

Reissued: 26-Jan-11

Model: PE-P1E	Date: 07-Apr-09	No.: RM035001c
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RTB Reissue

The items in bold italics have been changed or added.

Subject: Firmware History - Engine		Prepared by: H.K.	
From: 2nd Overseas Tech Support Sec., 2nd PQM Dept.			
Classification:	<input type="checkbox"/> Troubleshooting	<input type="checkbox"/> Part information	<input type="checkbox"/> Action required
	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Electrical	<input type="checkbox"/> Service manual revision
	<input type="checkbox"/> Paper path	<input type="checkbox"/> Transmit/receive	<input type="checkbox"/> Retrofit information
	<input type="checkbox"/> Product Safety	<input checked="" type="checkbox"/> Other (Firmware History)	<input checked="" type="checkbox"/> Tier 2

This is to inform you of the Engine firmware history.

Part No.	Program name	Version	
M0355130			
<i>E</i>	<i>M0355130E.dwn</i>	<i>01.04</i>	<i>February production '11</i>
D	M0355130D.dwn	01.03	August production '09
C	M0355130C.dwn	01.02	Not applied to the production
B	M0355130B.dwn	01.01	June production '09
A	M0355130A.dwn	01.00	March production '09

Symptom Corrected	Version
<p>Other changes: <i>Normally, the AIO motors will not rotate during the recovery from the sleep mode. This is to reduce the toner consumption. (However, they will rotate if process control and/or MUSIC are carried out during sleep recovery.)</i></p> <p><i>Noise is heard from the color AIO cartridges when the waste toner tank is full.</i></p> <p>Note:</p> <ul style="list-style-type: none"> - <i>To correct this, Near End and End conditions for the AIO waste toner tank were added as additional toner near and toner end conditions.</i> - <i>With color AIO cartridges, this occurs when the coverage is low (1% or less), the P/J is low (1-2P/J), and the printing mode is full color.</i> 	01.04

Reissued: 26-Jan-11

Model: PE-P1E	Date: 07-Apr-09	No.: RM035001c
Symptom Corrected		Version
<p>Other changes: Process Control conditions were changed as follows:</p> <ul style="list-style-type: none"> - Color toner is no longer consumed when Process Control or MUSIC is performed for B/W printing. - Process Control for full-color printing is performed just before the start of a full-color job <p>Note: Due to this change, when the operator switches to full-color mode for the first time after the main power switch is turned on, the machine requires about 30-40 seconds before it is ready to accept a job.</p> <p>IMPORTANT: To apply the change, after you update the firmware to this version, change the following setting in S mode (SP mode inside SOM):</p> <p>00: Normal (default) 08: Reduces color toner consumption</p> <p>See RTB #RM035003 for more details.</p>		01.03
To optimize Process Control for B/W printing, some process steps were eliminated.		
This was not applied to the production lines.		01.02
<p>Symptom corrected: Toner is sometimes attracted to non-image areas at both ends of the OPC surface after image development is completed.</p> <p>Note: To reduce the cleaning load on the AIO, the development bias after image development was increased from +100V to +150V.</p>		01.01
Initial Release		01.00

Reissued: 30-Mar-11

Model: Model PE-P1E	Date: 13-Apr-09	No.: RM035002a
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RTB Reissue

The items in bold italics have been changed or added.

Subject: Firmware History - Controller		Prepared by: H.K.	
From: 2nd Overseas Tech Support Sec., 2nd PQM Dept.			
Classification:	<input type="checkbox"/> Troubleshooting	<input type="checkbox"/> Part information	<input type="checkbox"/> Action required
	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Electrical	<input type="checkbox"/> Service manual revision
	<input type="checkbox"/> Paper path	<input type="checkbox"/> Transmit/receive	<input type="checkbox"/> Retrofit information
	<input type="checkbox"/> Product Safety	<input checked="" type="checkbox"/> Other (Firmware History)	<input checked="" type="checkbox"/> Tier 2

This is to inform you of the firmware history for the main control unit (Controller) (M035/M036).

Part No.	Program name	Version	
M0355682			
<i>B</i>	<i>M0355682B.dwn</i>	<i>1.01</i>	<i>WEB release only</i>
A	M0355682A_PDL.dwn	1.00	March production '09

Symptom Corrected	Version
<p>Symptom corrected:</p> <ol style="list-style-type: none"> <i>1. Slanted dots over umlauts in documents submitted using the PS driver. The problem only affected TrueType fonts.</i> <i>2. Parts of a page might be printed as two or more separate pages. This problem was triggered by having multiple instances of the orientation command in the same page of a PCL job.</i> <i>3. If printing a duplex job without driver, the printout might be cut off on 1 side.</i> 	<i>1.01</i>
Initial Release	1.00

Model: Model PE-P1E		Date: 31-Aug-09	No.: RM035003
Subject: Reducing the color toner consumption in BK mode		Prepared by: H.K.	
From: 1st Tech. Support Sec. Service Support Dept.			
Classification:	<input checked="" type="checkbox"/> Troubleshooting	<input type="checkbox"/> Part information	<input type="checkbox"/> Action required
	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Electrical	<input type="checkbox"/> Service manual revision
	<input type="checkbox"/> Paper path	<input type="checkbox"/> Transmit/receive	<input type="checkbox"/> Retrofit information
	<input type="checkbox"/> Product Safety	<input type="checkbox"/> Other ()	<input checked="" type="checkbox"/> Tier 2

SYMPTOM

The customer reports that the color toner cartridges run out too early, even though nearly 100% of their printing is done in B/W mode.

CAUSE

The machine consumes color toner while performing Process Control or MUSIC for B/W printing as well as for color printing.

SOLUTION

1. Update the Engine firmware to ver**01.03**.

Changes with Engine ver**01.03**:

Process Control conditions were changed as follows.

- Color toner is no longer consumed when Process Control or MUSIC is performed for B/W printing.
- Process Control for full-color printing is performed just before the start of a full-color job.

Important: Please advise customers that due to this change, when the operator switches to full-color mode for the **first** time after the main power switch is turned on, the machine requires about 30-40 seconds before it is ready to accept a job.

2. Change the following S mode setting to reduce the color toner consumption as necessary (inside SP mode).

00: Normal

06: Reduces the toner M/A by 20% (from beginning of mass production)

07: Reduces the toner M/A by 10% (from beginning of mass production)

08: Reduces color toner consumption (ver01.03** or later)**

See the tables below.

