ES3640MFP / CX3641MFP
Service & Troubleshooting Guide

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Chapter 1

Printer Maintenance Procedures

1.1 Service Maintenance Procedures

Perform the following procedures whenever you check, service, or repair the printer. Cleaning the printer, as outlined in the following steps, assures proper operation of the printer and reduces the probability of having to service the printer in the future. The frequency of use, Average Monthly Print Volume (AMPV), type of media used, and operating environment are factors in determining the frequency of this maintenance procedure. Be sure to record the number of sheets printed between each service visit and attach the PS test page, Demo Page, and configuration sheets to your service log for future reference.

Recommended Tools

- Toner vacuum cleaner
- Laptop computer with:
  (Windows XP)
  (Current Model Print Drivers)
  (Current Command Workstation loaded)
  (Kodak Calibration Pack)
- Clean, dry, lint-free cloth
- Black, light protective bag

Perform these routine maintenance procedures during the course of servicing the printer.

- Clean the feed rollers, exit rollers, and guides; replace as necessary.
- Remove and clean all paper trays.
- Clean the Color Registration and Automatic Density Control Sensors.
- Check cleanliness of interior and exterior, including fans; clean as necessary.
- Check the print engine and Fiery Controller firmware version located on the first page of the configuration sheet. Update as necessary.
- Print a PS test page and Demo page, diagnose, and repair any problems as indicated.
- Perform the Printer / Scanner calibrations in **Chapter 2.**
- Review proper printer operation using a customer file, if possible. Check with the customer regarding any special applications they may be running.
- Review with the customer all work that was performed; and discuss proper printer care and ***the importance of properly using the shut down sequence to prevent Hard Drive issues.***

1.2 Cleaning the Printer

Perform the following general cleaning steps as indicated by the printer's operating environment.

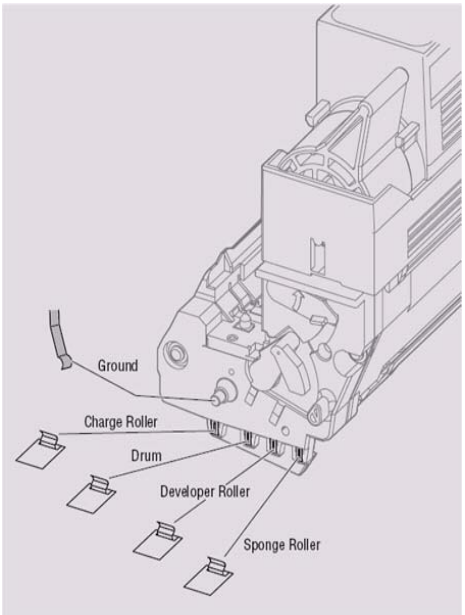
Caution

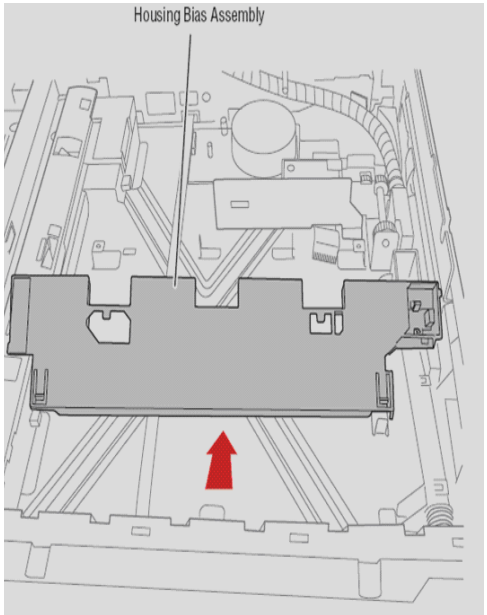
Never apply alcohol or other chemicals to any parts in the printer. Never use a damp cloth to clean up toner. If you remove the Image Drum Units, place them in a light protective bags or similar means to protect the drums as exposure to light can quickly degrade performance and result in early failure.

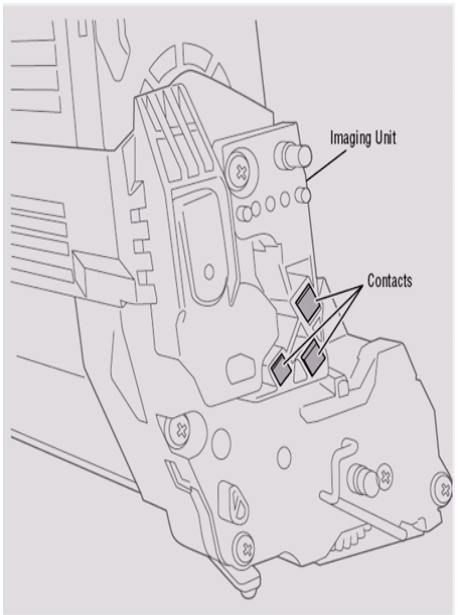
1. Record number of sheets printed on a service log left with the printer.
2. Print several sheets of paper to check for problems or defects.
3. Turn off the printer.
4. Clean all fans to remove excess dust.
5. Ensure that all cover vents are clean and free of obstructions.
6. Remove any debris or foreign objects from the Transfer Unit, Fuser, and Imaging Units.
7. Vacuum loose toner from the printer interior using a Type II toner vacuum only.
8. Remove and clean the paper trays.
9. Clean / inspect all rubber rollers with a lint-free cloth slightly dampened with cold water. Replace as necessary.

1.3 Cleaning the Imaging Unit Contacts

1. Open the Top Cover.
2. Remove the Imaging Units and place it on a stable surface.
3. Working quickly to reduce light exposure, clean the 4 contacts at the front of the Imaging Unit.
4. Clean the 3 contacts at the rear of the imaging unit.
5. Clean the contacts on the Housing Bias Assembly.





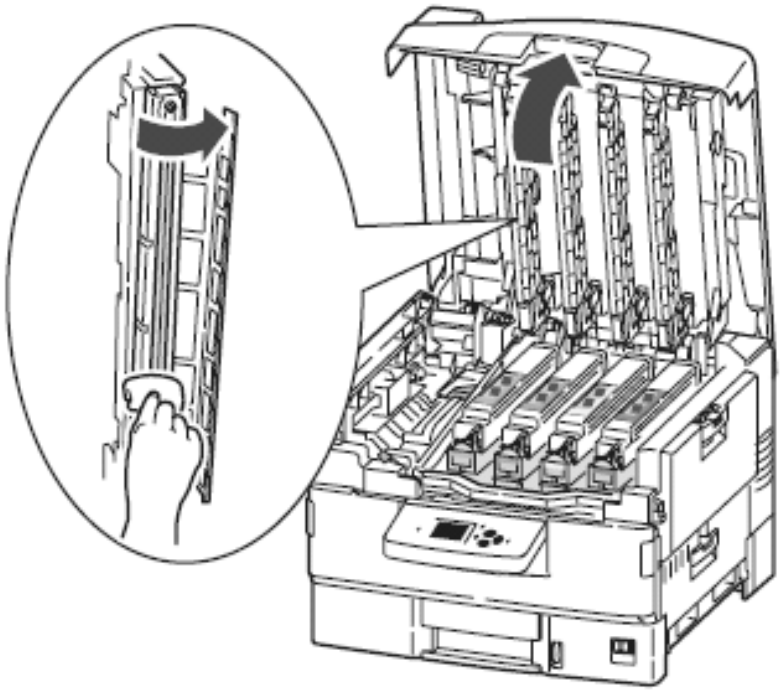


1.4 Cleaning the LED Heads

Clean the LED Head if a vertical White band or White stripe appears on the print.

Caution
Always use a soft, dry, lint-free cloth to clean the LED Heads. Never use solvents to clean the lens.

1. Open the Top Cover.
2. Clean each LED Head with a clean, lint- free cloth.

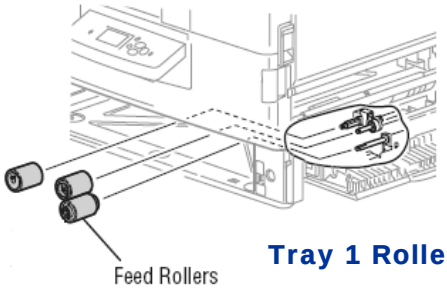


1.5 Cleaning the Feed Rollers

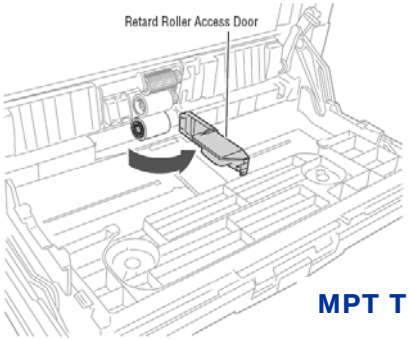
Clean the accumulated dust from the Feed Rollers.

Caution
Use care not to scratch or otherwise abrade the roller surface while cleaning. Gently rub the roller surface using a soft, lint-free cloth moistened with water.

1. Access the rollers by removing Tray 1 or opening the MPT tray.
2. Clean each roller with soft, lint-free cloth moistened with water.



Tray 1 Rollers



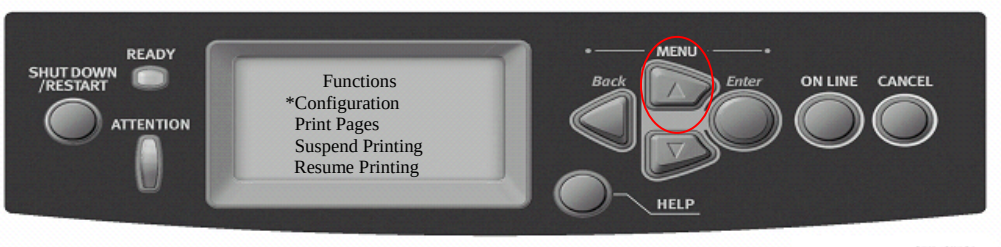
MPT Tray Rollers

Chapter 2

User Menu and Adjustments

2.1 Accessing the User Menu

Press the menu up arrow to access the User Menu.



User Mode Menus

Main Menus	Sub Menus
Configuration	Print Page Count • Finisher Count • Supplies Life
	Network • Paper Size in Tray • System
Print Pages	Print Pages
Suspend Printing	
Resume Printing	
Print Secure Job	Print Secure Job
Menus	Tray Configuration • System Adjust
Shut Down	
Admin Setup	Admin Setup
Calibration	Exit Calibration • Auto Density Mode
	Auto BG Adjust Mode • Adjust Density
	Adjust Registration • Setup Calibration
	Calibrate • Remove Calibration
Print Statistics	Statistics Menu • Log Size • Reset Counter
	Change Password

Configuration

Print Page Count

Item	Description
Total Page*	Displays the total number of printed pages. Must be enabled in printer service mode.
Color Page	Displays the number of color printed pages converted to letter equivalent.
Monochrome Page	Displays number of monochrome printed pages converted to letter equivalent.
Tray 1,2,3,4,MP	Displays the Total Pages from each Tray

Finisher Count

Item	Description
Staple	Displays total pages stapled
Punch	Displays total pages punched
Finisher	Displays total pages ejected into the finisher

Supplies Life

Item	Description
Drum C, M, Y, K	Displays the remaining life span of drum as a percentage. Select C, M, Y, or K
Belt	Displays the remaining life span of the belt unit as a percentage.
Fuser	Displays the remaining life span of the fuser unit as a percentage.
Toner C, M, Y, K	Displays the remaining life span of toner as a percentage. Select C, M, Y, or K

Network

The items and settings displayed are specific to your system. Full details are given in the Configuration Guide. Information given is also available on the printed configuration sheets.

Paper Size in Tray

Item	Description
Tray	Displays detected paper size of selected Tray
MP Tray	Displays detected paper size of the MP Tray.

System

Item	Description
Serial Number	Displays serial no. of the printer.
Asset Number	Displays Asset Number. Asset Number is 8 alphanumeric characters that can be assigned by a user. Same as Asset Number of Menu Map.
CU Version	Displays version no. of CU (Fiery Controller) firmware. Same as CU version of Menu Map.
PU Version	Displays version no. of PU (Engine Board) firmware. Same as PU version of Menu Map.
Total Memory	Displays total RAM memory installed in the printer. Same as Total Memory of Menu Map.
HDD	Displays size of hard disk and file system version. Same as HDD of Menu Map.

Print Pages

Print Pages

Item	Description
PS Test Page	Prints the PostScript sample page.
Configuration	Prints printer configuration details.
Job Log	Prints EFI job log details.
Color Charts (disk only)	Prints color charts.
PS Font List	Prints PostScript font list.
PCL Font List	Prints PCL emulation font list.
Demo Page	Prints a demo page.
E-mail Log	Prints e-mail log.
FTP Log	Prints FTP log.
Usage Report*	Prints a usage report. (must be activated from the Print Statistics menu)
Statistics Log	Prints Oki job log details.
Error Log	Prints the error log.
ID Check Pattern*	Prints an Image Drum Check Pattern. (must be enabled in service mode)
Engine Status*	Prints Engine Status details. (must be enabled in service mode)

Suspend Printing Sets Printer to Off-line Status

Resume Printing Sets Printer to On-line Status

Print Secure Job

Print Secure Job

Item	Description
Enter Password	Enter a password to use secure printing.
Not Found	Use a secure printing job (Secure Job) or a job Stored to HDD when printing. When you print a Secure document, it is deleted from the HDD. When you print a document Stored to HDD, it prints and remains stored on the HDD until you manually delete it. **Not Found**: (no jobs) is indicated when there is no output file. The following messages are displayed when there are printable files. **Print:** When you select Print, Set Collating Amount is displayed to enable you to specify a number of copies. After specifying the number of copies, press Enter to print all jobs with the specified number of copies. **Delete:** When you select Delete, you are prompted to recheck by Yes/No display, and selecting Yes deletes all jobs.

Menus

Tray Configuration

Item	Description
Paper Feed Tray1,2,3,4 MP Tray	Specifies a feed tray.
Auto Tray Switch	Sets the automatic tray switch function. **ON or OFF**
Tray Sequence	**Down, Up, Paper feed tray**- Specifies selection order priority for automatic tray selection/automatic tray switch.
Unit of Measure	Specifies units for custom paper size. **Inch** or **mm**
Tray Config,	Sets paper configuration in paper Trays. **Paper Size**- Cassette size or Custom **Media Type**-Plain, Letterhead, Transparency, Bond, Recycled, Card Stock, Rough, Glossy **Media weight-**Auto, Light, Heavy, Ultra heavy

System Adjust

Item	Description (Printer Defaults are indicated in **Blue**)
Power Save Time	Sets the period after which power save mode starts. 5 min, 15 min, 30 min, **60 min**, 240 min
Clearable Warning	When Online is selected, you must manually clear the warning by pressing the Online button. Change to Job if you wish the message to automatically clear when a new print job is received. **Online** or Job
Auto Continue	Sets whether the printer is automatically recovered when Memory Overflow or Tray Request occurs. ON or **OFF**
Manual Timeout	If paper is not fed within this time in manual feed, the job is cancelled. OFF, 30 sec, **60 sec.**
Wait Timeout	Sets the time period between stopping receipt of job data and forced print. For PS, printing is not carried out and the job is cancelled. Range is off, 5 sec. to 300 sec. default is **40 sec.**
Low Toner	Sets the printing operation when insufficient toner is detected. **Continue:** the printer can continue printing while remaining online. Stop: the printer stops printing and goes offline.
Jam Recovery	**ON**: continues printing the job, including any jammed pages, once the jam has been cleared. OFF: Cancels a job including the page currently jammed.
Print Position Adjust	X Adjust - Adjusts the position of the whole printing image (0.25 mm at a time) Range is -2.00 to +2.00 mm (horizontally). Default is **0.00mm.**
	Y Adjust - Adjusts the position of the whole printing image (0.25 mm at a time) Range is -2.00 to +2.00 mm (Vertically). Default is **0.00mm.**
	Duplex X Adjust - During the flip-side printing of duplex printing, adjusts the position of the whole printing image (0.25 mm at a time. Range is -2.00 to +2.00 mm (horizontally). Default is **0.00mm.**
	Duplex Y Adjust - During the flip-side printing of duplex printing, adjusts the position of the whole printing image (0.25 mm at a time. Range is -2.00 to +2.00 mm (Vertically). Default is **0.00mm**.
Darkness Cyan, Magenta, Yellow, Black	Adjusts the engine density for Cyan, Magenta, Yellow, Black. Darkest value is +3, Lightest value is -4. Default is **0**.
Cyan Reg. Adjust Magenta Reg. Adjust Yellow Reg. Adjust	Makes fine adjustment to image registration against Black in the horizontal direction. Adjust. is for Cyan, Magenta, Yellow. Range is -3 to +3. Default is **0**.
Paper Black Setting	Used for micro adjustment when very visible faded print results or light specks (or streaks) result when printing in Plain Paper/Black setting. Range is -2 to +2. Decrease the value if light specks (or streaks) or snow flake like printing results in high density print areas. Default is **0**.
Paper Color Setting	Used for micro adjustment when very visible faded print results or light specks (or streaks) result when printing in Plain Paper/Color setting. The range is -2 to +2.Decrease the value if light specks (or streaks) or snow flake like printing results in high density print areas. Default is **0**.
Transparency Black Setting	As for Paper Black Setting above. The range is -2 to +2. Default is **0**.

Transparency Color Setting	As for Paper Color Setting above. The range is -2 to +2. Default is **0**.
SMR Setting (New)	allows for minor corrections in print anomalies such as "smearing" due to environmental conditions (temperature & humidity)
BG Setting (New)	allows for minor corrections in print anomalies such as "dirty background" due to environmental conditions (temperature, humidity, media)
Drum Cleaning	Set to produce idling of a drum before printing in order to reduce horizontal white lines. This will shorten image drum life. Default is **Off**.
Hex Dump	Prints out the data received from the host PC in hexadecimal code.

Shut Down Allows for: Restart of Server, Shut Down of the System, or Reboot of System. Select appropriate item and execute.

Admin Setup Continue to setup: Yes / No Select yes (message: running setup)

Admin Setup

Item	**Description**
Exit Setup	Exits Setup Menu
Server Setup	See configuration sheet under Server Setup
Network Setup	See configuration sheet under Network Setup
Parallel Setup	See configuration sheet under Parallel Setup
USB Setup	See configuration sheet under USB Setup
Printer Setup	See configuration sheet under Printer Setup
PS Setup	See configuration sheet under PS Setup
PCL Setup	See configuration sheet under PCL Setup
Color Setup	See configuration sheet under Color Setup
Job Log Setup	See configuration sheet under Job Log Setup
Change Password	Change Admin. Password
Language	
Clear Server	Clears all Server Information
Factory Defaults	Restores Printer to Factory Default **Warning:** All Information such as IP addresses etc. will be lost. Be sure to print a Configuration sheet prior to setting the printer to Factory Default.

Calibration

Exit Calibration

Item	Description
Exit Calibration	Select **"enter"** to exit the calibration screen

Auto Density Mode

Item	Description
Auto Density Mode	***On** / Off – Turns On or Off the Auto Density Mode

Auto BG Adjust Mode

Item	Description
Auto BG Adjust Mode	***On** / Off – Turns On or Off the Auto Background Adjustment Mode

Adjust Density

Item	Description
Adjust Density	***Yes** / No – Select yes to execute density adjustment

Adjust Registration

Item	Description
Adjust Registration	***Yes** / No– Select yes to execute registration adjustment

Set Up Calibration

Item	Description
Standard	***Auto Select** / Bypass – Selects paper source for calibration
Expert	***Auto Select** / Bypass – Selects paper source for calibration

Calibrate

Item	Description
*6X6 Dot Screen	Print Meas. Pg. ***Yes** / No **See** "Calibrating the Printer" in Chapter 2
12X6 Dot Screen	Print Meas. Pg. ***Yes** / No **See** "Calibrating the Printer" in Chapter 2
12X6 Line Screen	Print Meas. Pg. ***Yes** / No **See** "Calibrating the Printer" in Chapter 2
12X12 Dot Screen	Print Meas. Pg. ***Yes** / No **See** "Calibrating the Printer" in Chapter 2
Copier Screen	Print Meas. Pg. ***Yes** / No **See** "Calibrating the Printer" in Chapter 2

Remove Calibration

Item	Description
*6X6 Dot Screen	Affects all. Contin? ***Yes** / No (removes previous Calibration)
12X6 Dot Screen	Affects all. Contin? ***Yes** / No (removes previous Calibration)
12X6 Line Screen	Affects all. Contin? ***Yes** / No (removes previous Calibration)
12X12 Dot Screen	Affects all. Contin? ***Yes** / No (removes previous Calibration)
Copier Screen	Affects all. Contin? ***Yes** / No (removes previous Calibration)

Print Statistics

Enter Password - Default password is **0000**

Statistics Menu

Item	Description
Statistics Menu **Enter Password "0000"**	***Enable** / Disable – Turns On or Off the Print Statistics Menu (MFP) To access select "Setup" from the scanner control panel. Select "Report" , Select "Print" from "MFP Statistics Report"

Log Size

Item	Description
Log Size	***30** – Range is 1 to 100

Reset Counter

Item	Description
Reset Counter	***No** / Yes – Not used at this time

Change Password

Item	Description
Change Password	***New Password** – Enter new 4 digit password

Service Modes & Adjustments

2.2 Accessing Service Mode

Enter Service Mode by holding down the menu up / menu down and help buttons **at the same time** while powering up the machine. (This may take up to 60 seconds.)

The System Maintenance Menu will appear.

Service Mode Menus

There are 4 menus under system maintenance described as follows:

1. OKIUSER - Used to set operating environment by country location. Should always be set to ODA

2. Maintenance Print Menu - This switches whether to Show/Hide the Print Information, ID Check Pattern and Engine Status of the Function Menu. If this item is disabled, the Print Information, ID Check Pattern and Engine Status of the Function Menu is never displayed. The printer is restarted after the settings are modified and exiting from the menu.

3. Print Page Count - This sets whether to Show/Hide the display of the "Functions", "Configuration", "Print Page Count", or "Total Page".

4. Diagnostic Mode – Used to perform diagnostic tests such as "Motor & Clutch" and "Switch Scan" to assist in troubleshooting motor, clutch, sensor, and switch operation.

2.3 Service Diagnostics Controls

Use the Control Panel buttons to interact with Service Diagnostics' tests and utilities.

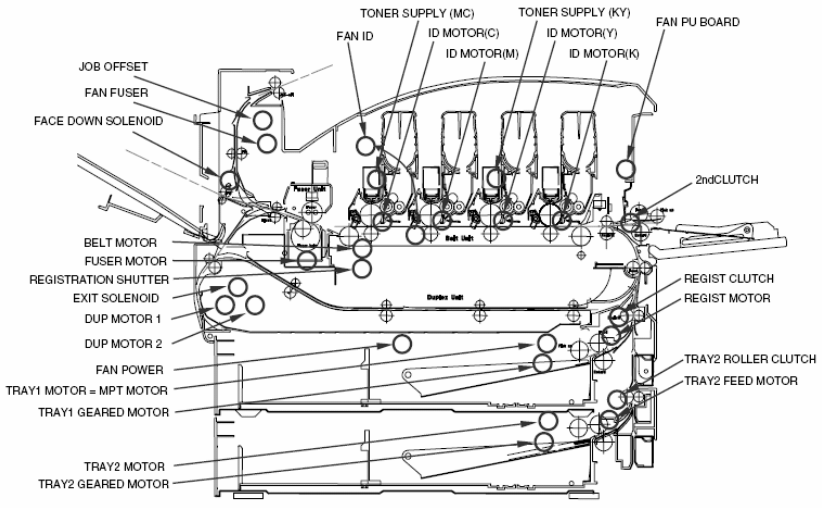
Button	Function
Back	Returns to the prior higher level menu structure, if available. If help text is displayed, pressing Back restores the current menu item.
Cancel	Terminates the current test or cancels current Help display.
Help	Provides help information, if available. Pressing **Help (?)** again restores the current menu item and removes the help text.
Up Arrow	Scrolls up one menu item within a menu list. Used to increment data in tests requiring user input.
Down Arrow	Scrolls down one menu item within a menu list. Used to decrement data in tests requiring user input.
Enter	Enters the highlighted menu. Executes the current test item. Used to select a data value entered by the user.

Note - The best method of exiting Service Diagnostics is to cycle printer power. This insures all printer components are reset. Also, an occasional paper jam is normal on the first print if clutch or solenoid tests were run.

2.4 Accessing the Motor & Clutch Test

The "Motor & Clutch Test" under the "Diagnostics" menu in service mode can be an important tool in assisting in the diagnosis of service related issues in the ES3640 / CX3641 MFP. The test gives you the ability to test the operation of all of the motors, clutches, and solenoids in the Printer, Large Capacity Feeder, and Duplexer that are indicated below.

For additional information, see "Component Disassembly" Guide.



Using the Motor & Clutch Test

Enter Service Mode by holding down the menu up / menu down and help buttons **at the same time** while powering up the machine. (This may take up to 60 seconds.)

From Diagnostic Mode Down arrow to "Motor & Clutch Test" and press "Enter"

From this menu, pressing the Down Arrow Key will scroll through the following table of tests. Simply select "Enter to execute and "Cancel" to terminate the selected test.

