Model: Bellini	Date: 15-Dec-99	No.: RA294001

Subject: Toner Hopper Gear Replcement at Installation	Prepared by: H.K.
From: Technical Services Dept., GTS Division	

Classification:	☐ Troubleshooting	☐ Part information	☒ Action required
	☐ Mechanical	☐ Electrical	☒ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

While SP2-207-2 (Toner Bank Toner Supply) is performed at installation, the rotation of the toner hopper gear (AB013748: Joint Gear -15Z) may cause an oversupply of toner from the hopper to the development unit. This in turn causes relatively high image density in copies/printouts made just following installation. To correct this, machines in mass-production have been modified as follows:

Temporary Solution

The toner hopper contains a red idler gear (A2943255: Idler Gear - 15Z). This gear reduces the drive supplied to the toner hopper and prevents the oversupply of toner that occurs in the initial period following installation.

The toner hopper gear for normal operation (White gear:AB013748: Joint Gear -15Z) and a spare C-ring (07200060B: Retaining Ring - M6) have been packed in the accessory plastic bag.

The procedure for the Toner Hopper Drive Gear Replacement (Joint Gear - 15Z) has been packed in the accessory plastic bag. The procedure is also included on page 2/3 of this bulletin.

Action required

Replace the red idler gear with the white gear after carrying out SP2-207-2 (Toner Bank Toner Supply) by referring to the procedure for the Toner Hopper Drive Gear Replacement (Joint Gear - 15Z) packed in the accessory plastic bag. The red idler gear is not necessary after machine installation.

Permanent Solution

The permanent solution is basically the same as the temporary solution. To facilitate gear replacement, the gear has been mounted with screw (09513006B: Philips Screw With Flat Washer - M3x6) instead of a C-ring. The procedure is included on page 3/3 of this bulletin. Regarding the cut-in serial numbers for this modification, we will issue an MB as soon as they are available.

Action required

Same as “Action required” described above.

The part number of the toner hopper unit will be changed from #A2943200 to a new part number due to the above modification. If the toner hopper unit is replaced in the field, replace the red idler gear in the new toner hopper with the white gear in the original toner hopper unit.
The toner hopper unit part number will be therefore changed because of the gear replacement and C-ring substitution. As the spare part of #A2943200 contains the white gear, the old unit part can be replaced in the machines installed in the field. It is not necessary to change the red gear to a white gear.

The following is the procedure packed in the accessory plastic bag as the temporary solution. After step #35, remove the development unit and follow the instruction marked with an asterisk (*). Then, put back the development unit.

Toner Hopper Drive Gear (Joint Gear 15Z) Replacement

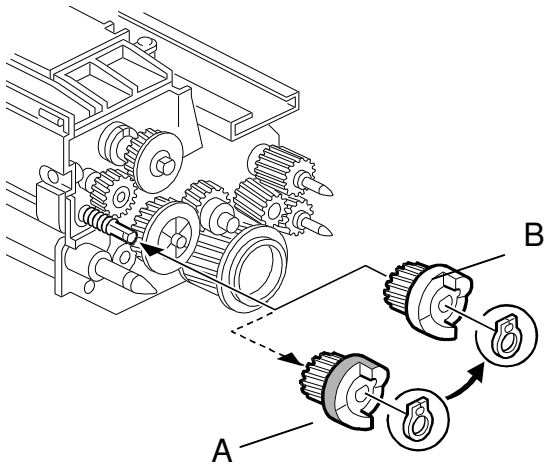
Please add the gear replacement procedure (*) after step #35 (Toner Bank Toner Supply).

#35. Supply toner from the toner bank to the toner hopper as follows:
1) Select SP2-207-2 (Toner Bank Toner Supply)
2) Press the “Start key” on the LCD.

*

#36. Change the paper size for all paper trays to suit the customer’s request.

*Remove the Joint Gear 15Z that has been marked red [A].
Replace it with the white gear [B] and a spare C-ring packed in the accessory plastic bag.



Toner Hopper Unit Rear View

Model: Bellini	Date: 15-Dec-99	No.: RA294001

The following is the procedure packed in the accessory plastic bag as the permanent solution. After step #35, remove the development unit and follow the instruction marked with an asterisk (*). Then, put back the development unit.

Toner Hopper Drive Gear (Joint Gear 15Z) Replacement

Please add the gear replacement procedure after step #35 (Toner Bank Toner Supply).

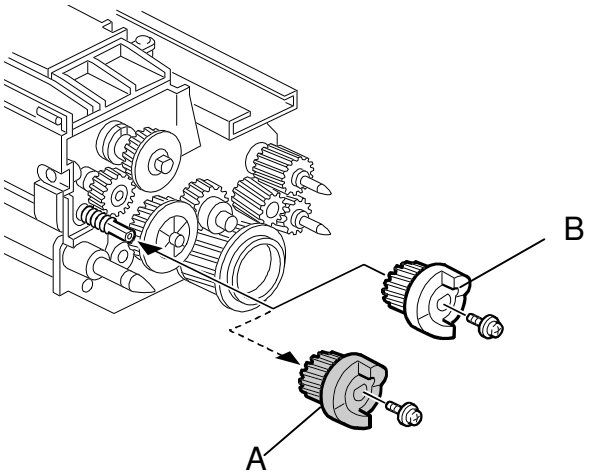
#35. Supply toner from the toner bank to the toner hopper as follows:
1) Select SP2-207-2 (Toner Bank Toner Supply)
2) Press the “Start key” on the LCD.

*:

#36. Change the paper size for all paper trays to suit the customer’s request.

*

Remove the Joint Gear 15Z that has been marked red [A].
Replace it with the white gear [B] and a spare C-ring packed in the accessory plastic bag.



Toner Hopper Unit Rear View

Reissued: 03-Feb-00

Model: Bellini	Date: 15-Dec-99	No.: RA294002a

RTB Correction

The following items in bold italics have been added.

Subject: Transportation Remarks			Prepared by: H.K.
From: Technical Services Dept., GTS Division			
Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☒ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

We have found that toner in the toner transport tube may be blocked due to vibrations during machine transportation. Please note the following remarks and do the procedure when the machine is transported.

3.9 TRANSPORTATION REMARKS

3.9.1 TONER TRANSPORT TUBE CLEANING

NOTE:

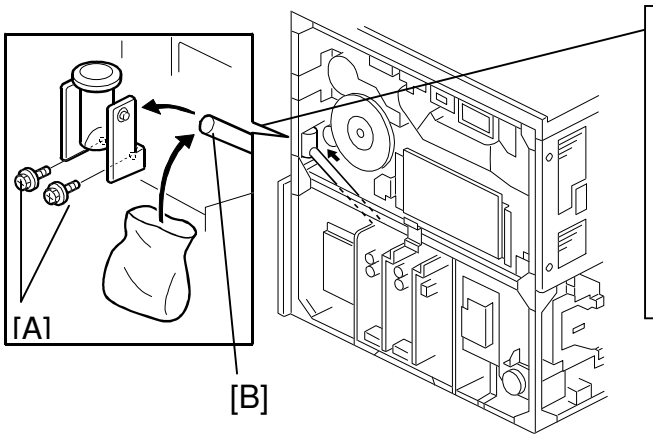
1) When transporting the machine, do the following operations. Otherwise, the toner system may be blocked.
2) Be careful not to drop the toner.
3) If this procedure is not carried out, SC592 (Toner Bank Motor Error) or SC495 (Toner Bottle Unit Error) could be displayed and the toner transport tube and screw should be replaced.

I. Procedure before transportation (Removing toner from the toner transport tube):

1. Close the toner bottle cap using SP5-804-62 (upper bottle) or -63 (lower bottle). Then remove the toner bottles from the bank.
2. Remove the upper rear and lower rear covers.
3. Remove the upper left cover, lower left cover, upper right cover.
4. Remove the two screws [A] securing the toner supply cylinder.
5. Cover the end of the toner transport coil tube [B] with a plastic bag.

NOTE: See "Note for step 6".

6. Energize the toner bank motor and toner supply coil clutch for 2 minutes using SP5-804-61 and -64 to remove all of the toner in the supply tube.
7. Re-install all removed parts except for the toner bottles.



NOTE for step 6:
Take extra caution not to bend the toner transport coil tube [B]. If it is bent, this can cause the coil (screw) inside to be overloaded, locked, or damaged. SC592 will be displayed, and the coil (screw) inside should be replaced.

Model: Bellini	Date: 15-Dec-99	No.: RA294002a

NOTE: Make sure that three tubes are connected to the toner supply cylinder when putting it back.

II. Procedure after transportation (loading toner into the toner transport tube):

1. Load the toner bottles into the toner bank.
2. Remove the upper right cover. Open the cylinder top cover and clean the inner surface of the cylinder with a cloth to check the toner supply at step 6. Then, close the cylinder top cover.
3. Energize the toner bank motor using SP5-804-61.
4. Energize the toner bottle motors for 5 to 6 seconds using SP5-804-59, -60.
5. Energize the toner supply coil clutch using SP5-804-64.
6. 50 to 60 seconds later, toner is supplied to the toner supply cylinder. Make sure that toner is properly supplied to the cylinder.
7. Turn off the toner supply coil clutch and then the toner bank motor.
8. Return all removed parts.

Note: Do not energize the toner bottle motors for a long time, otherwise toner overflows in the toner entrance tank.

Model: Bellini	Date: 15-Dec-99	No.: RA294002a

Upon reviewing the previous Toner Bank Unit Removal procedure in the Service Manual, the above procedures on pp.1-2 have been added as step 1:

6.11.2 TONER BANK UNIT REMOVAL

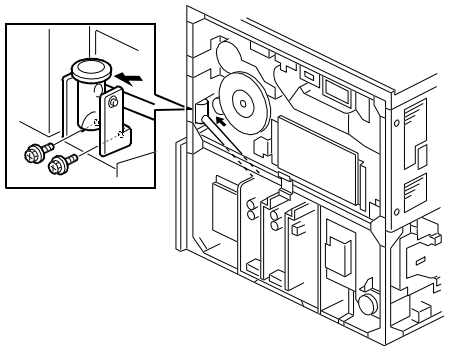
1. Follow steps 1 to 6 of the procedure before transportation.
2. Turn off the main switch and unplug the power cord. Follow steps 1 and 2 of the waste toner bottle removal procedure.

⚠CAUTION

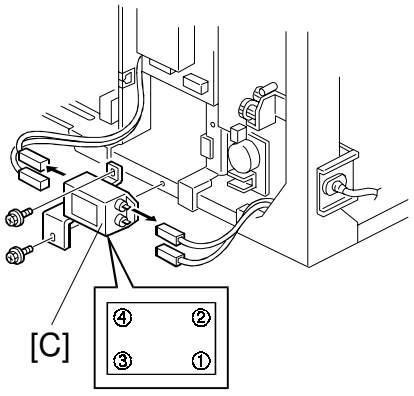
Make sure that the power cord is unplugged before removing the noise filter in the next step.

3 Remove the noise filter [C] (2 screws and 4 connectors; upper: ④, ② white lower: ③, ① yellow) and toner bank motor [D] (2 screws, 1 connector).

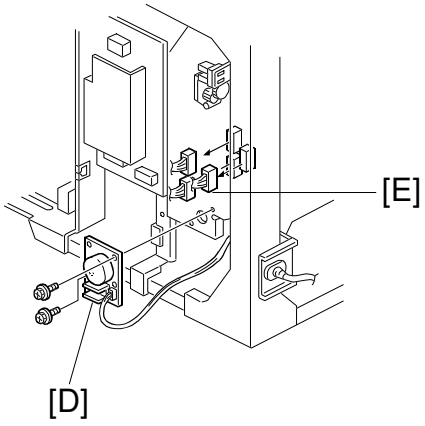
4 Disconnect the three connectors [E] from the toner bank unit.



A294R903.WMF



A294R904.WMF

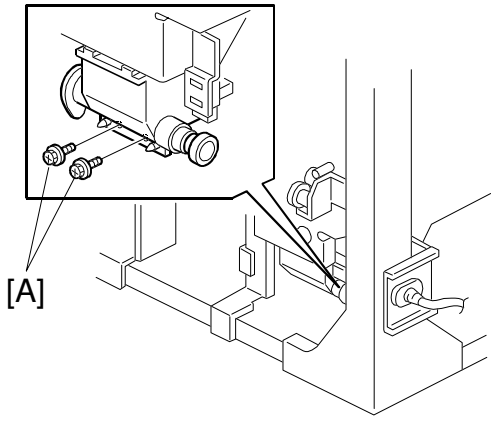


A294R905.WMF

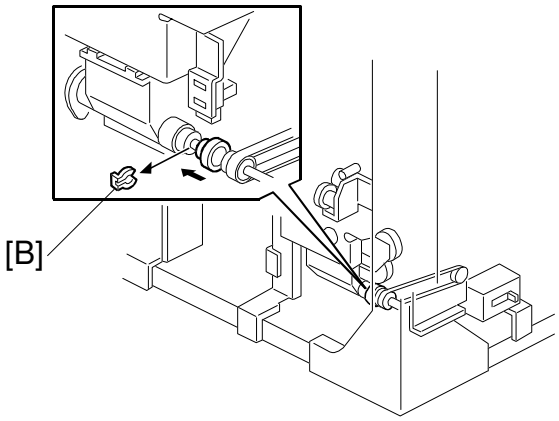
Model: Bellini	Date: 15-Dec-99	No.: RA294002a

5 Remove the two screws [A] securing the toner transport coil tube.

6 While sliding the toner transport coil tube, remove the snap ring [B].



A294R907.WMF



A294R906.WMF

Model: Bellini	Date: 15-Dec-99	No.: RA294002a

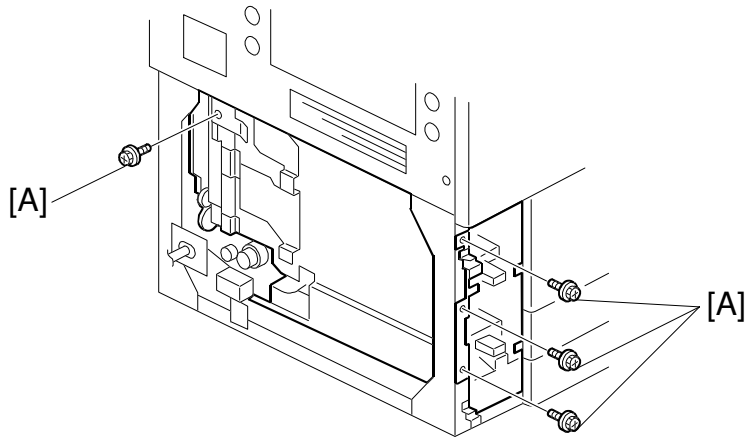
7 Remove the four screws [A] securing the toner bank unit.
NOTE: Try not to spill any toner from the toner bank.

8 Remove the screw [B] securing the toner recycling and collection cover [C].

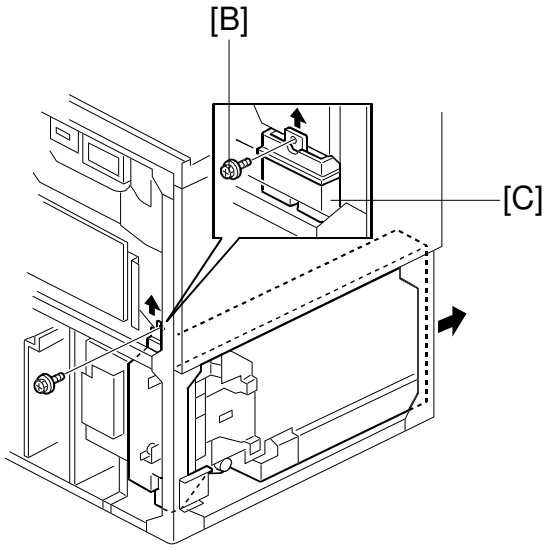
9 While lifting the toner recycling and collection cover [C], pull out the toner bank unit.
NOTE: When pulling out the toner bank unit, toner may leak out of the junction between the tube and toner bank. Place a cloth on the machine bottom plate so that the plate does not become dirty.

10 Remove the plastic bag from the toner transport coil tube. Re-connect the toner supply cylinder to the toner transport coil tube (2 screws).

11 Perform Procedure II. described on pp.1-2 of this bulletin (“After Transportation”).



A294R908.WMF



A294R909.WMF

Model: Bellini	Date: 31-Dec-99	No.: RA294003

Subject: SC495 (After installation)	Prepared by: J. Mochizuki
From: Technical Services Dept., GTS Division	

Classification:	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

SYMPTOM

SC495 is displayed while making copies. This symptom occurs soon after the machine installation is completed.

CAUSE

When SP2207 is performed at installation, the toner supply from the toner bank stops before enough toner is supplied to the toner hopper.

This is because the toner hopper sensor tends to misdetect the toner amount before the toner inside the toner hopper is stabilized.

SOLUTION

If this symptom occurs in the field, turn the main switch off and on. When enough toner is supplied to the toner hopper, this problem will not reoccur.

For a permanent countermeasure, the firmware has been changed to change the SP2207 operation. The firmware version was changed from Ver. 7.1 to Ver. 7.8.1.
The new firmware will be used from the January 2000 production.

Before modification:
While performing SP2207 (Forced toner supply), toner supply from the toner bank stops 4 minutes after the toner hopper sensor detects the toner.

After modification:
Toner supply stops 6 minutes after starting SP2207.

The part numbers (suffix) have been changed as follows:

	Old (Ver 7.1)	New (Ver 7.8.1)
P/N for the firmware (NA)	A2945610B	A2945610C
P/N for the firmware (EU)	A2945660B	A2945660C

It is recommended to install the new software (ver 7.8.1) before starting toner initial setting with SP2207.

Model: Bellini	Date: 31-Jan-00	No.: RA294004

Subject: Noise from the fusing unit	Prepared by: H. K.
From: Technical Services Dept., GTS Division	

Classification:	☐ Troubleshooting	☐ Part information	☒ Action required
	☐ Mechanical	☐ Electrical	☒ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

Note on reinstallation of the hot roller unit:

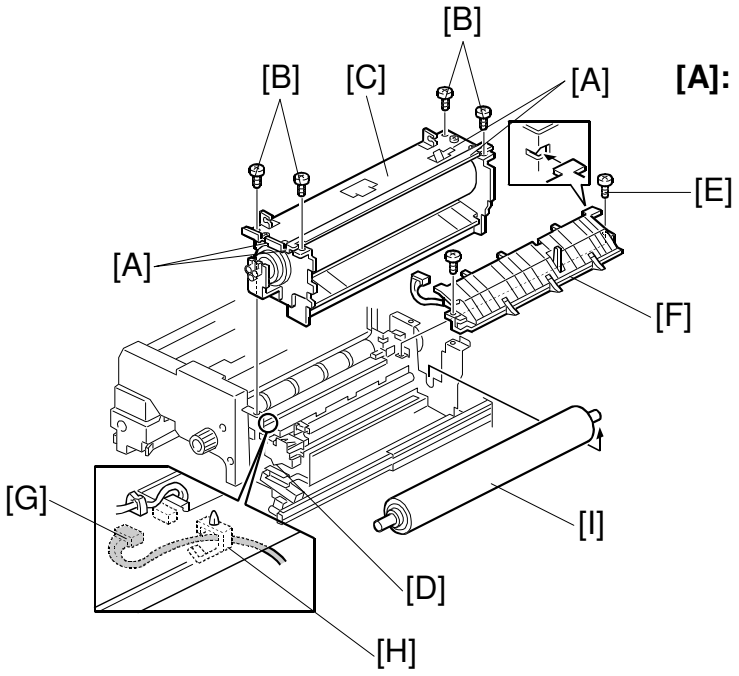
We have found that an audible resonance may occur inside the fusing unit while making copies. To correct this, the method for reinstalling the hot roller unit has been changed. Please correct the note on page 6-85 in the service manual as follows:

Old

5. Remove the four **M5 pan head screws** [B] and remove the hot roller unit [C].
   NOTE: 1) When re-installing the hot roller unit, make sure that the flanges of the ball bearings in the hot roller unit are set inside the fusing exit side plate [D] and the gear in the hot roller unit is installed on the rear side.
   2) Secure the M5 pan head screws at the rear side first. Then, secure the screws at the front side.

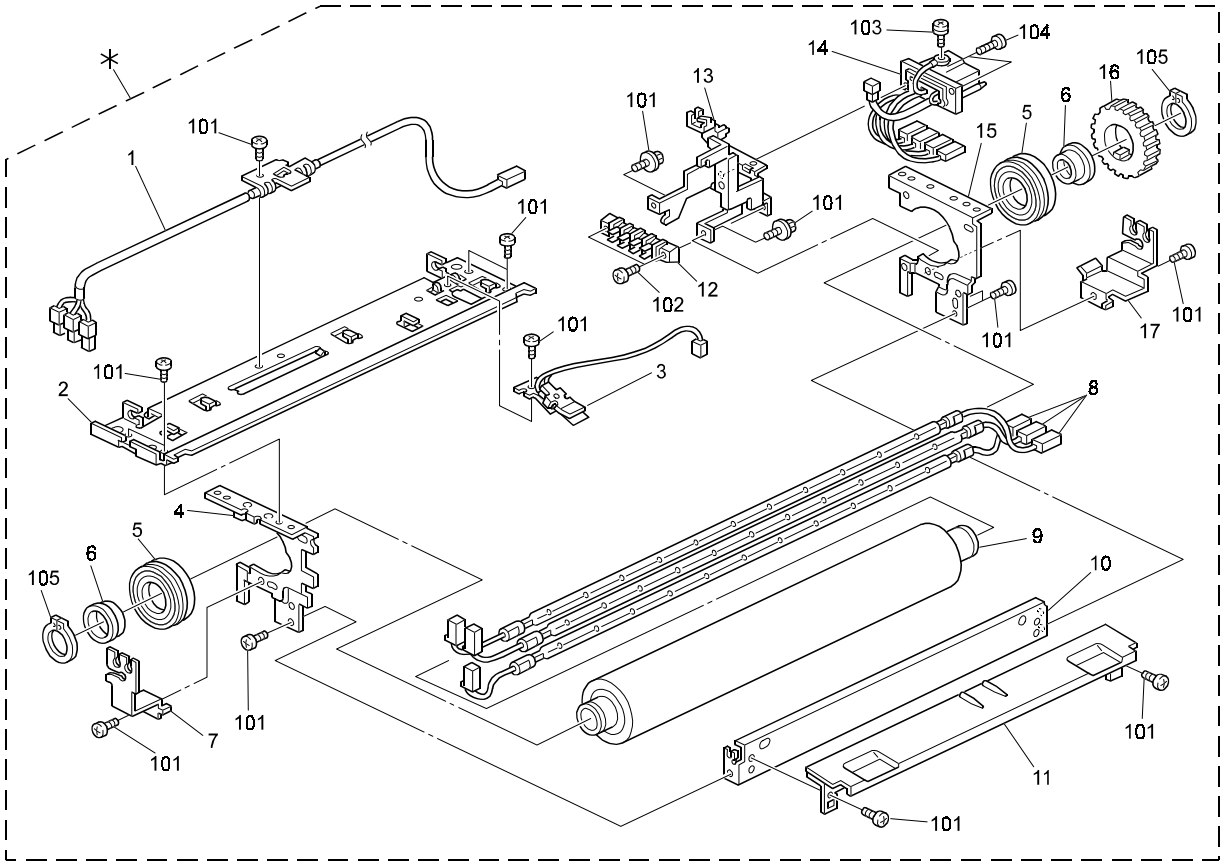
New

5. Remove the four **M5 pan head screws** [B] and remove the hot roller unit [C].
   NOTE: 1) When re-installing the hot roller unit, make sure that the flanges of the ball bearings in the hot roller unit are set inside the fusing exit side plate [D] and the gear in the hot roller unit is installed on the rear side.
   2) Secure the **M5 pan head screws in the following order: left-rear, right-front, right-rear, left-front.**



[A]: Do not remove these screws.