Model: Model PE-P1E	Date: 31-Aug-09	No.: RM035003
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S mode settings

	Normal	Reducing color toner consumption (+8)
Normal	00 (Default)	08
Reduces the toner M/A by 20%	06	0E
Reduces the toner M/A by 10%	07	0F

Note:

- “E” and “F” are hexadecimal symbols. For example, “0E” =0(6+8), and “0F”=0(7+8).
- Reducing the toner M/A:
This reduces the amount of toner used to develop the image. If a page is that is nearly 100% solid image is printed out during the Toner Near End condition, the trailing edge can sometimes appear lighter than the rest of the image. Reducing the toner M/A will reduce the image density of the image overall, and make this lighter area less noticeable.

Model: Model PE-P1E	Date: 31-Aug-09	No.: RM035003
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Machine behavior with default setting versus when reducing color toner consumption

Event	With default setting	When reducing color toner consumption
Process Control/MUSIC · Cover opened and closed · At job end, once 200 cumulative pages are developed	Machine performs Process Control and MUSIC for color.	- Machine performs Process Control for B/W mode without consuming any color toner. - Machine does not perform MUSIC.
MUSIC · Warm-up at power ON · Temperature change	Machine performs MUSIC	- Machine does not perform MUSIC.
Rotation of the color AIO cartridge at warm-up	All color AIO cartridges are rotated.	Only the black AIO cartridge is rotated.
Manual process control from SOM	Normal Process Control is performed.	Normal Process Control is performed.
A print job is initiated	Machine accepts and performs the job.	- Machine accepts the job, but before performing it, it judges whether or not Process Control needs to be performed first. - If 200 or more pages have been made since the last time a color job or Process Control was performed, the machine performs Process Control and then begins the job received.
First color print time just after main power is turned ON	The machine performs MUSIC during the warm-up.	The machine performs MUSIC just before the first color print job received after the main power is turned ON.

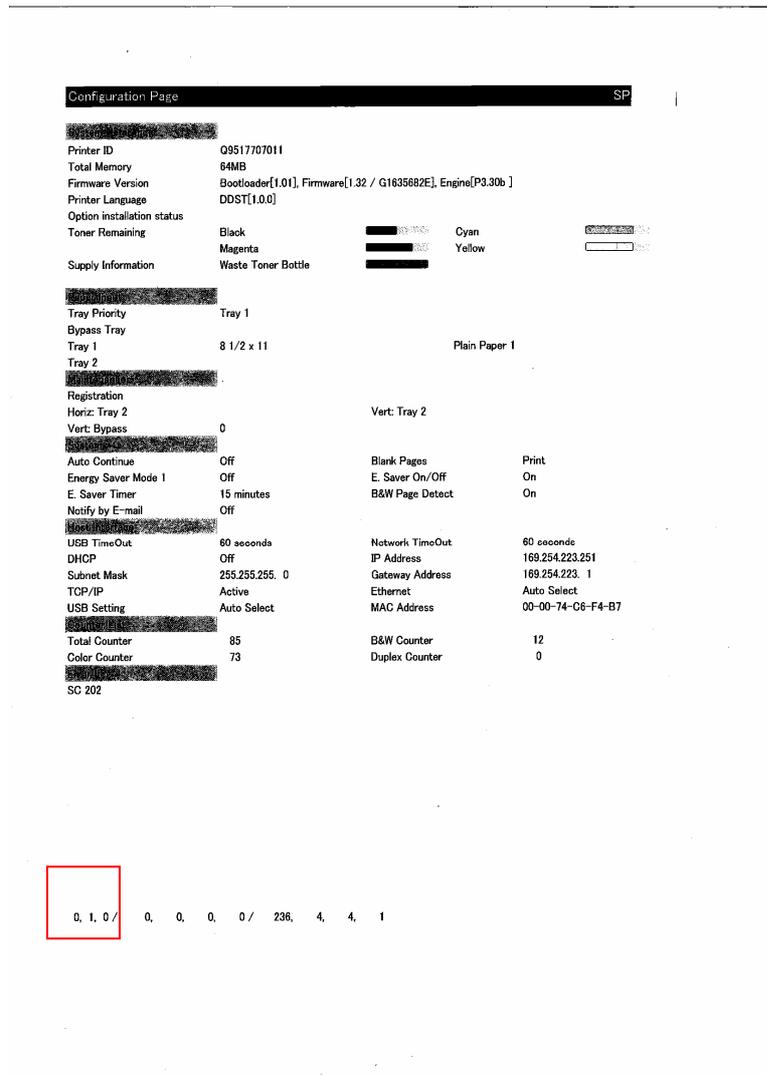
Model: Model PE-P1E		Date: 07-Oct-09	No.: RM035004
Subject: Paper Jam		Prepared by: H.K.	
From: 2nd Overseas Tech Support Sec. 2nd PQM Dept			
Classification:	<input checked="" type="checkbox"/> Troubleshooting	<input type="checkbox"/> Part information	<input type="checkbox"/> Action required
	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Electrical	<input type="checkbox"/> Service manual revision
	<input type="checkbox"/> Paper path	<input type="checkbox"/> Transmit/receive	<input type="checkbox"/> Retrofit information
	<input type="checkbox"/> Product Safety	<input type="checkbox"/> Other ()	<input checked="" type="checkbox"/> Tier 2

This RTB contains troubleshooting information for reducing paper jams.

Please use this RTB to instruct customers.

First, print out the Configuration Page sheet and check the jam counters to see which kinds of jams are occurring most frequently.

Printer version



Jam Counters:
 X,X,X :Tray jam counter, inner jam counter, duplex jam counter

Model: Model PE-P1E

Date: 07-Oct-09

No.: RM035004

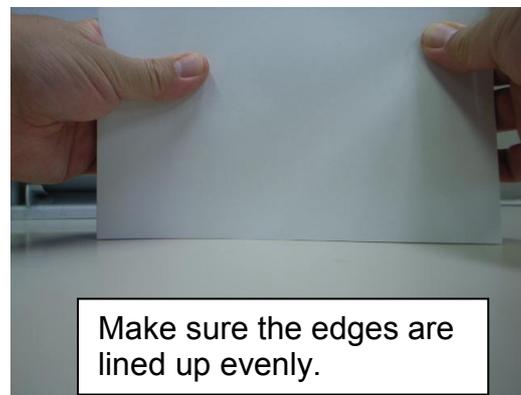
Next, advise the customer on the following:

Paper jam due to wrong paper size setting (Inner Jam)

Make sure that the paper size settings in the user menu (operation panel) and the printer driver and paper tray (side fence and end fence) are the same.

