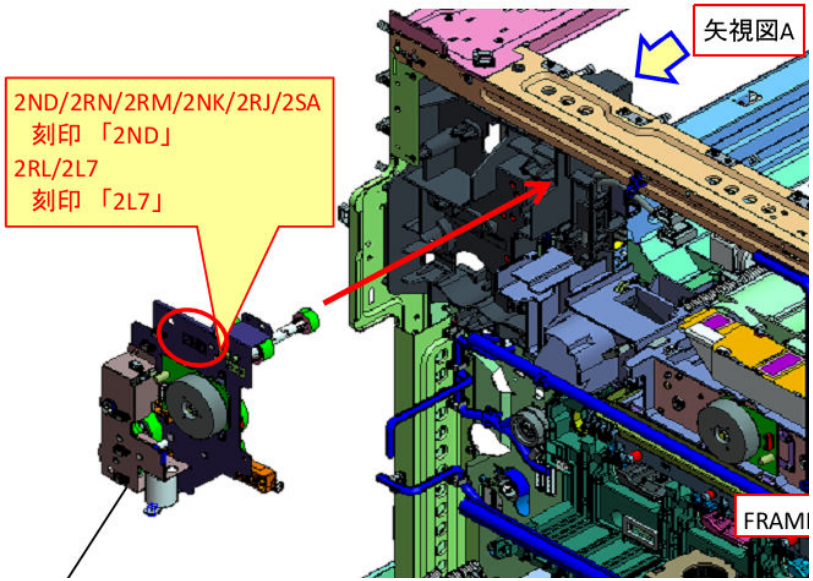


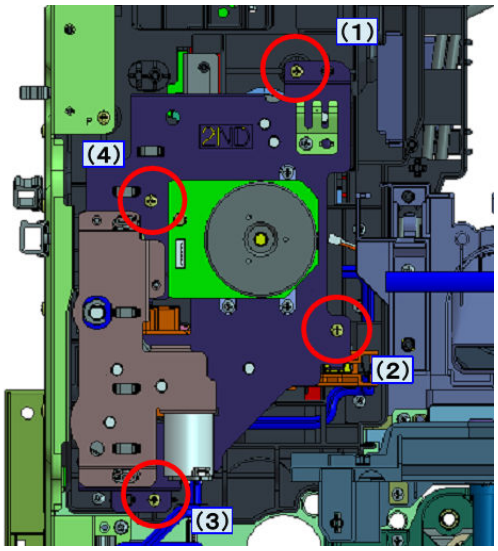
Fuser Drive Unit Replacement

Fuser Drive Unit Replacement

1. Open the control box. (remove 3 screws and disconnect the upper cable)
2. Disconnect the cable.
3. Detach Fuser Drive Unit (4 3x8 tapping screws)



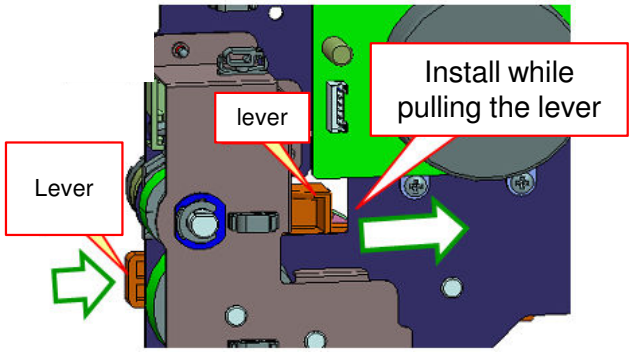


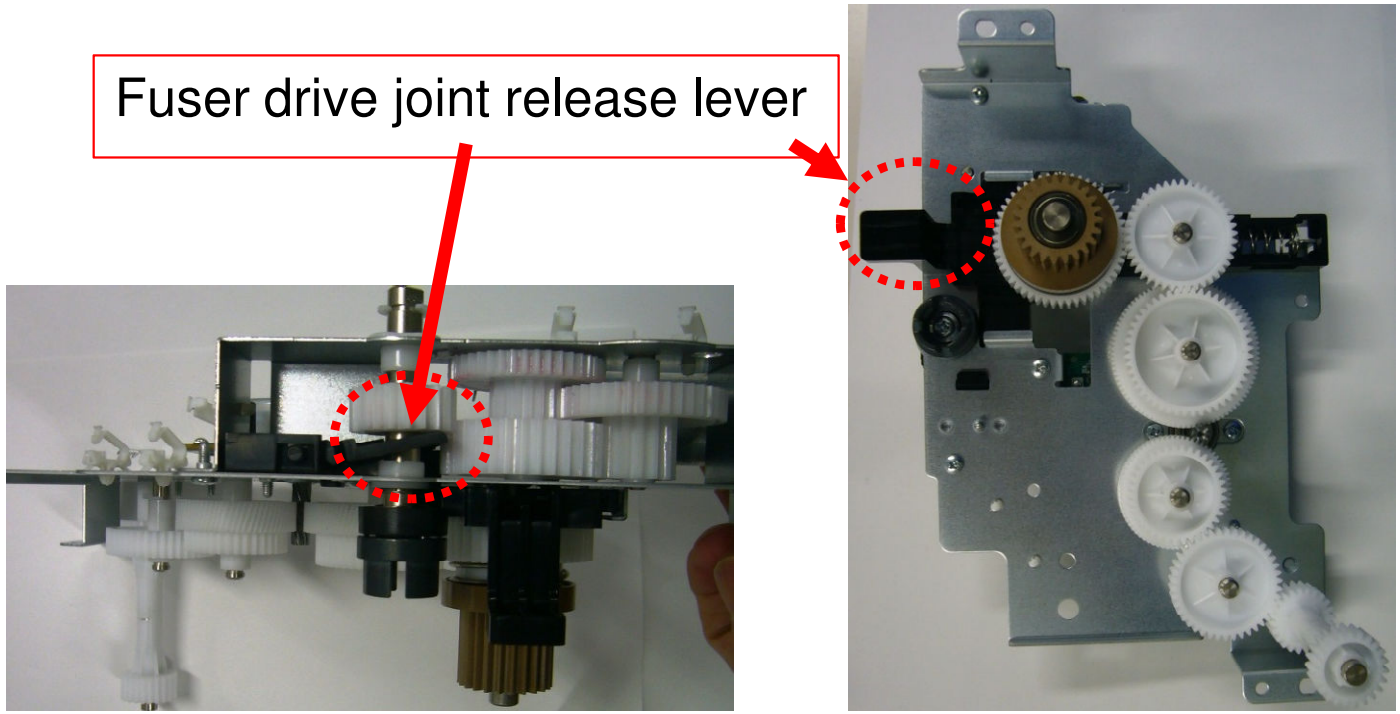


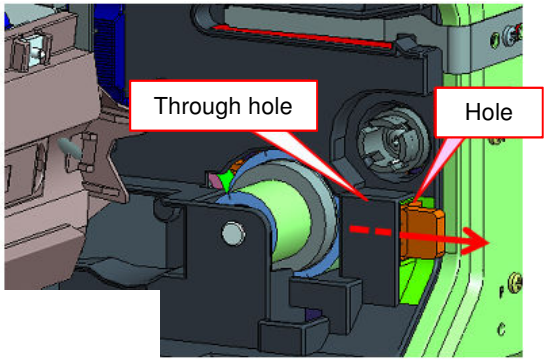
Fuser Drive Unit Replacement

<If detaching the unit by opening the right conveying cover>
The fuser drive joint is released and
detach Fuser Drive Unit while pulling the joint release lever. (Joint release leer moves)

Reattach Fuser Drive Unit while pulling the lever



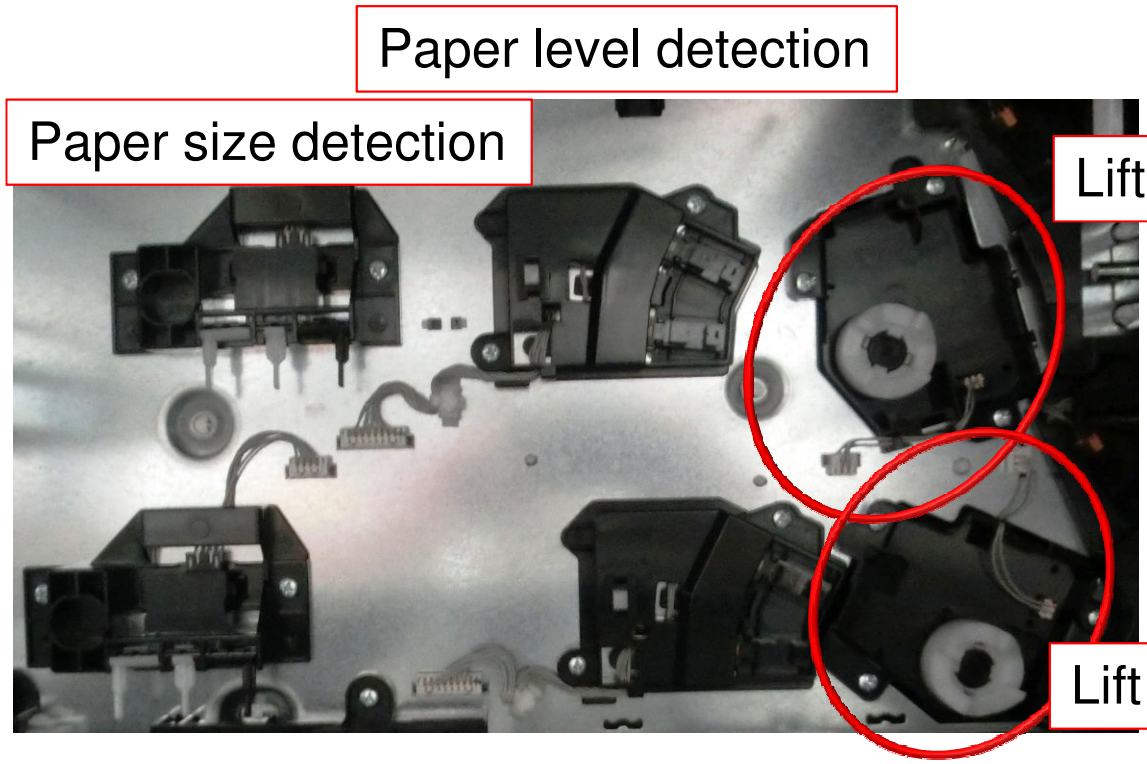


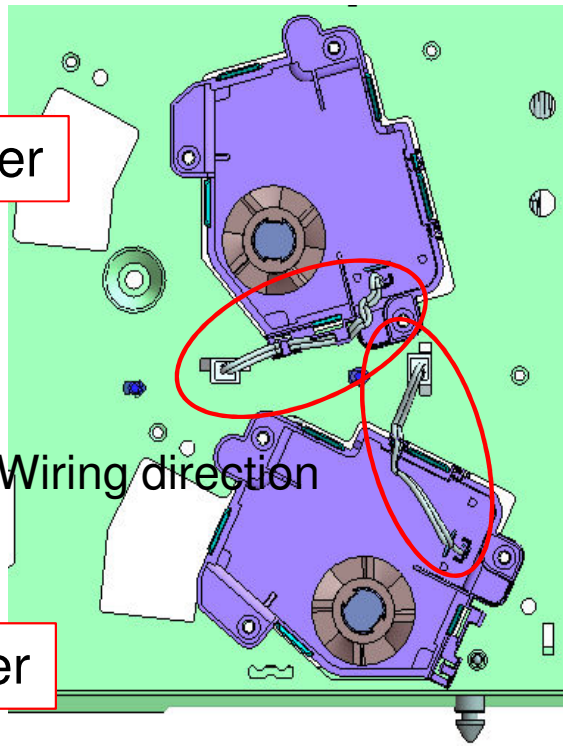


Cassette Lift Motor Replacement

Cassette Lift Motor Replacement

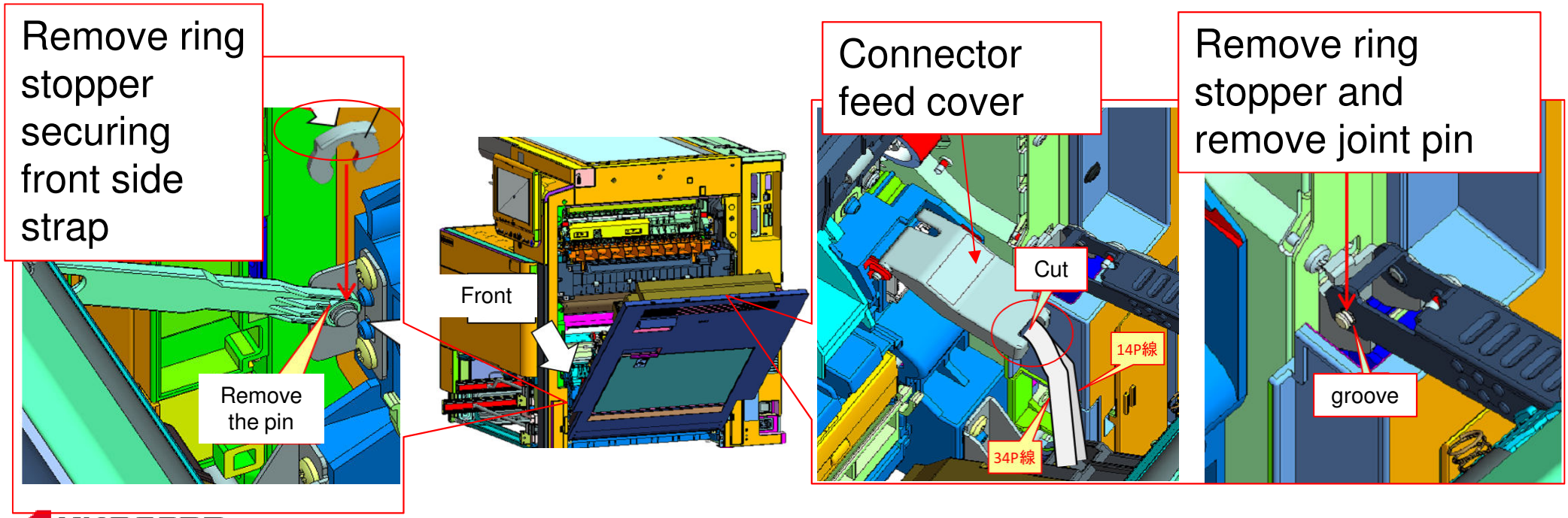
1. Take out Cassette.
2. Disconnect Cassette Lift Motor Cable.
3. Detach Cassette Lift Motor (2 3x8 screws)
4. Remove the cable from the lift motor and install it at new motor.
   (Please note that the cable wiring direction is different between for upper and lower Lift Motors.)





