KYOCERA ACADEMY

TRK-TA2551

TASKalfa 2551ci
TRAINING MANUAL

KYOCERA
Document Solutions

MODUL NAME

> TRK-TA2551

CERTIFICATION

> -

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NOTE

All the contents of this document have been carefully researched. However, we cannot assume liability for the information provided being accurate, complete and up to date.
If this document is provided as a PDF file, the page references can be used to navigate the text quickly. Clicking on the page number will take you to the corresponding page.
Moreover, some pictures are also linked in this manner and you will find corresponding notes in the text.
Please bear in mind that this document is meant to accompany a training and is in no way supposed to be a replacement for your Service Manual.

NOTE FOR STUDENTS

This manual is designed to support you during the entire training course. It will introduce you to the relevant topics and guides you to apply what you have learned in practice scenarios. To confirm you that you are able to apply your knowledge in the field a small test is held at the end of each chapter.

In order to make it simpler and easier to use our manual we have marked the most important milestones in your individual **"learning path"**:

THESE SYMBOLS INDICATE MILESTONES:

This symbol indicates Learning Objectives.
Learning objectives help you keep your focus on the relevant information and enable you to check your success at the end of the training.

This symbol indicates a Hands On session.
This session gives you the opportunity to apply your knowledge in the practice.
This is your turn to make your individual training experience!

This symbol indicates a Test to examine your knowledge.
A test enables you to check what you have learned and go to the next learning goals.

THESE ICONS HELP YOU TO DISCOVER AND "NAVIGATE" THE CONTENT:

A Scenario introduces you to typical field situations. Here you can use and verify your knowledge in a real customer environment.

A Tip helps you to clarify the use of technical terminology or explains in deep some specific topics.

Here you can find additional information about your topic.

A Video activates a playback of an animation or video.

A Link opens an embedded or linked information.

A Caution indicates that the described action is a must.

We hope this manual is a valuable tool for you to find your own personal way of learning.
We wish you success and hope you enjoy reading, studying and **"using"** this documentation!

Your KYOCERA ACADEMY

CONTENTS

CHAPTER
01

INTRODUCTION

CONTENTS

This chapter is the introduction of the device series with all important specifications.
Also it will describe the options and its compatibility to other device series.

OBJECTIVES

At the end of the chapter you will be able to...

- assign individual product variants
- set device options as needed
- provide customer-orientated advice

PRODUCT FEATURES

GENERAL

Technology
KYOCERA Laser Colour, HyPAS™ solution platform

Engine speed (pages per minute)
Up to 25/13 ppm A4/A3 in colour and b/w

Resolution: 600 x 600 dpi, Multi-bit technology for print quality of 9,600 dpi equivalent x 600 dpi

Warm-up time from power on
Approx. 30 seconds or less

Time to first page
Approx. 6.2 sec. or less in b/w; 8.1 sec. or less in colour

CPU: Freescale QorIQ P1022 (Dual Core) 800 MHz

Memory (standard max.)
3.5 GB RAM + 160 GB HDD

Standard interface: USB 2.0 (Hi-Speed), 4x USB Host 2.0, Fast Ethernet 10Base-T/100BaseTX/1000BaseT, slot for optional print server, slot for optional SD-card, slot for optional Fax System

Dimensions (W x D x H): Main unit: 594 x 737 x 745 mm

Weight: Main unit approx. 87.5 kg

Power source: AC 220 V ~ 240 V, 50/60 Hz

Power consumption
Printing: 590 W in colour; 550 W in b/w
Ready mode: 130 W
Sleep mode: Recover priority 10,5 W or less
Energy saving priority 1,7 W or less

Noise level (sound pressure level ISO 7779/ISO 9296)
Printing monochrome: 46.4 dB(A) LpA/colour 46.7 dB(A) LpA, Ready mode: 33.3 dB(A) LpA

Safety standards: GS, TÜV, CE
This unit is manufactured according to ISO 9001 quality standard and ISO 14001 environmental standard.
RoHS compatibility

PAPER HANDLING

All paper capacities quoted are based on paper thickness of max. 0.11 mm. Please use paper recommended by KYOCERA under normal environmental conditions.

Input capacity
100-sheet multi-purpose tray, 60–256 g/m², A6R–A3, 2 x 500-sheet universal paper cassette, 60–256 g/m², A5R–A3; max. input capacity with options: 4,100 sheets A4

Duplex unit: Duplex as standard supports A5R–A3, 60–220 g/m²

Output capacity: 280 sheets (250 sheets, job separator area 30 sheets); max. output capacity with options: 1,000 sheets

PRINT FUNCTIONS

Controller language: PRESCRIBE IIc

Emulations: PCL6 (PCL5c/PCL-XL), KPDL3 (PostScript 3 compatible), PDF Direct Print, XPS Direct Print

Operating systems: All current Windows operating systems, Mac OS X version 10.4 or higher, UNIX LINUX, as well as other operating systems on request

Fonts/barcodes: 93 outline fonts (PCL), 136 fonts (KPDL3), 8 fonts (Windows Vista), 1 Bitmap font, 45 types of one-dimensional barcodes plus two-dimensional barcode (PDF-417)

Print features: Encrypted PDF Direct Print, IPP printing, e-mail printing, WSD print, secure printing via SSL, IPsec, SNMPv3, quick copy, proof and hold, private print, job storage and job management functionality

COPY FUNCTIONS

Max. original size: A3

Continuous copying: 1–999

Zoom range: 25–400% in 1% steps

Preset magnification ratios: 5 reductions/5 enlargements

Digital features: Scan-once-copy-many, electronic sort, 2in1 and 4in1 function, image repeat copy, page numbering, cover mode, booklet copy, interrupt copy, form overlay, stamp function, margin shift, poster mode and skip blank page function

Exposure mode: Auto, manual: 7 or 13 steps

Image adjustments: Text + photo, text, photo, map

SCAN FUNCTIONS

Functionality: Scan-to-email, Scan-to-FTP, Scan-to-SMB, Scan-to-USB Host, Scan-to-box, Network TWAIN, WSD scan

Scan speed: (A4, 300 dpi, duplex with DP-772) b/w 100 images per minute, colour 100 images per minute

Scan resolution: 600 dpi, 400 dpi, 300 dpi, 200 dpi, 200 x 100 dpi, 200 x 400 dpi (256 greyscales)

Max. scan size: A3

Original recognition
Text, photo, text + photo, optimised for OCR

Network protocol: TCP/IP

File types: PDF (high compression, encrypted, PDF/A), Searchable PDF (Option), JPEG, TIFF, XPS

FAX FUNCTIONS (optional)

Compatibility: ITU-T Super G3

Modem speed: Max. 33.6 kbps

Transmission speed: Max. 3 seconds (JBIG)

Fax resolution: Normal: 200 x 100 dpi, Fine: 200 x 200 dpi Superfine: 200 x 400 dpi, Ultrafine: 400 x 400 dpi

Maximum original size: A3

Compression method: JBIG, MMR, MR, MH

Memory: Standard 12 MB, max. 128 MB

Features: Opt. Internet-fax, network faxing, rotate transmission, rotate reception, duplex fax reception, memory reception, mailbox, remote diagnostics, dual fax with second fax system

CONSUMABLES

Average continuous toner yield in accordance with 5% coverage A4.
TK-8325K Toner-Kit: Toner black for 18,000 pages

TK-8325C, TK-8325M, TK-8325 Y Toner-Kits
Toner cyan, magenta, yellow for 12,000 pages
Staple cartridge: SH-10 for DF-770 (D)

OPTIONS

Fax System (W) B

Internet Fax Kit (A)

Scan Extension Kit (A)
Scan to searchable PDF solution (embedded OCR)

Paper handling

DP-773 Document processor: (reversing), 50 sheets, 45–160 g/m² (simplex), 50–120 g/m² (duplex), A5R–A3

DP-770(B) Document processor: (reversing), 100 sheets, 45–160 g/m² (simplex), 50–120 g/m² (duplex), A5R–A3

DP-772 Document processor: (one-path duplex scanning) 175 sheets, 35–220 g/m² (simplex), 50–220 g/m² (duplex), A6R–A3

PF- 791 Paper feeder: 2 x 500 sheets, 60–256 g/m², A5R–A3

PF-810 Paper feeder: 2 x 1,500 sheets, 60–256 g/m², A4, B5, letter
Keyboard Holder (B): for optional USB keyboard

DT-730(B) Document tray

DF-770(D)* Document finisher + AK-740
Main tray: 1,000 sheets A4, 60–256 g/m², B5E–A3,
3 positions stapling up to 50 sheets A4 or 30 sheets A3
*Bridge unit AK-740 is required for the use of DF-770 (D)

PH-7C/PH-7D Punch unit for DF-770(D)
2-hole/4-hole/Swedish type, 60–256 g/m², A5R–A3

Fax memory

MM-16-128: Optional fax memory (128 MB)

Security

Data security kit (E)
In line with ISO 15408 (Common Criteria) with security level EAL3

Printed Document Guard Kit (B)

USB IC Card Reader and Card Reader Holder (E)

UG-33: ThinPrint support

UG-34: Emulation (IBM Proprinter/EPSON LQ-850)

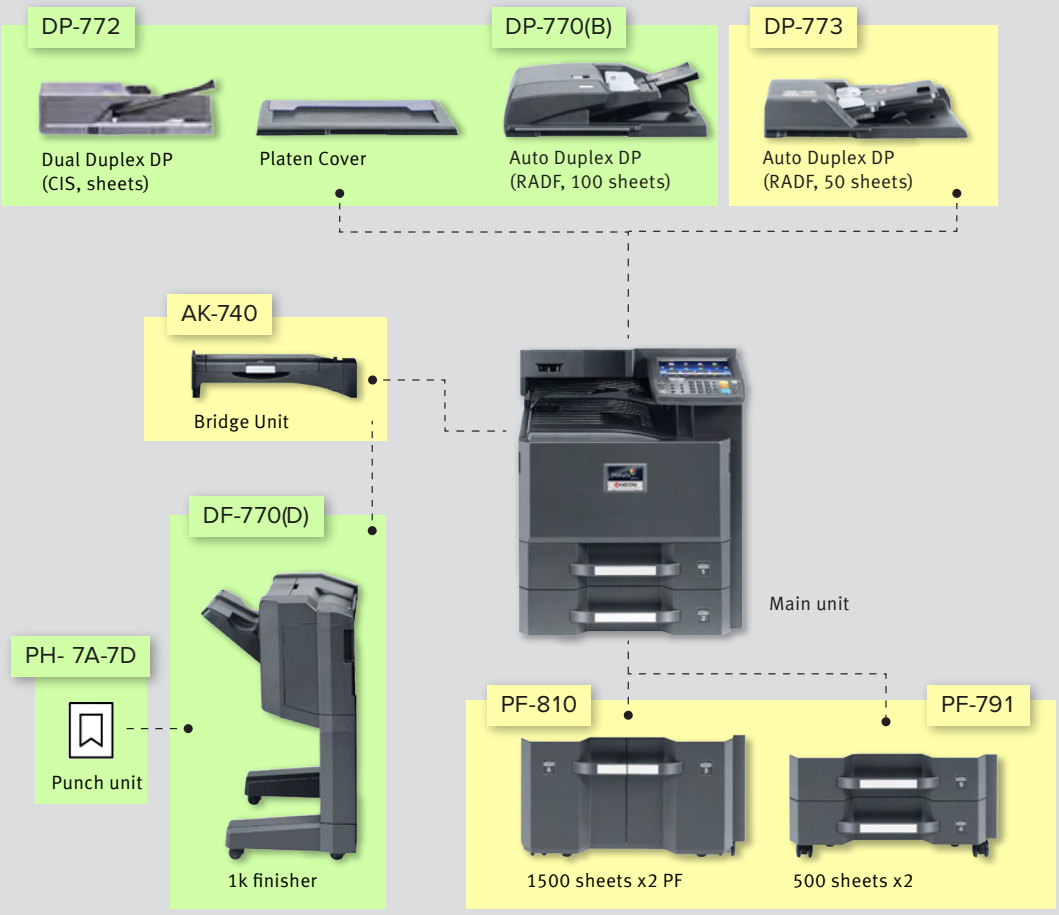
Optional interface
IB-50: Gigabit-Ethernet board 10BaseT/100BaseTX/ 1000BaseT

IB-51: Wireless Lan Interface (802.11 b/g/n)

Platen cover (E)
CB-810: Wooden cabinet
CB-811: Metal cabinet

SYSTEM CONFIGURATION

Compatible with TASKalfa 3010i/3510i
Compatible with TASKalfa 3010i/3510i, 3501i/4501i/5501i, 3051ci/3551ci/4551ci/5551ci



Supported Options

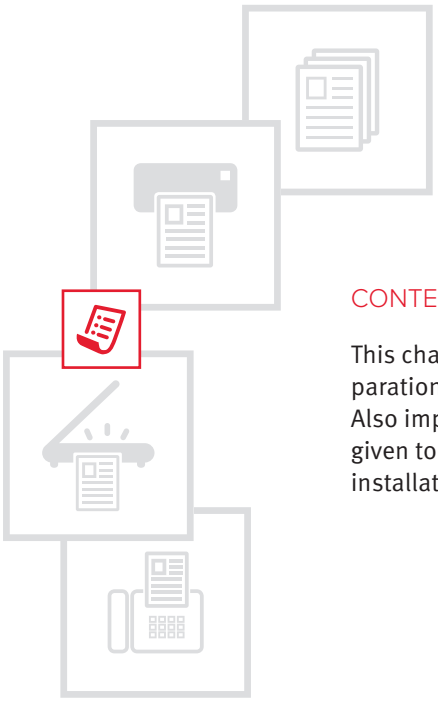
- IB-50 Gigabit LAN Board
- IC card reader
- FAX System (W) FAX-Kit
- UG-33 ThinPrint kit
- UG-34 Epson/IBM emulation
- OCR Searchable PDF
- Printed Document Guard Kit (B)
- Keyboard Holder (B)
- IB-51 Wireless IEEE802.11bgn
- Card Authentication Kit (B)
- Keyboard USB keyboard
- MM-16-128 FAX memory
- DT-730(B) Document tray
- Key counter
- Internet FAX Kit (A)
- Card Reader Holder (B)
- Data Security Kit (E) HDD security
- Set parts Key Counter

Non-supported Options

- Banner feed tray
- 4000-sheet finisher
- 3000-sheet side deck
- Booklet Unit
- Job seperator (side)
- Mailbox
- Fiery Printing System

CHAPTER
02

INSTALLATION



CONTENTS

This chapter shows the necessary preparation for installing the device. Also important hints and tips will given to avoid damages during the installation.

OBJECTIVES

At the end of the chapter you will be able to...

- disable the transport locks
- set up consumables
- set up the customer related settings

WHO SHOULD INSTALL IT?

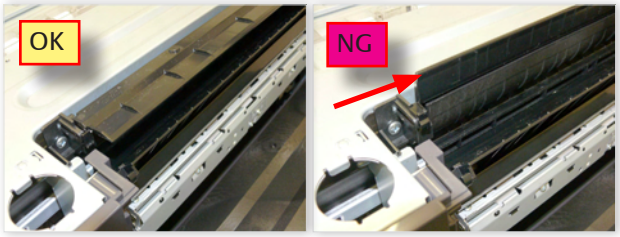
The initial installation should be carried out by technical staff. The reasons for this are:

- Although a manual has been provided for the initial installation (**"Quick Installation Guide"**) instructions are seldom read.
- Transport locks are sometimes not recognized or not removed.
- Transport damages can be identified from the outset.
- Brief introduction based on the customer‘s needs (e.g. for toner replacement).
- Adjusting basic settings according to customer requirements.
- Connection to the network or to the PC.
- Effective customer support.

INSTALLATION OF THE MAIN SYSTEM

The device is heavy. Removal from the box requires two people. If the optional paper feeder is used, set the system on top carefully. The electrical connection is automatically set up.

Before depositing the device on the PF-810 be shure that the guide plate (see arrow) is down. Otherwise the guide will be broken.



Now tighten the screws at the front in order to fix the paper feeder.

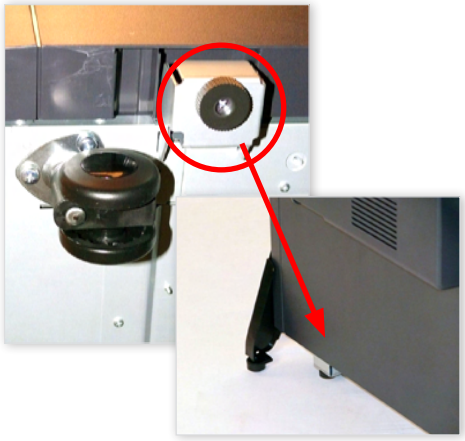
Mount the retaining angle on the back side.

Both stoppers must be secured as protection against tipping. The stoppers can be adjusted to different positions according to the condition of the floor surface.

After the stoppers have been mounted, the system should not be moved.

In order to finally position the system in place, the four stopper feet must be unscrewed so that they touch the ground.

The stoppers MUST NOT be used to create a level floor surface!



Shake the four toner cartridges well and put them in their respective slots.

Toner kits are not part of the shipment, this must be ordered separately.

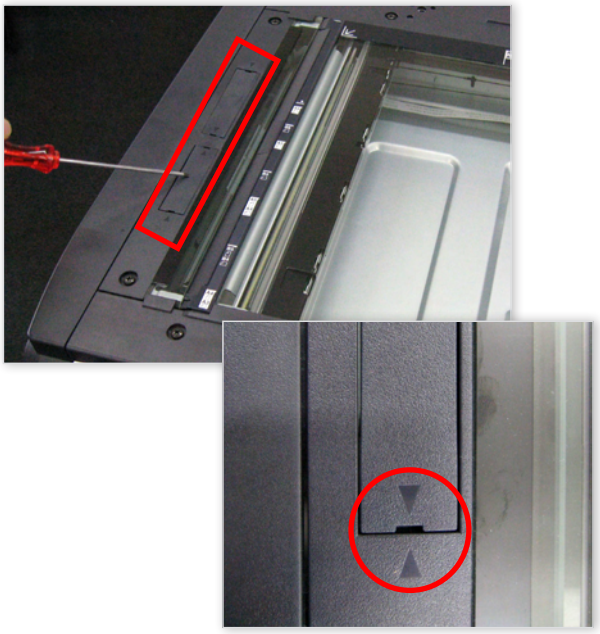
The scanner locks secure the scanner carriage during transport.

Remove the scanner locks carefully with a small screwdriver.
Then, turn the dismounted transport locks 180 degrees and re-insert them.

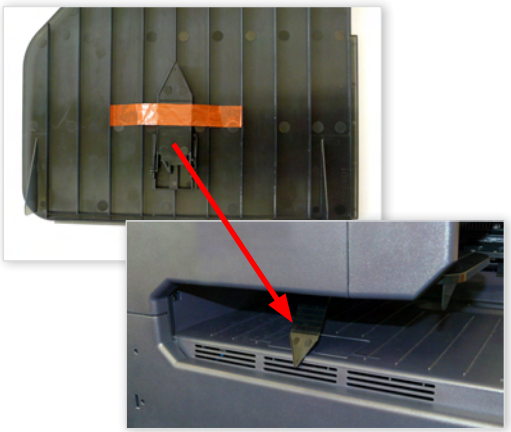
If the scanner locks are not released, you will receive a **C3100** error message. In this case switch off the device, move the locks as described and turn the machine back on.

When the two arrows face each other,
the transport lock is **deactivated** (see figure shown).

Both transport lock levers should be reengaged every time the machine is transported. Before locking is possible, use U002 to pull the scanner back into the transport position, and then lock it.



Before inserting the job separator tray, the paper stopper must be turned outward



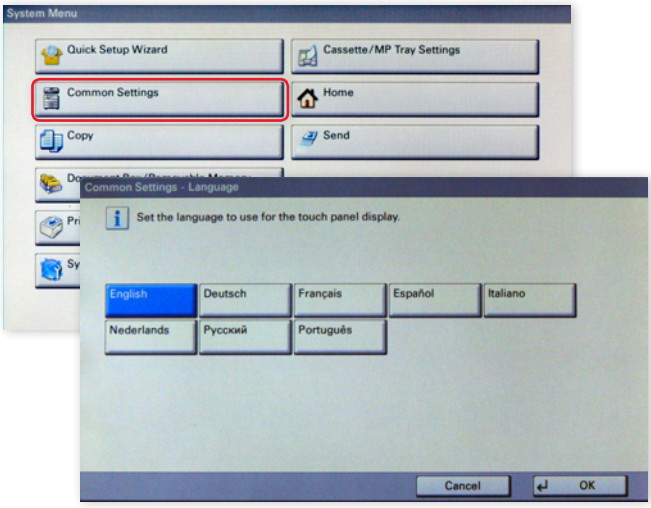
SETTING THE DISPLAY LANGUAGE

After turning on the system for the first time, it takes about 7 minutes for the installation routines to be carried out, e.g. the calibration, as well as a drum refresh.

During the initialization phase, the basic settings can be made.

SELECTING THE LANGUAGE:

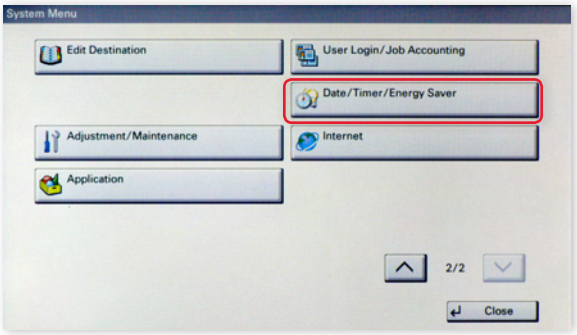
1. Enter the system menu.
2. Select `COMMON SETTINGS` › `LANGUAGE`
3. Select language



SETTING THE SYSTEM TIME

SETTING THE TIME:

1. Enter the system menu.
2. Select `DATE/TIMER/ENERGY SAVER`

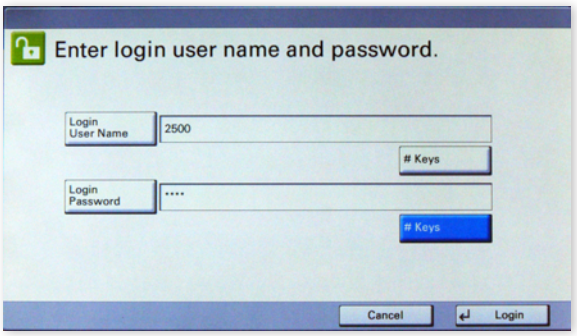


Setting the time requires administrator rights (see page 11).

The standard entries are:

- Login user name: 2500
- Login password: 2500

The time, date, and time zone can be adjusted after successful authentication.



After the successful start of the main system, the options can be installed.
After the complete installation, the following U parameters should be set in order to obtain the best results.

U906	Resetting partial operation control	Initializing of all connected devices
U252	Setting the destination	Europe metric
U253	Setting between double and single counts	A3 Double count
U260	Select. Timing for copy counting	Feed or eject
U265	Setting OEM purchaser mode	KYOCERA = 1
U276	Setting copy count fashion for single color	Mode 0 / Mode 1
U285	Setting service status page	Print coverage on status page
U340	Setting the applied mode	Setting memory allocation
U341	Paper feed location for print	Cassettes 1 to 4
U343	Duplex/ Simplex copy mode	ON/ OFF
U952	Maintenance Work Flow	Please refer to page 90

When used with one or more fax systems:

U660	Setting the NCU	Selection of the connection type (PSTN, PBX)

THE DEVICE ADMIN ACCOUNT

Certain entries in the device (e.g. system settings, job accounting setup, etc.) require authentication:

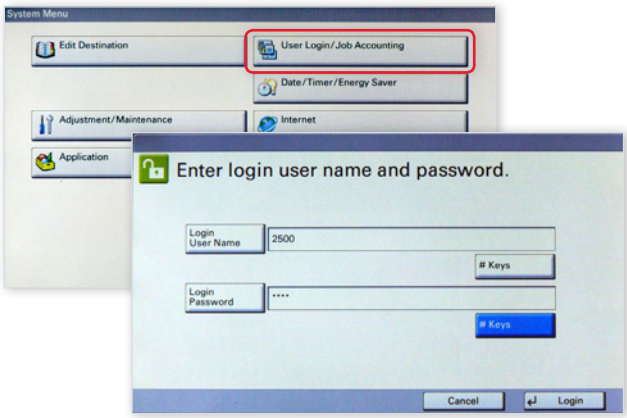
The standard entries for TASKalfa 2551ci are:

- User name: 2500
- Password: 2500

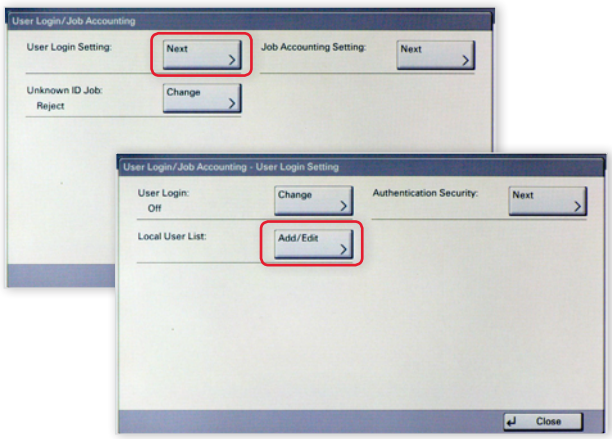
The data is part of the DeviceAdmin account which is set up in the machine by default.
The DeviceAdmin account cannot be deleted, because otherwise system settings cannot be accessed.
The default information can, however, be changed as desired.

CHANGING THE DEVICE ADMIN:

1. Enter the system menu.
2. Select **"User Login/Job Accounting"**
3. Enter the current login data

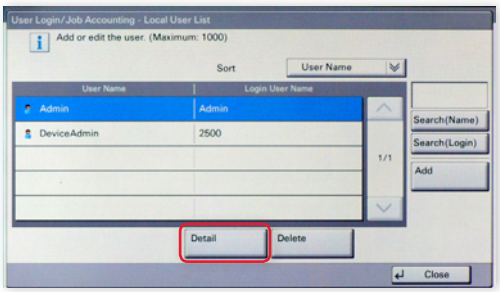


4. Select **"User Login Setting"**
5. Select **"Local User List"**



6. Select DeviceAdmin (see figure).

   Now the account data can be changed via the selection **"Detail"**.



The modification of the access data of the DeviceAdmin is part of the security concept. If the password is lost, access to the device system settings is no longer possible. In this case, the device has to be reset to factory settings.
The DeviceAdmin account can only be used via the operation panel!

INSTALLATION OF THE OPTIONS

INSTALLATION OF THE FAX SYSTEM-W

The TASKalfa 2551ci supports up to 2 fax systems. If only one fax system is used, it must be connected in the lower eKUIO Port (OPT 1).
It is initialized in maintenance mode using U600.

If two fax systems are used, each respective fax system can be displayed using U698, in order to be configured.

Delivery of the fax system also includes the 16 MB Memory DIMM. To install it, open the small metal cover in the middle of the rear cover and insert the Memory DIMM with the IC side facing up.

For the installation of further options see the Service Manual.

SYSTEM SHUTDOWN

1. Before turning off the main power, press the power key on the operation panel to off. Make sure that the power key, the processing indicator, and the memory indicator are no longer blinking.

2. Switch off the main power using the main power switch.

The hard disk may be active when the Power key, the Processing indicator or Memory indicator is lit or blinking.

Note that when the main power is turned off, the machine will be unable to automatically receive print data from computers or faxes.

If the optional Fax kit is installed, note that when the main power is turned off fax transmission and reception are disabled.

If the main power is off without shut down of the device, data loss can occur.

If the main power is off without shut down of the device, the duration of next start up sequence might be increased.

During service mode the shutdown procedure is not possible.

HANDS ON

OBJECTIVE

INSTALLATION OF THE SYSTEM

PREREQUISITES

- System (boxed)
- Toner
- Tools
- Service Manual
- Options (if available)

INSTRUCTIONS

- Unpack the system
- Remove all tapes
- Disable the scanner lock
- Install the toner
- Insert paper
- Switch on the system

QUESTION(S)

- Is the installation finished right now?
- What are the next possible steps?
- Where can you find the installation instructions for the options?
- Discuss the most efficient approach to install a complete system.
- Talk about your experience installing MFP systems.

TIME

1-2 hours (depending on the available options)

TEST YOUR KNOWLEDGE

THE TONER...

- ○ ... comes with the device
- ○ ... has to be ordered separately

THE PAPER FEEDER PF-810 IS SETUP AS FOLLOWS:

- ○ Locked automatically
- ○ Electrical connection automatically
- ○ Locked automatically, but electrical connection manually

SHUTDOWN THE SYSTEM:

- ○ Pull the power cord
- ○ Main switch off
- ○ Press Power key until memory indicator stops blinking
- ○ Press Power key until memory indicator blinks

THE DEVICE ADMIN ACCOUNT IS NECESSARY FOR:

- ○ Installing the device
- ○ Initialization of the toner
- ○ Setting date and time
- ○ System shutdown

FILL IN THE LIST WITH U PARAMETERS WHICH COULD BE IMPORTANT WHEN PERFORMING AN INSTALLATION.

_____
_____
_____
_____
_____

CHAPTER
03

DESIGN

CONTENTS

This chapter shows the design and the internal components of the system. Also the logical relationship between the electrical and mechanical components will be given, for a good understanding of the functions.