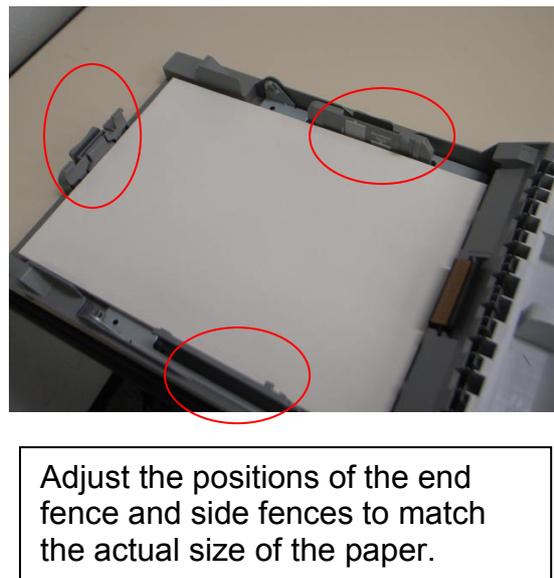
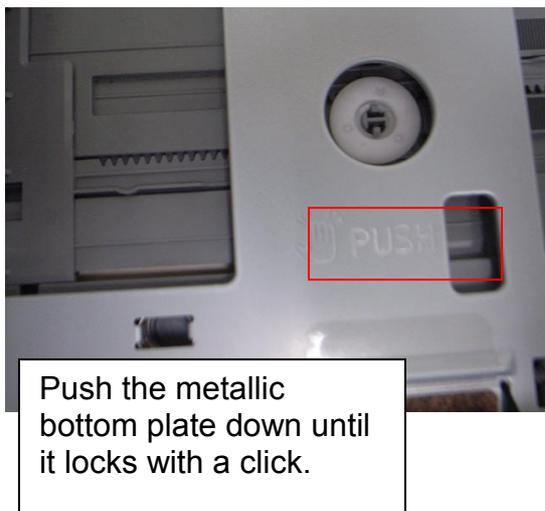
Paper jam by double or multi-feed (Tray jam, inner jam, or duplex jam)

Fan the paper well before loading it in the tray. Also, make sure that the edges are lined up evenly by tapping the stack on a desk or other flat surface. Only add paper when there is none left in the tray.



Paper jam by non-feed (Tray jam)

Make sure to push the metallic bottom plate down all the way (until it locks with a click) before you load the paper in the tray. Also, make sure the end fence and side fences are not too close together, compared to the paper size. (If they are, adjust their positions to match the edges of the paper).



Model: Model PE-P1E

Date: 07-Oct-09

No.: RM035004

Paper jam at paper exit (Inner jam)

Up to 150 sheets of plain paper can be stacked in the output tray. If the paper curl is severe, remove the paper from the exit tray stack more frequently. Also, raise the position of the stop fence in the output tray, which will prevent the paper from falling off the tray when you are printing out a large number of sheets.

Paper jam in the fusing unit (Inner jam)

Before you remove paper that is jammed inside the fusing unit, make sure to lower the fusing unit lever first (which releases the fusing pressure). After you remove the jammed paper, return the lever to the locked position.

Model: Model PE-P1E		Date: 19-Nov-09	No.: RM035005
Subject: Reset the "x" print cartridge		Prepared by: H.K.	
From: 2nd Overseas Tech Support Sec. 2nd PQM Dept			
Classification:	<input checked="" type="checkbox"/> Troubleshooting	<input type="checkbox"/> Part information	<input type="checkbox"/> Action required
	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Electrical	<input type="checkbox"/> Service manual revision
	<input type="checkbox"/> Paper path	<input type="checkbox"/> Transmit/receive	<input type="checkbox"/> Retrofit information
	<input type="checkbox"/> Product Safety	<input type="checkbox"/> Other ()	<input checked="" type="checkbox"/> Tier 2

SYMPTOM

The alert message, "Reset the (random color/s) print cartridge" is displayed, but the cartridges in question do not need to be reset. If this occurs during printing, the paper jam alert message is also displayed.

CAUSE

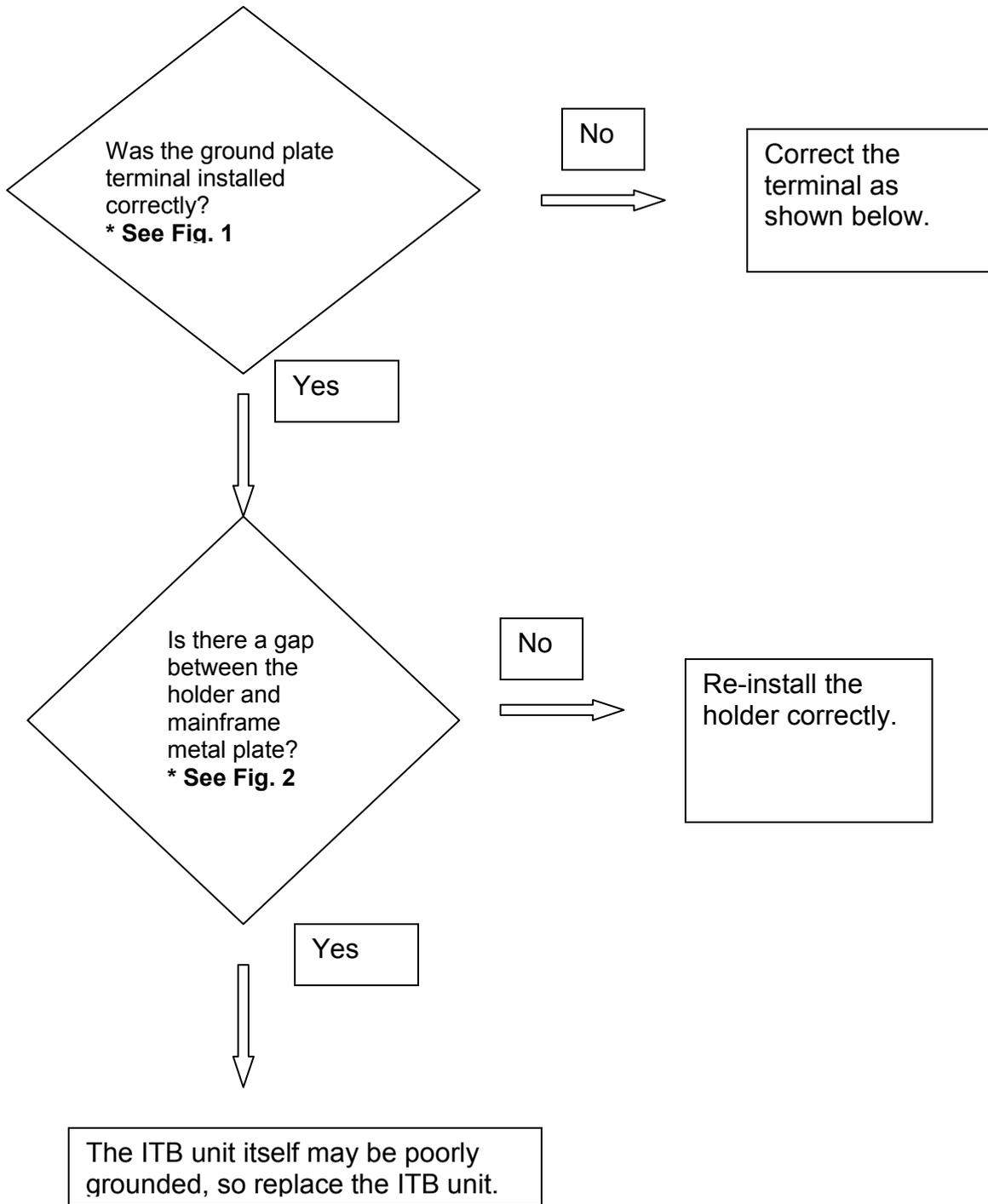
Poor grounding of the ITB (image transfer belt)

SOLUTION

1. Remove all AIO cartridges.
2. Remove the transfer unit.
3. Remove the lower fusing entrance guide (1 hook).
4. Remove the waste toner bottle.