Image Drum / Toner / Waste Toner Tests

Item Tested	Remark
K-ID Motor	Runs black image drum motor for 10 seconds
C-ID Motor	Runs Cyan image drum motor for 10 seconds
M-ID Motor	Runs Magenta image drum motor for 10 seconds
Y-ID Motor	Runs Yellow image drum motor for 10 seconds
ID UP/DOWN	Runs Image Drum Up/Down Motor for 10 Seconds
DISPOSAL TONER TUBE	Runs Disposal Toner Tube for 10 Seconds
TONER SUPPLY MC	Runs the Magenta / Cyan Toner Supply Motor
TONER SUPPLY C	Runs the Cyan Toner Supply Motor
TONER SUPPLY M	Runs the Magenta Toner Supply Motor
TONER SUPPLY KY	Runs the Black / Yellow Toner Supply Motor
TONER SUPPLY Y	Runs the Yellow Toner Supply Motor
TONER SUPPLY K	Runs the Black Toner Supply Motor

Printer Paper Feed Tests

Item Tested	Remark
TRAY1 GEARED MOTOR	Runs the Tray 1 geared motor for 10 seconds
TRAY1 MOTOR	Runs the Tray 1 motor for 10 seconds
M-ID Motor	Runs Magenta image drum motor for 10 seconds
JOB OFFSET	Runs the job offset mechanism for 10 seconds
REGISTRATION SHUTTER	Activates the Regis. solenoid ON/OFF for 10 seconds
FACEDOWN SOLENOID	Face Down solenoid ON/OFF for 10 seconds
EXIT SOLENOID	Exit solenoid ON/OFF for 10 seconds
MPT LIFT UP	Runs the MPT tray lift up motor
MPT MOTOR	Runs the MPT tray paper feed motor
REGIST CLUTCH	Runs the registration clutch for 10 seconds
REGIST MOTOR	Runs the registration motor for 10 seconds
FUSER RLS	Rotates the fuser rollers in steps
FUSER MOTOR REVERSE	Runs the fuser motor in reverse for 10 seconds
FUSER MOTOR	Runs the fuser motor for 10 seconds
BELT MOTOR	Runs the transfer belt motor for 10 seconds

Duplex Tests

Item Tested	Remark
DUP FAN	Runs the Duplex Fan for 10 seconds
DUP MOTOR	Runs the Duplex Motor for 10 seconds

High Capacity Paper Feeder Tests

Item Tested	Remark
TRAY5 GEARED MOTOR	Runs the Tray 5 geared motor for 10 seconds
TRAY4 GEARED MOTOR	Runs the Tray 4 geared motor for 10 seconds
TRAY3 GEARED MOTOR	Runs the Tray 3 geared motor for 10 seconds
TRAY2 GEARED MOTOR	Runs the Tray 2 geared motor for 10 seconds
TRAY5 ROLLER CLUTCH	Runs the Tray 5 roller clutch for 10 seconds
TRAY4 ROLLER CLUTCH	Runs the Tray 4 roller clutch for 10 seconds
TRAY3 ROLLER CLUTCH	Runs the Tray 3 roller clutch for 10 seconds
TRAY2 ROLLER CLUTCH	Runs the Tray 2 roller clutch for 10 seconds
TRAY5 FEED MOTOR	Runs the Tray 5 feed motor for 10 seconds
TRAY4 FEED MOTOR	Runs the Tray 4 feed motor for 10 seconds
TRAY3 FEED MOTOR	Runs the Tray 3 feed motor for 10 seconds
TRAY2 FEED MOTOR	Runs the Tray 2 feed motor for 10 seconds
TRAY5 MOTOR	Runs the Tray 5 motor for 10 seconds
TRAY4 MOTOR	Runs the Tray 4 motor for 10 seconds
TRAY3 MOTOR	Runs the Tray 3 motor for 10 seconds
TRAY2 MOTOR	Runs the Tray 2 motor for 10 seconds

Fan Tests

Item Tested	Remark
FAN ID	Runs black image drum Fan for 10 seconds
FAN BELT	Runs the Transfer Belt Fan for 10 Seconds
FAN FUSER	Runs the Fuser Fan for 10 Seconds
FAN PU-BOARD	Runs the PU Board Fan for 10 Seconds
FAN POWER	Runs the Power Supply Fan for 10 Seconds

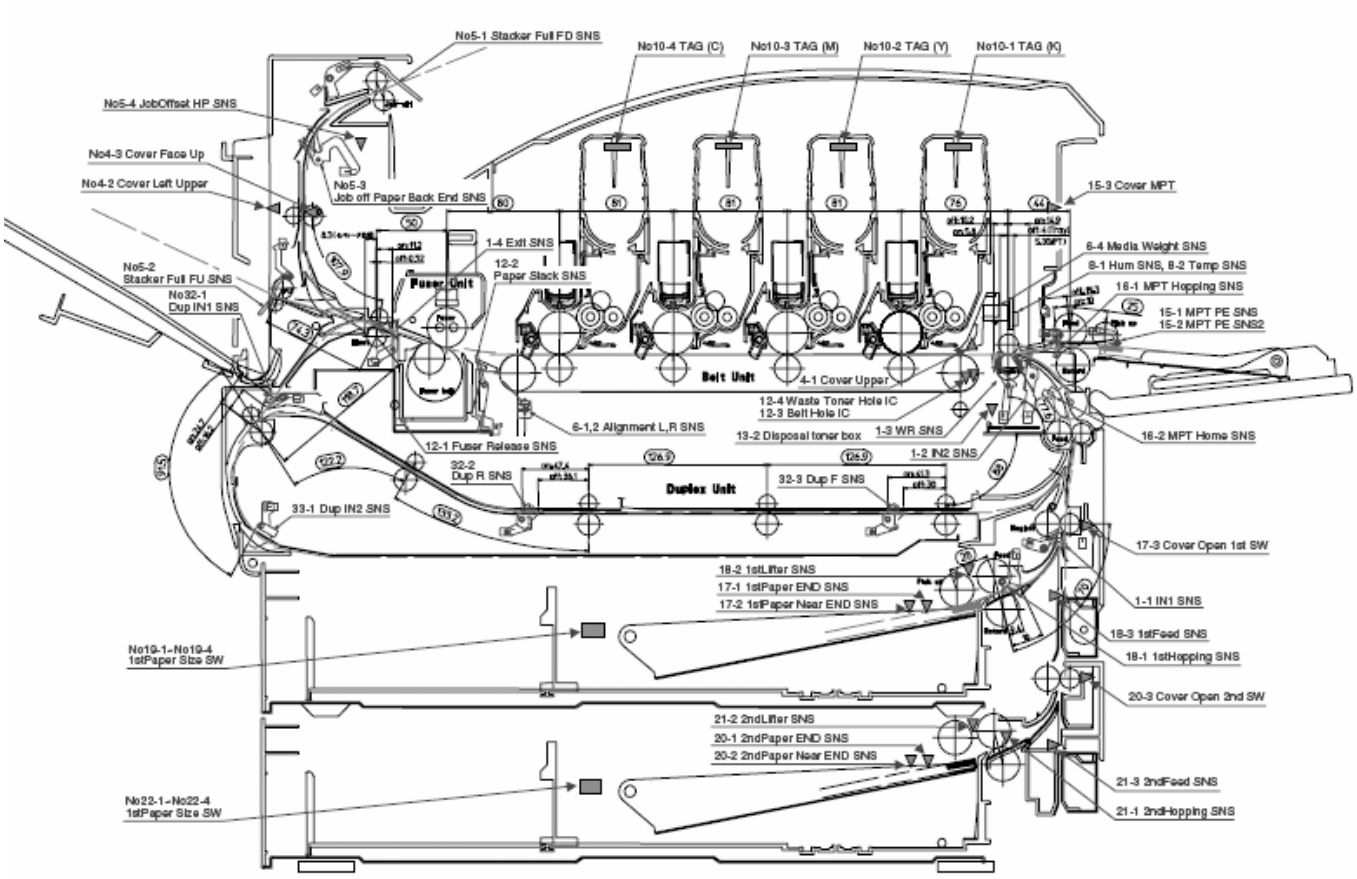
Inverter Tests

Item Tested	Remark
INV REGIST CLUTCH	Inverter Registration Clutch ON/OFF for 10 seconds
INV PRESSURE SOLENOID	Inverter Pressure solenoid ON/OFF for 10 seconds
INV SEPARATER	Inverter Separator Clutch ON/OFF for 10 seconds
INV MOTOR B	Runs the Inverter Motor B for 10 Seconds
INV MOTOR A	Runs the Inverter Motor A for 10 Seconds

2.5 Accessing the Switch Scan Test

The "Switch Scan Test" under the "Diagnostics" menu in service mode can be an important tool in assisting in the diagnosis of service related issues in the ES3640 / CX3641 MFP. The test gives you the ability to test the operation of all of the sensors, and switches in the Printer, Large Capacity Feeder, Duplexer, and finisher that are indicated below.

For additional information, see "Electronic Components and Functions" in this manual.



Using the Switch Scan Test

Enter Service Mode by holding down the menu up / menu down and help buttons **at the same time** while powering up the machine. (This may take up to 60 seconds.)

The System Maintenance Menu will appear.

From Diagnostic Mode, Down arrow to "Switch Scan" and press "Enter"

From this menu, pressing the Down Arrow Key will scroll through the following table of tests. Simply select "Enter to execute and "Cancel" to terminate the selected test.

Switch Scan Test (Printer)

Display Detail on Printer LCD	Location 1		Location 2		Location 3		Location 4	
	Sensor Tested	Display Condition	Sensor Tested	Display Condition	Sensor Tested	Display Condition	Sensor Tested	Display Condition
Paper Route: PU	IN1 Sensor	H - Off L – On	IN2 Sensor	H - Off L - On	WR Sensor	H - Off L - On	Exit Sensor	H - Off L - On
Paper Route: Sub	IN1 Sensor	H - Off L - On	IN2 Sensor	H - Off L - On	WR Sensor	H - Off L - On		
Toner Sensor	Toner K Sensor	H - Off L - On	Toner Y Sensor	H - Off L - On	Toner M Sensor	H - Off L - On	Toner C Sensor	H - Off L - On
COVER UP_LU_FU	Cover Upper	H - Open L - Close	Cover Left Upper	H - Open L - Close	Cover Face Up	H - Open L - Close		
STKF_FD_FU JOBOFFHOME	Stacker Full Sensor (Face down)	H - Full L - Empty	Stacker Full Sensor (Face up)	H - Full L - Empty	Job Offset Paper-End Sensor	H:ON L:OFF	Job Offset Home Pos. Sensor	H:ON L:OFF
REG L/R_ DENS_WEIGHT	Alignment Left Sensor	AD Value: ***H	Alignment Right Sensor	AD Value: ***H			Media Weight	Frequency
HEATER THERMISTER	Upper Center Thermister	AD Value: ***H	Lower-Center-Thermister	AD Value: ***H	Upper-Side-Thermister	AD Value: ***H	Detect-ambient temperature-Thermister	AD Value: ***H
HUM_TEMP_OHP	Humidity Sensor	AD Value: ***H	Temperature Sensor	AD Value: ***H	OHP Sensor	AD Value: ***H		
ID UP / DOWN							ID Up / Down Sensor	H - Up L – Down
RFID COLOR	TAG-K presence	UID:****H	TAG-Y presence	UID:****H	TAG-M presence	UID:****H	TAG-C Presence	UID:****H
DRUM PHASE Sensor KYMC	K-Drum Phase Sensor	Port Level H, L	Y-Drum Phase Sensor	Port Level H, L	M-Drum Phase Sensor	Port Level H, L	C-Drum Phase Sensor	Port Level H, L
F-RLS SLK BLT DT-DCT	Fuser Release	H:ON L:OFF	Paper Slack Sensor	H:ON L:OFF	Belt Hall IC	H:ON L:OFF	Waste Toner Hall IC	H:ON L:OFF
HALL BELT_ DT-BOX_DCT	Belt Hall IC	H:ON L:OFF	Waste Toner Box Hall IC	H:ON L:OFF	Waste Toner Hall IC	H:ON L:OFF		
DISTNR FULL_BOX_BOXSP	Disposal toner full	H:ON L:OFF	Disposal toner box	H - Not installed L – Installed				
TNR SPLY SNS KY_MC	K-Toner Supply	Port Level H, L	Y-Toner Supply	Port Level H, L	M-Toner Supply	Port Level H, L	C-Toner Supply	Port Level H, L

MPT PE_ HOP_CVO_HOME	MPT-Paper-End Sensor	Port Level H, L	MPT-Hopping	H:ON L:OFF	Cover-MPT	H - Open L - Close	MPT Home Position	H - Open L – Close
TRAY1 PE_ PNE_CVO	1st-Paper-End	Port Level H, L	1st-Paper-Near-End	Port Level H, L	Cover-1st	H - Open L – Close		
TRAY1 HOP_LIFT	1st-Hopping Sensor	Port Level H, L	1st-Lifter Sensor	Port Level H, L	1st-Feed Sens	Port Level H, L		
TRAY1 CASETTE SIZE	1st-Paper Size- 1 Switch	Port Level H, L	1st-Paper Size 2 Switch	Port Level H, L	1st-Paper Size 3 Switch	Port Level H, L	1st-Paper Size- 4 Switch	Port Level H, L
TRAY2 PE_PNE_CVO	2nd-Paper-End Sensor	Port Level H, L	2nd-Paper-Near-End	Port Level H, L	Cover Open 2nd Switch	Port Level H, L		
TRAY2 HOP_LIFT_FEED	2nd-Hopping	Port Level H, L	2nd-Lifter Sensor	Port Level H, L	2nd-Feed Sensor	Port Level H, L		
TRAY2 CASETTE SIZE	2nd-Paper Size- 1 Switch	Port Level H, L	2nd-Paper Size- 2 Switch	Port Level H, L	2nd-Paper Size- 3 Switch	Port Level H, L	2nd-Paper Size- 4 Switch	Port Level H, L
TRAY3 PE_PNE_CVO	3rd-Paper-End Sensor	Port Level H, L	3rd-Paper-Near- End	Port Level H, L	Cover Open 3rd Switch	Port Level H, L		
TRAY3 HOP_LIFT_FEED	3rd Hopping Sensor	Port Level H, L	3rd-Lifter Sensor	Port Level H, L	3rd-Feed Sensor	Port Level H, L		
TRAY3 CASETTE SIZE	3rd-Paper Size- 1 Switch	Port Level H, L	3rd-Paper Size- 2 Switch	Port Level H, L	3rd-Paper Size 3 Switch	Port Level H, L	3rd-Paper Size- 4 Switch	Port Level H, L
TRAY4 PE_PNE_CVO	4th-Paper-End Sensor	Port Level H, L	4th-Paper-Near- End	Port Level H, L	Cover-Open-4th Switch	Port Level H, L		
TRAY4 HOP_LIFT_FEED	4th Hopping Sensor	Port Level H, L	4th-Lifter Sensor	Port Level H, L	4th-Feed Sensor	Port Level H, L		
TRAY4 CASETTE SIZE	4th-Paper Size- 1 Switch	Port Level H, L	4th-Paper Size- 2 Switch	Port Level H, L	4th-Paper Size- 3 Switch	Port Level H, L	4th-Paper Size- 4 Switch	Port Level H, L
DUP INS_ REAR_FRONT	Duplex-In Sensor	Port Level H, L	Dup-Rear Sensor	Port Level H, L	Dup-Front Sensor	Port Level H, L		
DUP STACK_COVER	Duplex Stack Sensor	Port Level H, L	Duplex Cover Open Sensor	Port Level H, L				

Switch Scan Test (Finisher / Inverter)

Display Detail on Printer LCD	Location 1		Location 2		Location 3		Location 4	
	Sensor Tested	Display Condition	Sensor Tested	Display Condition	Sensor Tested	Display Condition	Sensor Tested	Display Condition
FIN S01_S02_ S03_S04	Upper Cover Sensor [PI23]	H:OPEN L:CLOSE	Front door Sensor [PI22]	H:OPEN L:CLOSE	Front door SW [MS2]	H:OPEN L:CLOSE	Joint SW [MS1]	H:OPEN L:CLOSE
FIN S05_S06_ S07_S08	Bookbinding position Sensor[PI10]	H - Paper present L - Paper absent	Processing tray Sensor [PI6]	H - Paper present L - Paper Absent	Entrance Sensor [PI1]	H - Paper present L - Paper absent	Punch timing Sensor	H - Paper present L - Paper absent
FIN S09_S10_ S11_S12	Bookbinding tray paper Sensor [PI13]	H - Paper present L - Paper absent	Bookbinding home position Sensor	H - Home position L - Not in home position	Bookbinding roller home position	H - Home position L - Not in home position	Front matching home position Sensor	H - Home position L - Not in the home position
FIN S13_S14_ S15_S16	Rear matching home position Sensor	H - Home position L - Not in the home position	Belt home position outlet Sensor	H - Home position L - Not in the home position	Feed roller home position Sensor	H - Home position L - Not in the home position	Paddle home position [PI2]	H - Home position L - Not in the home position
FIN S17_S18_ S19_S20	Staple / fold motor clock [PI14]	H/L - Clock	Self prime Sensor [PI21]	H - Start staple detection L - Staple Absent	Staple Sensor [PI20]	H - Staple absent L - Staple present	Stapler safety SW [MS3]	H - Not to drive L - Drive
FIN S21_S22_ S23_S24	Staple home position Sensor	H - Home position L - Not in the home position	Stapler slide home position Sensor	H - Home position L - Not in the home position	Stapler connect signal	H - connected L – unconnected	Stack tray lift motor clock[PI17]	H/L - Clock
FIN S25_S26_ S27_S28	Lower stack tray Sensor	H - Lower position L - Not in the lower position	Upper stack tray Sensor	H - Upper position L - Not in the upper position	Inter-level stack Tray Sensor	H - detected L - not detected	Paper stack tray Sensor	H - Paper detected L - paper Not detect
FIN S29_S30_ S31_S32	Stack tray paper Sensor	H - Paper present L - Paper Absent	Punch connect signal	H - connected L – unconnected				
INV IN_OUT_ EXIT_COV	Entrance Sensor	H:ON L:OFF	Outlet Sensor	H:ON L:OFF	PU Inverter Exit Sensor Signal	H:ON L:OFF	Cover open SW [FMS1]	H - Open L - Close
INV REMAIN_ JOINT	Lower Sensor	H:ON L:OFF	Inverter connected Sensor	H:ON L:OFF	PU Inverter CNT2 Signal	H:ON L:OFF		

2.6 Service Adjustments

Removing the calibration for the Copier Screen

1. Press the Down Arrow button until Calibration is highlighted, then press the Enter button

2. Press the Down Arrow button until Remove Calibration is highlighted, then press the Enter button

3. Press the Down Arrow button until Copier Screen is highlighted and then press the Enter button

4. The next screen will display "Affects All, Cont?", press the Enter button and after the calibration is removed you will be returned to the Calibration Menu

Calibrating the Printer Copier Screen

Tools Needed

Kodak Q-13 Gray Scale, Part Number 70051001.

Reasons that a calibration should be done

1. On initial setup, there is no copier calibration stored in the MFP unit so calibration is required.
2. Colors are off when making a copy, but are fine when printing.
3. Color is critical when making copies.
4. After servicing the printer or performing routine maintenance

IMPORTANT NOTE: If a calibration has previously been done, it is recommended that it be removed prior to doing the procedure below.

Calibrating the Copier Screen (See Accessing the User Menu)

1. On the front panel of the printer press the Down Arrow button until Calibration is highlighted, then press the Enter button

2. Press the Down Arrow until Adjust Density is highlighted, and press the Enter button

3. Press the Enter button again on the next screen in order to execute the Adjust Density procedure

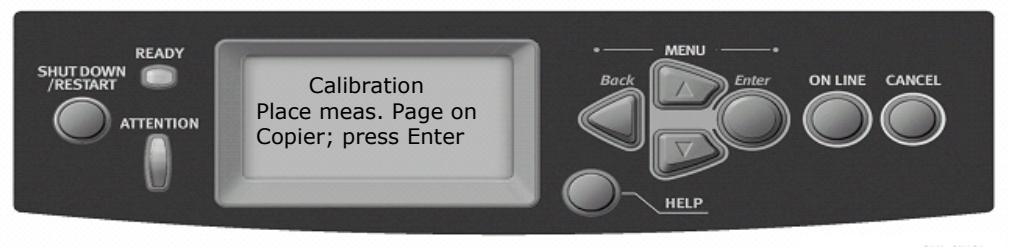
4. Next, press the Down Arrow button down until Calibrate is highlighted and press the Enter button

5. In the Screen Setting window press the Down Arrow button until Copier Screen is highlighted, and press the Enter button

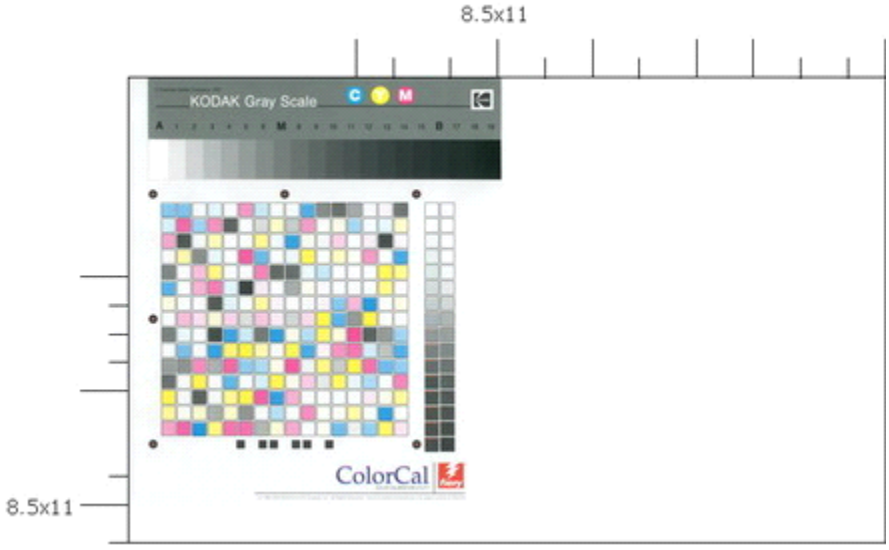
6. Press the Enter button in the next window to print out the ColorCal measurement page

7. Press the Enter button again to accept the choice to measure the ColorCal page that was just printed

8. Once the following screen appears:



Place the Q-13 strip face down on the glass in the top left corner. Next place the ColorCal measurement page over top of the Q-13 strip so that it looks like below:



9. Once the Q-13 and ColorCal page are on the copier glass, press the Enter button

10. In the next window choose whether or not to print a comparison page and press enter

11. When asked to apply the calibration, press the Enter button

12. In the final window select yes, and press the Enter button in order to overwrite the previous calibrations

13. Press the On Line button to return the printer to normal operation

Using Command WorkStation to Calibrate the Scanner

Tools Needed

Q-13 Gray Scale, Part Number 70051001.

Reasons that a calibration should be done

1. On initial setup, there is no copier calibration stored in the MFP unit so calibration is required.
2. Colors are off when making a copy, but are fine when printing.
3. Color is critical when making copies.
4. After servicing the printer or performing routine maintenance

IMPORTANT NOTE: If a calibration has previously been done, it is recommended that it be removed prior to doing the procedure below.

Removing the calibration for the Copier Screen

1. Press the Down Arrow button until Calibration is highlighted, then press the Enter button

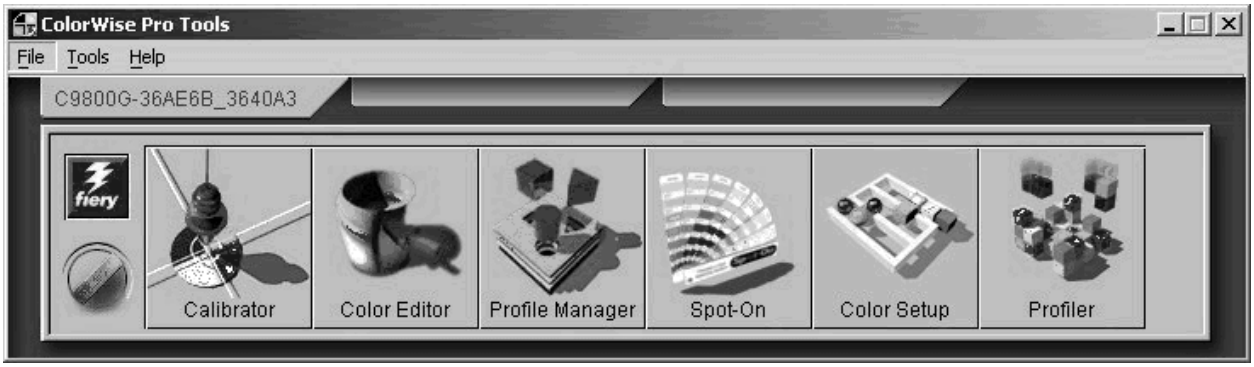
2. Press the Down Arrow button until Remove Calibration is highlighted, then press the Enter button

3. Press the Down Arrow button until Copier Screen is highlighted and then press the Enter button

4. The next screen will display "Affects All, Cont?", press the Enter button and after the calibration is removed you will be returned to the Calibration Menu

Calibrating Using Command Workstation

Open the ColorWise Pro Tools (shown below) by selecting Manage Color from the Server drop-down menu in Command WorkStation.



Double-click on the Calibrator utility (shown above). One of the following screens will appear.