A294R503.WMF



Noise (resonance) during copying

An audible resonance may occur during copying. To correct this, machines in production have been modified as follows:

Temporary countermeasure applied from December 1999 production:

The screws for attaching the right lower fusing stay (#10:A2944059) and the rear fusing plate (#15: A2944057) have been inserted from the front side. They were previously inserted from the rear side.

Permanent countermeasure for machines in production:

The screw holes in the rear fusing plate have been changed from 4.1 ± 0.1 mm and 4.1 ± 0.1 x 6 mm to 4 mm. The screw holes in the right lower fusing stay have been changed from 4 mm to 4.1 ± 0.1 mm and 4.1 ± 0.1 x 6 mm. Please note that for the permanent countermeasure, the insertion direction of the screws for the right lower fusing stay and rear fusing plate is unchanged (i.e. from the rear side).
The right lower fusing stay and rear fusing plate will be given new part numbers (see below). The interchangeability between old and new parts is O/O as a set. Detailed parts

information will be announced in an MB when the cut-in serial numbers are available.

P/N change:

-Right lower fusing stay: P/N changed from A2944059 to A2944099.
-Rear fusing plate: P/N changed from A2944057 to A2944094.

Action in the field for machines produced before December 1999:

If this symptom occurs on machines with the following serial numbers, please insert the screws from the front instead of the rear side. Refer to the temporary countermeasure on the previous page.

A29414,24; L0659110XXX, A29426: 4B11190XXX, A29415,17,22,27; H369110XXX

Model: Bellini	Date: 03-Feb-00	No.: RA294005

Subject: Key Counter Extension Kit & Relay Key Counter Harness	Prepared by: Hiroki Kobayashi
From: Technical Services Dept., GTS Division	

Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☒ Other ( )		

Part Number of the Key Counter Extension Kit

The part number for the extension cable is not listed in the parts catalogue or service manual. This cable is required when installing the key counter together with the LCT, and can be ordered as a spare part. For the installation procedure, please refer to page 3-27 of the service manual.

The part number is as follows:

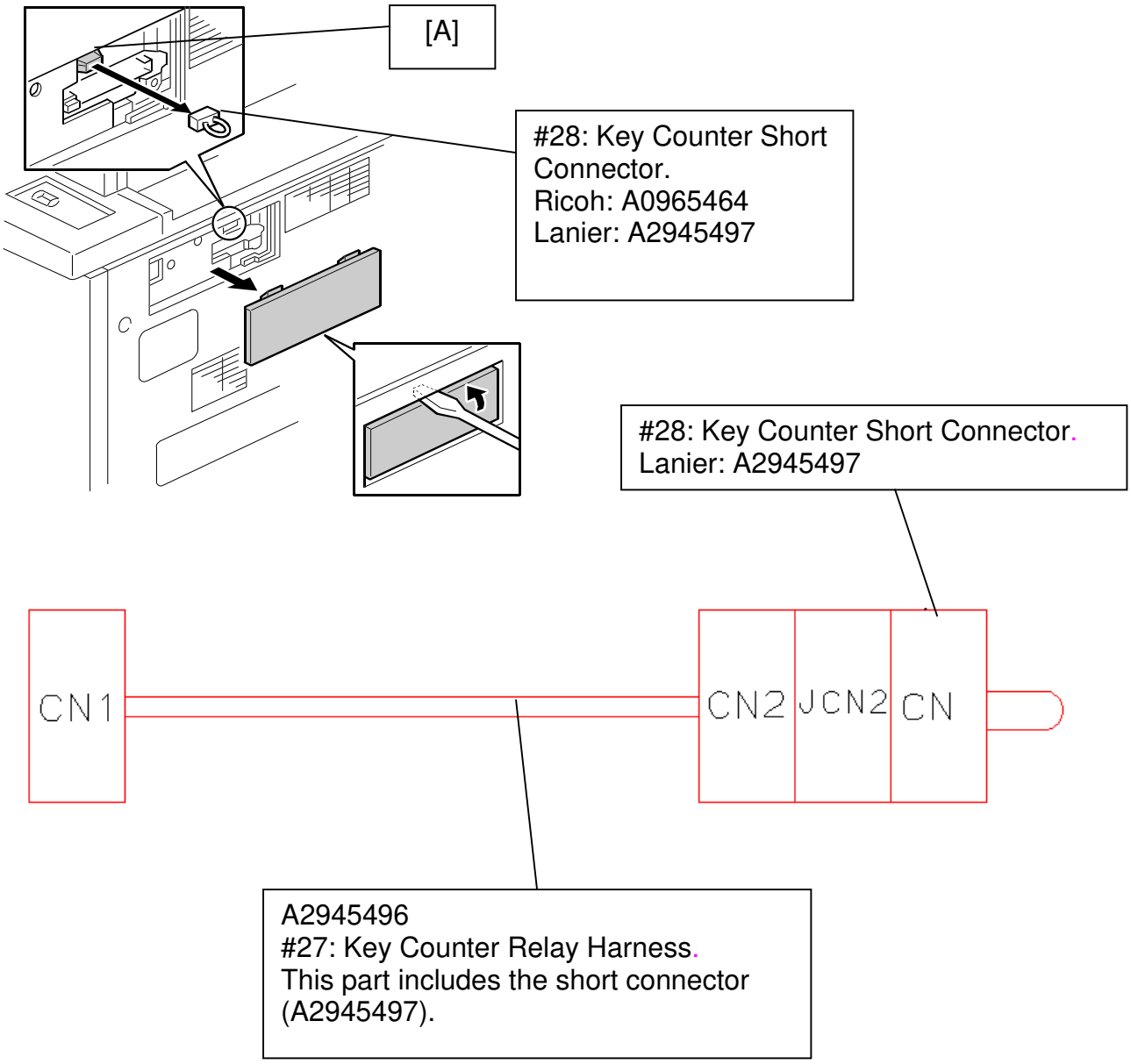
Old part number	New part number	Description	Q'ty
	A2949501	Key Counter Extension Kit	1

Key Counter Relay Harness - (Lanier Version Only)

Per Lanier's request, the Key Counter Relay Harness has been connected to the copier key counter harness in production machines. This harness will allow the Lanier key counter to be installed in the copier. Regarding the cut-in serial numbers, we will issue an MB as soon as they are available.

#: New index in the parts catalog

Old part number	New part number	Description	Q'ty	Int	Page	Index	Note
	A2945496	Key Counter Relay Harness - Lanier	0 - 1		47	#27	
	A2945497	Key Counter Short Connector - 4P	0 - 1		47	#28	
A0965464		Key Counter Connector	1 - 0		47	23	



CN1 has been connected to connector [A] of the copier harness (A2945098: SICU Connect Harness). The service manual procedure for key counter installation has not been changed. Because the key counter relay harness reverses the orientation of the four harness cables, it is not necessary to add additional key counter relay harnesses to the LCT (even if the optional LCT is installed).
In addition, the service manual procedure for key counter installation with the LCT remains unchanged. (Key counter extension kit <A2949501> on page 1/3 is required.)

Note on attaching the new key counter relay harness in Lanier machines:

Do not install key counters for Ricoh copiers in Lanier copiers. This may damage the ICs on the BICU board.

Do not connect the Ricoh short connector (A0965464: Key Counter Connector) to Lanier copiers. This may also damage the ICs on the BICU board.

Model: Bellini	Date: 15-Feb-00	No.: RA294006

Subject: Manual Correction	Prepared by: J. Mochizuki
From: Technical Services Dept., GTS Division	

Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☒ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

Please correct your Bellini service manuals as follows:

Location:	Incorrect description:	Correct description:	Note:
Page 1-2 Toner Yield:	55k copies	53k copies	
Page 1-8 Item 3	3. Tray 3 (1,500-sheet LCT)	3. Tray 3 (500-sheet)	
Page 1-8 Item 4	4. Tray 2 (550-sheet)	4. Tray 2 (500-sheet)	
Page 2-105 Last paragraph, second sentence.	400K	300K	The yield of the oil supply cleaning web is 300K.
Page 3-11 Step 33-3	Hold down the clear/stop key	Hold down the clear key	
Page 3-11 Step 39 Note	Perform SP6-009 (DF Free Run)	Perform SP6-008-3 (DF Output Check)	Using SP6-008-3 makes it easier to remove dust.
Page 4-17 SP2-301-3	If the user normally feeds thicker paper ~~from the by-pass tray~~, use a higher setting.	If the user normally feeds thicker paper, use a higher setting.	
Page 4-37 SP4-903-84, 85 "Setting" Column	0 ~ 5 1/step **2**	0 ~ 2 1/step **2**	
Page 4-38 SP4-904-5	Please delete this mode from the manual.		This mode has been removed from the first production lot.
Page 4-42 SP5-038 "Setting" Column		0: No **1: Yes**	The default setting was missing.

Page 4-47 SP6-116 "Function" Column	**Multiply** the normal limit by this number to determine the staple limit number for thick paper mode.	**Divide** the normal limit by this number to determine the staple limit number for thick paper mode.	
Page 7-31	**SC735: Finisher Exit Guide Error**	**SC736: Finisher Exit Guide Error**	
Page 2-80	**Paper size switch and paper size (see the tables below)**		

Incorrect

Paper Size Switch	Paper Size	
	A4/A3 Version	**LT/DLT Version**
00111	A3-L	11" x 17"-L
00011	8 1/4" x 13"	8 1/2" x 14"-L
10011	A4-L	8 1/2" x 11"-L
01001	A4-S	8 1/2" x 11"-S
00100	8 1/2" x 13"	5 1/2" x 8 1/2"-S
00010	—	8" x 10"-S
00001	A5-S	8" x 10"-L
10000	8 k-L (Taiwan version only)	8" x 13"-L
11000	16 k-L (Taiwan version only)	10" x 14"-L
11100	16 k-S (Taiwan version only)	11" x 15"-L
11110	✻	✻

Correct

Paper Size Switch	Paper Size	
	A4/A3 Version	**LT/DLT Version**
0**1**111	A3-L	11" x 17"-L
00**1**11	8 1/4" x 13"	8 1/2" x 14"-L
10011	A4-L	8 1/2" x 11"-L
01001	A4-S	8 1/2" x 11"-S
00100	8 1/2" x 13"	5 1/2" x 8 1/2"-L
00010	**A5-L**	**5 1/2" x 8 1/2"-S**
00001	A5-S	**8" x 10 1/2"-L**
10000	8 k-L (Taiwan version only)	**8" x 10"-L**
11000	16 k-L (Taiwan version only)	**8" x 13"-L**
11100	16 k-S (Taiwan version only)	**10" x 14"-L**
11110	✻	✻

Reissued: 16-Mar-00

Model: Bellini	Date: 15-Dec-99	No.: RA294001a

RTB Correction

The items in bold italics have been corrected added.

Subject: Toner Hopper Gear Replcement at Installation			Prepared by: H.K.
From: Technical Services Dept., GTS Division			
Classification:	☐ Troubleshooting	☐ Part information	☒ Action required
	☐ Mechanical	☐ Electrical	☒ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

While SP2-207-2 (Toner Bank Toner Supply) is performed at installation, the rotation of the toner hopper gear (AB013748: Joint Gear -15Z) may cause an oversupply of toner from the hopper to the development unit. This in turn causes relatively high image density in copies/printouts made just following installation. To correct this, machines in mass-production have been modified as follows:

Temporary Solution

The toner hopper contains red idler gear (A2943255: Idler Gear - 15Z). This gear reduces the drive supplied to the toner hopper and prevents the oversupply of toner that occurs in the initial period following installation.

The toner hopper gear for normal operation (White gear:AB013748: Joint Gear -15Z) and a spare C-ring (07200060B: Retaining Ring - M6) have been packed in the accessory plastic bag.

The procedure for the Toner Hopper Drive Gear Replacement (Joint Gear - 15Z) has been packed in the accessory plastic bag. The procedure is also included on page 2/3 of this bulletin.

Action required

Replace the red idler gear with the white gear after carrying out SP2-207-2 (Toner Bank Toner Supply) by referring to the procedure for the Toner Hopper Drive Gear Replacement (Joint Gear - 15Z) packed in the accessory plastic bag. The red idler gear is not necessary after machine installation.

Permanent Solution

The permanent solution is basically the same as the temporary solution. To facilitate gear replacement, the gear has been mounted with a screw (09513006B: Philips Screw With Flat Washer - M3x6) instead of a C-ring. The procedure is included on page 3/3 of this bulletin. Regarding the cut-in serial numbers for this modification, we will issue an MB as soon as they are available.

Action required

Same as “Action required” described above.

Reissued: 16-Mar-00

Model: Bellini	Date: 15-Dec-99	No.: RA294001a

The part number of the toner hopper unit will be changed from #A2943200 to a new part number due to the above modification. ***When replacing the toner hopper unit in the field, perform SP2-207-2 using the red gear because the new toner hopper does not contain any toner.***
The toner hopper unit part number will therefore be changed because of the gear replacement and C-ring substitution. ***Please be aware that although the spare part #A2943200 contains a white gear, this gear should be changed to the red gear when installing A2943200 in machines already in the field. After performing SP2-207-2 with the red gear, it is necessary to reinstall the white gear.***

The following is the procedure packed in the accessory plastic bag as the temporary solution. After step #35, remove the development unit and follow the procedure labeled (*) below. Then, put back the development unit.

Toner Hopper Drive Gear (Joint Gear 15Z) Replacement

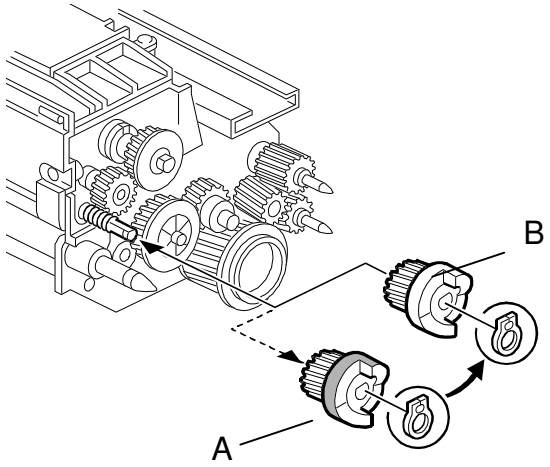
Please add the gear replacement procedure (*) after step #35 (Toner Bank Toner Supply).

#35. Supply toner from the toner bank to the toner hopper as follows:
1) Select SP2-207-2(Toner Bank Toner Supply)
2) Press the “Start key” on the LCD.

*

#36. Change the paper size for all paper trays to suit the customer’s request.

*Remove the Joint Gear 15Z that has been marked red [A].
Replace it with the white gear [B] and a spare C-ring packed in the accessory plastic bag.



Toner Hopper Unit Rear View

Reissued: 16-Mar-00

Model: Bellini	Date: 15-Dec-99	No.: RA294001a

The following is the procedure packed in the accessory plastic bag as the permanent solution. After step #35, remove the development unit and follow the instruction marked with an asterisk (*). Then, put back the development unit.

Toner Hopper Drive Gear (Joint Gear 15Z) Replacement

Please add the gear replacement procedure after step #35 (Toner Bank Toner Supply).

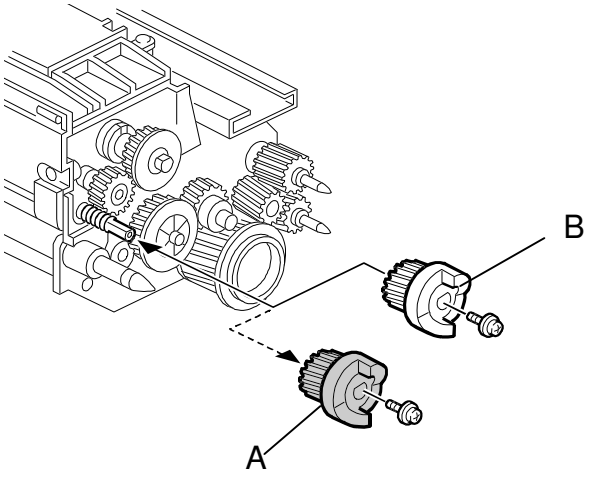
#35. Supply toner from the toner bank to the toner hopper as follows:
1) Select SP2-207-2 (Toner Bank Toner Supply)
2) Press the “Start” key on the LCD.

*:

#36. Change the paper size for all paper trays to suit the customer’s request.

*

Remove the Joint Gear 15Z that has been marked red [A].
Replace it with the white gear [B] packed in the accessory plastic bag.



Toner Hopper Unit Rear View

Model: Bellini	Date: 15-Dec-99	No.: RA294001a

Please make note of the following necessary actions following each service activity listed below:

Service activity	***Necessary action for adding toner to the toner hopper:***	***Remarks:***
Developer replacement	***No further action is required. The white gear is in the toner hopper unit.***	***Toner can be supplied from the toner hopper.***
Toner Hopper Unit Replacement (empty toner hopper installation).	**** Refer to the procedures described above in this bulletin.***	***Toner is not in the toner hopper. If the above action is not carried out, SC495 will be displayed.***
Toner transport tube cleaning (before and after machine transportation).	***No further action is required. The white gear is in the toner hopper unit.***	***Toner is already inside the development unit and toner hopper.***

Note for SP2-207-2

Occasionally, SP2-207-2 finishes within 2 seconds or so. If this happens, perform SP2-207-2 again. Normally this mode will continue for about 5 minutes.

Reason

The mylar attached to the agitator in the toner hopper cleans the surface of the toner hopper sensor. This is done so that the sensor will accurately detect the amount of toner in the hopper. If the sensor detects toner in the hopper when SP2-207-2 is initiated, the SP mode will not be carried out. This is to prevent toner from being mistakenly supplied. However, when the mylar is rotated to clean the sensor surface, the sensor may sometimes detect the mylar and judge that there is still toner present. This may occur even if there is no toner in the hopper.

Model: Bellini	Date: 15-Dec-99	No.: RA294001a

Correction for service manual page 4-15

Please correct your service manual as follows:

Incorrect: 7 minutes

Correct : 5 minutes

2-207	***Forced Toner Supply***				
	1	***Forced Toner Supply***		***Forces toner supply for 7 seconds from the toner bank through the toner hopper to the development unit.***	***Start***
				This mode finishes automatically after the toner is supplied 7 times (1 s for each time).	
	2	***Toner Bank Toner Setup***		***Turns on the main motor, development motor, development bias, toner supply motor and charge corona. Then turns on the toner supply coil clutch to supply toner to the toner hopper, but not to the development unit. It takes about 5 minutes.***	***Start***
				This mode should be used to fill the toner transport path with toner after cleaning the toner supply unit, or at installation.	

Model: Bellini	Date: 16-Mar-00	No.: RA294007

Subject: SP2506	Prepared by: H.K.
From: Technical Services Dept., GTS Division	

Classification:	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

SYMPTOM

In the Japanese market, it has been reported that vertical black lines have a tendency to appear in copy images after long continuous copy jobs (10 hours).

CAUSE

Toner is not completely removed by the cleaning blade due to paper dust that accumulates on the cleaning blade after long continuous copying. During the continuous copying, the drum motor does not stop and turn in reverse to clean the edge of the cleaning blade.

SOLUTION

On the production line (from March production: SICU&BCU version V.7.28.1)

The default settings of SP2506-1 and -2 will be changed from March production so that the drum motor stops and turns in reverse every 30 minutes during continuous copying to clean the blade edge.

Default setting: 2506-1 (changed from No to **Yes**), 2506-2 (changed from 15 to **30 minutes**).

Here is the revised SP Mode table:

2-506	Cleaning Interval – Multiple Copy				
	1	On/Off	B	Selects whether multiple copy jobs are stopped at regular intervals for the following purposes: 1. Stop and turn the drum motor in reverse to clean the cleaning blade edge. 2. Make an ID sensor pattern to correct the toner density control. The interval is determined by SP2-506-2. Use if the drum gets dirty or images get too pale or too dark during long copy jobs.	1: No **2: Yes**
	2	Interval	B	Selects the interval at which multi copy jobs are stopped for blade cleaning.	1 ~ 100 1 minute/step **30 minutes**

Countermeasure in the field for machines produced up to February 2000:

Upgrade the SICU & BCU to V.7.28.1. Then, change the SP mode values as shown above if the same symptom appears in the field.

Please note:

SP2-506-1 and –2

In order to activate the new default settings after you have installed the firmware, you must enter the SP modes and manually change the settings to these new default values. After this has been done, the machine will recognize these settings as the defaults.

If you change these two SP mode settings with versions older than 7.28.1, SC990 may occur when printing out blank copies with the slip-sheet, cover sheet or chapter sheet functions. Therefore, we recommend that you update the firmware to version V.7.28.1.

Continuous copy runs

Continuous copy runs are stopped for 5 or 6 seconds every 30 minutes to clean the edge of the cleaning blade. However, the fusing unit maintains the ready temperature, as the machine's major internal mechanisms are not shut down during this interval.