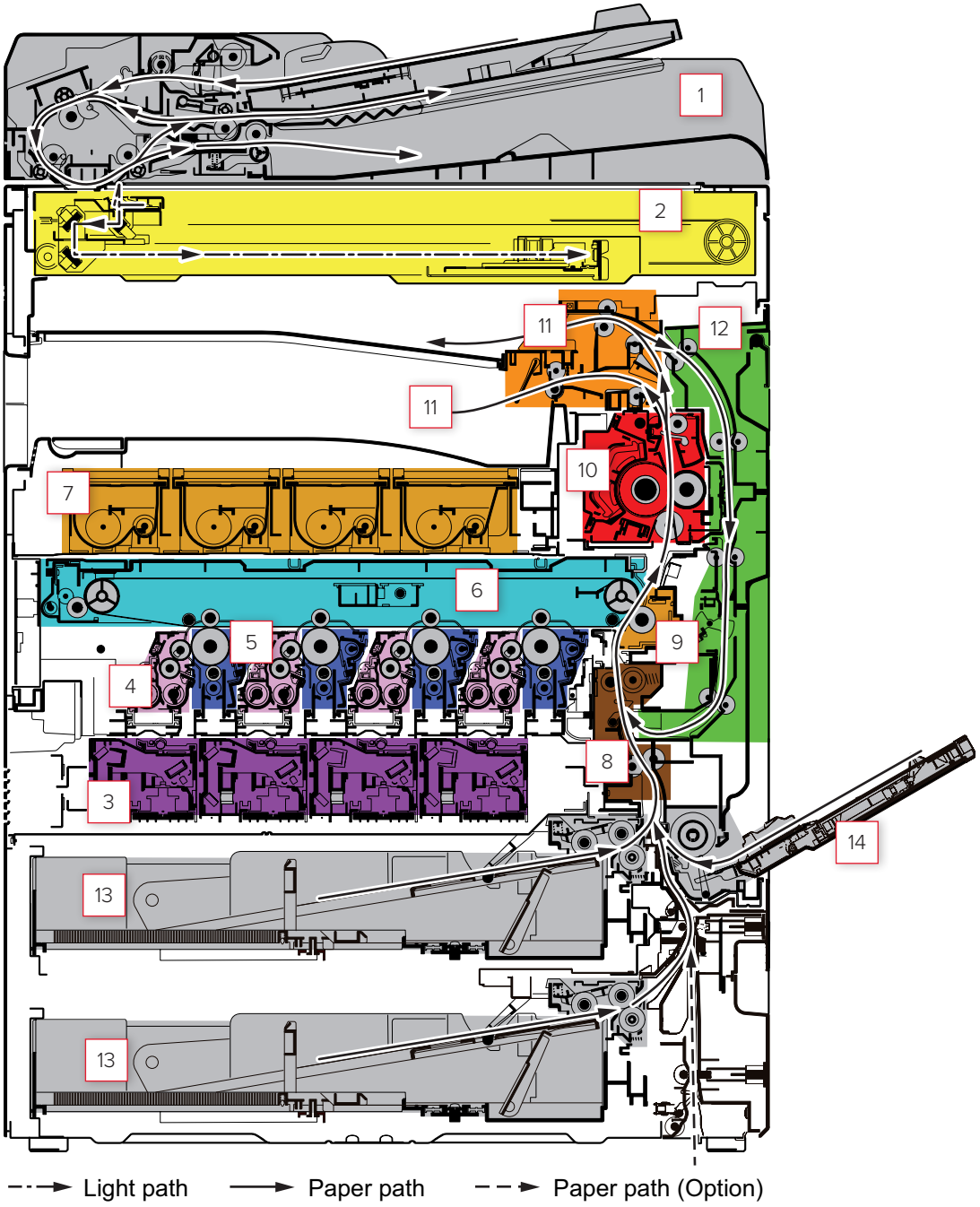
OBJECTIVES

At the end of the chapter you will be able to...

- allocate the individual components
- follow the technical concept of the system

additional information regarding the Service Manual is also provided.

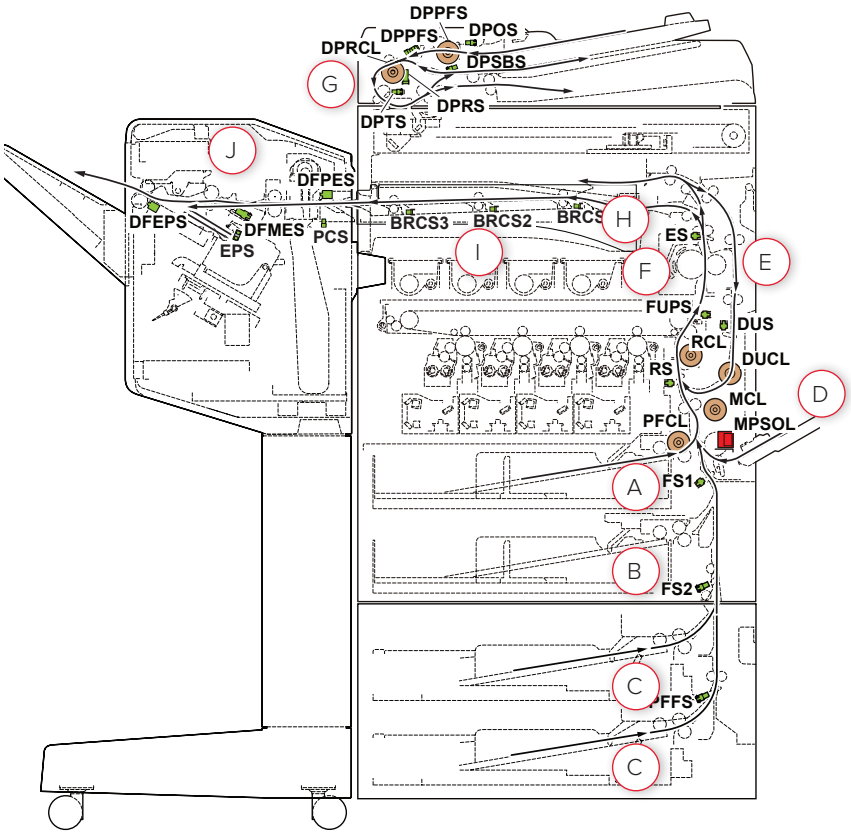
OVERVIEW, FUNCTION GROUPS AND PAPER PATH



1	Document processor (with reverse feed capability)
2	Document scanner
3	Laser units (4x separate)
4	Developer unit (4x)
5	Drum unit (4x)
6	Primary transfer section (transfer belt)
7	Toner container

8	Paper conveying
9	Secondary transfer section
10	Fuser unit
11	Paper output (inner tray, job separator)
12	Duplex unit
13	Paper cassette
14	Multi Purpose Tray (Bypass)

PAPER PATH COMPONENTS AND MISFEED DETECTION



	MISFEED POSITIONS
A	Cassette 1
B	Cassette 2
C	Cassette 3 or 4 (optional)
D	Multi purpose tray
E	Duplex unit
F	Inner tray or fuser section
G	Document processor (optional)
H	Job separator
I	Bridge (optional)
J	Document finisher (optional)

For more detailed information, please refer to the Service Manual.

	SENSORS (PAPER PATH)
FS1...2	Feed sensors
PFFS	Paper feeder feed sensor (3k feeder)
RS	Registration sensor
FUPS	Fuser pre-sensor
DUS	Duplex sensor
ES	Eject Sensor
BRCS1...3	Bridge conveying sensor
DPTS	DP timing sensor
DPRS	DP registration sensor
DPSBS	DP switchback sensor
DPOS	DP original sensor
DPPFS	DP paper feed sensor
PCS	Paper conveying sensor finisher
EPS	Eject sensor finisher

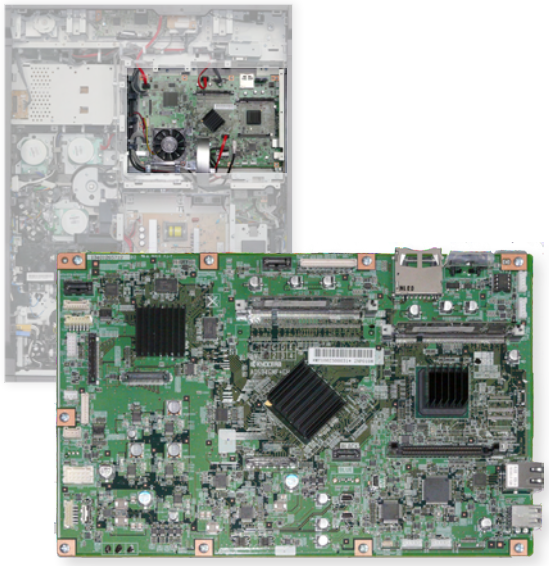
ASSEMBLY UNIT IDENTIFICATION

1	Main PWB (MPWB)	Operating system for the processing of printer data. Interfaces to the computer.
2	Engine PWB (EPWB)	Hardware control for the printer components: High voltage controllers (loading, bias) Paper transport Fuser temperature RFID analysis LSU control
3	High Voltage PWB (HVPWB)	High voltage: Main charging Developer bias Secondary transfer bias Separation voltage
4	High Voltage PWB sub (HVPWB-S)	Transfer belt (primary transfer bias). Voltage for transfer belt cleaning.
5	Power source PWB (PSPWB)	24 volt DC power supply. Control for fuser unit.
	Operation panel PWB main (OPPWB-M)	Contains LCD, LEDs, and key pad.
	Operation panel PWB sub (OPPWB S)	Contains LEDs and key pad.
	LCD	LCD display.
	Touch Panel (TP)	Operation panel.
10	ISC PWB (ISCPWB)	Control of the scanner, including DP. Image data processing of the CCD PWB.
	LED PWB (LEDPWB)	Document lighting.
	CCD PWB (CCDPWB)	Image sensor for documents.
12	APC PWB (APCPWB)	Laser beam controller (for LSU).
	BD PWB (BDPWB)	Horizontal synchronization of the laser beam.
14	Drum connect PWB (DRCPWB)	Relay board engine PWB - drum unit.
15-18	Drum PWB n (DRPWB n) n= C, M, Y, K	Drum relay board.
19-22	Developer PWB n (DEVPWB n) n= C, M, Y, K	Developer relay board.
	RFID PWB (RFPWB)	RFID sensor for toner container.
24	LSU connect PWB (LSUCPWB)	Connects Video PWB, Engine PWB and laser unit.
25	Engine connect PWB (ECPWB)	Connects Engine PWB, Drum connect PWB and Transfer connect PWB.
	Option connect PWB (OPCPWB)	Connection board for KeyCard, KeyCounter and Engine PWB.
27	IH PWB (IHPWB)	Power supply of the induction coil. Temperature control.
28	Fuser PWB (FUPWB)	Connection PWB fuser unit.
29	Transfer PWB (TCPWB)	Connection PWB transfer belt.
30	Transfer connect PWB (TCCPWB)	Connects Engine connect PWB - Transfer PWB.
	DP main PWB (DPMPWB)	Mainboard of the document processor.
	DP junction PWB (DPJPWB)	Connection board for DP main PWB and ISC PWB.

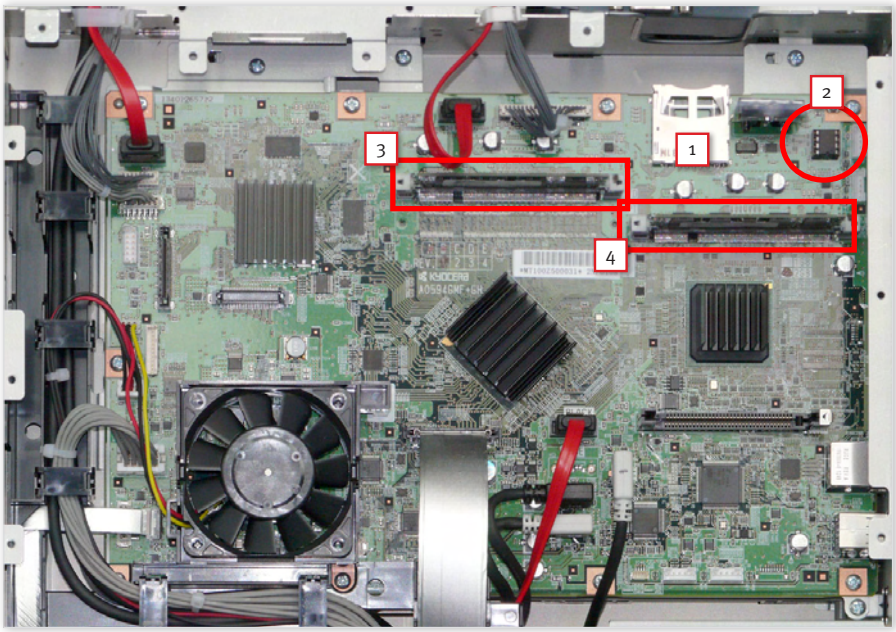
MAIN PWB

(1) MAIN PWB (MPWB):

- Operating system for the processing of printer data
- Interfaces for the computer
- Video signal processing (scanner)
- Hard drive controller
- USB Hub



DETAILS:



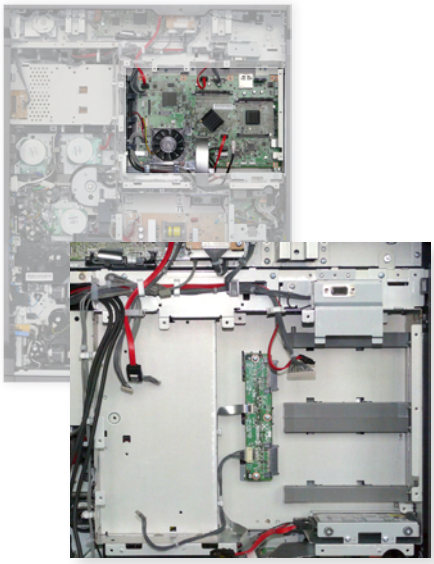
1. SD-Card socket (SD Card for fonts, API and macros)
2. EEPROM
3. ASIC memory (1GB)
4. System memory (2GB)

If service is required, please refer to page 82

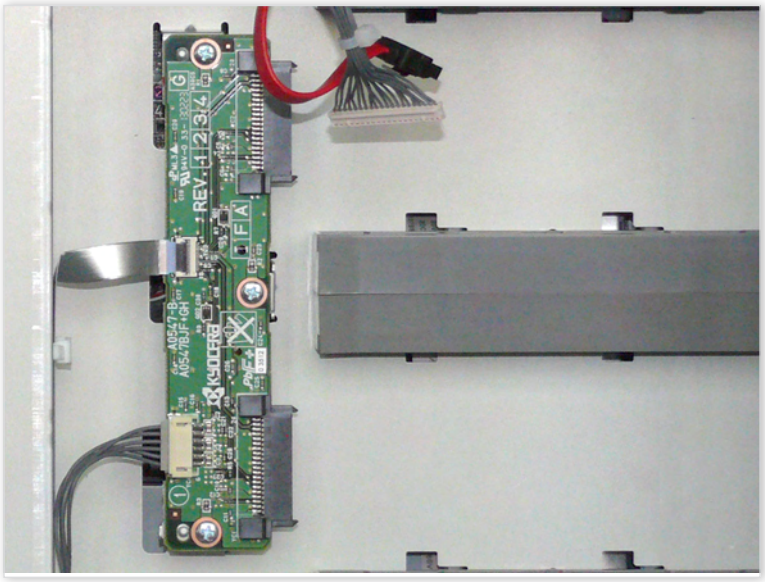
CONTROLLER BOX

HOUSING FOR :

- eKUIO ports
- FAX cards



DETAILS:



COMMENTS:

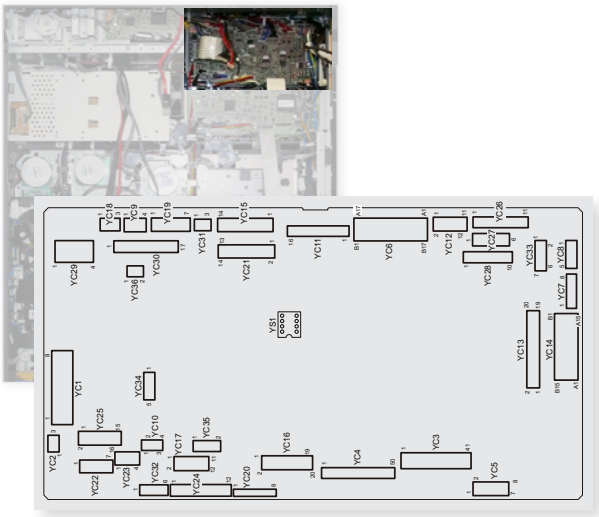
- Accessible after disassembly of the main board (refer to page 19).
- Component of the controller box.

ENGINE PWB

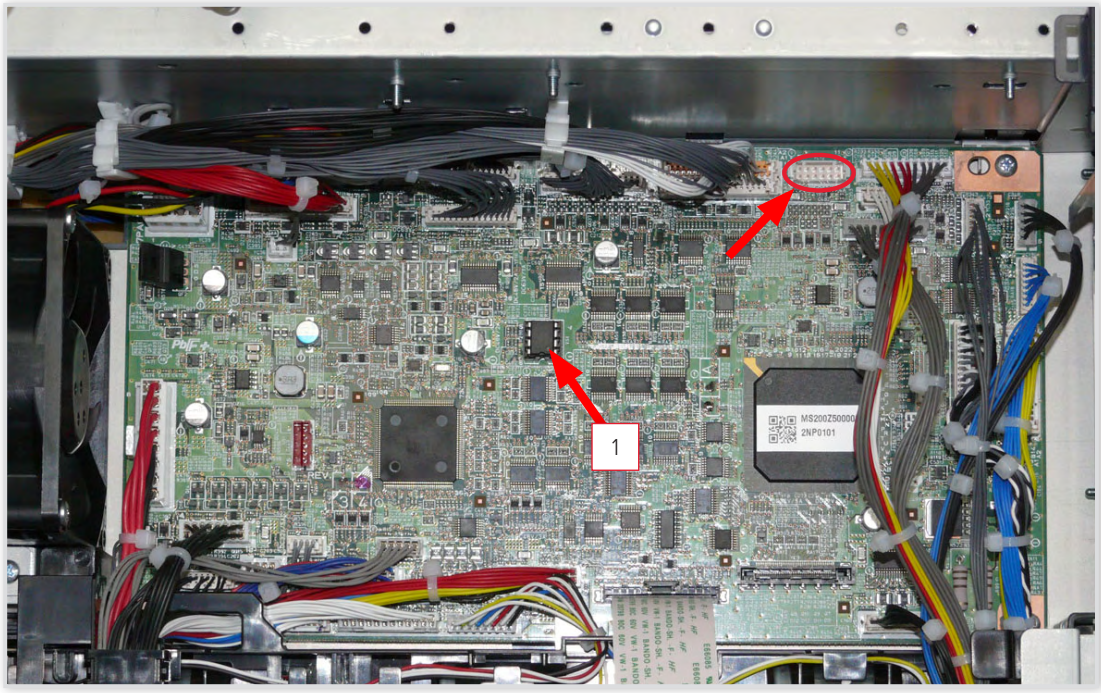
(2) ENGINE PWB (EPWB) :

Hardware control for the printer components:

- High voltage control (main charge, bias)
- Paper transport
- Fuser temperature
- RFID processing
- LSU control



DETAILS:



COMMENTS:

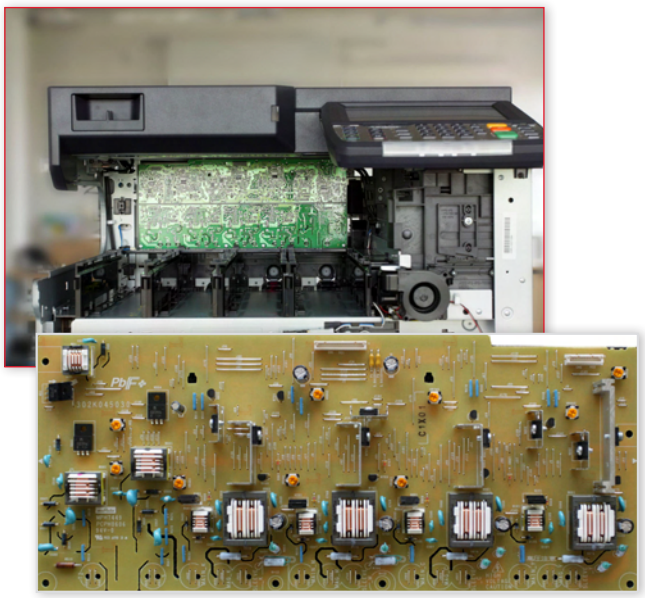
- Accessible after disassembly of the main board and the controller box.
- Not all connectors are covered (marked item: Coin vendor)!
- When replacing the board, put the EEPROM (1) on the new board.

HIGH VOLTAGE PWB

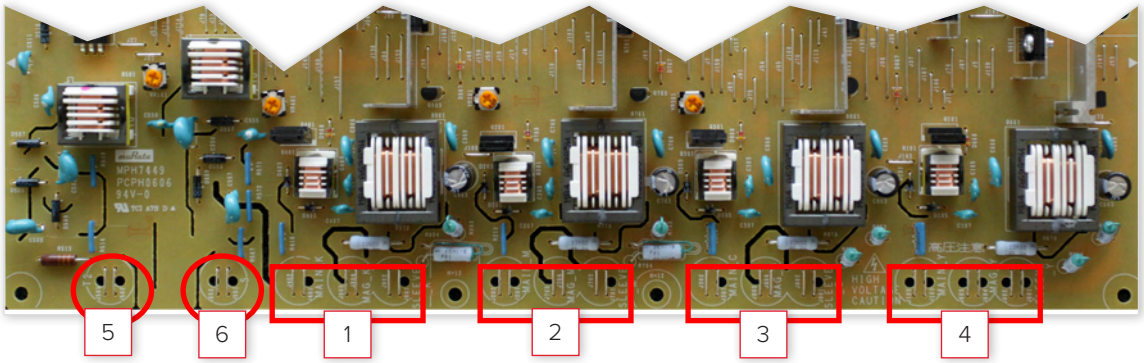
(3) HIGH VOLTAGE PWB (HVPWB) :

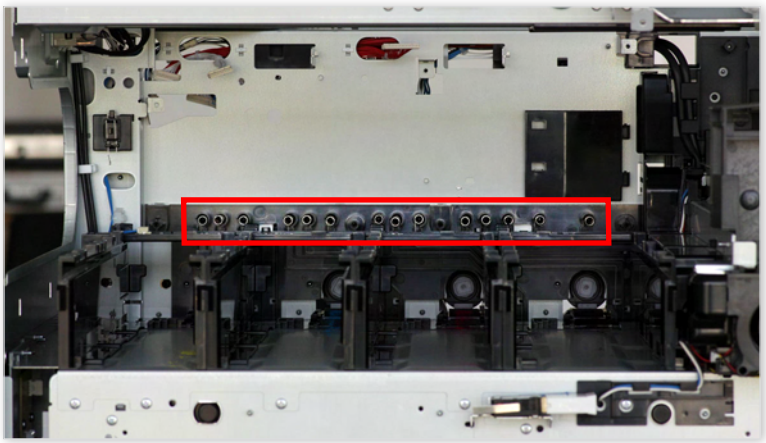
High voltage generation for:

- Main charging voltage
- Developer voltage
- Secondary transfer bias voltage
- Separation voltage



DETAILS:



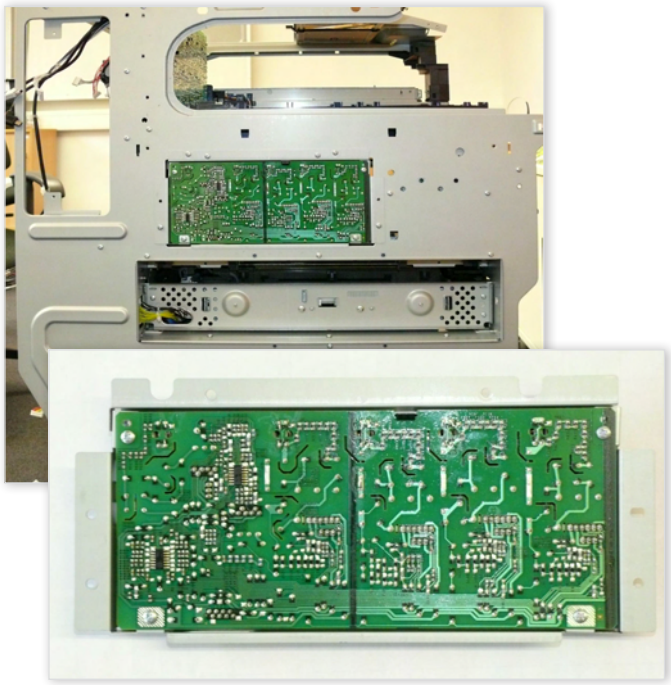


COMMENTS:

- Position 1-4: High voltages of the single color units (main, magnet, sleeve).
- Position 5: Secondary transfer bias.
- Position 6: Separation voltage.
- Image below: Contact spring on the opposite side.

HIGH VOLTAGE SUB PWB

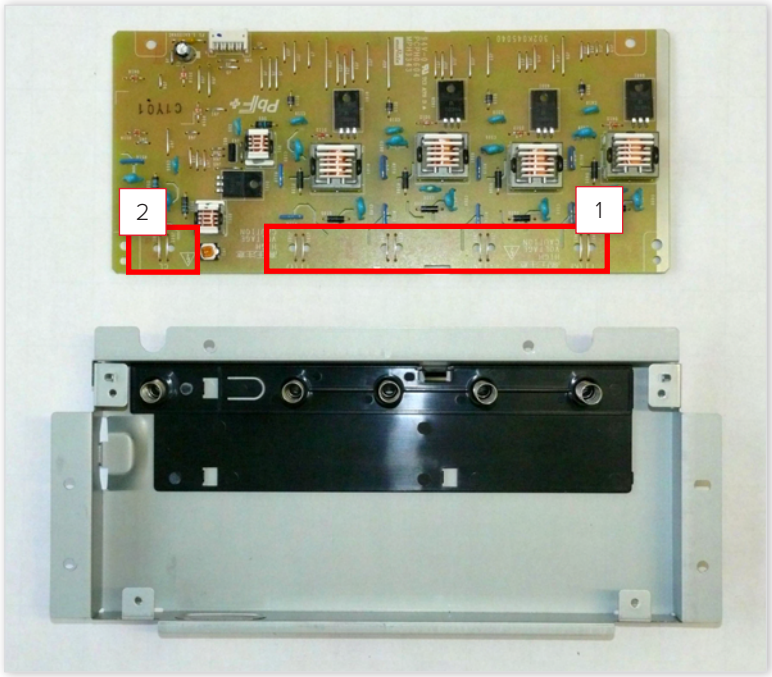
(4) HIGH VOLTAGE SUB PWB (HVPWB-S):



High voltage for:

- Transfer rollers (primary transfer bias)
- Transfer belt cleaning

DETAILS:



COMMENTS:

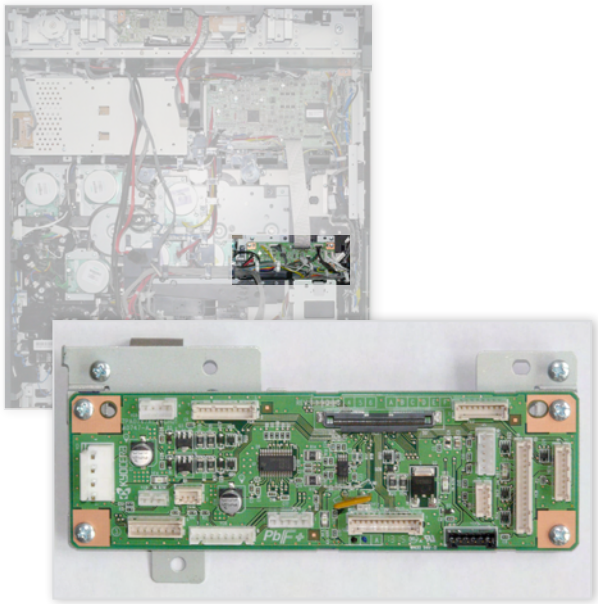
- Position 1: Voltages for transfer roller (from left to right) Y, C, M, K.
- Position 2: Voltage for transfer belt cleaning.

ENGINE CONNECT PWB

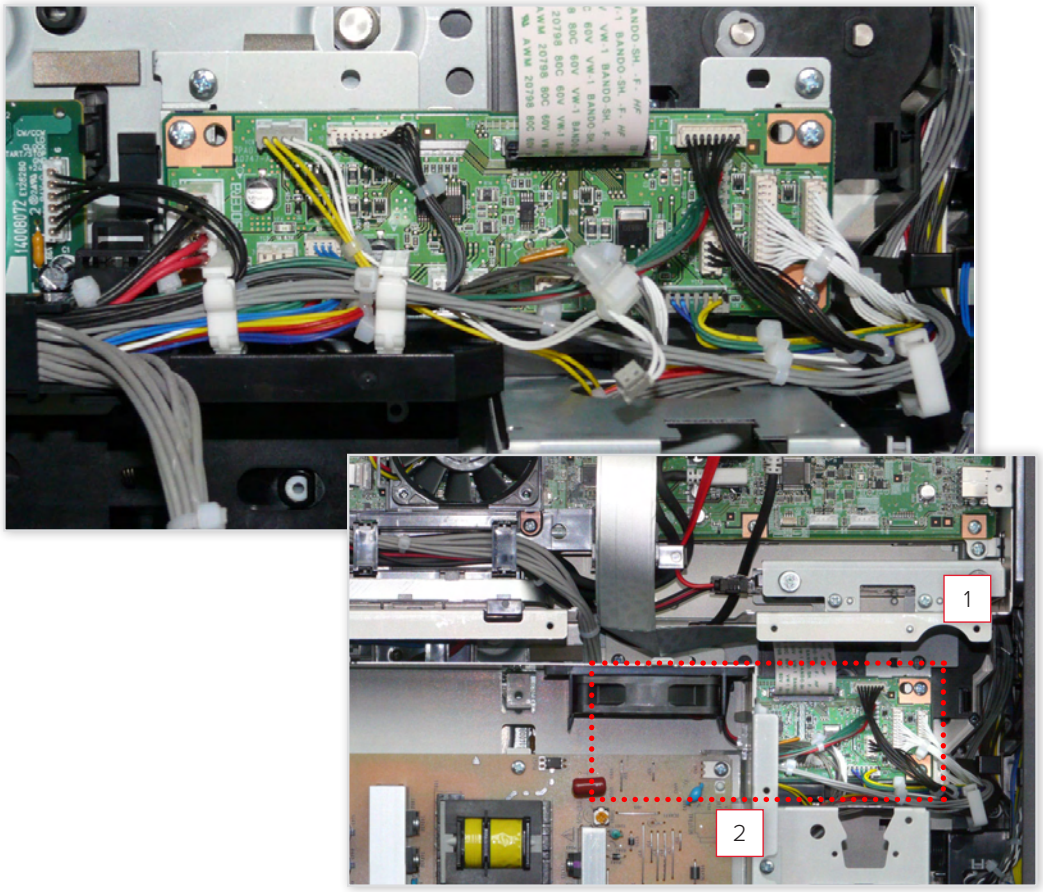
(27) ENGINE CONNECT PWB (ECPWB) :

Connection PWB of:

- Engine PWB (2)
- Drum Connect PWB (14)
- Transfer Connect PWB (30)



DETAILS:



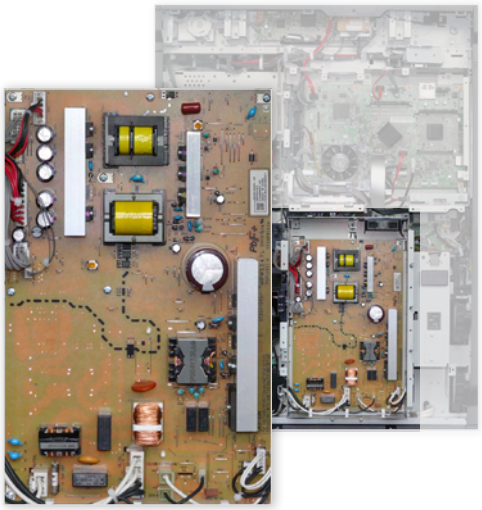
COMMENTS:

- Accessible after removing the controller box (1) and the LVU box (power supply) (2).
- Alternative label: Engine Relay PWB.