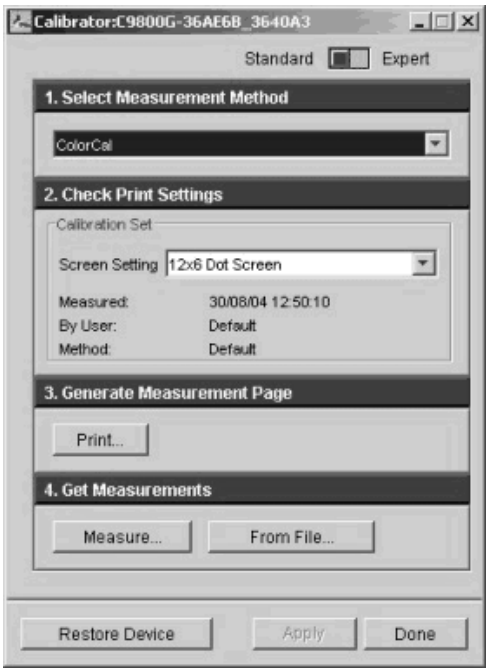


Diagram: Standard Calibrator Utility

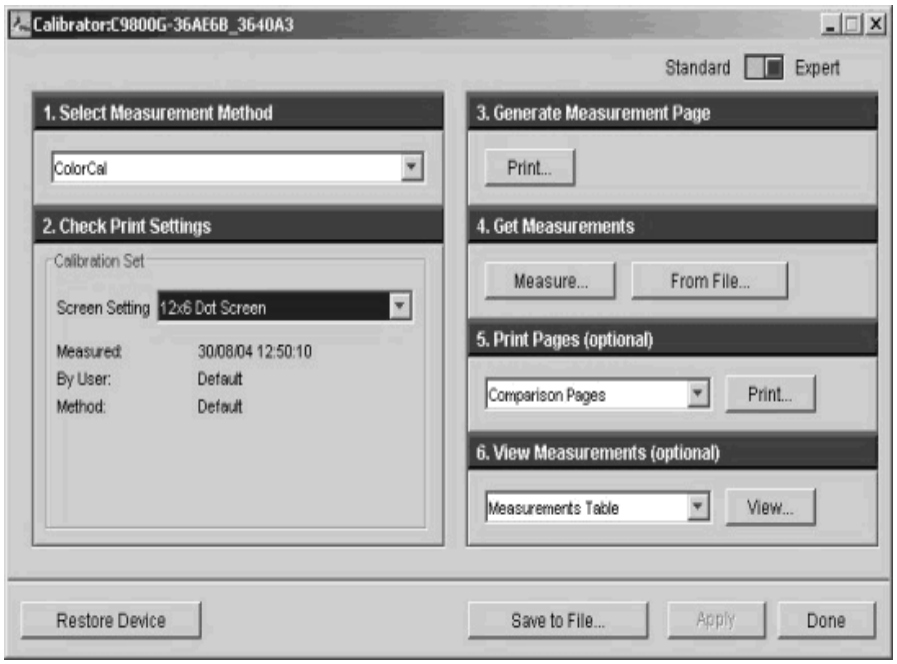
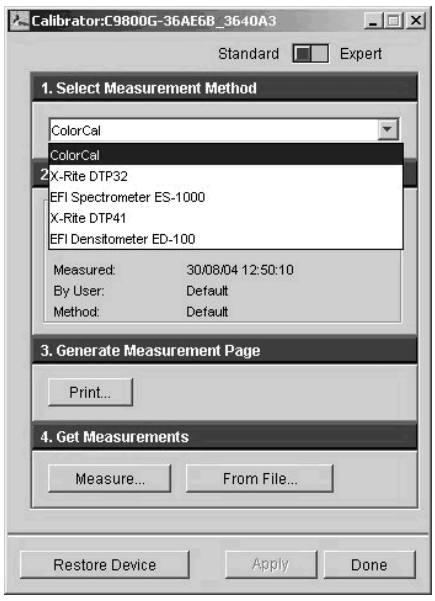


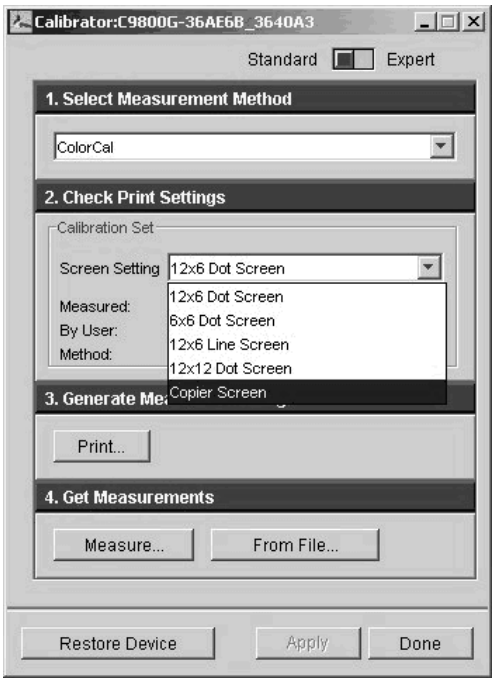
Diagram: Expert Calibrator Utility

The Scanner unit can be calibrated via both the Standard and Expert Calibrator processes (shown above). This article will use the Standard Calibrator to demonstrate the process for the remainder of the document. The instructions are the same for calibrating the scanner via Standard and Expert Calibrator modes.

In Select Measurement Method (item 1 of the above window), select ColorCal as shown below.

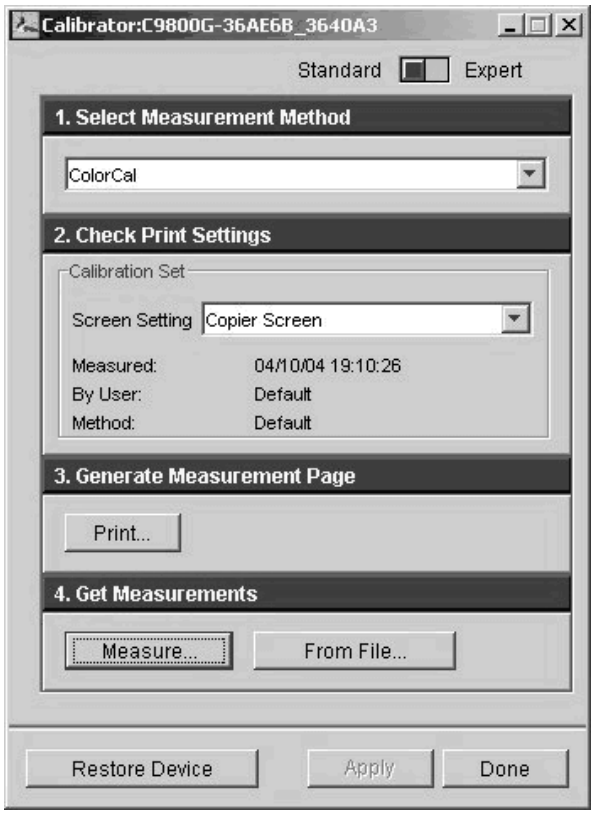


In Check Print Settings (item 2 of the following window), select Copier Screen as shown below.



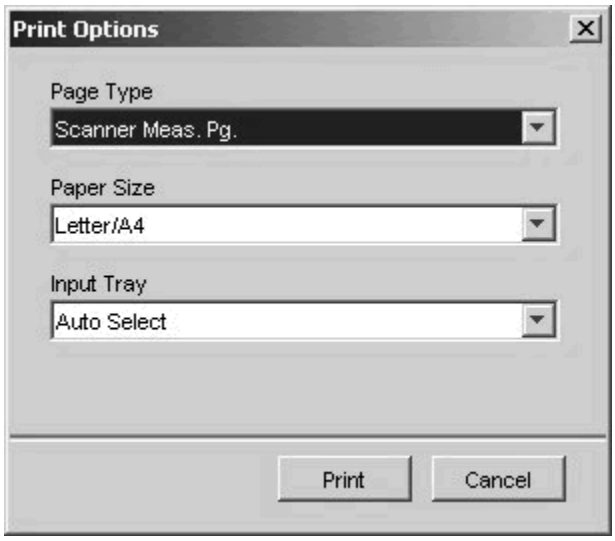
In Generate Measurement Page (item 3 of the above window), press the Print button. The following ColorCal Measurement Page will be printed.

In Get Measurements (item 4 of the following window), press the Measure button.



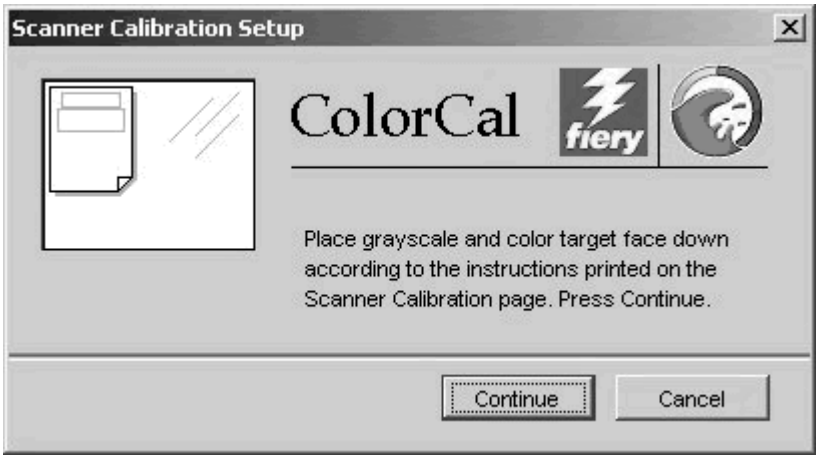
The following screen will appear.

Select "Yes" in the above window. The following screen will appear.



Press the Print button in the above screen. The following page will be printed.

The following screen will appear.

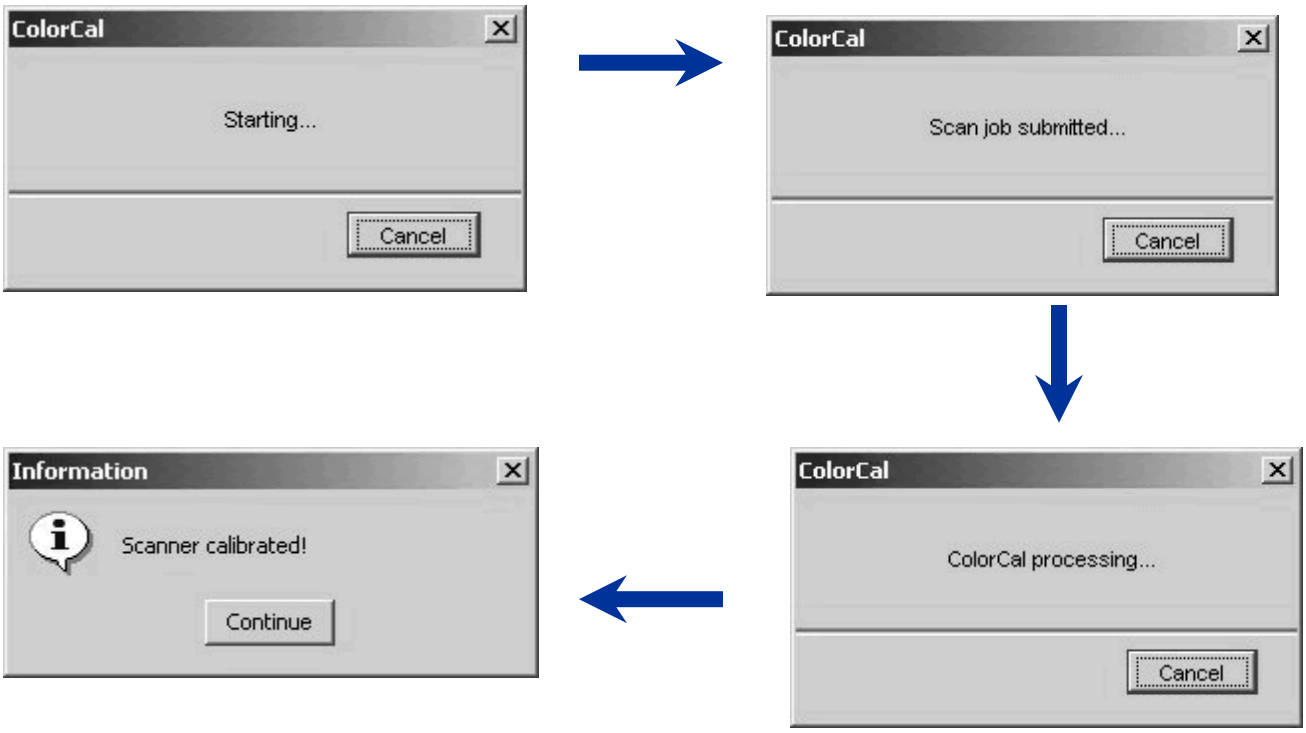


Place the Kodak Gray Scale and Kodak Color Control Patches on to the Scanner Calibration Page as shown below.

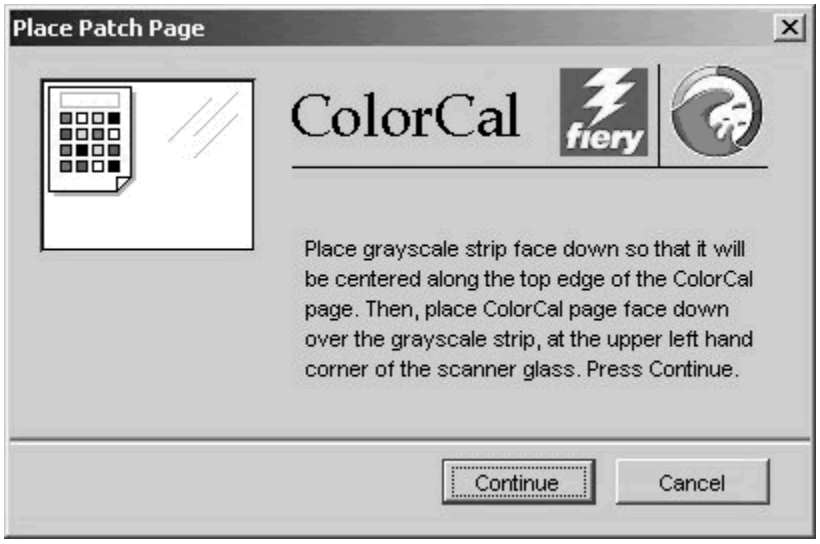
Kodak Grey Scale

Kodak Color Control Patches

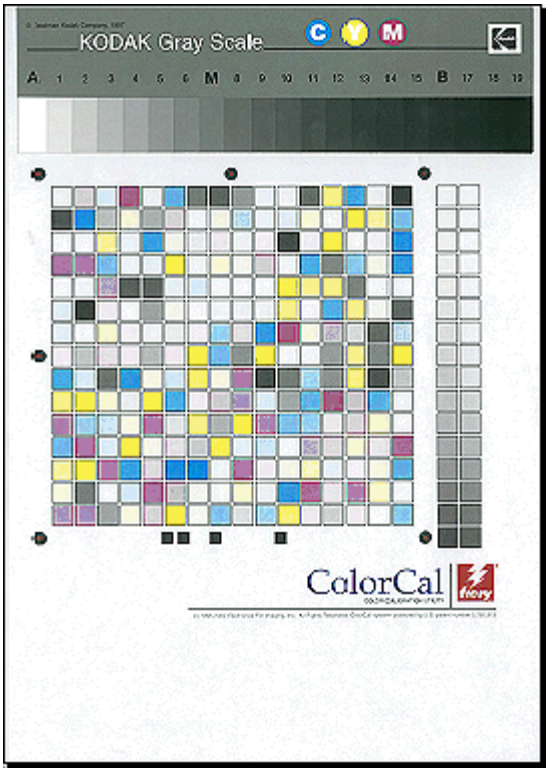
Now place the Kodak Gray Scale, Kodak Color Control patches and Scanner Calibration Page face down on the scanner glass and press the Continue button in the previously mentioned Scanner Calibration Setup window. The following screens will appear sequentially.



Press the Continue button in the previous Information window. The following screen will appear.

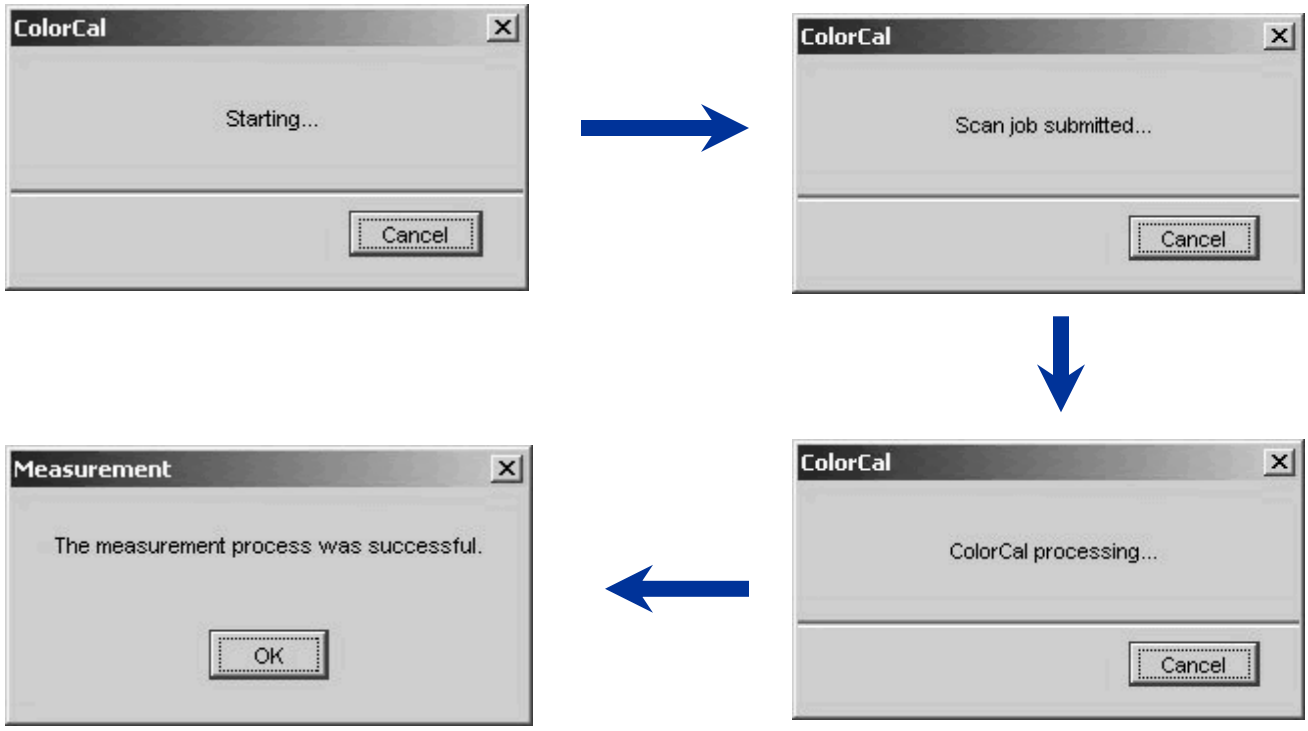


Place the Kodak Gray Scale strip face down on the scanner glass and place the ColorCal Measurement Page face down on top of the strip (as shown below).

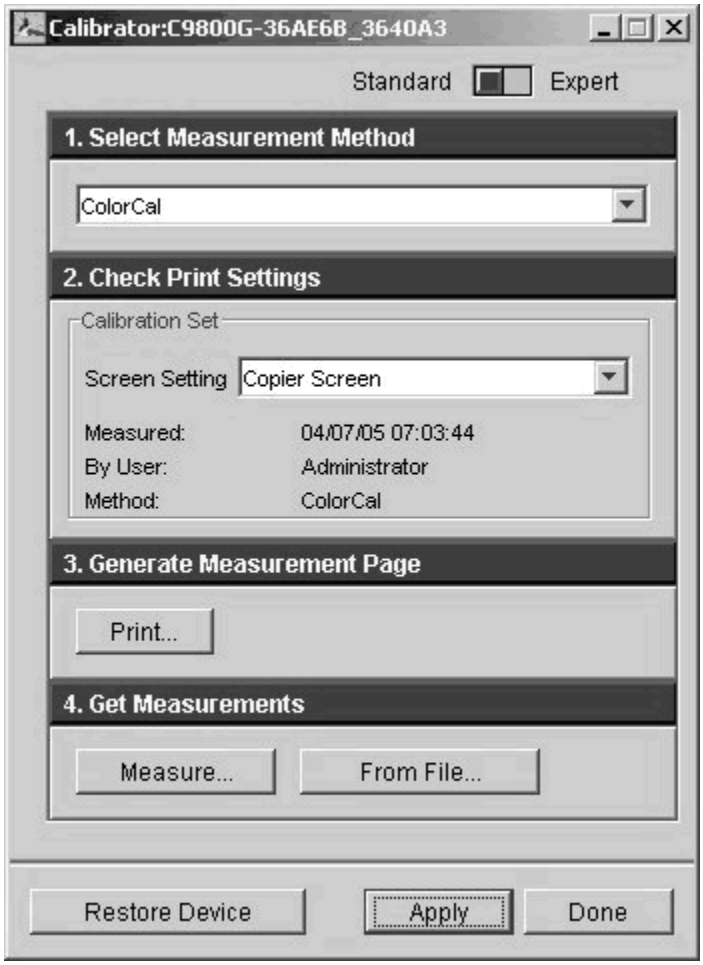


Kodak Grey Scale

Press the Continue button in the Place Patch Page window (shown in instruction 11). The following screens will appear sequentially.

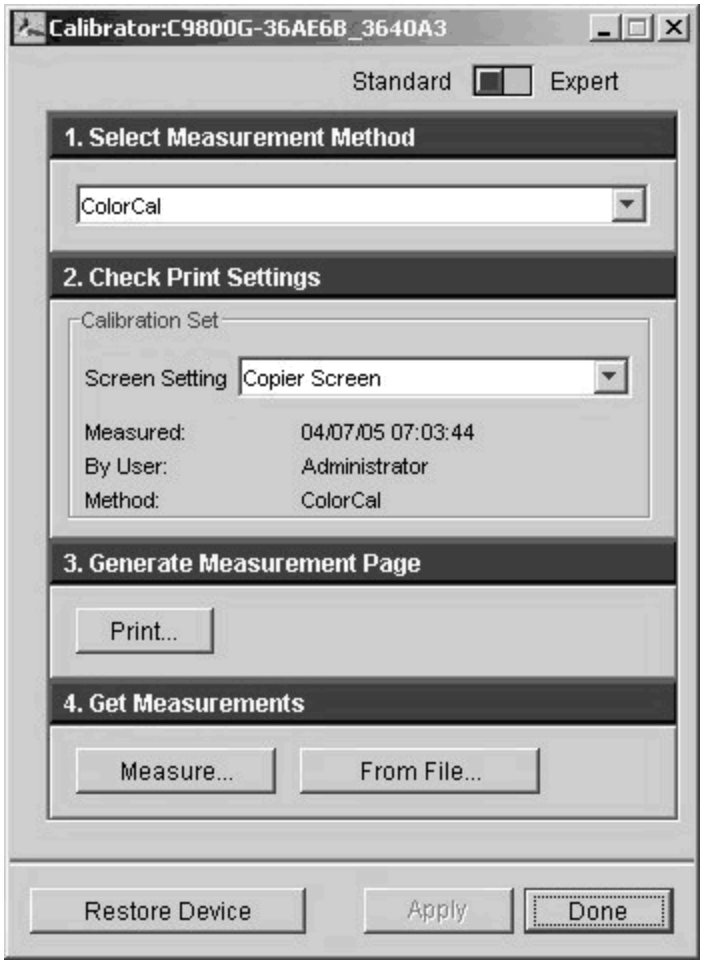


Press the OK button in the above Measurement window. The following screen will appear.



Press the Apply button in the above window. The following will appear.

Press the OK button in the above Information window. The following will appear.



Press the Done button in the above window.

The Scanner and the Printer have now been successfully calibrated.

Calibrating the Auto Media Detection Sensor

The auto media adjustment procedure is a two step process. There is a rough and fine adjustment that needs to be made. Both of these steps should be performed when doing the calibration.

Tools Needed

Pre-Measured Transparency Pack P/N 42527801

Reasons that a calibration should be done

1. When replacing the Paper Thickness Sensor, Registration Roller and PU PCB.
2. If the sensor is suspected of being out of calibration.
3. Printer exhibits a "Non Paper Sense" error or "Paper Too Thick" error.

- Media not fusing properly when the media setting is left at Auto, but fuses fine if a specific media setting is selected.

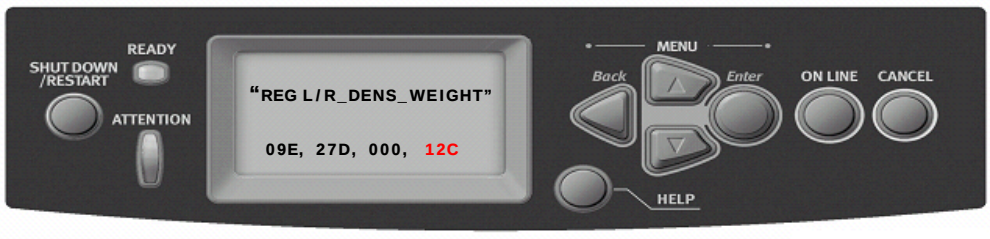
Rough Adjustment

Enter Service Mode by holding down the menu up / menu down and help buttons **at the same time** while powering up the machine. (This may take up to 60 seconds.)

The System Maintenance Menu will appear. Down arrow to "Diagnostics" and press "Enter". From Diagnostic Mode Down arrow to "Switch Scan" and press "Enter". Up arrow until "REG L/R_DENS_WEIGHT" appears and select "Enter".

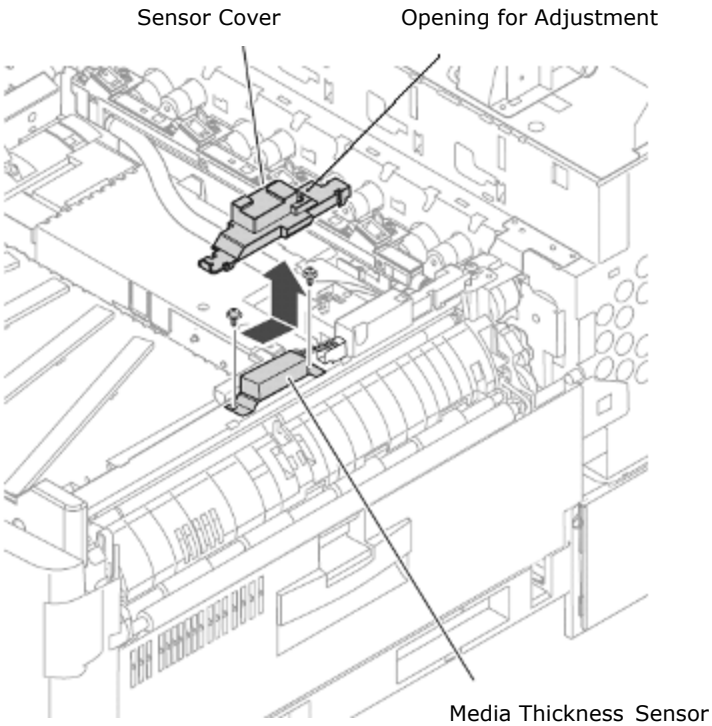
Four Hexadecimal number sets will be displayed. The Rough Adjustment is the 4th number.

Example: 09E, 27D, 000, 12C)



Adjust the 4th number as close to the desired 12C as possible (acceptable range: 10E ~ 13E) by rotating the adjustment screw (See illustration below).

Press the Back button three times to exit diagnostic mode, and restart the printer.



Fine Adjustment

Re-enter Service Mode using the above procedure.
Press the Menu Down button to "Diagnostic Mode" and select "Enter".