Model: Model PE-P1E	Date: 19-Nov-09	No.: RM035005
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5. Follow the flowchart below to check the ground plate terminal and sensor bracket:



Model: Model PE-P1E	Date: 19-Nov-09	No.: RM035005
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Figure 1

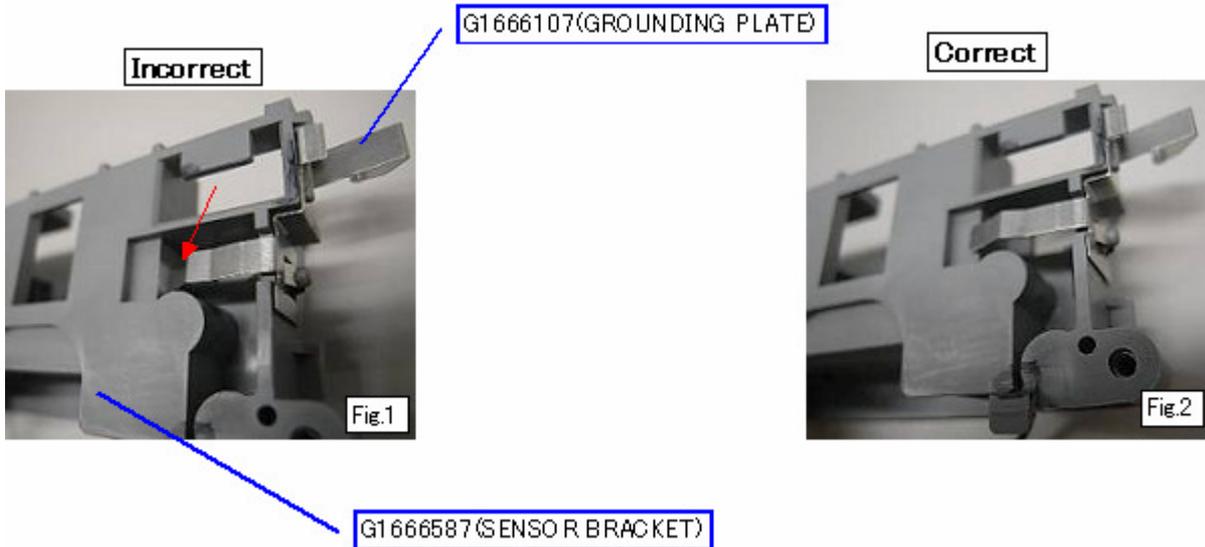
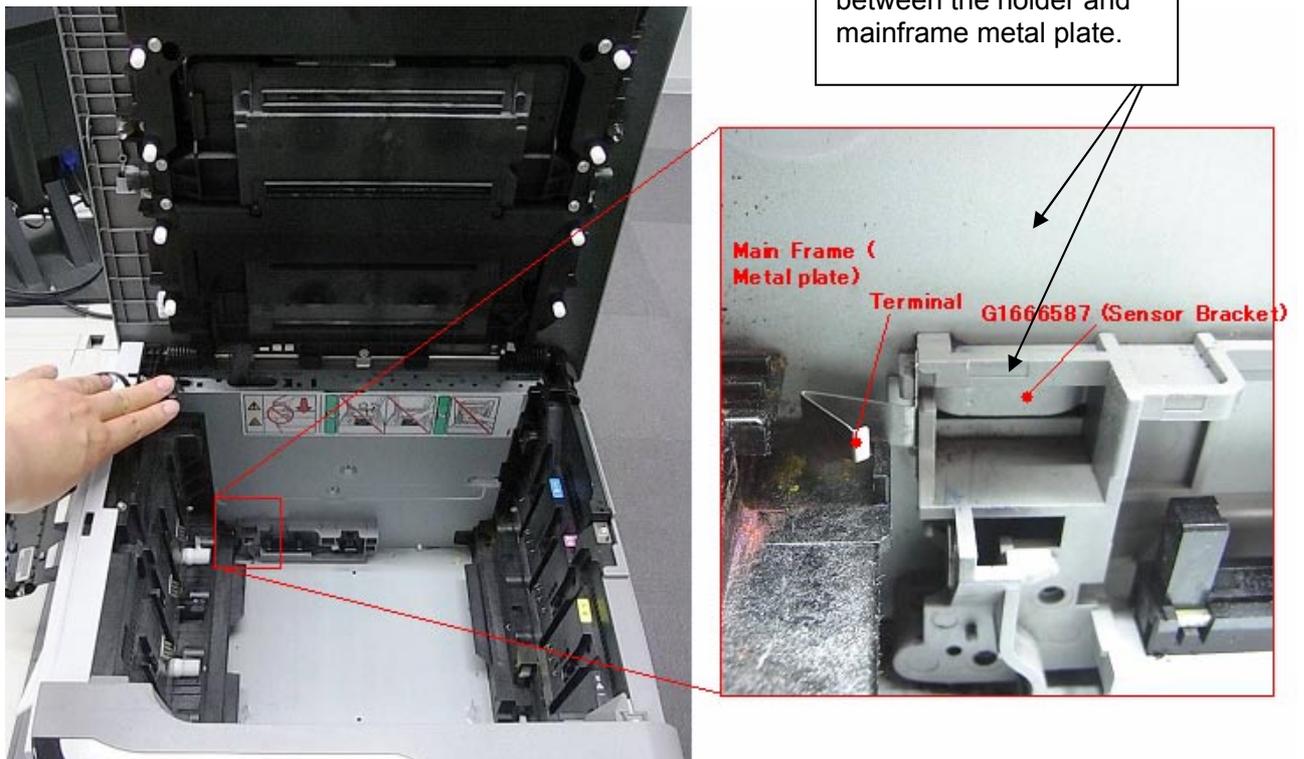


Figure 2



Model: Model PE-P1E		Date: 11-Dec-09	No.: RM035006
Subject: Jam Indication cannot be cleared.		Prepared by: H.K.	
From: 2nd Overseas Tech Support Sec. 2nd PQM Dept			
Classification:	<input checked="" type="checkbox"/> Troubleshooting	<input checked="" type="checkbox"/> Part information	<input type="checkbox"/> Action required
	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Electrical	<input type="checkbox"/> Service manual revision
	<input type="checkbox"/> Paper path	<input type="checkbox"/> Transmit/receive	<input type="checkbox"/> Retrofit information
	<input type="checkbox"/> Product Safety	<input type="checkbox"/> Other ()	<input checked="" type="checkbox"/> Tier 2

SYMPTOM

1. The "Paper jam" alert message does not clear after jammed paper is removed and the front or top cover is closed.
2. The "Toner End" alert message does not clear after the print cartridge is replaced at Toner End. Following this, if the main power switch is turned OFF/ON, the message changes to "Irregular toner".