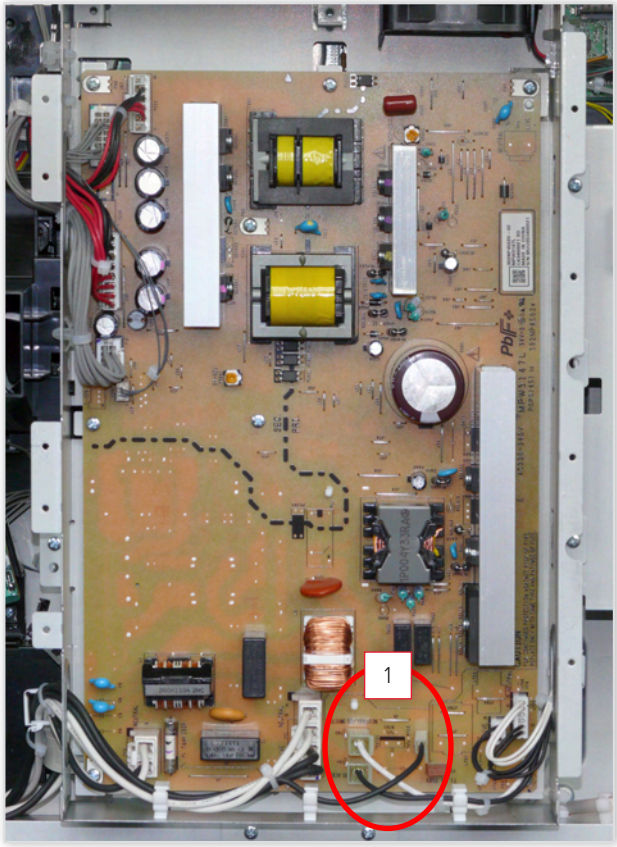
POWER SOURCE PWB

(5) POWER SOURCE PWB (PSPWB):

- 24 volt DC power supply.
- Relay control for fuser unit.



DETAILS:



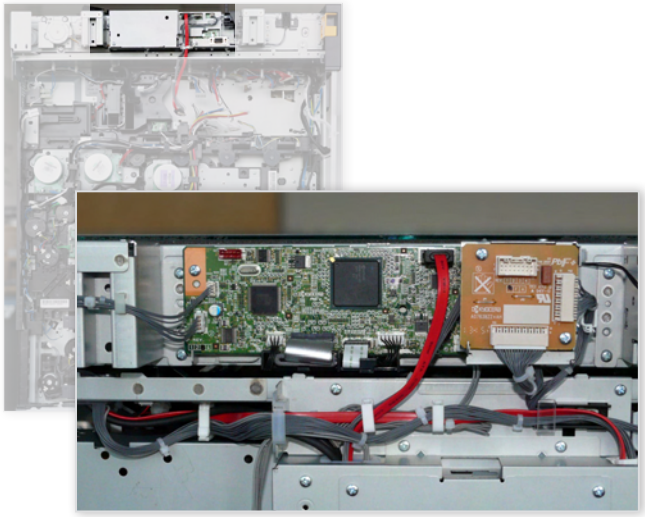
COMMENTS:

- Accessible after removal of the cover sheet.
- Removal with the housing.
- Do not mistake the plug connections (1)!

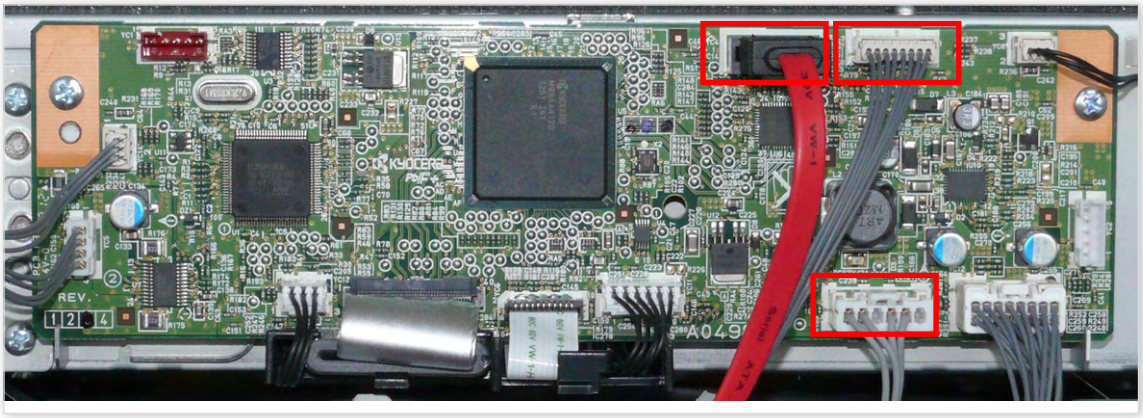
IMAGE SCANNER PWB

(10) IMAGE SCANNER PWB (ISCPWB):

- Controls the scanner, including DP.
- Image data processing of the CCD PWB



DETAILS:



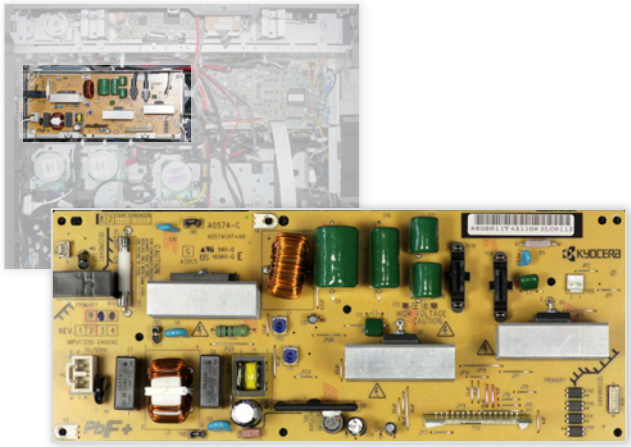
COMMENTS:

- Accessible after removal of the shielding plate.
- The image data of the CCD assembly are transformed into a serial signal so that the cable connections can be carried out easily from the scanner assembly to the Main PWB. Recognizable in the picture: SATA transmission path of the image data (red cable).
- The connectors (marked in red) must be loosened in order to remove the scanner unit.

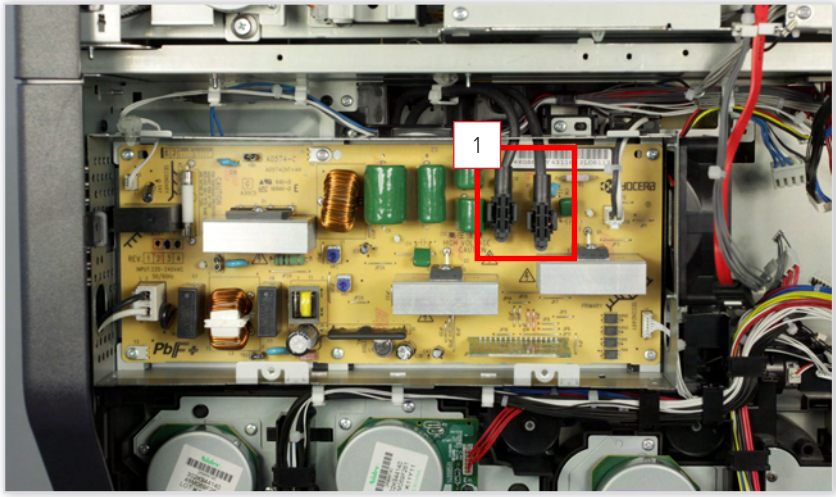
INDUCTION HEATER PWB

(29) INDUCTION HEATER PWB (IHWB):

- Power supply of the induction coil.
- Temperature control.



DETAILS:



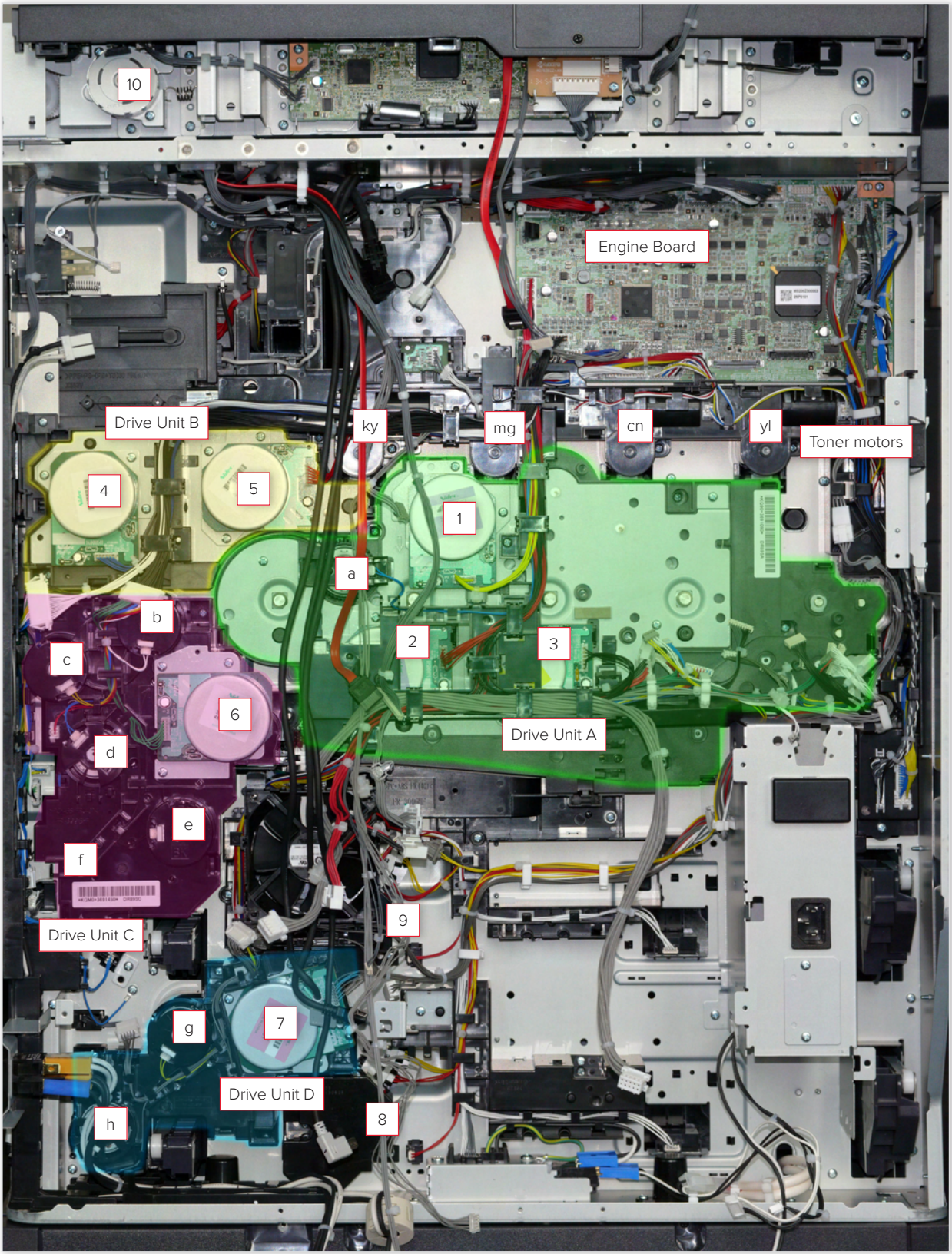
COMMENTS:

- Accessible after removal of the shielding plate.
- Do not change plug connections (1).
- Do not lay supply cable for the inductor (1) crossways.

The shielding plate may not be removed during operation.

DRIVE CONCEPT

After removing the PWBs, the drive concept is recognizable.
The drive motors are mounted on drive units, which can be removed easily.
On the following pages, the functional context is explained.

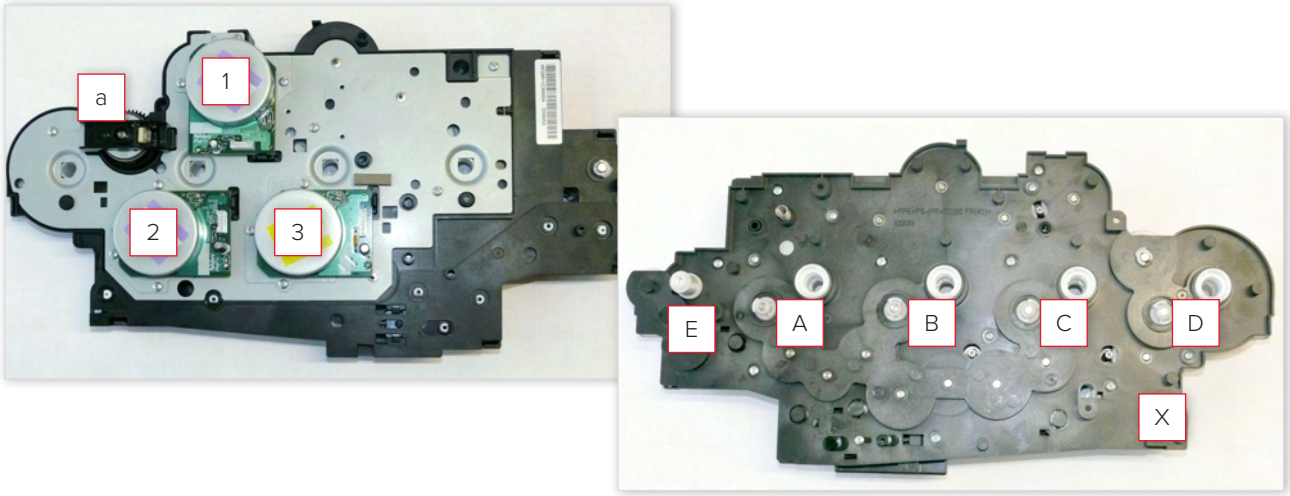


1	Drum Motor (Col)		Direct drive of the color drums (CMY).
2	Drum Motor (K)		Drives black drum. Drives the clutch (a) of the black developer unit.
3	Developer motor (col)		Direct drive of the color developer units (CMY).
4	Fuser Motor (FUM)		Drives the fuser unit.
5	Developer motor (K) (+ Belt motor)		Drives black developer unit (via the clutch on Drive Unit A). Drives the transfer belt.
6	Conveying motor (CM 1)		Drive motor for the paper feed and paper conveying.
7	Conveying motor (CM 2)		Drive motor for the paper feed and paper conveying (lower section).
8	Lift Motor (LM2)		1st cassette.
9	Lift Motor (LM1)		2nd cassette.
10	ISU motor		Moves the scanner.
a	Developer Stop Clutch (DEVSCL)		Clutch for black developer unit. (Drive of the clutch is done via Drive Unit B).
b	Registration Clutch		Drives the registration roller.
c	Duplex Clutch		Drives the drive gear for the duplex transport.
d	Mid Clutch 1		Drives the paper conveying rollers.
e	Paper Feed Clutch 1		Drives the feed roller of the first paper cassette.
f	MP Solenoid		After activation of the solenoids, the drive performs a 360° rotation.
g	Paper Feed Clutch 2		Drives the feed roller of the second paper cassette.
h	Mid Clutch 2		Drives the paper conveying rollers.

OTHER:

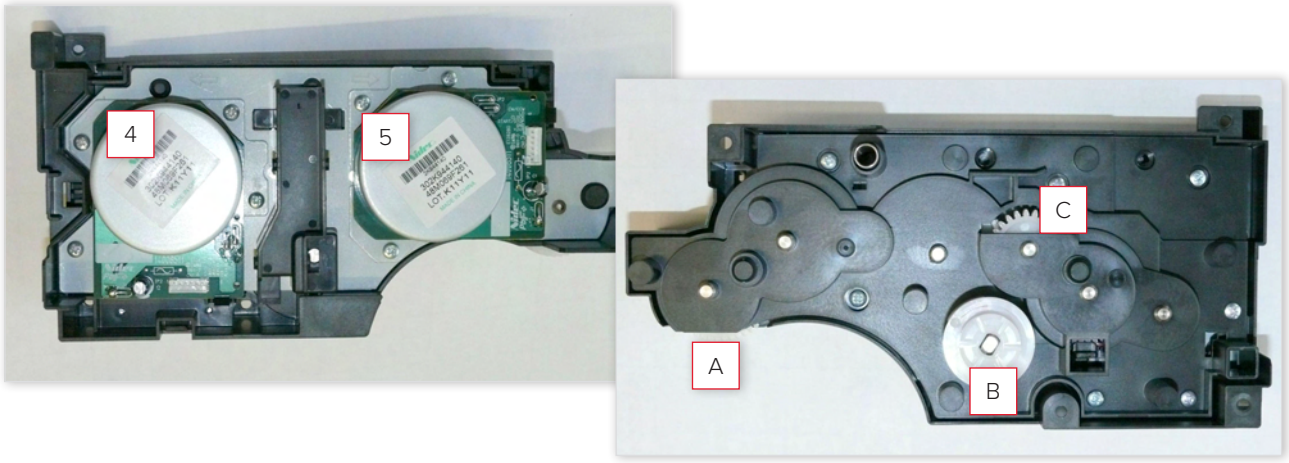
ky, mg, cn, yl: Motors for the toner transport from the toner containers.

DRIVE UNIT A



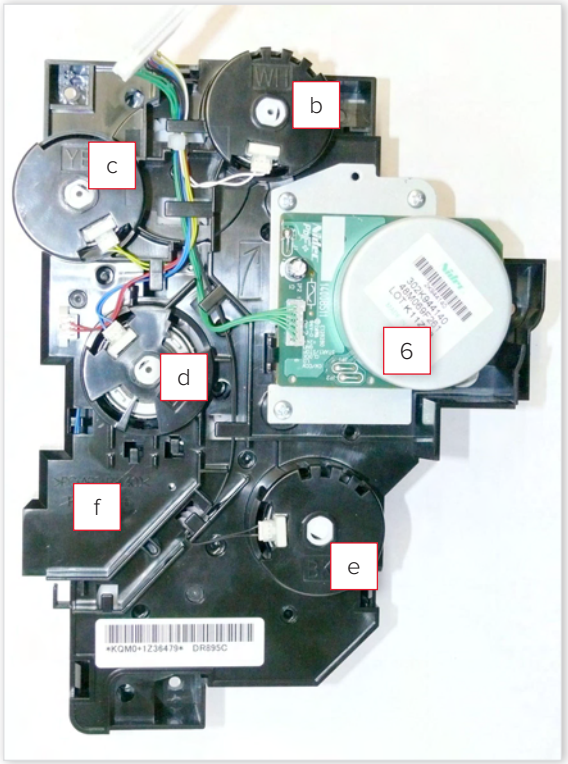
1	Drum Motor (Col)		Drive of the color drum (CMY).
2	Drum Motor (K)		› Drive of the black color drum. › Drive of the clutch (a) for the black developer unit.
3	Developer motor (col)		Drive of the color developer unit (CMY).
a	Developer Clutch (K)		Clutch for black developer unit (Drive of the clutch is done via Drive Unit B).
A		Drum / developer Y	Gear for drum and developer unit Y.
B		Drum / developer C	Gear for drum and developer unit C.
C		Drum / developer M	Gear for drum and developer unit M.
D		Drum / developer K	Gear for drum and developer unit K.
E			Gear for the transfer belt cleaning and waste toner transport (driven by Drive Unit C).
X			Drive of the transfer belt cleaning and waste toner transport.

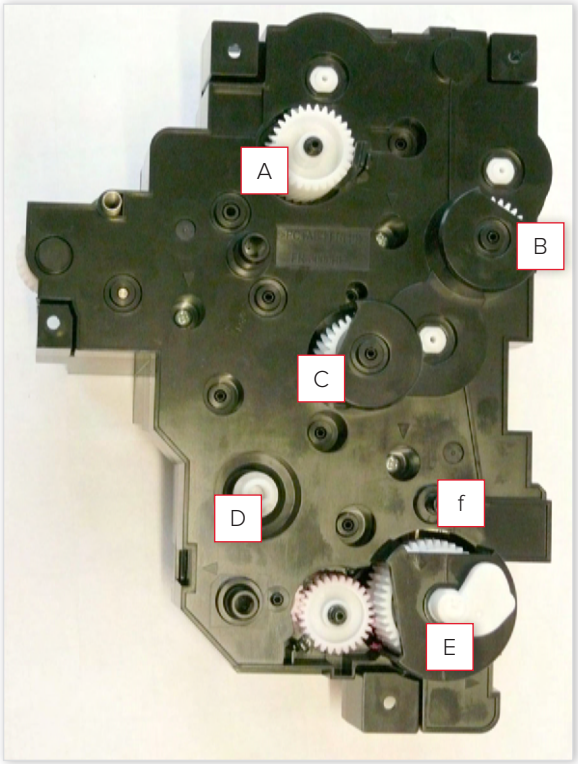
DRIVE UNIT B



4	Fuser motor		Drive of the fuser unit.
5	Developer motor (K)		> Drives the black developer unit (via the clutch on Drive Unit A). > Drives the transfer belt.
A			Drives the clutch (on Drive Unit A) of the developer unit K.
B			Gear for the transfer belt.
C			Drives the fuser unit.

DRIVE UNIT C

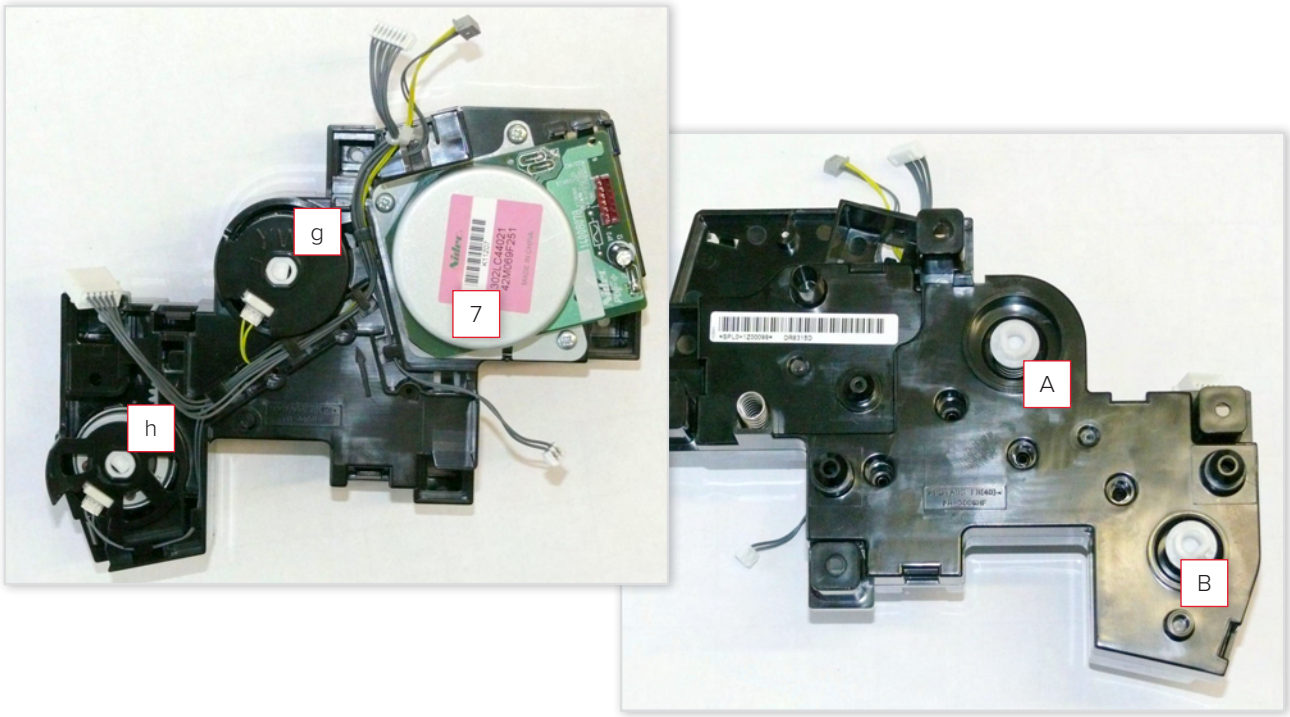




6	Conveying Motor (CM1)	Drives the paper conveying.
b	Registration Clutch	Drives the registration roller.
c	Duplex Clutch	Drives the drive gear of the duplex roller.
d	Mid Clutch 1	Transport rollers for vertical paper transport.
e	Paper Feed Clutch 1	Drives the feed rollers of the first paper cassette.
f	MP solenoid	After activation of the solenoids, the drive performs a 360° rotation.
A		Drive gear for registration roller.
B		Drive gear for duplex carrier.
C		Drive gear for vertical carrier.
D		Fulcrum for the feed rollers of the 1st paper cassette
E		Excenter for the movement of the paper lift of the multi-purpose paper feeder.

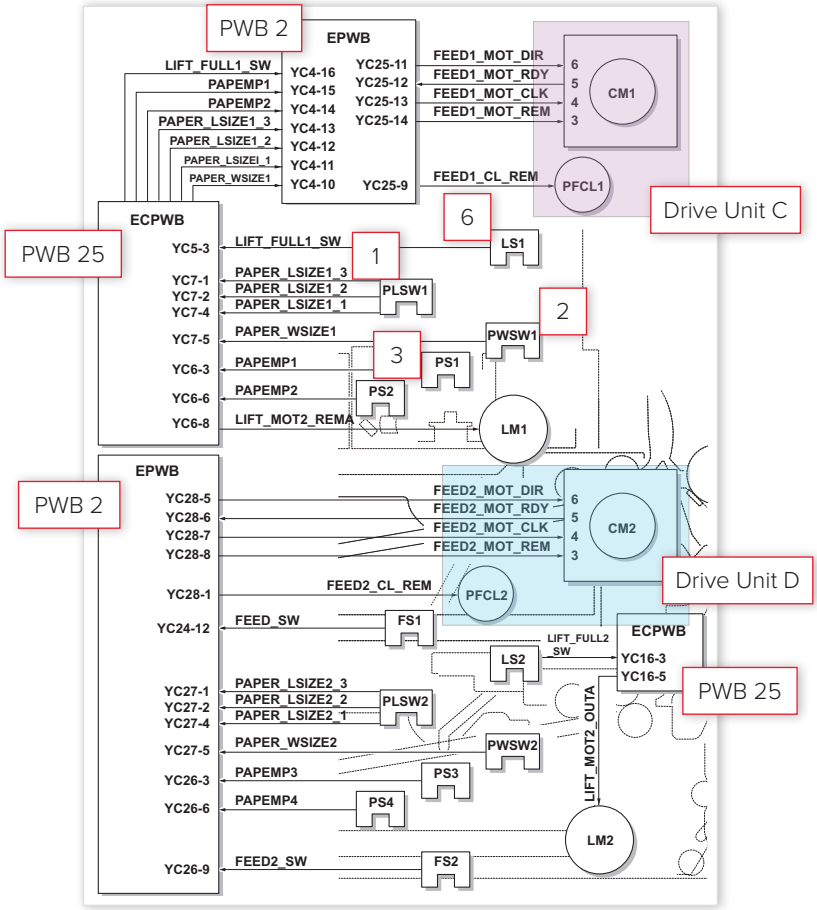
For reassembly of the drive unit, the paper lift has to be pressed down manually.
Only screw the drive unit on tightly when it is sitting flush with the framework of the device.

DRIVE UNIT D



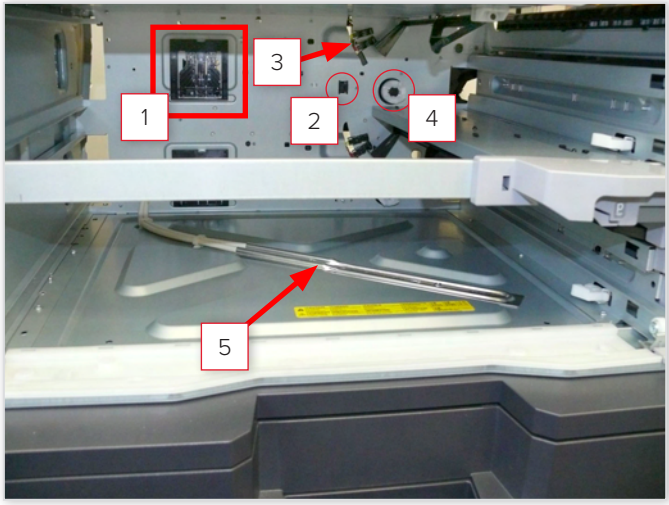
7	Conveying motor (CM2)	Drive motor for the paper conveying (lower section).
g	Paper Feed Clutch 2	Drives the feed rollers of the second paper cassette.
h	Mid Clutch 2	Drives the conveying rollers for the 2nd paper cassette.
A		Fulcrum for the feeder rollers of the 2nd paper cassette.
B		Fulcrum for the conveying rollers of the 2nd paper cassette.