Press the Menu Up button to "MEDIA WEIGHT ADJ PA" and select "Enter".

The display should now read "EDIT THICKNESS DATA", select "Enter".

"THICKNESS SAMPLE PAGE P=3" should be displayed.

Press the Menu up button and the display should now read:

"PAPER THICKNESS=:P1"
"T=100um OFFSET=0000H"

At this point the measurements of all 4 transparency sheets are going to be entered.
*Note: all values to be entered are located on a label on each transparency.
Enter the Values as follows:

P=1	This is the top sheet when placed in the MP tray
P=2	This is the second sheet
P=3	This is the third sheet
P=CHK	This is the bottom sheet that is placed in the MP tray

To enter the value for P=1, press the Enter button so that the Ones unit columns begins flashing (example: T=110um, the digit in red will be flashing).

Use the Menu UP & Menu Down buttons to change the value of the Ones column.

Press the On Line button to change from the Ones to the Tens column (ex. T=110um), and again use the Menu Up & Menu Down buttons to change the value.

Last press the On Line button to change from the Tens column to the Hundreds (ex. T=110) column and once again use the Menu Up & Menu Down buttons to change the value.

Once the T value for P=1 is set correctly press the Enter button to exit the value adjustment.

Press the Menu Up button to change between P values, and repeat the steps above to enter the correct measurement values for P=2, P=3, & P=CHK.

Once all of the values are set correctly for all four transparency sheets, press the Back button so that the display now reads "EDIT THICKNESS DATA" again.

Press the Menu Up button so that the display reads "WEIGHT SCAN ADJ EXEC".

Place the stack of 4 transparency sheets in the MP tray so that they are stacked according to step 6.

Press the Enter button, and the unit should begin feeding all 4 sheets.

Once all 4 sheets are fed, the display should read OK in the top left corner.

Once OK is displayed the adjustment procedure is completed. If **FAIL** is displayed the Auto Media Sensor must be adjusted and/or replaced and the procedure must be done over.

Press the Back button twice, then press and hold the Shut Down/Restart button until the display says to power off, then cycle the printer power off/on.

Chapter 3

Troubleshooting Print Quality

3.1 Print-Quality Problems Overview

Print-quality defects can be attributed to printer components, consumables, media, internal software, external software applications, and environmental conditions. To successfully troubleshoot print-quality problems, eliminate as many variables as possible. The first step is to generate prints using printable pages embedded in the printer on paper from the Supported Media List. Use paper from a fresh, unopened ream that is acclimated to room temperature and humidity. If the print-quality defect is still present when printing on approved media, then investigate software applications and environmental conditions.

The printers use separate Imaging Units to develop a latent image for each color where the colors are combined on the Transfer Unit to form the final image. In most cases, print-quality defects are the result of one particular component in the print engine, **See the Repeating Defects chart**. When a single component of the Imaging Unit is causing a print quality defect, replace the Imaging Unit.

When analyzing a print-quality defect, first determine if the defect occurs in all colors or only one color and if it is repeating or random. Continuous defects in the **process direction**, such as voids and lines, are the most difficult to diagnose. Inspect the visible surfaces of all rollers for obvious defects. If no defects are observed, replace the Imaging Units, Transfer Unit, and Fuser one at a time until the defect is eliminated.

Defects Associated with Specific Printer Components

Some print-quality problems can be associated with specific assemblies, the most common problems and the associated assemblies are listed below. Also, refer to the printer's Troubleshooting Print-Quality Problems pages or a specific print-quality troubleshooting procedure for more information.

Imaging Unit

- Streaks in Process Direction (in the direction of feed, parallel with paper travel)
- Banding in Scan Direction (across the page, perpendicular to paper travel)
- Uneven Density
- Voids
- Repeating Defects
- Mis-registration

Transfer Unit

- Toner on the back side of the printed page (simplex mode)
- Light Prints
- Repeating Defects
- Mis-registration - only when there is obvious damage to the belt.

Fuser

- Hot or Cold Offsetting
- Repeating Defects
- Dark Streaks in Process Direction

LED Head

- Streaks in the Process Direction
- Uneven Density in the Scan Direction

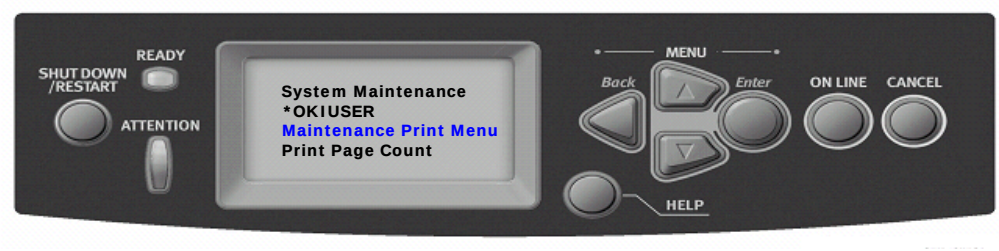
Test Prints

A variety of test prints are available to aid in determining the quality of output from the printer and to assist in troubleshooting. The next section shows how to generate and analyze test prints

3.2 Generating and Analyzing Control Panel Test Prints

Control panel test prints must first be enabled in service mode. Enter Service Mode by holding down the menu up / menu down and help buttons at the same time while powering up the printer unit. (This may take up to 60 seconds.)

Select "Maintenance Print Menu" – Select "Enter"

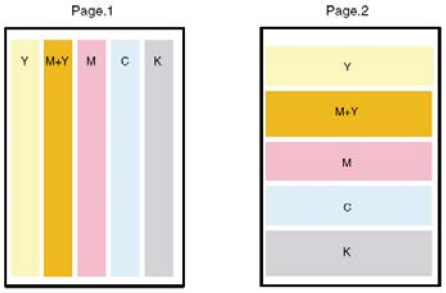


Select "Enable" – Select "Enter"

Select "Cancel" to exit service mode and restart server

To generate the "ID Check Pattern" test print select "Menu" arrow down to "Print Pages"

Arrow down to "ID Check Pattern" Select "Enter"



Things to observe when analyzing the ID Check Pattern test page include:

- Streaks in Process Direction (in the direction of feed, parallel with paper travel)
- Banding in Scan Direction (across the page, perpendicular to paper travel)
- Uneven Density
- Voids
- Repeating Defects
- Mis-registration

Note: Consult the "Repeating Defect Spacing Chart" below.

Repeating Defects Spacing

Component	Defect Spacing	Replace
Imaging Drum	94 mm (in.)	Imaging Unit
Developer Roller	49 mm (in.)	Imaging Unit
Charge Roller	37.4 mm (in.)	Imaging Unit
Supply Roller	102 mm (in.)	Imaging Unit
Fuser Belt	124 mm	Fuser
Heat Roller	87.3 mm (in.)	Fuser
Transfer Unit Belt	706 mm	Transfer Unit

Generating and Analyzing Service Test Prints

Generating and Analyzing 100% Solid Fill Test Pages

These prints consist of 100% solid fill in CMYK. Each color can be selected individually or in combinations.

Enter Service Mode by holding down the menu up / menu down and help buttons at the same time while powering up the printer unit. (This may take up to 60 seconds.

The System Maintenance Menu will appear. Down Arrow to “Diagnostic Mode” and press “Enter” Down arrow to “Test Print” and Select “Enter”

“Print Execute” will appear. Down arrow to “Output Bin”

Select “Enter” - Select either “Face Up” or “Face Down” – Select “Enter”

Page down to “Job Offset” - Select “Enter” - Select “off” - Select “Enter”

Page down to “Duplex”- Select “Enter”- Select “Off”- Select “Enter”

Page down to “Color”- Select “On”

Select “On Line” Key. Screen will appear where you can select each color to print. Use the “ON Line” Key to turn off all colors you do not wish to print. Example: for a “Magenta” print, turn off “Yellow”, “Cyan”, and “Black”. To turn “On” / “Off” the individual colors use the “On Line” key. Once the desired color menu is set, Select “Enter”

Page down to “Page” – Select “Enter”. Select the number of prints desired – Select “Enter”

Page down to “Cassette” – Select “Enter” Select Tray 1,2,3,4, or MPT – Select “Enter”

Page down to “Test Pattern” – Select “Enter”

Select “Test Pattern 7” – Select “Enter”

Page down to “Print Execute” – Select “Enter” to print selected test page

Things to observe when analyzing the 100% fill test page include:

2	Wrinkling
3	Creases
4	Roller marks
5	Scratches
6	Repeating defects or banding
7	Missing Color(s)
8	Streaks
9	Voids

1. Consistent fills in each color. Each color should be consistent across the page with no voids.
2. Look for thin white lines that would indicate a dirty LED lens or a scratched Imaging Unit.
3. Look for dark lines that would indicate a dirty or damaged Imaging Unit.
4. Look for complete fusing. Cold or hot offset fusing could indicate the incorrect paper weight has been selected.

Generating and Analyzing 25% Color Fill Test Pages

The following print consists of 25% fill in CMYK. Follow the service mode procedure above and select Test Pattern # 2.

Things to observe when analyzing the 25% fill test page include:

3	Repeating defects or banding
4	Missing Color(s)
5	Streaks
6	Voids

1. Consistent fills in each color. Each color should be consistent across the page with no voids.

2. Look for thin white lines that would indicate a dirty LED lens or a scratched Imaging Unit.

3. Look for dark lines that would indicate a dirty or damaged Imaging Unit.

4. Look for complete fusing. Cold or hot offset fusing could indicate the incorrect paper weight has been selected.

Generating and Analyzing Print Engine Test Prints

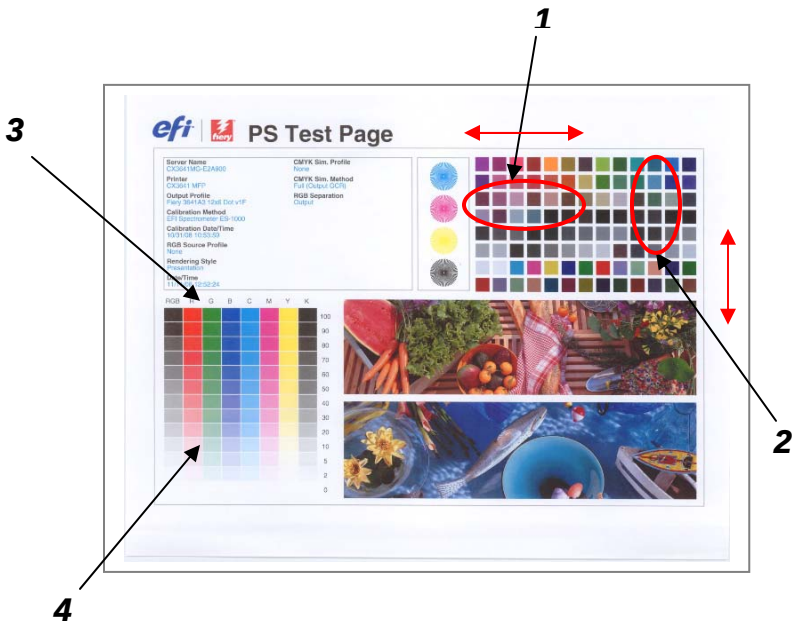
Analyzing the PS Test Pattern

1. Color Registration (Horizontal):
The colored lines should match up.

2. Color Registration (Vertical):
The colored lines should match up.

3. Uniform RGB / CMYK:
color squares should be uniformly colored with no mottling.

4. Density:
The color bars should have even density from top to bottom.



Analyzing the Demo Page

Compare with previous Demo page that was left with the service log during the previous service visit and observe the following:

- Consistent fills in all colors.
- thin white lines
- dark lines
- Color registration

Comparing with the previous Demo page will ensure consistent output that will match the customer's expectations.

3.3 Print-Quality Troubleshooting Practices

Initial Actions to perform prior to using any of these troubleshooting procedures.

Ask specific questions of the operator to determine actual problem

Generate Configuration Pages to ascertain if all updates are installed, consumable life and to use for reference after changes are performed

Generate ID Check Pattern test print, PS Test Page, and Demo Page

Follow Standard Preventative Maintenance procedures and clean the printer

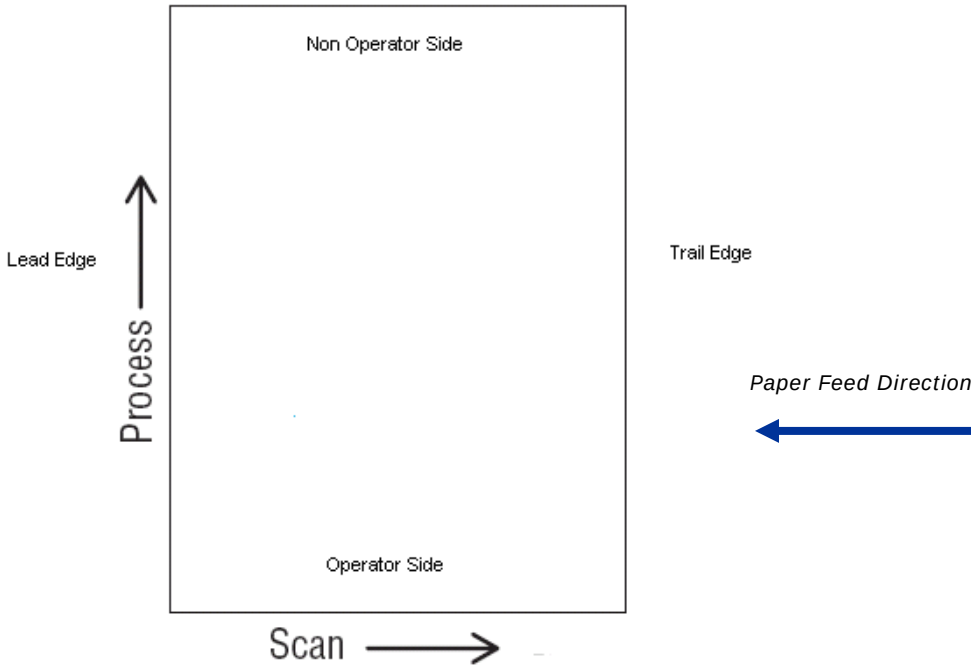
Verify the media used is supported by the printer.

Verify the media settings are correct at the Control Panel.

Print the PS Test and Demo pages to see if it is an application problem.

Run the color calibration routine from **Chapter 2**

Note: For troubleshooting purposes it is important to note the direction of paper feed in the printer to establish if the problem is a **process issue** or a **scan issue**. Use the diagram below as a basis to determine orientation. For troubleshooting purposes this document will assume all issues have been fed in the LEF (long edge feed) or Letter direction.



Final Actions to perform after using any of these troubleshooting procedures.

- Perform printer and scanner calibrations from printer and through Command Workstation
- Generate Configuration Page and attach to the Service Log
- Generate PS Test Page, and Demo Page and attach to the Service Log

Light Prints in All Colors

The overall image density is too light in all colors. If the image is light in only one color, see "Light Print in Only One Color".

Initial Actions to Perform

☐ Perform Initial Actions from Print Quality Troubleshooting Practices
☐ Verify the media used is supported by this printer.
☐ Verify the media settings are correct at the Control Panel.
☐ Print the PS Test and Demo pages to see if it is an application problem.
☐ Run the color calibration routine

Areas of the Printer that Apply to Light Prints

☐ Imaging Unit
☐ LED Head
☐ Transfer Unit
☐ HVPS
☐ Engine Control Board

Troubleshooting Steps	Resolution
1. Verify all packaging material has been removed form the toner cartridges	Yes – Go to Step 2 No - Remove packing material
2. Remove the Imaging Units and the Transfer Unit and check for toner contamination on the high voltage contacts. Are the contacts contaminated?	Yes – Clean the contacts No - Go to Step 3
3. Are the LED Heads dirty? Clean the heads with a clean, lint-free cloth. Did this correct the problem?	Yes – Complete No - Go to Step 4
4. Are the wiring harnesses on the LED Heads undamaged, properly routed and seated?	Yes – Repair / Replace Harnesses No - Go to Step 5
5. Inspect the high-voltage wiring harness. Reseat the wiring Harness. Did this correct the problem?	Yes – Complete No - Replace in the following order: Transfer Unit / LVPS / Imaging Unit Sensor Board / HVPS / Engine Control PCB

Light Print in Only One Color

Only one color; yellow, magenta, cyan, or black, is too light on the printed image.

Initial Actions to Perform

☐ Perform Initial Actions from Print Quality Troubleshooting Practices
☐ Verify that color calibration has been performed prior to using this troubleshooting procedure.
☐ Check that the Toner Cartridge pull strip is completely removed from the affected color.

Areas of the Printer that Apply to Light Print in Only One Color

☐ Imaging Unit
☐ LED Head
☐ Engine Control Board
☐ Toner Supply

Troubleshooting Steps	Resolution
1. Verify all packaging material has been removed form the toner cartridges	Yes – Go to Step 2 No - Remove packing material
2. Print the 100% Solid Fill test print. Can the problem be isolated to one primary color?	Yes – Go to Step 3 No - "Light Print in Only One Color"
3. Remove the Toner Cartridge and check for toner starvation in the Imaging Unit. Is there evidence of toner starvation	Yes – Replace the Toner Cartridge No - Go to Step 4
4. Remove the Imaging Units and the Transfer Unit and check for toner contamination on the high voltage contacts. Are the contacts contaminated?	Yes – Clean the contacts No - Go to Step 5
5. Are the LED Heads dirty? Clean the heads with a clean, lint-free cloth. Did this correct the problem?	Yes – Complete No - Go to Step 6
6. Swap the LED Head of the problem color with any other LED Head. Print a Solid Fill Test Pattern. Has the problem moved with the LED Head?	Yes – Replace the LED Head No - Go to Step 7
7. Are the wiring harnesses on the LED Heads undamaged, properly routed and seated?	Yes – Reseat the wiring Harnesses No - Replace in the following order: Transfer Unit / LVPS / Engine Control PCB

Blank Prints

Initial Actions

☐ Perform Initial Actions from Print Quality Troubleshooting Practices
☐ Run a test print to help isolate the problem between the Fiery Control Board and the Engine Control Board.

Areas of the Printer that Apply to Blank Prints

☐ Imaging Unit
☐ LED Head
☐ Engine Control Board

Troubleshooting Steps	Resolution
1. Print a 100% Solid Fill Test Print from the printer's Control Panel. Is the entire test print blank?	Yes – Go to Step 2 No - Have the customer check there application and printer settings.
2. Remove the Toner Cartridge and check for toner starvation inside the Imaging Unit. Is there evidence of toner starvation?	Yes – Replace the Toner Cartridge. No - Go to Step 3
3. Are the LED Heads dirty? Clean the heads with a clean, lint-free cloth. Did this correct the problem?	Yes – Complete No - Go to Step 4
4. Are the wiring harnesses on the LED Heads undamaged, properly routed and seated?	Yes – Repair / Replace Harnesses No - Go to Step 5
5. Inspect the high-voltage wiring harness. Reseat the wiring Harness. Did this correct the problem?	Yes – Complete No - Replace in the following order: Transfer Unit / LVPS / Imaging Unit Sensor Board / HVPS / Engine Control PCB

Mottled or Splotchy Prints

The print image has a mottled appearance.

Note: This defect is known to occur when manually duplexing, at low humidity, and when printing on heavy weight media.

Initial Actions

☐ Perform Initial Actions from Print Quality Troubleshooting Practices

Areas of the Printer that Apply to Mottled or Splotchy Prints

☐ Imaging Unit
☐ LED Head
☐ HVPS
☐ Engine Control Board

Troubleshooting Steps	Resolution
1. Ensure the media is approved and the Control Panel and driver settings match the loaded media. Try different media to verify consistent, reproducible problem.	Yes – Go to Step 2 No - Have the customer load approved media or correct the settings.
2. Print the configuration page to verify the operating environment. NOTE: Low humidity, less than 20% relative humidity can cause mottling on prints.	Yes – Go to Step 3 No - Advise customer regarding the printer's environmental specifications.
3. Check for toner contamination on the high voltage contacts. Remove the Imaging Units and Transfer Unit. Is there contamination?	Yes – Clean the contacts No - Go to Step 4
4. Check / Replace the Transfer Unit. Is the problem resolved?	Yes – Complete No - Replace in the following order: LVPS / HVPS / Engine Control PCB

Unexpected Colors

The colors produced by the printer are dramatically different from the color expected.

Initial Actions

☐ Perform Initial Actions from Print Quality Troubleshooting Practices

Areas of the Printer that Apply to Unexpected Colors

☐ Imaging Unit
☐ HVPS
☐ Engine Control Board

Troubleshooting Steps	Resolution
1. Print the ID Check Pattern / Demo / PS Test Page and evaluate the colors. Are the colors on the test pages representative of what the customer expects?	Yes – Complete, the problem is with the Customer application. No - Go to Step 2.
2. Print a configuration page to check the Imaging Unit life remaining. If the Imaging Unit is reaching it's maximum image count, this can reduce print-quality.	Yes – replace the Imaging Unit. No - Go to Step 3.
3. Print the 100% Solid Fill Test pattern and check for any missing colors. Is the problem with a single color?	Yes –Go to Step 4. No - Go to Step 6
4. Is there debris or contamination on the LED Head?	Yes – Clean them with a dry, lint free cloth. No - Go to Step 5
5. Swap the LED Head of the problem color with any other LED Head. Print a Solid Fill Test Pattern. Has the problem moved with the LED Head?	Yes – Replace the defective LED Head No – Go to Step 6
6. Swap the Imaging Unit of the problem color with any other Imaging Unit. NOTE: Remove the keys before swapping. Print a Solid Fill Test Pattern to check for defects. Has the problem color moved with the Imaging Unit?	Yes – Replace the Imaging Unit No - Go to Step 7.
7. Check for toner contamination on the high voltage contacts. Remove the Imaging Units and the Transfer Unit and Is there contamination on the contacts?	Yes – Clean the contacts. No - Go to Step 8.
8. Are the wiring harnesses on the LED heads undamaged, properly routed and seated?	Yes – Go to Step 9. No - reseat the wiring harness.
9. Inspect the high-voltage wiring harness.	Yes – reseat the wiring harness. No - Replace in the following order: Transfer Unit / LVPS / Imaging Unit Sensor Board / HVPS / Engine Control PCB

Repeating Bands, Lines, Marks, or Spots

This is usually caused by a damaged roller. In some instances, the spots may be dark instead of white and are repeated.

Initial Actions

☐ Perform Initial Actions from Print Quality Troubleshooting Practices
☐ Print the Color Test pages to identify the color causing the defect.
☐ Print multiple pages, and then measure the defect and compare it to the Repeating Defects table (Below) to identify the problem component.

Areas of the Printer that Apply to Repeating Bands, Lines, Marks, or Spots

☐ Imaging Unit
☐ Fuser
☐ Transfer Unit

Note: Consult the "Repeating Defect Spacing Chart" below.

Repeating Defects Spacing

Component	Defect Spacing	Unit to Replace
Imaging Drum	94.0-94.25 mm	Imaging Unit
Developer Roller	49.0-49.60 mm	Imaging Unit
Charge Roller	37.4-44.0 mm	Imaging Unit
Supply Roller	55.8-57.8 mm	Imaging Unit
Fuser Roller	87.3-87.6 mm	Fuser
Transfer Roller	57.8 mm	Transfer Unit
Transfer Unit Belt	706 mm	Transfer Unit

Random Bands, Lines, Marks, or Missing Spots

There are areas of the image extremely light or are missing entirely and do not appear to be a repeating defect or in a single color.

Caution

Leaving an Imaging Unit exposed to light for periods in excess of 10 minutes can quickly degrade its performance and result in early failure.

Initial Actions

☐ Perform Initial Actions from Print Quality Troubleshooting Practices

☐ Using a flashlight, carefully examine the area around the Imaging Units and the openings between the Imaging Units and LED Heads. Small obstructions, such as hair or fibers, can create streaks

☐ When troubleshooting, print a test print on at least letter size paper for diagnosing this problem. The problem may be a repeating defect that is not noticeable on smaller media.

☐ Random missing spots can also be associated with "Cold Offset", which lifts toner off the page in certain areas. Usually this will occur in high-coverage areas where the fuser temperature is not high enough to fuse the toner on the media. This causes toner to be re-deposited further down the page.

Areas of the Printer that Apply to Random Bands, Lines, Marks, or Missing Spots

☐ Imaging Unit
☐ Fuser
☐ Transfer Unit
☐ Engine Control Board

Troubleshooting Steps	Resolution
1. Check for obstructions between the LED Heads and the Imaging Units. Remove the Imaging Unit and inspect each Drum and corresponding area. Remove any debris.	Yes – Remove the obstruction or debris. No - Go to Step 2.
2. Replace the Imaging Unit. Does the image quality improve?	Yes – Complete. No - Go to Step 3.
3. Replace the Transfer Unit. Does the imaging quality improve?	Yes – Complete. No - Go to Step 4.
4. Replace the Fuser. Does the image quality improve?	Yes – Complete. No - Go to Step 5.
5. Replace the LED Head. Does the image quality improve?	Yes – Complete. No – Replace the engine PCB.

Random Spots

There are spots of toner randomly scattered across the page. Toner melting off the Fuser thermistors can also place random spots onto prints.

Initial Actions

☐ Perform Initial Actions from Print Quality Troubleshooting Practices
☐ Verify the Imaging Unit, Fuser, and Transfer Unit are not at or near end of life. Waste toner, especially from the Transfer Unit, can cause random spots to appear on the page.

Note
Depending on the type of paper and environmental conditions, some light amount of random background spotting is normal. The whiter and glossier the paper, the more noticeable it will be.

Areas of the Printer that Apply to Random Spots

☐ Imaging Unit
☐ Fuser
☐ Transfer Roller

Troubleshooting Steps	Resolution
1. Is there toner spilled inside the printer?	Yes – Vacuum inside the printer and remove all visible toner. No - Go to Step 2.
2. Check the media for spots or contamination that exists prior to printing. Try printing on a different media, not a glossy media.	Yes – Replace with fresh paper. No - Go to Step 3.
3. Print the Color Test Pages to determine which primary color(s) are spotting or missing. Is the problem with one color?	Yes – Replace the Imaging Unit No - Go to Step 4.
4. Run the SMR (Smears) and BG (Background) from the printer's Control Panel. Did this fix the problem?	Yes – Complete. No - Go to Step 5.
5. Inspect the Fuser. Is there dirt, debris, or contamination on the Fuser housing or rollers?	Yes – Clean the Fuser No – Replace the Fuser.