Model: Bellini	Date: 21-Mar-00	No.: RA294008

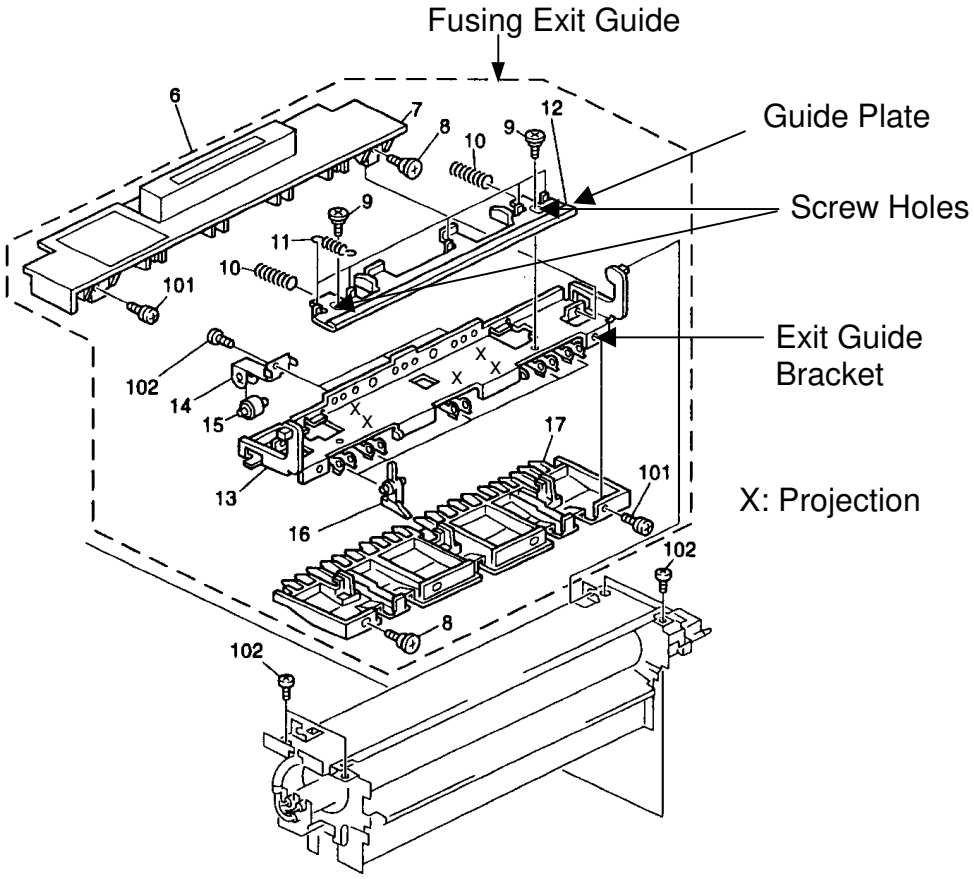
Subject: Dog Ear	Prepared by: H.K.
From: Technical Services Dept., GTS Division	

Classification:	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

Symptom 1:
Dog ear at the rear side of the leading edge.

Cause:
The Fusing Exit Guide is not properly set. There is a small gap at the Rear Magnet Catch. In addition, the hot roller strippers are not in the proper position when the exit guide is closed due to the mechanical load of the stripper sliding mechanism.

Solution:
Temporary Solution: From December production.
In order to minimize the sliding mechanical load, apply grease to the Stripper Release Slider in the following places:
- The 2 shoulder screw holes on the Guide Plate
- The 5 projections on the surface of the Exit Guide Bracket



Type of grease: Grease Barrierta –JFE5 5/2 (P/N: A028 9300)

Permanent Solution: From March production.
In addition to applying grease to the stripper release slider, the shape of the Exit Guide Plate has been modified to smooth the stripper sliding mechanism as an "improvement". The part number is still the same.

Symptom 2:

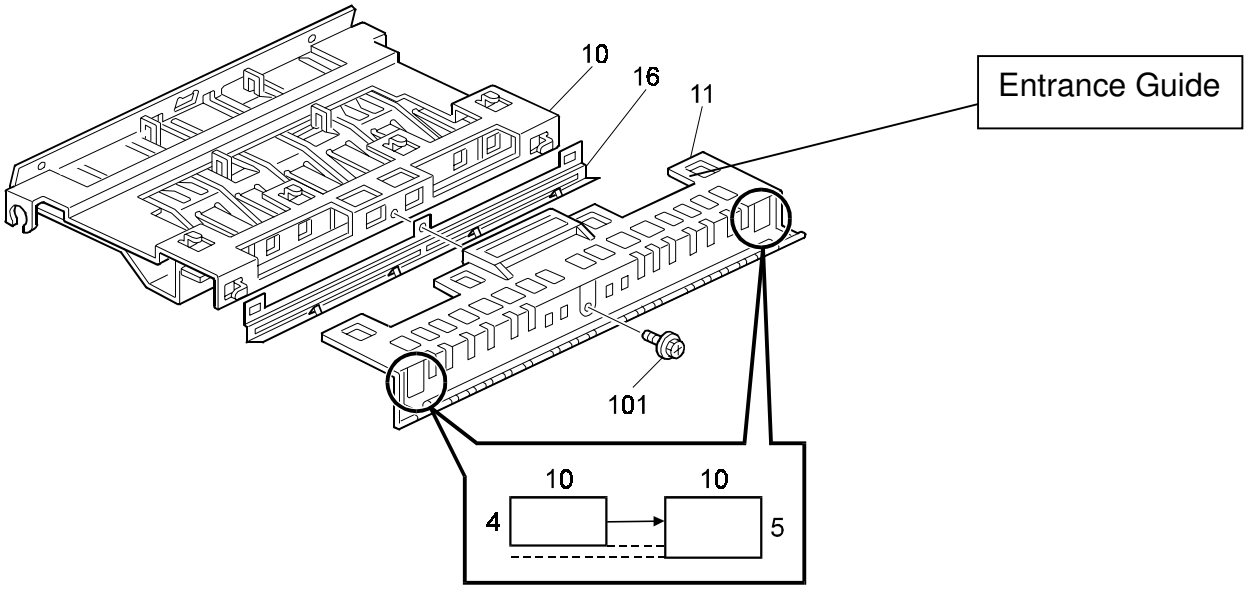
Dog-ears have a tendency to occur when using curled paper.

Solution:

Temporary Solution:

To minimize this, the following modification has been applied to machines in mass production:

The height of the holes has been changed from 4 x 10 mm to 5 x 10 mm, so the position of the entrance guide has been raised by 1 mm on the production line.



Cut-in serial numbers

A294-14 L065003XXXX

A294-15 H3600200180

A294-17 H3600200220

A294-22 H3600200001

A294-24 L065003XXXX

A294-26 4B10200001

A294-27 H3600200051

Permanent Solution: From March production

Refer to Bellini MB No. 4 for details.

Model: Bellini	Date: 24-Apr-00	No.: RA294009

Subject: Timing Belt Slipping Off	Prepared by: H.K.
From: Technical Services Dept., GTS Division	

Classification:	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

SYMPTOM

No paper feed from trays 2 and 3.

CAUSE

During rotation, the lower timing belt may tend to slip off the idler pulley.

SOLUTION

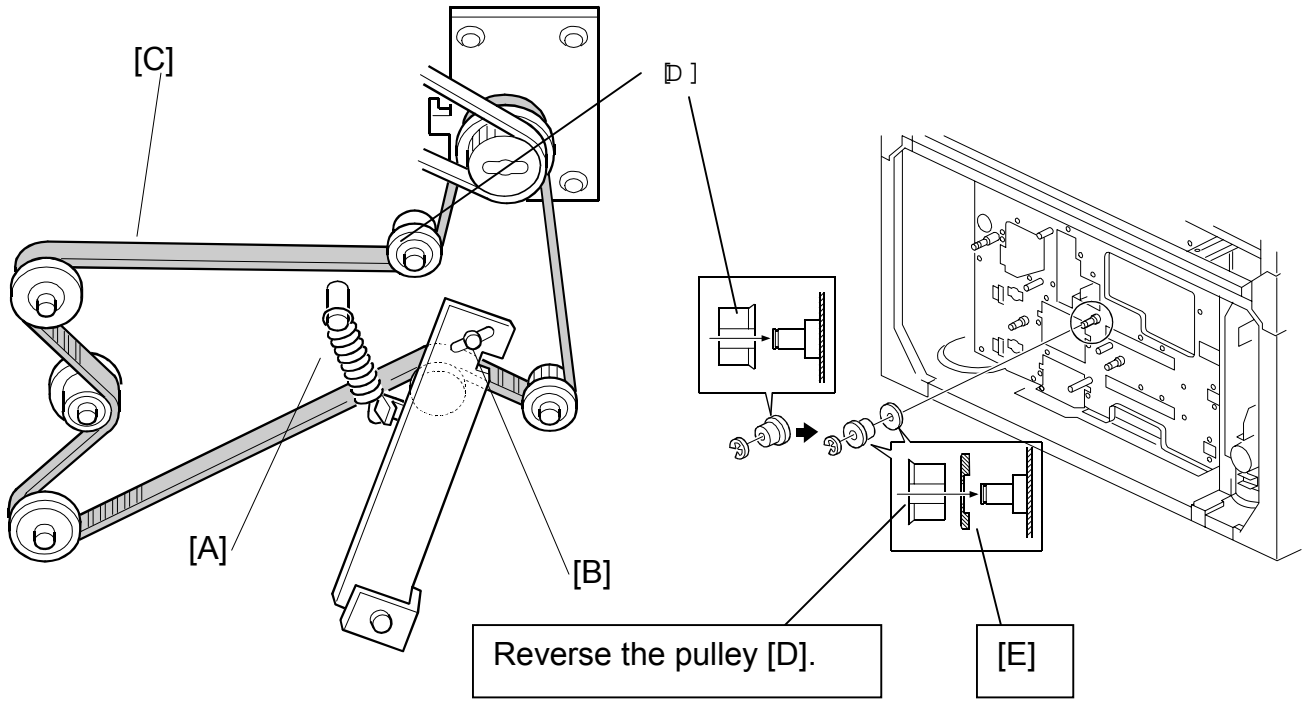
- Production line -

A spacer (AA132212: Spacer – 8 x 22 x 1.5) will be added as a flange to prevent the belt from slipping off the pulley. In addition, the orientation of the pulley (AB032716) will be reversed.

This modification will be applied from May 2000 production.

- In the field -

If the problem occurs in the field, install the spacer as a flange and reverse the orientation of the pulley.



A294R930.WMF

Spacer Installation for the Lower Timing Belt (2nd & 3rd Trays)

1. Turn off the main switch.
2. Remove the lower rear cover.
3. Remove the PSU (5 screws, all connectors) and IOB board (4 screws, all connectors). See *Boards and Other Items* in the service manual.
4. Remove the tension spring [A].
5. Remove the screw [B].
6. Remove the lower timing belt [C].
7. Remove the pulley [D] (1 E-ring).
8. Attach the spacer [E].
9. Reverse the pulley [D] and attach it as shown (1 E-ring).
10. Put back all removed parts.

Model: Bellini	Date: 01-May-00	No.: RA294010

Subject: Toner bottle cap open/close mechanism faliure	Prepared by: H.K.
From: Technical Services Dept., GTS Division	

Classification:	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

SYMPTOM

The open/close mechanism for the lower toner bottle cap does not work properly. In some cases, the mechanism does not return the cap to the bottle, which causes the toner to spill when the bottle is removed.
Note: This symptom occurs only with the lower toner bottle.

Occurrence conditions:

1. The lower toner bottle is not placed in the toner bank unit or the toner end condition is detected for the lower toner bottle *and:*
2. The upper toner bottle is shaken several times before it is set.

CAUSE

If an operator shakes the bottle several times and then sets it in the machine, too much toner will be supplied from the bottle. Normally, when the bottle cap is opened, about 30 to 40 g of toner is supplied. However, after the bottle has been shaken several times, this amount can be up to 150 g.
In addition, if the upper bottle is installed first after having been shaken several times, toner can get jammed in the lower bottle open/close mechanism, causing the mechanism to lock.

SOLUTION

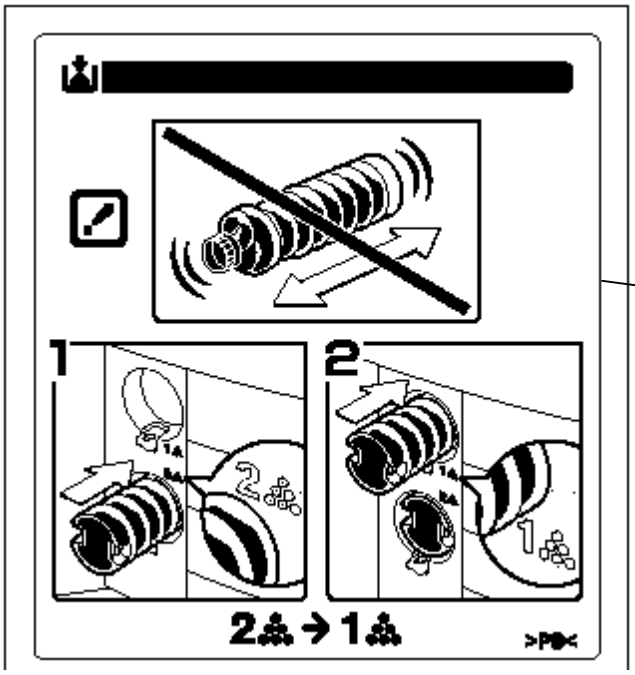
Production line (from April production: SICU&BCU version V.7.31.3)
-Software modification: If the upper toner bottle is set first, the machine LCD will instruct the operator to install the lower toner bottle first.
-Decal: A caution decal [A] (A2941273) has been attached to the toner bank cover. Also, step 3 of the existing toner bank decal [B] has been changed. This decal is attached to the inner face of the toner bank cover.

The decal will read:

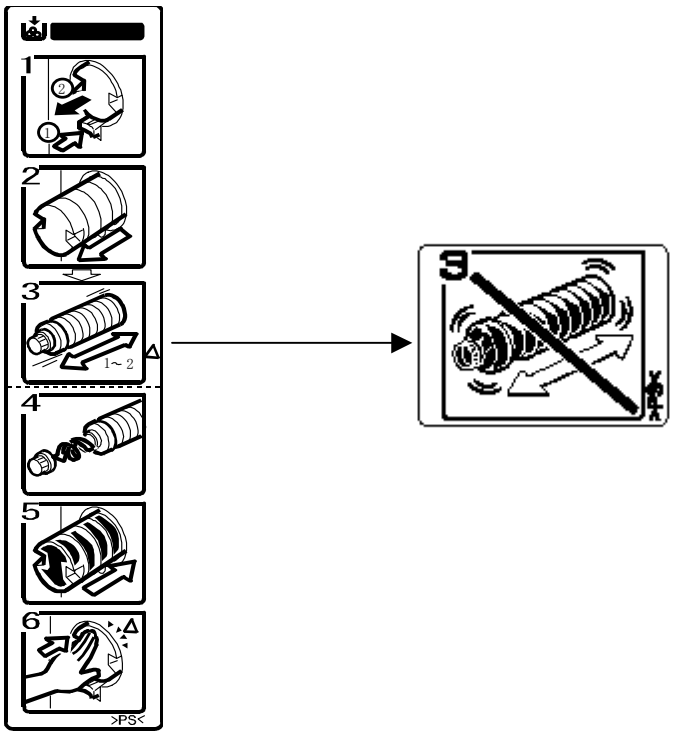
Do not shake toner bottle before setting.
Set lower toner bottle first.

Countermeasure in the field for machines produced up to March 2000:

Update the SICU & BCU to V.7.31.3. Demonstrate to the customer the correct way to install the toner bottles (according to the decal illustrations).



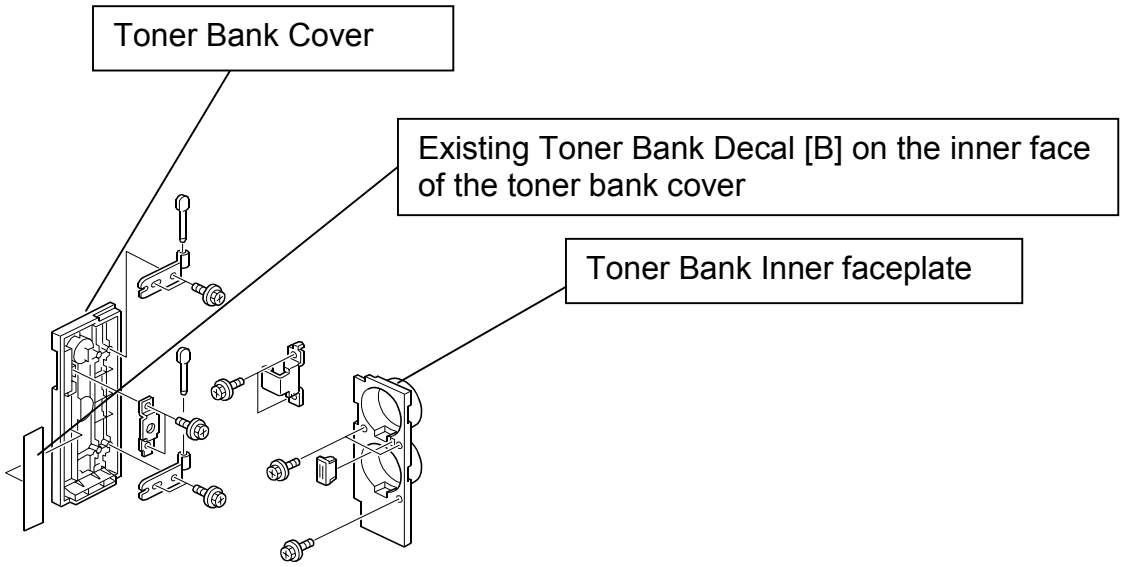
[A]
A2941273
CAUTION
DECAL - TONER
SUPPLY



Toner Bank Decal [B] (A2941272)

Model: Bellini	Date: 01-May-00	No.: RA294010

NOTE:
Toner Bank Decal [B] (A2941272): The part number remains the same. The old decal has never been supplied from SPC as a service part.



Model: Bellini	Date: 26-May-00	No.: RA294011

Subject: Used toner bottle full at an early stage	Prepared by: S. Hizen
From: Technical Services Dept., GTS Division	

Classification:	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

SYMPTOM

Used toner bottle at an early stage.

Almost all of the toner that should be routed to the toner collection unit is sent to the used toner bottle.

This is because the old-type toner collection pipe was installed in the following machines.

A294-17: H3691100001 to H3691100015 (15 machines)

A294-27: H3691100039 to H3691100053 (15 machines)

COUNTERMEASURE

Replace the toner collection pipe

Please refer to following toner collection unit removal and installation procedures.

Note: Before beginning the replacement procedure, please check whether the pipe in the machine is the old type.

1. Toner Collection Unit Removal Procedure

Preparation:

1) Remove the upper rear cover.
2) Remove the drum inner cover and drum stay. Slide the drum unit out 50 mm. (Picture 1)

Picture 1

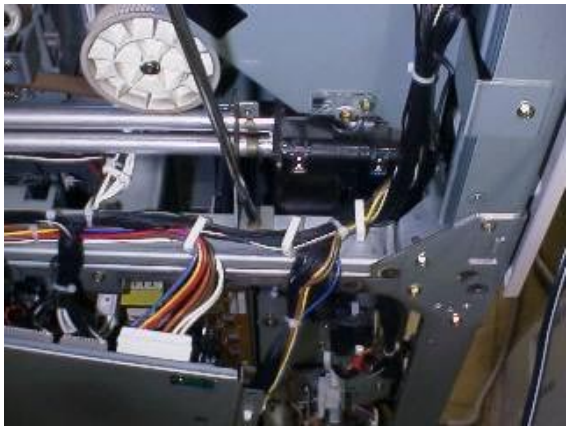
Removing the Toner Collection Unit:

1) Remove the fly wheel (3 screws).
2) Remove the 4 BCU securing screws and tilt out the BCU toward you. (Picture 2)

Picture 2

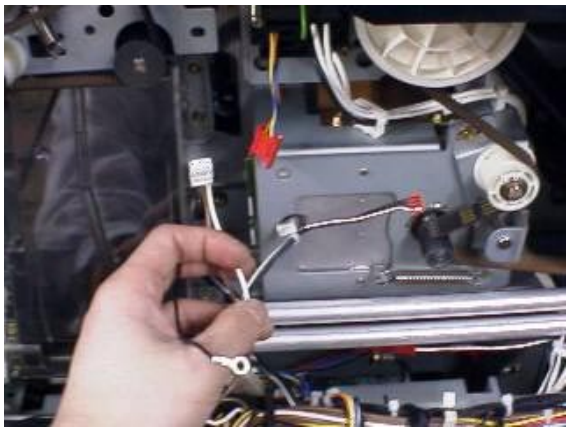
3) Remove the BCU hinge brackets (one on each side, one screw each). The picture shows the right bracket being removed. (Picture 3)

Picture 3



4. Disconnect the three fusing unit connectors and ground wire (1 screw). These 3 harnesses run above the pipe. (Picture 4)

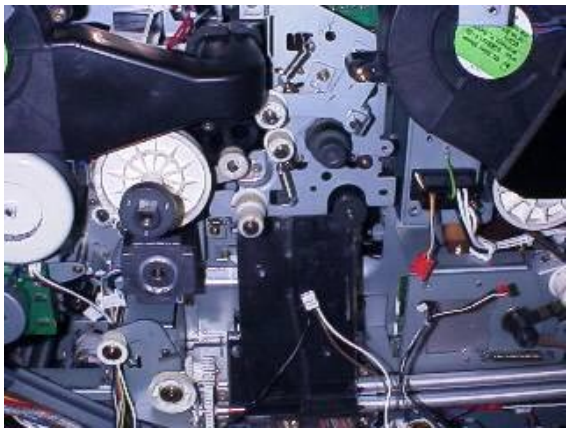
Picture 4



5. As shown in the picture to the right, remove the support plate located near the main motor (1 screw), loosen the 2 screws of the tightener bracket and remove the tightener tension spring.
   Next, remove the three timing belts as shown in the two pictures below.
   (Pictures 5, 6)

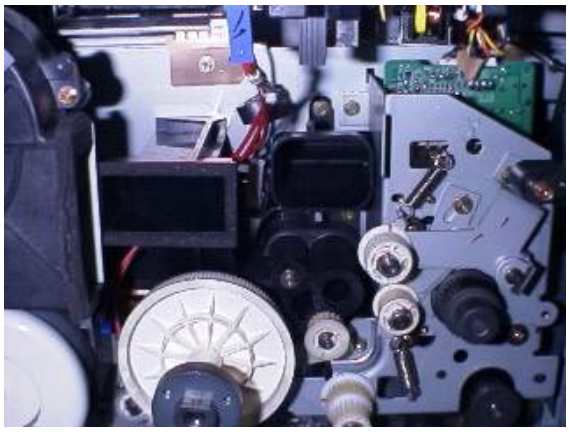
Picture 5

Picture 6



6. Remove the exhaust fan duct, located to the left of the main motor (no screws).
   Note: It is easier to remove the duct if you loosen the fan bracket securing screw first. This screw is located to the left of the duct.
   (Picture 7)