PAPER FEEDER

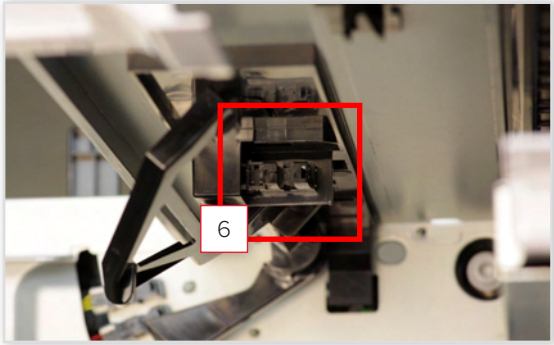


VIEW INTO THE CASSETTE AREA (FEEDING UNIT REMOVED) :

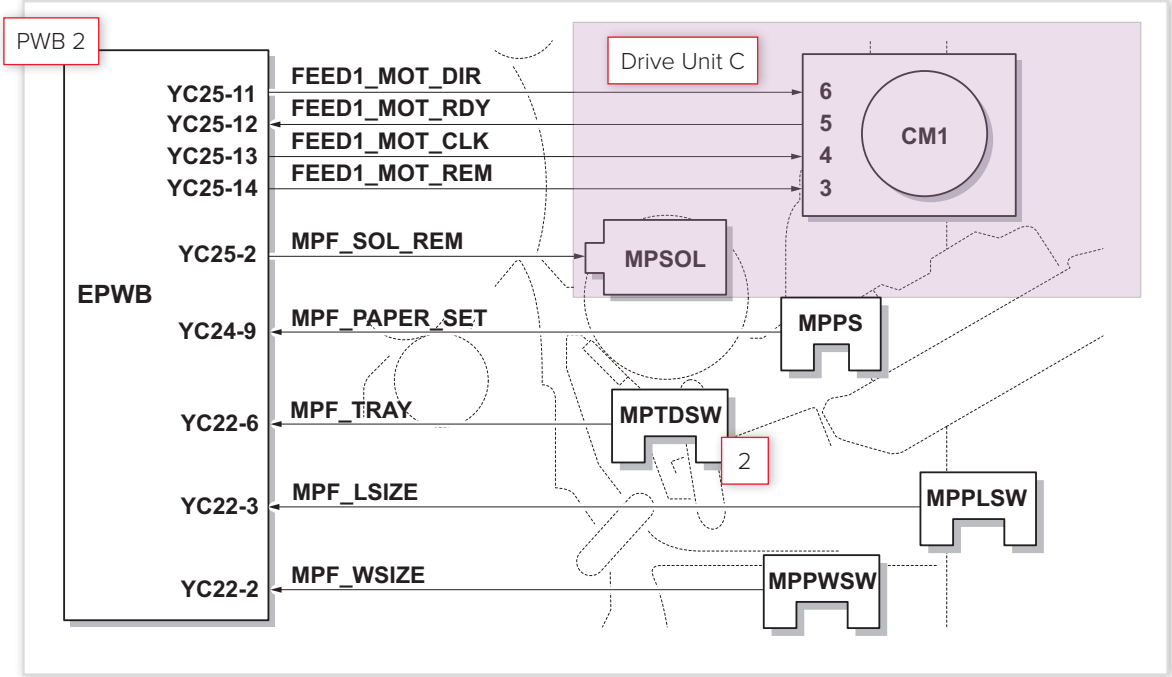
1. Paper length sensors (PLSW)
2. Paper width sensor (PWSW)
3. Paper full sensor paper cassette (PS1, PS2)
4. Fulcrum of the paper lift (of the lift motor LM)
5. Cassette heater



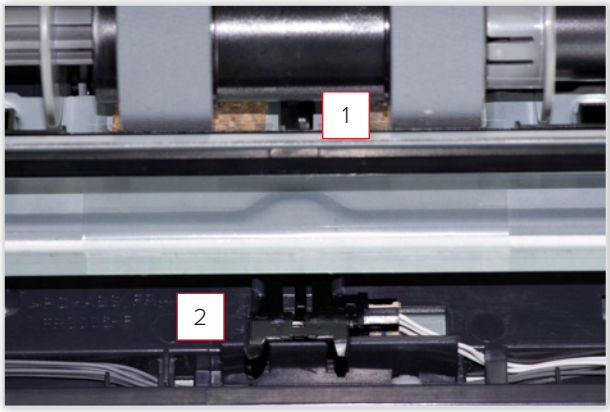
6. Paper lift sensor



MULTI-PURPOSE PAPER FEEDER



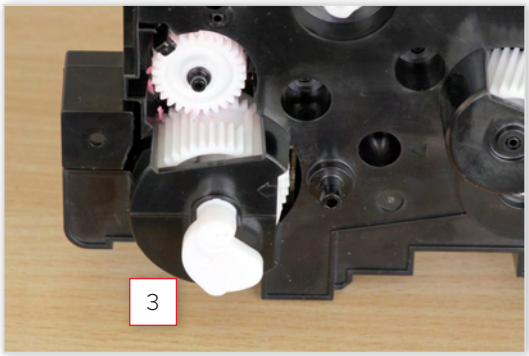
VIEW OF THE OPENED MULTI-PURPOSE PAPER FEEDER:



1. Sensor actuator
2. Paper sensor (MPTDSW)

OTHER SENSORS:

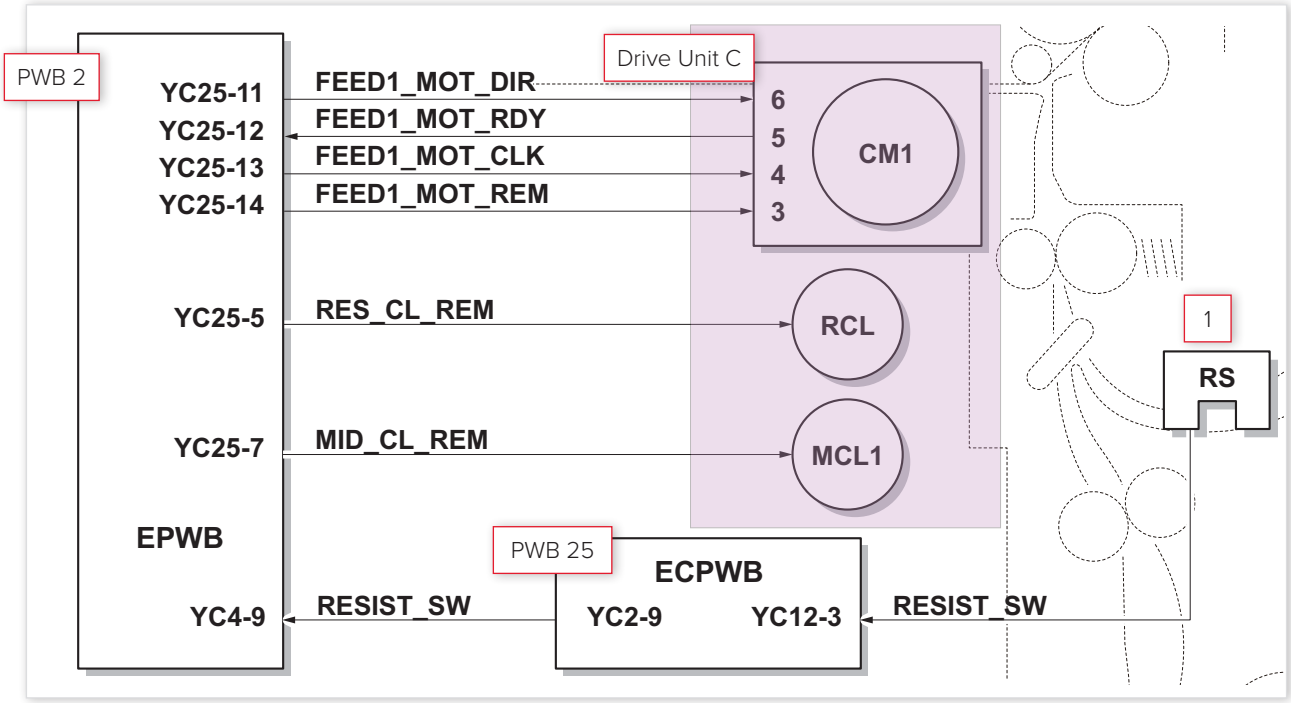
- Width sensor, via the paper guide (MPPWSW)
- Length sensor, via the extension of the paper tray (MPPLSW)
- Extension of the paper tray pulled out (MPPS)



3. Excenter of Drive Unit C (for the assembly should be positioned as illustrated).

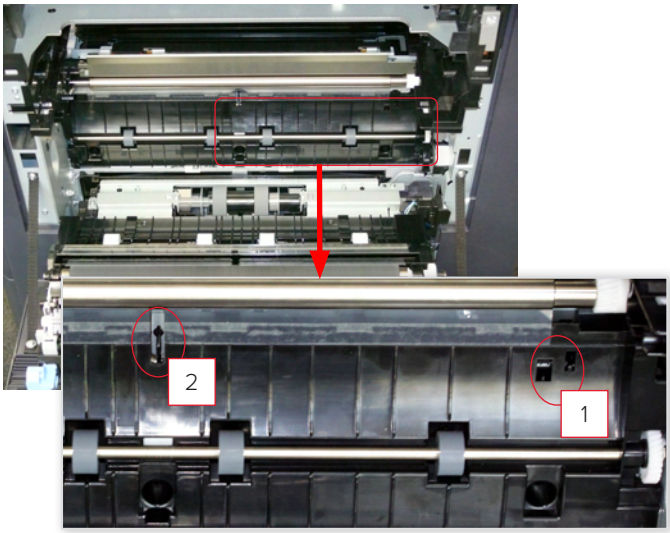
During reassembly the lift plate of the multi purpose feeder must be pressed down manually.

PAPER CONVEYING

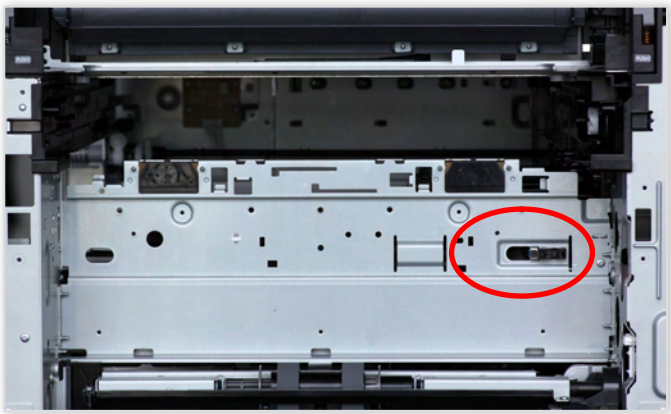


REGISTRATION:

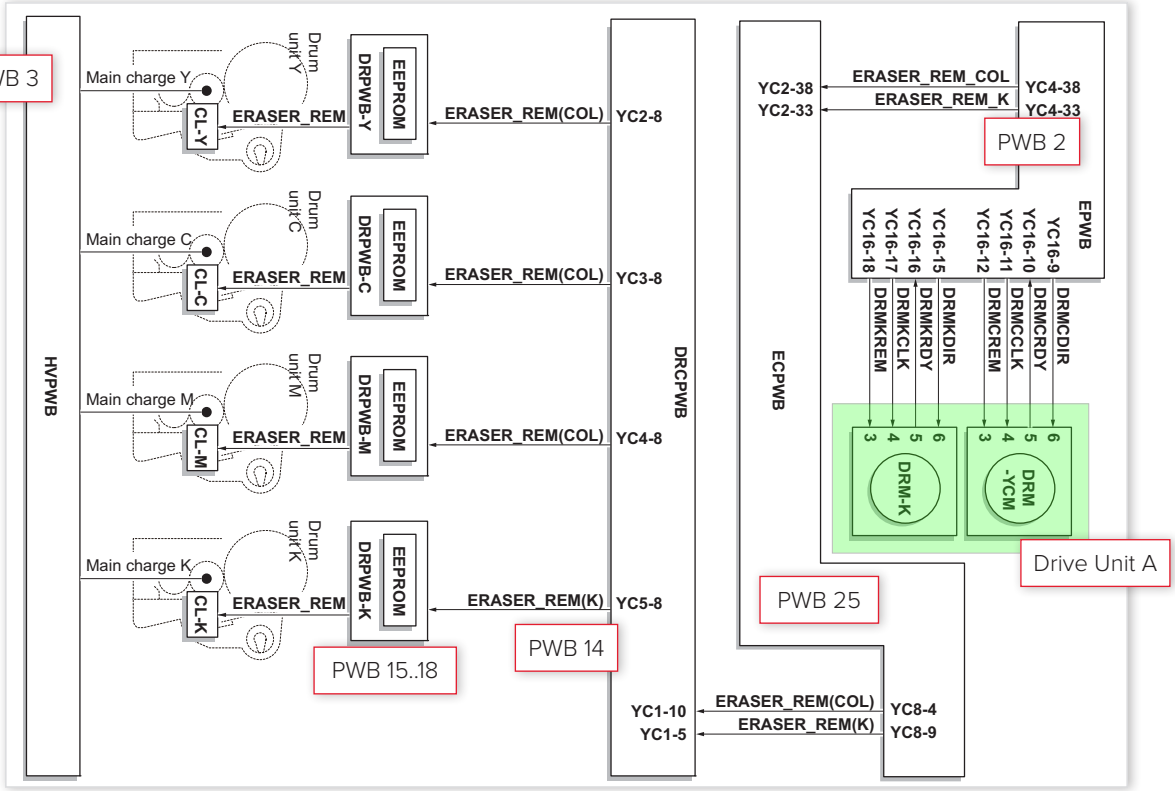
1. Position of the registration sensor RS (behind the paper guide)
2. Sensor actuator



Position of the registration sensor RS with the paper guide removed.

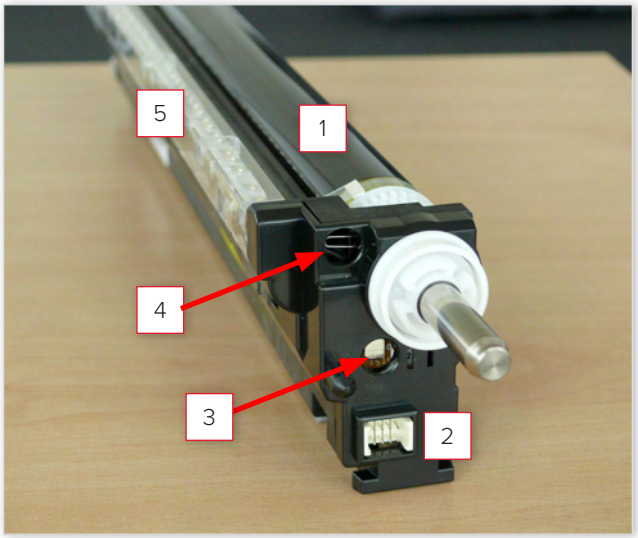


DRUM UNITS



DRUM UNIT:

1. Drum (OPC material)
2. EEPROM connector (with connected eraser lamp)
3. Drum ground
4. Contact spring for charging voltage
5. Eraser lamp

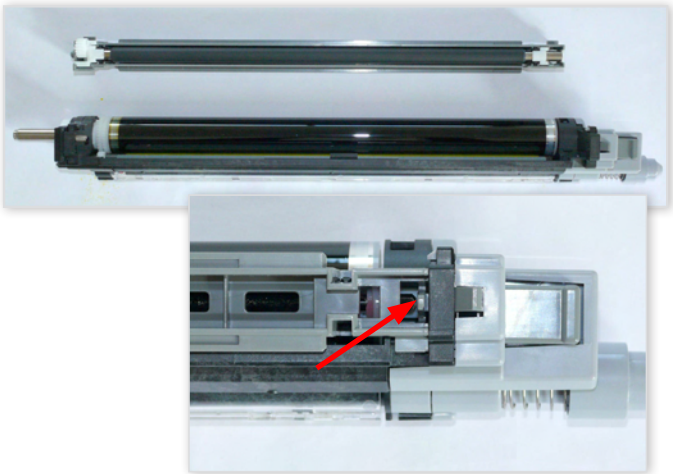


THE EEPROM IN THE DRUM UNIT ALSO SAVES THE FOLLOWING DATA:

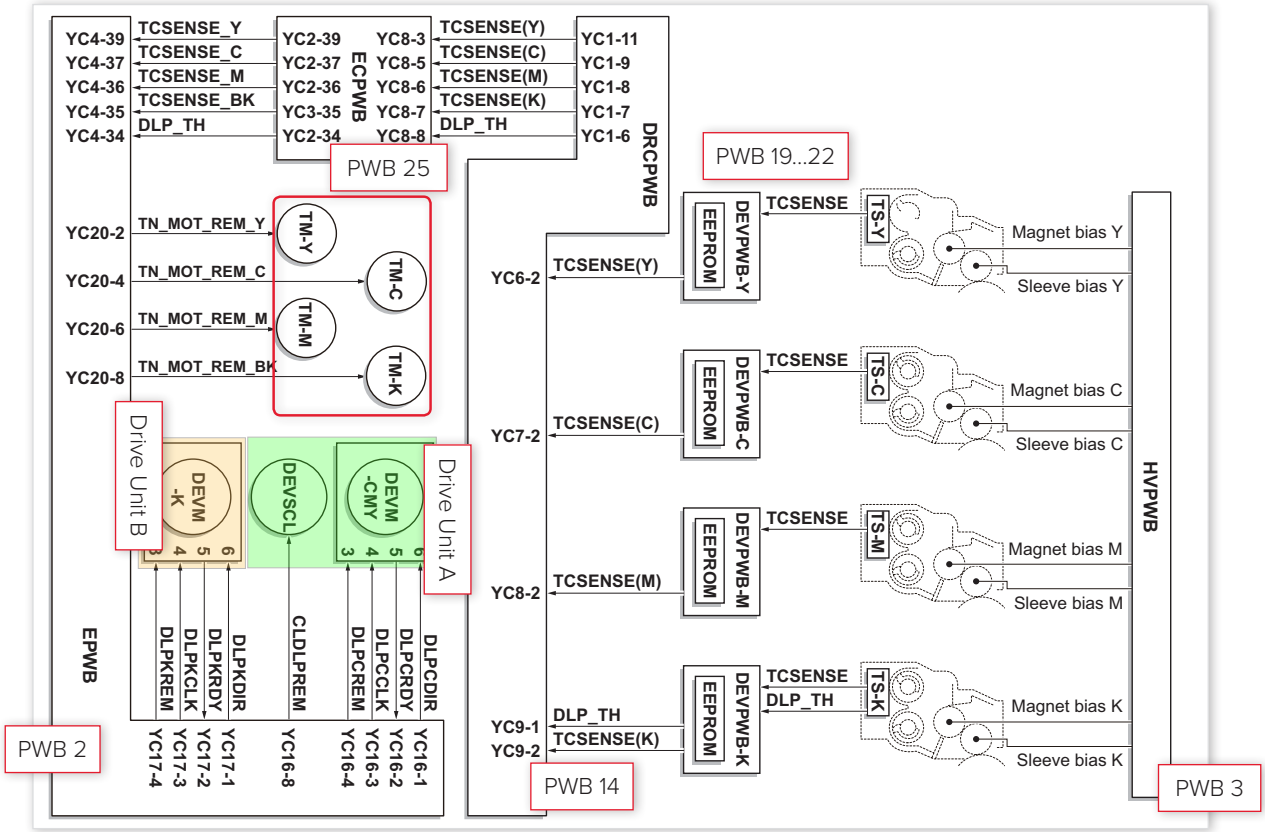
- Counter status
- Serial number
- Process data

For cleaning the charger roller release the two lock levers and remove the unit (see arrow).

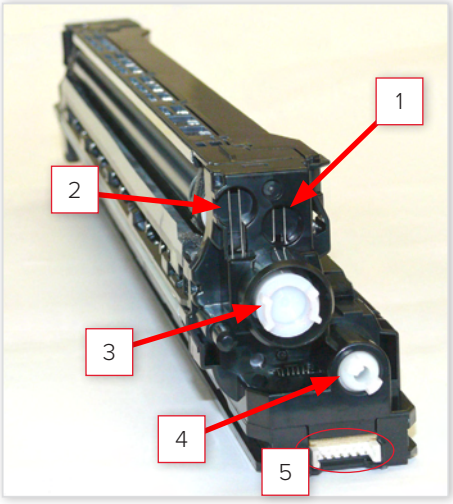
Image shows the drum unit with the charger roller unit removed.

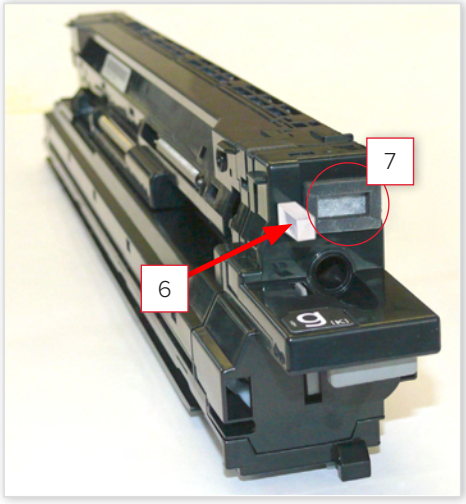


DEVELOPER

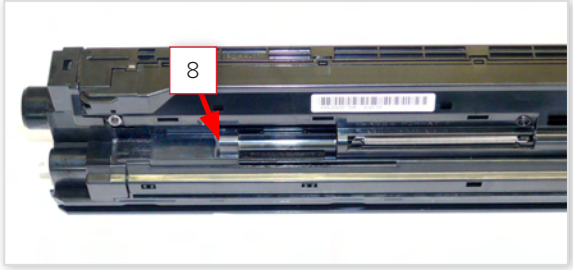


Developer units (CMYK) are filled, ex factory, with toner and ferromagnetic developer material.
During operation, a toner density sensor (TS-x) measures the ratio of developer material and toner. Toner is added via the corresponding toner motors (TM-x) as needed.
The developer material lasts for the entire service life (200,000 pages/A4) of the developer unit.

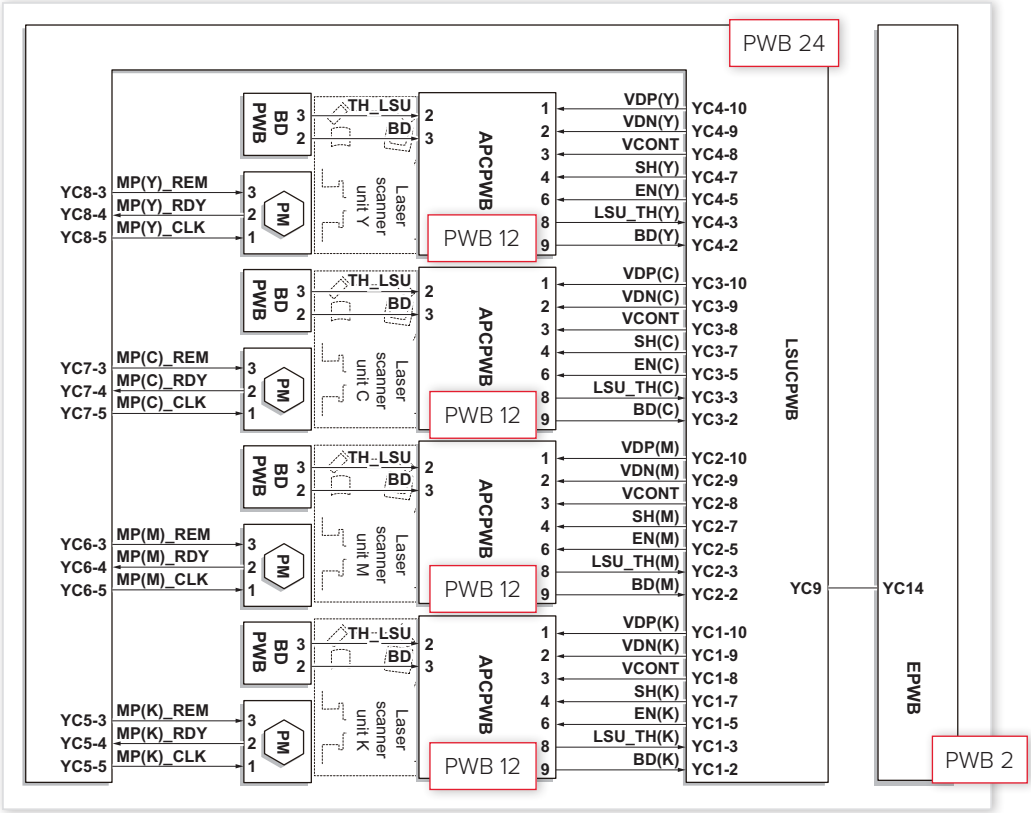




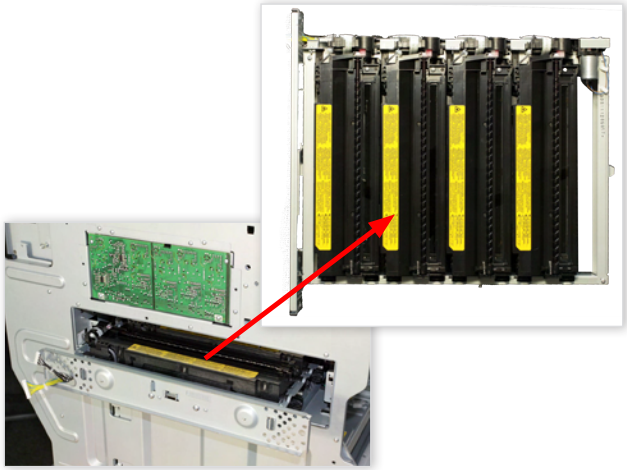
1. Contact spring for the sleeve bias
2. Contact spring for the magnet bias.
3. Drive flange.
4. Fulcrum for the toner conveying screws.
5. Connector for EEPROM and toner sensor.
6. Release mechanism for sleeve roller.
7. Intake fitting with filter (to avoid toner contamination).
8. Toner shutter.

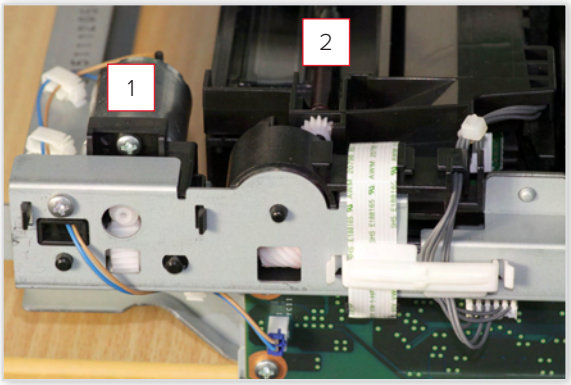


LASER UNITS



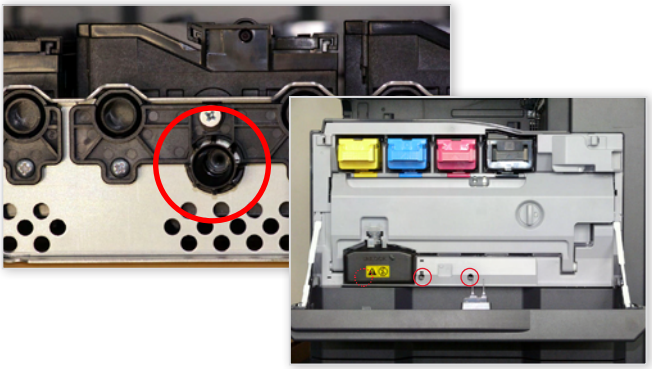
For each color, a separate laser unit is available.
At regular intervals, or requested through the system menu (refer to page 98), the glasses of the laser units are cleaned.
A motor (1) drives the cleaner (2) via a gear.



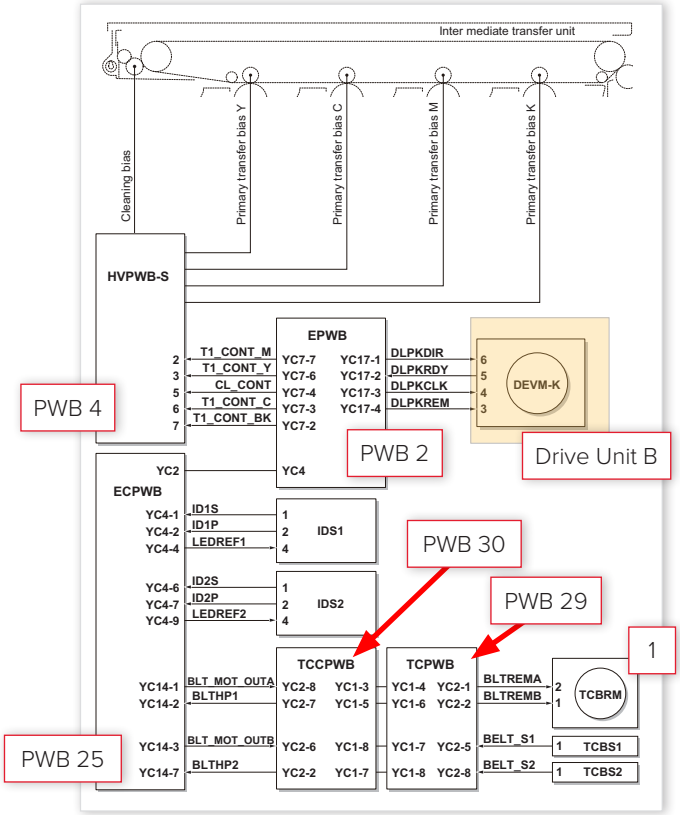


MIRROR CORRECTION:

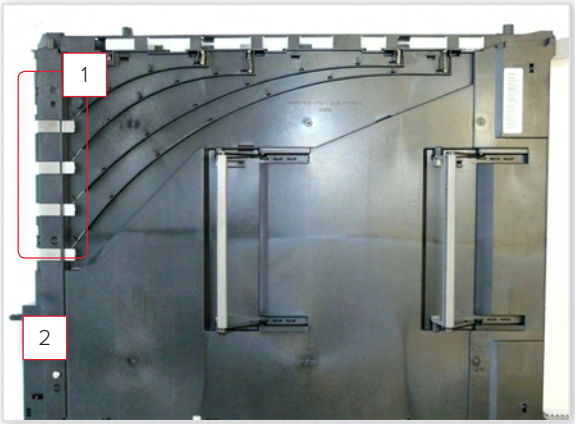
The correction of the YCM laser mirror can be done with a 5 mm allen wrench (minimum length: 15 cm). The access to the laser mirror is covered by tape.

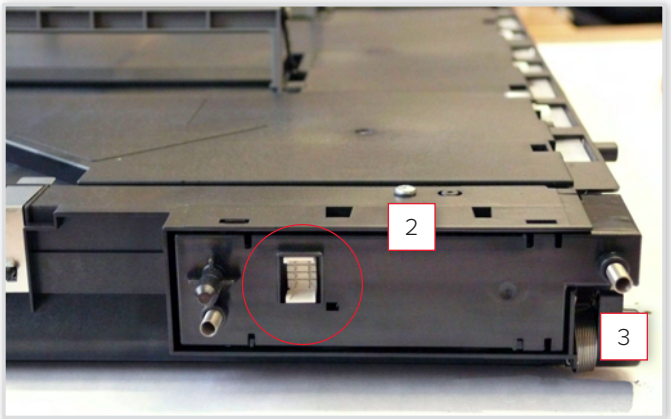


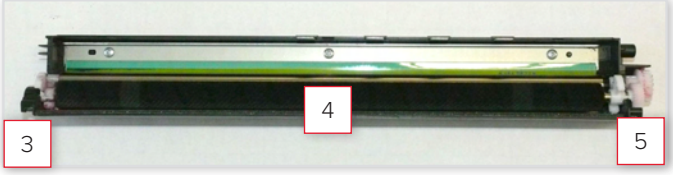
TRANSFER UNIT



The transfer unit is designed as a compact assembly unit, to be replaced after 200,000 prints using the MK Kit. An exchange of single parts is not intended.







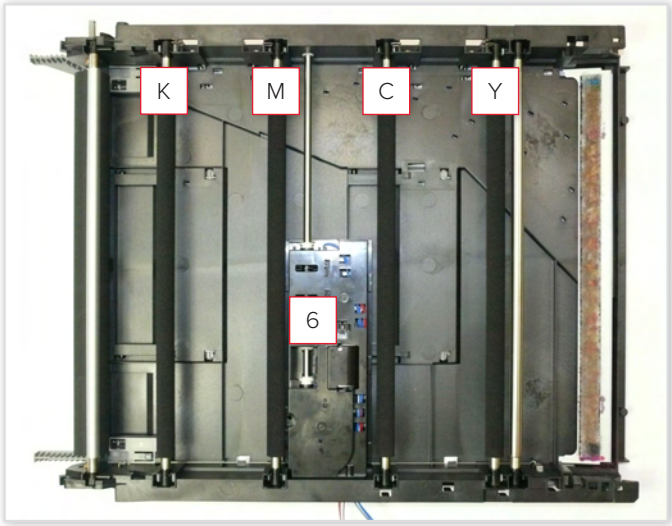
View of the transfer belt unit from above:

1. Contact area for transfer- and cleaning voltages.
2. Contact area for transfer belt - lift device.
3. Outlet for waste toner material.
4. Transfer belt cleaning roller.
5. Drive area of the cleaning unit.

With the movable bearing carriages, the transfer rollers can be swung in and out as needed.
A mode switch is placed here for changing tasks (color operation/black and white operation), and also to guarantee that, when not in use, all transfer rollers are in so that the drum units can be removed without damaging them.