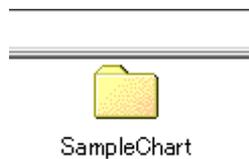
CAUSE

The interlock switch arm (G1665747) breaks, which causes the torsion spring to open up too far. As a result, the interlock switch lever cannot be shifted and the interlock switches are not released, preventing the machine from detecting the cover open condition.

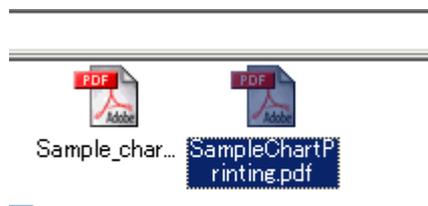
Model: Model PE-P1E		Date: 22-Jan-10	No.: RM035007
Subject: Sample Chart PDF in CD		Prepared by: H.K.	
From: 2nd Overseas Tech Support Sec. 2nd PQM Dept			
Classification:	<input type="checkbox"/> Troubleshooting	<input type="checkbox"/> Part information	<input type="checkbox"/> Action required
	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Electrical	<input checked="" type="checkbox"/> Service manual revision
	<input type="checkbox"/> Paper path	<input type="checkbox"/> Transmit/receive	<input type="checkbox"/> Retrofit information
	<input type="checkbox"/> Product Safety	<input type="checkbox"/> Other ()	<input checked="" type="checkbox"/> Tier 2

This RTB contains the procedure for checking a sample chart printout in the driver CD for Model PE-MF2/P1E/MD-P1. This procedure is already in the Service Manual and is also available via GKM (Global Knowledge management) DB Tier 0.

1. Select the "SampleChart" folder in the CD drive.



2. Select the file "ChartPrinting.pdf".

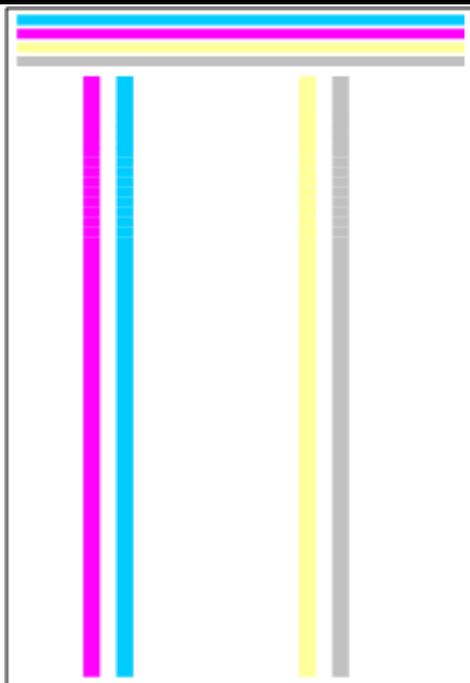


Checking a Sample Printout

Print out a mono-color pattern (all K, C, M, or Y) to clarify if the cause is a problem with one of the print cartridges, image transfer belt, image transfer roller, or the fusing unit. This sample page is attached to the last page of this manual. If you have a PDF version of this manual, you can print this page. Before printing, you have to adjust the printer driver settings to make the problem become obvious. For details about adjusting the settings, refer to "Printer Driver Setting for Printing a Sample" described below.

- Occurs with 1-3 colors: print cartridge(s) failure
- Occurs with all four colors: Image transfer belt, transfer roller or fusing unit failure

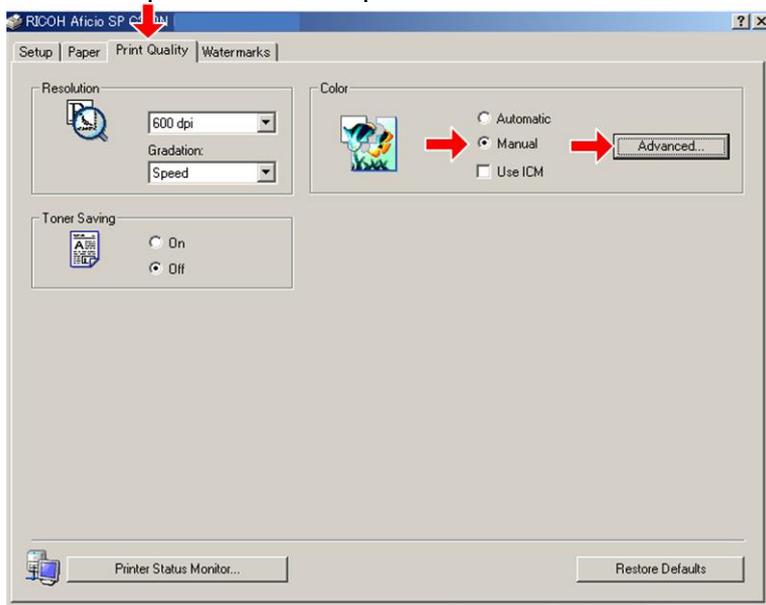
Model: Model PE-P1E	Date: 22-Jan-10	No.: RM035007
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g165c502

Printer Driver Setting for Printing a Sample

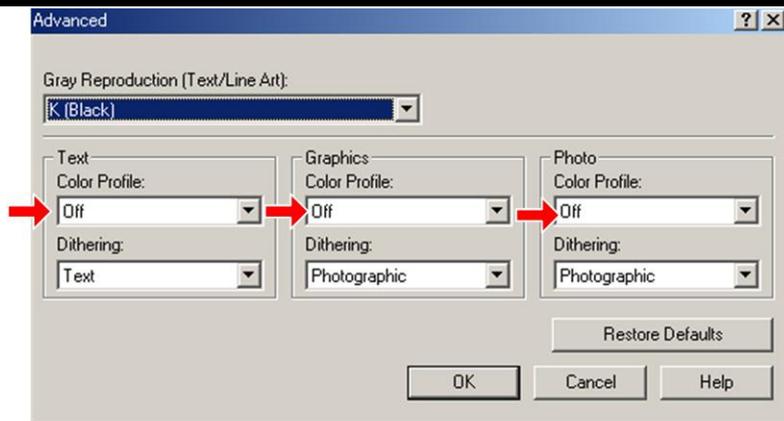
1. Click "Properties" on the printer driver.



g165c511

2. Click "Print Quality" tab.
3. Check "Manual" in the color setting.
4. Click "Advanced..."

Model: Model PE-P1E	Date: 22-Jan-10	No.: RM035007
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g165c510

5. Select "Off" from the pull-down menu in the "Color Profile" of the "Text".
6. Select "Off" from the pull-down menu in the "Color Profile" of the "Graphics".
7. Select "Off" from the pull-down menu in the "Color Profile" of the "Photo".