Picture 7

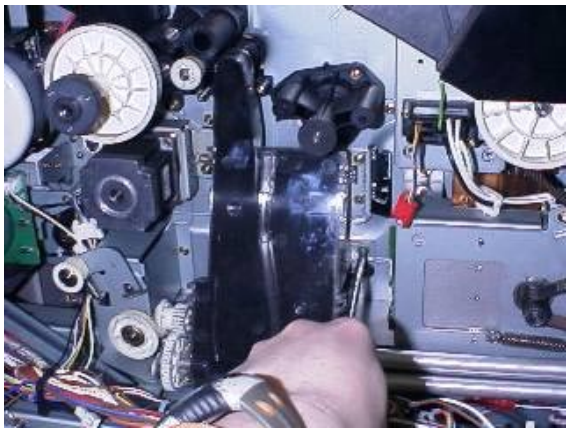


7. Remove the main motor (4 screws) and remove the two connectors.
   Note: Tilt the bottom face of the motor toward you when removing it from the machine.
   (Picture 8)

Picture 8

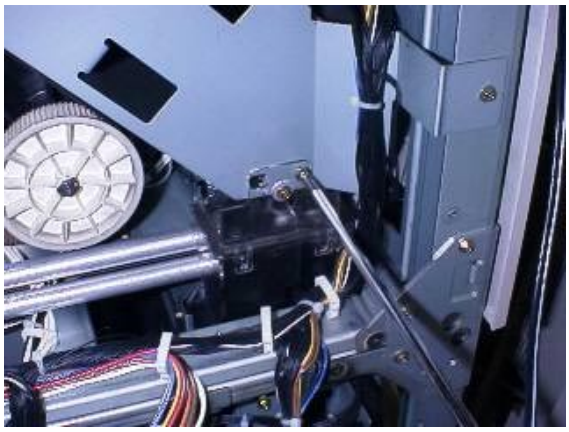
8. Remove the 2 securing screws for the collection case.
   (Picture 9)

Picture 9



9. Remove the screw for the distribution case (the only M4X10 screw).
   (Picture 10)

Picture 10



10. Slide the toner collection unit to the right, disconnect the screw drive shaft from the bushing and remove the unit. (Picture 11)

Picture 11

11. The picture below is the toner collection unit after it has been removed. (Picture 12)

Picture 12

2. Toner Collection Pipe Replacement Procedure

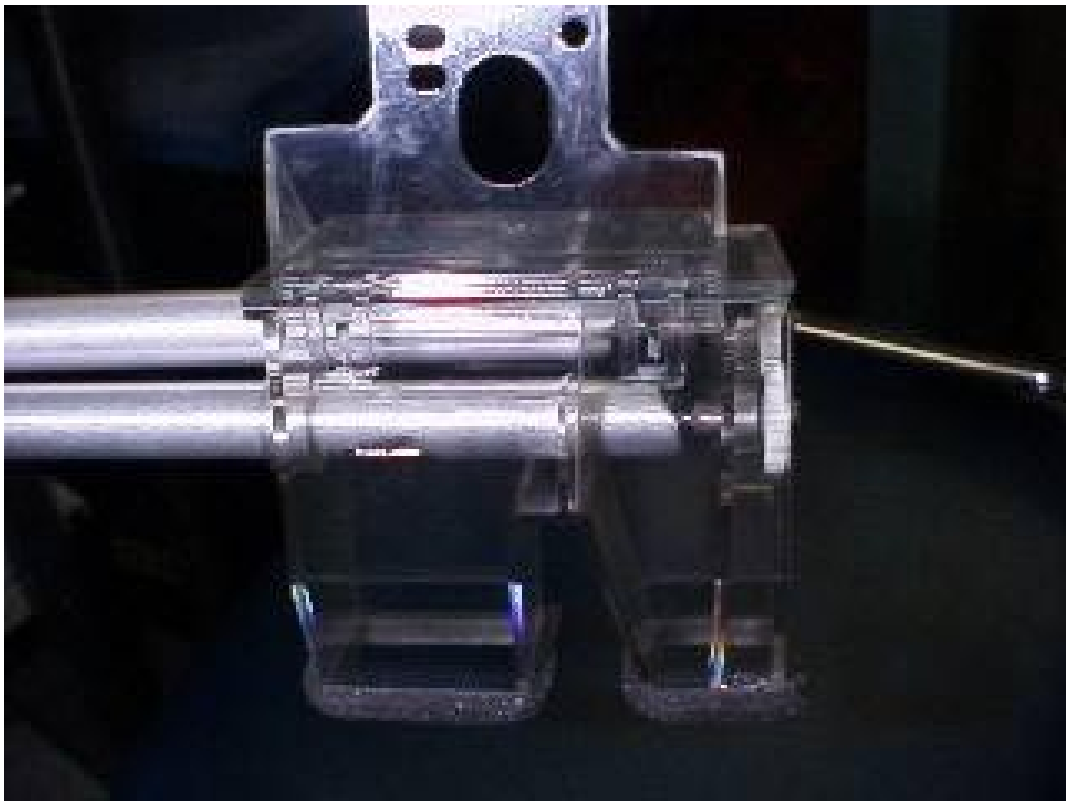
How to distinguish the old type from the current type:
The angles of the cut-outs are 60 degrees different.

1. Remove the two gears shown in the picture (2 e-rings).
2. Remove the 2 pipes from the distribution case.
3. Loosen the two screws of the collection case and remove the *lower pipe only*.
   Note: Place a sheet of paper or newspaper underneath the case, as toner from the pipe will tend to leak.
4. Replace the lower pipe with the current type.
   Note: Make sure that the toner drop hole is facing downward. However, it does not need to be completely vertical (90 degrees). In addition, make sure that the U-groove on the left face of the pipe is properly lined up with the projection on the case.
5. Return all other parts to their original positions.

Note: Make sure that the toner drop hole is in a lower position.
(It would be hard to see the hole from the front when the hole is in the proper position)

NOTE: After installing the new pipe, please double check that the drop hole is facing downward. You can check this by looking at the pipe from the front. If you can barely see the hole, it is in the proper position.

Picture 13



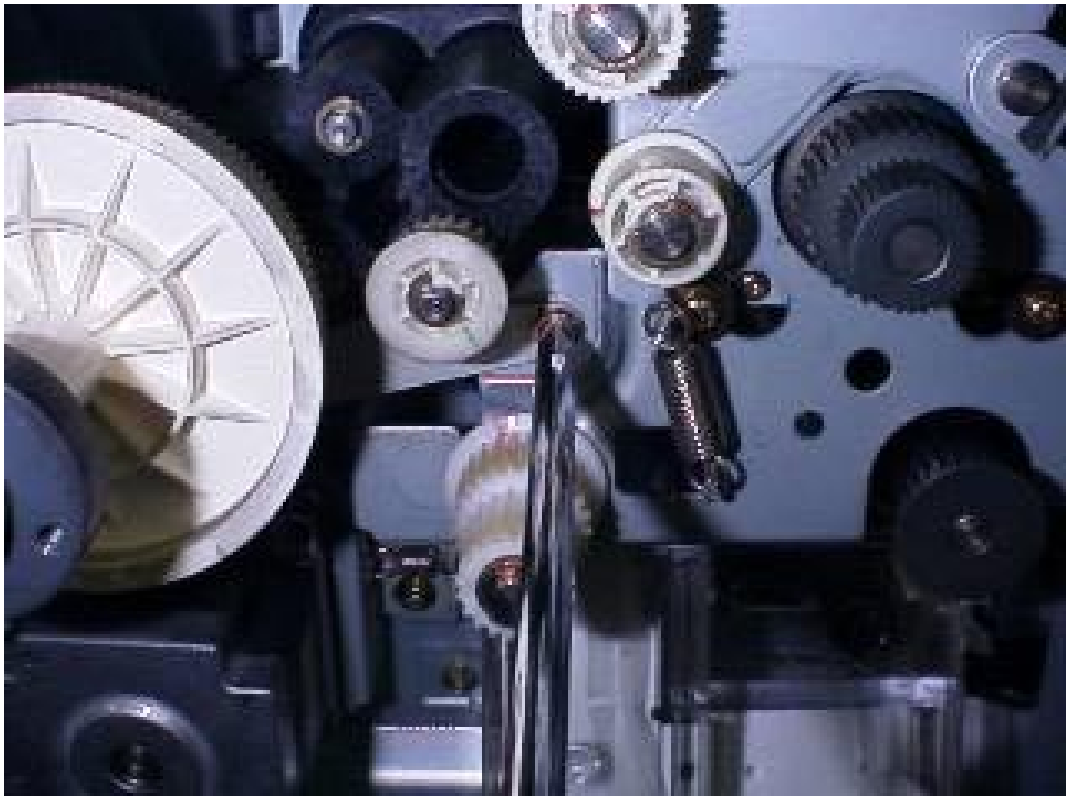
3. Toner Collection Unit Installation Procedure

Reinstall the parts in the reverse order in which they were removed (see the unit Removal Procedure above).

Note: Please follow the procedure below when reinstalling the 3 Timing Belts (step 5):

1. Attach the support plate (see picture below).
2. Attach the belts.
3. Turn the belts several times in the motor rotation direction.
4. Tighten the 2 screws of the tightener bracket.

Picture 14



Model: Bellini	Date: 26-May-00	No.: RA294012

Subject: 105 CPM Version Information	Prepared by: H.K.
From: Technical Services Dept., GTS Division	

Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☒ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

Introduction

To facilitate servicing the 105cpm (A295) model in the field, this RTB describes the differences from the 85cpm (A294) model.

Major Parts

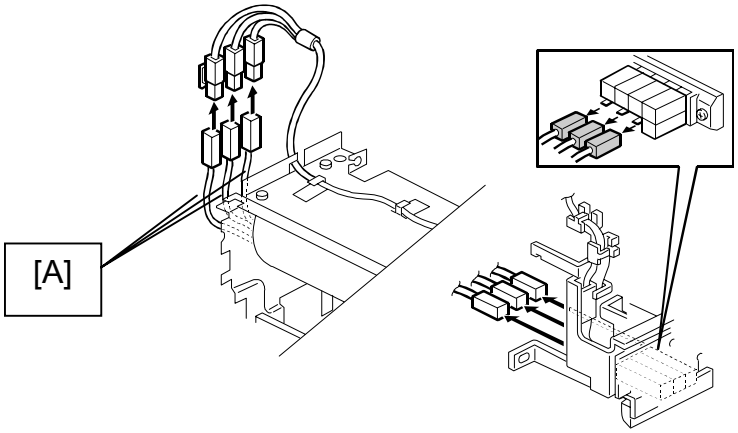
Fusing Lamps:

85 CPM	AX430052	Fusing Lamp – 230V/530W
105 CPM	AX430055	Fusing Lamp – 230V/630W

The wattage of the fusing lamps has been increased from 530 to 630W to improve fusing. To distinguish these two lamps, the colors of the front harnesses [A] are as follows:

530W: Blue
630W: Red

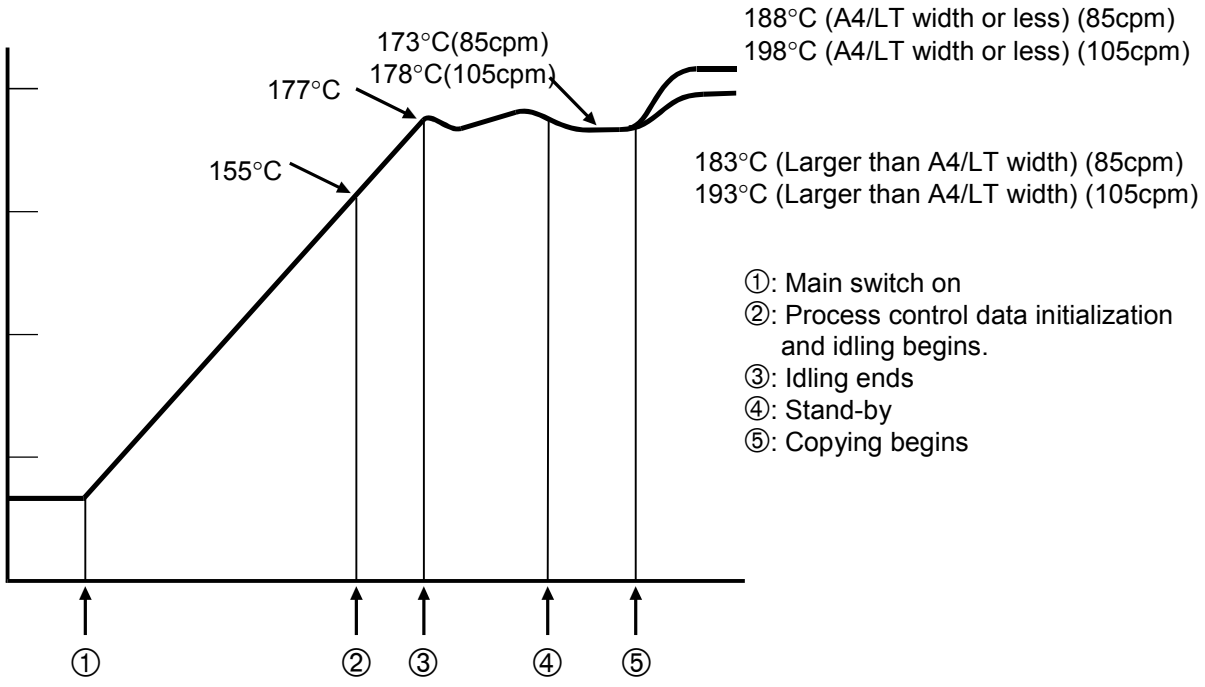
The connectors for both the lamps have the same color. The following note for re-assembly has not been changed:



Note on 6-87
At the front, connect the white fusing lamp connectors to the white connectors on the cable. At the rear, connect the green fusing lamp connectors to the green connectors on the cable.

Fusing Lamp Control:

The fusing temperature control for the 105cpm model is different from that of the 85cpm model.



A294D627.WMF

The CPU turns on all three fusing lamps after the main switch is turned on, with a one-second interval between each. This prevents the power from the AC line from dropping too quickly.

When the fusing temperature reaches 155°C, the machine starts the process control data initialization. However, this is not performed if the fusing temperature is already above 100°C at the time the main switch is turned on.

When the fusing temperature reaches 155°C, the copier starts fusing idling. However, the idling is not performed if the fusing temperature is already above 100°C at the time the main switch is turned on

When the temperature reaches 177°C, the warm-up period is completed and the “Ready” indicator turns on. After this, the machine maintains a fusing temperature of 173°C (85 cpm model) and **178°C (105cpm model)**.

In stand-by mode, one of the fusing lamps turns on intermittently in order to maintain ready temperature. During the copy cycle, all three fusing lamps are used to maintain operating temperature. The machine will turn the lamps on one at a time, with a one-second interval between each.

The CPU changes the interval that the fusing lamp is on depending on the temperature measured by the thermistor. This is to maintain the fusing temperature as close to the target value as possible.

Even if one of the lamps fails during copying, the machine will continue to function. However, if it detects a broken lamp just after being switched on, an SC error occurs and copying is not possible.

The machine uses the fusing lamp on/off control mode to maintain the fusing temperature as close to the target value as possible. Even if thick paper mode is selected, fusing temperature control does not change.

SP1-902-2 Default setting (42 seconds: 85 cpm, 34 seconds: 105 cpm):

Page 2-105, second paragraph:

Every 42 seconds (85cpm) or **34 seconds (105cpm)** during printing, the oil supply/cleaning web motor turns for 0.8 seconds to move the oil supply and cleaning web felt. This 42 or 34-second cycle starts when the first copy reaches the fusing exit sensor and ends 2 seconds after the last copy has passed this sensor. Both the motor rotation cycle and on-time are adjusted by SP1-902-2 / 3.

Hard Disk:

85 CPM	A6915879	Hard Disk Drive
105 CPM	A2955172	Hard Disk - Fireball Plus KX

For printing out with the 105 cpm model, it is necessary to use a hard disk with a faster rotation speed in order to conform to the higher copy speed of the machine. The hard disks used for both models are as follows:

	Seek Time	Rotation Velocity	Capacity
85cpm	9.5 ms	5400 rpm	4.3 GB
105cpm	8.5 ms	7200 rpm	6.8 GB

HDD Control (S/M 2-127):

UP Setting for "Memory Allocation"	HDD 1 (Front)	HDD 2 (Rear)
Copier Priority	Copy Jobs: 0.82 GB Copy Server Jobs: 3.08 GB (85 CPM) 5.00 GB (105 CPM) Printer Jobs: 0.20 GB	Copy Jobs: 3.35 GB Copy Server Jobs: Not used Printer Jobs: 0.76 GB
Max. Memory for Document Server	Copy Jobs: 1.23 GB Copy Server Jobs: 2.57 GB (85 CPM) 5.00 GB (105 CPM) Printer Jobs: 0.31 GB	Copy Jobs: 1.23 GB Copy Server Jobs: 2.57 GB (85 CPM) 5.00 GB (105 CPM) Printer Jobs: 0.31 GB

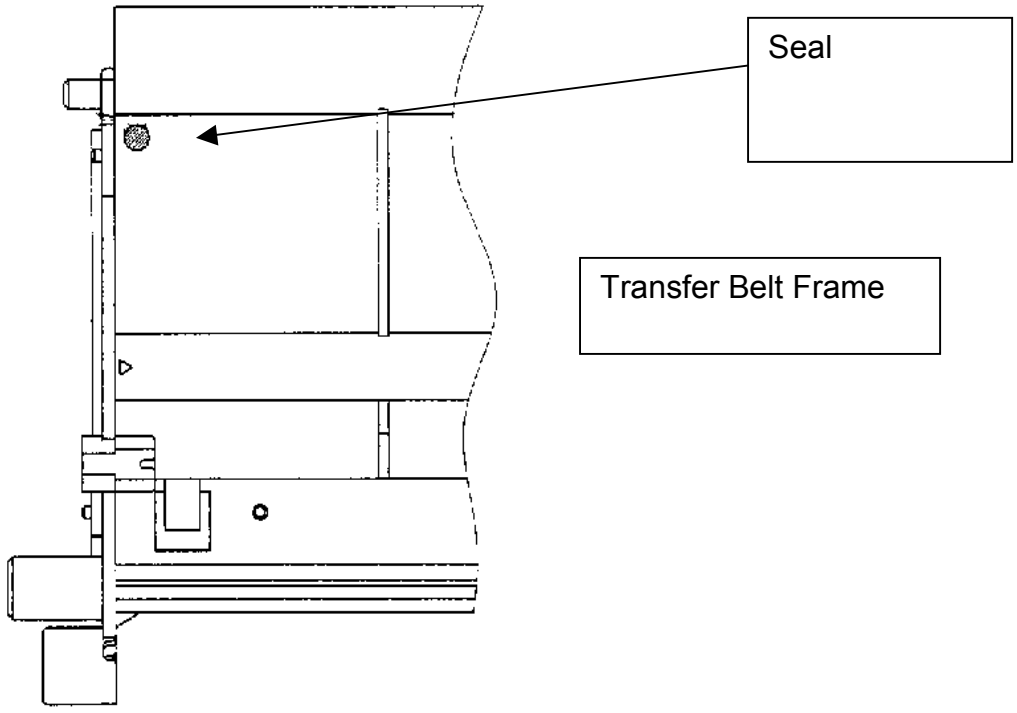
Model: Bellini	Date: 26-May-00	No.: RA294012

Transfer Belt:

85 CPM	A229 3852	Transfer Belt
	A2943810	Transfer Belt Unit
105 CPM	A229 3899	Transfer Belt
	A2953810	Transfer Belt Unit

To achieve a higher copy speed than the 85cpm model, the transfer belt in the 105cpm model is given a higher transfer current. With higher transfer current, black lines have a greater tendency to appear in half-tone areas on the copy. To compensate for this, the transfer belt used in the 105cpm model has a lower resistance.

To distinguish between the two transfer belt units, a seal is attached to the transfer belt frame for the 105cpm model as shown. Note that the belt for the 105cpm model can also be used for the 85cpm model.



Specifications

The additional items added to the specifications of the 105cpm model are listed on page 7/16 of this bulletin.

SP Mode

The SP modes that have been revised or added for the 105cpm model are listed on page 11/16 of this bulletin. All information from Class 1 of the 85cpm model is also listed along with these new additions/revisions.

Unique parts

An MB for information on the 105cpm model will be issued containing a list of the parts that are unique to this model.

Input Voltage Level:

The input voltage for the 85cpm model listed on page 3-2 of the Service Manual is incorrect. Please correct your manuals as follows:
North America:
240V, 60 Hz: More than 10A (85cpm)
240V, 60 Hz: More than 12A (105cpm)
Europe/Asia:
220 ~240V, 50/60 Hz: More than 10A (85cpm)
220 ~240V, 50/60 Hz: More than 12A (105cpm)

Finisher ROM interchangeability

Although the finisher itself is interchangeable between both the 85cpm and 105cpm models, the EPROM firmware must be updated to version E or newer for fnishers produced before April 2000. The cut-in serial numbers for April 2000 production are as follows:

L0670040001 (B302-14)
H3800400001 (B302-17)
4B20400001 (B302-26)

OVERALL MACHINE INFORMATION

SPECIFICATIONS

COPIER ENGINE

Configuration: Console

Copy Process: Dry electrostatic transfer system

Originals: Sheet/Book

Original Size: Maximum: A3/11" x 17"
Minimum: A5, 5 1/2"x 8 1/2" (using ADF)

Original Alignment: Rear left corner

Paper Size/Weight:

Size:
Mainframe, Tray 1 (Tandem Tray):
A4 sideways and LT sideways
Mainframe, Trays 2 and 3 (Universal Trays):
Europe/Asia:
A5 - A3 lengthwise,
8-kai sideways, 16-kai
N. America:
5 1/2" x 8 1/2" sideways - 11" x 17" lengthwise
LCT, Trays 4 ~ 6:
A4 sideways, B5 sideways, LT sideways, A5, HLT
Duplex Tray: A5/HLT (lengthwise or sideways) to A3/DLT. Tab paper cannot be used.