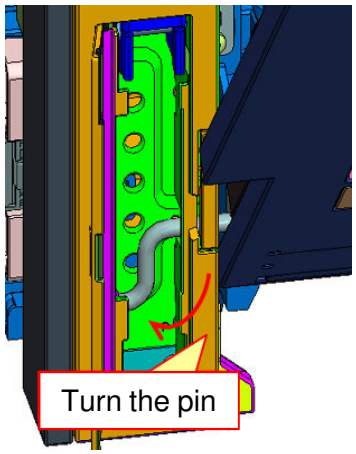
Conveying unit removal

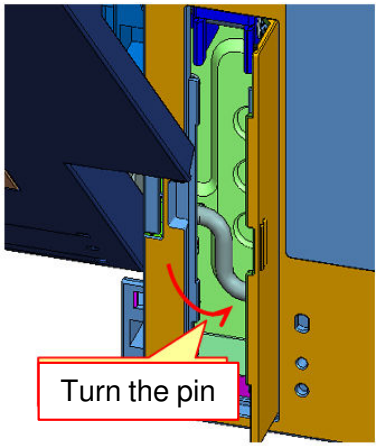
1. Open the conveying unit.
2. Open the connector feed cover and disconnect 2 connectors.
3. Remove the conveying unit front/rear side straps. (remove ring stopper)
4. Remove the conveying unit rear side damper sprint.
5. Remove the ring stopper securing the damper and release the damper.
   *MPF table rear wire is secured to the main unit so that paper does not fall down when opening the conveying cover to clear paper jam
6. Close the conveying unit.

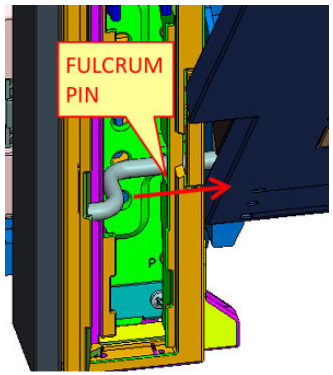


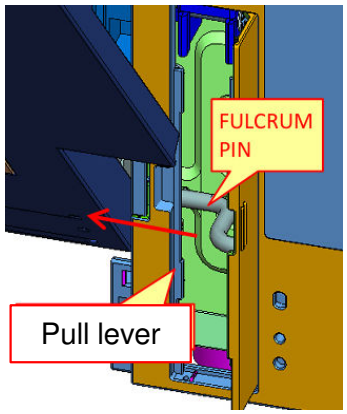
Conveying unit removal

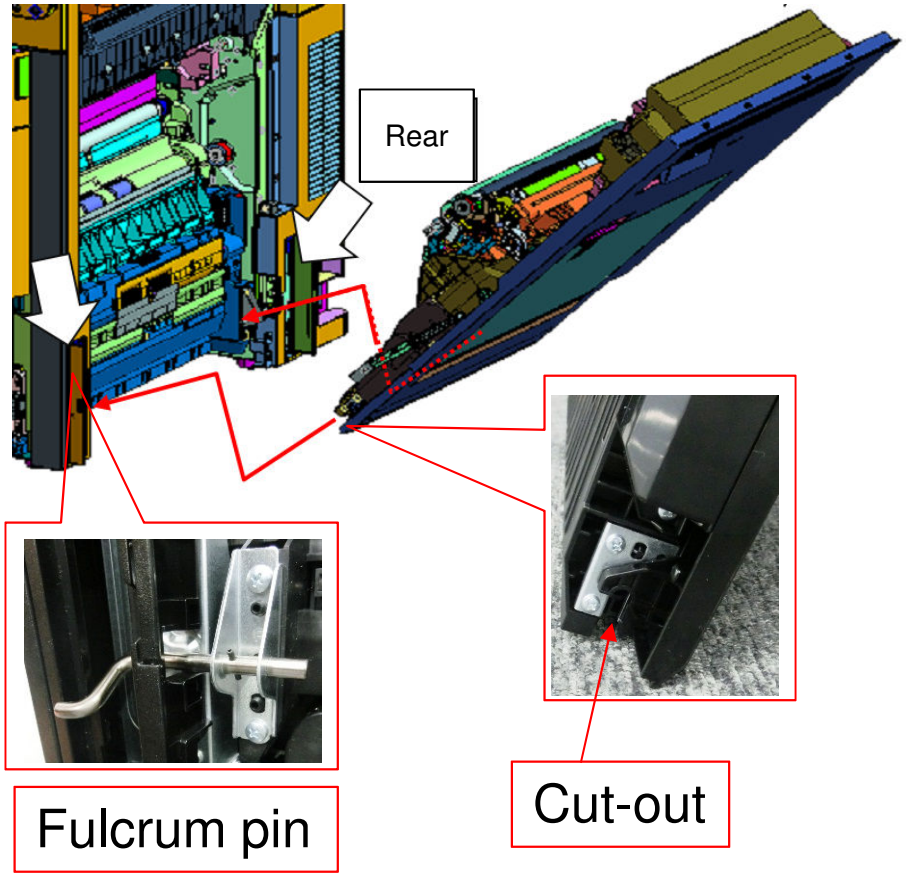
7. Open the cover for right side front/rear handle for machine lifting.
8. Rotate the bent part of fulcrum pin at the front/rear opening fulcrum of the conveying unit toward you and put it out until where the pin stops
9. Open the conveying and pull it toward the direction of the cut-out at the lower part of the unit. Then, remove the conveying unit.





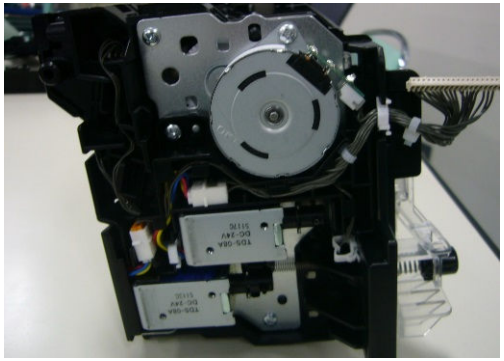




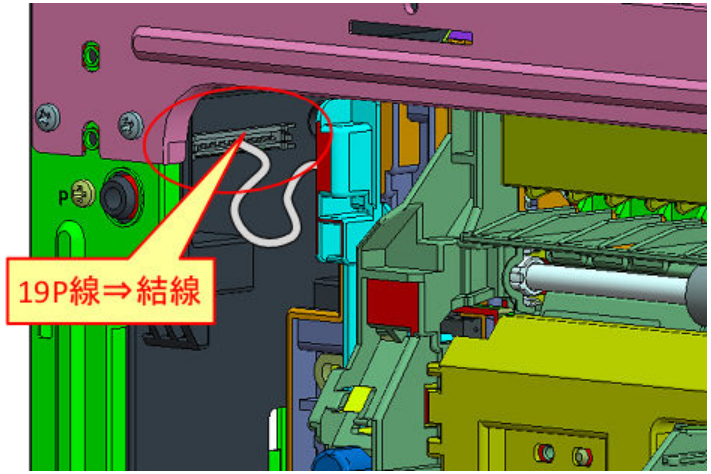


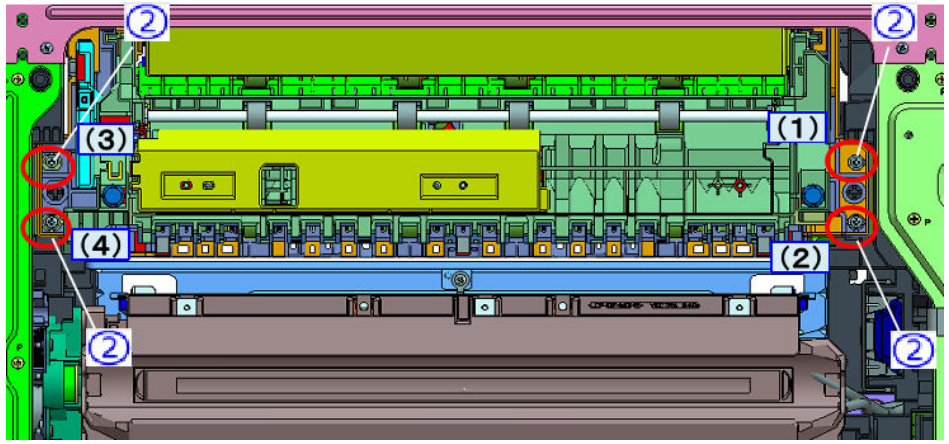
Eject unit removal

Eject unit removal



1. Open the right conveying cover.
2. Remove the fuser unit. (release front/rear lock)
3. Disconnect the eject unit cable. (front side)
4. Remove the eject unit. (4 3x8 screws)





4-5-5
HDD Failure Isolation

HDD Failure Isolation

Partial operation target: DP,DF,PF, HDD(New) *Inner DF is not applicable

<HDD failure isolation>

1. Flow of the failure isolation
   - If C0640 error appears twice in succession by turning the power off and on, HDD failure isolation is processed at the next power-up.
   - After HDD is recovered, release the isolation in U906.
2. After the isolation, the functions below using HDD are unavailable.
   - User Box: Document storage, Document print, Document handling, Preview
   - Job Retention Box : Document storage, Document print
   - Fax Box: Preview (actual image stored in SSD)
   - Fax Polling Box: Document storage, Document print, Document Send, Preview
   - Image Overlay: Select documents from Image Overlay Box

Note

1. In case of the below, HDD failure isolation is not processed.
   - One or more HyPAS application(s) are started up
   - Data Security Kit is started up
2. HyPAS application can not start up at HDD failure isolation.

HDD Failure Isolation

3. After the isolation, the registration data / device information below using HDD are unavailable.

① Registration Data
- Address Book or One touch :
  Sending destination can not be selected.
- User Authentication and Job Account Function:
  User information can not be obtained and Log in by function or Simple Log in is not possible

② Device Information
- Shortcut function
- Program function

Restriction at HDD Failure Isolation (Reference)

- Data Lost at HDD Failure
  - HyPAS application management data (incl. ImageLog image)
  - User Box
  - Job Retention Box (Printer)
  - Recopy Box
  - Form overlay Box
  - Printer data (PRESCRIBE, KPDL)
  - Fax Box Preview image (actual image stored in SSD)
  - Scheduled Fax Box
  - Fax Polling Box
  - Job Log*1

    *1: Job Log storage is temporarily prepared in SSD at HDD Failure Isolation and Job Log is indicated after the isolation.

Restriction at HDD Failure Isolation

- Image storage capacity when printing multiple copies

  Image storage capacity is restricted as below. (Memory full is indicated)

  - When 8GB SSD installed: 128 pages (Only 1GB used)
  - When 32GB SSD installed: 1024 pages (8GB)

  *Calculated with the standard original of 8MB/page

  * When HDD installed: 7680 pages (60GB)

- Document storage capacity of Job Retention Box and Recopy Box

  Storage capacity is restricted as below.

  - When 8GB SSD installed: 1GB
  - When 32GB SSD installed: 10GB

  *When HDD installed: 200GB

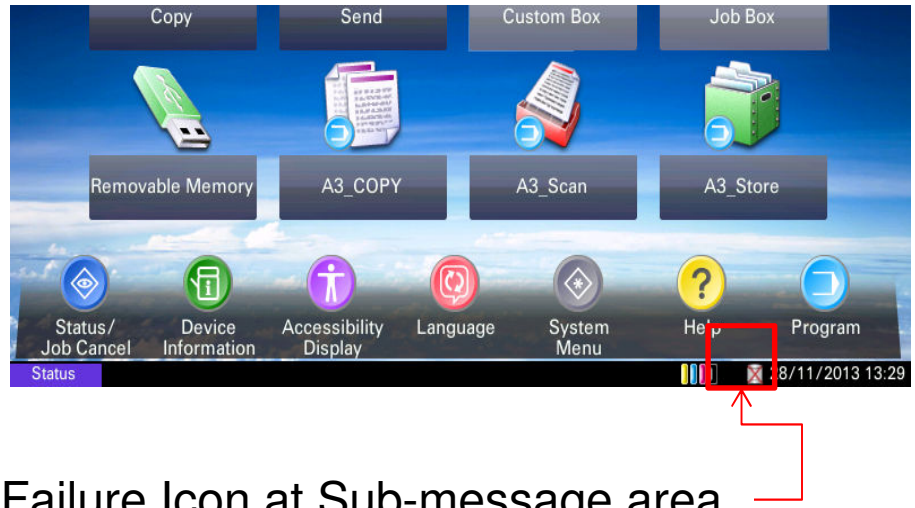
Restriction at HDD Failure Isolation

<Message display>

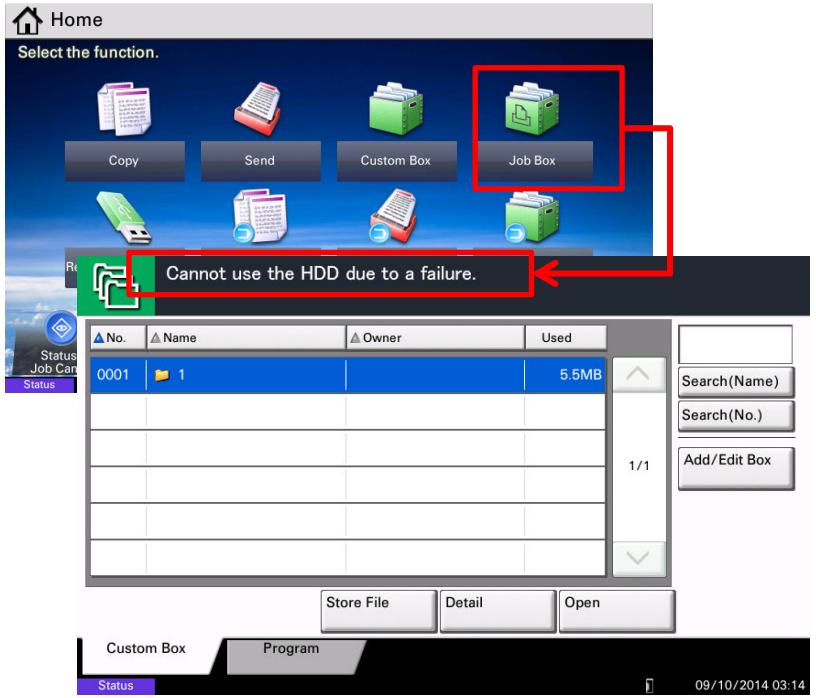
Hard disk failed. Call service. appear when selecting the function below

Due to HDD failure,

1) Image Overlay is unavailable
2) Custom Box is unavailable
3) Image Overlay form and Job Retention are unavailable
4) Polling Box is unavailable



Failure Icon at Sub-message area



4-5-5
SSD Replacement

Correction History

2016 10 11 Ver 1.4

P10 Note on Firmware Update

Correct the following message: USB memory starts up quickly → communicates a quick speed

Add the “PF-7100/7110” (main power sw off after completion of firmware upgrade)

SSD Life Prediction

SSD characteristics:

SSD is a memory media using an NAND flash memory.
When the flash memory writing exceeds the upper limit number, it need to replace.