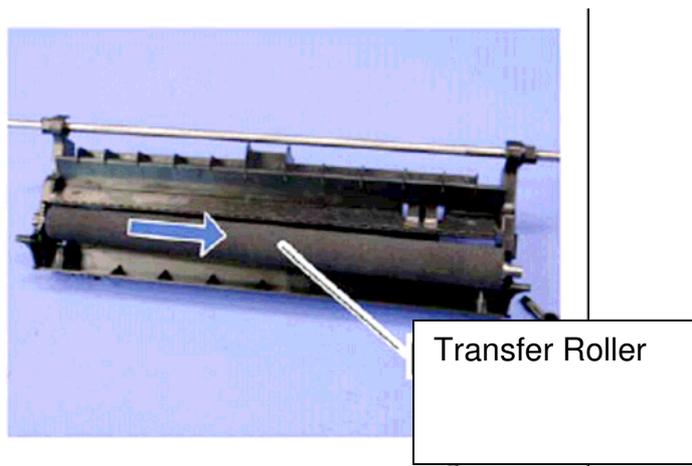
Model: Model PE-P1E		Date: 19-Feb-10	No.: RM035008
Subject: TRANSFER ROLLER		Prepared by: H.K.	
From: 2nd Overseas Tech Support Sec. 2nd PQM Dept			
Classification:	<input type="checkbox"/> Troubleshooting	<input checked="" type="checkbox"/> Part information	<input type="checkbox"/> Action required
	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Electrical	<input type="checkbox"/> Service manual revision
	<input type="checkbox"/> Paper path	<input type="checkbox"/> Transmit/receive	<input type="checkbox"/> Retrofit information
	<input type="checkbox"/> Product Safety	<input type="checkbox"/> Other ()	<input type="checkbox"/> Tier 2

Old part number	New part number	Description	Q'ty	Int	Page	Index	Note
	G1633978	TRANSFER ROLLER	0 - 1		13	*25	

*: New index

Change: This part was newly registered as a service part.

Reason: As per a request from the field.



Model: PE-P1E		Date: 18-May-10	No.: RM035009
Subject: Laser Optics Housing Replacement		Prepared by: H.K.	
From: 2nd Overseas Tech Support Sec. 2nd PQM Dept			
Classification:	<input checked="" type="checkbox"/> Troubleshooting	<input type="checkbox"/> Part information	<input type="checkbox"/> Action required
	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Electrical	<input checked="" type="checkbox"/> Service manual revision
	<input type="checkbox"/> Paper path	<input type="checkbox"/> Transmit/receive	<input type="checkbox"/> Retrofit information
	<input type="checkbox"/> Product Safety	<input type="checkbox"/> Other ()	<input checked="" type="checkbox"/> Tier 2

The following was added to the Service Manual.

LSU data input (S/M: Page 32)

Do the following after you replace the laser optics housing unit.

1. Perform Color Registration inside the "SP Mode 2" tab.
2. Turn the main switch OFF/ON.
Note: MUSIC will be performed automatically.
3. Print out the following test chart and make sure that MUSIC was performed successfully.
See the procedure below

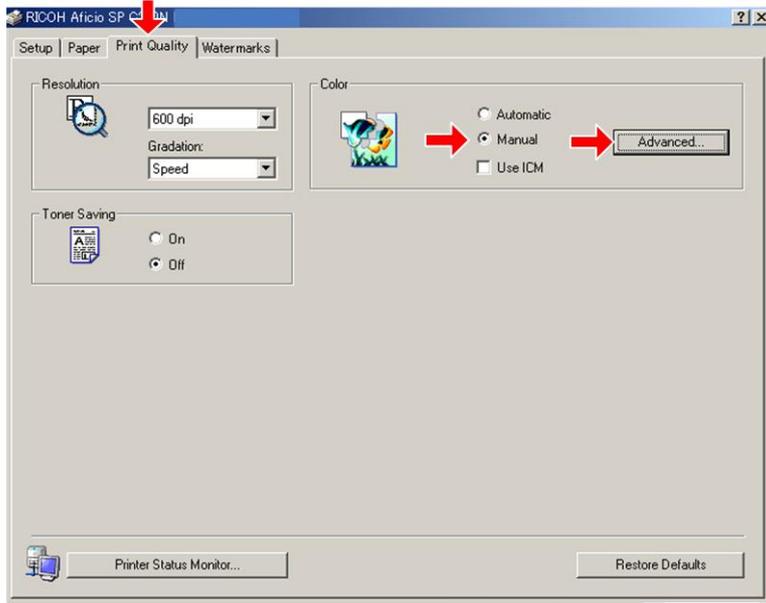


4. If necessary, adjust the registration settings for the front and rear sides of each paper tray inside the "SP Mode 2" tab.

Model: PE-P1E	Date: 18-May-10	No.: RM035009
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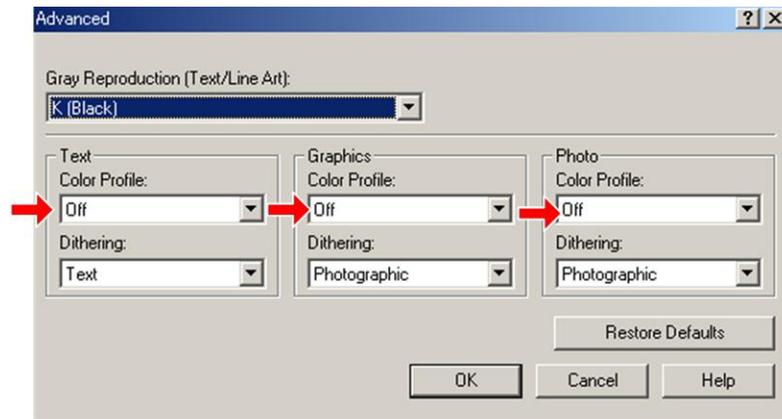
Printing out the test chart to make sure MUSIC was performed correctly

1. Click the "Properties" tab inside the printer driver.



g165c511

2. Click the "Print Quality" tab.
3. Select the "Manual" radio button.
4. Click [Advanced...].
5. Select "Off" for the three Color Profile pull-down menus shown (i.e. for Text, Graphics, and Photo modes).