Weight:
Mainframe, Trays 1 to 3:
52 to 163 g/m^2
16 to 40 lbs Bond
50 to 60 lbs Cover
90 lbs Index (no Tab)
LCT, Trays 4 and 5:
52 to 216 g/m^2
16 to 40 lbs Bond
50 to 80 lbs Cover
90 to 110 lbs Index
LCT, Tray 6:
Same as Mainframe, Trays 1 to 3
Duplex Tray:
64 to 163 g/m^2
20 to 40 lbs Bond
50 to 60 lbs Cover
90 lbs Index (no Tab)

Reproduction ratios: 7 reduction and 5 enlargement

	Metric Version	Inch Version
Enlargement	400% 200% 141% 122% 115%	400% 200% 155% 129% 121%
Full Size	100%	100%
Reduction	93% 82% 75% 71% 65% 50% 25%	93% 85% 78% 73% 65% 50% 25%

Zoom: 25 ~ 400%

Copy Speed: 85 cpm: Max. 85 cpm (A4/8 1/2" x 11" sideways)
105 cpm: Max. 105 cpm (A4/8 1/2" x 11" sideways)

Resolution: Scanning: 600 dpi
Printing: 600 dpi

Gradation: 256 levels

Warm-up Time: Less than 360 s (from Off mode)

First Copy Time:
(1st Tray, A4 sideways)

Finisher upper tray: face down
85 cpm: Less than 5.4 s
105 cpm: Less than 4.9 s
Finisher upper tray: face up
85 cpm: Less than 4.1 s
105 cpm: Less than 3.8 s
Copier: face down
85 cpm: Less than 4.5 s
105 cpm: Less than 4.2 s
Copier: face up
85 cpm: Less than 3.2 s
105 cpm: Less than 2.9 s

Copy Number Input: Ten-key pad, 1 to 9999

Copy Paper Capacity: 1st Tray: 1,000 sheets (2,000 when used as a tandem tray)
2nd/3rd Tray: 500 sheets each
4th/5th Tray (LCT): 1,000 sheets each
6th Tray (LCT): 2,550 sheets

Memory Capacity: RAM: 48 MB x 2
HDD: 4.3 GB x 2 (85 CPM), 6.8 GB x2 (105 CPM)

Toner Replenishment: Cartridge exchange (1,450 g/cartridge)

Toner Yield: 53 k copies
(A4 sideways, 6% full black, 1 to 25 copying)

Power Source: North America: 240 V, 60 Hz, 20 A
Europe/Asia: 220 ~ 240 V, 50Hz/60 Hz, 16 A

Power Consumption:

N. America Version

85 cpm

	Mainframe Only	**Full System *1**
Warm-up	about 1.96 kW	about 1.98 kW
Stand-by	about 0.79 kW	about 0.8 kW
Copying	about 2.24 kW	about 2.3 kW
Maximum	less than 2.35 kW	less than 2.38 kW

*1: Mainframe with Finisher, Large Capacity Tray

105 cpm

	Mainframe Only	**Full System *1**
Warm-up	about 2.51 kW	about 2.52 kW
Stand-by	about 0.93 kW	about 0.95 kW
Copying	about 2.67 kW	about 2.68 kW
Maximum	less than 2.77 kW	less than 2.84 kW

*1: Mainframe with Finisher, Large Capacity Tray

Europe Version

85 cpm

	Mainframe Only	**Full System *1**
Warm-up	about 1.89 kW	about 1.9 kW
Stand-by	about 0.75 kW	about 0.77 kW
Copying	about 2.14 kW	about 2.18 kW
Maximum	less than 2.24 kW	less than 2.26 kW

*1: Mainframe with the finisher, large capacity tray

105 cpm

	Mainframe Only	**Full System *1**
Warm-up	about 2.38 kW	about 2.39 kW
Stand-by	about 0.89 kW	about 0.9 kW
Copying	about 2.52 kW	about 2.54 kW
Maximum	less than 2.64 kW	less than 2.7 kW

*1: Mainframe with Finisher, Large Capacity Tray

Noise Emission *1: 85 cpm

Sound Power Level

	Mainframe Only	Complete System *3
Warm-up	about 74 dB (A)	78 dB (A)
Stand-by	about 59 dB (A)	58 dB (A)

Sound Pressure Level *2

	Mainframe Only	Complete System *3
During printing	59 dB (A)	68 dB (A)

*1: Actual values in accordance with ISO 7779 standards.
*2: Measured from the position of the bystander or operator during printing.
*3: Mainframe with all options installed.

Noise Emission *1: 105 cpm

Sound Power Level

	Mainframe Only	Complete System *3
Warm-up	75 dB (A)	78 dB (A)
Stand-by	59 dB (A)	58 dB (A)

Sound Pressure Level *2

	Mainframe Only	Complete System *3
During printing	61 dB (A)	67 dB (A)

*1: Actual values in accordance with ISO 7779 standards.
*2: Measured from the position of the bystander or operator during printing.
*3: Mainframe with all options installed.

Dimensions: (W x D x H)	870 x 735 x 1,476 mm (34.3" x 28.9" x 58.1") (without options)
Weight:	252 kg (without options)
Optional Equipment:	Refer to Machine Configuration

SERVICE PROGRAM MODE TABLES

NOTE: 1) In the Function column, comments are in italics.
2) In the Settings column, the default value is in bold letters.
3) S and B in the right hand side of the mode number column means that this mode is stored in the NVRAM on the SICU (S) or BCU (B). If you do a RAM reset, all these SP modes will be reset to their factory settings.

Mode No. (Class 1, 2 and 3)				Function	Settings
1-002	Side-to-Side Registration				
	1	Tray-1	B	Adjusts the printing side-to-side registration from the 1st paper feed station using the trimming area pattern (SP2-902-3, No.15). *Use the "•" key to toggle between + and – before entering the value.* *See "Replacement and Adjustment – Copy Image Adjustments" for details on SP1-002.*	+9 ~ –9 0.1 mm/step **–1.5 mm**
	2	Tray-2	B	Adjusts the printing side-to-side registration from the 2nd paper feed station using the trimming area pattern (SP2-902-3, No.15). *Use the "•" key to toggle between + and – before entering the value.* *The specification is 0 ± 2.0 mm.*	+9 ~ –9 0.1 mm/step **–1.5 mm**
	3	Tray-3	B	Adjusts the printing side-to-side registration from the 3rd paper feed station using the trimming area pattern (SP2-902-3, No.15). *Use the "•" key to toggle between + and – before entering the value.* *The specification is 0 ± 2.0 mm.*	+9 ~ –9 0.1 mm/step **–1.5 mm**
	4	Tray-4 (LCT)	B	Adjusts the printing side-to-side registration from the 4th paper feed station using the trimming area pattern (SP2-902-3, No.15). *Use the "•" key to toggle between + and – before entering the value.* *The specification is 0 ± 2.0 mm.*	+9 ~ –9 0.1 mm/step **–2.5 mm**
	5	Tray-5 (LCT)	B	Adjusts the printing side-to-side registration from the 5th paper station using the trimming area pattern (SP2-902-3, No.15). *Use the "•" key to toggle between + and – before entering the value.* *The specification is 0 ± 2.0 mm.*	+9 ~ –9 0.1 mm/step **–2.5 mm**
	6	Tray-6 (LCT)	B	Adjusts the printing side-to-side registration from the 6th paper station using the trimming area pattern (SP2-902-3, No.15). *Use the "•" key to toggle between + and – before entering the value.* *The specification is 0 ±2.0 mm.*	+9 ~ –9 0.1 mm/step **–2.5 mm**

Mode No. (Class 1, 2 and 3)				Function	Settings
1-002	Side-to-Side Registration				
	7	Duplex Tray	B	Adjusts the printing side-to-side registration from the duplex tray using the trimming area pattern (SP2-902-3, No.15). *Use the "•" key to toggle between + and – before entering the value.* *The specification is 0 ±2.0 mm.*	+9 ~ –9 0.1 mm/step **–3.0 mm**
1-003	Paper Buckle Adjustment (Registration)				
	1	Copier Paper Tray	B	Adjusts the relay clutch timing at registration. The relay clutch timing determines the amount of paper buckle at registration. (A positive setting leads to more buckling.)	+9 ~ –9 1 mm/step **+4.0 mm**
	2	LCT Tray	B		
	3	Duplex Tray	B		
1-008	Duplex Fence Adjustment				
			B	Adjusts the distance between the front and rear fences.	+4 ~ –4 0.5 mm/step **0 mm**
1-103	Fusing Idling After Low Power Mode				
			B	Selects whether fusing idling is done or not when recovering from the low power mode.	**0: Not done** 1: Done
1-105	Fusing Temperature Adjustment				
	1	Fusing Temperature in Waiting Condition	B	Adjusts the fusing temperature for stand-by.	170 ~ 200 1°C/step **173°C** **(85 CPM)** **178°C** **(105CPM)**
	2	Fusing Temperature Lower Limit	B	Adjusts the fusing temperature lower limit. When the fusing unit falls below this temperature, the machine stops copying. Copying automatically restarts when the fusing temperature recovers. ***This SP mode is for designer's use only.***	157 ~ 167 1°C/step **163°C** **(85 CPM)** **167°C** **(105 CPM)**
	3	Fusing Temperature Correction (<A4/LT)	B	Specifies the amount to raise the fusing temperature from standby mode to print on A4/LT long edge or smaller width paper.	+0 ~ +20 1°C/step **+15°C**
	4	Fusing Temperature Correction (A4/LT)	B	Specifies the amount to raise the fusing temperature from standby mode to print on paper of A4/LT long edge width.	+0 ~ +25 1°C/step **+10°C**
1-902	Web Motor Control				
	1	Web Consumption	B	Displays the percentage of the web consumption in 1% steps (0% ~ 100%). The value can be manually input using number keys.	
	2	Web Motor Drive Interval	B	Change the interval of copy operation time after which the web motor is driven	15 ~ 130 1 s/step **42 s** **(85 CPM)** **34 s** **(105 CPM)**

Mode No. (Class 1, 2 and 3)				Function	Settings
1-902	Web Motor Control				
	3	Web Motor Drive Time	B	Changes the time that the web motor is driven.	0.1 ~ 3.0 0.1 s/step **0.8 s**
	4	Web Near End Setting	B	Changes the web consumption ratio at which web near end is displayed. About 40k A4 copies can be made after the web consumption reaches 100%.	0 ~ 100 1%/step **100%**
2-001	Charge Corona Bias Adjustment				
	1	Image Area (Auto Process Control OFF)	B	Adjusts the voltage applied to the grid plate during copying when auto process control is **off**. *Normally, there is no need to adjust this. If there is an ID or TD sensor problem, the machine goes into fixed toner supply mode. After replacing the drum or charge corona wire, change this value to the default.*	–650 ~ –1,300 10 V/step **–1,000 V**
	2	ID Sensor Pattern (Auto Process Control OFF)	B	Adjusts the voltage applied to the grid plate when making the ID sensor pattern, when auto process control is switched off. *Normally, there is no need to adjust this. If the user wants high density copies, the sensor pattern must be lighter, so this voltage must be a higher negative voltage.*	–650 ~ –1,300 10 V/step **–800 V**
	3	Image Area (Auto Process Control ON)	B	Adjusts the voltage applied to the grid plate during copying when auto process control is switched **on**. This voltage changes every time auto process control starts up (every time the machine is switched on)	–650 ~ –1,300 10 V/step **–1,000 V**
	4	Grid Voltage for Transparencies (OHP)	B	Adjusts the voltage applied to the grid plate when translucent mode is selected. Use this if there is a copy quality problem when making copies on transparencies. Normally there is no need to adjust this. See 2-001-1.	–650 ~ –1,300 10 V/step **–1,070 V**
	5	Total Corona Current	B	Adjusts the current applied to the charge corona wire except for Photo mode.	–1,400 ~ –2,800 100 μA/step **–1,400 μA**
	6	Total Corona Current (Photo mode)	B	Adjusts the current applied to the charge corona wire for Photo mode.	1,400 ~ –2,800 100 μA/step **–1,600 μA**
	7	V_D (Auto Process Control)	B	Adjust the target V_D voltage for Process Control Initial Setting.	–900 ~ –1,000 10 V/step **–970 V**
2-201	Development Bias Adjustment				
	1	Image Area	B	Adjusts the development bias for copying. *This can be adjusted as a temporary measure if faint copies appear due to an aging drum.*	–200 ~ –700 10 V/step **–530 V**

Mode No. (Class 1, 2 and 3)				Function	Settings
2-201	Development Bias Adjustment				
	2	ID Sensor Pattern	B	Adjusts the development bias for making the ID sensor pattern for VSP measurement. *This should not be used in the field, because it affects ID sensor pattern density, which affects toner supply.*	–200 ~ –700 10 V/step **–400 V**
	3	Transparencies (OHP)	B	Adjusts the development bias for copying onto transparencies.	–200 ~ –700 10 V/step **–530 V**
	4	ID Sensor Development Potential	B	Adjusts the development potential for making the ID sensor pattern for VSP measurement. Do not adjust.	-180 ~ -380 1 V/step **-280 V**
2-209	Toner Supply Rate				
			B	Adjusts the toner supply rate from the hopper. *Increasing this value reduces the toner supply roller clutch on time. Use a lower value if the user tends to make lots of copies that have a high proportion of black.*	100 ~ 2,000 10 mg/s/step **800 mg/s (85 CPM)** **1,000 mg/s (105 CPM)**
2-301	Transfer Current Adjustment				
	1	1st Copy Side	B	Adjusts the current applied to the transfer belt during copying on the 1st side of the paper. If the user uses thicker paper, the current may have to be increased to ensure sufficient transfer of toner.	15 ~ 200 1 μA/step **120 μA (85 CPM)** **140 μA (105 CPM)**
2-301	Transfer Current Adjustment				
	2	Thick Paper	B	Adjusts the current applied to the transfer belt during copying on thick paper. *See above.*	15 ~ 200 1 μA/step **120 μA (85 CPM)** **140 μA (105 CPM)**
	3	Transparencies (OHP)	B	Adjusts the current applied to the transfer belt during copying on transparencies. See above. If the user normally feeds thicker paper from the bypass tray, use a higher setting.	15 ~ 200 1 μA/step **140 μA**
	4	Translucent Sheet	B	Adjusts the current applied to the transfer belt during copying on translucent sheet.	15 ~ 200 1 μA/step **120 μA (85 CPM)** **140 μA (105 CPM)**
	5	2nd Copy	B	Adjusts the current applied to the transfer belt during copying on the 2nd side of the paper.	15 ~ 200 1 μA/step **120 μA (85 CPM)** **140 μA (105 CPM)**

Mode No. (Class 1, 2 and 3)				Function	Settings
2-301	Transfer Current Adjustment				
	6	Between Pages	B	Adjusts the current applied to the transfer belt between the pages.	15 ~ 200 1 μA/step **20 μA**
2-506	Cleaning Interval – Multiple Copy				
	1	On/Off	B	Selects whether multiple copy jobs are stopped at regular intervals for the following purposes. 1. Stop and turn the drum motor in reverse to clean the cleaning blade edge 2. Make an ID sensor pattern to correct the toner density control. The interval depends on SP2-506-2. Use if the drum gets dirty or images get too pale or too dark during long jobs.	1: No **2: Yes**
	2	Interval	B	Selects the interval at which multi copy jobs are stopped.	1 ~ 100 1 minute/step **30 minutes**
2-969	ID Sensor Pattern Interval – Multicopy				
			B	If this is enabled, an ID pattern is made every minute if the machine is being used during the first 20 minutes after process control is done. This stabilizes image density just after the machine has been switched on. However, the printing productivity will be decreased.	**OFF** ON
4-915	CD-RW				
	1	CD-RW Model Name Display		Displays the CD-R/RW model name and firmware version.	
	2	CD-RW F/W Version Display			
5-923	Border Erase Area Selection				
			S	Selects the standard for edge erase. 0: The margin is erased from the original data. 1: The margin is erased from the data sent to the laser diode. Note that the output resulting from each of the settings will be different when reduction/enlargement is used.	**0: Original Standard** 1: Copy Standard

Mode No. (Class 1, 2 and 3)				Function	Settings
5-924	Margin Per Original				
	1	Margin Per Original	S	Margin adjustment for each scanned original can be adjusted when the settings of the following SP modes. This change was a result of special requests from the Japanese domestic market. The following remarks will be added as machine limitations. As a general rule, the settings should not be changed. • Printing productivity for the 1st set of originals will be decreased after the margin is adjusted. • The margin in Magazine Mode and in Combine Mode cannot be adjusted in this SP mode. • After scanning an original in the sample copy mode or after select setting key is pressed when printing file using the document server, the margin adjust key can be changed. However, the key changed will not affect any margin adjustment. • When different margins are selected for the front original and rear original in Designate or Chapter Mode (Duplex copy), copying may not meet the expectation. • When the margin is changed in Tab Sheet in Tab Mode, copying may not meet the expectation.	**NO** YES
	2	Per Original Priority	S		**0: OFF** 1: ON
6-120	Staple Jogger Adjustment				
	1	A3	S	Adjusts the staple jogger positions for each paper size.	+1.5 ~ –1.5 0.5mm/step **0 mm**
	2	B4			
	3	A4 L			
	4	A4 S			
	5	B5 L			
	6	B5 S			
	7	DLT L			
	8	LG L			
	9	LT L			
	10	LT S			
	11	Others			

Model: Bellini	Date: 26-May-00	No.: RA294013

Subject: Decal - Paper Set Direction	Prepared by: H.K.
From: Technical Services Dept., GTS Division	

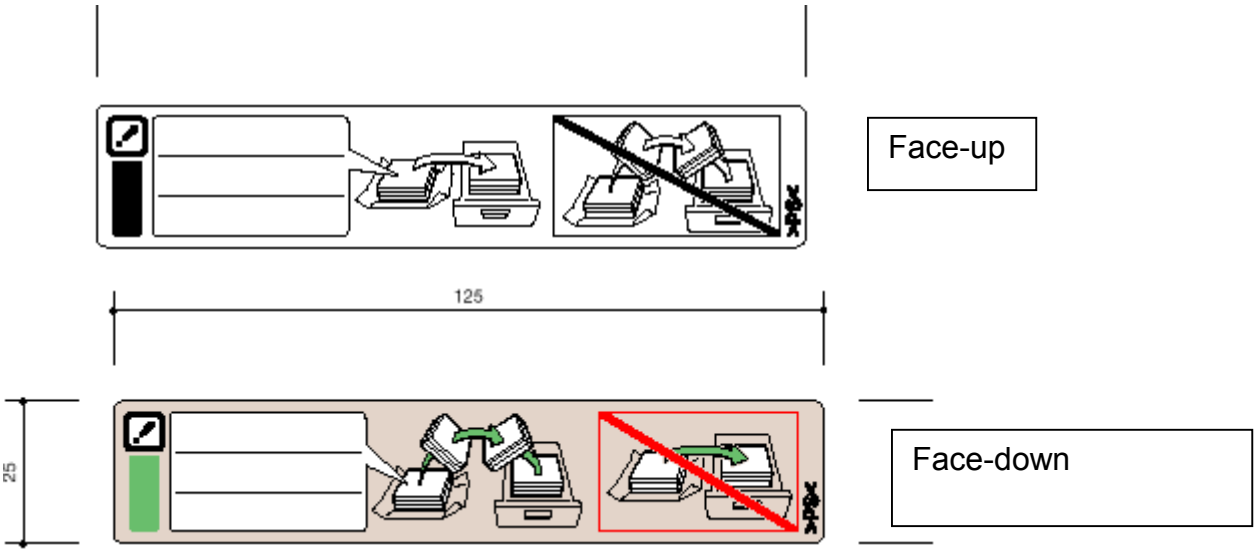
Classification:

- ☐ Troubleshooting
- ☐ Part information
- ☒ Action required
- ☐ Mechanical
- ☐ Electrical
- ☐ Service manual revision
- ☐ Paper path
- ☐ Transmit/receive
- ☐ Retrofit information
- ☐ Other ( )

The following decal has been added to the accessories for the mainframe copier and LCT from May production.

	New part number	Description	Q'ty	Int	Page	Index	Note
	A2941307	Decal - Paper Set Direction	3		181	*43	A294 copier
	A2941307	Decal - Paper Set Direction	3		37	*18	B303 LCT

*:New index



Decal - Paper Set Direction

The finisher stacking ability depends on the paper load orientation (face-up or face-down). For some paper brands, face-up produces better stacking and for other brands, face down is better. The above decal instructs customers on loading paper in order to prevent unnecessary service calls. Therefore, please use this decal for operator training.

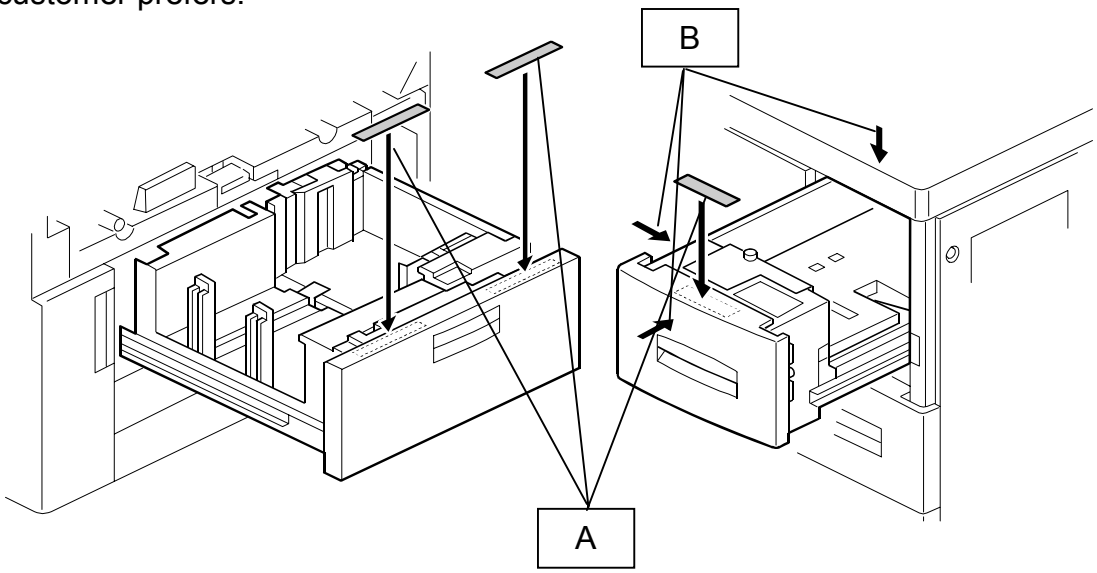
Model: Bellini	Date: 26-May-00	No.: RA294013

1. Using the mainframe paper trays, make more than 10 copies of a given paper brand face-up and face-down. Try to use paper which is normally used by the customers.
2. Compare the curl of the two bunches of paper by placing them on a flat surface.
3. If the face-down bunch shows less curling, write in the brand name on the face-down label (and vice-versa).
4. Repeat steps 1 to 3 for all the brands of paper normally used by the customer.
5. Repeat steps 1 to 4 for LCT paper feed.