The transfer rollers are engaged or extended by the gear unit (6):

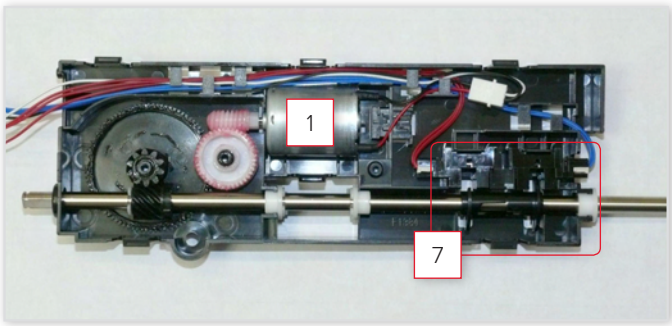
Idle	All transfer rollers are in, no contact between the transfer belts and the drums.
Black and white	K transfer roller pulled out.
Color	K, M, C, Y transfer rollers pulled out.



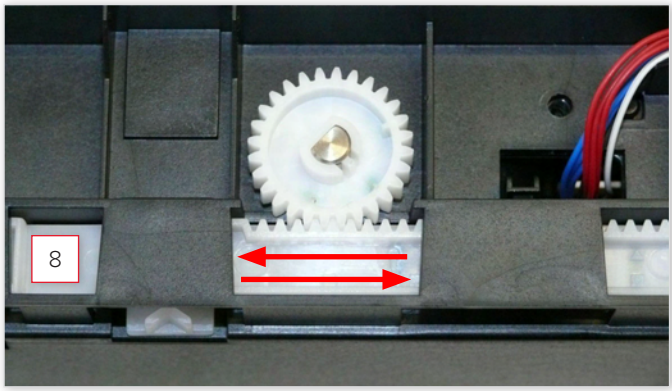
In the illustration, the transfer belt was removed.

FUNCTION OF THE GEAR UNIT (6):

Via a gear the motor 1 (TCBM) presses a shaft whose position is recognized by the position sensors TCBS 1 and TCBS 2 (7).
The shaft drives a push device (8), which correspondingly changes the position of the bearing carriages.

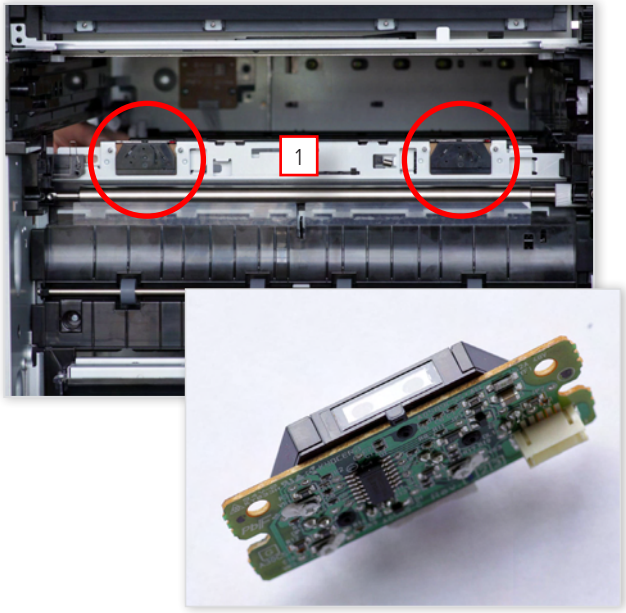


NEVER try to manually move the push device to position the transfer rollers. The construction of the gear does not permit this.

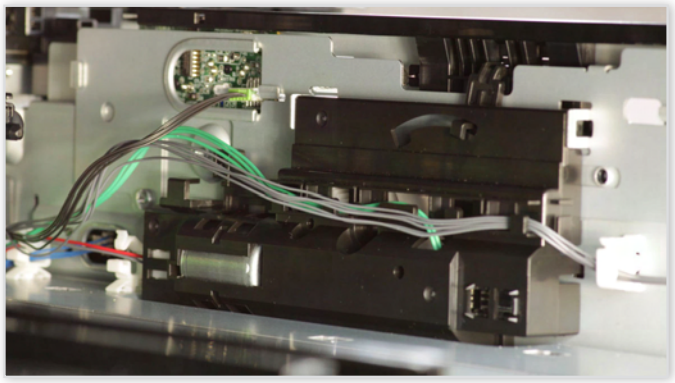


ID SENSORS:

The ID sensors (ID1, ID2) measure the toner density of the toner patches that are applied to the transfer belt for calibration.

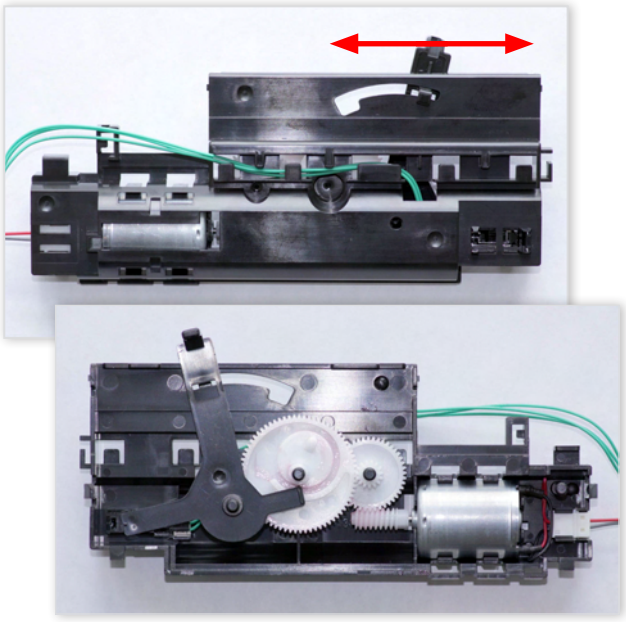


The sensors are automatically cleared of toner dust via a cleaning unit.
The cleaning unit is on the back of position 1.

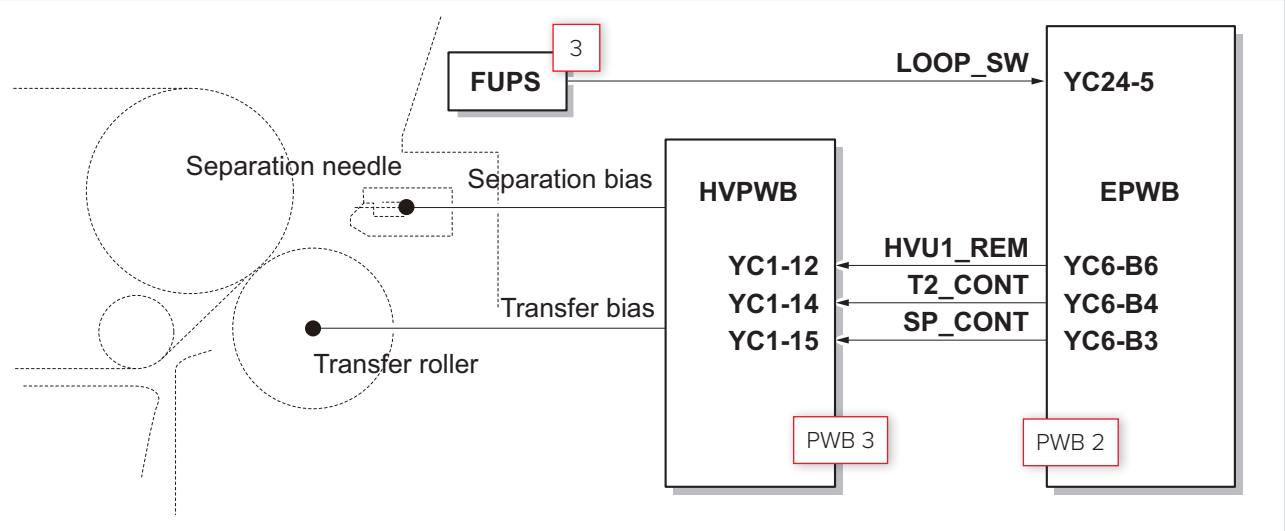


DETAILS:

An actuator is moved by a direct current motor and a control disk.

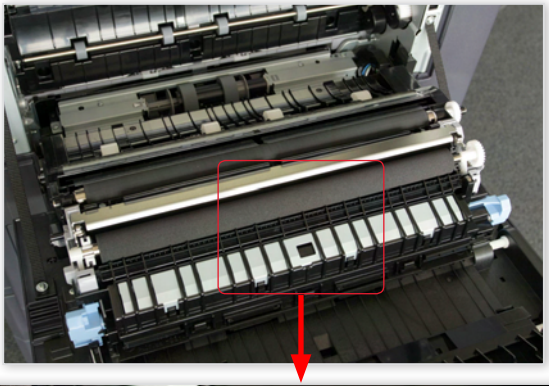


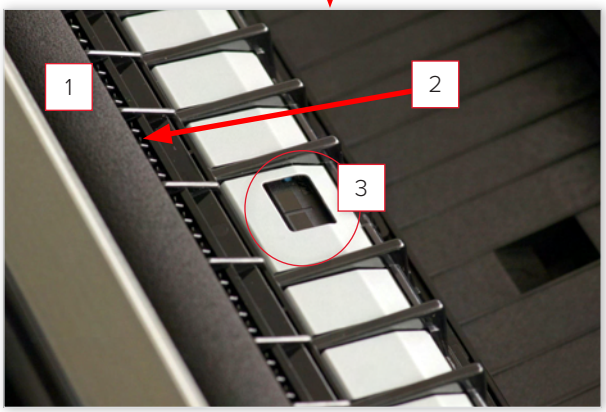
SECONDARY TRANSFER



The transfer roller is a part of the Maintenance Kit and has to be replaced after 200,000 prints.

1. Transfer roller
2. Separation electrodes
3. Paper sensor (reflection sensor, FUPS)

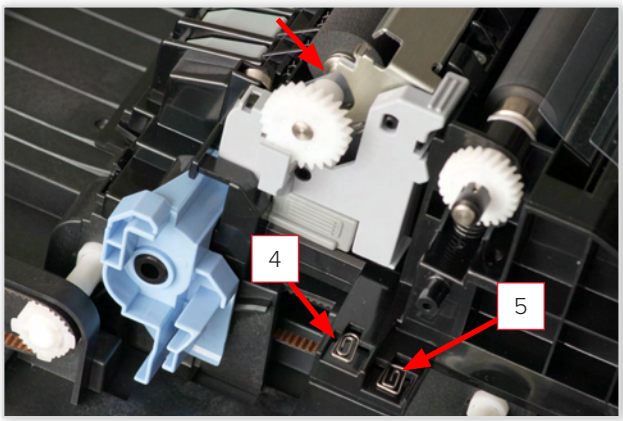




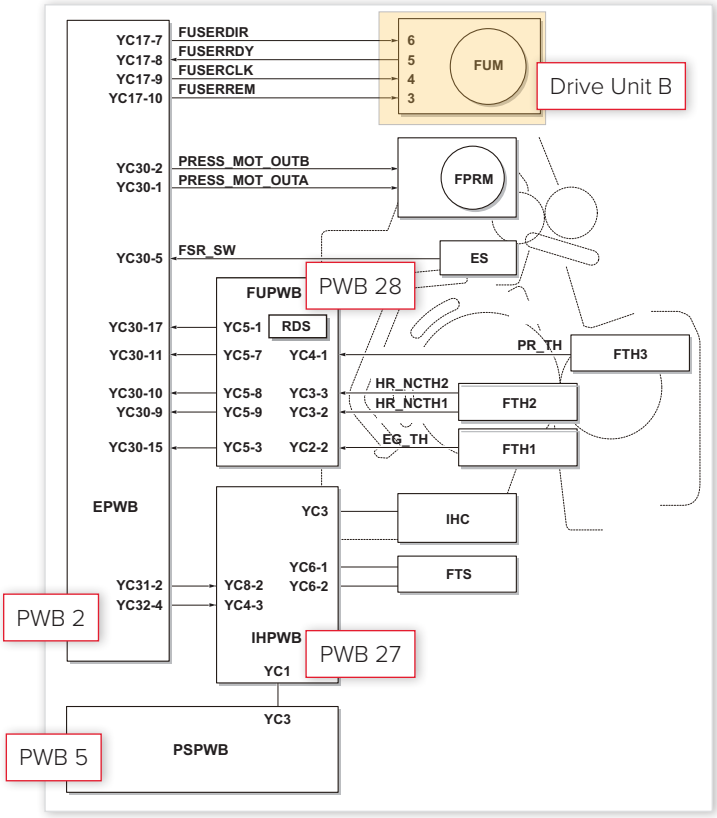
CONTACT SPRING:

4. Transfer bias
5. Separation bias

The transfer voltage is set up by the conductive plastic bushing (arrow) on the transfer roller.

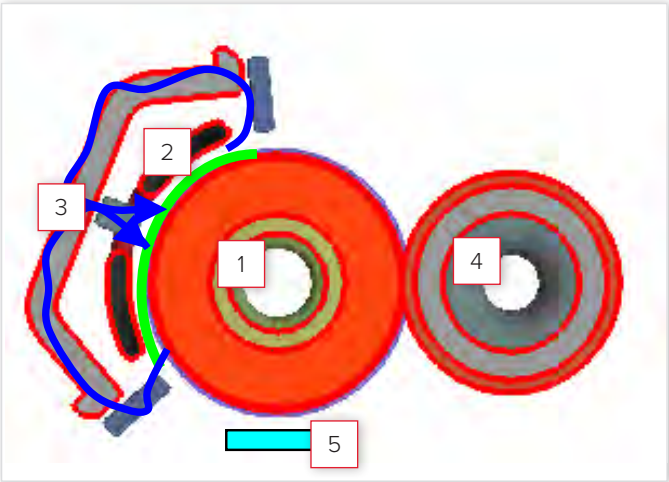


FUSER UNIT



THE FUSER WORKS ACCORDING TO THE PRINCIPLE OF INDUCTION HEATING:

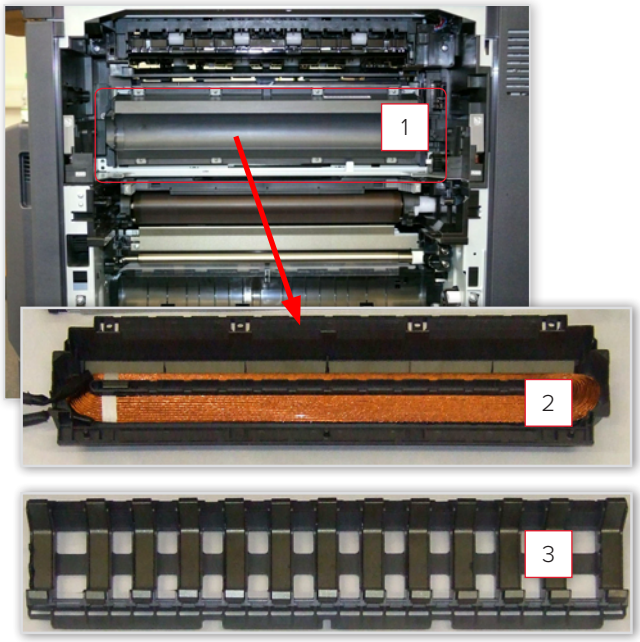
The core of the heat roller (1) consists of iron. Around that is a soft plastic casing that is both heat resistant and insulated for warmth. On the surface of the heat roller, a nickel belt is stretched. The inductor coil (2) is supplied with an alternating voltage (ca. 50 kHz). The resulting magnetic field is aimed via the ferrite core (3) at the self-turning nickel belt segment (green). As a result of the induction, an eddy current develops. In turn, the eddy current within the nickel belt leads to its partial heating.
Through the continual rotation of the heat roller, the complete nickel cover is heated up.
The thermistor (5) simultaneously monitors the surface temperature.



SPECIFIC FEATURES OF THE INDUCTION HEATING:

- Because only a thin metal volume band must be heated, the fuser system is operative in a very short time.
- By the use of a plastic casing insulated for warmth on the fuser roller, heat losses are minimized.
- Because of the construction, the heat rollers should not remain still during the heating process! This is regulated by a movement sensor (RDS) on the heat roller.

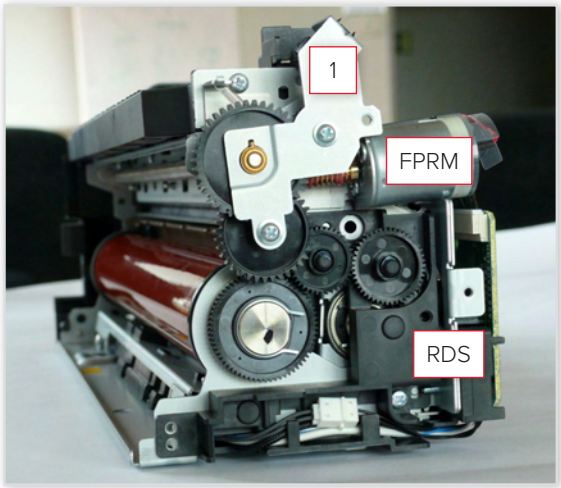
After the removal of the fuser unit, the housing (1) of the induction unit becomes visible.
This housing contains the coil (IHC, 2) and the ferrite core (3).



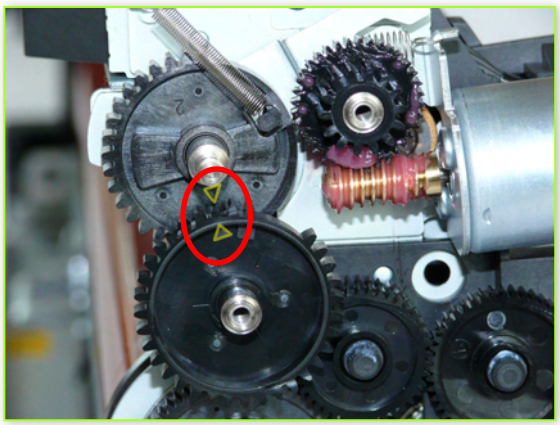
ADJUSTING THE CONTACT PRESSURE:

The fuser unit has an optional position for differentiated fuser pressure. In standby mode and for the selection of the media type **"Envelope"** contact pressure is reduced by means of the actuator of the contact pressure unit (FPRM) via a gear.
The position of the setting device is recorded by a sensor (1).

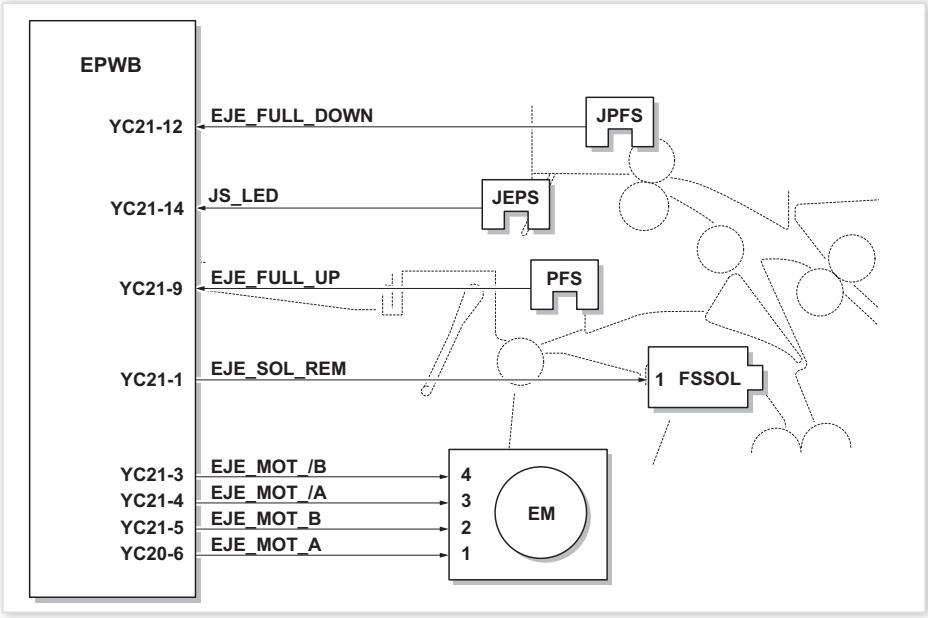
RDS: Movement sensor of the fuser unit



In order to guarantee synchronization of the setting device, the marks of the transmission gears must face each other (in case of repair).



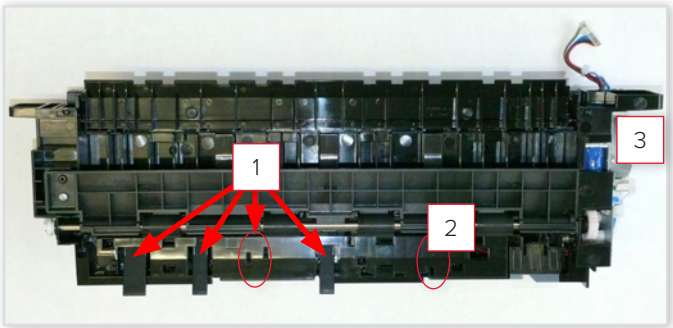
EJECT/FEEDSHIFT SECTION



Paper output is handled by a separate motor (EM). In case of duplex operation, re-feeding occurs by changing the direction of rotation.
A paper guide, controlled by a solenoid (FSSOL), leads the paper into the internal tray, or the job separator.
The paper output is monitored by the JEPS sensor.
Both overflow sensors monitor the fill status of the internal tray (PFS) and the job separator (JPFS).

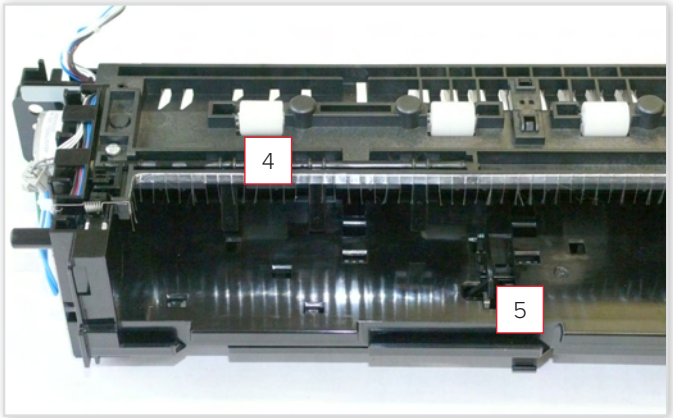
BOTTOM SIDE:

1. Sensor actuators, sensor position PFS
2. Sensor position JEPS
3. Motor EM



TOP SIDE:

4. Sensor actuators, sensor position JPFS
5. Sensor actuator JEPS



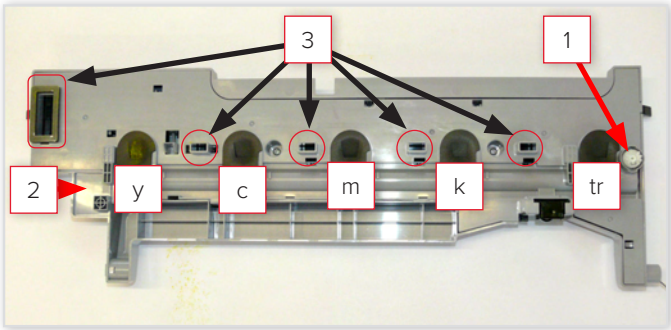
WASTE TONER CARRIER AND VENTILATION

The entire remaining waste toner is collected by an internal carrier system via the **"duct cover"** (1) and is fed into the waste toner container.

To avoid toner contamination, the air is drawn continuously from the developer units via the **"duct holder"** (2). Each developer unit has an intake fitting which contains a filter (refer to page 38). The toner dust is trapped in these filters.

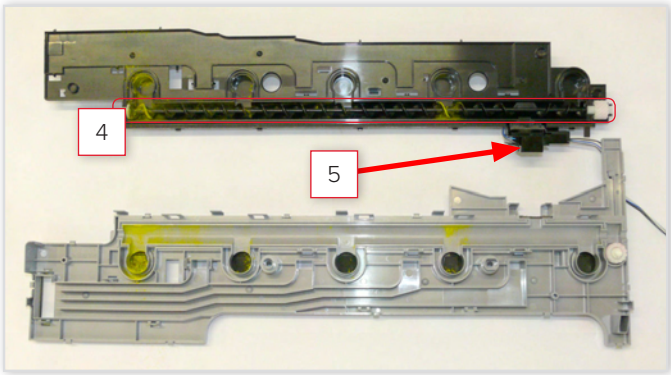
CONSTRUCTION OF THE "DUCT COVER" :

1. Catch for the waste toner transport spindle
2. Uptake for the waste toner fittings of the drum units (tr = waste toner fittings of transfer belt)
3. Air ducts



OPENED "DUCT COVER" :

4. Transport spindle for remaining toner
5. Sensor for remaining toner container



HANDS ON

OBJECTIVE

DISASSEMBLING OF THE SYSTEM

PREREQUISITES

- System
- Tools (screwdriver, cover removal tool)
- Service Manual

INSTRUCTIONS

- Remove the components
- Find the appropriate information of the components in the Service Manual
- Talk about your understanding regarding the components

TIME

2...5 hours (depending on the diassembling level and the knowledge of the technician)

TEST YOUR KNOWLEDGE

WHICH STATEMENT IS CORRECT?

- ○ The removal of the drum units is only possible if the transfer belt is disassembled first.
- ○ The disassembling of the transfer belt is only possible if the drum units are removed first.
- ○ The disassembling of the transfer belt is only possible if the black drum unit is removed.
- ○ The removal of the parts above are independent of each other.

THE DEVELOPER UNIT DV-8325 IS A ...

- ○ ... one-component developing system
- ○ ... two-component developing system
- ○ ... hybrid developing system

THE DRUM UNIT DK-8325 ...

- ○ ... has a short circuit fuse to reset the drum counter
- ○ ... has an EEPROM which has a serial number and a counter stored inside
- ○ ... has no internal components, the drum counter has to be reset with maintenance mode U110.

THE DEVELOPER STOP CLUTCH IS DRIVEN BY...

- ○ Drive unit A
- ○ Drive unit B
- ○ Drive unit C

THE DRUMS ARE...

- ○ ... A-Si drums
- ○ ... OPC drums
- ○ ... selen drums

CHAPTER
04

MAINTENANCE

CONTENTS

This chapter shows the necessary preparation for installing the Maintenance Kits.
Also additional hints for maintenance will be given.

OBJECTIVES

At the end of the chapter you will be able to...

- carry out maintenance according to the guidelines of KYOCERA Document Solutions
- carry out the adjustments and settings that are required when installing the Maintenance Kit
- carry out settings for maintenance workflows

MAINTENANCE KITS

ACTIONS	Installation of maintenance parts after a defined interval.
RECOMMENDATIONS	To be carried out when the maintenance message appears (in the display).
PREREQUISITES	› Information about accessing Maintenance Mode (refer to page 69) › Required Maintenance Kit.
NOTES	The system produces two* maintenance messages depending on a defined run output:

Maintenance for black/white (for Maintenance Kit MK-8325A)	200,000 pages (all)
Maintenance for color (for Maintenance Kit MK-8325B)	200,000 pages (only color)

*) The maintenance interval for the halftone calibration (refer to page 84) is set to 0 in the default setting. If a value is entered in U250 under **"M. Cnt HT"**, an additional maintenance message for the halftone calibration appears when this counter status is reached.

THE MK KITS INCLUDE THE FOLLOWING:

MK-8325A (200,000 pages, complete)

NO.	UNIT	NAME	REMARK
1	Drum unit (as a BK unit)	DK-8325K	Replace at 200K, 1 unit
2	Fuser unit	FK-8325	Replace at 200K
3	Developer unit (black)	DV-8325K	Replace at 200K
4	Primary feed unit for cassette	PARTS PRIMARY FEED ASSY SP	Replace at 200K
5	Primary transfer belt unit	TR-8315A	Replace at 200K
6	Secondary transfer unit	TR-8315B	Replace at 200K
7	Paper dust cleaning brush	PARTS CLEANING REGIST ASSY SP	Replace at 200K
8	MPT feed roller	PARTS ROLLER MPF ASSY SP	Replace at 200K
9	MPT separation pad	PARTS PAD SEPARATION ASSY SP	Replace at 200K

MK-8325B (200,000 pages, only color)

NO.	UNIT	NAME	REMARK
1	Drum units (as C,M,Y)	DK-8325C/M/Y	Replace at 200K, 3 units
2	Developer unit (cyan)	DV-8325C	Replace at 200K
3	Developer unit (magenta)	DV-8325M	Replace at 200K
4	Developer unit (yellow)	DV-8325Y	Replace at 200K

Relevant parts for document processor (no MK)

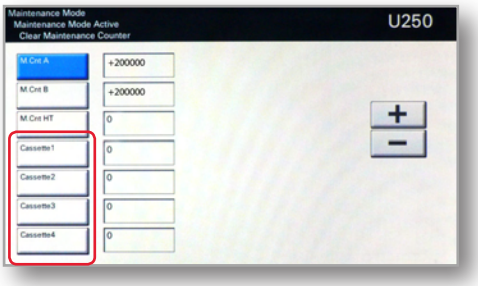
	UNIT	NAME
	Feed roller (DP)	PARTS PAPER FEED ASSY SP
	Retard guide (DP)	PARTS GUIDE RETARD ASSY SP
	Retard roller (DP)	PARTS HOLDER RETARD ASSY SP

- After the installation of the Maintenance Kit, the corresponding maintenance counter has to be reset in U251.
- Resetting the counters for the developer unit and drum unit by using EEPROMS in the units is NOT required.
- After the installation of a new drum unit, a drum refresh is automatically done.

U250

Default settings for maintenance notification.

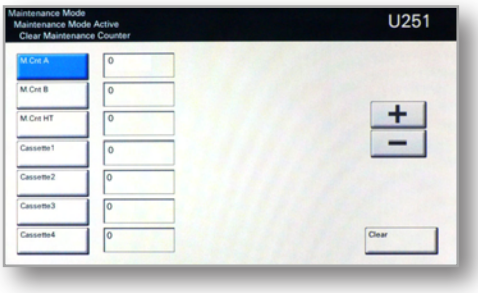
A value set for Cassettes 1...4 establishes a threshold for a maintenance message to appear prompting to change feed/separation rollers etc.



When the specified value (defined in U250) is exceeded, a corresponding maintenance message is displayed.

Each counter is monitored in U251.

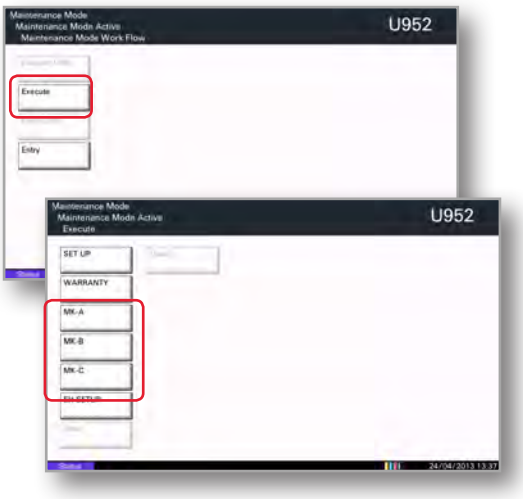
After installing the Maintenance Kit, the maintenance message is deleted by resetting U251.



RECOMMENDED MAINTENANCE STEPS

After installation of the appropriate MK-Kit (A or B) select the corresponding workflow sequence.