Background

There is a very light covering of toner across the entire page. Background contamination can appear in one of the primary colors or gray. The printer displays no error code.

Note

Depending on the type of paper and environmental conditions, some light amount of random background spotting is normal. The whiter and glossier the paper, the more noticeable it will be.

Initial Actions:

☐ Perform Initial Actions from Print Quality Troubleshooting Practices

☐ Ask the customer about their typical printing habits. A high daily duty cycle can temporarily fatigue the OPC drums within the Imaging Unit and contribute to unwanted background toner.

Areas of the Printer that Apply to Background Issues

☐ Imaging Unit ☐ Fuser ☐ Transfer Unit ☐ HVPS ☐ Engine Control Board

Troubleshooting Steps	Resolution
1. Is the printer in direct sun light?	Yes – Move the printer. No - Go to Step 2.
2. Does the background appear to be in only one of the primary colors?	Yes – Go to Step 3. No - Go to Step 4.
3. Check the Imaging Unit drum for toner contamination. Remove the Imaging Unit of the problem color. Is there a film of toner across the surface of the drum?	Yes – Replace the Imaging Unit. No - Go to Step 4.
4. Verify the printer is operating within its environmental specifications. Low humidity increases the degree of background toner.	Yes – Go to Step 5. No - Advise the customer of the environmental specifications.
5. Check the Transfer Unit belt. Is the background contamination a mixture of colors and excessive? Is the Transfer Unit belt contaminated with toner?	Yes – Replace the Transfer Unit. No - Go to Step 6.
6. Is the customer printing on high-gloss media?	Yes – Advise the customer of the limitation of this printer. No - Go to Step 7.
7. Check minimum clearances around the printer especially sides and back as it can cause heat buildup. Are clearances within specifications?	Yes – Go to Step 8. No - Advise customer.
8. Test the Fans. Heat build-up under the Imaging Units can cause toner to stain the background. Are the fans operating correctly?	Yes – Go to Step 9. No - Replace the defective fan.
9. Check that the Imaging Unit contacts are in working condition and clean.	Yes – Clean the or replace the drum contacts. No - Go to Step 10.
10. Remove the Imaging Units and the Transfer Unit and check for toner contamination on the high voltage contacts.	Yes – Clean the contacts. No - Replace in the following order: Transfer Unit / HVPS

Ghosting or Hot Offset

There are faint, ghostly images appearing on the page. The images may be either from a previous page or from the current page. **This type of artifact can be related to the percent coverage called out in the file being printed. If the colors are offset by less than 10 mm, this represents mis-registration, not ghosting.**

Ghosting: This can be the Imaging Unit (green roller) where a residual image is left on the green film, which is then deposited further down the page. This is most noticeable on images that have a dark background with light text. The text is ghosted down the page at **94 mm** intervals. This is caused by a defective Imaging Unit. Ghosting every **49 mm** is caused by the developer roller and is a limitation of the design; therefore, technicians should not replace Imaging Units for this type of ghosting.

Hot Offset: This can be characterized by a repeating image every **87.3 mm** or **124 mm**. The Fuser temperature is set too high for the given media and the toner adheres to the Fuser rollers causing the image to be deposited further down the page or on the following pages. Offsetting occurs on media if the fuser's temperature setting does not match the media type loaded in the tray.

Initial Actions:

☐ Perform Initial Actions from Print Quality Troubleshooting Practices
☐ Verify the correct media type is set at the Control Panel
☐ Print an internal test page to see if ghosting appears there as well.
☐ Try printing with fresh media from a recently opened ream.

Areas of the Printer that Apply to Ghosting or Hot Offset

☐ Imaging Unit	☐ Fuser	☐ Transfer Unit
☐ LVPS	☐ Temp/Humidity Sensor	☐ Engine Control Board

Troubleshooting Steps	Resolution
1. Refer to the Repeating Defects Chart and compare to the customer's print to determine if the defect is Fuser or Imaging Unit related. Is the defect repeating at 94 mm?	Yes – Replace the Imaging Unit. No - Go to Step 2.
2. Run some blank pages through the printer to clean the fuser. Did this correct the problem?	Yes – Complete. No - Go to Step 3.
3. Check the media settings. Is the setting correct for the media loaded in the tray?	Yes – Go to Step 4. No - Advise the customer of the correct media settings.
4. Try setting the Control Panel media type to the **next lightest** type of paper than that loaded in the tray. Did this correct the problem?	Yes – Advise customer of the appropriate media type selection. No - Go to Step 5.
5. Remove the Fuser covers and inspect the thermistor for debris between it and the rollers. Is there any debris build-up?	Yes – Replace the Fuser. No - Go to Step 6.
6. Print a test print and monitor the Fuser temperature with Service Diagnostics. Is the temperature within its optimal range?	Yes – Replace the Fuser. No - Replace the Engine Control Board

Incomplete Fusing or Cold Offset

The Fuser temperature is set too low for the media loaded in the tray causing improper fusing resulting in the toner rubbing off easily.

Initial Actions:

☐ Perform Initial Actions from Print Quality Troubleshooting Practices
☐ Verify the correct media type is set at the printer's Control Panel.

Areas of the Printer that Apply to Incomplete Fusing or Cold Offset

☐ Fuser
☐ Media Thickness Sensor

Troubleshooting Steps	Resolution
1. Remove the Fuser covers and inspect for debris between the rollers. Is there dirt or debris wrapped around or on the Fuser rollers?	Yes – Replace the Fuser. No - Go to Step 2.
2. Set the media type to the **next heaviest setting** than the type loaded. Did this correct the problem?	Yes – Advise customer on appropriate media type selection. No - Go to Step 3.
3. Print a test print and monitor the Fuser temperature with Service Diagnostics. Is the temperature within its optimal range?	Yes – Replace the Fuser. No - Replace in this order: Engine Control Board / LVPS

Mis-Registration, Color Layers Not Correctly Registered

The image appears blurred and the primary colors are not aligning correctly into one image. For a page oriented Long-Edge Feed, the following applies:
☐ If the colors are shifted from left to right, this is mis-registration in the **process direction.**
☐ If the colors are shifted from top to bottom, this is mis-registration in the **scan direction.**

Initial Actions:

☐ Perform Initial Actions from Print Quality Troubleshooting Practices
☐ If the mis-registration is in the horizontal direction, perform the color registration adjustment
☐ If the mis-registration is in the vertical direction, clean the Sensor.

Areas of the Printer that Apply to Mis-Registration

☐ Imaging Unit
☐ LED Heads
☐ Color Registration Sensors
☐ Transfer Unit
☐ HVPS
☐ Image Processor Board
☐ Engine Control Board

Troubleshooting Steps	Resolution
1. Cycle power to the printer. Did this correct the problem?	Yes – Complete No - Go to Step 2.
2. **Process Direction:** Remove the Imaging Units and Transfer Unit. Inspect the Color Registration Sensors for dirt, debris or toner build-up. Are the sensors clean?	Yes – Go to Step 3. No - Clean the sensors.
3. Check the Color Registration Shutter. Run the Service Diagnostics Registration Shutter test. Is the shutter functioning correctly?	Yes – Go to Step 4. No - Replace the solenoid and wiring harness.
4. Inspect the Transfer Unit for tears or damage on the edges of the belt. Is the belt damaged?	Yes – Replace Transfer Unit. No - Go to Step 5.
5. Check the Imaging Unit drive gears for missing or worn gear teeth. Run the Service Diagnostics Imaging Unit Motors tests to visually inspect the gears. Are the gears working correctly?	Yes – Go to Step 6. No - Replace the Imaging Unit Drive Gear.
6. Replace the Registration Sensor Board. Did this fix the problem?	Yes – Complete. No - Go to Step 8.
7. Replace the Engine Control Board EEPROM. Did this fix the problem?	Yes – Complete. No - Replace the Engine Control Board
8. **Scan Direction:** Use the configuration page to identify the problem color. Remove the Imaging Unit of the suspect color. Inspect the grounding shaft. Has the shaft shifted?	Yes – Replace the Imaging Unit. No - Go to Step 9.
9. Check the Imaging Unit guides for debris or damage. Are the guides damaged or obstructed?	Yes – Clean the guides on the chassis or Replace the damaged assembly. No - Go to Step 10.
10. Check the Color Registration Sensors for dirt or debris. Be sure to check in and around the registration shutter.	Yes – Clean the sensor. No - Go to Step 11.
11. Check the Color Registration Shutter. Run the Service Diagnostics Registration Shutter test. Is the shutter functioning correctly?	Yes – Go to Step 12. No - Replace the solenoid and wiring harness.

12. Are the LED Head ribbon cables undamaged, properly routed and seated?	Yes – Go to Step 13. No - Reseat, correctly route or replace the wiring harness.
13. Swap the LED Head of the problem color with any other LED Head. Print a Supplies page. Has the problem moved with the LED Head?	Yes – Replace the defective LED Head No - Go to Step14.
14. Replace the Registration Sensor Board. Did this fix the problem?	Yes – Complete. No - Go to Step15.
15. Replace the Engine Control Board EEPROM. Did this fix the problem?	Yes – Complete. No - Replace the Engine Control Board

Toner on Back of Print

There is toner on the back of the printed sheet of paper.

Initial Actions:

☐ Perform Initial Actions from Print Quality Troubleshooting Practices

Areas of the Printer that Apply to Toner on Back of Print

☐ Imaging Unit
☐ Transfer Unit

Troubleshooting Steps	Resolution
1. Check and clean the Exit Rollers and paper path for toner or debris. Does this correct the problem?	Yes – Complete. No - Go to Step 2.
2. Verify the printer is operating within its environmental specifications.	Yes – Go to Step 3. No - Advise customer on the specifications.
3. Inspect the Transfer Unit. Has the cleaning blade flipped or failing to clean the Transfer Unit?	Yes – Replace the Transfer Unit. No - Go to Step 4.
4. Select the "Special" media setting and experiment with alternate settings, such as the next heaviest or lightest paper type. Does this correct the problem?	Yes – Complete. No - Go to Step 5.
5. Test the Fuser. Print a test print and monitor the Fuser temperatures. Are temperatures within specification.	Yes – Replace Engine Control Board No - Replace the Fuser.

Image Not Centered or Positioned Correctly

The image is not centered on the page correctly

Initial Actions:

☐ Perform Initial Actions from Print Quality Troubleshooting Practices

Areas of the Printer that Apply to Image Not Centered or Positioned Correctly

☐ Imaging Unit
☐ Transfer Unit

Troubleshooting Steps	Resolution
1. Check the user's application and driver settings to ensure the problem is with the printer and not with the settings. 1. Print an internal page to verify the printer is functioning properly. 2. Check the tray setup settings and ensure Custom is set to Off. 3. Print from a different tray. 4. Clean the Pick and Feed Rollers. Is the problem with the printer?	Yes – Go to Step 2. No - Advise the customer of the problem with the application.
2. Are the paper guides set snugly against the paper?	Yes – Go to Step 3. No - Adjust the guides.
3. Verify the size of media reported by the printer is the actual size.	Yes – Go to Step 7. No - Go to Step 4.
4. Test the Paper Size Switches. Run the Service Diagnostics Paper Size Switch tests. Are the switches functioning correctly?	Yes – Go to Step 5. No - Go to Step 6.
5. Check the backside of the paper tray for proper movement of the paper size plate while adjusting the tray guides. Did the plate move with the guides?	Yes – Go to Step 7. No - Replace the tray.
6. Check the wiring harness to the Paper Size Switch for damage or defects. Is the wiring harness defective?	Yes – Replace the wiring harness. No - Replace in this order: Paper Size Switch, Engine Control Board, or Option Control Board.
7. Inspect the tray pick and feed rollers for dirt, debris or excessive wear.	Yes – Clean or replace the rollers. No – Go to Step 8.
8. Print a test print. Did the test pattern print correctly?	Yes – Replace the Fiery Control Board No – Replace Engine Control Board

Process Direction Bands, Voids, or Streaks

There are areas of the image that are extremely light or missing entirely. These missing areas form wide bands that run along the page parallel to the leading edge of the paper.

Initial Actions:

☐ Perform Initial Actions from Print Quality Troubleshooting Practices

Areas of the Printer that Apply to Process Direction Bands, Voids, or Streaks

☐ Imaging Unit
☐ Transfer Unit belt

Troubleshooting Steps	Resolution
1. Print the 100% Solid Fill Test print. Is the problem with one primary color?	Yes – Replace the defective Imaging Unit. No - Go to Step 2.
2. Is the paper wrinkled, dimpled or curled Indicating a high moisture content? Load a fresh ream of paper. Did this correct the problem?	Yes – Complete. No - Go to Step 3.
3. Print multiple pages. Do the defects correspond to a customer Replaceable Consumable?	Yes – See "Repeating Bands, Lines, Marks, or Spots" on page 17. No - Go to Step 4.
4. Inspect the Fuser housing for warping or damage.	Yes – Replace the Fuser. No - Replace the Engine Control Board

Scan Direction Bands, Voids, or Streaks

There are areas of the image that are extremely light or are missing entirely. The missing areas form bands that run along the page from the leading edge to the trailing edge in the direction of paper travel.

Initial Actions:

☐ Perform Initial Actions from Print Quality Troubleshooting Practices

Areas of the Printer that Apply to Scan Direction Bands, Voids, or Streaks

☐ Imaging Unit
☐ Transfer Unit belt
☐ LED Heads

Troubleshooting Steps	Resolution
1. Print the 100% Solid Fill test print. Are the missing bands in the process direction?	Yes – Go to Step 2. No - See "Process Direction Bands, Voids, or Streaks" on page 27.
2. Are there any obstructions, dirt or debris in the printer's paper path?	Yes – Clean or remove obstructions. No - Go to Step 3.
3. Clean the LED Heads with at dry, lint free cloth. Did this fix the problem?	Yes – Complete. No - Go to Step 4.
4. Remove the each Toner Cartridge and check for toner starvation within the Imaging Unit(s).	Yes – Replace the Toner Cartridge. No - Go to Step 5.
5. Swap the LED Head of the problem color with any other LED Head. Print a Solid Fill Test Pattern. Has the problem moved with the LED Head?	Yes – Replace the defective LED Head No - Go to Step 6.
6. Swap the Imaging Unit of the problem color with any other Imaging Unit. NOTE: Remove the keys before swapping. Print a Solid Fill Test Pattern to check for defects. Has the problem color moved with the Imaging Unit?	Yes – Replace the defective Imaging Unit. No - Go to Step 7.
7. Check the Fuser for damage.	Yes – Replace the Fuser. No - Replace the Engine Control Board

Scan Direction Dark Streaks

There are dark lines running parallel with the leading edge of the print.

Initial Actions:

☐ Perform Initial Actions from Print Quality Troubleshooting Practices

Areas of the Printer that Apply to Scan Direction Dark Streaks

☐ Imaging Unit
☐ Transfer Unit belt

Troubleshooting Steps	Resolution
1. Print the Color Test Pages. Does the problem occur in one primary color?	Yes – Replace the Imaging Unit of the defective color. No – Go to Step 2.
2. Inspect the Transfer Unit. Has the cleaning blade flipped or failing to clean the Transfer Unit?	Yes – Replace the Transfer Unit. No - Go to Step 3.
3. Inspect the Fuser rollers for contamination. Is the Fuser contaminated?	Yes – Replace the Fuser. No - Go to Step 4.
4. Print a test print Did the test pattern print correctly?	Yes – Replace the Fiery Control Board No - Replace Engine Control Board

Process Direction Lines or Streaks

There are dark lines running along the page in the direction of paper travel from the leading edge to the trailing edge. This is generally due to Fuser, paper path roller and/or exit guides contaminated with toner debris.

Initial Actions:

☐ Perform Initial Actions from Print Quality Troubleshooting Practices

Areas of the Printer that Apply to Process Direction Bands, Voids, or Streaks

☐ Imaging Unit
☐ Transfer Unit belt

Troubleshooting Steps	Resolution
1. Run the Remove Print Smears routine from the printers Control Panel. Did this fix the problem?	Yes – Complete No - Go to Step 2.
2. Are there any obstructions, dirt or debris in the printer's paper path? Check for toner spills.	Yes – Clean and remove obstructions. No - Go to Step 3.
3. Visual inspect the Imaging Units and rollers for damage.	Yes – Replace the Imaging Unit. No - Go to Step 4.
4. Clean the Fuser where paper enters. Did this fix the problem?	Yes – Complete No - Go to Step 5.
5. Verify the ribbon cables and wiring harnesses on the LED Heads are seated, connected and routed properly.	Yes – Go to Step 6. No - Reseat, re-route any damaged wiring harnesses.
6. Print a test print Did the test pattern print correctly?	Yes – Replace the Fiery Control Board No - Replace Engine Control Board

Chapter 4

Troubleshooting Paper Jams

4.1 Paper Jam Error Code Table

***Note - When a jam occurs, to display the error code, press the HELP button.**

Error Code Contents of the operator panel display Area where the jam has occurred

370 : Paper jam occurred around the duplex unit. Duplex unit (Rear area)

371 : Paper jam occurred around the duplex unit. Duplex unit (Middle area)

372 : Paper jam occurred around the duplex unit. Front Cover or Duplex unit (Front area)

373 : Paper jam occurred around the duplex unit Duplex unit (Rear area)

380 : Paper jam occurred in the paper path. Side Cover

381 : Paper jam occurred in the paper path. Top Cover (Under the drums)

382 : Paper jam occurred in the paper path. Top Cover (Fuser unit)

383 : Paper jam occurred in the paper path. Top Cover (Fuser unit or Duplex Entry)

384 : Paper jam occurred in the paper path. Top Cover (Fuser unit or Exit area)

390 : Paper jam occurred during the paper feed process. Multi Purpose Tray

391 : Paper jam occurred during the paper feed. Side Cover or Tray1

392 : Paper jam occurred during the paper feed. Side Cover or Tray2

393 : Paper jam occurred during the paper feed. Side Cover or Tray3

394 : Paper jam occurred during the paper feed. Side Cover or Tray4

395 : Paper jam occurred during the paper feed. Side Cover or Tray5

400 : Incorrectly sized paper has been used. Side Cover

401 : Multiple sheets of paper were fed through together. Side Cover

Errors in the 6xx range are User Clearable Errors. These errors indicate locations where paper remains in the printer after a jam. These errors do not reference the actual jam, which is referenced by 3xx errors.

631: Tray 1 Side Cover

632: Tray 2 Side Cover

633: Tray 3 Side Cover

634: Tray 4 Side Cover

635: Tray 5 Side Cover

637: MP Tray Side Cover

638: Paper Transport Path (Transfer Belt)

639: Paper Exit Path

640: Duplex Entry Path

641: Duplex Reversal Path

642: Duplex Transport Path

643: Finisher: Input Area

644: Finisher: Saddle Transport Path

645: Finisher Paper Stack Eject

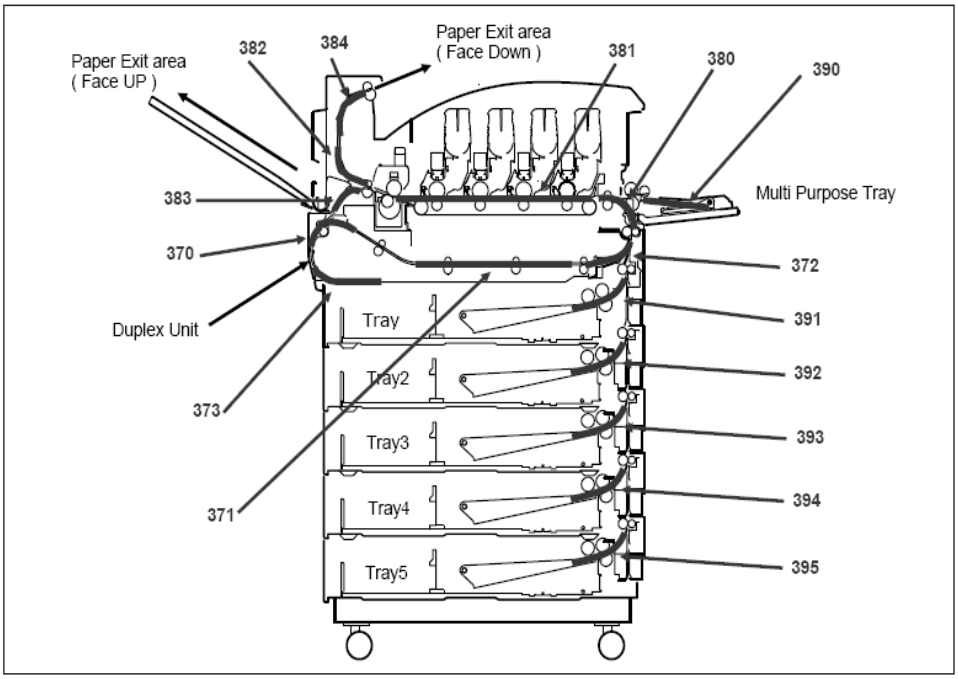
646: Saddle Stack Eject

647: Inverter: Paper Eject

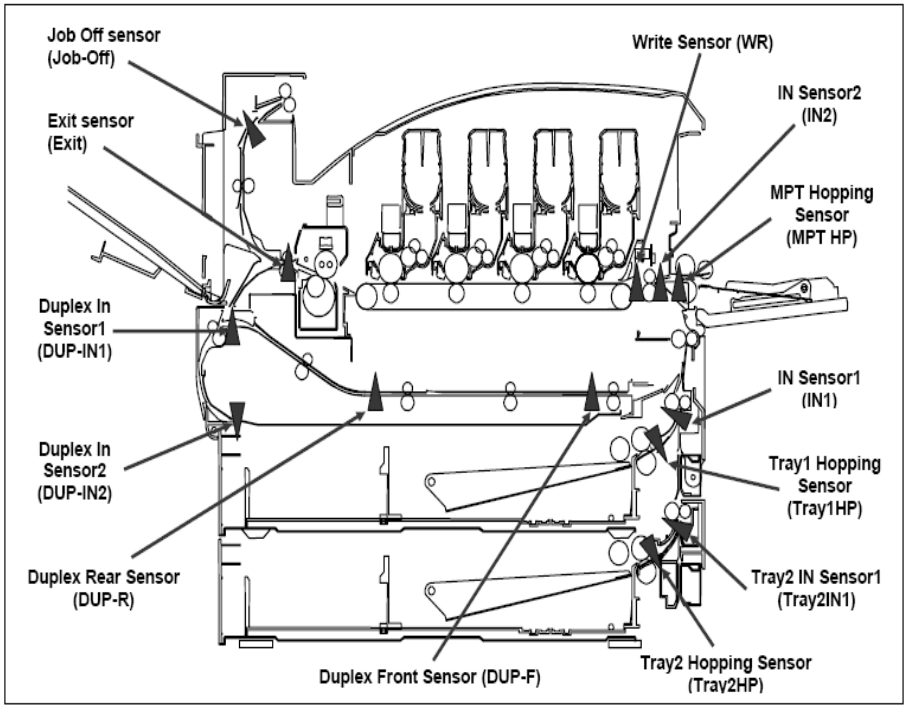
648: Inverter: Reverse Stacker Area

649: Inverter: Input Area

Area where paper jam has occurred



Names of various sensors and their locations



4.2 Jam Troubleshooting

370: Paper Jam

Condition Paper jam 370 occurs when the paper is inverted for double-sided printing.
1. The DUP-IN1 sensor does not change to OFF-state within the predefined time after it changed to ON-state.
2. The DUP-IN2 sensor does not change to ON-state within the predefined time after the DUPIN1 sensor changed to ON-state.
3. The DUP-R sensor does not change to ON-state after the paper was inverted in the duplex unit.

The printer stops printing immediately when the jam occurs.

Cause

1. Transport rollers cannot transport paper because they have become dirty with paper dust, toner, etc.
2. A piece of paper, foreign substance, etc., has got stuck in the DUP-IN1, 2 or DUP-R sensor lever.
3. DUP-IN1, 2 or DUP-R sensor motion failure

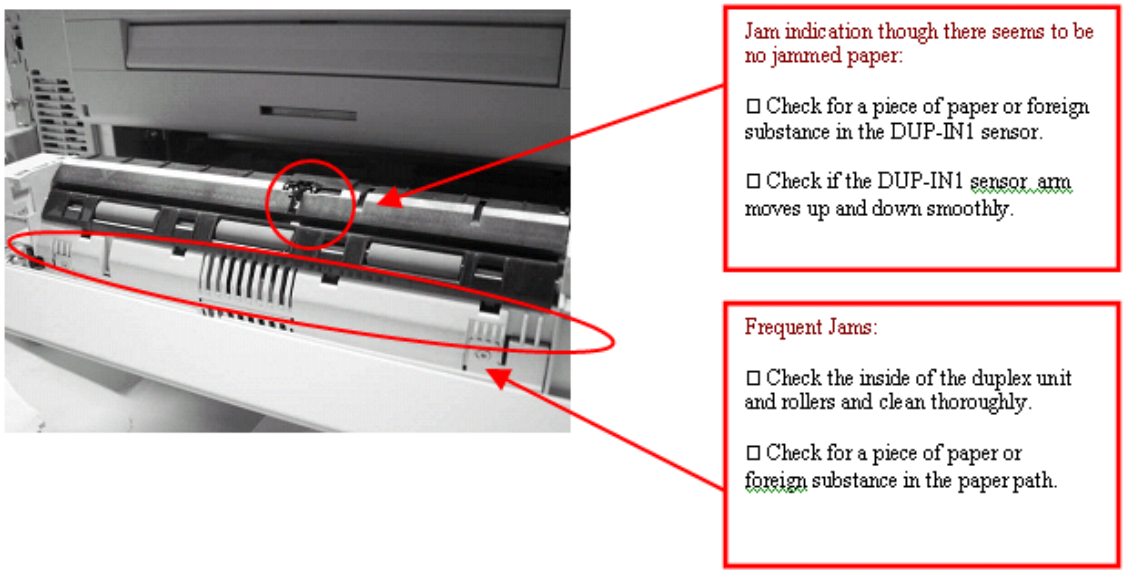
How to remove the jammed paper

Open the duplex cover - Remove all the sheets that have jammed - Close the duplex cover.