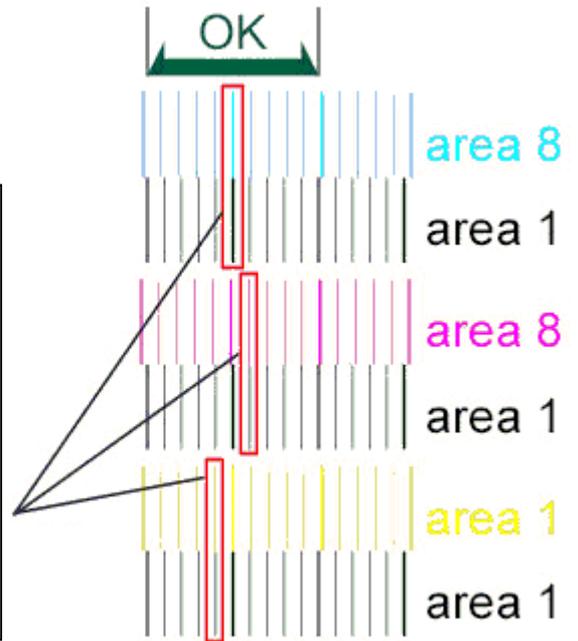
g165c510

6. Click [OK] twice to print out the test chart.
7. Make sure that MUSIC was performed successfully.
See the sample below
 - Four sets of vertical lines appear on the test chart (C and k, M and k, Y and k...). In each set, look for any vertical lines that are aligned within the region defined by "OK".

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- If all sets have at least one set of vertical lines that are aligned, MUSIC has been performed successfully.
- If MUSIC has not been performed successfully, do the procedure on the next page.

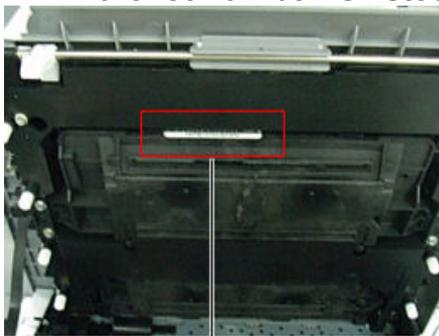
In each region/area, at least one set of vertical lines is aligned.



If MUSIC has not been performed successfully, do the following:

1. Open the upper cover and check the lot number of the laser optics housing unit.
2. Check to see if this lot number is listed in any of the Excel files attached below.

If the lot number is listed in one of the Excel files, do Steps 3-8 below.



Model: PE-P1E	Date: 18-May-10	No.: RM035009
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3. Open the front cover and turn on the machine.
4. Program the settings for the laser optics housing unit.
 - In the SOM utility, access "LSU Adjustment" inside the "SP Mode 2" tab.
 - Copy the corresponding LSU data inside the Excel sheet into the space provided in the SOM utility.
5. Close the front cover.
6. Execute "Color Registration", which is inside the "SP Mode 2" tab.
7. Turn the main switch OFF/ON.
Note: MUSIC will be performed automatically.
8. Adjust the registration settings for each tray for the front and rear sides of the paper with the "SP Mode 2" tab if necessary.



LSU Lot no. Data

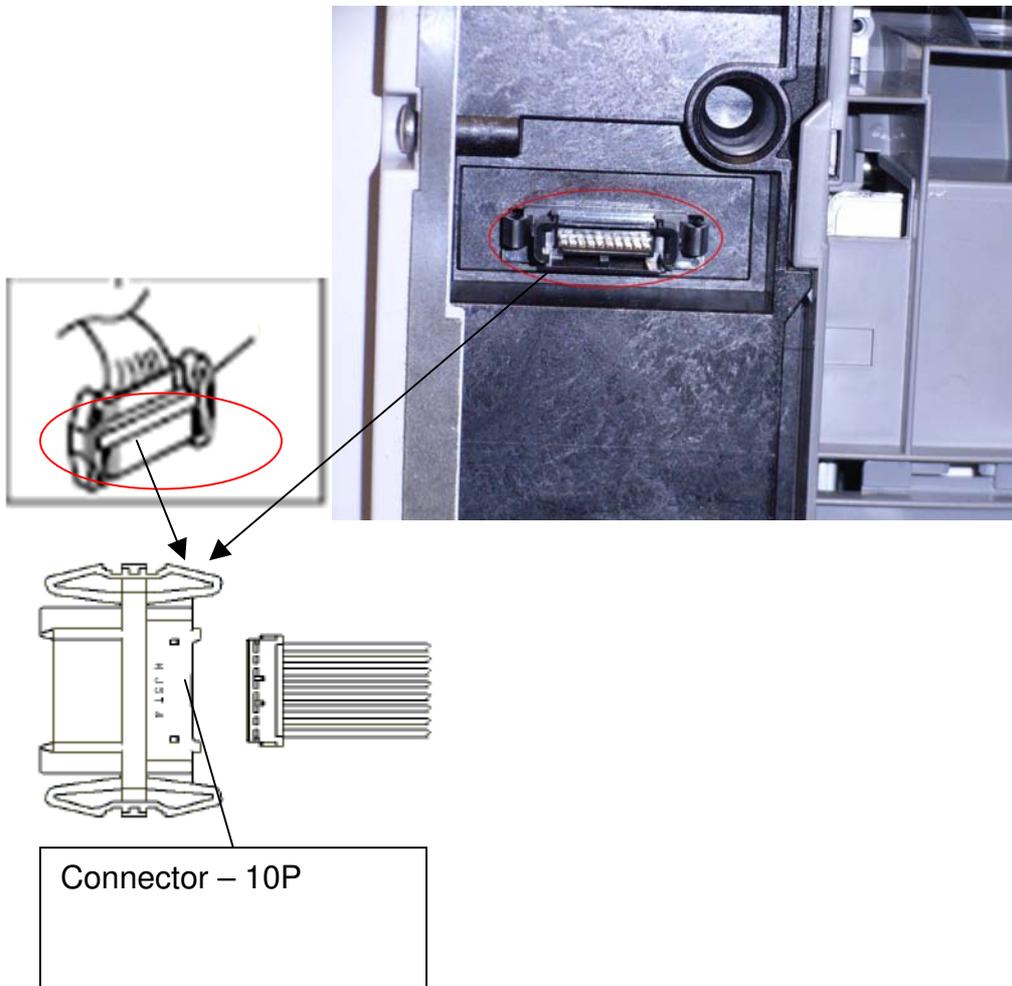
KMI1080100001-KM I1080100077a.xls	KMI1080700001-KM I1080700168a.xls	KPE1071100089-KP E1071104999a.xls	KPE1071105000-KP E107111013a.xls	KPE1071200001-KP E1071203999a.xls	KPE1071204000-KP E1071208616a.xls
KPE1080100001-KP E1080103999a.xls	KPE1080104000-KP E1080106999a.xls	KPE1080107000-KP E1080108927a.xls	KPE1080200001-KP E1080203999a.xls	KPE1080204000-KP E1080207999a.xls	KPE1080208000-KP E1080301444a.xls
KPE1071204567-KP E1080304899a.xls	KPE1080304900-KP E1080400499a.xls	KPE1080400500-KP E1080404299a.xls	KPE1080404300-KP E1080502255a.xls	KPE1080502256-KP E1080505248a.xls	KPE1080505249-KP E1080601116a.xls
KPE1080601117-KP E1080604545a.xls	KPE1080604546-KP E1080703301a.xls	KPM0000000002a.xls	KPP1071000002a.xls	RPE0800000006a.xls	