Phenomenon of the SSD nearly end of its life

If read-out is possible, the box storage capacity decreases and accumulated number of pages for the multiple copies print decreases.（Since it is usable, it does not stop by an error)

◆SSD life prediction (The monthly print volume is calculated by assuming the product life page count is used up in 5 years)

● Data size (calculation)　8MB/page (A4 600dpi standard pattern)）
Send & Stored FAX reception: 100x200dpi standard pattern

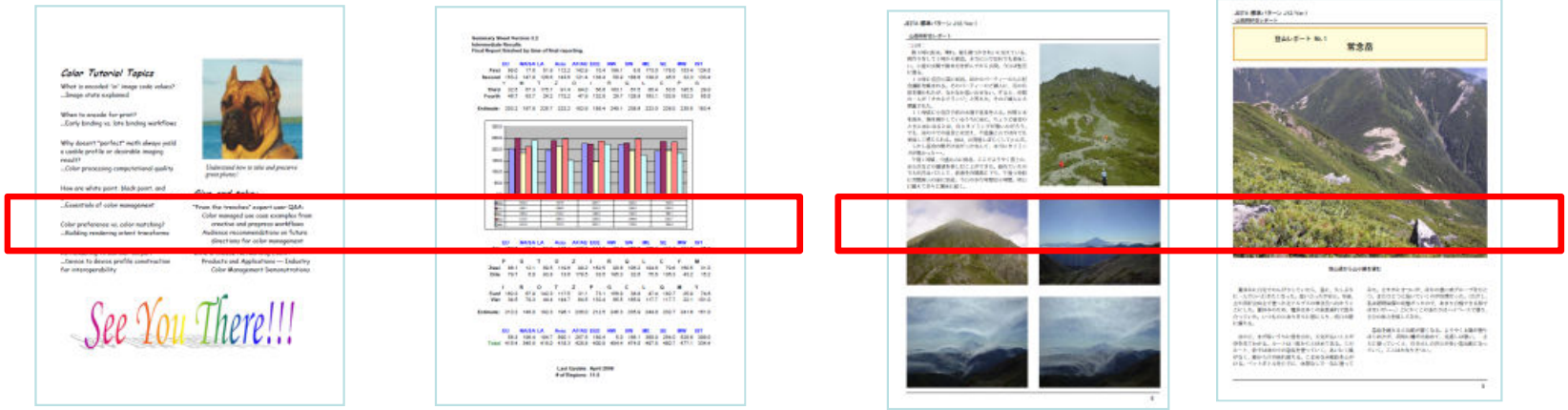
<Predicted time to reach the guaranteed SSD writing upper limit number>

	Guaranteed SSD life time (Year)	Data Security Kit	Product life (K page)	Print (K/Month)	Send & Save (K/Month)	FAX receive (K/Month)
SSD 32GB	13.4	Off	1,800	30	15	52.5
	7.18	On	1,800	30	15	52.5
SSD 8GB + HDD	16.07	Off	1,800	-	-	52.5
	11.83	On	1,800	-	-	52.5

*HDD is used for print, send and job save.

SSD Life Prediction

- **The case where writing size increases more than prediction**
  - **HyPAS application occupied area increase**
    - HyPAS application area is included in Send & Store counts. Install the HDD option for the application like Image Log that exceeds the Send& Store pages.
      Consider the HDD option installation base on the prediction of the monthly print volume and Send & Store pages.
      The number of writing in the internal flow of the HyPAS application that writes image differs by application (Installing the HDD is recommended)
  - **Each job settings**
    - Predicted image size is based on the standard patter with the default values.
    - If the poor compression rate pattern (mainly photo), high resolution or high image quality of a large data size is selected, installing the HDD is recommended.



Standard pattern

Poor compression rate pattern

SSD replacement indication based on guaranteed life

<Flow to reach the SSD life>

1) Reaching the guaranteed SSD lfe

[Replace SSD. Time for Maintenance (SSD)] message is indicated

SSD replacement
Execute U026 for data backup/retrieval
*Connect USB memory

When exceeding the SSD writing upper limit number

*If continuing use with this message indication, it will be unable to write in the SSD and finally programs cannot be read out. The machine cannot start up.

If exceeding the writing number of manufacturer's guarantee, the device has not reached the durable limit and the use can be continued.

*When exceeding the SSD durable limit, it becomes Read Only mode and the SSD mount. System cannot start up. If this message is indicated, Repalcing the SSD is necessary as soon as possilbe.

2) Read only mode

SSD replacement
Unable to execute U026 Data is not guaranteed

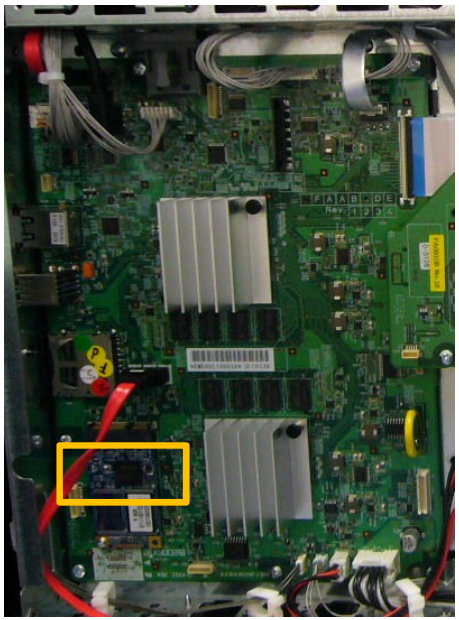
When the SSD becomes Read Only mode, the SSD data retrieval by U026 is not possible. After reaching the SSD durable limit, the SSD mount fails and system cannot start up.

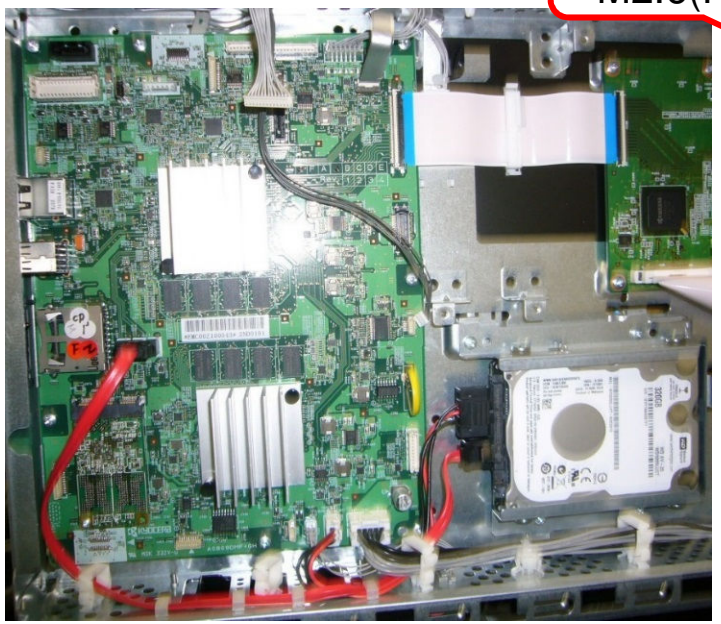
Replacement of the SSD on the main PWB

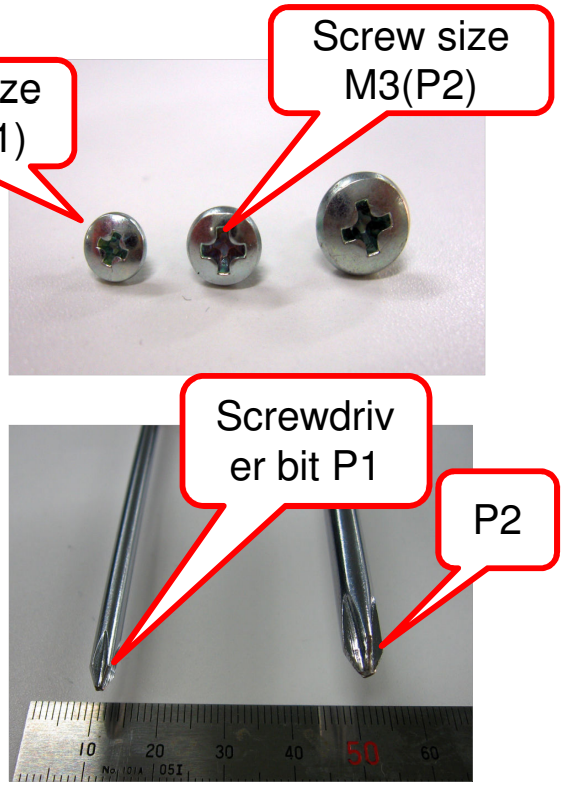
<SSD replacement procedure>

1. In case of reaching SSD life, execute U026 to backup the SSD internal data.
   Preparing a SSD failure, execute U917 to backup the SSD internal data
2. Replace the SSD. (1 M2.6 screw: Use P1 screwdriver)
   As the mSATA SSD spec, secure the other edge than the connector edge with a M2 screw.

- If wrongly installing the 8GB SSD to low end model instead of 32GB SSD, C0680 error occurs.







SSD replacement by SSD replacement indication and Backup data retrieval procedure

<Data retrieval procedure> SSD replacement by SSD replacement indication

*When the SSD fails or SSD becomes Read Only mode, the U026 data retrieval cannot be executed since the data cannot be read out.

Preparing two pcs of USB memory for firmware install and data back up

1. USB memory A for firmware installation
   ① Save a set of released firmware (Main/MMI/Language/OCR/Dictionary/Browser/Color table) in a USB memory A for firmware.*Minimum required released firmware set: Main and MMI *Check if it is the applicable firmware and do not include wrong one.
2. USB memory B for SSD data backup
   ① Connect a USB memory B (64GB for 32GB SSD).for data back up
   ② Execute U026 and select SSD→ Back Up
   (SSD data is copied to USB memory)
   *"SSD" is indicated when connected to USB memory.
   ③ Turn the power off
3. Replace with a new SSD.

SSD replacement by SSD replacement indication and Backup data retrieval procedure

4. Firmware retrieval

① Turn the power on with the USB memory A connected. *Programs cannot be loaded from the SSD and the SSD retrieval program in the SNOR on the main PWB starts up. If turn on the power without USB memory A, F010 will display.

② Firmware retrieval is executed.

*The SSD is automatically formatted and it is ready for the normal update.

③ When [UPDATE complete] is indicated on the operation panel, turn the power off and on with the UBS memory A connected.

④Execute the normal firmware update

*Write Main/MMI /Language/OCR/Dictionary/Browser firmware and Color Table from the USB memory A in the SSD.

5. SSD data retrieval

① Turn the power on with the USB memory A disconnected.

② Connect the USB memory B after start-up.

③ Execute U026 [SSD] → Restore * Automatically deleted when the data in the USB memoryB is retrieved in the SSD.

④ HyPAS application: Write FMU application from System Menu and set them up again.

U026 backup data retrieval

Migrate the SSD data by U026 when replacing the SSD.

- SSD → USB memory, USB memory → SSD data migration
- Data save in the USB memory is encrypted by AES256.

  (The encryption code validity is 30 days. If exceeding the validity, data migration is not possible.)
- Data migration in other machine is not possible. Only backup machine can retrieve the data.
- After the data is migrated from the USB memory to the SSD, the data in the USB memory is automatically deleted.

*Note that unnecessary data in the old SSD is not automatically deleted after backup. (Destroy it physically)

- Use a USB memory B of 64GB capacity or more in case 32GB SSD is fully used to save the backup data in the SSD.

Data migration time by U026 SSD backup/retrieval

1) 8GB SSD model: 14min. (when full 8GB memory is used)
2) 32GB SSD model: 62min.-178min. *Depending on data usage

Note on Firmware Update

<Note when executing the firmware update>

When using a USB memory that communicates a quick speed, the machine starts up before executing firmware update and cannot enter the firmware update mode.

Execute Maintenance mode U025 Firmware Update (S): Firmware Update (Security)

(Execute → Start key→ Power Off/On and firmware update starts)

*No problem is expected with the USB memory recommended by the USB memory guideline

*After the 3K side deck &1K DF & PF-7100/7110 firmware update, turn the machine power off with the main power switch. The front side power switch cannot turn the power off.

Type	Display	Saved in	High-end Color	Low-end Color	Mono
Main	CTRL	SSD	2ND_2000.001.xxx	2RL_2000.001.xxx	2NK_2000.001.xxx
MMI	PANL	SSD	2ND_7000.001.xxx	←	←
Language	OPT	SSD	2ND_81XM.001.013	←	←
Dictionary	DIC	SSD	2ND.CA00.001.002	←	←
Engine	ENGN	Engine PWB	2ND_1000.001.xxx	2RL_1000.001.xxx	2NK_1000.001.xxx
Panel	SPNL	Panel main PWB	2ND_7200.001.013	←	←
Browser	BRWS	SSD	2ND_F000.001.003	←	←
OCR	OCR	SSD	2R6_L000.001.001	←	←
FMU	FMU	SSD	J00.E00C.009.004	←	←
Color Table (Prn)		SSD	2ND_GZ00.001.001	←	NA
Color Table (Copy)		SSD	2ND_KZ00.001.001	←	NA

SSD + HDD storage data

- Image storage volume and HyPAS area details

		32/25ppm model	60/50/40ppm model, KDA model	Remarks
	SSD	32GB	8GB	
	HDD	None	320GB	
CustomBox/JobBox /JobRetentionBox	Usable size	10GB	200GB	Custom Box is not supported with the 8GB SSD only
	Accumulate pages	1,280 pages	25,600 pages	Standard pattern ISO24314 Word file
Continuously processed pages (Accumulated pages at multiple copies print) (Usable size)*		1,024 pages (8GB)	7,680 pages (60GB)	
HyPAS	Install area	52MB	52MB	MAX 5
	HyPAS application usable area	2GB	10GB	Expandable by installing the USB or SDHC card

*Original preset number for continuous Copy/Send scanning is 998.
Depending on original like photo of low compression rate, accumulable number is less. Install HDD if memory shortage message often appears.