If you have been performing continuous printing, some paper may still remain in other areas. After opening and closing the cover, if other error code is displayed, follow the jam clearance method of that code.

Check Points

Open the duplex unit cover and check the following areas and clean them.



371: Paper Jam

Condition Paper jam 371 occurs when paper jams in the middle area of the duplex unit.

1. The DUP-R sensor does not return to OFF-state within the predefined time after it changed to ON-state.
2. The DUP-F sensor does not change to ON-state within the predefined time after the DUP-R sensor changed to ON-state.
3. The DUP-F sensor does not return to OFF-state within the predefined time after it changed to ON-state.

The printer stops printing immediately when the jam occurs.

Cause

1. Transport rollers cannot transport paper because they have become dirty with paper Dust, toner, etc.
2. A piece of paper, foreign substance, etc., has got stuck in the DUP-R or DUP-F sensor lever.
3. DUP-R or DUP-F sensor motion failure

How to remove the jammed paper

Open the duplex cover - Remove all the sheets that have jammed - close the duplex cover.

Pull out the duplex unit - Pull the lever at the right side of the duplex open - Hold the two levers and slowly pull out the duplex unit until it stops - Open the cover in front by grabbing the knob and remove the jammed paper - Open the inside cover in the same manner and remove the jammed paper if any -Return the covers (2) to the original positions and the duplex unit to the printer.

Return the covers (2) to the original positions and the duplex unit to the printer. If you have been performing continuous printing, some paper may still remain in other areas. After opening and closing the cover, if other error code is displayed, follow the jam clearance method of that code.

Check Points

Pull out the duplex unit and check the following areas and clean/inspect them.

Hold the two levers and slowly pull out the duplex unit until it stops. - Continue to pull it out slowly while lifting it slightly

Frequent Jams: □ Check the inside of the duplex unit and clean the rollers □ Check for a piece of paper or foreign substance in the paper path.□ Check for smooth operation of the sensor arms

Jam indication though there seems to be no jammed paper: □ Check for a piece of paper or foreign substance in the DUP-R and DUP-F sensor □ Check for smooth operation of the sensor arms

372 : Paper Jam

Condition Error 372 occurs when paper jams in the front area of the duplex unit.

1. The IN2 sensor does not change to ON-state within the predefined time after paper has exited from the duplex unit.

The printer stops printing immediately when the jam occurs.

Cause

1. Transport rollers or registration rollers cannot transport paper because they have become dirty with paper dust, etc.
2. A piece of paper, foreign substance, etc., got stuck in the IN2 sensor lever.
3. IN2 sensor motion failure

How to remove the jammed paper

Open the tray1 side cover - Pull the jammed paper in the direction shown - Close the tray1 side cover



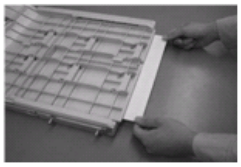
Pull the opener and open the side cover - Remove the jammed paper and close the side cover.



Pull out the duplex unit - Pull the lever at the right side of the duplex unit open - Hold the two levers and slowly pull out the duplex unit until it stops



Continue to pull it out slowly while lifting it slightly - Remove all the sheets that have jammed

If you have been performing continuous printing, some paper may still remain in other areas. After opening and closing the cover, if other error code is displayed, follow the jam clearance method of that code.

Check Points

Pull out the duplex unit and check the following areas and clean them.


Hold the two levers and slowly pull out the duplex unit until it stops - Continue to pull it out slowly while lifting it slightly.

Frequent Jams: □ Check the inside of the duplex unit and clean the rollers □ Check for a piece of paper or foreign substance in the paper path. □ Check for smooth operation of the sensor arms

Jam indication though there seems to be no jammed paper:

□ Check for a piece of paper or foreign substance in the DUP-R and DUP-F sensor. □ Check for smooth operation of the sensor arms




373: Paper Jam

Condition Paper jam 373 occurs when the paper is inverted for double-sided printing.

1. The DUP-IN2 sensor does not change to OFF-state within the predefined time after the DUP-R sensor changed to ON-state.

The printer stops printing immediately when the jam occurs.

Cause

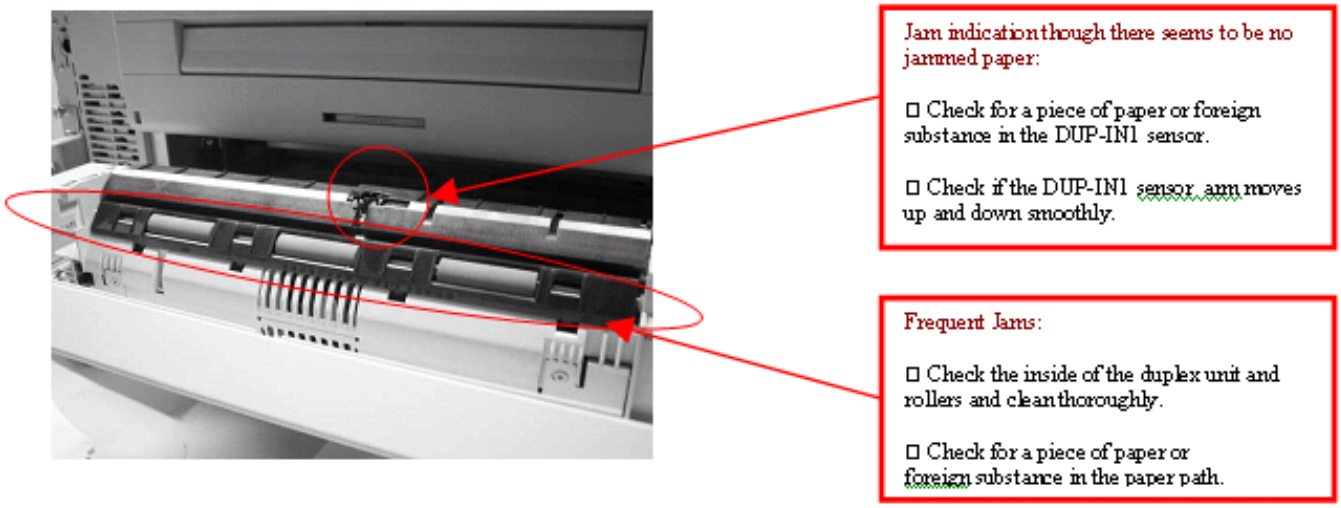
1. Transport rollers cannot transport paper because they have become dirty with paper dust, toner, etc.
2. A piece of paper, foreign substance, etc., has got stuck in the DUP-IN2 sensor lever.
3. DUP-IN2 sensor motion failure

How to remove the jammed paper

Open the duplex cover - Remove all the sheets that have jammed - Close the duplex cover.

Check Points

Open the duplex unit cover and check the following areas and clean them.



380: Paper Jam

Condition Paper jam that occurred while the paper was being transported by the registration roller after it was hopped normally.

1. The IN2 sensor does not change to ON-state within the predefined time after the registration roller started to rotate.
2. The WR sensor does not change to ON-state within the predefined time after the IN2 sensor changed to ON-state.
3. When the printer is turned on or the cover is opened and closed, IN1 or 2 is ON-state.

The printer stops printing immediately when the jam occurs.

Cause

1. Registration rollers cannot transport paper because they have become dirty with paper dust, toner, etc.
2. A piece of paper, foreign substance, etc.

How to remove the jammed paper

Open the tray1 side cover - Pull the jammed paper in the direction shown - Close the tray1 side cover



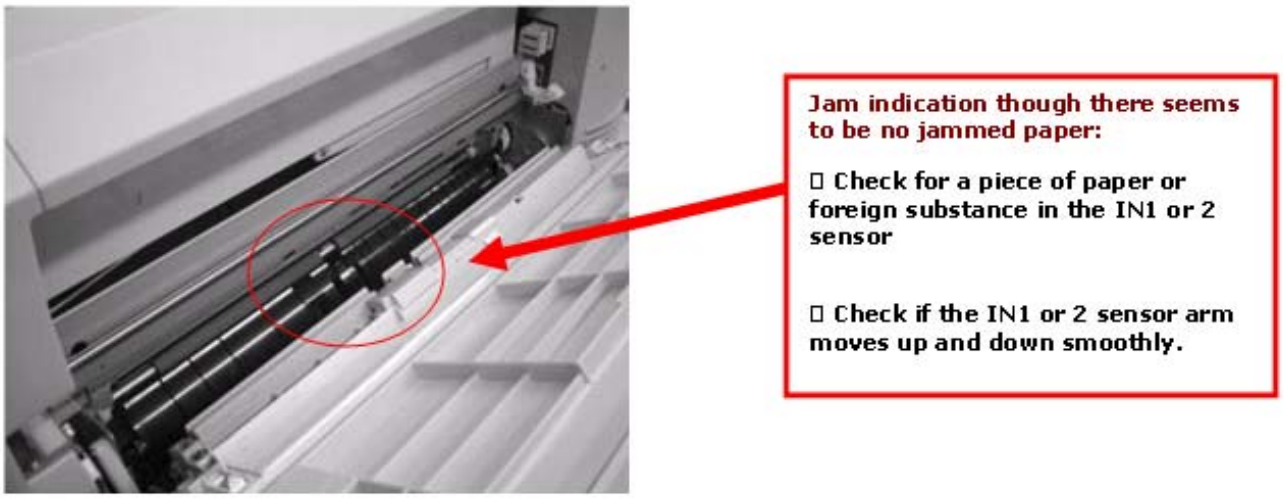
Pull the opener and open the side cover - Remove the jammed paper and close the side cover.



If you have been performing continuous printing, some paper may still remain in other areas. After opening and closing the cover, if other error code is displayed, follow the jam clearance method of that code.

Check Points

Open the tray1 side cover and the side cover, and check the following areas and clean them.



381 : Paper Jam

Condition Paper jam has occurred while the paper was being transported by the registration roller, the belt unit or the fuser.

1. The EXIT sensor does not change to ON-state within the predefined time after the WR sensor changed to ON-state.
2. The IN2 sensor does not return to OFF-state within the predefined time after the IN1 sensor returned to OFF-state.
3. The WR sensor does not return to OFF-state within the predefined time after the IN2 sensor returned to OFF-state.

The printer stops printing immediately when the jam occurs.

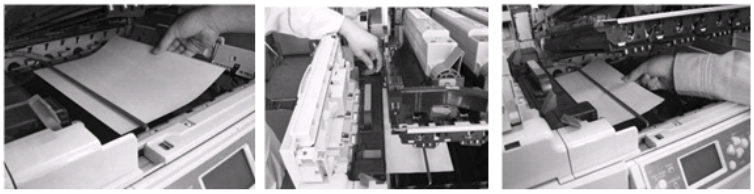
Cause

There are several possible causes for this problem.
2.1 Registration rollers cannot transport paper because they have become dirty with paper dust, toner, etc., and this causes the paper to slip.
2.2 A piece of paper, foreign substance, etc., has got stuck in the IN2, WR or EXIT sensor lever.
2.3 IN2, WR or EXIT sensor motion failure
2.4 Belt unit or the fuser unit is not transporting the paper.

How to remove the jammed paper

Open the top cover - Push the blue lever of the basket handle to release the lock of the basket - Pull up the basket

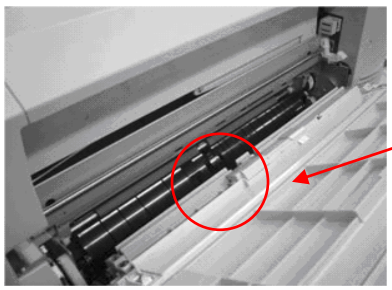
Remove all the sheets that have jammed - Pull up the fuser's blue levers (both sides) and remove the jammed paper in the direction indicated by the arrow.



Pull down the basket and confirm that the basket is locked, and then close the top cover.
If you have been performing continuous printing, some paper may still remain in other areas. After opening and closing the cover, if other error code is displayed, follow the jam clearance method of that code.

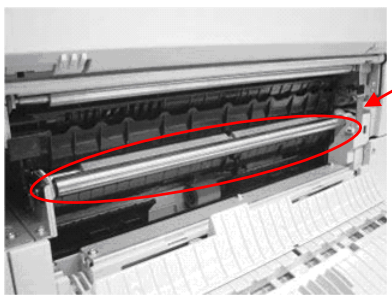
Check Points

Open the side cover, and check the following areas and clean them.



Jam indication though there seems to be no jammed paper:

- **Check for a piece of paper or foreign substance in the IN1 or 2 sensor.**
- **Check if the IN1 or 2 sensor arm moves up and down smoothly.**



Frequent Jams:

- **Check the registration roller and clean thoroughly.**
- **Check for a piece of paper or foreign substance in the paper path.**

382: Paper Jam

Condition Jam near the fuser unit
1. The EXIT sensor does not return to OFF-state within the predefined time after it changed to ON-state.
The printer stops printing immediately when the jam occurs.

Cause

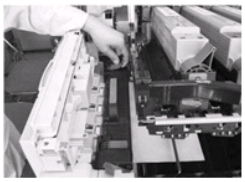
1. Fuser unit is not transporting paper.
2. A piece of paper, foreign substance, etc., got stuck in the EXIT sensor lever.
3. EXIT sensor motion failure

How to remove the jammed paper

Open the top cover - Push the blue lever of the basket handle to release the lock of the basket - Pull up the basket

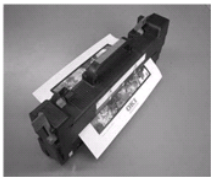


Remove all the sheets that have jammed - Pull up the fuser's blue levers (both sides) and remove the jammed paper in the direction indicated by the arrow.





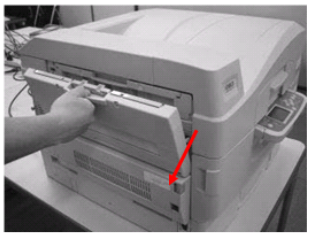
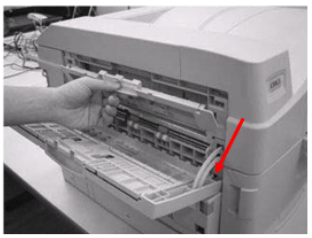
Press up the lock lever in the direction of arrow - Take out the fuser. Pull up the fuser's blue levers (both side) and remove the jammed paper – remove paper from the exit area

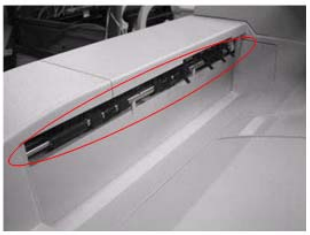




If you have been performing continuous printing, some paper may still remain in other areas. After opening and closing the cover, if other error code is displayed, follow the jam clearance method of that code.

Check Points

Open the exit side cover, and check the following areas and clean them. Open the Face-up Stacker - Open the exit side cover.



Frequent Jams Check the inside of the exit side cover and rollers and clean thoroughly Check for a piece of paper or foreign substance in the paper path. If jamming issues continue replace the fuser

383 : Paper Jam

Condition Paper jam in the fuser or near the entrance to the duplex unit

1. The DUP-IN1 sensor does not change to ON-state within the predefined time after the Exit sensor changed to ON-state.

The printer stops printing immediately when the jam occurs.

Cause

1. Paper path switch separator does not work.
2. A piece of paper, foreign substance, etc., got stuck in the DUP-IN1 sensor lever.
3. DUP-IN1 sensor motion failure

How to remove the jammed paper

Open the duplex cover - Remove all the sheets that have jammed - Close the duplex cover.

Remove all the sheets that have jammed - Pull up the fuser's blue levers (both sides) and remove the jammed paper in the direction indicated by the arrow.

If you have been performing continuous printing, some paper may still remain in other areas. After opening and closing the cover, if other error code is displayed, follow the jam clearance method of that code.

Check Points

Open the duplex unit cover and check the following areas and clean them.

Frequent Jams Check if there is a piece of paper or foreign substance in the DUP-IN1 sensor. Check if the DUP-IN1 sensor moves up and down smoothly. Check the white lever operation.

384: Paper Jam

Condition Jam near the exit area

1. When the printer is turned on, or the cover is opened and closed, Job-Off sensor has changed to ON-state.

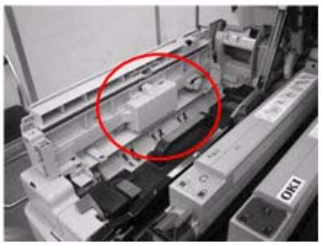
The printer stops printing immediately when the jam occurs.

Cause

1. Transport rollers cannot transport paper because they have become dirty with paper Dust, toner, etc.
2. A piece of paper, foreign substance, etc., got stuck in the Job Off sensor lever.
3. The Job Off sensor motion failure

How to remove the jammed paper

Open the top cover - Check if there is a piece of paper or foreign substance near the Job Off sensor.

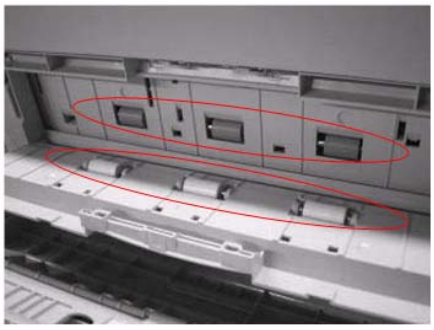



Open the Face-up Stacker - Open the exit side cover


Check Points

Open the exit side cover, and check the following areas and clean them.

Frequent Jams Check the inside of the exit side cover and rollers and clean thoroughly Check for a piece of paper or foreign substance in the paper path



390 : Paper Jam

Condition This is a Multi Purpose Tray mis-feed.

1. Even after the printer tries hopping operation three times, MPT HP sensor does not change to ON-state.
2. Even after the printer tries hopping operation three times, IN2 sensor does not change to ON-state, then, OFF-state.

The printer stops printing immediately when the jam occurs.

Cause

1. Hopping roller or Registration roller cannot transport paper because they have become dirty with paper powder, etc.
2. A piece of paper, foreign substance, etc., got stuck in the IN2 or MPT HP sensor lever.
3. IN2 or MPT HP sensor motion failure

How to remove the jammed paper

Remove the paper that was not loaded, in the direction shown - Remove all the paper from the Multi Purpose Tray, then, align edges and reset them in the Multi Purpose Tray.

If you have been performing continuous printing, some paper may still remain in other areas. After opening and closing the cover, if other error code is displayed, follow the jam clearance method of that code.

Check Points

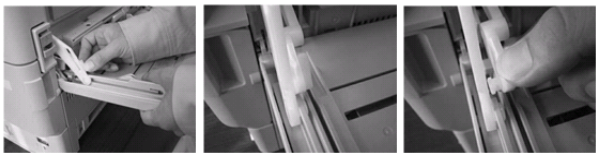
Frequent Jams:

Check if the Hopping rollers are dirty/need replacement

Open the side cover - Open the paper supporter - Slide the paper guide to the center

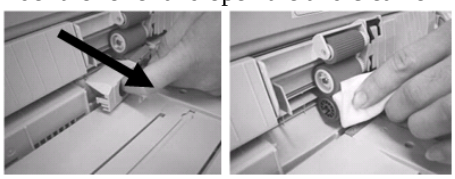
Lift the white lever of the arm (left side) that supports MP Tray.

Lift MP tray slightly with left hand, move the lever inward with right hand, and free it.



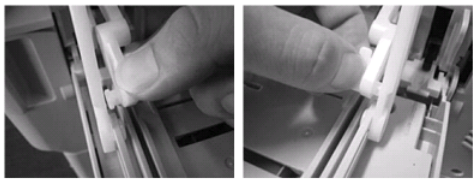
Free the lever on the right in the same manner as above - Lift the cover toward the printer main unit - Slide the paper guide to the outside.

Put finger in the hole under the roller and open the and clean or replace the three rollers



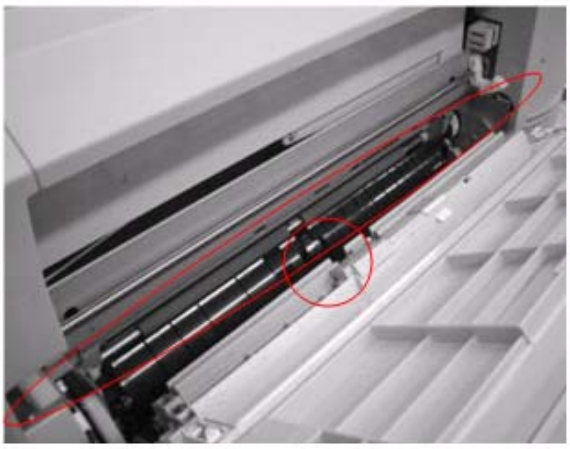
Close the cover - Slide the paper guide to the center - Return cover to the original position.

While lifting MP tray, insert the white lever in the arm that supports MP tray, and lock it by lowering the white lever. (Both sides)



Move the paper guide outward, close the paper supporter, and close the MP tray.

Frequent Jams: □ Check if there is a piece of paper or foreign substance in the IN2 sensor. □ Check if IN2 sensor moves up and down smoothly.



391, 392, 393, 394, Paper Jam

Condition Paper has misfed from Tray 1, 2, 3, 4.

1. Even after the printer tries hopping operation three times, Tray 1 to 4HP sensors do not change to ON-state.
2. The IN1 sensor does not return to OFF-state within the predefined time after the tray1 to 4 HP sensor changed to OFF-state.

(Error391:Tray1) (Error392:Tray2) (Error393:Tray3) (Error 394:Tray4)

The printer stops printing immediately when the jam occurs.

Cause

1. Hopping roller cannot transport paper because they have become dirty with paper dust, toner, wear, etc.
2. A piece of paper, foreign substance, etc, got stuck in IN1 or tray1 to 4 HP sensor lever.
3. IN1 or tray1 to 4 HP sensor motion failure.

How to remove the jammed paper

Open the tray1 side cover - Pull the jammed paper in the direction of the arrow - Close the tray1 side cover.

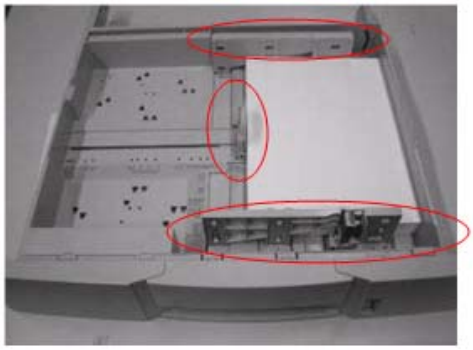
Pull out the tray - Remove the paper - Return the tray to the original position.

If you have been performing continuous printing, some paper may still remain in other areas. After opening and closing the cover, if other error code is displayed, follow the jam clearance method of that code.

Check Points

Frequent Jams: Remove the tray and clean or Replace the hopping rollers (3). Check if the paper guide of the tray is correctly set (if it matches the paper size). Fan paper well and align the edges, then, set them in the tray.

Pull out the tray - Open the side cover - Clean or replace the rollers.



400: Paper Size Error / 401: Multiple sheet feed error

Condition Error indicating that the detected size is not the specified size. The printer ejects the paper, then, displays the error.
* Error 401 may occur along with Error 400 when the paper is fed from the tray.

Cause

There are several possible causes for this problem.
1. Hopping roller or Registration roller cannot transport paper because they have become dirty with paper dust, etc.
2. A piece of paper, foreign substance, etc., has got stuck in the IN1 or IN2 sensor lever.
3. IN1 or IN2 sensor motion failure.
4. Sheets are sent stuck together due to large friction (due to static charge, etc) (Multi feeding).

How to remove the jammed paper

1. If Error 400 or 401 occurs by itself, paper is ejected. So there's no need to remove the paper. Open/close the top cover.

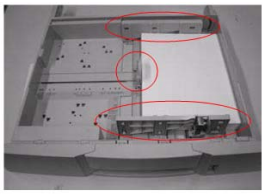
Check Points

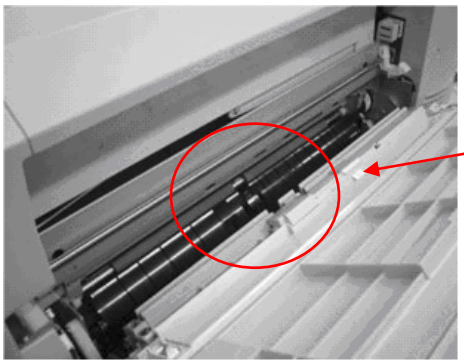
Frequent Error 400/401 Remove the tray and clean / replace the hopping rollers (3). For instruction on how to clean MP tray's HP rollers, see Error 390. Check to ensure the paper guides of the tray are correctly set (if it matches the paper size). Open the tray1 side cover and the side cover, and check the following areas and clean them. Fan paper well and align the edges, then, set them in the tray.

Pull out the tray - Open the side cover - Clean or replace the rollers.