1. Call U952
2. Select **“Execute”** (access to the internal workflows)
3. Select MK-A or MK-B



MAINTENANCE STEPS AFTER INSTALLATION OF MK-A

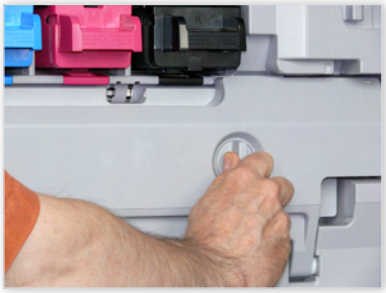
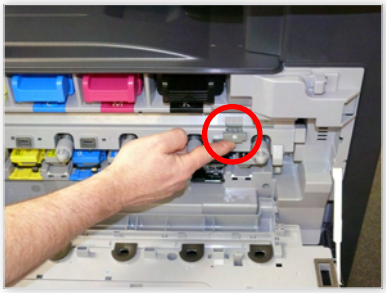
1 1087 1087	Enter the service mode
2 U952 › Execute	Workflow entry
3 Select **“MK-A”**	Selection of the Maintenance Kit (A) workflow sequence
4 U127 › Clear › Start	All transfer counters reset
5 U410 › Normal Mode	Half tone calibration
6 U901 › Cassette n	Clear paper feeder counter
7 U251 Select **"M.Cnt A"**	Maintenance counter reset

MAINTENANCE STEPS AFTER INSTALLATION OF MK-B

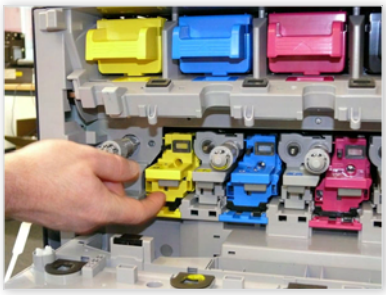
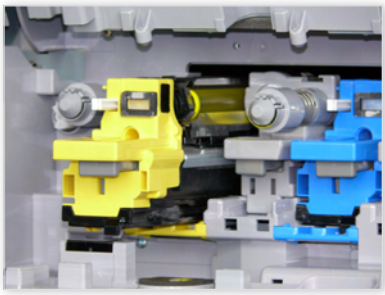
1 1087 1087	Enter the service mode
2 U952 › Execute	Workflow entry
3 Select **“MK-B”**	Selection of the Maintenance Kit (B) workflow sequence
4 U410 › Normal Mode	Half tone calibration
5 U251 Select **"M.Cnt B"**	Maintenance counter reset

INSTALLING MAINTENANCE PARTS

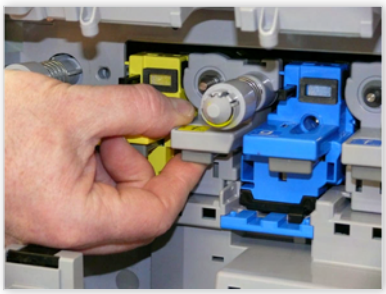
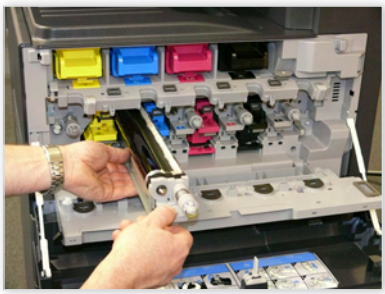
Open the duct cover.

Change the developer unit.

Change the drum.

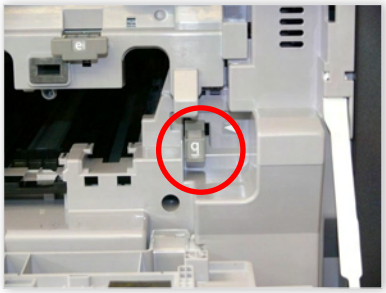



Change the fuser unit.

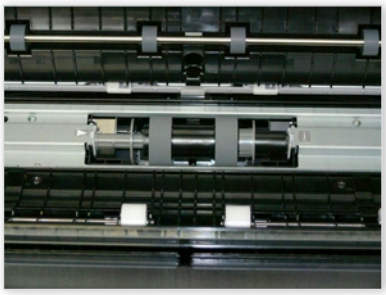
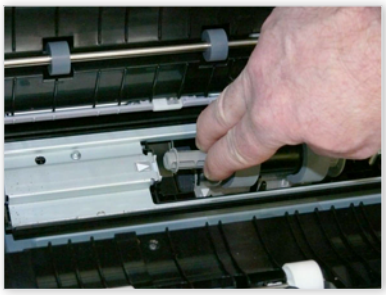

Change the transfer belt.


Change the primary feed unit (cassette).

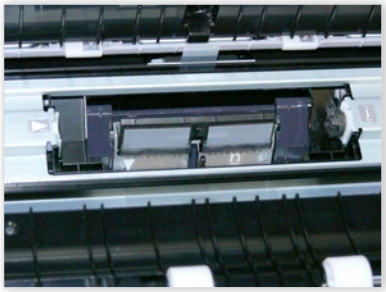
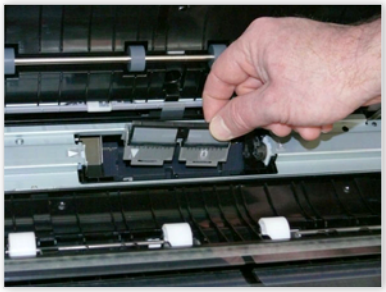

Change the paper dust cleaning brush




Change the MPF feed roller.

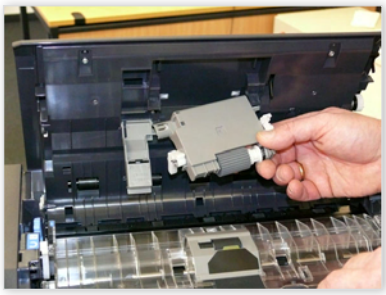



Change the MPT separation pad

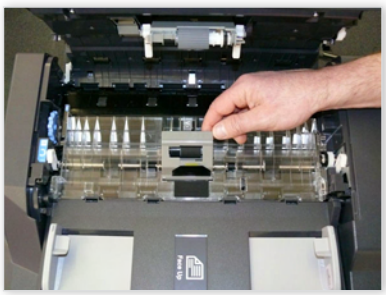
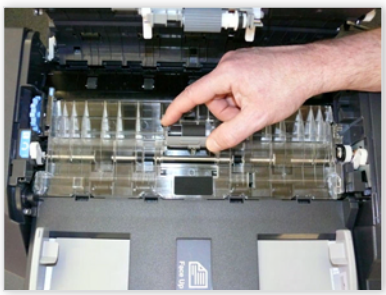



Change the 2nd transfer roller unit


Change the feed roller DP

Change the retard roller DP

CALIBRATION OF THE SCANNER USING COLOR SCANNER CHART A4

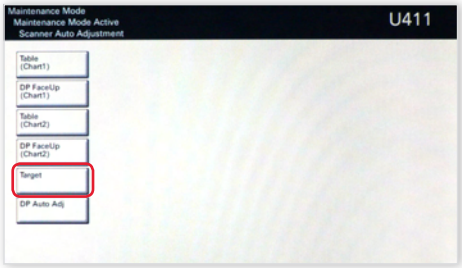
ACTIONS	Calibration and adjustment of the optical components by means of Color Scanner Chart A4 (Art. Nr. 7505000005).
RECOMMENDATIONS	After replacement of: › LED lamp PWB (exposure lamp) › Scanner PWB (ISU) › Main PWB › ISC PWB › CIS and/or DP main PWB
PREREQUISITES	› Information about access to the Maintenance Mode › Color Scanner Chart A4
NOTES	› Always press the START button to save entries. › The old chart (Art. Nr: 302FZ56990) CANNOT be used for this adjustment!

The Color Scanner Chart A4 is called Chart 1 in programs U411 and U425.
The L*a*b* values are represented as a 2 dimensional bar code which can be automatically read in.

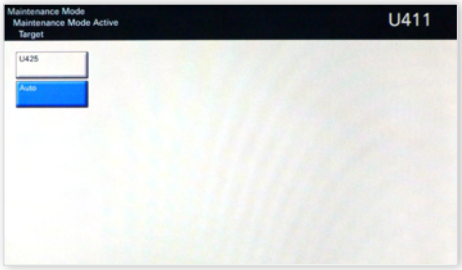
U425 can be used for the manual entry of the L*a*b* values. This is, however, no longer required as these values are automatically read via the bar code during the alignment. For more information please refer to the Service Manual.

SCANNER ADJUSTMENTS CCD:

- Position the Color Scanner Chart A4 correctly on the contact glass
- Call U411
- Select **"Target"**

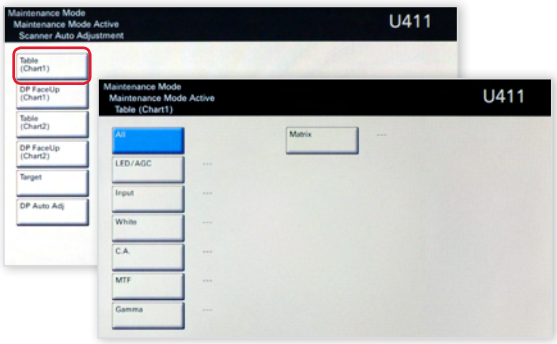


- Select **"Auto"**.
- Press START to confirm (display will show **"Completed"**)
- Press STOP for the upper U411 menu



- Select **"Table (Chart1)"**
- Select **"All"**

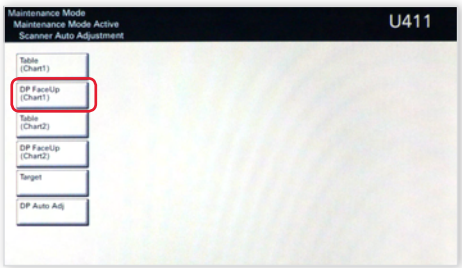
Seven parameters are now aligned. The results of each step are saved in the corresponding position.



SCANNER ADJUSTMENTS DP-770(B) / DP-773:

- Position the Color Scanner Chart A4 correctly (face up) in the document processor
- Call U411.

- Select **"DP FaceUp (Chart1)"**
- Select **"Input"**
- Press **"Start"**



ADJUSTMENT OF THE CIS UNIT (DP-772 ONLY):

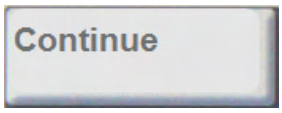
- Place the Color Scanner Chart A4 **FACE DOWN** in the DP

- (If necessary call U411)
- Select **"All"**
- Select **"DP Face Down"**
- Press START

The Color Scanner Chart A4 is scanned in the DP (CIS unit); the feed is delayed.
The automatic calibration starts and finishes the process with **"OK"**.

- Return to the initial position with STOP

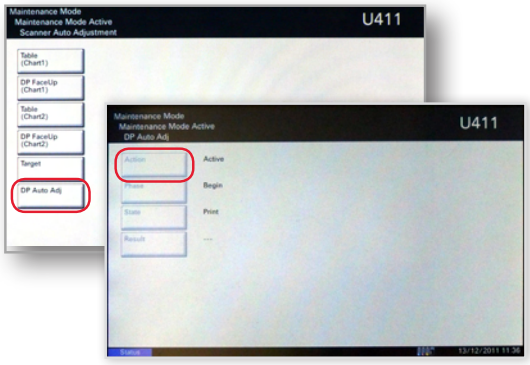
If an alignment attempt fails, an error message is displayed. After the removal of the cause for the error (see service manual), the adjustment procedure can be carried out again.



U411, AUTOMATIC ALIGNMENT OF THE DP

ACTIONS	Alignment of the document processor using the internal machine test chart.
RECOMMENDATIONS	If the copy between DP and contact glass does not match.
PREREQUISITES	› A4 paper in every paper cassette. › The scanner is completely adjusted.
NOTES	Alternative alignment if the Color Scanner Chart A4 is not available.

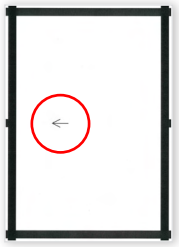
› Call U411
› Select **"DP Auto Adj"**



The following display notice provides information about the different phases of the individual alignment steps.

Print an A4 test chart, which is then used for the alignment of the DP.

The correct position and/or transport direction of the chart is indicated by an arrow.



› Put the test chart on the contact glass with the arrow pointing to the left edge
› Close the document processor
› Initiate the scanning process with START

Phase: Table

› Place the test chart **FACE UP** in the DP
› Initiate the scanning process with START
› Execute the calculation with START

DP-772 ONLY:

› Place the test chart **FACE DOWN** in the DP
› Initiate the scanning process with START
› Execute the calculation with START

End of the DP alignment.

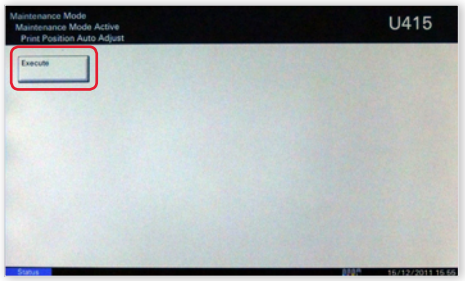
› Return to the initial position with STOP

Phase: Finish

U415, AUTOMATIC ADJUSTMENT OF THE PAPER CASSETTES

ACTIONS	Laser start time for the individual paper trays (incl. duplex) is adjusted.
RECOMMENDATIONS	› At the first installation. › After the installation of optional paper feeder.
PREREQUISITES	› Scanner adjustments (with Color Scanner Chart 1). › Insert A3 paper into ALL paper trays (if possible, including the MP tray).
NOTES	› A mechanical alignment of the paper cassettes is no longer possible. › The sequence of access is: Cass. 1, 2, duplex, MPF, optional feeders.

› Call U415
› Select **"Execute"**



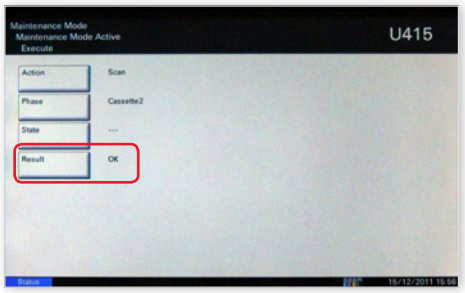
The test chart is printed from cassette 1.

› Put the test chart on the contact glass with the arrow pointing to the left edge
› Press **"START"**

The test chart is scanned.

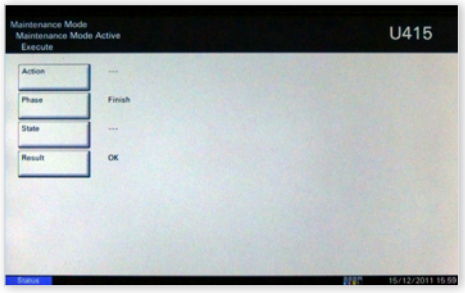
The current process is shown in the display.

If the result is **"OK"** then a test chart is automatically produced from the next cassette.



Repeat the process described above for:
› Cassette 2
› Duplex
› MPF
› If available: Optional feeder

End of the alignment process.



If an error code appears (for example C-0104), a corrected printout is made from the affected paper tray. This must be rescanned in the manner described above (display message **"RETRY"**).
Repeat this process until the system message **"OK"** appears (max. 3 attempts per paper cassette).

U246, ADJUSTMENT OF THE FINISHER DF-770(D) AND OPTION

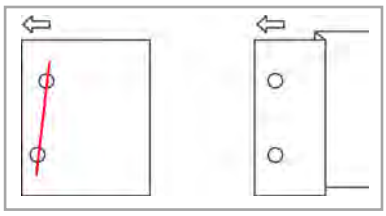
ACTION	Different settings and adjustments of the 1000-sheet finisher.
RECOMMENDATIONS	In case of: › inexact punch position (PH-7C,D) › inexact stapling position
PRECONDITIONS	Information about the service mode.
NOTES	The adjustments should be carried out with different paper formats.

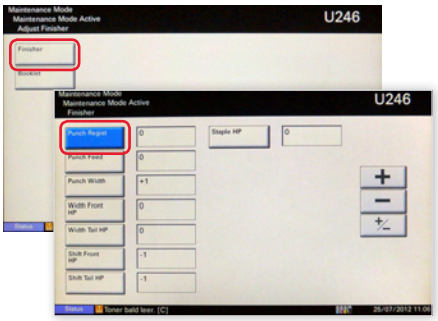
ADJUSTMENT OF THE PUNCH POSITION (PH-7C, D):

REGISTRATION:

If the position of the punches is not parallel to the sheet edge, the registration can be adapted.

› Call U246
› Select **"Finisher"**
› Select **"Punch Regist"**
› Enter correction value (0,25mm/step)
› Review result

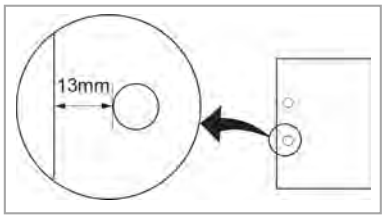


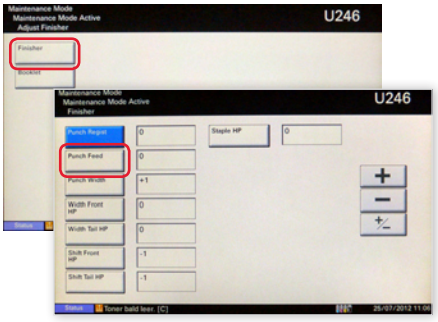


DISTANCE FROM PAPER EDGE:

The distance of the punches to the sheet edge should be 13mm.

› Call U246
› Select **"Finisher"**
› Select **"Punch Feed"**
› Enter the correction value (0.52mm/step)
› Review result

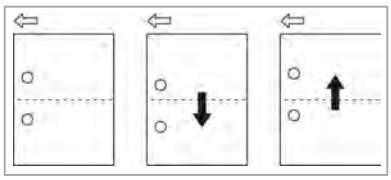


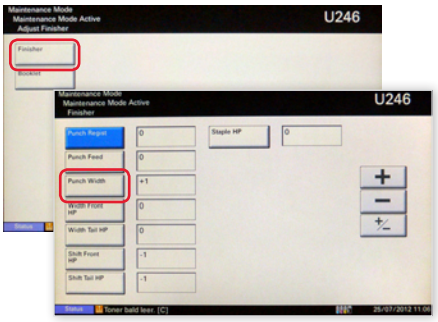


CORRECT MIDDLE POSITION:

The position of the punches should be centered.

› Call U246
› Select **"Finisher"**
› Select **"Punch Width"**
› Enter the correction value (0.52mm/step)
› Review result



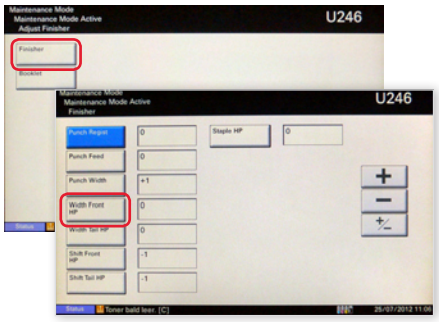


ADJUSTMENT OF THE PLACEMENT QUALITY

For a good alignment of the finished copies, the exact adjustment of the paper guide is crucial.
The positions of both guides (front and back) can be adjusted independently from one another.

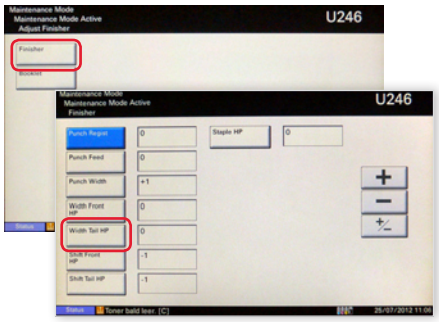
FRONT SIDE REGISTRATION HOME POSITION:

- Call U246
- Select **"Finisher"**
- Select **"Width Front HP"**
- Enter correction value (0.19mm/step)
- Review result (see below)



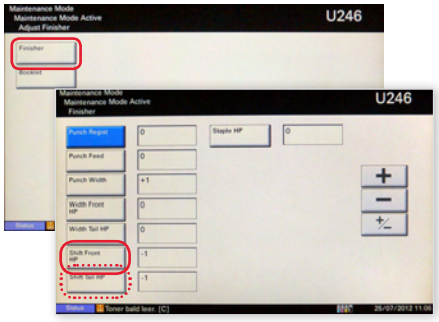
REAR SIDE REGISTRATION HOME POSITION:

- Call U246
- Select **"Finisher"**
- Select **"Width Tail HP"**
- Enter correction value (see above)
- Review result (see below)



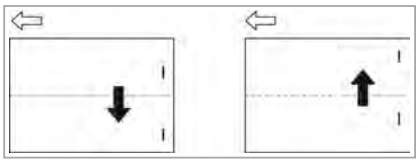
SHIFT HOME POSITIONS:

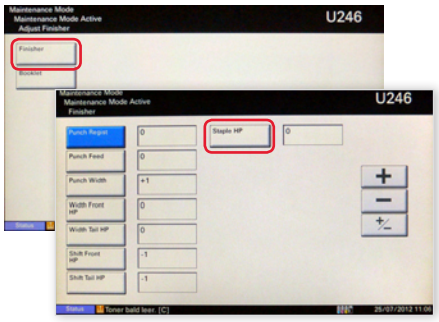
- Call U246
- Select **"Finisher"**
- Select **"Shift Front HP"** and/or **"Shift Tail HP"**
- Enter correction value (see above)
- Review result (see below)



FRONT AND BACK STAPLING HOME POSITION:

- Call U246
- Select **"Finisher"**
- Select **"Staple HP"**
- Enter correction value (0,19mm/step)
- Review result





HANDS ON

OBJECTIVE

MAINTENANCE

PREREQUISITES

- System
- Maintenance Kits (or parts of them)
- Tools
- Service Manual

INSTRUCTIONS

- Change the value of the maintenance counter (U250) so that the maintenance message appears (mind the difference between MK-A and MK-B)
- Unpack the Maintenance Kit
- Change all parts of the Maintenance Kit
- Reset the maintenance counter (U251)
- Restore the maintenance counter (U250) to the original value

ADDITIONAL EXERCISES (DEPENDING ON THE DEVICES):

- Change the feed- and separation rollers
- Perform scanner calibration
- Perform CIS calibration (if DP-772 is available)
- Perform alignment of the paper cassettes
- Perform finisher adjustment (if available)

TIME

1...2 hours (depending on the available parts and devices)

If the MK is not available or incomplete, a part of the MK-components is sufficient to simulate a maintenance procedure.
Changing the value of the counter in U250 is only a training activity.
It should not be changed under normal conditions.

HANDS ON

OBJECTIVE

PERFORM A CASSETTE ALIGNMENT

PREREQUISITES

- System
- A3 paper in all paper sources, universal tray included
- Training manual

INSTRUCTIONS

- Start the alignment (U415)
- When performing the alignment with a cassette of your choice place the printout unprecisely on the scanner
- What happens?

QUESTIONS

- What is the result of the alignment?
- Which circumstances force an error message?

INSTRUCTIONS

- Finish the alignment using the correct routine

TIME

30 minutes

TEST YOUR KNOWLEDGE

THE PARAMETER U415 OFFERS:

- ○ The scanner calibration using the test chart "Color Testchart 1"
- ○ Alignment of the cassettes using test printing
- ○ Tone curve adjustment

THE MAINTENANCE MESSAGE WILL BE RESET...

- ○ ... automatically, after installation of the Maintenance Kit
- ○ ... manually, by resetting the maintenance counter in U250
- ○ ... automatically, by calling the Maintenance Workflow in U952
- ○ ... manually by resetting the maintenance counter in U251

AFTER INSTALLATION OF THE NEW MAINTENANCE KIT (B)...

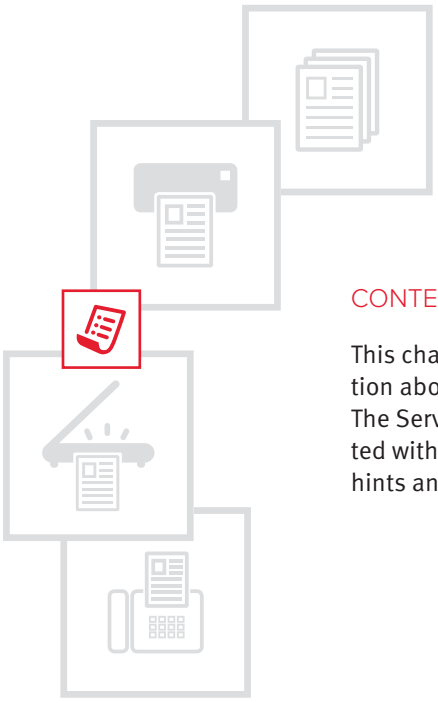
- ○ ... no action required, all steps are automatically done
- ○ ... perform the Workflow MK-B
- ○ ... perform U410 and U251

"M. CNT HT" IN U250 MEANS...

- ○ ... halftone calibration is performed automatically
- ○ ... halftone calibration is indicated if the counter exceeds the value
- ○ ... maintenance message appears if the counter exceeds the value

CHAPTER
05

SERVICE



CONTENTS

This chapter shows important information about some service cases.
The Service Manual will be supplemented with illustrations and additional hints and tips.

OBJECTIVES

At the end of the chapter you will be able to...

- carry out the U parameters and their particular functions
- perform the correct steps after changing parts or units
- handle the specific lists and printouts
- replace the key components
- perform firmware updates and emergency procedures
- program individual workflows

MAINTENANCE MODE

ACTIONS	Enter maintenance mode.
RECOMMENDATIONS	› When specific device parameters (U parameters) are to be adjusted or changed. › When special service prints (e.g. error protocol) should be printed out. › When test prints (e.g. for equipment alignments) should be generated. › When adjustments and calibrations should be made to the machine.
PREREQUISITES	› Information about access to the Maintenance Mode. › Detailed information about the functionality of U parameters.
NOTES	› The Maintenance Mode allows access to the equipment's technical parameters so that the machine's behavior can be influenced in a number of areas of operation. › Dealing with parameters requires a certain level of knowledge. Therefore, you should ensure that users cannot access them. › A detailed description of all U parameters can be found in the service manual.  Maintenance Mode must not be operated by customers! Do not leave the Maintenance Mode permanently switched on. In some cases the energy saving function is deactivated in this mode. Thus it results in higher heat emission and higher power consumption.

ENTERING THE MAINTENANCE MODE:

Variant 1:	Copy mode	1087 1087
Variant 2:	Status/Job Cancel	1087 1087

Choose variant 2 if variant 1 does not give the desired result. For example, if the device is in job accounting mode.

 In specific cases, the front cover has to be opened briefly after 10871087 has been entered.

NAVIGATION IN MAINTENANCE MODE:

Input:	Number buttons or ‹› buttons on the display
Confirm	START or OK button
Back:	Back or reset or stop button

EXITING THE MAINTENANCE MODE:

U001

U PARAMETER

IMPORTANT HINTS AND TIPS:

- Before changing the U parameters, a list of the current settings should be printed out via U000. Alternatively, the list can be stored via U000 on a USB memory as ASCII or HTML file.
- If in doubt about the function of a U parameter, you can refer to the service manual for a detailed description of all U parameters (English). A brief description in the respective national language can be found on the following pages.
- Some U parameters allow the generation of test prints or adjustments. For a test copy or print out, the service mode can be temporarily exited by pushing the **"Status/Job cancel"** key. The temporary copy or printer mode lasts until this key is pressed once again.
- Only when the newly set values are confirmed with OK or START are they also saved.
- Some counters (certain U parameters) count the test prints while others do not. In the course of time, there may be differences between the counters.
- U parameters for faxes are not included in the U000 list. The FAX U parameters can be printed by using U670 / **"Self Status Report"**.
- Make sure that the Maintenance Mode is switched off when you leave the customer.

AREA	U...	DESCRIPTION	DEFAULT SETTING
General	U000	Lists in the form of print out or saved on a USB memory (if already inserted): U parameter lists, user status lists. Service status report, EventLOG report. Network status report.	-
	U001	Exiting the Maintenance Mode.	-
	U002	Optical parameters are partially reset, mirror unit in transport position. Preparation of the scanner transport lock or if a scanner error appears.	-
	U003	Entering the service telephone number. Number appears if a Service Call is made.	-
	U004	Displaying the serial number of the machine. Overwrite not-matching serial numbers of Main and Engine PWB (for more information please refer to the Service Manual).	-
	U010	Changing the number combination of the Maintenance Mode.	-
	U019	Display of the current software version of the individual components.	-
Initialization	U021	All user settings are reset (page counter is preserved). Maintenance counter U251 is reset! EventLOG is reset!	-
	U024	Formatting the hard drive (the following will be deleted: Data: Customer data Full: Customer data and applications)	-
	U025	Security firmware update.	
	U026	Retrieving the backup data. This data will be restored: U278-date of delivery, U402-margin adj. U952-reg date of maintenance workflow.	
Drive, feed, conveying, cooling	U030	Motor test of all internal motors.	-
	U031	Current status of all paper sensors.	-
	U032	Specific check of the clutches.	-
	U033	Specific check of all acceleration solenoids.	-
	U034	Adjustment of the horizontal and vertical picture position.	-
	U035	Entering the printable area for the **"folio"** format.	330/ 210
	U037	Specific check of the fan.	-
	U051	Adjusting the timing of the registration roller.	0/0/0/0/0
	U053	Adjusting the motor speeds (in different operational modes).	0
Opticals	U061	Checking the operation of the exposure lamp (LED strip).	-
	U063	Adjusting the shading position (full - 3/4 – half).	0
	U065	Adjustment of the magnification (scanner).	0/0
	U066	Adjusting the scanner leading-edge registration.	0/0
	U067	Adjusting the scanner center line.	0/0
	U068	Adjusting the scanning position for originals from the DP.	0/0
	U070	Adjusting the DP magnification (sub scan direction)	0
	U071	Position for leading edge in the document processor	0/0/0/0/0
	U072	Adjusting the DP center line for the document processor	0/0
	U073	Checking the scanner operation	-
	U074	Presetting the intensity for copies via the DP	1
	U087	Setting DP reading-position modification operation Dust and black line compensation.	145/145/145
	U089	Test pattern print outs. Please refer to page 97	-
	U091	Setting the white line correction.	
	U099	Setting the original size recognition (for using the contact glass).	-

AREA	U...	DESCRIPTION	DEFAULT SETTING
High voltage	U100	Setting the main high voltage.	0
	U101	Setting the voltage for the primary transfer (pos. value = voltage increase).	0
	U106	Setting the voltage for the secondary transfer.	
	U107	Setting the voltage for the intermediate transfer cleaning.	-
	U108	Setting separation shift bias.	-
	U110	Checking the drum count.	-
	U111	Checking the drum drive time (for internal aging compensation).	-
	U117	Checking the drum number.	-
	U118	Displaying the drum history.	-
	U122	Checking the transfer belt unit number.	-
	U123	Displaying the transfer belt unit history.	-
	U127	Checking/clearing the transfer count.	-
Development	U135	Checking toner motor operation.	-
	U136	Setting the threshold value **"Toner near end"**.	3/3
	U139	Displaying the temperature and humidity outside the machine.	-
	U140	Setting developer bias.	-
	U147	Setting for toner applying (T7 control avoids overcharging the toner).	-
	U150	Checking sensors for toner.	-
	U157	Checking the developer drive time (for internal aging control).	-
	U158	Checking the developer count.	-
Fusing	U161	Setting the fuser control temperature.	-
	U167	Checking the fuser count.	-
	U169	Checking/setting the fuser power source (IHPWB).	-
	U199	Displaying fuser heater temperature.	-
Operation panel and options	U200	Turning all LEDs on.	-
	U201	Initializing the touch panel (please refer to the Service Manual).	-
	U202	Only for Japan.	
	U203	Checking DP operation.	-
	U204	Setting the presence or absence of a key card or key counter.	-
	U206	Setting the presence or absence of a coin vendor.	-
	U207	Checking the operation panel keys.	-
	U209	Setting RTC (Real Time Clock) Date. Execution after replacement of the backup battery on Main Board (error code: C0840).	
	U221	Setting the USB host lock function.	-
	U222	Setting the IC card type.	-
	U223	Operation panel lock (off, partially, completely).	-
	U224	Panel sheet extension. Programming an individualized start screen, see Service Manual.	-
	U234	Setting punch destination of the 1000-sheet finisher.	
	U237	Setting stack quantity of the 1000-sheet finisher.	
	U240	Checking the operation of the 1000-sheet finisher.	
	U241	Checking the operation of the switches of the finisher.	
	U243	Document processor: Specific control of the motor, clutches, and acceleration solenoids.	-
	U244	Checking the DP switches.	-
	U245	Checking messages (all messages of the operation panel).	-
	U246	Setting the finisher. Provides various settings for the 1000-sheet finisher.	