SSD error at lifetime end

[SSD failure, phenomenon when data cannot be written at lifetime end: stop with an error]

1. Service call error C0680 mount failure: In case the communication with the SSD is disabled during the machine operation (Same as C0640 for HDD)
Remedy: U024 SSD initialization, Check whether SSD spec. is correct

2. System error F010 (program load error by device detection failure) or does not start up. (Occurs when program read fails. Main and MMI firmware in the SSD cannot be extended at start-up)
Remedy: Re-install the main firmware to SSD or Replace SSD

* NO panel display occurred with the conventional models by HDD failure does not occur with the SSD factor but NOR memory failure on the main PWB is considered.

4-5-6.
Main PWB Replacement

Correction

2016 5 10 Ver 1.1

P5, Main PWB Replacement: Counter retrieval (Detail)

New model: Remount SSD, C0180(Serial No. error) , Execute Maintenance mode U026 flash (Data recovery from SSD) is added.

In case of replacing with the used main PWB for temporary operation check

If replacing with used main PWB, replace it together with SSD on the used main PWB. Otherwise, original SSD data (device and job setting, service counter information) will be changed to other machine's data transferred from the used main PWB since the data in the main PWB are backup by SSD automatically.

C0180 (wrong serial number) occurs after power on and then execute U004 (not necessary to execute U026 when replacing the used main PWB together with used SSD.

P7, Data retrieval procedure after Main PWB replacement

The following is added. *Prevent the data in the main PWB from being overwrite the data of SSD

After replacing the main PWB, C0180 (serial number mismatch) occurs. Do not execute U004 (set machine's serial number) immediately since the SSD data will be changed to the data from the main PWB. Please execute the U026 Flash (transfer the data from SSD) and then execute U004.

Following is deleted

2. When the used main PWB is installed for operation check

Execute U021 initialize before installing it in order not to store the other main PWB data into original SSD.

Following is added

2.In case of replacing with the used main PWB for temporary operation check

When replacing with used main PWB, replace it together with SSD on the used main PWB and check the operation. The SSD is back up the device setting data in the main PWB in case of the damage or replacement of the main PWB

Please note when installing the used main PWB with original SSD, the data in the original SDD is changed to the data in the used main PWB after execute U004.

Correction

2016 5 10 Ver 1.1

P9. Data retrieval procedure after Main PWB replacement

The following are added.

4. Transfer the SSD backup data to the new main PWB (flash memory)

- U026 Pulling Back Up Data → Flash → Restore (Data transfer from SSD to new main PWB.)

*In case of the used main PWB, the data in the original SSD is changed to the data in the used main PWB after executing U004. Before executing the U004, please execute U026 Flash to transfer the original SSD data to the used main PWB.

P10 Data retrieval procedure after Main PWB replacement

Following is deleted.

- U026 Pulling Back Up Data → Flash → Restore (Register the data to new main PWB from SSD)

Following is added

Re-register the Network Certificate (Re-issuing it if the user is registered by CCRX)

2016 6 24 Ver 1.2

P9 Data retrieval procedure after Main PWB replacement

Following sentence is added to prevent the connector damage.

* When detaching IB-35, hold the both side of connector and disconnect it while pulling it right and left side little by little.

Main PWB (Change from the conventional model)

<Change from the conventional model> (SSD + Flash memory + FRAM configuration)

1. Data storage device change (New: SSD, Disused: EEPROM)

Conventional model: EEPROM / Main PWB (Flash memory) / HDD
New model: Main PWB (FRAM / Flash memory) / SSD / HDD

* FRAM/Flash memory are mounted on the PWB (Irremovable)

* Main /MMI firmware are stored in the SSD to shorten start-up time

2.Data storage change

EEPROM/Main PWB (Flash memory) → Main PWB (FRAM/Flash memory)/SSD

Data stored in EEPROM

- Job No./Event Log/Firmware history code → SSD
- Halftone adjustment value → Main PWB (Flash memory)
- Others → Main PWB (FRAM)

Data stored in Main PWB (Flash memory)

- Job related/Device settings/Certificate →Main PWB (Flash memory)
- Others → SSD

3. When replacing the Main PWB with new PWB, the SSD backup data is migrated

U026 Pulling Back Up Data → Flash → Restore

Main PWB (Change from the conventional model)

New model

Device	Data	Removable
SNOR Flash	Job data / Device settings / Halftone auto adjustment value / Sheet Extension (Wallpaper image: U224), etc.	No
FRAM	Counter / MAC address / Serial No. / OEM setting etc.	No
SSD HDD	Color Table / Address Book / Job Log / Event Log / Job Accounting data / Job Accounting counter / FAX Box / FAX reserve data / FAX image / Box data / HyPAS application, etc.	Yes

Conventional model

Device	Data	Removable
EEPROM	Job No. / Event Log / Firmware history code, Halftone auto adjustment value, etc.	Yes
NAND Flash	Job data / Device settings / Certificate, etc.	No

Main PWB Replacement: Counter retrieval (Detail)

Conventional model: Remount EEPROM

New model: Remount SSD, C0180(Serial No. error) , Execute Maintenance mode U026 flash (Data recovery from SSD) → U004 (Set Serial No.)

*Counter values below are retrieved from the SSD and engine PWB EEPROM

Device	PWB	Counter
FRAM (irremovable)	Main	Billing counter (Main)/Life counter(Sub)/Maintenance counter (Main)→ retrieved from the engine PWB EEPROM Service data counter (Main) → retrieved from the SSD
SSD(Removable)	Main	Billing mode/Service data counter (Sub)/Job Accounting counter
EEPROM (Removable)	Engine	Billing counter (Sub)/Life counter (Main)/LLU counter/maintenance counter(Sub)

In case of replacing with the used main PWB for temporary operation check

If replacing with used main PWB, replace it together with SSD on the used main PWB. Otherwise, original SSD data (device and job setting, service counter information) will be changed to other machine's data transferred from the used main PWB since the data in the main PWB are backup by SSD automatically.

*C0180 (wrong serial number) occurs after power on and then execute U004 (not necessary to execute U026 when replacing the used main PWB together with used SSD)

Main PWB replacement: MAC address

MAC address changes by Main PWB replacement and resetting network is necessary depending on environment.

Ex. If the printer name is registered with the IP address, reset IP address. (This is the same case as the conventional low-end model without EEPROM)

Model	MAC address storage	Scenario	Service
Conventional model	EEPROM	PWB replacement EEPROM damage	Re-mount EEPROM after main PWB replacement, and execute U004
			Need EEPROM storing MAC address. Execute U004 after mounting EEPROM.
New model	FRAM	PWB replacement (FRAM damage)	Execute U004 after main PWB replacement . *New MAC address is set up in the PWB replaced. Resetting network environment is necessary with the new MAC address.
Conventional Low-end model without EEPROM	Flash memory	PWB replacement (SNOR damage)	

Data retrieval procedure after Main PWB replacement

1.Caution when replacing with the new main PWB

Replace the EEROM (Engine PWB), Main PWB/SSD individually.
When replacing them more than 2pcs together at the same time, the machine serial number, counter etc. cannot be retrieved

*Prevent the data in the main PWB from being overwrite the data in the SSD

After replacing the main PWB, C0180 (serial number mismatch) occurs. Do not execute U004 (set machine's serial number) immediately since the SSD data will be changed to the data in the main PWB. Please execute the U026 Flash (transfer the data from SSD) and then execute U004.

2.In case of replacing with the used main PWB for temporary operation check

When replacing with the used main PWB, replace it together with the used SSD on the used main PWB and check the operation.

*The SSD is back up the device setting data in the main PWB in case of the damage or replacement of the main PWB

Please note when installing the used main PWB with original SSD, the data in the original SDD is changed to the data in the used main PWB after execute U004.

Data retrieval procedure after Main PWB replacement

<Data retrieval procedure after Main PWB replacement>

1. Remove the SSD and IB-35 (KDA standard) from the old Main PWB and re-mount them in the new Main PWB. *Do not install SSD which has other type of Main firmware. * When detaching IB-35, hold the both side of connector and disconnect it while pulling it right and left side little by little.
2. Install the new Main PWB and turn the power on.
3. C0180 error appears. *Machine number is lost by new Main PWB replacement.
4. Transfer the SSD backup data to the new main PWB (flash memory)
   - U026 Pulling Back Up Data → Flash → Restore (Data transfer from SSD to new main PWB.)
     *In case of the used main PWB, the data in the original SSD is changed to the data in the used main PWB after executing U004. Before executing the U004, please execute U026 Flash to transfer the original SSD data into the used main PWB.
   - Execute U917 to return the device and job setting if it is available.
5. U004 set the machine number
   - Billing counter, life counter, LLU counter and maintenance counter (except the cassette counter) are copied from the engine PWB EEPROM

Data retrieval procedure after Main PWB replacement

6. Main PWB (Flash memory) backup data retrieval
   - Input setting values with Maintenance Report by U000 previously printed.
     (U251 Cassette Counts, U265 OEM setting, U065 Main Scan timing adjustment, U402 Margin adjustment, other setting items changed at setup)
   - Execute U410 Automatic halftone adjustment
   - Re-register the Network Certificate (Re-issuing it if the user is registered by CCRX)
   - Re-register the Panel original display by U224 home screen image
   – Set the Interface block and security level in the system menu if the default is changed.
   – Enter the Data security encryption ID. *When the data security kit is activated, input the security ID which was entered at set up of the data security kit.
   – Due to MAC address (printer name) change, resetting network setting is necessary depending on environment.

U917 backup data

Registered data	Information outline
Address Book	Group Address Book
One Touch	One Touch
Job Account	Department Accounting Control
User	User information, Login by function, Simple login information
Device information	Information outline
Document Box	Custom box list, Fax confidential receive box list
Shortcut	Shortcut (Box storage) (Box print) (Box send) (Fax)
Fax Forward	Memory forward information (All) (Others) (individual)
Program	Panel program
Panel Setting	Panel home menu
Fax Setting	Fax common settings, Fax settings
Network	Network settings (IPv4 filter) (IPv6 filter)
Printer	Print settings (Copy settings) (Emulation settings) (Print environment settings)
System	Device settings (Adjustment/maintenance settings) (Error Handling settings) (Timer settings) (Sound settings) (Paper/feed settings) (Report settings) (Fax remote diagnostics settings) (File settings) (SSFC Job Log settings) (Send original storage settings) (Finisher settings) (Job indication settings)
Job Setting	Job settings (Scan settings) (print settings) (File settings) (Copy settings) (Send and print settings)

機器情報バックアップ先

Category	Item	Venus2 Storage	Iris(32/25) Storage	Iris with HDD Storage
Machine settings	Job data(SVC)	NAND	NOR	NOR
	Device setting (STC)	NAND	NOR	NOR
	Forward condition setting	HDD	SSD	SSD
	Forward destination setting	HDD	SSD	SSD
	Fax memory forward	HDD	SSD	SSD
	Reserve data	HDD	SSD	SSD
	FAX lost document data	Fax Flash	SSD	SSD
	One-touch key	HDD	SSD	SSD
	Panel program	HDD	SSD	SSD
	Job ID (Reception No.)	EEPROM	FRAM	FRAM
	Option language (eWeb)	HDD	SSD	SSD
	Option language (List)	HDD	SSD	SSD
	Fax font	HDD	SSD	SSD
	Halftone auto adjust value	EEPROM	NOR	NOR
	Color table	HDD	SSD	SSD
User settings	User settings	HDD	SSD	HDD
	Personal Address Book	HDD	SSD	HDD
	Group Address Book	HDD	SSD	HDD
	Group member	HDD	SSD	HDD
	One-touch address	HDD	SSD	HDD
	Others	HDD	SSD	HDD

Device information backup

Category	Item	Venus2 Storage	Iris(32/25) Storage	Iris with HDD Storage
Device management	FAX communication history	Fax Flash	SSD	SSD
	Job Log (Print)	HDD	SSD	HDD
	Job Log (Print: receive dest.)	HDD	SSD	HDD
	Job Log (Storage)	HDD	SSD	HDD
	Job Log (Storahe: receive dest.)	HDD	SSD	HDD
	Job Log (Send)	HDD	SSD	HDD
	Job Log (Send: receie dest.)	HDD	SSD	HDD
	Job Log (Send:send dest.)	HDD	SSD	HDD
	Event Log (Occurred Log)	E2PROM	SSD	SSD
	Counter	E2PROM	FRAM	FRAM
	Certificate (network)	NAND	NOR	NOR
	Job Accounting counter	HDD	SSD	SSD
	Job Accounting	HDD	SSD	SSD
	Service data counter (backup)	-	SSD	SSD
	Billing mode（backup）	-	SSD	SSD
FAX image	FAX image storage	Fax Flash	SSD	SSD
Solution	HyPAS application	HDD	SSD	SSD

4-5-7

PWB Replacement

Correction

2016 5 10 Ver 1.1

P3 Engine PWB Replacement The following is added.

4. After installing the engine PWB, the updated engine firmware should be installed.

P4, Engine PWB EEPROM Replacement

The following items are added

2. If the setting value on the previously printed out U000 maintenance report are differed from the report after replacing the EEPROM, please re-enter the setting value.

U969 Toner Area Code

U065/66/67 Copy Image Position Setting

2016 5 10 Ver 1.1

P4, Engine PWB EEPROM Replacement

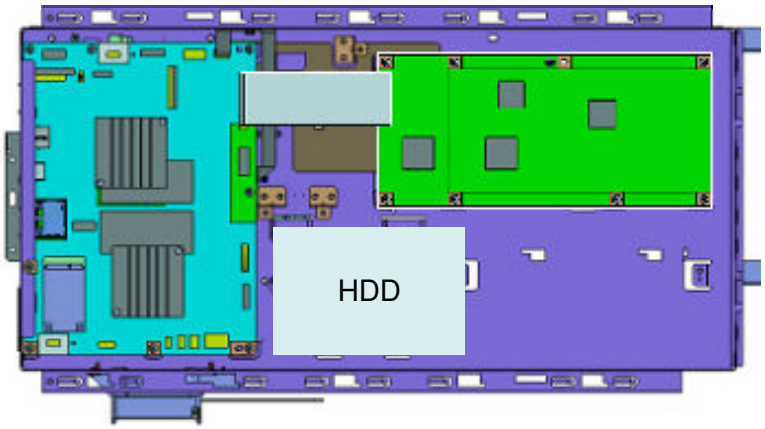
The following items are deleted.