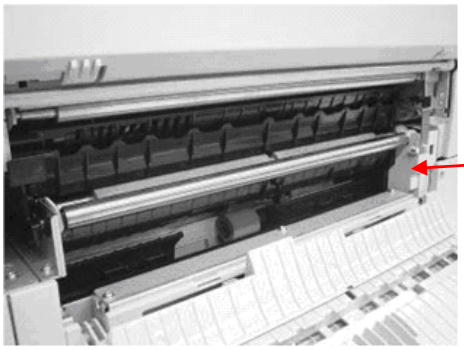
Check Paper Guides





Jam indication though there seems to be no jammed paper:

- **Check for a piece of paper or foreign substance in the IN1 or 2 sensor.**
- **Check if the IN1 or 2 sensor arm moves up and down smoothly.**



Frequent Jams:

- **Check the registration roller and clean thoroughly.**
- **Check for a piece of paper or foreign substance in the paper path.**

Chapter 5

Troubleshooting Self Diagnostic Codes

5.1 Self Diagnostic Error Codes (Printer)

Code	Cause / Description	Remedy
001 to 007	CPU Exception 001 = ASP PCB Key Chip Error 002 = Unauthorized HDD Copy 003 = Unauthorized Software Configuration 004 = EEPROM Missing	Power Off/On. Replace Fiery PCB (must move EEPROM to new board)
025	CU Font ROM Hash Error	Re-mount Slot B Rom DIMM / Replace Slot B Rom DIMM Replace Fiery PCB (must move EEPROM to new board)
030	CU Resident RAM Check Error	Replace Fiery PCB (must move EEPROM to new board)
031	CU Slot 1 DIMM RAM Check Error	Re-mount RAM DIMM / Replace RAM DIMM Replace Fiery PCB (must move EEPROM to new board)
032	CU Slot 2 DIMM RAM Check Error	Re-mount RAM DIMM / Replace RAM DIMM Replace Fiery PCB (must move EEPROM to new board)
036	Slot 1 RAM Speed Error. Specification of DIMM in CU RAM Slot is Unsupported	Use a Standard RAM DIMM / Re-mount RAM DIMM Replace RAM DIMM Replace Fiery PCB (must move EEPROM to new board)
037	Slot 1 RAM Sped Error. Specification of DIMM in CU RAM Slot is Unsupported	Use a Standard RAM DIMM / Re-mount RAM DIMM Replace RAM DIMM Replace Fiery PCB (must move EEPROM to new board)
040	CU EEPROM Error	Replace EEPROM Replace Fiery PCB (must replace EEPROM)
041	CU FLASH Error CU PCB FLASH ROM Error	Replace EEPROM Replace Fiery PCB (must replace EEPROM)
042 to 045	File Flash System Error CU PCB FLASH ROM Error	Replace Fiery PCB (must replace EEPROM)
048	PS + PCL Model CU ROM is Mounted on a Non-PS Model Unit	Replace Program ROM DIMM / Replace with Standard Program ROM DIMM For that Model
049	CU Type Mismatch. CU ROM Model Mismatches Unit	Replace Program ROM DIMM / Replace with Standard Program ROM DIMM for that Model
050	Operator Panel Error	See **"General Troubleshooting"** and **"Control Panel Communication Failure"**
051	CU Fan Error CPU Cooling Fan Abnormal	See **"Fiery Controller Fan Failure"**

Self Diagnostic Error Codes (Printer)

Code	Cause / Description	Remedy
052	Image Processor Driver Error	Replace Fiery PCB (must replace EEPROM)
060	Parallel Interface Driver Error	Replace Fiery PCB (must replace EEPROM)
062	USB Drive Error	Replace Fiery PCB (must replace EEPROM)
063	Network Communication Error	Check Connections Replace Network PCB if applicable Replace Fiery PCB (must replace EEPROM)
070	CANT_HAPPEN PS Firmware Abnormality Detection	Replace Fiery PCB (must replace EEPROM)
072	Engine Board Communication Error Error Between Fiery Control Board and Engine Board	See **"Fiery Controller to Engine Board Communication Failure"**
073 to 075	Video Overrun Detected	Check Connections Replace Fiery PCB (must replace EEPROM)
081	Parameter Match Check Error	If Condition Does Not Change Replace Fiery PCB (must replace EEPROM)
096	Finisher Un-restorable Error. For **sub codes** see **Self Diagnostic Error Codes (Finisher)**	See **"Finisher Interface Error"**
097	Inverter Power Supply Error	See **"Inverter Power Supply Failure"**
102	Error Detected in Engine Read/Write at Power On	See **"Engine Control Board Failure"**
103	Error Detected in Engine SRAM Read/Write at Power On	See **"Engine Control Board Failure"**
104	Error Detected in Engine EEPROM Test at Power On	See **"Engine Control Board Failure"**
105	Error Detected in Engine EEPROM Presence at Power On	See **"Engine Control Board Failure"**
106	Error Detected in Engine Control Logic	See **"Engine Control Board Failure"**

Self Diagnostic Error Codes (Printer)

Code	Cause / Description	Remedy
111 to 117	An Optional Unit for Another Model is Detected 111 = Duplex 112 = 2nd Tray 113 = 3rd Tray 114 = 4th Tray 115 = 5th Tray 116 = Finisher 117 = Inverter	Install Option / Check Connections Replace Engine Control Board See **"Unsupported ROM"**
121	Low Voltage Power Fan Error	See **"Power Supply Fan Failure"**
123	Environmental Sensor Error	See **"Environmental Sensor Failure"**
124	Environmental Sensor Error	See **"Environmental Sensor Failure"**
125	MT Home Position Detection Error	See **"MT Home Position Detection Error"**
126	Sensor Dew Error	Wait for Printer to Acclimate to Environment Turn On Power. See **"Environmental Sensor Failure"**
127	Fuser Cooling Fan Error	See **"Fuser Fan Failure"**
128	Engine Fan Motor Error 01 = Fuser Fan 02 = Power Fan 03 = PU Motor Fan 04 = Belt Fan 05 = ID Fan 06 = Top Cover Fan	See **"Fan Failure"**
131 to 134	LED Head Error 131 = Y Head 132 = M Head 133 = C Head 134 = K Head	See **"Cyan, Magenta, Yellow, Black LED Failure"**
142	Color Up / Down Error	See **"Color Up / Down Error"**
144 to 147	Toner Feed Switch Error. Toner Lock Lever Open Error 144 = Y ID 145 = M ID 146 = C ID 147 = K ID	See **"Toner Feed Switch / Toner Lock Lever Error"**
150 to 153	The ID Unit Fuse Can not Be Cut 150 = Y 151 = M 152 = C 153 = K	See **"Fuse Cut Error C, M, Y, K Imaging Drum Unit"**
154	The Belt Unit Fuse Can not By Cut	See **"Fuse Cut Error (Transfer Belt Unit)"**
155	The Fuser Unit Fuse Can not Be Cut	See **"Fuse Cut Error (Fuser)"**
160 to 163	Toner Sensor Detection Error 160 = Y 161 = M 162 = C 164 = Black	See **"Toner Sensor Detection Error"**

Self Diagnostic Error Codes (Printer)

Code	Cause / Description	Remedy
167 to 169	167 = Thermistor Slope error 168 = Compensation Thermistor Error 169 = Upper Side Thermistor Error	See **"Fuser Failure"**
170 to 176	Fuser thermistor Short Circuit / Open Circuit High Temperature / Low Temperature	See **"Fuser Failure"**
179	Wrong Fuser Installed	Install Correct Fuser / Replace The Fuser See **"Fuser Mismatch Error"**
180 to 186	Communication Error 180 = Envelope Feeder 181 = Duplex 182 = 2nd Tray 183 = 3rd Tray 184 = 4th Tray 185 = 5th Tray 186 = Finisher	Install Option / Check Connections Replace Engine Control PCB See **"Tray 1, 2, 3, 4 Communication Errors"**
187	Communication with Control Panel Error	See **"General Troubleshooting"** and **" Control Panel Communication Failure"**
188	Sub CPU I/F Error	Check Connection of the Motor Driver Board. Replace the Motor Driver Board / Engine Control Board
189	Inverter Unit I/F Error	See **"Inverter Unit Interface Failure"**
190	System Memory Overflow	Replace Fiery PCB (must replace EEPROM)
200 to 202	PU Firmware Download Error	See **"Engine Control Board Failure"**
209	Custom Media Table Download Error	
203 to 208 **210 to 214**	CU Program Error 0xFOC Error 0xFOD Error 0xFFE Error 0xFFF Error	Write Down the 24 Digit Number Check Connection of the CU PCB
220	Print Statistic Mismatch	HDD was Removed or Print Statistic Set to On Re-install Original HDD
230	RFID Reader Not Installed	Check Connections. Replace the RFID Relay Board Replace the Engine Board.
231	RFID Reader I/F Error	Check to Confirm that the Number of the RFID Tags is Correct. Check Connections. Replace Engine Control Board.
240 to 245 **247, 248**	Engine Program Memory Error 240 = Flash Memory Hardware 241 = Duplex Flash Memory 243 = Tray 3 Flash Memory 244 = Tray 4 Flash Memory 245 = Tray 5 Flash Memory 247 = Sub CPU Flash Memory 248 = Inverter Flash Memory	See **"Engine Board Flash Memory Error"**

Self Diagnostic Error Codes (Printer)

Code	Cause / Description	Remedy
310	The Printer Engine Top Cover is Open	See **"Top Cover Open Error"**
320	Fuser Unit is Detected as Missing	See **"Fuser Unit Detected as Missing"**
321	Motor Overheated	See **" Motor Overheating Error"**
323 to 326	Open Cover Paper Thickness Error	Check / Clean Sensor
330	Belt Missing Error	See **" Error in Transfer Belt"**
340 to 343	ID Unit Missing Error 340 = Y 341 = M 342 = C 343 = K	See **"C, M, Y, K Image Drum Unit Failure"**
350 to 353	ID Unit Life Error 350 = Y 351 = M 352 = C 353 = K	See **" ID Unit Life Error"**
354	Fuser Life Error	See **"Fuser Life Error"**
355	Belt Life Error	See **"Belt Life Error"**
360	Double Side Printer Unit Error	See **" Unsupported Duplex ROM Error"**
370 to 372	Duplex Paper Jam	Check Sensor / Connections See **"Jam Troubleshooting Section"**
380 to 383	Paper Jam Error 380 = Cassette Areas 381 = Between Black ID and Fuser 382 = Between Fuser and Delivery 383 = Duplex	Check Sensor / Connections See **"Jam Troubleshooting Section"**
389 to 395	Paper Jam Error	Check Sensor / Connections See **"Jam Troubleshooting Section"**
400	Paper Size Error	Adjust Paper Guides Check / Replace Paper Size PCB See **"General Troubleshooting"**
410 to 413	Toner Out Error 410 = Y 411 = M 412 = C 413 = K	See **"Toner Out Error"**

Self Diagnostic Error Codes (Printer)

Code	Cause / Description	Remedy
480	Paper Output Stacker Full Error	Check Sensor / Connections Check / Replace stacker Full Sensor
490	MP Tray Out of Paper Error	Check Sensor / Connections Check / Replace Sensor
491 to 495	Tray Out of Paper Error 491 = Tray 1 492 = Tray 2 493 = Tray 3 494 = Tray 4 495 = Tray5	Check Sensor / Connections Check / Replace Sensor
Replace Fuser	Fuser Counter Exceeds Life	Check Fuser Unit Life Replace Fuser Unit
Tray Paper Almost Finished	Paper Near End Detection Error	Check Sensor / Connections Check / Replace Sensor
Disk Operation Error	Can not Write to Hard Drive	Replace Hard Drive
910 to 914	GDDC Error / Tray Motor Error 910 = Tray 1 911 = Tray 2 912 = Tray 3 913 = Tray 4 914 = Tray5	Check Sensor / Connections / Replace Motor See **"Tray 1, 2, 3, 4 Communication Errors"**
917	Belt Slit Sensor Error	Check Belt Unit is Turning. Check Sensor / Connections See **"Error in the Transfer Belt"**
918	Duplex Fan Error	Check / Re-install Duplex Unit. Check Connections See **"Duplex Fan Failure"**
919	Abnormal 24V to the Duplex	Check / Re-install Duplex Unit. Check Connections See **" Duplex Interface Failure"**
920 to 923	Drum Lock Error 920 = Y 921 = M 922 = C 923 = K	Check / Re-install Drum Unit Replace the Drum Unit Replace the Drum Motor
924 to 927	Abnormal Voltage Detection Cassette Error 924 = Tray 2 925 = Tray 3 926 = Tray 4	Check Sensor / Connections See **" Tray 1, 2, 3, 4 Communication Errors"**
928	Fuser Motor Lock Error	Check / Re-install Fuser Unit Replace the Fuser Unit Replace the Fuser Motor
929	Waste Toner Transfer Motor Lock Error	Check Waste Toner Unit Operation Replace the Waste Toner Motor

Self Diagnostic Error Codes (Printer)

Code	Cause / Description	Remedy
930	Sub CPU Clock Frequency Error	Check Connections of the Engine PCB (S2M) Replace the Engine PCB
931 to 935	Clock Frequency Error 931 = Duplex 932 = Inverter 933 = Tray 2 934 = Tray 3 935 = Tray 4	Check Sensor / Connections Replace for: 931 = V72-2 Board (Duplex Control Board) 932 = V72-3 (Inverter Control Board) 933 to 935 = V72-1 (Hi Cap Feeder Control Board)
940	Waste Toner Transfer Error	Check that Basket Assembly is in Position Check Holder Magnet D Check / Replace Hall IC PCB Replace Duct Assembly

Self Diagnostic Error Codes (Scanner / ADF)

Code	Cause / Description	Remedy	Lamp Blink	Sense Key
0A980	SDRAM Test Error (Flatbed)	Replace Scanner Control Board	1	4
0A980	SDRAM Test Error (ADF)	Replace Scanner Control Board	2	4
See Lamp Blink	ARM7 SDRAM SDRAM Failure	Replace Scanner Control Board	3	4
See Lamp Blink	A/D Dark Calibration Error(Flatbed) Flatbed Lamp Error	Replace Flatbed Lamp Replace Scanner Control Board	4	4
See Lamp Blink	A/D Dark Calibration Error(ADF) ADF Lamp Error	Replace Duplex Side of ADF Lamp Replace Scanner Control Board	5	4
See Lamp Blink	Home Position Sensor Error Flatbed Motor Error	Check / Replace Home Position Sensor Check / Replace Flatbed Scanner Motor Replace Scanner Control Board	6	4
See Lamp Blink	Lamp Check Error (Flatbed)	Replace Flatbed Lamp	7	4
See Lamp Blink	Lamp Check Error (ADF)	Replace ADF Lamp	8	4

Self Diagnostic Error Codes (Finisher)

Code	Cause / Description	Remedy
090	Finisher Stapler Error	See Finisher Service Manual
091	Finisher Tray Elevator Error	See Finisher Service Manual
092	Finisher Bin 2 Exit Belt Motor Error	See Finisher Service Manual
093	Finisher Jogging Motor Error	See Finisher Service Manual
094	Finisher Main Feed Motor Error	See Finisher Service Manual
096-01	Paper Eject Motor Error	Check All Connections Check / Replace Motor Replace Finisher Control PCB
096-02	Tray Raise / Lower Error * Replace Shift Motor & Finisher Controller as a set.	Check / Clean / Replace Upper Limit Sensor Check / Replace Shift Motor Check / Replace Finisher Control PCB
096-03	Aligning Motor Error	Check / Clean / Replace Alignment Sensor Check / Replace Alignment Motor Check / Replace Finisher Control PCB
096-04	Staple Motor Error	Check Stapler Movement / Connections Check Stapler Home Position Sensor Replace Motor / Sensor
096-05	Batch Processing Motor Error	Check Delivery Belt Check Paper ejection Belt Check Belt Home Position Sensor
096-06	Stapler Unit Feed Motor Error	Check Slide Motor Check Home position Sensor
096-07	Paddle Motor Error	Check Paddle Movement Check Paddle Home Position Sensor Check Swing Guide Movement Check Swing Guide Home Position Sensor
096-08	Folding Sensor Error	See Finisher Service Manual
096-09	Backup RAM Data Error	Check All Connections Check / Replace Interface Cable Replace Finisher Control PCB Replace Engine PCB
096-10	Punch Horizontal Sensor Error	Check / Replace Sensor
096-11	Punch Debris Sensor Error	Check / Replace Sensor
096-0A	Punch Motor Error	Check / Replace Punch Motor Home position Sensor Check / Replace Punch Motor
096-0B	Punch Feed Motor Error	Check / Replace Punch Feed Motor Home Position Sensor
096-0C	Punch Interface Error	Check Connections
096-0D	Punch Power Failure Error	24V missing from Finisher Controller Replace Finisher Controller Replace Punch Controller
097	Inverter Power Supply Error. 24V not detected	Check/Re-install all finisher connectors Replace inverter Power supply Replace Finisher Controller
186	Interface Error	Check All Connections Check / Replace Interface Cable Replace Finisher Control PCB Replace Engine PCB

Self Diagnostic Error Codes (Other Codes)

Code	Cause / Description	Remedy
0101 to 0104	The data stored in HDD may be corrupted	Re-image Hard Drive with the latest version.
0201 to 0223	The Communication between a scanner and a printer is disrupted	**Step 1.** Check all cable connections between Scanner & Printer **Step.2** Replace cables between Scanner & Printer **Step 3.** Re-image Hard Drive **Step 4.** Replace Scanner **Step 5.** Replace BY3 PCB and/or Hard Drive
0301 to 0304	I/F Error between modules (Incorrect input value) I/F Error between modules (Incorrect output value) Failure in resource acquisition Failure in memory allocation	Re-image Hard Drive with the latest version.

5.2 General Troubleshooting

No Control Panel Display

Troubleshooting Procedure

Initial Actions:

1. Remove and reseat the Fiery Control Board.
2. Print an engine test print.
3. Replace the Fiery Control Board.
4. See "DC Power Supply Troubleshooting".

Control Panel LED is on, No Control Panel Display

Troubleshooting Procedure

Initial Actions:

1. Remove and reseat the Fiery Control Board.
2. Replace the Control Panel.
3. Replace the Fiery Control Board.
4. Replace the Control Panel harness.

Printer does not Appear to Operate at Power On.

Troubleshooting Procedure

Initial Actions:

1. Check the wall outlet for available AC voltage.
2. Cycle printer power.
3. Check the Fiery Control Board LED's for a fault indication.
4. Systematically remove all printer options to isolate a possible problem component.

Printer Continually Displays "Warming Up" or "Initializing"

Troubleshooting Procedure

Initial Actions:

The most likely cause is that the Fiery Control Board has not successfully loaded its NVRAM contents (instructions) into RAM. All print engine operation halts, and will only become ready when the Fiery Control Board successfully boots.

1. Check for media or debris in the paper path.
2. Power cycle the printer.
3. Replace the Fiery Control Board.
4. Replace the Hard Drive.

Troubleshooting AC Power Supply

Troubleshooting Procedure

Initial Actions:

1. Check the voltage at the AC wall outlet.
2. Check the power cord for defects or a loose connection.
3. Replace the Low Voltage Power Supply (LVPS).

Troubleshooting DC Power Supply

Troubleshooting Procedure

Initial Actions:

1. Perform the AC power supply troubleshooting procedure.
2. Replace the Low Voltage Power Supply (LVPS).

Troubleshooting RAM Memory Failures

Troubleshooting Procedure

Initial Actions:

Check that the RAM devices are making positive contact with their connectors.

1. Power off the printer.
2. Remove / re-install the RAM memory.
3. Replace the Ram Memory.
4. Replace the Fiery Control Board.

Paper Size Errors

Troubleshooting Procedure

Initial Actions:

The position of a multi-slotted plate, at the rear of the universal paper tray, is set according to the position of the tray's paper guides. Upon installation of the tray, the plate's position actuates the Paper Size Switch. A Paper Size Mismatch error or Tray Missing error are sometimes the result of a damaged or jammed Paper Size Switch. To correct these types of errors, use the following procedure.

1. Remove the affected tray and examine the switch actuators for evidence of damage or debris.
2. Check / move the tray to another location to see if the error follows.
3. Check the affected Paper Size Switch for damage or debris.
4. Check the size of the loaded media.
5. Check the adjustment of the paper guides.
6. Run the Switch Scan test to test the Paper Size Switches.
7. Replace the Paper Size Switch.
8. Replace the Motor Driver Board.
9. Replace the Motor Driver Board.
10. Replace the Engine Control Board.

3.3 Troubleshooting Error Codes

Fuser Failure

The Fuser temperature regulation has failed.

Error Codes that Apply

167 to 169 and 170 to 176

Initial Troubleshooting Actions to Take

1. **Reseat the Fuser.**
2. **Cycle the printer's power.**
3. **Test wall Voltage**

Parts of the Printer that Apply

1. **Fuser**
2. **LVPS**
3. **Engine Control Board**

Troubleshooting Procedure

Steps	Action Taken	Yes	No
1	Replace the Fuser. Does the error persist?	Go to Step 2	Complete.
2	Check the Fuser Heat Lamps. Does the Fuser error occur after at least 3 minutes of operation?	Go to Step 3.	Go to Step 3.
3	Did the Fuser warm up?	Replace the Engine Control Board	Replace the Fuser Replace the LVPS

Environmental Sensor Failure

The Environmental Sensor has failed.

Error Codes that Apply
123 and 124

Initial Troubleshooting Actions to Take
1. **Cycle the printer's power.**
2. **If the problem persists follow the procedure below.**

Parts of the Printer that Apply
1. **Environmental Sensor**
2. **Environmental Sensor Wiring**
3. **Engine Control Board**

Troubleshooting Procedure

Steps	Action Taken	Yes	No
1	Test the Temp/Humidity Sensor. 1. Run the Scan Switch Test **HUM_TEMP_OHP** 2. Verify proper operation by blowing on the sensor. Is the sensor operating correctly?	Replace the Engine Control Board	Go to Step 2.
2	Replace the Temp/Humidity Sensor. Does the error persist?	Go to Step 3.	Complete
3	Check the Environmental Sensor Wiring. Is it properly connected and undamaged?	Reconnect/Repair Wiring Harness	Replace the Front Sensor Board / Motor Driver Board / Engine Board in order.

Imaging Unit Motor Overheating Failure

Error Codes that Apply
321

Initial Troubleshooting Actions to Take
1. **Ensure that the temperature and installation clearances of the printer are at specifications.**
2. **Clean all fan ducts.**
3. **Turn the printer off and allow a minimum of 30 minutes for cooling.**
4. **Restart the printer.**
5. **If the problem persists follow the procedure below.**

Parts of the Printer that Apply
1. **Imaging Unit Motors**
2. **Motor Driver Board**

Troubleshooting Procedure

Steps	Action Taken	Yes	No
1	Test the cooling fans for proper operation and adequate airflow. Run the Motor Clutch Fan tests. Do the fans operate correctly?	Go to Step 2.	Replace the defective fan.
2	Test the Imaging Unit Motors. Run the Service Diagnostics Imaging Unit Motor tests. Do the motors operate correctly?	Replace the Motor Driver Board	Replace the defective motor
3	Does this resolve the issue?	Complete	Replace the Engine Board

Engine Control Board Failure

Error Codes that Apply
102 to 106 and 200 to 202

Initial Troubleshooting Actions to Take
1. **Cycle the Printers Power**
2. **If the problem persists follow the procedure below.**

Parts of the Printer that Apply
1. **Engine Control Board EEPROM**
2. **Engine Control Board**

Troubleshooting Procedure

Steps	Action Taken	Yes	No
1	Cycle power to the printer. Does the error still appear?	Go to Step 2.	Complete
2	Perform a Factory Default Reset Does the error still appear?	Go to Step 3.	Complete
3	Replace the EEPROM	Complete	Replace the Engine Board.

LVPS Power Supply Failure

Error Codes that Apply
N / A

Initial Troubleshooting Actions to Take
1. **Cycle the Printers Power**
2. **If the problem persists follow the procedure below.**

Parts of the Printer that Apply
1. **LVPS**

Troubleshooting Procedure

Steps	Action Taken	Yes	No
1	Visually inspect the LVPS for damage or excessive dust. Is the LVPS damaged or dirty?	Clean the LVPS if dirty. If damaged, replace the LVPS	Go to Step 2.
2	Check the LVPS output voltages at the POWER connector on the Engine Control Board.	Replace the Engine Controller Board.	Replace the LVPS or POWER harness.

Fiery Controller Fan Failure

Error Codes that Apply

051

Initial Troubleshooting Actions to Take

1. **Cycle the Printers Power**
2. **If the problem persists follow the procedure below.**

Parts of the Printer that Apply

1. **Fiery Control Board Fan**

Troubleshooting Procedure

Steps	Action Taken	Yes	No
1	Test the cooling fan for proper operation and adequate airflow. Run the Motor Clutch **Fan test**. Does the fan operate correctly?	Replace the Engine Control Board	Go to Step 2.
2	Check for +5 V to the fan. Is +5 V present?	Replace the Fan	Replace the Fiery Control Board

Power Supply Fan Failure

Error Codes that Apply

121

Initial Troubleshooting Actions to Take

1. **Clear any obstructions from the LVPS Fan vent.**
2. **Cycle the printer's power.**
3. **If the problem persists follow the procedure below.**

Parts of the Printer that Apply

1. **LVPS Fan**
2. **LVPS**
3. **Engine Control Board**

Troubleshooting Procedure

Steps	Action Taken	Yes	No
1	Test the LVPS Fan. Run the Motor Clutch Test **FAN POWER** Does the Fan operate correctly?	Replace the Engine Control Board	Go to Step 2.
2	Check the LVPS Fan connection. Is the fan securely connected?	Go to Step 3.	Reconnect the Fan.
3	Verify +24 volts is available to the Fan. Disconnect the Fan and test at connector. Is there +24 volts at the Fan connector?	Replace the LVPS Fan	Replace the LVPS

Fan Failure

Error Codes that Apply

127 Fuser Fan

128 01 Fuser Fan, 02 Power Fan, 03 PU Motor Fan, 04 Belt Fan, 05 Image Drum Fan, 06 Top Cover Fan

918 Duplex Fan

Initial Troubleshooting Actions to Take

1. Ensure that the temperature and installation clearances of the printer are at specifications.
2. Clean all fan ducts.
3. Turn the printer off and allow a minimum of 30 minutes for cooling.
4. Restart the printer.
5. If the problem persists follow the procedure below.

Parts of the Printer that Apply

1. Fan Associated with the code
2. Engine Control Board

Troubleshooting Procedure

Steps	Action Taken	Yes	No
1	Test the cooling fan for proper operation and adequate airflow. Run the Motor Clutch **Fan test**. Does the fan operate correctly?	Replace the Engine Control Board	Check the Fan connection.
2	Does this resolve the issue?	Complete	Replace the Fan.

Duplex Interface Failure

Error Codes that Apply

181, 919

Initial Troubleshooting Actions to Take

1. **Reseat the Duplex Unit**
2. **Cycle the Printers Power**
3. **If the problem persists follow the procedure below.**

Parts of the Printer that Apply

1. **Duplex Unit**
2. **Motor Driver Board**

Troubleshooting Procedure

Steps	Action Taken	Yes	No
1	Check the Duplex Unit connector for damage. Is the connector damaged?	Replace the connector.	Replace the Duplex Unit. If the error persists, go to Step 2.
2	Check all pins on the DUPLEX Wiring Harness for continuity. Disconnect the DUPLEX Harness. Is the DUPLEX Harness conductive?	Replace the Motor Driver Board. If the error persists, go to Step 3.	Replace the DUPLEX Harness.
3	Check all pins of the harness for continuity. Disconnect the ribbon cable. Is the cable conductive?	Replace the Engine Control Board	Replace the Harness.