AREA	U...	DESCRIPTION	DEFAULT SETTING
Default settings	U250	Checking/clearing the maintenance cycle.	200000*
	U251	Checking/clearing the maintenance counter. Has to be reset for removing the **"maintenance"** message.	-
	U252	Country specific setting.	Europe Metric
	U260	Selecting the timing for copy counting (feed or eject counting).	EJECT*1
	U265	OEM code (1 = KYOCERA).	1
	U276	Setting the copy count mode.	Mode 0
	U278	Setting the delivery date.	-
	U284	Activation and count behavior of the two color modes.	-
	U285	Display of the toner coverage on service status page.	ON
	U325	Setting the paper interval in high coverage (to avoid uneven density).	-
	U326	Setting the black line cleaning indication.	-
	U332	Conversion factor for toner coverage (for non A4 formats)	1.0*1
	U340	Setting the applied mode. Allocation of the printer memory based on the customer's choice.	-
	U341	Setting the specific paper feed location for printing function exclusively.	--
	U343	Switching between duplex/simplex copy mode.	OFF*1
	U345	Setting the value for maintenance due indication.	0*1
	U346	Selecting Sleep Mode.	
Image processing	U402	Adjusting margins of image printing.	30/25/25/50/50
	U403	Adjusting margins for scanning an original on the contact glass.	2.0/2.0/2.0/5.0
	U404	Adjusting margins for scanning an original from the DP.	3.0/2.5/3.0/4.0
	U407	Adjusting the leading-edge registration for memory image printing.	0
	U410	Adjusting the halftone automatically.	-
	U411	Adjusting the scanner automatically.	-
	U415	Adjusting the print position automatically.	-
	U425	Color values of the adjustment chart Chart 1 (P/N: 7505000005) Limited use Chart 2 (P/N:302FZ56990)	-
	U429	Setting the offset for the color balance.	-
	U464	Setting the ID correction (calibration) operation.	-
	U467	Setting the color registration adjustment.	-
	U468	Checking the color registration data.	-
	U469	Manual and automatic color registration	-
	U470	Setting the JPEG compression ratio.	-
	U473	Adjusting laser power output.	-
	U474	Checking LSU cleaning operation. Setting the cleaning cycle.	
	U485	Threshold value of the **"Document Guard"** function. Installation and selection of a color table.	
	U486	Setting color/black and white operation mode.	

AREA	U...	DESCRIPTION	DEFAULT SETTING
Fax	U600	Initialization (country code for EMEA: 253)	-
	U601	Initialization of specific country settings	-
	U603	Selection procedures	DTMF*2
	U604	Call counter for incoming fax	2 (120 V)*2 1 (220-240 V)*2
	U605	Delete all fax protocols (for data protection)	-
	U610	Reduction factor for marginally excessive length (Is used when many extra sheets are printed out)	3 0 0
	U611	Reduction parameter for automatic reduction when receiving	7 22 26
	U612	Dynamic reduction for very long faxes Conditions for the output of the transmission report Automatic page detection	ON OFF ON
	U615	Only for inch specification	
	U620	Remote switching to fax (one: one-time recognition)	ONE*2
	U625	Number of redialing attempts if connection not made Interval between redialing attempts	3 (120 V)*2 2 (220-240 V)*2 2 (120 V)*2 3 (220-240 V)*2
	U630	Initial transmission speed (send and/or receive) Echo compensation (send and receive) Super G3 transmissions are not affected by this	14400bps/V17*2 14400bps*2 300*2 75*2
	U631	Activate ECM (error correction) (send and/or receive) CED frequency	ON*2 ON*2 2100*2
	U632	Configuration of DIS Short protocol TX Short protocol RX Number of CNG signals until switchover to fax (tel/fax mode)	OFF*2 ON*2 ON*2 2TIME*2
	U633	V.34 protocol (Super G3) active (send and/or receive) V.34 symbol speed DIS signal detection Error rate of sending from RTN	ON*2 ON*2 ONCE*2 15%*2
	U634	Permitted errors during training (TCF)	0*2
	U640	Time frame for recognition of remote switching	7*2 80*2
	U641	Timing for: - T0 Time-out - T1 Time-out - T2 Time-out - Ta Time-out - Tb1 Time-out - Tb2 Time-out - Tc Time-out - Td Time-out	56*2 36*2 69*2 30*2 20*2 80*2 60*2 9 (120 V)*2 6 (220-240 V)*2
	U650	Send G3 equalizer Receive G3 equalizer Reception sensitivity	0dB*2 0dB*2 43dBm*2

AREA	U...	DESCRIPTION	DEFAULT SETTING
Fax	U651	Modem transmission level Dial tone transmission level	9 (120 V)*2 10 (220-240 V)*2 5 (120 V)*2 10.5 (220-240 V)*2 2 (120 V)*2 2.5 (220-240 V)*2
	U660	Connection type (main connection – PSTN, extension – PBX) Dial tone recognition Busy tone detection Procedure for public line access Loop current check after public line access	PSTN*2 ON*2 ON*2 LOOP*2 ON*2
	U670	Lists: - Setting-software switches - Action-error report - Self Status Report – FAX U Parameter Lists - Protocol- communication protocol of the last transmission - Error-error report - Addr Book No.- fax address book IDs - Addr Book (Name)- fax address book name list - One Touch List- speed dialing key assignment - Group list- group call list	-
	U671	Deleting/initializing the storage DIMMs of the fax system.	-
	U695	Fax stapling reception (fax jobs to identical fax numbers are summarized). Switching mode for A5 reception.	ON/OFF
	U698	Presetting the fax systems (Port1, Port2) in U600.	-
	U699	Software switch (see service manual).	-

AREA	U...	DESCRIPTION	DEFAULT SETTING
Other	U901	Checking copy counts by paper feed locations.	-
	U903	Checking/clearing the paper jam counts.	-
	U904	Checking/clearing the service call counts	-
	U905	Checking counts of optional devices.	-
	U906	Resetting partial operation control (finisher, cassettes etc.).	
	U908	Checking the total counter value (without test sheets).	-
	U910	Clearing the print coverage data.	-
	U911	Checking copy counts by paper sizes.	-
	U917	Export or import of the following data on USB memory: - Address book - Job Account - One Touch - User accounts - Document Box - Shortcut - Fax Forward - System - Network - Job Setting - Printer - Fax Setting - Program - Panel Setting	-
	U920	Number of copies per function (copy, print, fax)	-
	U927	Clearing the all copy counts and machine life counts (only 1x and <1000)	-
	U928	Checking machine life counts (including test sheets)	-
	U933	Set Maintenance Mode Execute Log.	
	U942	Setting of deflection for feeding from DP.	-
	U952	Maintenance Mode workflow.	-
	U964	Checking of log. Sends a log file saved on the HDD to a USB memory.	-
	U969	Checking of toner area code (1 = KYOCERA)	-
	U977	Data capture mode. Print data is stored as CAPT files on the USB memory.	-
	U984	Checking the developer unit number.	-
	U985	Displaying the developer history.	-
	U989	HDD Scan disk (process lasts ca. 30 minutes!).	-
	U991	Number of scans per function (copy, fax, scans)	-

ASSOCIATED U PARAMETERS

ASSEMBLY / UNIT	U PARAMETER	DESCRIPTION
Paper transport and conveying	U030	Checking the operation of the motors
	U031	Checking switches and sensors for paper conveying
	U032	Checking the operation of the clutches
	U033	Checking the operation of the solenoids
Transfer Belt	U122	Checking the transfer belt unit number
	U123	Displaying the transfer belt unit history
	U127	Checking/clearing the transfer count
Transfer Roller	U127	Checking/clearing the transfer roller count
Drum Unit	U110	Checking the drum count
	U111	Checking the drum drive time
	U117	Checking the drum number
	U118	Displaying the drum history
Developing Unit	U140	Setting the developer bias parameters
	U157	Checking the developer drive time
	U158	Checking the developer count
	U464	Setting the ID calibration (operation and parameters)
	U984	Checking the developer unit number
	U985	Displaying the developer unit history
LSU	U474	Checking the LSU cleaning operation
Fuser Unit	U167	Checking the fuser count
	U199	Displaying the fuser heater temperature
Image Scanner Unit	U061	Checking the operation of the exposure lamp (also CIS Light, if available)
	U063	Adjusting the shading position (for correct white balance)
	U991	Checking the scanner operation count
Operation Panel	U200	Turning all LEDs on
	U201	Initializing the touch panel
	U207	Checking the operation panel keys
	U223	Operation panel lock /unlock
Document Processor	U203	Checking DP operation
	U243	Checking the operation of the DP motors
	U244	Checking the DP switches
	U942	Setting of deflection for feeding from DP
Finisher	U019	Displaying the ROM version
	U234	Setting the punch destination
	U237	Setting the finisher stack quantity
	U240	Checking the operation of the finisher
	U241	Checking the operation of the switches of the finisher
	U246	Finisher settings/adjustments (refer to page 62)
	U905	Counter for optional devices (sorter, staples, punches)

ADDITIONAL INFORMATION (U024, 917, 964, 977)

U917	SETTING BACKUP DATA READING/WRITING
	BEFORE system initialization or hard disk formatting, the customer data can be secured on a USB memory. The following data can be stored/selected: › Adress book › Job accounting data › One touch keys › User managements › Document boxes (structure only, no image data) › Shortcut information › Fax transfer information › System information › Network information › Job settings › Printer information › Fax settings › Programs › Panel setting information Save or read out settings are done in a menu selection.

U964	CHECKING OF LOG
	Transfer a LOG file from the hard drive to the USB memory. In this LOG file the type and time of the error is logged. This data can then be evaluated by the support. **PROCEDURE:** › Turn off system. › Insert USB memory. › Turn on system. › Call U964 and select **"Execute"**. Data is transferred to the USB memory (ca. 5 minutes), subsequently **"Completed"** appears in the display. › Shut down and turn off the system. › Remove the USB memory. **FOR SITUATIONS IN WHICH ACCESS IS NO LONGER POSSIBLE (SYSTEM FROZEN):** Within 6 seconds simultaneously press the following button combination: * 8 6 Clear The LOG file is produced and transmitted to the USB memory. During this time, the green LED memory blinks. The data transmission is concluded when the LED stops blinking.

U977	DATA CAPTURE MODE
	Stores the print data sent to the print system on a USB memory. **PROCEDURE:** › Turn off system. › Insert USB memory. › Turn on system. › Call U977. › Select **"Execute"**, subsequently confirm with **"Start"**. › Send print data to the system. The storage process is concluded if **"Finish"** appears in the display.

U024	HDD FORMATTING
	Deleting the data on the hard drive. **METHOD 1 ("FULL"):** is deleted: › All applications (HyPAS etc.) › Optional languages › PDF 1.7 resource › FMU (File management utility) › Weekly Timer › Color table **METHOD 2 ("DATA"):** is deleted: › User login administration › Job accounting › Directory › Contents of the speed dial keys › Contents of the document box › Panel programs

After a **"Full"** HDD format a firmware update must be performed.
Otherwise the device functionality might be limited.

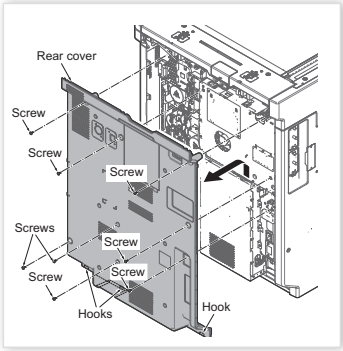
REMOVING COMPONENTS

Actions	Removing the side covers and some components.
Recommendations	Required for repair or intensive maintenance.
Prerequisites	Because of the large number of cover parts removal follows a logical sequence.
Notes	› Despite the removal of all the components shown here, the device remains operational. CAUTION: FOLLOW SAFETY REGULATIONS! › All procedures are described in the service manual. › Pay attention to the relevant marked shafts and hooks which make removal easy.

On the following pages, the removal of parts and components is described.
For detailed information, please refer to Service Manual-

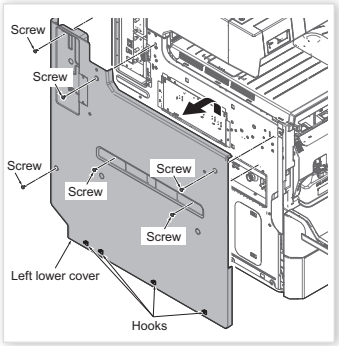
REMOVAL OF: REAR COVER

- 8 screws.
- Remove the cover upwards.



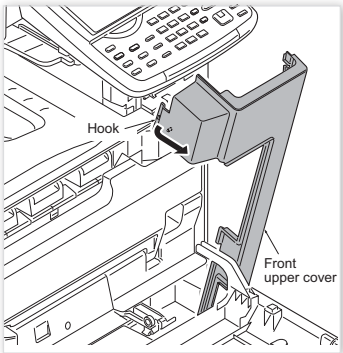
REMOVAL OF: LEFT COVER

- Remove the upper 2 paper cassettes.
- Open the front door.
- 6 screws.
- Unhook front area.
- Pull the cover upwards and release the four hooks.



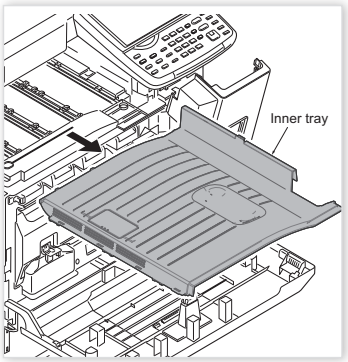
REMOVAL OF: FRONT UPPER COVER

- Open the upper paper transport door.
- Open the **"Right Cover"**.
- With a thumb firmly pressed on the front side...
- ...while at the same time lifting out the interior placed part (see video).
- Remove the cover upwards.



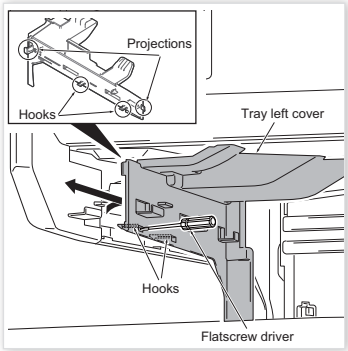
REMOVAL OF: INNER TRAY

- The tray can be simply removed.



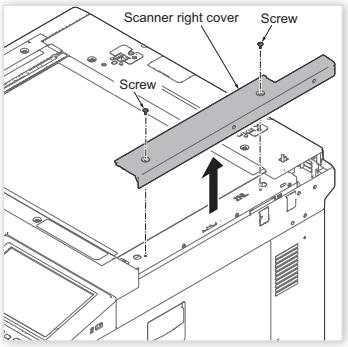
REMOVAL OF: LEFT UPPER COVER

- Lever out the outer part with the cover tool.
- Unhook the inner part with the cover tool.



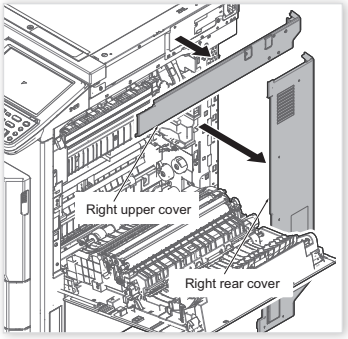
REMOVAL OF: CONTACT GLASS (SCANNER)

- 2 screws.
- Housing parts are hooked into each other.
- Remove the contact glass.



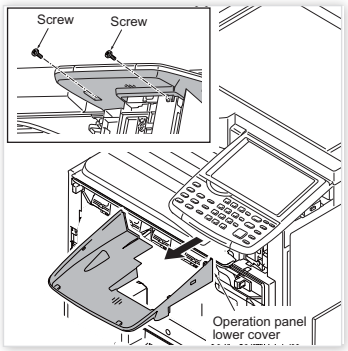
REMOVAL OF: RIGHT REAR COVER

- Remove the housing part upwards.
- The right side door must be closed for this.



REMOVAL OF: OPERATION PANEL LOWER COVER

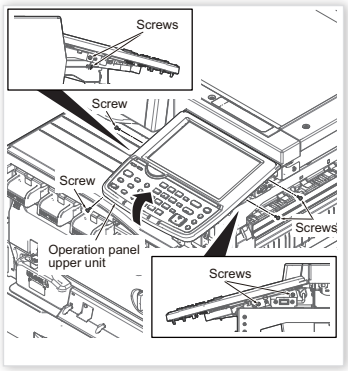
- 2 screws on the bottom.
- Carefully remove the cover.



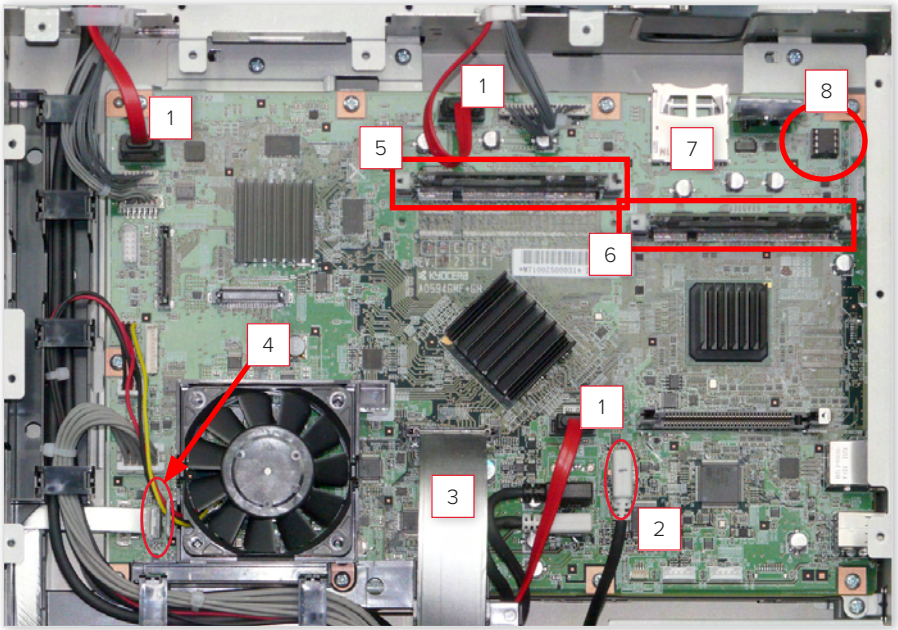
REMOVAL OF: OPERATION PANEL

- 3 screws.
- Carefully pull the 3 cables out of the connector.

Avoid contact between the PWB and the equipment frame. The conducting cables could be damaged!



REPLACING MAIN PWB

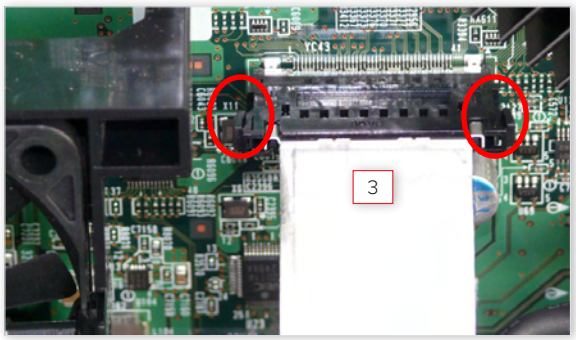


MAIN BOARD REPLACEMENT:

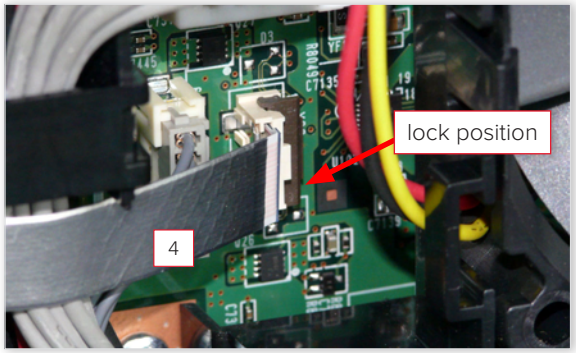
- Mount the EEPROM (8)
- Insert the ASIC memory (5)
- Insert the system memory (6)
- Perform a F/W update via USB memory
- Execute U026 for restoring the data: U278 -date of delivery, U402-margin adj. U952 -reg date of maintenance workflow
- Check the OEM Code U265 (KYOCERA = 1)

The ASIC memory (5) is a 1024MB DIMM
The system memory (6) is a 2048MB DIMM
Do not change the EEPROMs of Main Board and Engine Board at the same time.
If U026 procedure fails, manual execution of U402, U952 and U278 is necessary.

- Accessible after removal of the cover sheet.
- The SATA cables (pos.1) are secured with a latch.
- Take note of the marking on the USB plug (pos. 2). It serves as distinction.
- The flat ribbon cable (pos. 3) is equipped with a socket which can be locked.
- SD-Card (for fonts, API and macros) (pos.7)



- The FFC (pos.4) is secured. To release it the handle is lifted up.



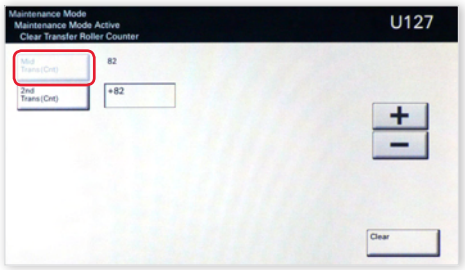
U127, REPLACING TRANSFER BELT UNIT

ACTIONS	Replacement of the Transfer Belt Unit
RECOMMENDATIONS	› Required after maintenance › In case of an irreparable malfunction › In case of reduced printing quality
PREREQUISITES	Information about installing the maintenance parts (refer to page 55) Information about access to the Maintenance Mode
NOTES	Deleting the counter is not mandatory. However, in order to be able to evaluate the run time, deletion of the counter after the exchange of the component is recommended.

EXECUTION:

- Call U127
- Select **"Mid. Trans (Cnt)"**
- Select **"Clear"**
- START

Counter is reset...



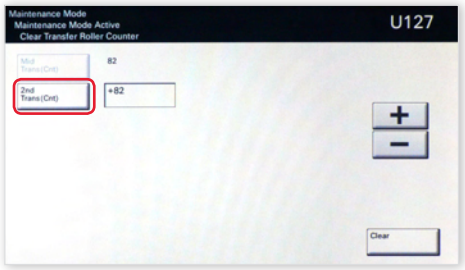
U127, REPLACING 2ND TRANSFER ROLLER UNIT

ACTIONS	Replacement of the 2nd Transfer Roller Unit
RECOMMENDATIONS	› Required after maintenance › In case of an irreparable malfunction › In case of reduced printing quality
PREREQUISITES	Information about installing the maintenance parts (refer to page 55) Information about access to the Maintenance Mode
NOTES	Deleting the counter is not mandatory. However, in order to be able to evaluate the run time, deletion of the counter after the exchange of the component is recommended.

EXECUTION:

- Call U127
- Select **"2nd Trans (Cnt)"**
- Select **"Clear"**
- START

Counter is reset...



U410, AUTOMATIC HALFTONE CALIBRATION

ACTIONS	Adjustment for the correct reproduction of halftones
RECOMMENDATIONS	› Required after initial installation. Recommended in case of replacement / repair of the following components: › Drum units › LSU › Developer units › Transfer belt › Transfer roller
PREREQUISITES	› Information about access to the Maintenance Mode › The use of color copy paper is required otherwise optimal results cannot be expected.
NOTES	Alternatively, the registration can also be triggered via the system menu.

PRINTING THE TEST PATTERN:

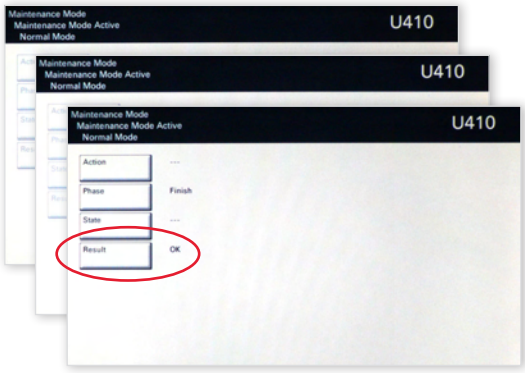
› Call U410.
› Select **"Normal Mode"**.

Three test pages are printed out.

These test pages are numbered according to the sequence of the subsequent scanning process.
The index (see marking) ensures the correct positioning (left corner on the contact glass).

› Place the test pages on the contact glass successively and start the scanning process

Each scanning process is started by pressing the START button.
The end of U410 adjustments is indicated by END.
To end adjustments press the STOP button.



Make sure that the originals are placed correctly. Use about ten extra white pages to improve printing.

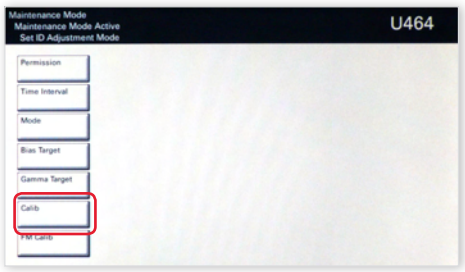
U464, I/O CALIBRATION

ACTIONS	I/O calibration
RECOMMENDATIONS	› Required after initial installation › In case of reduced color printing quality Recommended in case of replacement/repair of the following components: › Drum units › Developer units › Laser units › Transfer belt
PREREQUISITES	Information about access to the Maintenance Mode
NOTES	› In the case of an I/O calibration, the following operations will be automatically performed: registration, gamma measurement, color registration, paper calibration. › Alternatively, the calibration can also be initiated via the system menu. › This process is automatically carried out by the system at regular intervals.

EXECUTION:

- Call U464
- Select **"Calib"**
- Select **"Execute"**
- START

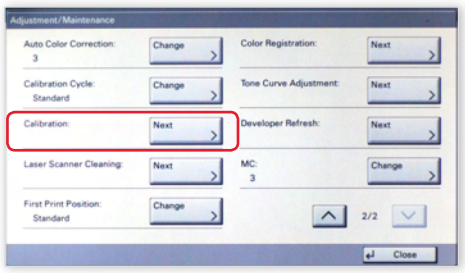
Calibration in progress...



Alternatively, the calibration can be carried out via the system menu:

`SYSTEM MENU > ADJUSTMENT/MAINTENANCE`

No other measures are necessary.



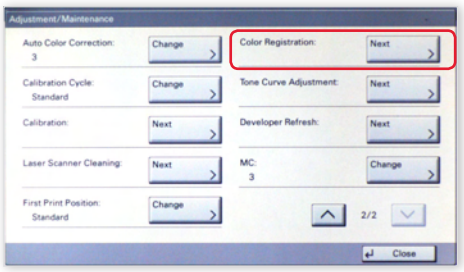
U469, COLOR REGISTRATION, AUTOMATIC CORRECTION

ACTIONS	Correction of color registration as required
RECOMMENDATIONS	› Required after initial installation After repair or replacement of: › LSU › Transfer belt
PREREQUISITES	Information about access to the Maintenance Mode
NOTES	There are two procedures: 1 Simple form 2 Detailed form › Access via U parameters as well as the system menu. › After replacement of an LSU, a calibration (U464) should be carried out first. › Alternatively, the calibration can also be initiated via the system menu.

SIMPLE FORM:

Select:

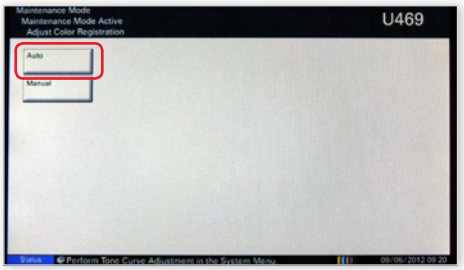
`SYSTEM MENU > ADJUSTMENT/MAINTENANCE`



Alternatively:

› Call U469

› Select **"Auto"**.



The registration chart is printed out.

› Put the chart in the correct position on the contact glass.

› Select **"Execute"**.

› Start the process with the START button.

The chart is scanned and the registration is carried out.
The end is indicated by **"End Message"**.

If the chart is not put on correctly, an error message occurs

U469, COLOR REGISTRATION, DETAILED FORM

ACTIONS	› Accurate verification of color registration over the entire print width. › If necessary, correct the color registration by mechanically adjusting the LSU mirror.
RECOMMENDATIONS	› After the first installation of the system. After repair or replacement of: › LSU › Transfer belt
PREREQUISITES	Information about access to the Maintenance Mode
NOTES	› In **"Detail"**, the color registration is verified not only in one place, but in several places. The setting is therefore more precise. › Alternatively, the registration can also be triggered via the system menu.

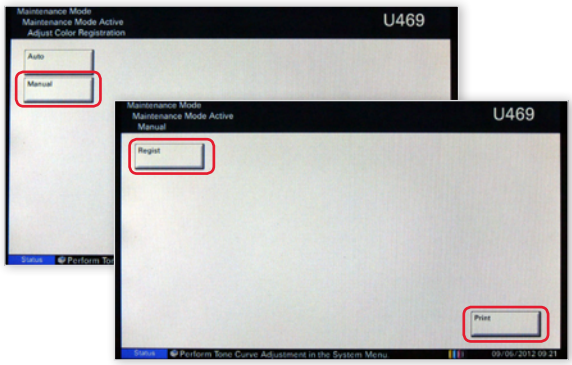
DETAILED FORM:

Select:

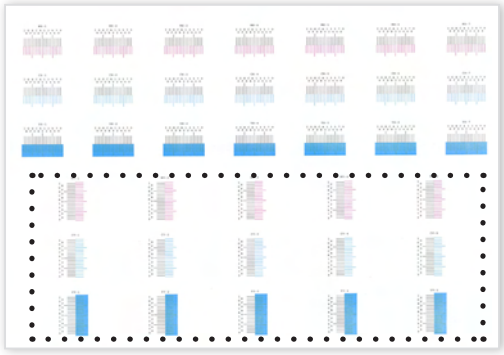
`SYSTEM MENU > ADJUSTMENT/MAINTENANCE > COLOR SET UP > MANUAL > DIAGRAM`

or:

› Call U469
› Select **"Manual"**
› Select **"Regist"**



The registration chart is printed out.