U969 Toner Area Code

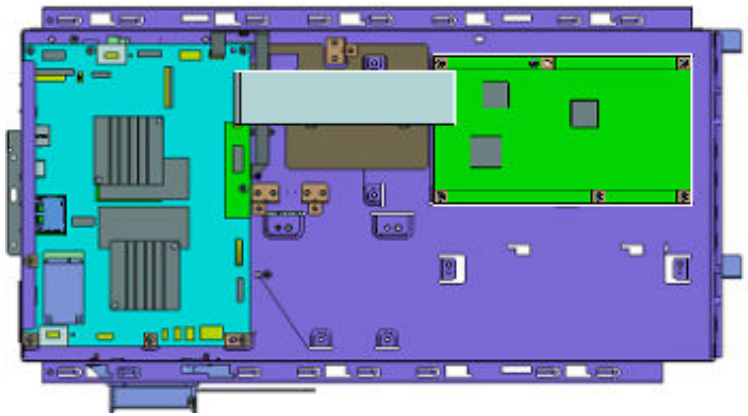
Engine PWB Replacement

<Engine PWB Replacement>

1. Detach the upper rear cover.
2. Disconnect the cable connected to the engine PWB.
3. Remove the EEPROM from the board and replace it on the new board.
4. After installing the engine PWB, the updated engine firmware should be installed.



For high-end model

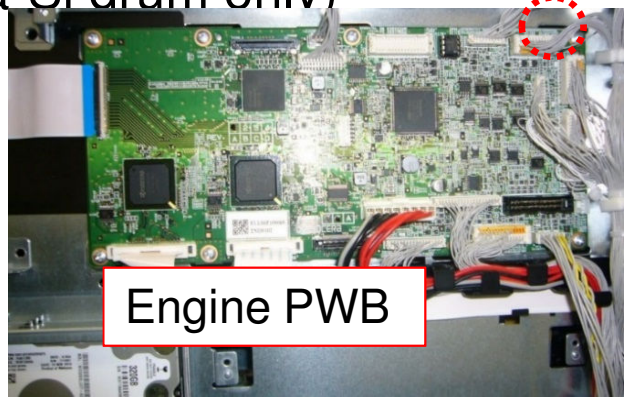


Engine PWB:
For low-end model (ELW) and BW (ELZ) distinguished with the barcode number

Engine PWB EEPROM Replacement

1. After replacing with new EEPROM and turning the power on, execute U169 IH power destination voltage setting (C6990:Fuser power supply incompatibility) because C6990 appears.
2. If the setting value on the previously printed out U000 maintenance report are differed from the report after replacing the EEPROM, please re-enter the setting value. (U053:Motor, U100:Main HV, U101/U106:1/2 Transfer, U140Dev bias,U161 Fuser, U464 Calib setting)
3. Execute maintenance modes below

U252 Set Destination
U119 Setting the drum (for high-end model a-Si drum only)
U411 Automatic scanner adjustment
U469 Color registration adjustment (Drum belt speed adjustment)
U140 AC calibration(for high-end model Touch-Down Developer only)
U140 Calibration
U412 Uneven density adjustment(for high-end model a-Si drum only)
U140 Calibration
U410 Automatic halftone adjustment
U034 Adjusting the print start timing
U155 Waste Toner Box weight detection calibration
U065/66/67 Copy Image Position Setting



Fuser IH PWB Replacement

1.Detach the upper rear cover at the far end of the inner eject tray and drawer cover (job separator). (4 3x8 screws)

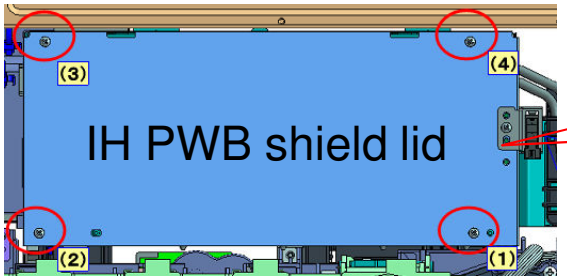
2. Remove the paper sensor mounting plate for the job separator. (1 3x8 screw)

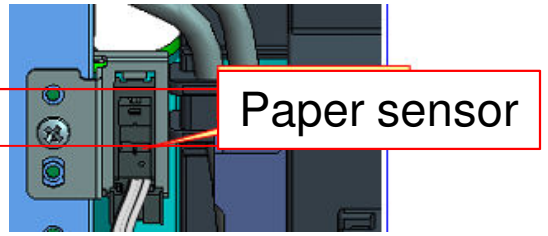
3. Remove IH PWB shield lid (Lid Shield IH PWB). (4 3x8 screws)

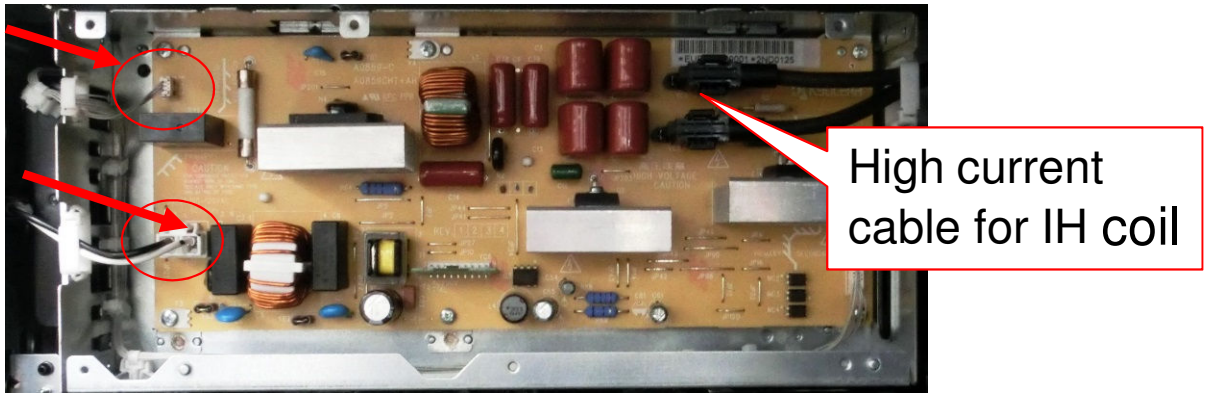
4. Disconnect 4 cables.

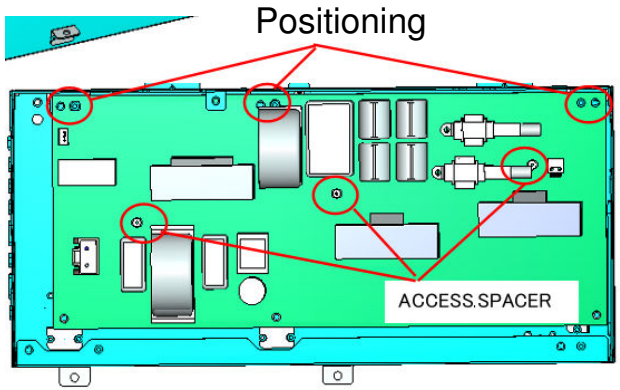
*Make sure to connect the high current cable for IH coil.

5. Detach IH PWB (6 3x8 screws, 3 access spacers)





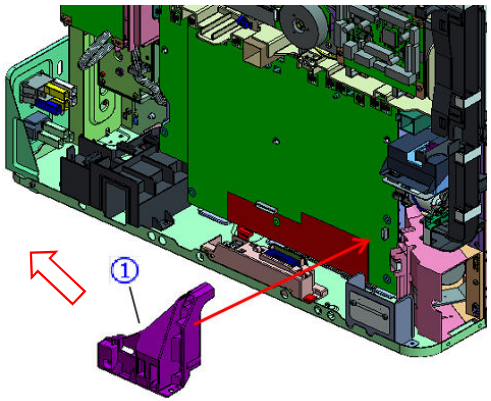


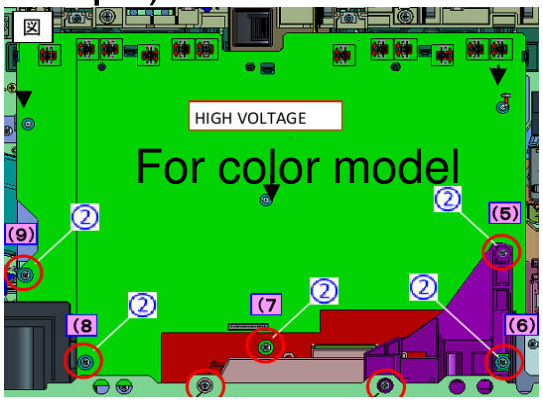


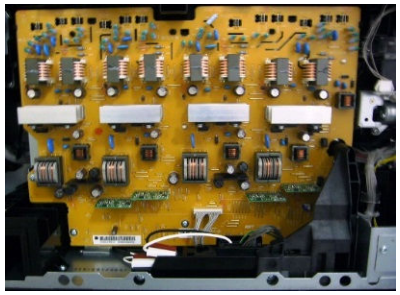
Main High Voltage PWB Replacement

1. Detach the lower rear cover.
2. Pull rear frame support①* toward you and detach it while rotating it in the upper left direction. (2 screws)

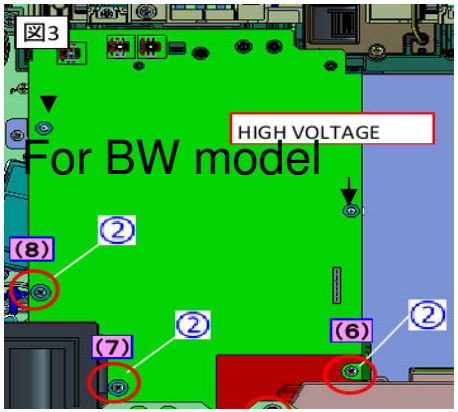
   *Take care not to pinch wires when attaching
3. Remove 5 screws. (Screws (5) –(9) below)
4. Detach high voltage PWB for color model. (3 clamps)

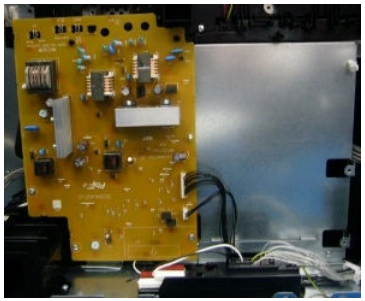




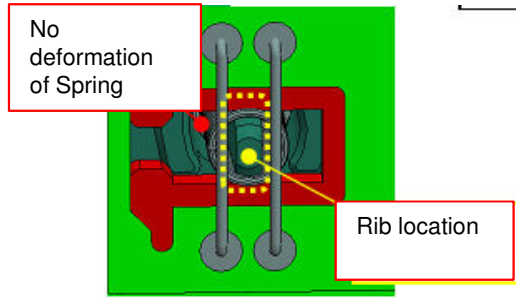


4. Detach the high voltage PWB for BW model. (3 screws,2 clamps)





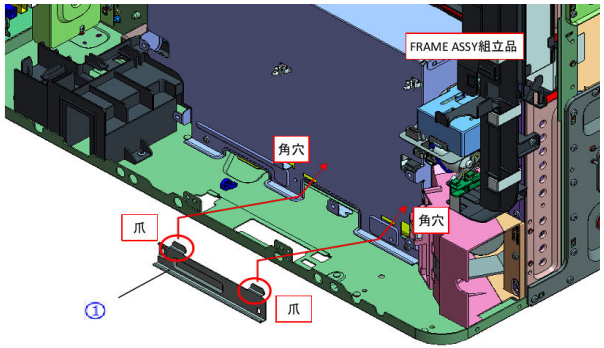
When reattaching the PWB, confirm the high voltage terminal on the PWB stands in the center of the spring

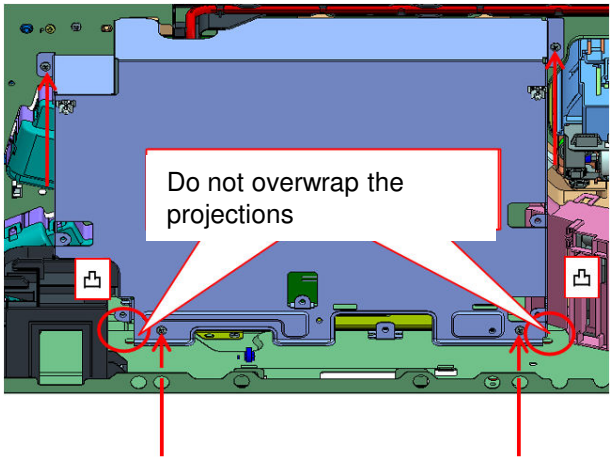


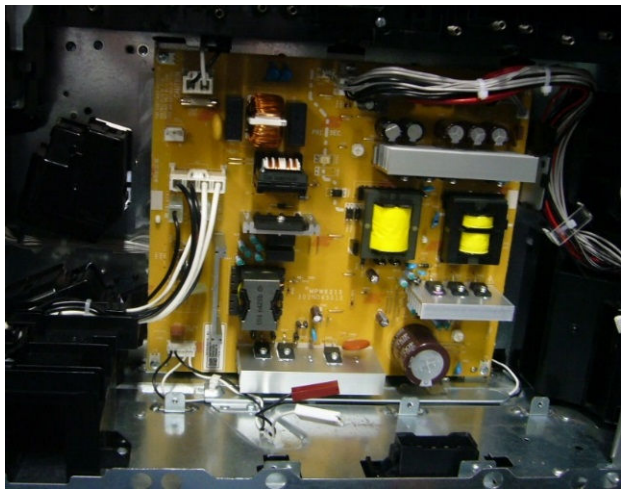
Power Source PWB Replacement

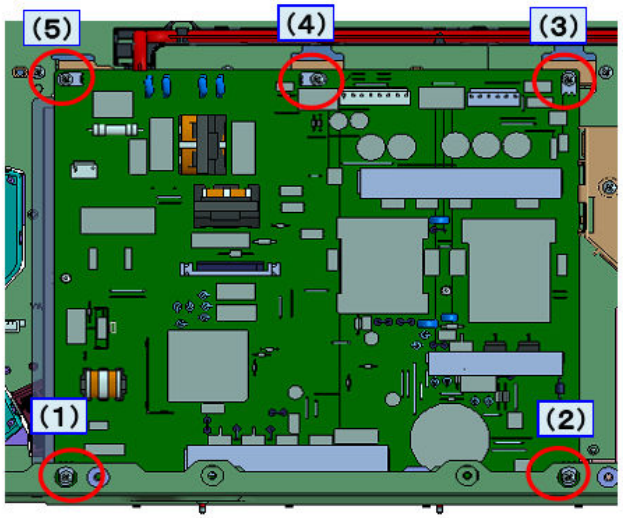
Power Source PWB Replacement

1. Detach the lower rear cover.
2. Detach the main high voltage PWB.
3. Detach PF joint cover. (2 screws))
4. Detach the lid (LVU PWB cover) under LVU PWB shield.
   (2 screws)
5. Detach LVU PWB shield. (4 screws)
6. Detach LVU PWB. (1 cable and 5 screws)
   PWB support (access spacer) 2 at left and right center