   Note: With the LCT, the paper is not inverted as it is when fed from the copier trays. Therefore, the same brand of paper should yield opposite results. Please confirm this when testing with the LCT and write in the brand name on the appropriate label.

6. Attach the two decals [A] to the copier paper feed tray and LCT as shown.

Note: Two decals can be attached to each copier feed tray. However, there is only room for one decal on the LCT. Therefore, attach the LCT decal with more brand names onto the LCT itself. Attach the other to one of the areas labeled [B] below, whichever the customer prefers.

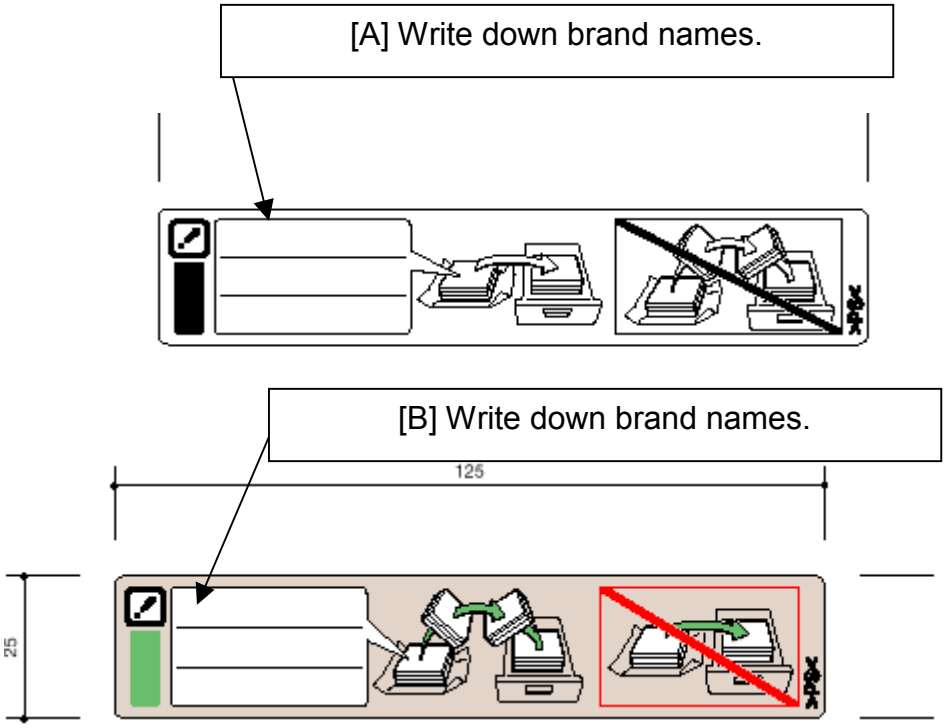


Example:
Copier feed:
Brand A curls less when facing up.
Brand B curls less when facing down.

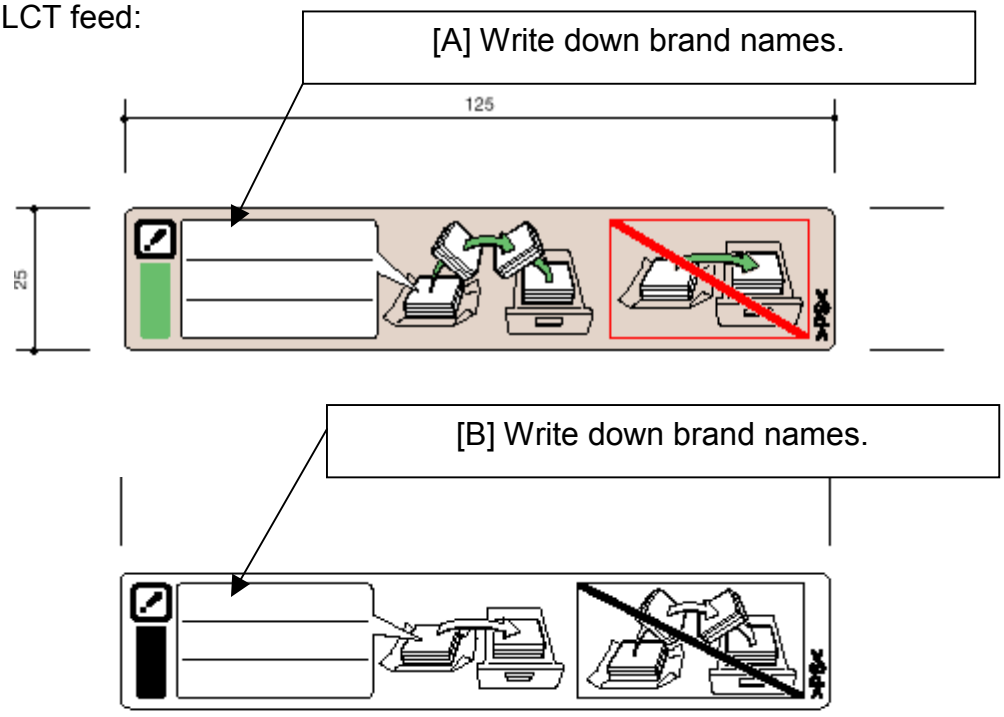
LCT feed:
Brand A curls less when facing down.
Brand B curls less when facing up.

Model: Bellini	Date: 26-May-00	No.: RA294013

Copier feed:



LCT feed:



Reissued: 29-Aug-01

Model: Bellini	Date: 30-May-00	No.: RA294014a

RTB Correction
The adjustment value of SP6120 in bold italics has been corrected from "–1.5 ~ +1.5" to "0 ~ +1.5".

Subject: Finisher ROM History			Prepared by: S. Orita
From: Technical Services Dept., GTS Division			
Classification:	☐ Troubleshooting	☒ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

The history of the EPROM (B3025103) on the Finisher Main Control Board and cut-in production month are as follows:

B3025103B (Check sum: FF9B4CBD H)

First release of finisher firmware.

From first production.

B3025103B to C (Check sum: FF9F43EE H)

SP6120 display title missing

The staple jogger positions for each paper size can be adjusted with SP6-120. This modification becomes effective when the mainframe firmware is updated to version 7.23.2 (F) or later.

6-120	Staple Jogger Adjustment				
	1	A3	S	Adjusts the staple jogger positions for each paper size.	***0 ~ +1.5*** 0.5mm/step **0 mm**
	2	B4			
	3	A4 L			
	4	A4 S			
	5	B5 L			
	6	B5 S			
	7	DLT L			
	8	LG L			
	9	LT L			
	10	LT S			
	11	Others			

From February Production

Model: Bellini	Date: 30-May-00	No.: RA294014a

B3025103C to D (Check sum: FFA114DC H)

Correction of finisher malfunctions that occurred when the printer controller was installed and used with a test machine:

- Door Open is indicated after staple job.
- After a staple job, the Staple Unit does not move to the staple supplying position in the staple end condition.
- Stapled sheets of paper fed out incorrectly when the interrupt function is used during printing.

Correction of finisher malfunctions that occurred when the finisher was connected to a 105-cpm test machine:

- Incorrect stapling, Incorrect jogging, R2 jam, R6 jam

From March production

B3025103D to E (Check sum: FFA063EA H)

Correction of finisher malfunctions that occurred when the finisher was connected to a 105-cpm test machine:

- Tab paper stack failure, exit paper jam in different paper length paper shift

Solution for a symptom that occurred when emptying the finisher copy tray :

Symptom

In a large copy job, the machine stops with 3000 sheets on the finisher tray. As the operator removes the copies, the machine restarts immediately and the tray is still in the down position. This causes the copies to fly out of the trays. The tray moves upwards to the correct position if the Stop button is pushed.

Cause

Once the finisher detects that the tray is in the bottom position, it takes 1.5 seconds for the finisher to send the signal to the mainframe to stop the copy job.

Solution

Software change: The finisher sends the stop signal to the mainframe at the same time it detects that the tray is in the bottom position.

From April production

Reissued: 29-Aug-01

Model: Bellini	Date: 30-May-00	No.: RA294014a

For your reference:

This is the solution for the following problem that was reported:

When the paper stack is removed when the tray is full, the stack height sensor feeler drops. Then, 1.5 seconds later, the finisher raises the tray and the sends the "wait" signal to the copier. The copier then immediately stops the paper flow exiting to the finisher. When the tray is lifted to the top position, the finisher sends the "wait clear" signal to the copier. Then, the copier restarts exiting the paper to the finisher.

If the copier does not receive the "wait" signal, it restarts exiting the paper immediately.

The following condition has also been reported.

When lower limit sensor 2 is activated while the paper is exiting to the finisher, the finisher sends the "lower limit" signal to the copier. The finisher stops lowering the tray. At the same time, the copier stops the paper from exiting. Here, copying is stopped by the tray full condition, not by the "wait" signal. When the stack of paper is removed, the paper load is lifted and the tray lifts up slightly because it is suddenly lighter. The lower limit sensor 2 may deactivate at this point. In this case, the finisher will not send the "wait" signal to the copier. Therefore, the copier will restart exiting the paper to the finisher. If the paper passes the stack height sensor within 1.5 seconds, the tray cannot be lifted. This caused the copies to fly out of the trays.

Model: Bellini	Date: 09-Jun-00	No.: RA294015

Subject: Installation Notes for Optional CD-R/RW	Prepared by: J. Mochizuki
From: Technical Services Dept., GTS Division	

Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☒ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

The following is installation information for the optional CD-R/RW.

Installation

Please refer to page 3-30 of the Bellini Service Manual for the installation procedure. The optional interface board is required when installing the CD-R-RW.

Note:

1. Remove the short connector installed on TB101 of the interface board.
2. In order to use the CD-R/RW, firmware version 7.31.3 (suffix J) or newer must be installed in the copier.

Switch Settings

The switches on the rear face of the CD-R/RW should not be changed from the factory settings.

Switch	Setting
SCSI ID SW (Rotary SW)	Keep the setting at “0”
Option SW (DIP SW)	No. 5 should be ON. Nos. 1 to 4 should be OFF.

Reissued: 06-Jun-01

Model: Bellini	Date: 09-Jun-00	No.: RA294016a

RTB Correction

The items in bold italics have been corrected or added.

Subject: SC Code Information (SC395,397,398 and 966)			Prepared by: S. Orita
From: Technical Services Dept., GTS Division			
Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☒ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

Please add the following SC codes to Section 7 of the Service Manual.

SC395: CD-R/RW Control CPU Error

Definition [C] (All copier functions can be used except for the Document Editor).
The CD-R/RW control CPU on the interface board generates an abnormal signal.

Possible Causes:

- Interface board defective

SC397: CD Access Error

Definition [C] (All copier functions can be used except for the Document Editor).
The CD-R/RW generates an abnormal signal during data transmission between the copier HDD and the CD-R/RW.

Possible Causes:

- CD-R/RW defective
- CD-R/RW media defective

***SC398:* CD-R/RW Data Transmission Error**

Definition [C] (All copier functions can be used except for the Document Editor).
Data transmission between the copier HDD and the CD-R/RW is not completed within 105 seconds.

Possible Causes:

- CD-R/RW defective
- CD-R/RW media defective
- ***SICU detective***

SC966: Polygon Mirror Motor Ready Error

Definition [B]
The polygon mirror motor does not reach ready status within 15 seconds after the copy paper is detected by the registration sensor.

Possible Causes:

- Polygon mirror motor defective
- Poor connection between polygon mirror motor drive board and SICU board
- Polygon mirror motor drive board defective
- SICU board defective

Model: Bellini	Date: 09-Jun-00	No.: RA294017

Subject: Bellini Language Software Information	Prepared by: J. Mochizuki
From: Technical Services Dept., GTS Division	

Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☒ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

Up to two languages can be stored in the Bellini SICU as 1st and 2nd languages.

The following languages are pre-installed at the factory for each model:

Machine Code	1st Language	2nd Language
A294-14	English - NA	Spanish
A294-15	English - NA	Spanish
A294-17	English - NA	Spanish
A294-22	English - UK	None
A294-24	English - UK	None
A294-26	English - UK	None
A294-27	English - UK	None

Any two of the following 11 languages can be installed from the IC card.

Please refer to the service manual (page 4-81) for the procedure.

1. Japanese
2. English – UK
3. English – NA
4. French
5. Germany
6. Italian
7. Spanish
8. Dutch
9. Norwegian
10. Danish
11. Swedish

The part number of the language software is A2945125. The software is provided in the same way as the SICU/BCU firmware.

Model: Bellini	Date: 09-Jun-00	No.: RA294018

Subject: Enhancement Kit - Development Seal	Prepared by: H.K.
From: Technical Services Dept., GTS Division	

Classification:			
	☐ Troubleshooting	☐ Part information	☒ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☒ Retrofit information
	☐ Other ( )		

A2949901 (Enhancement Kit - Development Seal) has been prepared for the machines produced before the following cut-in serial numbers.

A29414 L0650030001
A29415 H3600400632
A29417 H3600400001
A29422 H3600400536
A29424 L0650030041
A29426 4B10400001
A29427 H3600400584

This kit includes 9 pcs. of the development seal to ensure proper function of the development unit. This RTB contains supplementary remarks for attaching the seals. Please read these remarks over carefully when doing the procedure.

1. A2943160, A2943162 (step 6 on page 2/4)

Align the side edge of each seal with the edge of the side plate as shown, using the outer edge of the plate as the reference point.

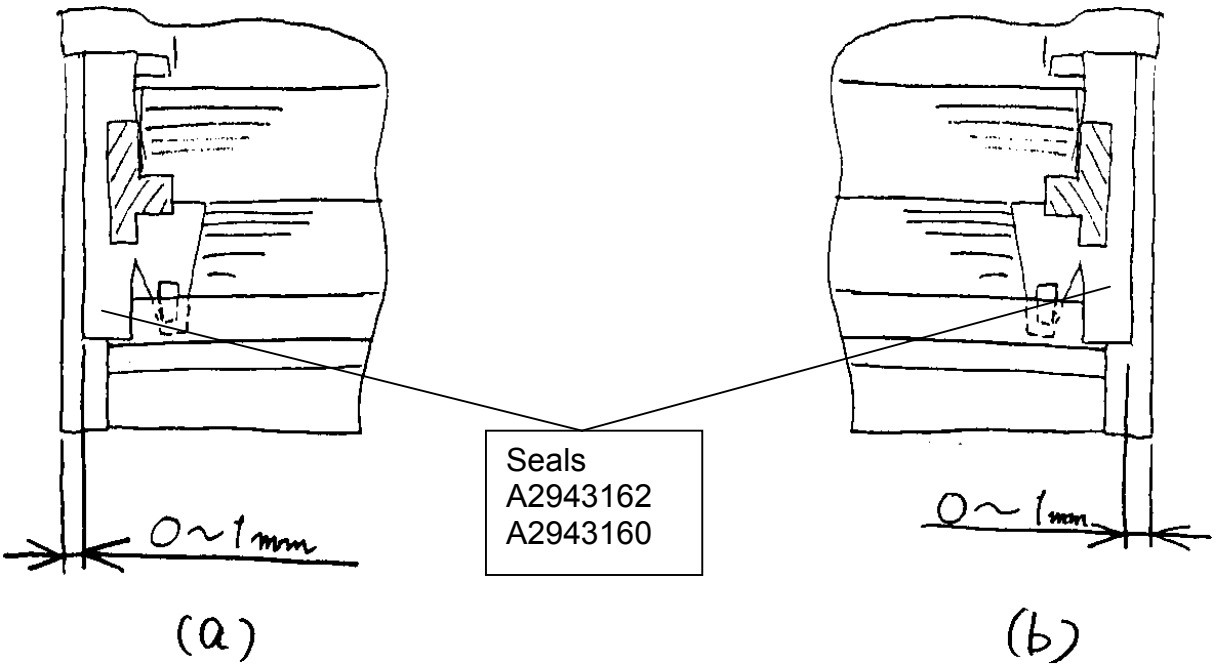


Figure 1

2. A2943166, A2943167 (step 7 on page 3/4)

Align the corner of each seal with the top of the development lower casing [B] on both sides of the development unit (see [C] in the diagram). (The lower casing top should be higher than the corner).

The attachment position (top margin) for the seals on the casing has been changed from 0 ~ 1 to 0.5 ~1.5 mm.

The attachment position (outside of the plate edge) for the seals on the side plates has been changed from 0 ~ 1 to 0.5 ~1.5 mm.

Note: If these two reference values (height, inside margin) are not followed when attaching A2943160 and A2943162, developer can ride on the seals. This will lead to developer leakage.

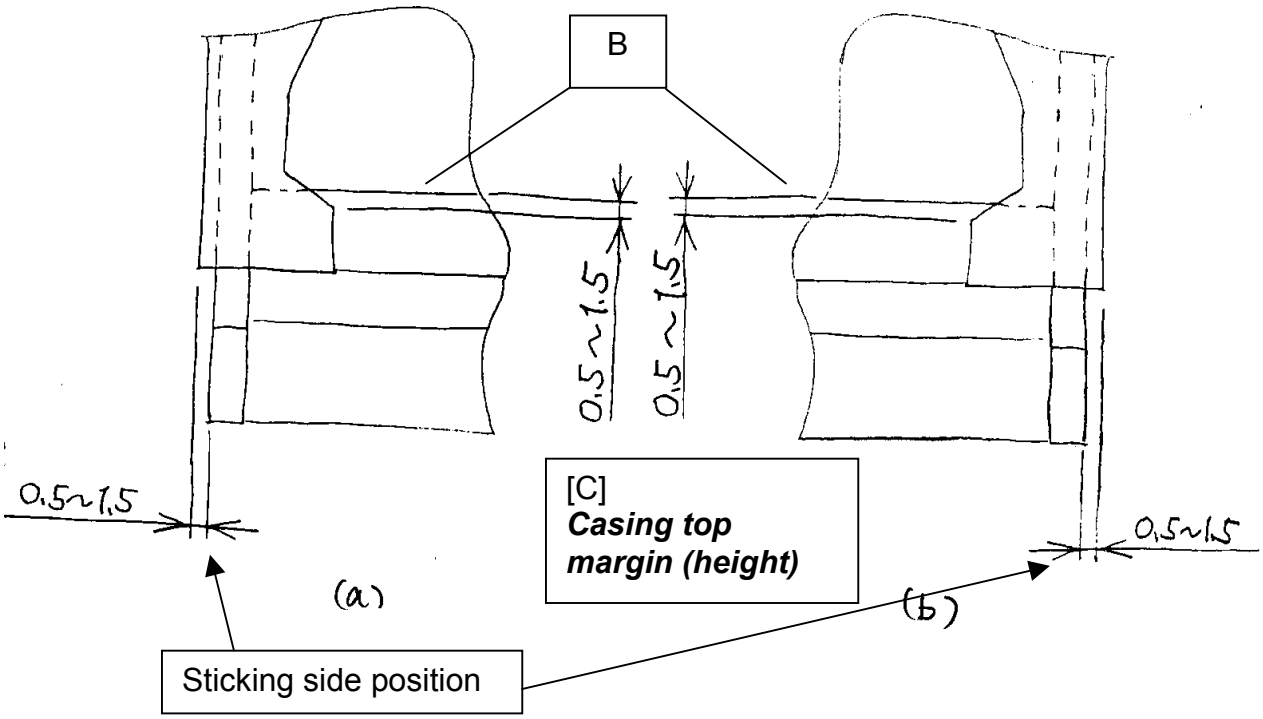
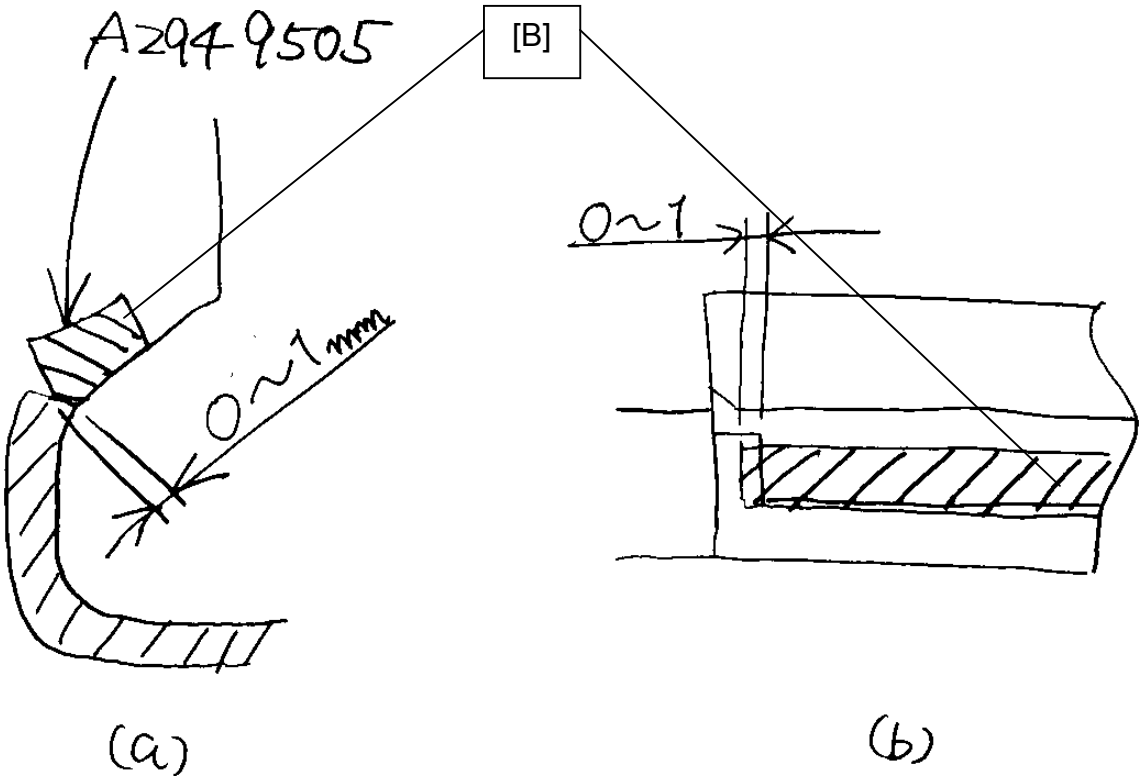


Figure 2

3. A2949505 (on page 4/4)

Stick the seal [B] (Seal - 5x203x3: A2949505).