In case of deviations in the lower area (dotted markings), a correction of the mirror must be done, if necessary (refer to page 88).

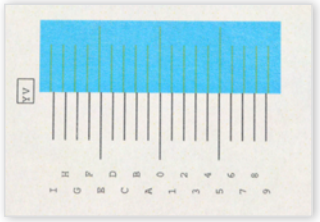
The test printout reflects the current status of all colors with regard to color registration.
In case of deviations, the relevant color correction value can be entered in the menu.

CORRECTION EXAMPLE:

Defective registration: Magenta (1).
After entering the correction value (MH-1: = 3)...
...correct registration (2).

TIPS FOR BETTER LEGIBILITY:

› Yellow can be more easily assessed in blue (LED) light.
› Make a B/W copy of the test print. There the yellow indices are clearly recognizable.



MANUAL MIRROR CORRECTION OF THE LSU

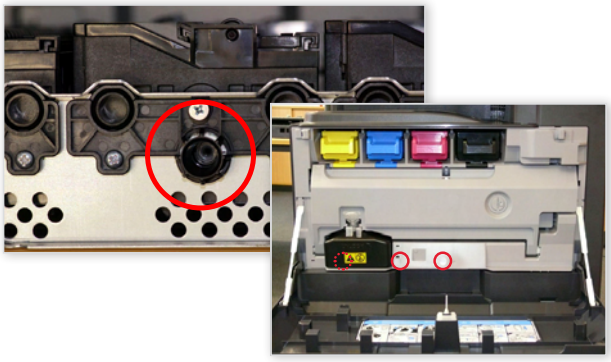
ACTIONS	Mechanical LSU mirror correction
RECOMMENDATIONS	> After replacing the LSU, if necessary > In case of deviation in the vertical registration
PREREQUISITES	Allen wrench (5 mm), length at least 15 cm.
NOTES	Please correct the mirror only if necessary!

To correct a mirror, the lower test printout of the detailed color registration must be used.

A correction is always necessary when the individual indicators show different deviations:

The LSUs have a feature used to change the position of the deflection mirrors.

The correction of the YCM laser mirror can be done using a 5mm Allen wrench (minimum 15 cm long). The access to the YCM laser mirror is covered by tape.



THE CORRECTION CONSISTS OF THE FOLLOWING STEPS:

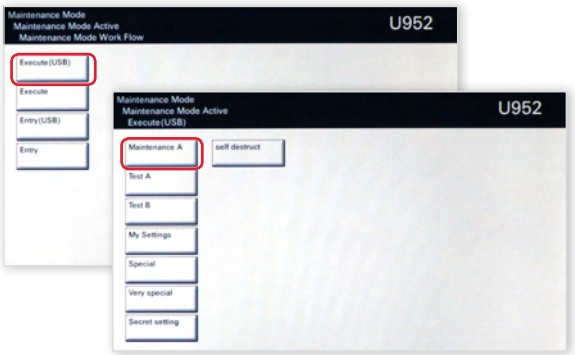
1. Mechanical alignment of the relevant LSU, so that subsequently the deviation of all indicators is identical (several runs may be required).
2. Input of the correction value XV-3, so that the vertical registration is correct for the entire width (i.e. the indicator shows 0).

U952, EXECUTION WORKFLOW

- Call up U952 and insert the USB stick (optionally)
- Select **"Execute"** or **"Execute (USB)"***.

All available workflows are displayed.

- Select workflow (for instance: **"Maintenance A"**).

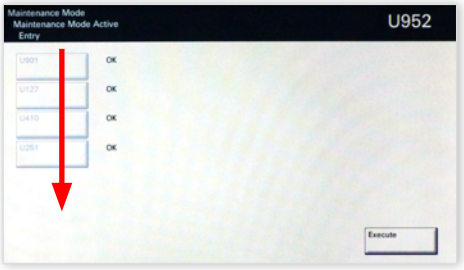


*) If an USB memory has been inserted.

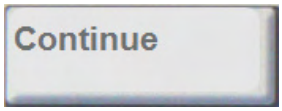
All the associated U parameters are listed.

- Choose and execute the individual U parameters in the specified sequence (from top to bottom).

Every finished U parameter will be marked with a time stamp. The workflow is completed if the last U parameter has been finished.



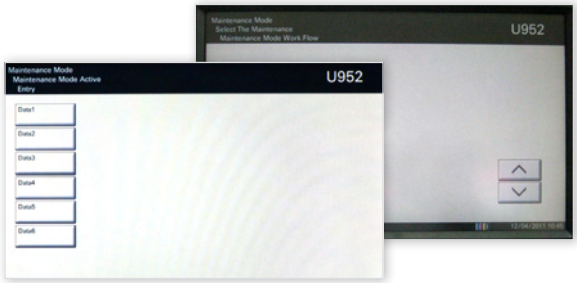
To resume an interrupted workflow, call U952 again and continue the workflow with **“Continue”**. Other workflows, however, can be selected independently



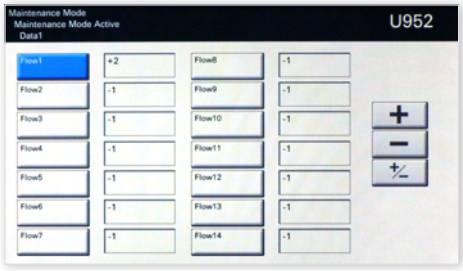
U952, PROGRAMMING WORKFLOW

The U parameter can be simplified via a so-called **“workflow”** program after installing certain components or Maintenance Kits”.
The settings in U952 can be programmed directly on the operation panel.
At most, 7 workflows can be stored in the machine.

Alternatively, the workflow can be carried out directly via USB memory.



Each workflow can contain a maximum of 14 U codes.



THE PROGRAMMING OF WORKFLOWS WITH TEXT EDITOR

Programming workflows is only possible with pure ASCII text. Please use a suitable ASCII editor (e.g. EDITOR in MS Windows Accessories). Word processing programs (e.g. MS-Word) are NOT SUITABLE.

The structure of the driver file should be as follows (example):

```
# Workflow TASKalfa 2551ci

1,Setup,464,469,410,000,927,278                  # Work Flow 01
2,Warranty,089,000                               # Work Flow 02
3,Maintenance A,901,127,410,251                  # Work Flow 03
4,Maintenance B,410,251                          # Work Flow 04
5,Enhance Setup ,411,034,246                     # Work Flow 05
.....
```

The example above shows altogether 5 workflows. Workflow 1 includes the U parameters 464, 469, 410, 000, 927, 278. This workflow is indicated with the label **"Setup"**.
All characters behind the **"#"** (within a command line) are commentaries and have no effect.

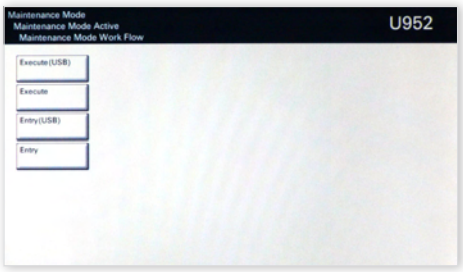
The file is subsequently stored with the following name on an USB memory:

MAINTENANCEWORKFLOW.MWF

So that the system recognizes the file, the extension **"mwf"** MUST be used.

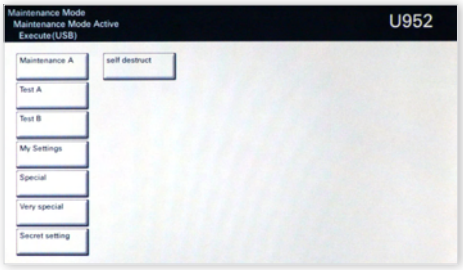
U952, SAVE WORKFLOW

- Call U952
- Insert the USB memory.

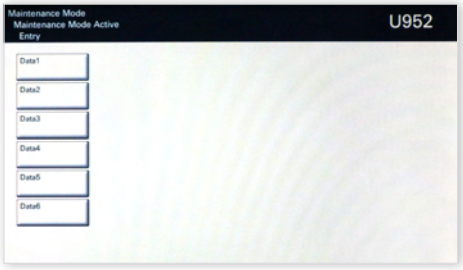


"**Execute (USB)**" and "**Entry (USB)**" are only active when a USB memory has been inserted.

- Select "**Entry (USB)**".
- Select workflow sequence from the USB memory that is to be placed in a program location.
- Alternatively, "**Execute (USB)**" can be selected if the workflow is to be carried out directly from the USB memory.

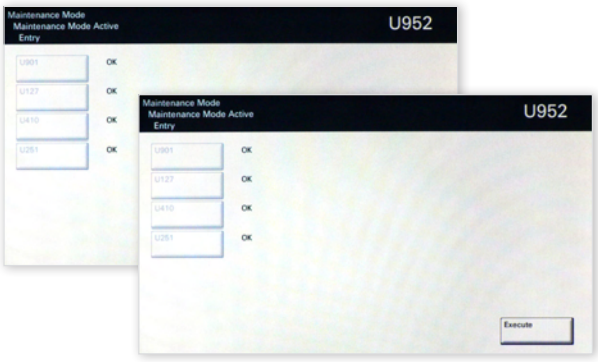


- Select the program location where the sequence has to be stored (Data 1...6).



- Select "**EXECUTE**".
- Select the option with the START button.

The program has now been permanently stored in the machine.



If the sequence contains a U parameter that is not available in the machine, this sequence cannot be saved.
If a workflow is changed on the operation panel, the description is automatically reset to **"Data n"**. The original designation is permanently removed!

As many U parameters may have a number of sub-items, the sequence cannot be executed automatically. The technician must activate each sub-item manually.

FIRMWARE UPDATE

- For the firmware update, a USB memory with at least 250 MB of capacity is required.
- All update files must be put into the root directory of the USB memory.
- If the **"ES_SKIP. ON"** file is available on the USB memory, only the areas that are different are updated*.
  If ALL areas should be generally updated, then the **"ES_SKIP. ON"** file must be removed from the USB memory.
- U019 displays the current firmware version of the system.
- For the update, no external files should be stored on the USB memory!

EXECUTION:

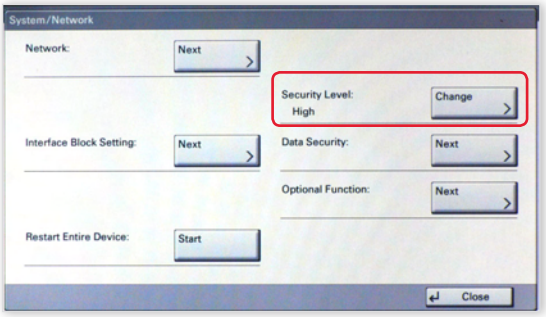
- Extract the firmware files and copy them into the root directory of the USB memory.
- Shut down and turn off the system.
- Insert the USB memory.
- Turn on the main power of the system.
- After ca. 1 minute **"Firmware update"** should appear in the display.
- Wait until all areas have been updated.
- After the **"Finish"** message appears, turn off the system and remove the USB memory.

A firmware update via the SD card (on Main Board) is NOT possible!
If the firmware update fails, an emergency update is possible (refer to page 94).

*) Don’t skip the fax firmware and color correction tables.

U025, FIRMWARE UPDATE WITH SECURITY LEVEL "VERY HIGH"

If the system is set to security level **"Very High"**, the conventional F/W update is not possible.



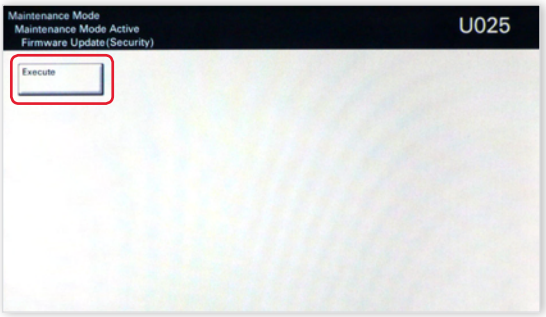
The security level is set:

`SYSTEM MENU > SYSTEM/NETWORK > SECURITY LEVEL`

The security level is indicated on the operation panel.

If the F/W update is to be performed without changing the security level, the following steps are necessary:

- Formatting the USB memory
- Copy the F/W data on the USB memory
- Call U025
- Plug in the USB memory
- Select **"Execute"** and press START
- Switch off the system

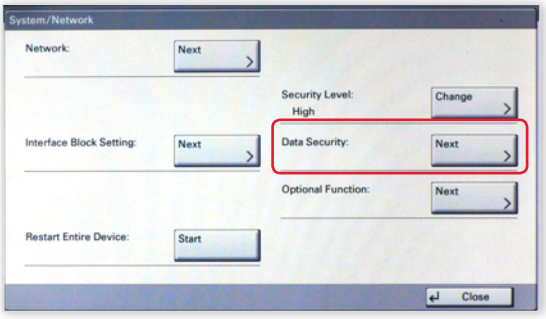


Do not remove the USB memory!

- After 5 seconds, switch the system on
- F/W update starts automatically
- After F/W update, switch the system off
- Remove the USB memory

A check sum test is also possible via System Menu:

`SYSTEM MENU > SYSTEM/NETWORK > DATA SECURITY`



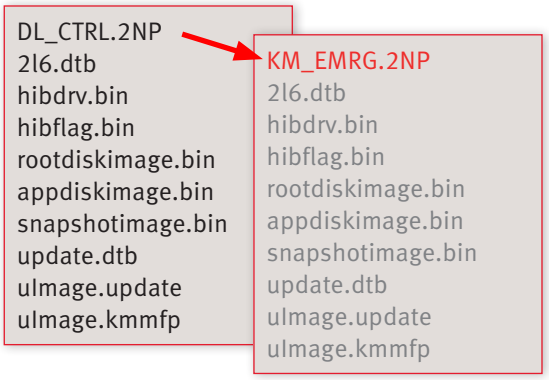
EMERGENCY UPDATE

The conventional firmware update procedure is very safe and reliable. In rare cases, the firmware update might fail.

The emergency update restores the main PWB firmware so that the conventional firmware update can be executed afterwards.

PREPARATION

- Extract all firmware files
- Copy all specific files (see figure) to a newly formatted USB memory
- Rename the **“master file”** as illustrated
- Leave all other files untouched



EXECUTION

- Confirm the machine is turned off
- Install the prepared USB memory
- Turn power on

Emergency update is in progress:

- Memory LED is blinking
- Attention LED is blinking
- LCD indication

Success:
Only the Memory LED is blinking

Fail:
Attention LED is blinking only

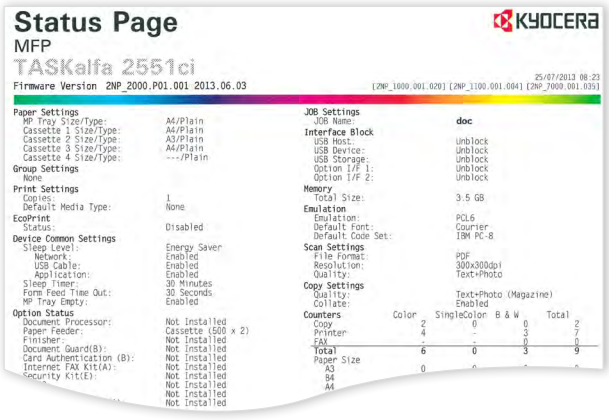
The emergency update is only possible, if the system has an updatet related malfunction. After the successful emergency update a conventional firmware update MUST be performed (refer to page 92)

REPORTS, STATUS PAGES

STATUS PAGE

Information about:

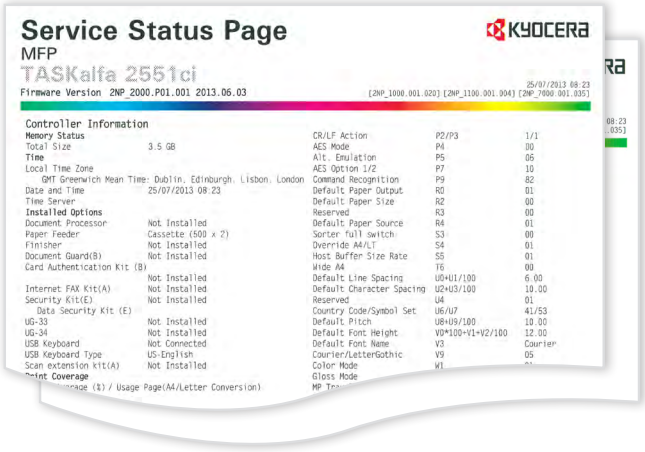
- Firmware versions
- System default settings
- Available storage
- System options
- Toner level status
- Counter readings



SERVICE STATUS PAGES

Information about:

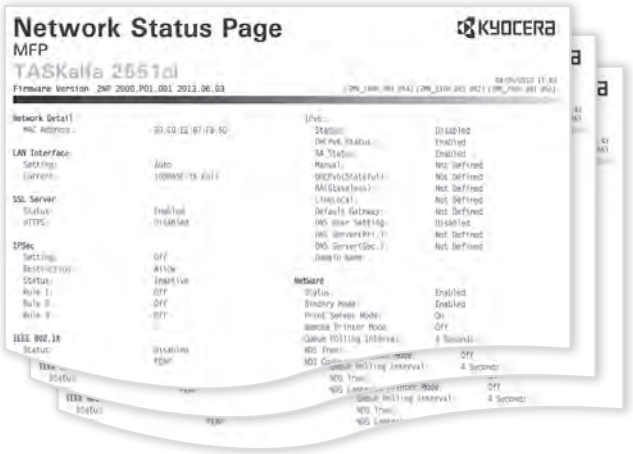
- Firmware versions
- Installed options
- FRPO status
- Average toner coverage



NETWORK STATUS PAGES

Information about:

- Network settings
- Log settings



ADDITIONAL LISTS:

- Font list: Information about loaded fonts.
- Send result report: Transmission report (fax).
- Sending Log History: Transmission journal (fax).

REPORTS, EVENTLOG

ACTIONS	Analysis of the error protocols.
RECOMMENDATIONS	› If a fast and comprehensive overview regarding the reliability of the machine is required. › If maintenance processes must be kept.
PREREQUISITES	Information about the Maintenance Mode (see page 69).
NOTES	The EventLog list (and also other reports attainable via U000) can be stored alternatively on a USB memory (see page 69).

POS. 8, PAPER JAM LOG:

Detailed information about the last 16 paper jams on the machine (the latest entry is always on top).
Every entry contains details about the counter status and the type of paper jams.
The type of paper jam is codified by a certain sequence of numbers.

The individual entries (from left to right):

- › a Cause of the paper jam
- › b Paper source
- › c Paper size
- › d Media type
- › e Location of the output

POS. 9, SERVICE CALL LOG:

Information about the last 8 service codes (C Calls).
Every entry contains details about the counter status and the corresponding service code.

POS. 10, MAINTENANCE LOG:

Information about the last 8 service events (change of toner cartridge or developer unit).
Every entry contains the details about the counter status and the corresponding event.

ITEM:

01.	.00	.01	.02	.03
Toner	black	cyan	magenta	yellow

02.	.01	.02	-	-
MK-Kit	MK-8325A	MK-8325B	-	-

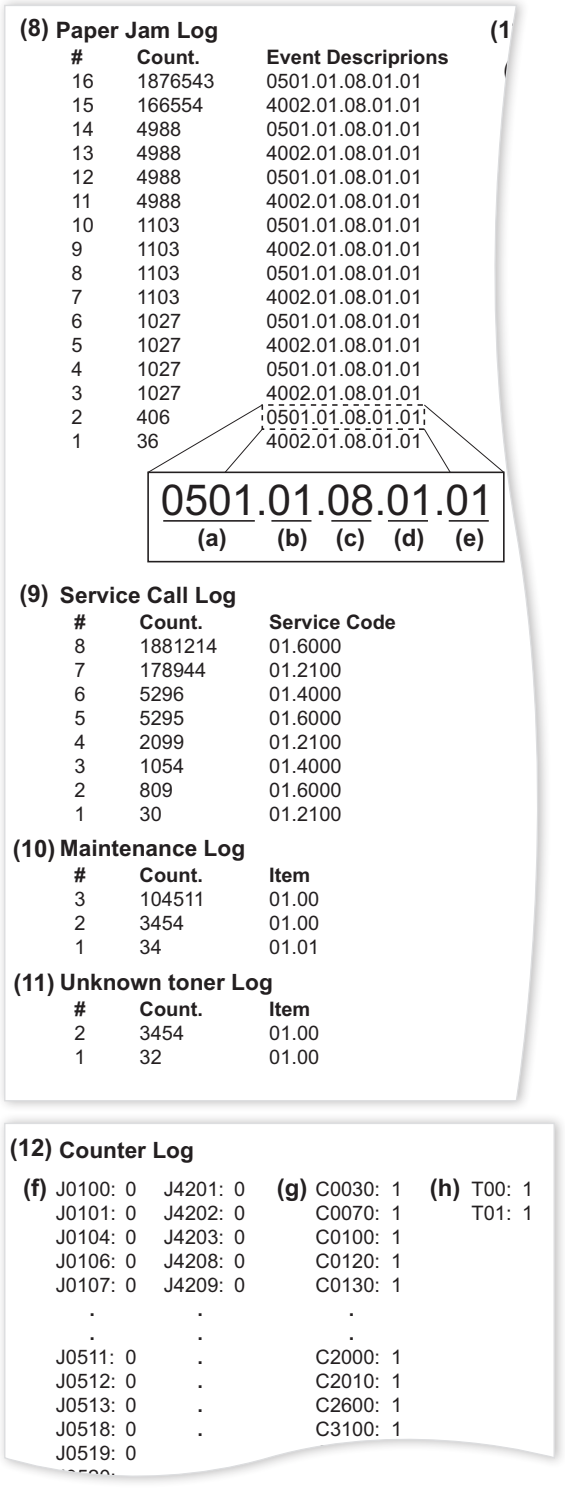
POS. 11 UNKNOWN TONER LOG:

If the displayed toner malfunction occurs because non standard toner is used, this is indicated by a corresponding entry (max. 5 entries possible).

POS. 12, COUNTER LOG:

All events described above, are logged and summarized corresponding to their type.

For more information, please refer to the Service Manual.



(8) Paper Jam Log

#	Count.	Event Descriprions
16	1876543	0501.01.08.01.01
15	166554	4002.01.08.01.01
14	4988	0501.01.08.01.01
13	4988	4002.01.08.01.01
12	4988	0501.01.08.01.01
11	4988	4002.01.08.01.01
10	1103	0501.01.08.01.01
9	1103	4002.01.08.01.01
8	1103	0501.01.08.01.01
7	1103	4002.01.08.01.01
6	1027	0501.01.08.01.01
5	1027	4002.01.08.01.01
4	1027	0501.01.08.01.01
3	1027	4002.01.08.01.01
2	406	0501.01.08.01.01
1	36	4002.01.08.01.01

0501.01.08.01.01
(a) (b) (c) (d) (e)

(9) Service Call Log

#	Count.	Service Code
8	1881214	01.6000
7	178944	01.2100
6	5296	01.4000
5	5295	01.6000
4	2099	01.2100
3	1054	01.4000
2	809	01.6000
1	30	01.2100

(10) Maintenance Log

#	Count.	Item
3	104511	01.00
2	3454	01.00
1	34	01.01

(11) Unknown toner Log

#	Count.	Item
2	3454	01.00
1	32	01.00

(12) Counter Log

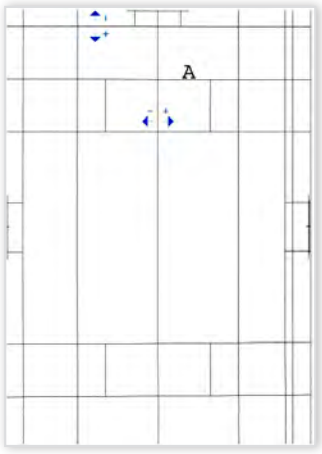
(f)			(g)		(h)	
J0100: 0	J4201: 0		C0030: 1		T00: 1	
J0101: 0	J4202: 0		C0070: 1		T01: 1	
J0104: 0	J4203: 0		C0100: 1			
J0106: 0	J4208: 0		C0120: 1			
J0107: 0	J4209: 0		C0130: 1			
.	.		.			
.	.		.			
J0511: 0	.		C2000: 1			
J0512: 0	.		C2010: 1			
J0513: 0	.		C2600: 1			
J0518: 0	.		C3100: 1			
J0519: 0						

TEST PRINT OUTS

TEST PRINT OUT FOR THE PRINTER ALIGNMENT:

- U034 (Print start)
- U053 (Motor speed correction)
- U402 (Printing margins)

The test print out is done in the temporary print mode/ copy mode (press the **"System Menu"** button).



U089 MIP-PG PATTERN:

- Select **"Sample Set"**

GRADATION GRAY:

For easy identification of streaks in print direction.

256 GRADATION:

Quality test of the gray scale reproduction.

COLOR BELT:

Quality test of the individual developer units.
(Print out via **"Sample Set"**)

GRAY (C), GRAY (M), GRAY (Y), GRAY (B):

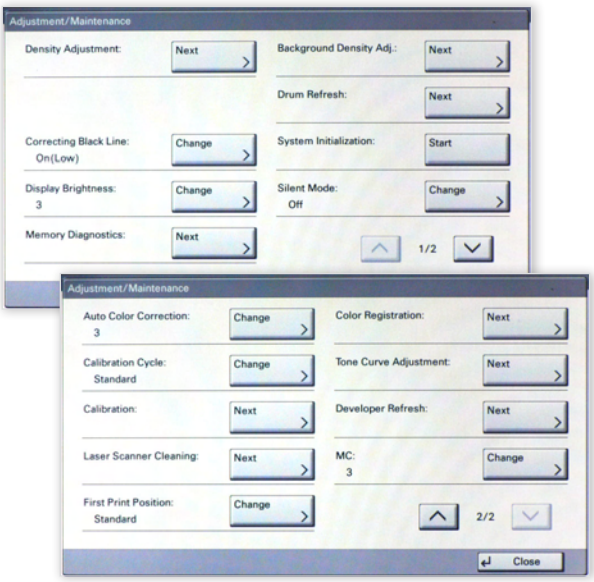
Quality test of the individual developer units.
(Print out via **"Sample Set"**)

SYSTEM SETTINGS

ACCESS TO THE SYSTEM SETTINGS:

Button **"System menu"**› Adjustment/Maintenance

Some settings correspond to the settings of the U parameters.



FUNCTION	DESCRIPTION	NOTES
Density Adjustment	Exposure adjustment for the operation types Copy/Print/Fax.	
Background Density Adj.	Default setting of the recognition threshold of the document background in the operation types Copy/Send (only automatic mode).	
Correcting Black Line	Compensation of scanner streaks when using the document processor (DP).	
Drum Refresh	Removal of stained, and/or streaky print outs.	Not possible during printing.
System Initialization	Formatting the hard drive.	Refer to page 77
Display brightness	Display lightness.	4 levels.
Silent Mode	Reduces the sound level during readiness.	If turned on, the first copy needs longer.
MC	Changes in the drum load, to be used if printouts are pale.	Do not use for **"Altitude adjustment"**
Auto Color Correction	Recognition threshold for the color/black/white switch in **"Auto"** mode.	
Color Registration	Automatic and manual color registration (similar to U469).	
Calibration Cycle	Length of the interval of the calibration processes, for the stabilization of the picture quality.	Auto-short-standard-long
Tone Curve Adjustment	Automatic alignment of the color values to guarantee color stability. Corresponds to U410.	A4 paper is required.
Calibration	Color calibration for the stabilization of the color value. Corresponds to U464.	
Developer Refresh	For use in case of weak or incomplete print outs.	
Laser Scanner Cleaning	For use in case of white or colored streaks in print direction.	

HANDS ON

OBJECTIVE

PROGRAMMING A CUSTOMIZED WORKFLOW

PREREQUISITES

- System
- USB memory
- Platform with editor
- Training Manual
- Service Manual

INSTRUCTIONS

- Fomat the USB memory (FAT or FAT32)
- Create a *.MWF file with the following data:
  “1, Lists,089,402,000,001 # my personal workflow”
- Call U952
- Insert the USB memory and follow the instructions of page 90
- Save this workflow permanently in the system
- Execute this workflow from the USB memory
- Alternatively, execute this workflow from the system

TIME

50 minutes

Please bear in mind that printing test charts in Maintenance Mode needs an escape to a temporary print mode (refer to page 69).

HANDS ON

OBJECTIVE

UPDATE FIRMWARE WITH HIGH SECURITY LEVEL

PREREQUISITES

- System
- USB memory with firmware
- Training Manual (refer to page 93)
- Service Manual

INSTRUCTIONS

- Setup the security settings in the device to **„Very high“**
- what happens?

- First try to perform a standard firmware update
- what happens?

- Call U952
- Subsequently perform a firmware update using U parameter U025
- Return the security settings in the device to **“Standard”** again

QUESTION

- Why is it sometimes NOT reasonable to perform the firmware update using a temporary change of the security settings?

TIME

25 minutes

HANDS ON

OBJECTIVE

RECORD THE DATA STREAM TO THE PRINTER

PREREQUISITES

- System with latest firmware
- Print data with errors
- Platform with printer driver installed
- Training Manual (see 77)

INSTRUCTIONS

- Check the connection to the device
- Print the defective print data to verify the error
- Insert the USB-memory into the host slot of the device
- Call U977 and choose Execute › Start
- Again, send the print data to the device
- The screen should indicate **„Finish"**
- Subsequently analyze the print data on the USB memory

TIME

45 minutes

TEST YOUR KNOWLEDGE

IF JOB ACCOUNTING IS ENABLED THE MAINTENANCE MODE CAN BE ACCESSED BY:

- ○ Opening the front cover and entering “10871087” on the operation panel.
- ○ Pressing the system menu button and entering “10871087” on the operation panel.
- ○ Pressing the status button and entering “10871087” on the operation panel.

WHICH COMPONENTS HAVE TO BE INSERTED WHEN CHANGING THE MAIN BOARD?

- ○ EEPROM
- ○ ASIC memory
- ○ CPU memory
- ○ Counter FROM
- ○ Model ID chip

THE DEFAULT SETTING OF U265 FOR THE KYOCERA BRAND IS:

- ○ 1
- ○ 2
- ○ 43

THE PARAMETER U415 OFFERS:

- ○ To carry out the scanner calibration using the test chart "Color Testchart 1"
- ○ To align the cassettes performing test printing
- ○ To carry out tone curve adjustment

IF A MAINTENANCE WORKFLOW WITH U952 IS INTERRUPTED IT HAS TO...

- ○ ... start up newly as it cannot be continued.
- ○ ... be carried out as a new workflow.
- ◉ ... be finished later.

WHAT IS THE BENEFIT IN USING PRESTORED WORKFLOWS?

- ○ No know-how about maintenance is needed
- ○ It leads through all maintenance-relevant settings to increase quality and save time
- ○ It allows the technician to store individual workflows

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