Tray 1, 2, 3, 4 Communication Errors

Error Codes that Apply

180 to 186
910 Tray 1 Motor Error
911 Tray 2 Motor Error
912 Tray 3 Motor Error
913 Tray 4 Motor Error
924 Tray 2 Abnormal Voltage Detection
925 Tray 3 Abnormal Voltage Detection
926 Tray 4 Abnormal Voltage Detection

Initial Troubleshooting Actions to Take

1. **Cycle the Printers Power**
2. **If the problem persists follow the procedure below.**

Parts of the Printer that Apply

1. **High Capacity Feeder Control Board**
2. **Engine Control Board**

Troubleshooting Procedure

Steps	Action Taken	Yes	No
1	Check the Hi Cap connector for damage. Is the connector damaged?	Replace the connector.	Go to Step 2.
2	Check all pins on the Hi Cap Harness for continuity. Disconnect from the Engine Control Board and Option connector. Is the harness conductive?	Replace the Hi Cap Control Board. If the error persists, replace the Engine Control Board	Replace the Hi Cap Harness.

Inverter Unit Interface Failure

Error Codes that Apply

189

Initial Troubleshooting Actions to Take

1. **Reseat the Finisher connections.**
2. **Cycle the printer's power.**
3. **If the problem persists follow the procedure below.**

Parts of the Printer that Apply

1. **Inverter Control Board**
2. **Finisher Power Cord**
3. **Engine Control Board**

Troubleshooting Procedure

Steps	Action Taken	Yes	No
1	Check the following for evidence of fault or damage: Inverter Interface Cable Inverter connections, Power Cord. Is there any damage?	Replace any damaged parts.	Go to Step 2.
2	Check the Inverter connection. Is the Inverter interface cable securely connected at both ends?	Go to Step 3.	Connect the Inverter to the Finisher.
3	Check all pins on the Interface Harness for continuity. Disconnect from the Engine Control Board and Option connector. Is the harness conductive?	Replace the Inverter Control Board. If the error persists, replace the Engine Control Board	Replace the Interface Harness.

Cyan, Magenta, Yellow, Black LED Failure

Error Codes that Apply

131 Yellow, 132 Magenta, 133 Cyan, 134 Black

Initial Troubleshooting Actions to Take

1. **Cycle the printer's power.**
2. **If the problem persists follow the procedure below.**

Parts of the Printer that Apply

1. LED Head 2. LEDPWR harness 3. LED Relay Board 4. YK LED DATA harness
5. CM LED DATA harness 6. LED Relay Board 7. Engine Control Board

Troubleshooting Procedure

Steps	Action Taken	Yes	No
1	Check LED Head. Exchange the affected LED Head with another LED Head. Does the error move with the LED Head?	Replace the LED Head.	Go to Step 2.
2	Ensure the LED Head harness is properly connected and not damaged. Is the wiring harness defective?	Reconnect or replace the wiring harness.	Go to Step 3.
3	Check harness continuity between the LED Head and the Engine Control Board. Is there continuity?	Go to Step 4.	Replace the data harness.
4	Check harness continuity between the LED Head and the LED Relay Board. Is there continuity?	Go to Step 5.	Replace the power harness.
5	Check for +5 V to the LED Relay Board.	Replace the LED Relay Board	Go to Step 6.
6	Check for +5 V at the LVPS.	Replace the Engine Control Board	Replace the LVPS

Fuser Fan Failure

Error Codes that Apply

127

Initial Troubleshooting Actions to Take

1. **Cycle the printer's power.**
2. **If the problem persists follow the procedure below.**

Parts of the Printer that Apply

2 **Fuser Fan**
3 **Fuser Fan harness**
4 **Engine Control Board**

Troubleshooting Procedure

Steps	Action Taken	Yes	No
1	Test the cooling fan for proper operation and adequate airflow. Run the Motor Clutch **Fan test**. Does the fan operate correctly?	Replace the Engine Control Board	Check the Fan connection.
2	Does this resolve the issue?	Complete	Replace the Fan.

Fuser 110V/220V Mismatch Error

Error Codes that Apply

179

Initial Troubleshooting Actions to Take

1. **Cycle the printer's power.**
2. **If the problem persists follow the procedure below.**

Parts of the Printer that Apply

1. **Fuser**
2. **Engine Control Board**

Troubleshooting Procedure

Steps	Action Taken	Yes	No
1	Ensure the proper Fuser (110v vs. 220v) is installed in the printer. Is the correct Fuser installed?	Replace the Engine Control Board	Replace the Fuser.

Unsupported Duplex Unit Rom

Error Codes that Apply

360

Initial Troubleshooting Actions to Take

1. **Reseat the Duplex Unit**
2. **Cycle the printer's power.**
3. **If the problem persists follow the procedure below.**

Parts of the Printer that Apply

1. **Duplex Unit**
2. **Engine Control Board**

Troubleshooting Procedure

Steps	Action Taken	Yes	No
1	Check the following for evidence of fault or damage: Duplex Connector Is there any damage?	Replace any damaged parts.	Go to Step 2.
2	Check that the Duplex Unit is correctly installed and fully seated.	Go to Step 3.	Reseat the Duplex Unit
3	Check the Duplex Unit version using the Printer Configuration Sheet Is the version current?	Replace Engine Control Board if the error persists, replace the DUPLEX harness.	Replace the Duplex Unit.

Fuse Cut Error (Fuser)

Error Codes that Apply

155

Initial Troubleshooting Actions to Take

1. **Cycle the printer's power.**
2. **If the problem persists follow the procedure below.**

Parts of the Printer that Apply

1. **Fuser**
2. **Engine Control Board**

Troubleshooting Procedure

Steps	Action Taken	Yes	No
1	Test the Fuser fuse. Is the Fuse Cut?	Replace the Engine Control Board	Go to Step 2.
2	Replace the Fuser. Cycle the power. Does the error persist?	Go to Step 3.	Complete.
3	Check all pins of the harness between the Fuser and Engine Control Board.	Replace Engine Control Board	Replace the Harness.

Fuse Cut Error (Transfer Belt Unit)

Error Codes that Apply

154

Initial Troubleshooting Actions to Take

1. **Cycle the printer's power.**
2. **If the problem persists follow the procedure below.**

Parts of the Printer that Apply

1. **Transfer Unit**
2. **HVPS Cover**
3. **HVPS**
4. **Engine Control Board**

Troubleshooting Procedure

Steps	Action Taken	Yes	No
1	Test the condition of the fuse. Is the Fuse cut?	Replace the Engine Control Board	Go to Step 2.
2	Check the connections between HVPS, HVPS Cover, and Transfer Unit. Are the contacts clean and intact?	Install a new Transfer Unit and verify the fuse blows.	Clean or align contacts as needed. If the error persists, go to Step 3.
3	Does the error persist?	Replace in the following order: HVPS Cover HVPS	Complete

Fuse Cut Error C, M, Y, K Imaging Drum Unit

Error Codes that Apply

150 Yellow 151 Magenta 152 Cyan 153 Black

Initial Troubleshooting Actions to Take

1. **Reseat the indicated Imaging Unit**
2. **Cycle the printer's power.**
3. **If the problem persists follow the procedure below.**

Parts of the Printer that Apply

1. **C, M, Y, K Imaging Unit**
2. **Imaging Unit Sensor Board**
3. **Engine Control Board**

Troubleshooting Procedure

Steps	Action Taken	Yes	No
1	Check the affected Imaging Drum Unit contacts for evidence of fault or damage: Is there any damage, debris or corrosion?	Replace the damaged parts.	Go to Step 2.
2	Test the Imaging Unit fuse. Is the Fuse Cut?	Replace the Engine Control Board	Go to Step 3.
3	Replace the affected Imaging Drum Unit. Does the error persist?	Replace the ID Sensor Board	Complete

Fiery Controller to Engine Board Communication Failure

Error Codes that Apply

072

Initial Troubleshooting Actions to Take

1. **Cycle the printer's power.**
2. **If the problem persists follow the procedure below.**

Parts of the Printer that Apply

1. **Fiery Control PCB**
2. **Engine Control Board**

Troubleshooting Procedure

Steps	Action Taken	Yes	No
1	Cycle power to the printer. Does the error persist?	Go to Step 2.	Complete
2	Reseat the Fiery Control Board to the Engine Board. Does the error persist?	Replace the Engine Control Board	Go to Step 3.
3	Does the error persist?	Replace the Fiery Control Board	Complete

Finisher Interface Error

Error Codes that Apply

096

Initial Troubleshooting Actions to Take

1. **Cycle the printer's power.**
2. **If the problem persists follow the procedure below.**

Parts of the Printer that Apply

1. **Finisher Control Board**
2. **Finisher Interface Cable**
3. **Finisher Power cord**
4. **Engine Control Board**

Troubleshooting Procedure

Steps	Action Taken	Yes	No
1	Check the following for evidence of fault or damage: Finisher Interface Cable/Power Cord Finisher connections Is there any damage?	Check the following for evidence of fault or damage: Finisher Interface Cable Finisher connections Is there any damage?	Go to Step 2.
2	Check all the pins of the Finisher Interface Cable for continuity. Is the cable conductive?	Go to Step 3.	Replace the cable.
3	Replace the Finisher Control Board. Does the error persist?	Replace the Engine Control Board	Complete

Inverter Power Supply Failure

Error Codes that Apply

097

Initial Troubleshooting Actions to Take

1. **Cycle the printer's power.**
2. **If the problem persists follow the procedure below.**

Parts of the Printer that Apply

1. **Inverter Power Supply**
2. **Inverter Interface Cable**
3. **Inverter Power cord**
4. **Engine Control Board**

Troubleshooting Procedure

Steps	Action Taken	Yes	No
1	Check the following for evidence of fault or damage: Inverter Power Cord Inverter Power Supply Is there any damage?	Replace any damaged parts.	Go to Step 2.
2	Check AC Power. Is the AC voltage available at the outlet?	Go to Step 3.	Advise customer.
3	Check the Inverter connection. Is the Inverter interface cable securely connected at both ends?	Go to Step 4.	Connect the Inverter to the Finisher.
4	Replace the Inverter Power Supply. Does the error persist?	Replace the Inverter Control Board.	Complete.

Control Panel Communication Failure

Error Codes that Apply

050 and 187

Initial Troubleshooting Actions to Take

1. **Cycle the printer's power.**
2. **If the problem persists follow the procedure below.**

Parts of the Printer that Apply

1. **Control Panel**
2. **Control Panel Interface Cable**
3. **Engine Control Board**

Troubleshooting Procedure

Steps	Action Taken	Yes	No
1	Check the Control Panel connection. Is the Control Panel Harness connected to the Engine Control Board?	Go to Step 2.	Connect the Control Panel harness,
2	Check all pins on the Control Panel Harness for continuity. Disconnect the harness from the Engine Control Board and Control Panel connectors. Is the harness conductive?	Replace the Engine Control Board If the error persists, replace the Control Panel	Replace the harness.

Error in the Transfer Belt

Error Codes that Apply

330 and 917

Initial Troubleshooting Actions to Take

1. **Cycle the printer's power.**
2. **If the problem persists follow the procedure below.**

Parts of the Printer that Apply

1. **Transfer Unit**
2. **Transfer Unit Motor**
3. **Belt Rotation Sensor**
4. **Engine Control Board**

Troubleshooting Procedure

Steps	Action Taken	Yes	No
1	Test the Belt Rotation Sensor. **Run the Switch Scan test** and test the Hall IC. Does the sensor function correctly?	Go to Step 2.	Replace the Sensor. If the error persists, go to Step 3.
2	Test the Transfer Unit Motor. 1. Close the Interlock Switches for the test. 2. **Run the Motor Clutch test** to test the Transfer Belt Motor. Does the motor operate?	Replace the Transfer Unit. If the error persists, go to Step 3.	Replace the motor. If the error persists, go to Step 3.
3	Check all pins on the HALL1 Harness for continuity. Disconnect HALL1 Harness. Is the harness conductive?	Replace the Motor Driver Board. If the error persists, go to Step 4.	Replace the HALL1 Harness.
4	Check all pins of the harness for continuity. Disconnect the ribbon cable. Is the cable conductive?	Replace the Engine Control Board	Replace the Harness.

C, M, Y, K Imaging Drum Unit Failure

Error Codes that Apply

340 Yellow Image Drum Unit Failure
341 Magenta Image Drum Unit Failure
342 Cyan Image Drum Unit Failure
343 Black Image Drum Unit Failure

Initial Troubleshooting Actions to Take

1. **Reseat the indicated Image Drum Unit**
2. **Cycle the printer's power.**
3. **If the problem persists follow the procedure below.**

Parts of the Printer that Apply

1. **C, M, Y, K Imaging Drum Unit**
2. **C, M, Y, K Unit Motor**
3. **Imaging Drum Unit Sensor Board**
4. **Imaging Drum Unit Up/Down Mechanism**
4. **Engine Control Board**

Troubleshooting Procedure

Steps	Action Taken	Yes	No
1	Check the following for evidence of fault or damage: Imaging Unit Imaging Unit Drive Gears Imaging Unit Sensor Board Imaging Unit Lift Up/Down Mechanism Is there any damage?	Replace any damaged parts.	Go to Step 2.
2	Test the Drum Phase Sensor. **Run the Scan Switch test** for the indicated Imaging Unit. Does the sensor function correctly?	Go to Step 5	Go to Step 3.
3	**Use the Scan switch Test** to check the Imaging Unit Phase signal: C-Drum Phase Sensor M-Drum Phase Sensor Y-Drum Phase Sensor K-Drum Phase Sensor Does the Drum Phase signal change when the sensor is blocked?	Go to Step 4.	Replace the Imaging Unit Sensor Board
4	Check the harness continuity. Disconnect the Harness from the Imaging Unit Sensor Board and from the Engine Control Board. Is the harness conductive?	Replace the Engine Control Board	Replace the harness.

5	Test the indicated Imaging Unit Motor 1. Remove the affected Imaging Unit. 2. Close the Interlock Switches. 3. **Run the Motor Clutch test** for the affected motor. Does the motor function correctly?	Go to Step 6.	Replace the motor. If the error persists, go to Step 6.
6	Check the Up/Down Mechanism and associated gears. See "Drive Motors" for a description of Up/Down Mechanism operation. 1. Access the Cyan Unit Motor. 2. Rotate the Cyan Motor manually in both directions. Do the gears and links function properly?	Replace the Cyan Imaging Unit Motor. If the error persists, go to Step 7.	Replace the Up/Down Mechanism.
7	Check for +24 V at the Motor Driver Board	Replace the Motor Driver Board	Replace the LVPS

Engine Board Flash Memory Error

Error Codes that Apply

240	Flash memory Hardware	**241**	Duplex Flash Memory	**243**	Tray 3 Flash Memory
244	Tray 4 Flash Memory	**247**	Sub CPU Flash Memory	**248**	Inverter Flash Memory

Initial Troubleshooting Actions to Take

1. **Cycle the printer's power.**
2. **If the problem persists follow the procedure below.**

Parts of the Printer that Apply

1. **Engine Control Board**

Troubleshooting Procedure

Steps	Action Taken	Yes	No
1	Cycle power to the printer. Does the error reappear?	Replace the Engine Control Board	Complete

Unsupported ROM

Error Codes that Apply

111	Duplex Unit	112	Tray 2 Unit	113	Tray 3 Unit	114	Tray 4 Unit
116	Finisher Unit	117	Inverter Unit				

Initial Troubleshooting Actions to Take

1. **Reseat the Unit in Question**
2. **Cycle the Printers Power**
3. **If the problem persists follow the procedure below.**

Parts of the Printer that Apply

1. **Unit indicated by the Code**
2. **Engine Control Board**

Troubleshooting Procedure

Steps	Action Taken	Yes	No
1	Check for evidence of fault or damage to the indicated unit. Is there damage evident?	Replace any damaged parts	Go to step 2.
2	Check that the Unit is correctly installed and fully seated.	Go to Step 3.	Reseat the Unit
3	Check the Unit version using the Configuration Sheet. Is the version current?	Replace the Engine Control Board	Replace the indicated Unit

Toner Sensor Detection Error

Error Codes that Apply

160 Yellow **161** Magenta **162** Cyan **163** Black

Initial Troubleshooting Actions to Take

1. **Cycle the printer's power.**
2. **If the problem persists follow the procedure below.**

Parts of the Printer that Apply

1. **Toner Cartridge**
2. **Image Drum Unit**
3. **Toner Motor**
4. **Imaging Drum Unit Sensor Board**
5. **Engine Control Board**

Troubleshooting Procedure

Steps	Action Taken	Yes	No
1	Check the following for evidence of fault or damage: Toner Cartridge Imaging Unit Agitator Bar Low Toner Sensors Is there any damage, debris or blockage?	Replace any damaged parts.	Go to Step 2.
2	Test the affected Toner Motor. 1. Remove the Toner Cartridge. 2. **Run the motor Clutch test** to test the Toner Supply Motor test. Does the motor rotate?	Go to Step 3.	Replace the motor. If the error persists, replace the Motor Driver Board
3	Does the plunger that engages the Agitation Bar move in and out while the Toner Motor rotates?	Go to Step 4.	Replace the Toner Supply Camshafts
4	Test the affected Low Toner Sensor. 1. Remove the CM or YK Imaging Units. 2. **Run the Scan switch test** to test the Toner Cart Sensor. Does the sensor function correctly?	Replace the Engine Control Board	Replace the Imaging Unit Sensor Board

MT Home Position Detection Error

Error Codes that Apply

125

Initial Troubleshooting Actions to Take

1. **Cycle the printer's power.**
2. **If the problem persists follow the procedure below.**

Parts of the Printer that Apply

1. **MPT Home Position Sensor**
2. **Home Position Sensor Harness**
3. **Registration Motor**
4. **Engine Control Board**

Troubleshooting Procedure

Steps	Action Taken	Yes	No
1	Check the MPT Lift Plate by printing a job from MPT. Does the Lift Plate operate correctly?	Go to Step 3.	Go to Step 2.
2	Test the Registration Motor **Run the Motor Clutch test** to test the motor. Is the motor operating correctly?	Replace the MPT Assembly	Replace the Registration Motor
3	Test the MPT Home Position Sensor. **Run the Scan Switch test** to test the Sensor. Does the sensor function correctly?	Replace the Engine Control Board	Go to Step 4.
4	Check continuity of the MPT Home Position Sensor harness. Is the wiring harness conductive?	Replace the Engine Control Board	Replace the MPT Home Position Sensor harness.

Toner Feed Switch Error / Toner Lock Lever Error

Error Codes that Apply

144 Yellow **145** Magenta **146** Cyan **147** Black

Initial Troubleshooting Actions to Take

1. **Ensure that the Toner Cartridges are fully seated and locked into position**
2. **Cycle the printer's power.**
3. **If the problem persists follow the procedure below.**

Parts of the Printer that Apply

1. **Toner Cartridge**
2. **Image Drum Unit**
3. **RFID Antenna**
4. **RFID Reader Board**
5. **Engine Control Board**

Troubleshooting Procedure

Steps	Action Taken	Yes	No
1	Check for packaging material. Is there packing materials present?	Remove the Material	Go to Step 2.
2	Remove the cartridge and tap it on a hard surface to break up any compacted toner. Reinstall the cartridge. Does the error persist?	Go to Step 3.	Complete
3	Check the RFID Harness continuity. 1. Remove the Top Cover. 2. Disconnect the RFID cable from the RFID and on the Engine Control Board Is the cable conductive?	Replace the RFID Reader Board. If the error persists, go to Step 4.	Replace the RFID Harness. If the error persists, go to Step 4.
4	Check the Antenna Harness continuity. Disconnect the connectors from the RFID Reader Board and Antennas. Is each harness conductive?	Replace the RFID Antennas	Replace the damaged Wiring. If the error persists, Replace the Engine Control Board. If the error persists, Replace the LVPS

Color Up/Down Error

Error Codes that Apply

142

Initial Troubleshooting Actions to Take

1. **Cycle the printer's power.**
2. **If the problem persists follow the procedure below.**

Parts of the Printer that Apply

1. **Up/Down Motor**
2. **Front Up/Down Mechanism**
3. **Rear Up/Down Mechanism**
4. **Engine Control Board**

Troubleshooting Procedure

Steps	Action Taken	Yes	No
1	Test the Up/Down Sensor. **Run the Scan Switch test** to test the Up/Down Sensor. Does the sensor change state?	Go to Step 2.	Replace the Engine Control Board
2	Test the Up/Down Motor. 1. Remove the Image Drum Units. 2. **Run the motor Clutch test** to test the Up/Down Motor. Does the motor rotate? Does the Up/Down mechanism move smoothly?	Replace the Engine Control Board	Go to Step 3
3	Check the UP/Down Motor and Up/Down Mechanism for Obstructions or broken gears that would prevent movement. Is there damage evident?	Repair/Replace the damaged parts.	Replace the Engine Control Board

Top Cover Open Error

Error Codes that Apply

310

Initial Troubleshooting Actions to Take

1. **Ensure that the Top Cover Latch is free of obstructions and fully closed**.
2. **Cycle the printer's power.**
3. **If the problem persists follow the procedure below.**

Parts of the Printer that Apply

1. **Top Cover Interlock Switch**
2. **HVPS**
3. **Engine Control Board**

Troubleshooting Procedure

Steps	Action Taken	Yes	No
1	Check the following for evidence of fault or damage: Top Cover latch (right side) Top Cover Interlock Actuator Is there any damage or misalignment?	Replace any damaged parts.	Go to Step 2.
2	Test the Top Cover Interlock Switch. **Run the Scan Switch test** to test the Switch. Does the switch function correctly?	Replace the Engine Control Board	Go to Step 3.
3	Replace the Top Cover Interlock Switch. Does the error persist?	Go to step 4.	Complete
4	Check the switch voltage on the HVPS. Is there +5 V across the connector?	Go to Step 5.	Replace the HVPS
5	Check all pins on the HVOLT Harness for continuity. 1. Disconnect the ribbon cable. 2. Check continuity of the ribbon cable.	Replace the Engine Control Board	Replace the Ribbon cable. Replace the HVPS

Fuser Unit Detected as Missing

Error Codes that Apply

320

Initial Troubleshooting Actions to Take

1. **Ensure that the Fuser Latch is free of obstructions and fully engaged**.
2. **Cycle the printer's power.**
3. **If the problem persists follow the procedure below.**

Parts of the Printer that Apply

1. **Fuser**
2. **Fuser Release Sensor**
3. **Engine Control Board**

Troubleshooting Procedure

Steps	Action Taken	Yes	No
1	Check the following for evidence of fault or damage: Fuser Fuser Connector Fuser Release Sensor Is there any damage?	Replace any damaged parts, and then cycle printer power.	Replace the Fuser. If the error persists, Go to Step 2.
2	Test the Fuser Release Sensor. **Run the Scan Switch test** to test the sensor. Does the sensor function correctly?	Replace the Engine Control Board	Replace the sensor. If the error persists, go to Step 3.
3	Check for +5 V to the sensor. Is there +5 V?	Replace the sensor harness.	

ID Unit Life Error

Error Codes that Apply

350 Yellow **351** Magenta **352** Cyan **353**Black

Initial Troubleshooting Actions to Take

1. **Print a Configuration Page to verify remaining life.**
2. **Cycle the printer's power.**
3. **If the problem persists follow the procedure below.**

Parts of the Printer that Apply

1. **C, M, Y, K Imaging Unit,**
2. **Engine Control Board**

Troubleshooting Procedure

Steps	Action Taken	Yes	No
1	Generate a Configuration Page and check the indicated Drum Life counter under "Supply Life". Does the counter indicate end of life?	Replace the Image Drum	Replace the Engine Control Board.

Fuser Life Error

Error Codes that Apply

354

Initial Troubleshooting Actions to Take

1. **Replace the Fuser.**
2. **Cycle the printer's power.**
3. **If the problem persists follow the procedure below.**

Parts of the Printer that Apply

1. **Fuser Unit,**
2. **Engine Control Board**

Troubleshooting Procedure

Steps	Action Taken	Yes	No
1	Generate a Configuration Page and check the indicated Fuser Life counter under "Supply Life". Does the counter indicate end of life?	Replace the Fuser.	Replace the Engine Control Board.

Belt Life Error

Error Codes that Apply

354

Initial Troubleshooting Actions to Take

1. **Replace the Transfer Unit.**
2. **Cycle the printer's power.**
3. **If the problem persists follow the procedure below.**

Parts of the Printer that Apply

1. **Transfer Unit,**
2. **Engine Control Board**

Troubleshooting Procedure

Steps	Action Taken	Yes	No
1	Generate a Configuration Page and check the indicated Belt Life counter under "Supply Life". Does the counter indicate end of life?	Replace the Transfer Belt.	Replace the Engine Control Board.

Toner Out Error

Error Codes that Apply

410 Yellow **411 Magenta** **412 Cyan** **413 Black**

Initial Troubleshooting Actions to Take

1. **Replace the effected Cartridge**
2. **Cycle the printer's power.**
3. **If the problem persists follow the procedure below.**

Parts of the Printer that Apply

1. **Toner Cartridge**
2. **RFID harness**
3. **RFID Reader Board**
4. **Engine Control Board**
5. **LVPS**

Troubleshooting Procedure

Steps	Action Taken	Yes	No
1	Check Toner Cartridge installation. Are the Toner Cartridges properly installed?	Go to Step 2.	Correct the installation.
2	Replace the affected Toner Cartridge. Does the error persist after a genuine Oki Toner Cartridge is installed?	Go to Step 3.	Complete
3	Check all pins of the RFID Harness for continuity. Remove the Top Cover. Disconnect the RFID cable from the RFID reader board and the Engine Control Board. Is the cable conductive?	Replace the RFID Reader Board If the error persists, go to Step 4.	Replace the RFID Harness. If the error persists, go to Step 4.
4	Check continuity of the affected Antenna Harness. Disconnect the harness from the RFID Reader Board and RFID Antennas. Is each harness conductive?	Replace the Engine Control Board and then Replace the LVPS in that order.	Replace damaged wiring.