Overlap the seal [B] with the seal already stuck on the toner hopper as shown.
Make sure there is no gap between the two seals.



4. Note for all seals to be attached

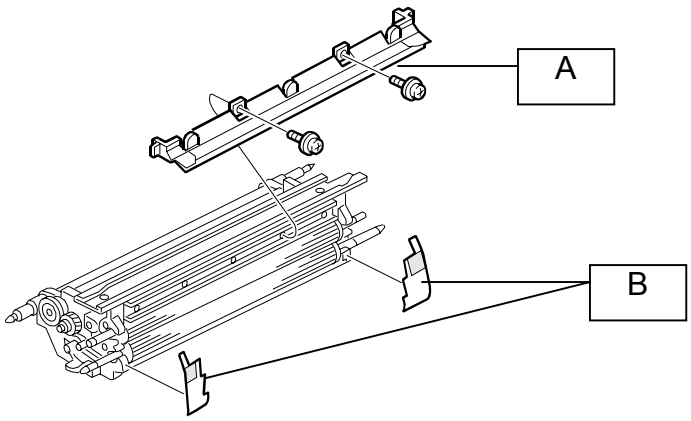
Although it is necessary to smooth the seals to prevent air pockets/gaps, do not repeatedly rub the seals. This can cause them to break. Instead, smooth the area out by pressing the seals down firmly.

A2949901:ENHANCEMENT KIT - DEVELOPMENT SEAL

To improve the toner shield of the development unit, the following seals are included in the Development Seal Enhancement Kit (P/N:A2949901).

A2943160: Front Development Roller Seal
A2943162: Rear Development Roller Seal
A2943166: Front Drum Seal
A2943167: Rear Drum Seal
A2949502: Seal - 5x400x3
A2949503: Sheet - 15x47
A2949504: Sheet - 15x58
A2949505: Seal - 5x203x3

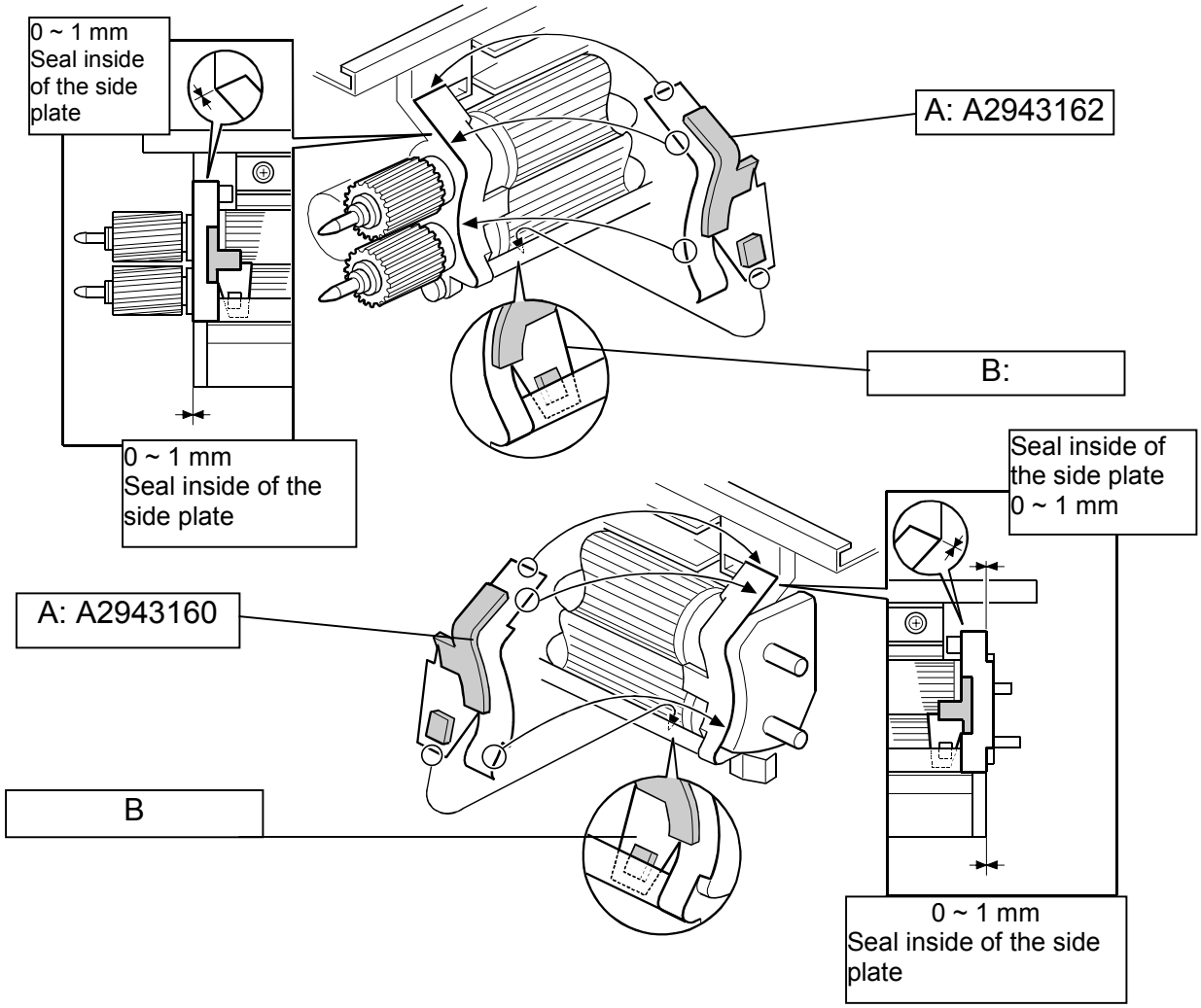
1. Remove the development unit. Remove the toner hopper from the development unit. Remove any developer present.
2. Clean the development unit to completely remove all toner and developer.
3. Remove the developer entrance seal [A] (2 screws, 2 hooks).
4. Remove all the old developer entrance seals [B] (***2 each*** on front and rear).
5. Clean the areas where the seals were attached with a dry cloth to completely remove any toner.



6. Attach the front and rear development roller seals [A] as shown (rear & front: A2943162 & 3160) below.

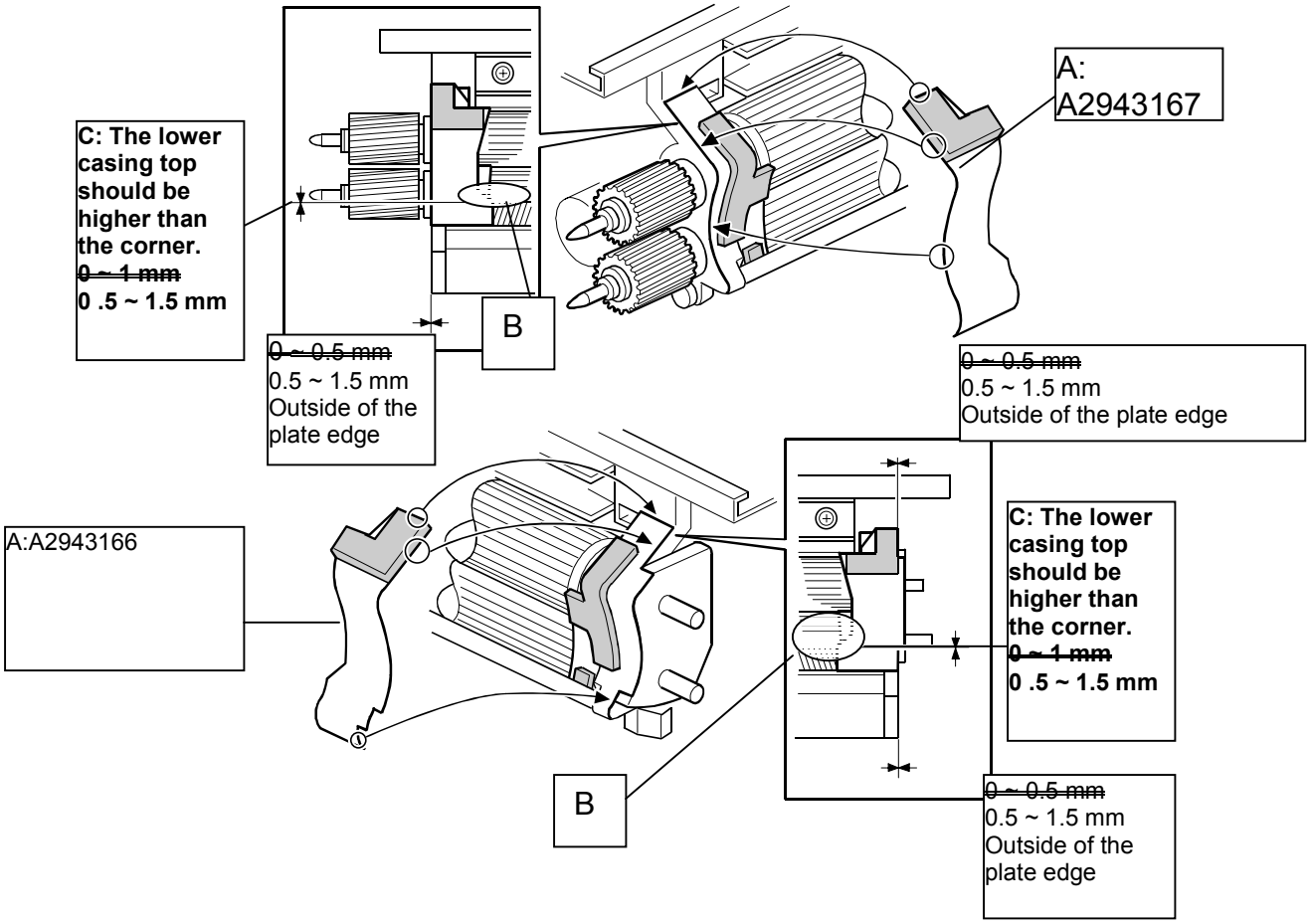
- Align the edges of the seals with the side plates as shown.
- Insert the lower part of the seal [B] under the lower development casing.
- Attach this part to the development roller tightly so that there is no slack / air pockets in the seals.
- Make sure that there is no slack / air pockets in the seals.

Note: If there is any oil or foreign material on the seals, clean them very carefully with alcohol.



7. Attach the front and rear drum seals [A] (Rear and Front: A2943167 & 3166) on top of the seals attached in step 6 above.

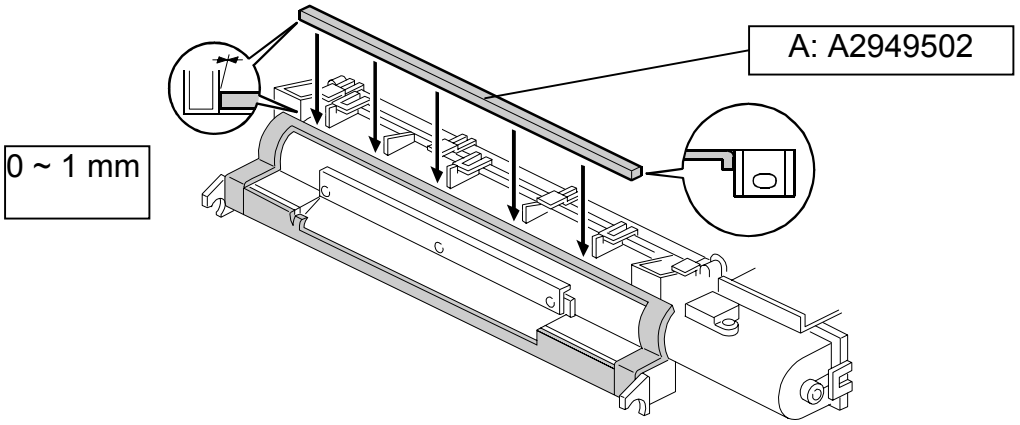
- **Align the corner of the seals with the top of the lower development casing [B] on the both sides of the development unit as shown [C]**. (The lower casing top should be higher than the corner).
- To attach the seals, press the non-sponge area firmly so that there is no slack / air pockets in the seals.



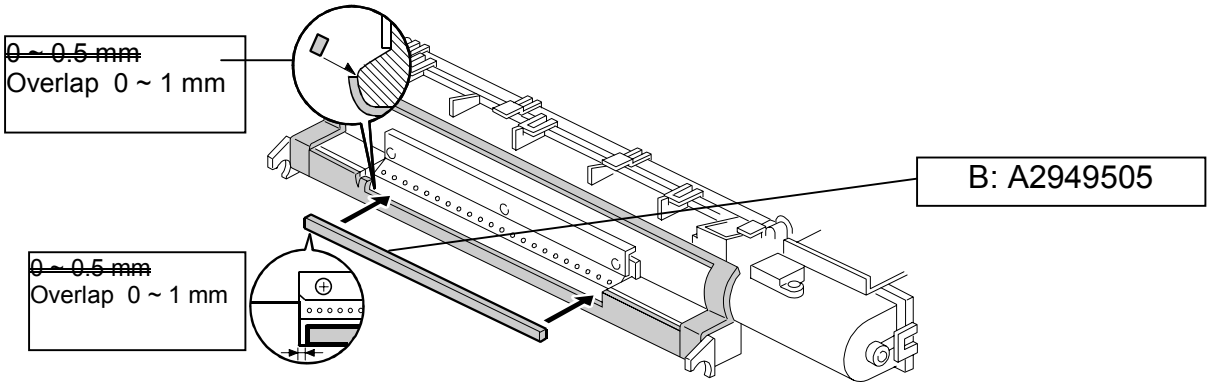
Attaching Seals (A2949502, 9505, 9503, and 9504) to the toner hopper

1. Clean the areas where the seals will be attached with a dry cloth.
2. Attach the seals & sheets as shown.

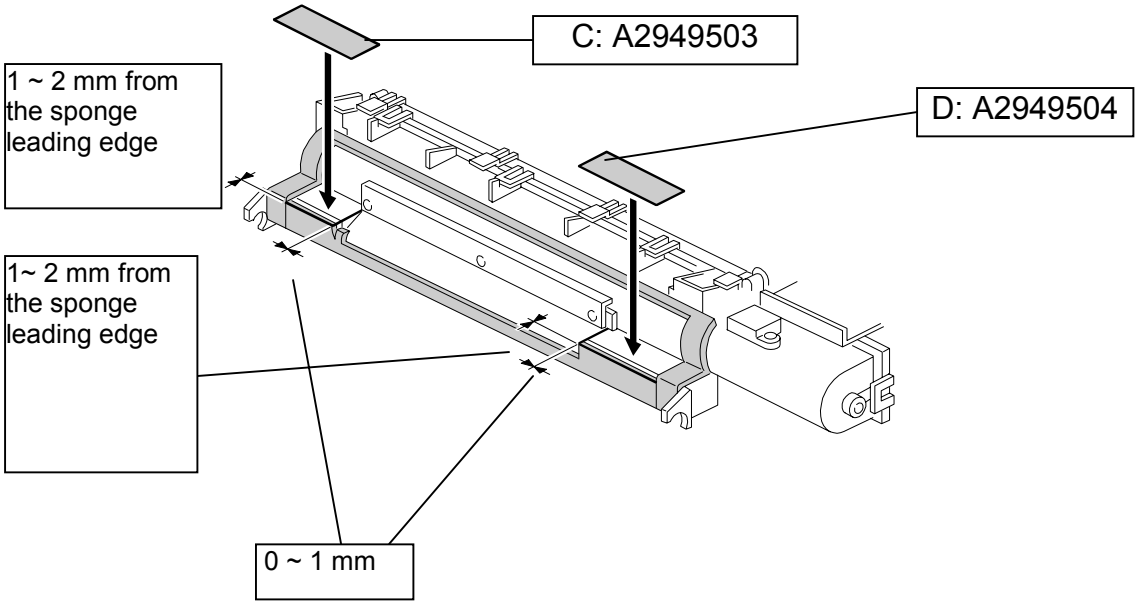
Attach the seal [A] (Seal - 5x400x3: A2949502).



Attach the seal [B] (Seal - 5x203x3: A2949505).



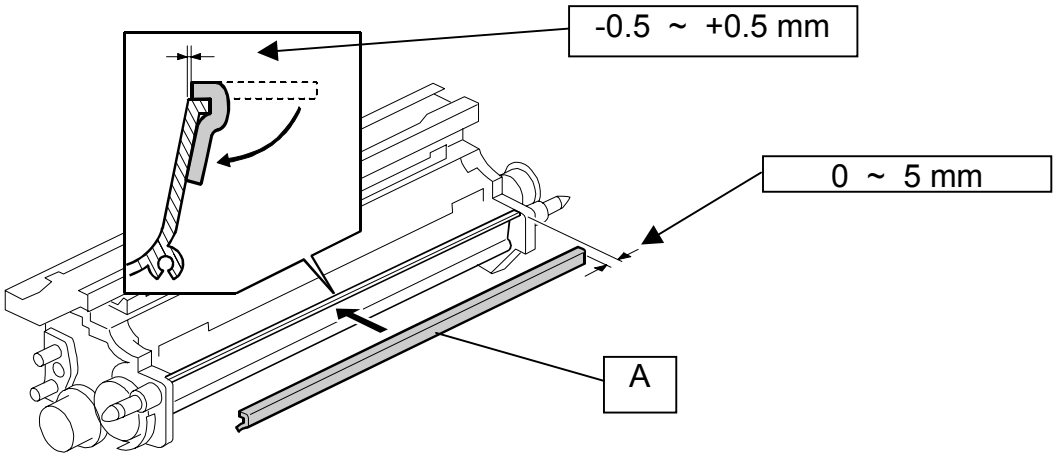
Attach the sheets (Sheets - 14x47: A2949503 [C], & Sheets - 15x58: A2949504 [D])



ADITINONAL SEAL ATTACHEMENT FOR A2949901: ENHANCEMENT KIT - DEVELOPMENT SEAL

In addition to the 8 seals included in this kit, please attach A2943165 (Seal - 325x15x3) as follows:

1. Remove the old seal from the development unit.
2. Clean the areas where the seals were attached with alcohol.
3. Attach the new seal [A] (A2943165: Seal - 325x15x3) to the development unit.



Model: Bellini	Date: 14-Jun-00	No.: RA294019

Subject: Bellini PM Item Addition	Prepared by: J. Mochizuki
From: Technical Services Dept., GTS Division	

Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☒ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

Based on the present results from the IFAP and production tests for the 105 cpm model, we have determined that the following PM items should be added to improve copy quality and reliability.

Description	Activity Type	Interval	Note/Remarks
DEVELOPMENT UNIT			
Development Roller	**I** (Note 1)	390 k	Clean with a dry cloth
Fusing			
Lower Fusing Exit Guide Plate	**I** (Note 2)	300 k	Clean with water or alcohol
Hot Roller Stripper	**I** (Note 3) r	300 k 600 k	Clean with a dry cloth
DUPLEX			
Duplex Transport Sensors (Note 4)	**I** (Note 4)	300 k	Blower brush
Duplex Inverter Sensor (Note 5)	**I** (Note 4)	300 k	Blower brush

Note

1. If toner sticks to the development roller, the bias voltage will increase in that area. This may in turn cause dirty background on copies. Therefore, the development rollers should be cleaned whenever the developer is replaced.
2. Paper jams may occur if toner sticks to the lower fusing exit guide. Therefore, the guide should be cleaned at every PM visit.
3. If the hot roller stripper becomes dirty with toner or other particles, this may cause the edge of the copy stack (paper trailing edge) to become dirty.
4. Paper dust on the duplex transport sensors and the duplex inverter sensor can cause paper jams. Therefore, these sensors should be cleaned with a blower brush at every PM visit.

Model: Bellini	Date: 19-Jun-00	No.: RA294020

Subject: Firmware Modification History	Prepared by: H.K.
From: Technical Services Dept., GTS Division	

Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☒ Other ( )		

Firmware Modification History

Firmware Version: 6.3.1 A2945610A (NA) A2945660A (EU)

First release of the firmware

From first production

Firmware Version: 7.1 A2945610B (NA) A2945660B (EU)
From December 1999 production
Corrections (Ver.6.3.1 to 7.1)

No,	Title	Details of Errors and Modifications
1	SC990 Prevention	SC990 was occasionally indicated in the following situations. This problem was caused by data transfer failure from SICU to BCU: ● During 2-sided to 2-sided copying ● 1-sided to 2-sided copying with A3 paper ● When changing pages in SP mode
2	SC304 Prevention	SC304 was misdetected while the charge corona is off. After changing the firmware, SC conditions related to the grid voltage are ignored while the charge corona is off.

Firmware Version: 7.8.1: A2945610C (NA) A2945660C (EU)
From January 2000 production
Corrections (Ver. 7.1 to 7.8.1)

No,	Title	Details of Errors and Modifications
1	SC990 Prevention	SC990 was displayed when 1000 stapling operations were consecutively made in one job.
2.	PM Counter Description Correction	1. Item No. 023 “Toner Shield Glass” has been changed to “Toner Filter”. 2. Item No. 044 to 046 “Original Feed Counter” has been changed to “Paper Feed Counter”.
3	Extra Counter Error	The counters of items no. 044 to 046 (Extra Counters) did not count up.

No,	Title	Details of Errors and Modifications
4	PM Alarm Interval (SP5501)	The maximum value of the SP5501 setting has been changed from 255(k) to 999(k).
5	Dog Ear Curl Prevention	To minimize dog ear curl when tab sheets are used, inverter timing in tab mode has been changed.
6	SC 495 Prevention	When only one toner bottle is installed and a long job is done using a high image density original, the system toner end is not detected and SC495 is displayed.
7	SC 495 Prevention (at installation)	Not enough toner was supplied to the toner hopper when performing SP2207 at installation. The toner supply time in SP2207 has been extended.

Firmware Version: 7.19: A2945610D (NA) A2945660D (EU)
From February 2000 production
Corrections (Ver. 7.8.1 to 7.19)

No,	Title	Details of Errors and Modifications
1	SP6113 Error	The SP6113 setting is reset when the main switch is turned off and on if the value is changed to a –ve value.
2.	SC515 Prevention	SC515 is displayed if the main switch is turned off and on when the tandem rear fence is fully shifted to the right. This occurs because the machine thinks that the end fence is between the Rear Fence Return Position sensor and the Rear Fence HP Sensor, even though it is at the right side of the Rear Fence Return Position sensor. To counter this, the rear fence is moved to the left for 1 second if both sensors do not detect the fence when the main switch is turned on.
3	SP6119 description correction	The description was incorrect. Incorrect: 0: Enabled 1: Disabled Corrected: 0: Disabled 1. Enabled
4	SMC Print Missing Items	The following SP mode settings were not printed out by SMC print mode: SP5038 SP5212-3, 4 SP5967
5	1st Tray Movement Error	After moving the tandem end fence using SP5804, the 1st tray does not work until the main switch is turned off and on.