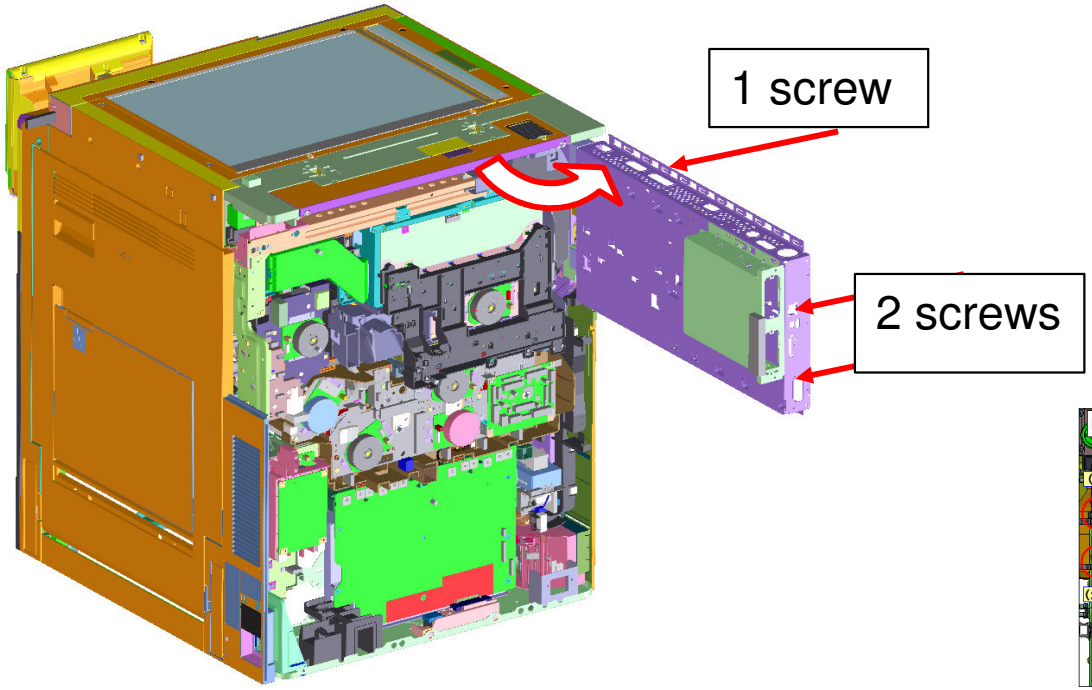


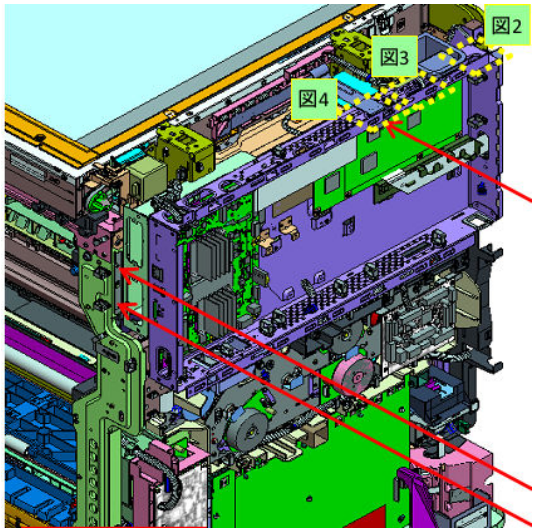
Controller Box Open/Close

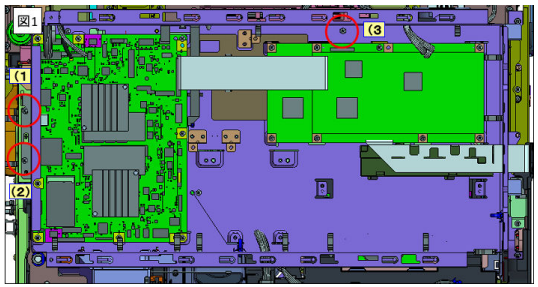
Opening Controller Box

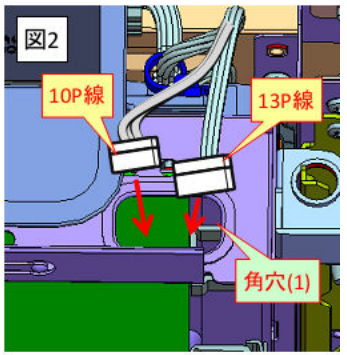
Controller Box Open/Close
Access to container drive and fuser drive

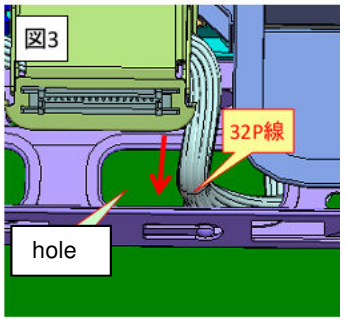
1. Detach the upper rear cover.
2. Disconnect the cables to DP, ISU and operation panel.
   (2 SATA/USB cables for the operation panel above the box, 2 cables, 3 cables,1 FFC cable)
3. Remove 2 left side screws and1 upper center screw.

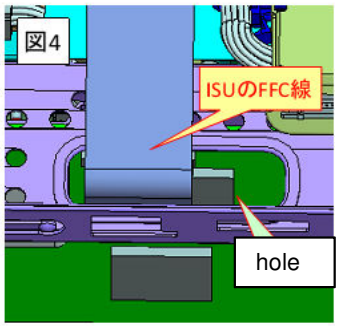








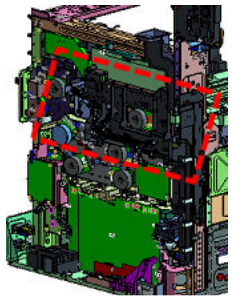




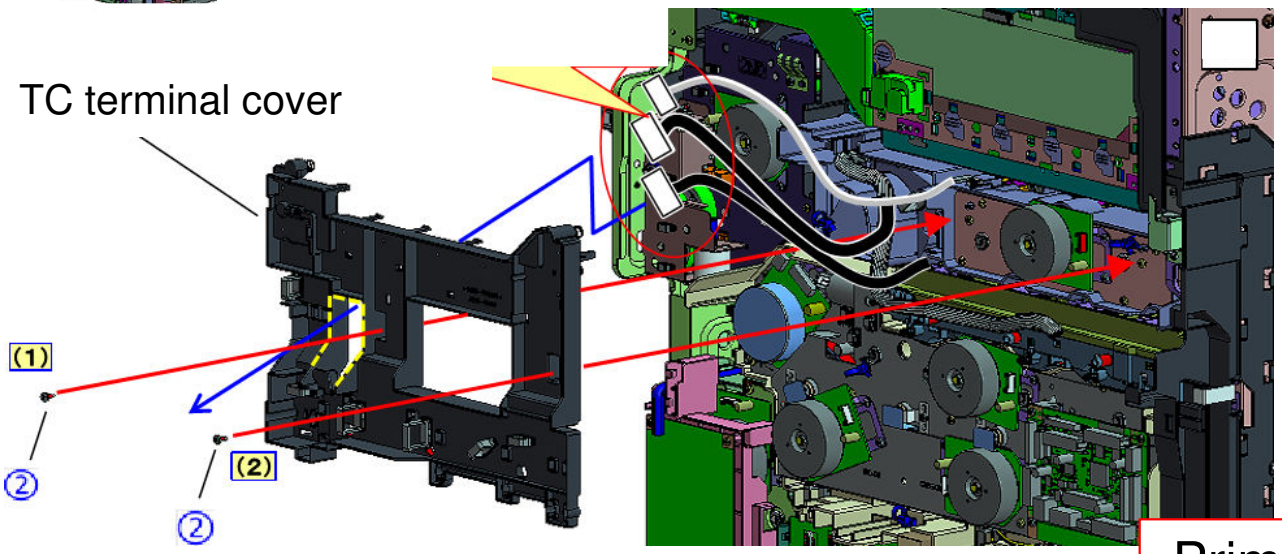
TC Terminal Cover Removal

TC Terminal Cover Removal

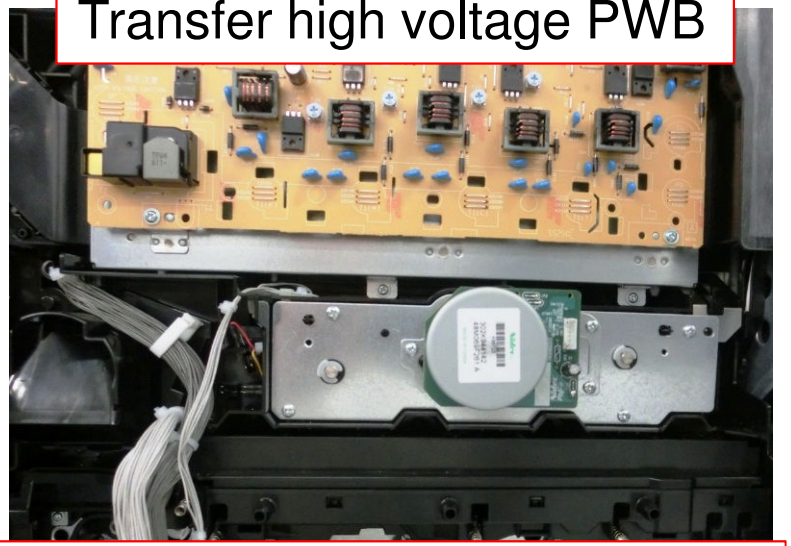
1. Open the controller box. (Disconnect upper cables to panel and ISU, 3 screws)
2. Disconnect wires on TC terminal cover.
3. Detach TC terminal cover. (2 3x8 screws, hooks: 6 top, 4 bottom)



<TC terminal cover>
Transfer high voltage contact connects transfer high voltage PWB to primary transfer unit.



Transfer high voltage PWB

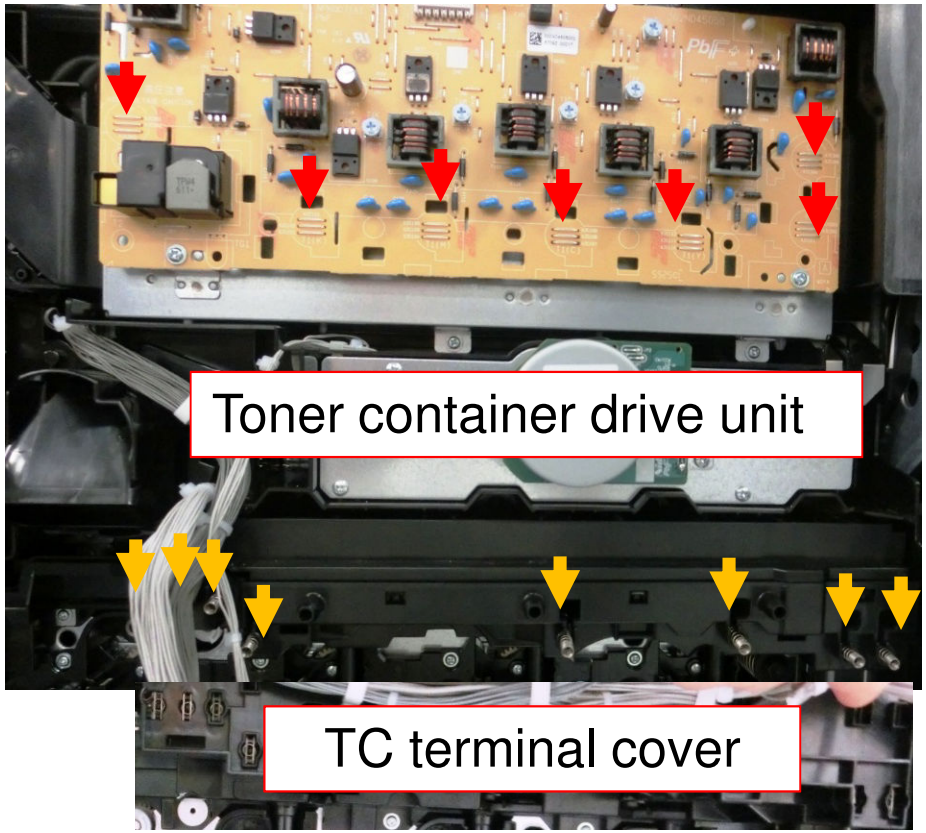


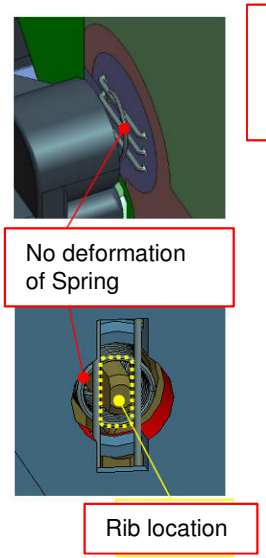
Primary transfer high voltage contact

TC Terminal Cover Removal

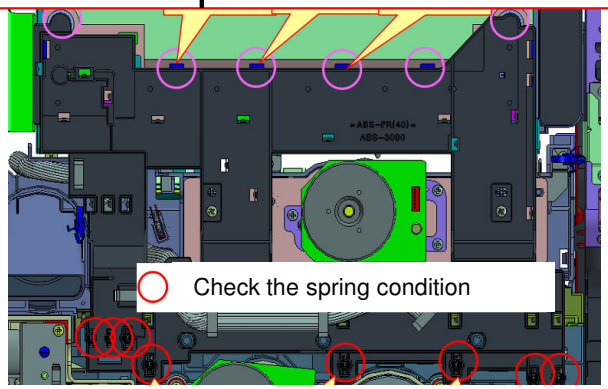
<Check when attaching TC Terminal Cover>

High voltage terminal is not deformed and the rib stands in the center of the spring.