Model: Model PE-P1E		Date: 14-Jul-10	No.: RM035010
Subject: Connector to the optional paper tray		Prepared by: H.K.	
From: 2nd Overseas Tech Support Sec. 2nd PQM Dept			
Classification:	<input type="checkbox"/> Troubleshooting	<input checked="" type="checkbox"/> Part information	<input type="checkbox"/> Action required
	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Electrical	<input type="checkbox"/> Service manual revision
	<input type="checkbox"/> Paper path	<input type="checkbox"/> Transmit/receive	<input type="checkbox"/> Retrofit information
	<input type="checkbox"/> Product Safety	<input type="checkbox"/> Other ()	<input type="checkbox"/> Tier 2

Old part number	New part number	Description	Q'ty	Int	Page	Index	Note
	11033902	CONNECTOR - 10P	0 - 1		21	*21	

*: New index

Change/Reason: This part was missing from the parts catalogue.



Model: PE-P1E		Date: 19-Dec-13	No.: RM035011
Subject: Shaft: Paper Feed Roller		Prepared by: H.K.	
From: 3rd Tech Service Sect., MFP/P Tech Service Dept.			
Classification:	<input type="checkbox"/> Troubleshooting	<input checked="" type="checkbox"/> Part information	<input type="checkbox"/> Action required
	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Electrical	<input type="checkbox"/> Service manual revision
	<input type="checkbox"/> Paper path	<input type="checkbox"/> Transmit/receive	<input type="checkbox"/> Retrofit information
	<input type="checkbox"/> Product Safety	<input type="checkbox"/> Other ()	<input type="checkbox"/> Tier 2

Old part number	New part number	Description	Q'ty	Int	Page	Index	Note
G1662580	M1982580	SHAFT:PAPER FEED ROLLER:PRESS FIT	1 - 1	X/X	19	19	O/O as a set
08050089		RETAINING RING - M4	n - n-1		19	105	
	H5213355	C RING - PAPER FEED ROLLER	0 - 1	X/X	19	*27	

*:New index

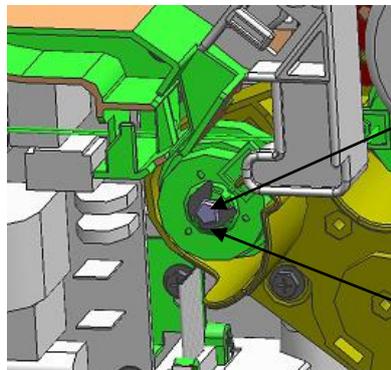
Change:

- 1) The width of the e-ring groove in the paper feed roller shaft was increased.
- 2) The e-ring was changed to a C-ring.

Reason: To facilitate assembly.

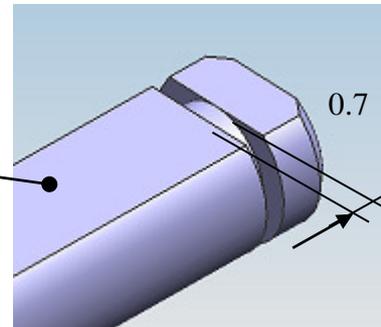
Model: PE-P1E	Date: 19-Dec-13	No.: RM035011
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Old

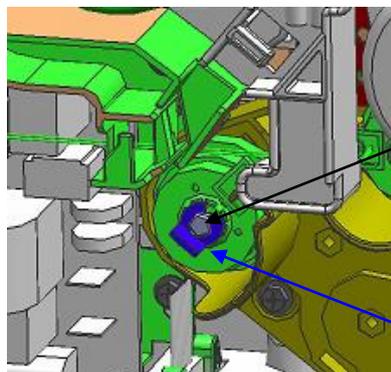


G1662580 Paper Feed Roller Shaft

08050089 E-ring

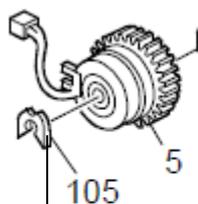
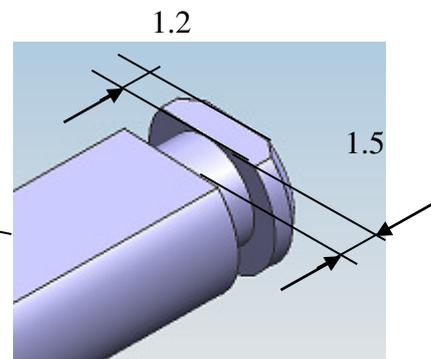


New



M1982580 Paper Feed Roller Shaft

H5213355 C-ring



08050089 → H5213355 New index
27

Model: PE-P1E	Date: 19-Dec-13	No.: RM035011
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SRD (China) Production

MODEL NAME	V/Hz	DESTINATION	CODE	SERIAL NUMBER
Ricoh Aficio SP C231N	120/60	USA	M035-17	Spare parts only
Ricoh Aficio SP C231N	220/50, 60	China	M035-21	Spare parts only
Gestetner SP C231N Nashuatec SP C231N Rex Rotary SP C231N	220/50, 60	Europe	M035-22	Spare parts only
Ricoh Aficio SP C231N	220/50, 60	Europe, Asia, etc	M035-27	Spare parts only
SP C 231N	120/60	USA	M035-51	Spare parts only

MODEL NAME	V/Hz	DESTINATION	CODE	SERIAL NUMBER
Ricoh Aficio SP C232DN	120/60	USA	M036-17	Spare parts only
Ricoh Aficio SP C232DN	220/50, 60	China	M036-21	Spare parts only
Gestetner SP C232DN Nashuatec SP C232DN Rex Rotary SP C232DN	220/50, 60	Europe	M036-22	Spare parts only
Ricoh Aficio SP 232DN	220/50, 60	Europe, Asia, etc	M036-27	Spare parts only
SP C232DN	120/60	USA	M036-51	Spare parts only