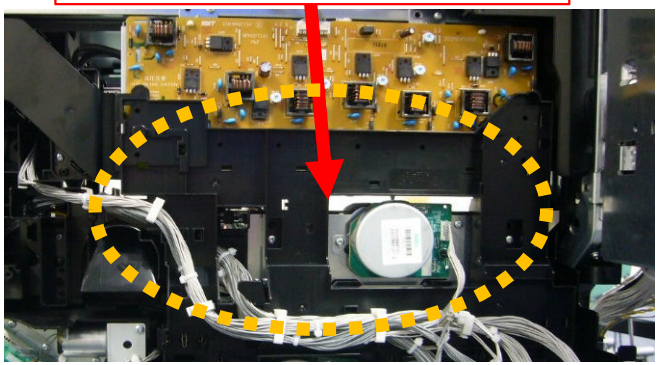




TC terminal high voltage terminal position



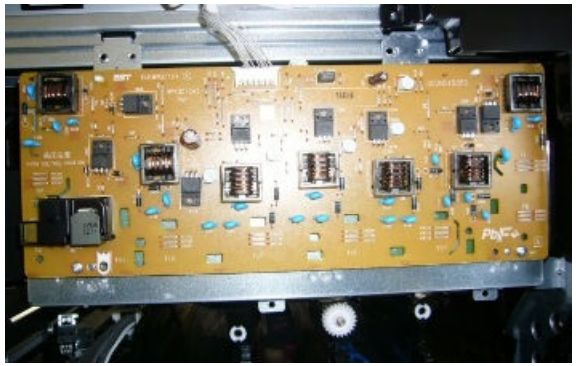
TC terminal cover

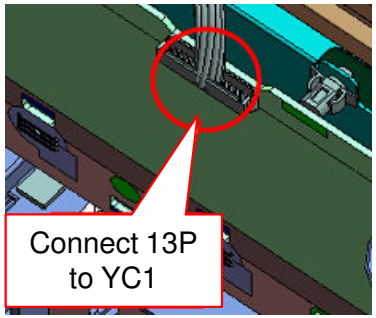


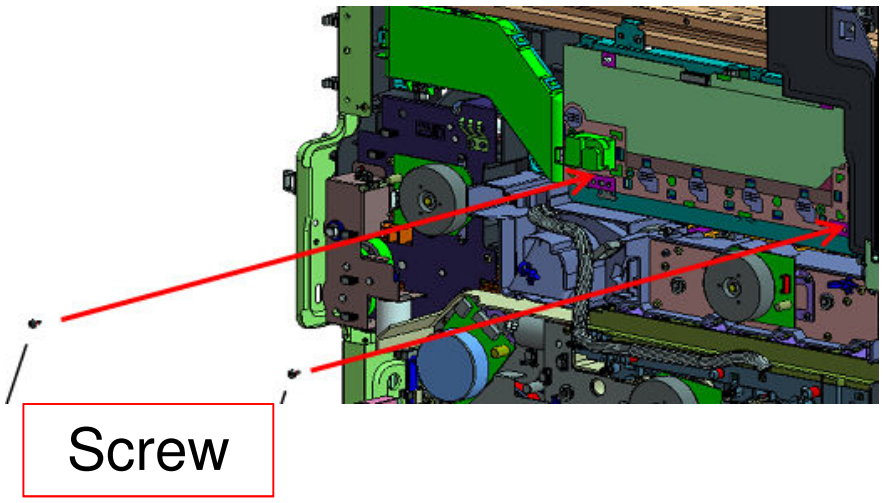
Transfer High Voltage PWB Replacement

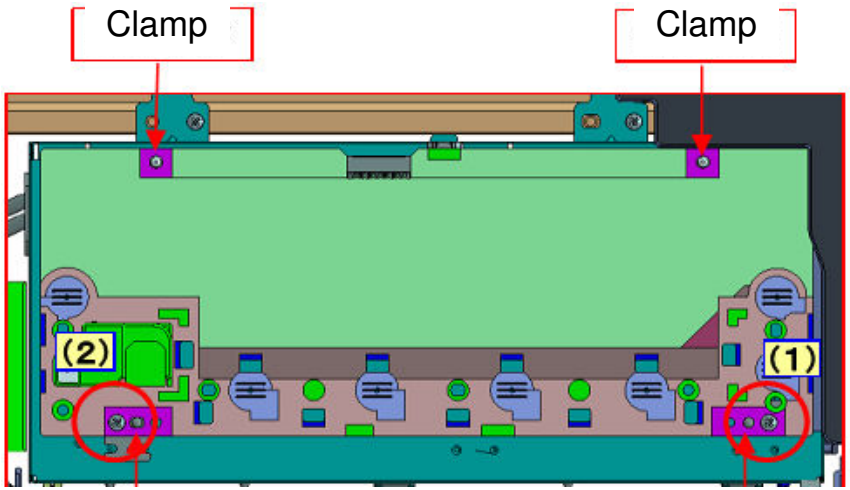
Transfer High Voltage PWB Replacement

1. Detach TC Terminal Cover.
2. Detach Transfer High Voltage PWB.
   (1 cable connection, 2 screws, 2 clamps)









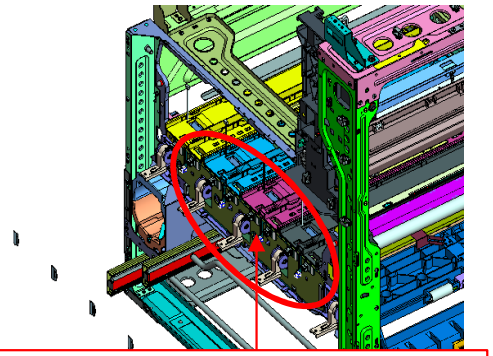
Drum/Dev Relay PWB

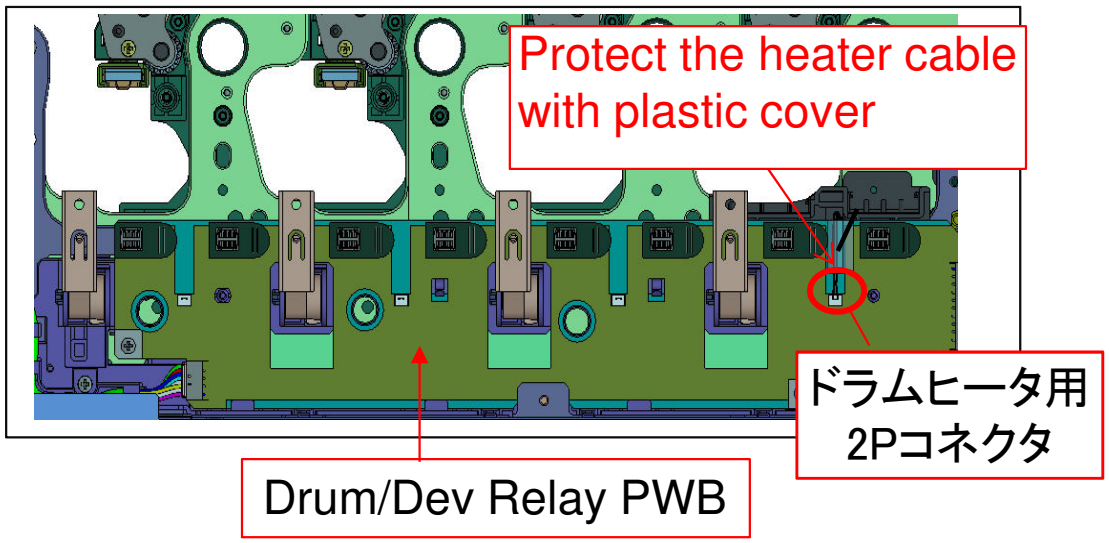
Cable wiring caution for Drum/Dev relay PWB (machine front)

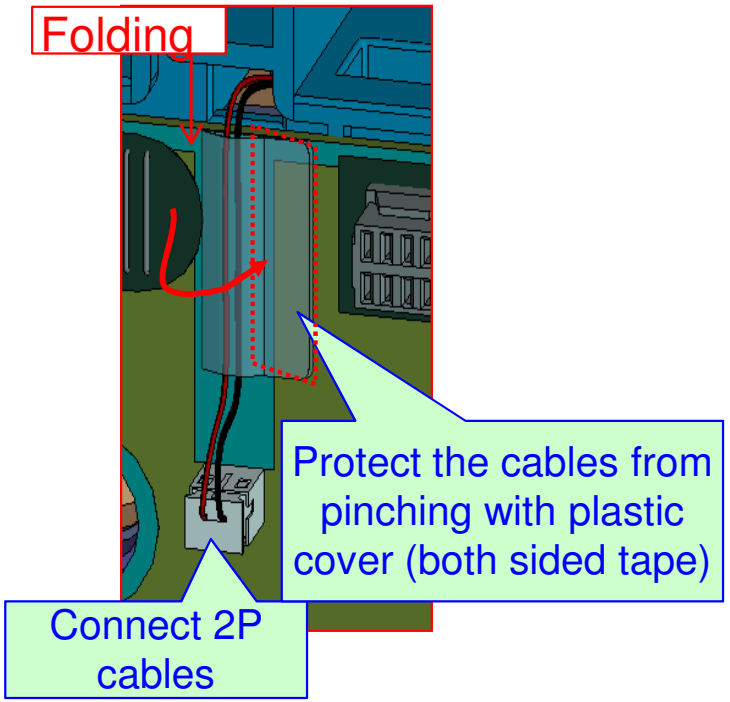
The drum heater cable is protected by plastic cover.

When detaching the relay PWB, after removing the plastic cover, disconnect the drum heater cable.

When installing the relay PWB, after connecting the drum heater cable, peel off the adhesive of plastic cover and protect the cable with it.



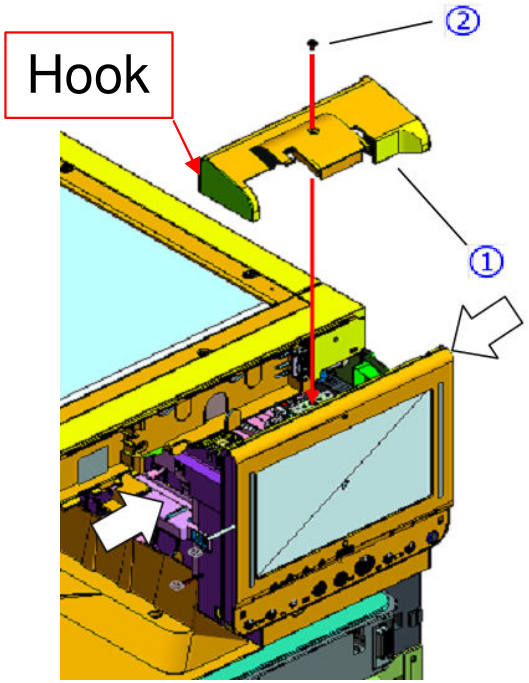


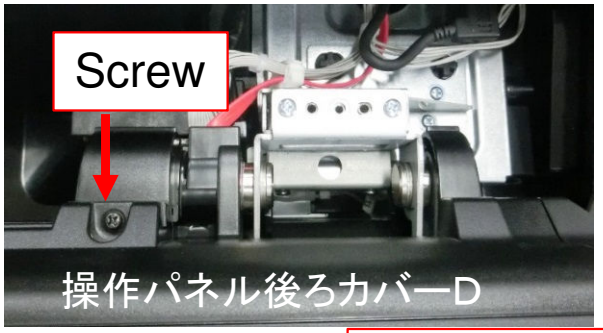


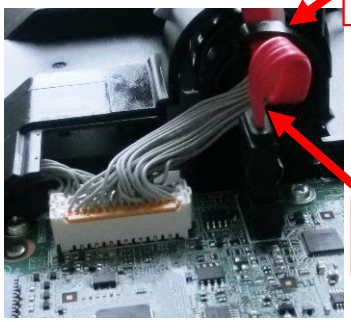
4-5-8
Operation Panel Removal

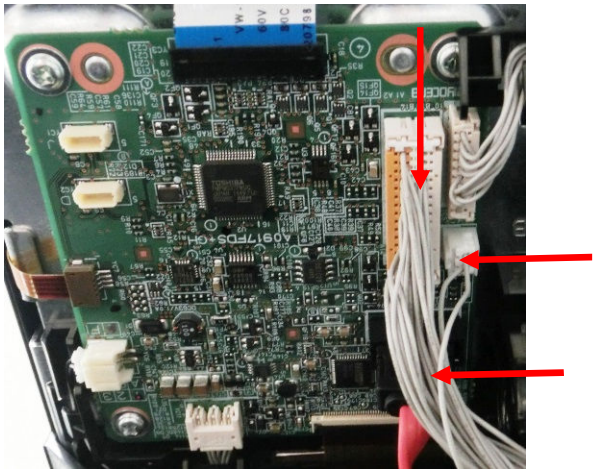
Operation Panel Removal

1. Stand the operation panel upright.
2. Remove the front right ISU cover. (release 1 right hook at the min unit)
3. Remove the upper front cover. (remove 1 screw and release 1 left hook)
4. Remove operation panel rear cover D. (1 screw)
5. Disconnect the operation panel PWB cable at the operation panel side.
   (1 wire stopper, 3 connectors)
   *Stand the cable upright when SATA cable is connected)



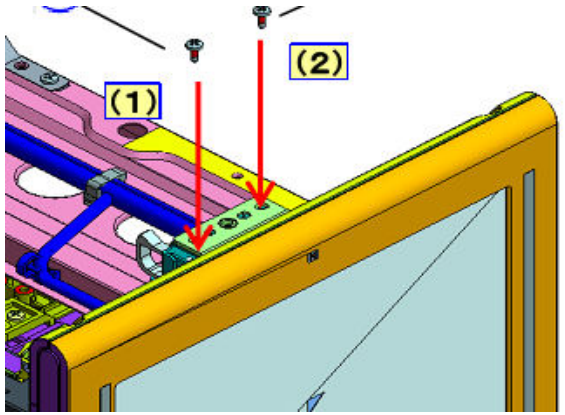


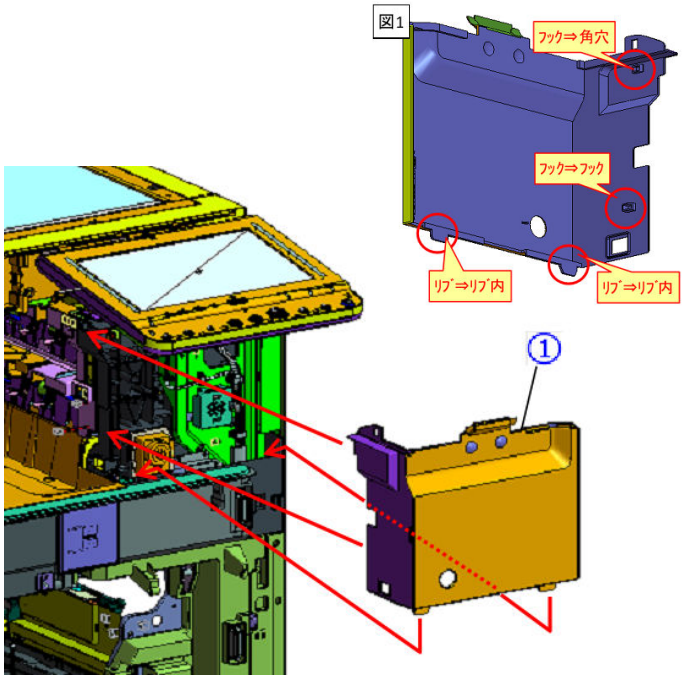


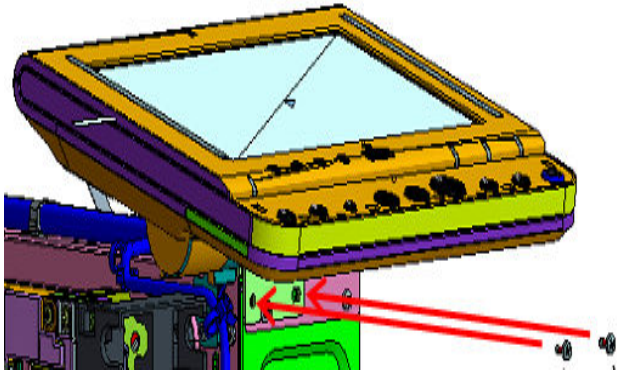


Operation Panel Removal

6. Remove the screws securing the operation panel. (2 upper 3x10 screws)
7. Place the operation panel horizontally.
8. Remove the front right cover.
   (Release 2 left side hooks obliquely upward **to release lower hooks**.
9. Remove the screws securing the operation panel. (2 front side 3x10 screws)
10. Remove the operation panel and replace all the operation unit.
11. Install the latest panel firmware and language firmware.





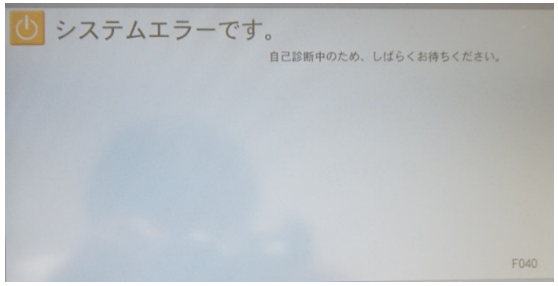


5.F-code Reboot Function

System error auto recovery

■ System error reboot function

✔reboot action: System error occurred is indicated for about 10s to acquire the short log and “Preparing reboot” appears. Then, automatically rebooted.
Display: [Welcome] → [TASKalfa] → [Ready]
*The service call error is also applicable by setting.



■ If a service call error occurs,

It enters Off mode and rebooted by power off/on.

✔but if a job is in process, treated as a system error and no reboot is executed.

✔If the service call error applicable to the partial operation, it is not effected at the 1st error but effected at another error.

✔Maintenance mode U287 enables/disables auto reboot.

✔Reboot history is recorded in the event log.
Counter at occurrence, number of occurrence, number of reset

Default setting of auto reboot

- System error(CF error) ON
- Service call error (C0-C9) OFF

• Maintenance mode U287 enables/disables auto reboot for the service call error (C0xxx-C9xxx) and system error (CF error).

Reboot policy by service call error

■Reboot target: service call errors except fuser related

Reboot rank	Applied service call error	Reboot policy
①	Fuser and safety related service call error	Reboot prohibited
②	Other service call error	Reboot is disabled at default setting Reboot setting by error group is available In U287
③	System error (CF code error)	Rebooted (Enable/Disable available)

Class	Category	Reboot rank
C0	CPU and neighboring circuit error	②
C1	Feed and conveying error	②
C2	Cooling and drive error	②
C3	Image scanning error	②
C4	Scanner error	②
C5	High voltage error	②
C6	Fuser error	①
C7	Developer and drum error	②
C8	Sorter and finisher error	②
C9	DF and other option error	②
CF0	Hardware communication error	③
CF1-CF9	Software communication error	③

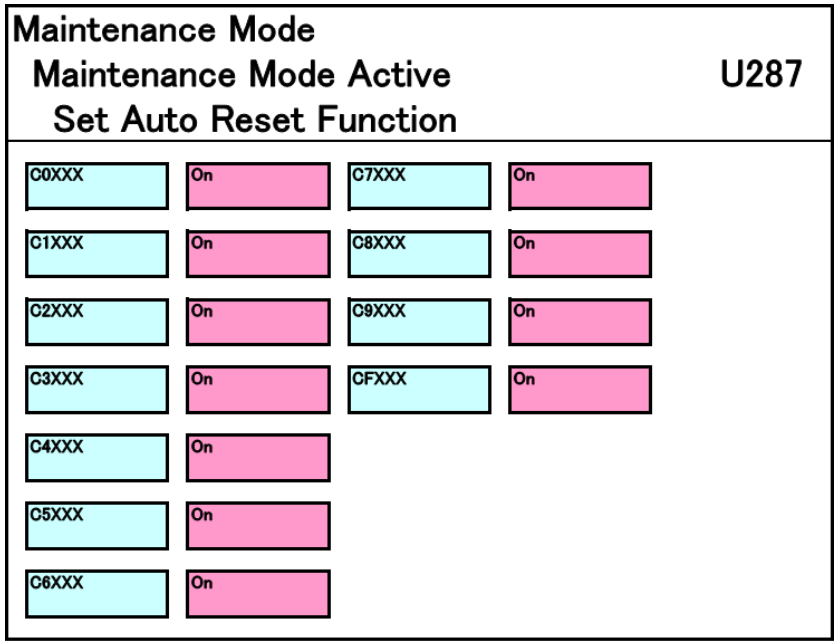
System error auto recovery

When an error is detected and it is a recoverable error (F-code) by turning the power off and on, its is recovered with the automatic reboot. (Not operated during a job)
(Time for recovery: 30-60s)

U287 Set Auto Reset Function

When a service call error or system error occurs, auto recovery is enabled /disabled. by service call error group.

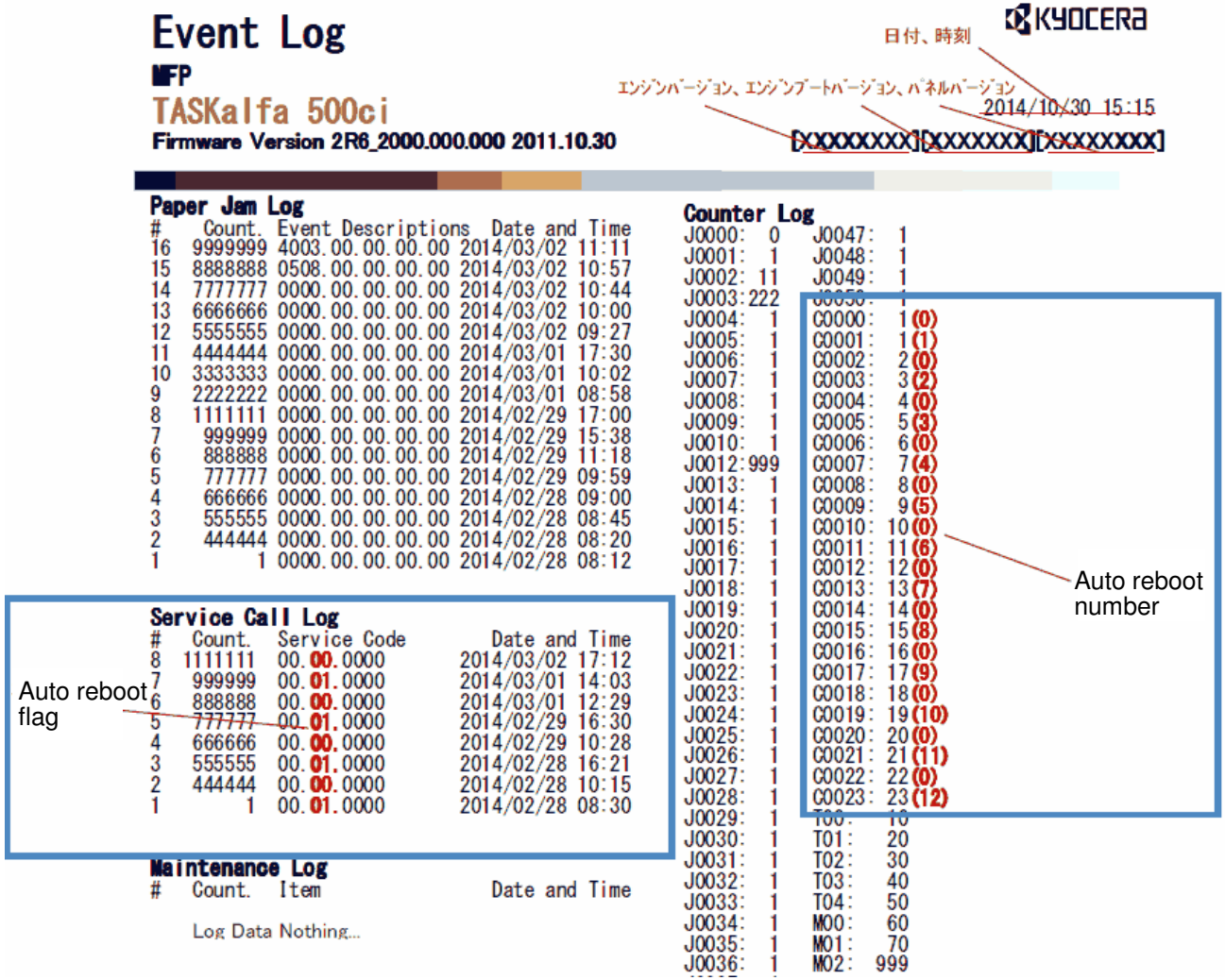
*The service call errors and system errors are classified into recoverable and the one requiring repair. If recoverable, automatic reboot is executed by turning the power off and on as the default setting.



Error	Remarks
C0XXX	Auto recovery function when the service call error occurs is enabled or disabled
C1XXX	
C2XXX	
C3XXX	
C4XXX	
C5XXX	
C6XXX	
C7XXX	
C8XXX	
C9XXX	
CFXXX	Auto recovery function when the system error occurs is enabled or disabled

System error auto recovery – Event log

■Number of times of reboot log is indicated on the event log.
If reboot is executed, the event log additionally indicate the number of times.



Event Log

MFP

TASKalfa 500ci

Firmware Version 2R6_2000.000.000 2011.10.30

日付、時刻

エンジンバージョン、エンジンブートバージョン、パネルバージョン

2014/10/30 15:15

[XXXXXXXX][XXXXXXX][XXXXXXXX]

Paper Jam Log

#	Count.	Event Descriptions	Date and Time
16	9999999	4003.00.00.00.00	2014/03/02 11:11
15	8888888	0508.00.00.00.00	2014/03/02 10:57
14	7777777	0000.00.00.00.00	2014/03/02 10:44
13	6666666	0000.00.00.00.00	2014/03/02 10:00
12	5555555	0000.00.00.00.00	2014/03/02 09:27
11	4444444	0000.00.00.00.00	2014/03/01 17:30
10	3333333	0000.00.00.00.00	2014/03/01 10:02
9	2222222	0000.00.00.00.00	2014/03/01 08:58
8	1111111	0000.00.00.00.00	2014/02/29 17:00
7	999999	0000.00.00.00.00	2014/02/29 15:38
6	888888	0000.00.00.00.00	2014/02/29 11:18
5	777777	0000.00.00.00.00	2014/02/29 09:59
4	666666	0000.00.00.00.00	2014/02/28 09:00
3	555555	0000.00.00.00.00	2014/02/28 08:45
2	444444	0000.00.00.00.00	2014/02/28 08:20
1	1	0000.00.00.00.00	2014/02/28 08:12

Service Call Log

#	Count.	Service Code	Date and Time
8	1111111	00.00.0000	2014/03/02 17:12
7	999999	00.01.0000	2014/03/01 14:03
6	888888	00.00.0000	2014/03/01 12:29
5	777777	00.01.0000	2014/02/29 16:30
4	666666	00.00.0000	2014/02/29 10:28
3	555555	00.01.0000	2014/02/28 16:21
2	444444	00.00.0000	2014/02/28 10:15
1	1	00.01.0000	2014/02/28 08:30

Auto reboot flag

Maintenance Log

#	Count.	Item	Date and Time

Log Data Nothing...

Counter Log

J0000:	0	J0047:	1
J0001:	1	J0048:	1
J0002:	11	J0049:	1
J0003:	222	J0050:	1
J0004:	1	C0000:	1 (0)
J0005:	1	C0001:	1 (1)
J0006:	1	C0002:	2 (0)
J0007:	1	C0003:	3 (2)
J0008:	1	C0004:	4 (0)
J0009:	1	C0005:	5 (3)
J0010:	1	C0006:	6 (0)
J0012:	999	C0007:	7 (4)
J0013:	1	C0008:	8 (0)
J0014:	1	C0009:	9 (5)
J0015:	1	C0010:	10 (0)
J0016:	1	C0011:	11 (6)
J0017:	1	C0012:	12 (0)
J0018:	1	C0013:	13 (7)
J0019:	1	C0014:	14 (0)
J0020:	1	C0015:	15 (8)
J0021:	1	C0016:	16 (0)
J0022:	1	C0017:	17 (9)
J0023:	1	C0018:	18 (0)
J0024:	1	C0019:	19 (10)
J0025:	1	C0020:	20 (0)
J0026:	1	C0021:	21 (11)
J0027:	1	C0022:	22 (0)
J0028:	1	C0023:	23 (12)
J0029:	1	T00:	10
J0030:	1	T01:	20
J0031:	1	T02:	30
J0032:	1	T03:	40
J0033:	1	T04:	50
J0034:	1	M00:	60
J0035:	1	M01:	70
J0036:	1	M02:	999

Auto reboot number