New Functions

No,	Title	Details of Errors
1	SP6120 Jogger Position Adjustment	To match various paper types, a function to adjust jogger movement towards the paper has been added. To enable this adjustment, a modified finisher ROM (B3025103C or later) is required. However, at this moment, SP6120 was not displayed in SP mode. Refer to Ver.7.23.2.
2	Spanish Language	Spanish has been released for the 2nd language of the NA (-17) model. 1st Language: English (NA) 2nd Language: Spanish

Firmware Version: 7.23.2: A2945604F/A2945264F (NA)
A2945654F/A2945264F (EU)

Note:
The part numbering system for the firmware has been changed. Beginning with version 7.23.2, the part numbers for the SICU and BCU firmware will be written continuously as one part number. This is to avoid any confusion with the internal handling of the firmware.

From March 2000 production
Corrections (Ver. 7.19 to 7.23.2)

No,	Title	Details of Errors and Modifications
1	SC990 Prevention	After the setting of SP2506 is changed to “On”, SC990 occurs in Cover/Slip Sheet Mode if a blank sheet is fed when drum cleaning begins.
2	Image Density Drop in Magazine Mode	In Magazine Mode, image density drops in 1 out of 10 sheets of the first set.
3	SP6120 display title missing	The title for SP6120 “Staple Jogger Adjustment” is not displayed. This correction makes only SP6120 be displayed in the SP mode. SP6120 adjustment becomes effective when the Finisher firmware is updated to version C or later together with updating mainframe firmware.

New Functions

No,	Title	Symptom
1	SP4915	SP modes have been added that will display the CD-R/RW model name and firmware version. SP4915-1: CD-RW Model Name Display SP4915-2: CD-RW F/W Version Display
2	CD-R/RW Function	The optional CD-R/RW can be used from ver 7.23.2

Firmware Version: 7.28.1: A2945604G/A2945264G (NA)
A2945654G/A2945264G (EU)

From March 2000 production
Corrections (Ver. 7.23.2 to 7.28.1)

No,	Title	Details of Errors and Modifications
1	SP6-119 Display	The displays for SP6-119 have been corrected as follows: Previous New 0: Enabled to **Disabled** 1: Disabled to **Enabled** .
2.	New SP mode SP2-969 for ID pattern making during copy process	Twenty ID patterns are made in a 1-minute interval during a copy process just after the process control is completed.
3	System settings in the user tools.	Thick paper and tab stock can be selected independently for tray 4 or 5. Previously, Index paper (Tab paper) means Thick paper. This is the first step for the selecting plain index paper. The plain index paper function does not become effective with this modification. The Tab Stock key and Thick Paper key are indicated in the User Tools. Only selecting Tab stock key does not make any plain index paper copy. The selected tab stock function will return to the non-selected condition when the machine enters the off condition (main switch or power switch off). If you wish to select the past "Thick paper Tab copy function", select both Tab Stock and Thick paper keys. The tab stock function for plain paper becomes effective with firmware V7.31.3 or later.

No,	Title	Details of Errors and Modifications
4	SP2-506 default settings change	The default settings of SP2-506 (Cleaning interval – multiple copy) have been changed as follows: SP2-506-1 (On/Off): from No to **Yes** SP2-506-2 (Interval): from 15 min to **30 min**

Firmware Version: 7.30.1: A2945604H/A2945264H (NA)
A2945654H/A2945264H (EU)
From Middle of March 2000 production
Corrections (Ver. 7.28.1 to 7.30.1)

No,	Title	Details of Errors and Modifications
1	SC990 in Platen + Two sided to Two sided + Chapter modes	Corrects this mis-detection.
2.	SC990 in Platen + interrupt modeTwo sided to Two sided + Chapter modes	SC990 is displayed mistakenly after returning from the interrupt and platen modes when "left original" is indicated in the operation LCD. This is a bug correction.
3	Bug correction for printer option	Bugs found in the printer option test in Ricoh's laboratory were corrected for the future launch.
4	SP5823	An unnecessary SP mode (5-823) is displayed.
5	Suffix indication still old when the BICU Firmware is installed	The suffix indication was still old when pressing the OK key just after the BICU firmware was installed.

Firmware Version: 7.31.3: A2945604J/A2945264J (NA)
A2945654J/A2945264J (EU)

From April 2000 production
Corrections (Ver. 7.30.1 to 7.31.3)

No,	Title	Details of Errors and Modifications
1	SC990 in 2 sheets staple + A5S,B5S,A4,HLTS, and/or LTS feed from 3rd, 4th, or, 6th feed tray	Corrects this mis-detection.

No,	Title	Details of Errors and Modifications
2.	Changing the parameters for the Process Control, drum charge and development bias	Background appears on the copies. The parameters for Process Control need to be improved to consistently prevent the appearance of copy background. The target V_D value for the process control data initialization has been changed from 900V to 970V. In addition, this value can be changed in SP mode (SP2001-7). The value of the development bias for the image area has been changed from 550V to 530V. In order to activate the new default settings after you have installed the firmware, you must enter the SP modes and manually change the settings to the following new default values. After this has been done, the machine will recognize these settings as the defaults. Development Bias Image area: SP2201-1 (550 to 530) Development Bias Transparent Sheet: SP2201-3 (550 to 530) Charge Corona Bias Grid Voltage for transparent sheet: SP2001-4 (1000 to 1070)
3	Instructing the operator to set the lower toner bottle first.	The open/close mechanism for the lower toner bottle cap does not work properly. In some cases, the mechanism does not return the cap to the bottle, which causes the toner to spill when the bottle is removed. This symptom occurs only with the lower toner bottle. If the upper toner bottle is set first, the machine LCD will instruct the operator to set the lower toner bottle first.
4	System settings in User Tools.	Thick paper and tab stock can be selected at the same time for tray 4 or 5. Firmware version 7.28.1 did not include this function. The plain paper index can be selected (punch function enable). Index tab paper and thick paper can be selected when the two keys are pressed.

No,	Title	Details of Errors and Modifications
5	Margin adjustment per original can be adjusted by changing the original margin adjustment by the user tool to that of by SP mode	Margin adjustment for each scanned original can be adjusted when the settings of the following SP modes, which have been added to the SP mode with this release. SP5924-1 (Margin Per Original, default :no) SP5924-2 (Per Original Priority, default 0:off) This change was a result of special requests from the Japanese domestic market. The following remarks will be added as machine limitations. As a general rule, the settings should not be changed. • Printing productivity for the 1st set of originals will be decreased after the margin is adjusted. • The margin in Magazine Mode and in Combine Mode cannot be adjusted in this SP mode. • After scanning an original in the sample copy mode or after the select setting key is pressed when printing file using the document server, the margin adjust key can be changed. However, the key change will not affect any margin adjustment. • When different margins are selected for the front original and rear original in Designate or Chapter Mode (Duplex copy), copying may not meet the user's expectation. • When the margin is changed in Tab Sheet in Tab Mode, copying may not meet the user's expectation.
6	Increase tolerance against registration motor torque	A registration sensor jam (SP7-504-63) with duplex tray feed has been reported from the Japanese field. When the paper buckle (adjustment: SP1-003-3) in the registration nip is too high, Z fold jams may occur. The tolerance against registration motor torque has been improved by this firmware upgrade. After updating the firmware, check the registration from the duplex tray (SP1-001-2).

<table>
<tr><th>No,</th><th>Title</th><th>Details of Errors and Modifications</th></tr>
<tr><td>7</td><td>Incorrect SC306 detection</td><td>Mis-detection of SC306 (Charge corona wire cleaner connector is not connected). This condition can be detected by SC305 (Charge corona wire cleaner error 1) after updating the firmware. SC306 was detected by a malfunction in the Japanese field. The wire cleaner stopped in the middle of the charge corona unit. Thus, a black line appeared on the copy. After opening and closing the copier door or switching the main switch off and on, the cleaner returned to the home position. The symptom was not duplicated when the technicians visited the machine site.</td></tr>
<tr><td>8</td><td>Default setting for SP1-002</td><td>We have learned that the new settings of SP 1-002 (side-to-side registration) are better. In order to activate the new default settings after you have installed the firmware, you must enter the SP modes and manually change the settings to the following new default values. After this has been done, the machine will recognize these settings as the defaults. If the side-to side registration is within the specifications (2±1.5 mm), you do not have to change the settings.
<table>
<tr><th></th><th>1st</th><th>2nd</th><th>3rd</th><th>4th (LCT)</th><th>5th (LCT)</th><th>6th (LCT)</th><th>Duplex</th></tr>
<tr><td>old</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>New</td><td>-1.5</td><td>-1.5</td><td>-1.5</td><td>-2.5</td><td>-2.5</td><td>-2.5</td><td>-3.0</td></tr>
</table></td></tr>
</table>

No,	Title	Details of Errors and Modifications
9	Transparencies & Translucent Sheet	As a result of a request from the field, the terms used to describe OHP and tracing paper in SP Mode descriptions have been changed. Specifically: Old / New: OHP: Transparencies Tracing paper: Translucent sheet Old Titles: SP2001-4 "Grid Voltage for Transparent Sheet" SP2201-3 "Transparent Sheet" SP2301-3 "OHP Sheet" SP2301-4 "Transparent Sheet" (translation error) New Titles: SP2001-4 "Grid Voltage for Transparencies" SP2201-3 "Transparencies" SP2301-3 "Transparencies" SP2301-4 “Translucent Sheet"
10	1st release for the printer controller	This is the 1st release for the mass production machines of the printer controller. When the printer controller unit is installed, it is necessary to update the firmware. The language card must also be updated to A2945125A (V7.31.3).

NOTE:
The default settings for display languages are as follows:
European version: 1st:English (UK), 2nd: No selection
USA version: 1st: English (NA), 2nd: Spanish

Updating the language firmware overwrites the 1st and 2nd language areas. Also, updating the SICU & BCU firmware overwrites the 1st and 2nd language areas with the default language. When different languages from the default setting are selected, the language firmware should be re-installed after the updating SICU & BCU firmware.

Language Card Modification History

Firmware Version: 7.31.3: A2945125A

[Corrections] (Ver. 7.19 to 7.31.3)

4 languages (Italian, Norwegian, Danish, and Swedish) have been released.

Language	SUM
1.Japanese	C411
2. English (UK)	105B
3. English (NA)	9D8A
4. French	D0B0
5. German	3765
6. Italian	A38F
7. Spanish	83FB
8. Dutch	9CA2
9. Norwegian	21F2
10. Danish	E2D4
11. Swedish	A997

No,	Title	Details of Errors
1	1st release for the printer controller	This is the first release of the printer controller for production machines. When the printer controller unit is installed, it is necessary to update the language.
2	Message correction in French	The message displayed when changing the language with the language select key has been changed as follows: Langage en cours de changememt. → Langage en cours de changement.
3	Translation correction in German and French	Translation correction of user ID in Document Server Mode in German and French Code → ID

Model: Bellini	Date: 19-Jun-00	No.: RA294020

No,	Title	Details of Errors
4	Text corrections / additions - SP Mode	•SP6119 Display Correction: "0:Enabled 1:Disabled"→"0:Disabled 1:Enabled" •SP6120 Newly added: "Staple Jogger Adjustment" •SP4915 Newly added: "CD-RW" •SP4915-1 Newly added "Model Name Display" •SP4915-2 Newly added "F/W Version Display" •SP2969 Newly added "ID Sensor Pattern Interval-Multiple Copy" •SP2001-4 Correction "Grid Voltage for Transparent Sheet"→"Grid Voltage for Transparencies" •SP2201-3 Correction "Transparent Sheet"→"Transparencies" •SP2301-3 Correction "OHP Sheet"→"Transparencies" •SP2301-4 Correction "Transparent Sheet"→"Translucent Sheet" •SP2001-7 Newly added: Vd (Auto Process Control)" •SP5924 Newly added "Margin Per Original" •SP5924-1 Newly added "Margin Per Original" •SP5924-2 Newly added "Per Original Priority"

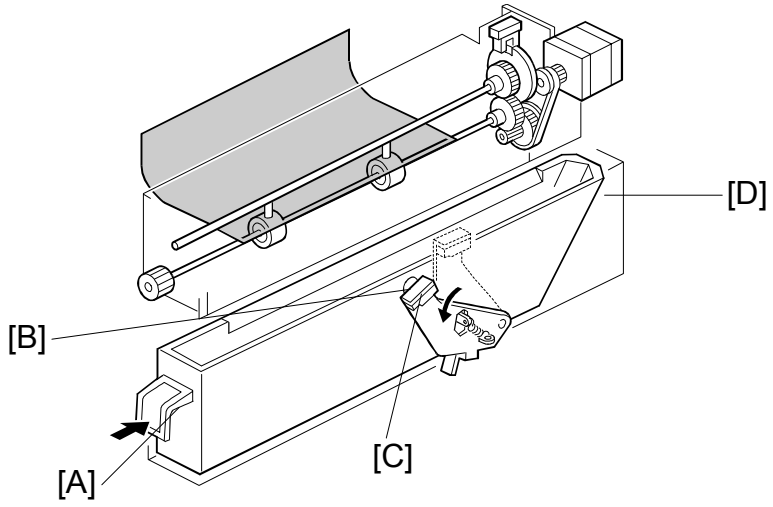
Model: Bellini	Date: 26-Jun-00	No.: RA294021

Subject: Finisher - Punch Waste Full Condition	Prepared by: H.K.
From: Technical Services Dept., GTS Division	

Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☒ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

We have found an incorrect description of the punch waste full condition on page B302-18 in the finisher service manual. Please correct the service manual as follows:

PUNCH WASTE COLLECTION



B302D002.WMF

The punch waste is collected in the punch waste hopper [A], which is under the punch unit.

Incorrect

When the punch waste covers the hole [B] in the hopper, the punch waste hopper sensor [C] turns on and a message will be displayed after the copy job finishes.

Correct

When the punch waste covers the hole [B] in the hopper, the punch waste hopper sensor [C] turns on and a message will be displayed in the operation panel LCD. Then, the copy job will be stopped. After emptying the punch waste and returning the punch waste hopper [A] to the finisher, the copy job will be resumed.

Model: Bellini	Date: 06-Jul-00	No.: RA294022

Subject: Finisher: Poor Front Cover Sheet Positioning	Prepared by: H.K.
From: Technical Services Dept., GTS Division	

Classification:	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

SYMPTOM

When stapling more than 50-70 documents with front and rear cover sheets, the front cover is not squared up before stapling. The alignment is within standard (2 to 30 sheets stapled: 2 mm, 31 to 100 sheets stapled: 3 mm). However, some customers request a better alignment.

CAUSE

1. The exact position where the jogger stops differs for each paper type. It is necessary to adjust the staple jogger position for each type.
2. The trailing edge of paper with a large curl may not be aligned with the stack stopper in the jogger unit.

SOLUTION

Solution 1 (Staple Jogger Span Adjustment)

SP6120 adjustment becomes effective when the finisher firmware is updated to version C or later and the mainframe firmware is updated to version 7.23.2 (F) or later. If the mainframe firmware is updated without the finisher firmware, SP6120 will be displayed in SP Mode but will not be effective.

The staple jogger positions for each paper size can be adjusted with SP6-120 as shown.

6-120	Staple Jogger Adjustment				
	1	A3	S	Adjusts the staple jogger positions for each paper size. The higher the setting, the narrower the jogger span.	+1.5 ~ 0 0.5mm/step **0 mm**
	2	B4			
	3	A4 L			
	4	A4 S			
	5	B5 L			
	6	B5 S			
	7	DLT L			
	8	LG L			
	9	LT L			
	10	LT S			
	11	Others			

From Finisher February Production

1. Increase the SP mode value by 1 step and make copies to check whether the symptom is corrected.
2. If the symptom still appears, repeat step 1 (maximum value 1.5 mm).

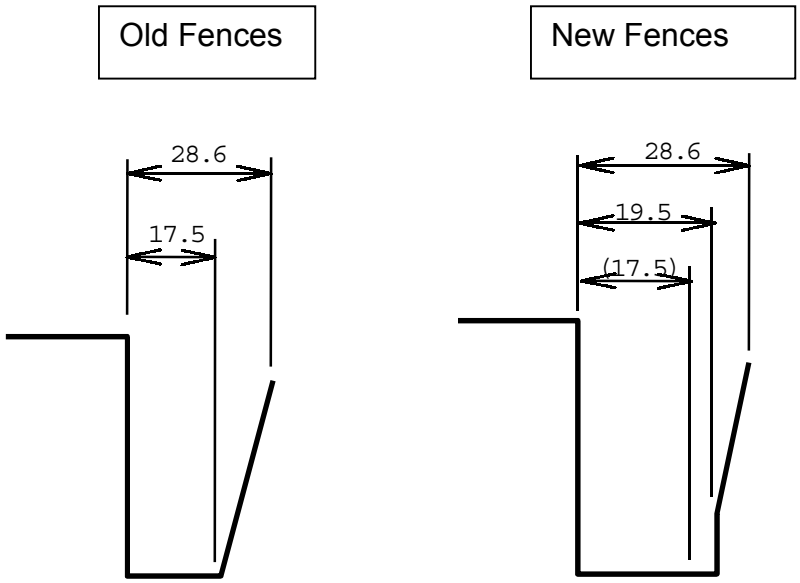
Model: Bellini	Date: 06-Jul-00	No.: RA294022

Solution 2 (widening the positioning fences):

To improve the stacking ability of the jogger unit, the production machines have been modified as follows: The modification has been applied to the April production. Regarding the cut-in serial numbers, please refer to finisher MB No.003.

Old part number	New part number	Description	Q'ty	Int	Page	Index	Note
B3024511	B3024518	Front Positioning Fence	1	X/X	13	4	1
B3024521	B3024528	Middle Positioning Fence	1	X/X	13	5	1
B3024531	B3024537	Rear Positioning Fence	1	X/X	13	8	1

The widths of the positioning fences (front, middle and rear) have been increased as shown below.
Note 1: When replacing either of the old fences in the field, install all three new parts as a set.



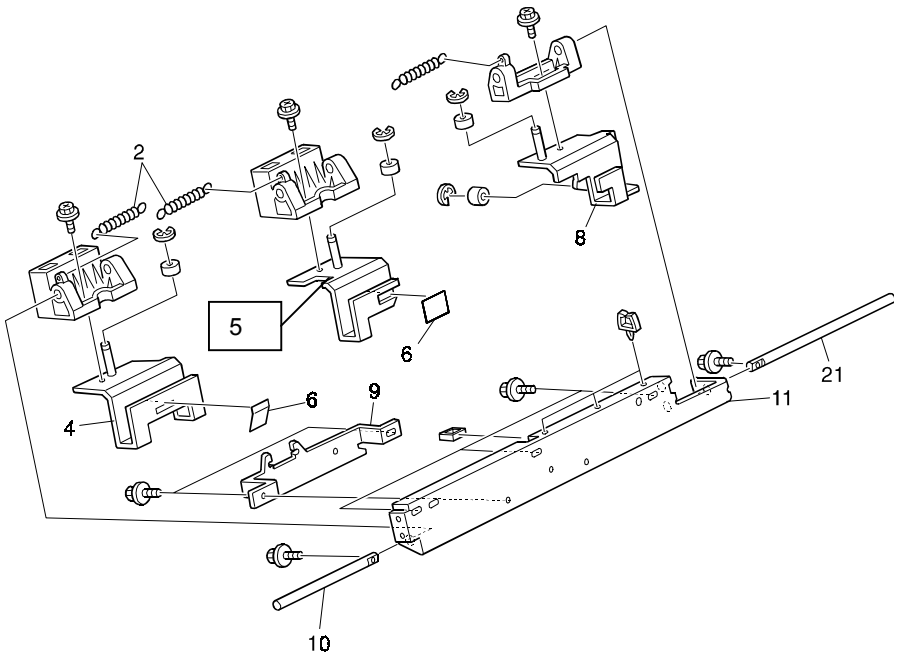
Model: Bellini	Date: 06-Jul-00	No.: RA294022

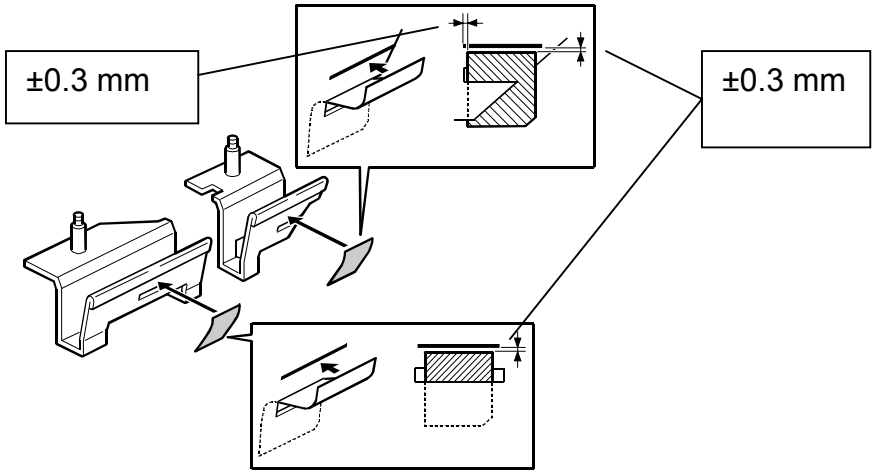
Replacement procedure

Note: In addition to installing the new three fences, it is necessary to attach two Mylar Guides (B3024517, Index 6) to the Front and Middle Positioning Fences.

1. Remove the two springs (index 2) hooked on the Slide Holder Shaft Bracket (B3024742: Index 9).
2. Remove the securing screws for the front and rear shafts (B3024541: Front Shaft - Slide Holder, Index 10 & B3014542: Rear Shaft - Slide Holder, Index 21).
3. Slide out the front and rear shafts from the Staple Unit Lower Stay (B3024741: Index 11).
4. Remove the old positioning fences (Index 4, 5, and 8).
5. Attach the two Mylar Guides (B3024517: Index 6) to the Front and Middle Positioning Fences as shown in the illustration on the next page.
6. Install the new positioning fences (front, middle, and rear).
7. Return all removed parts.

Note: Make sure that the two springs are put back correctly.




±0.3 mm
±0.3 mm

Model: Bellini	Date: 06-Jul-00	No.: RA294023

Subject: Web Cleaning Roller	Prepared by: H.K.
From: Technical Services Dept., GTS Division	

Classification:	☐ Troubleshooting	☐ Part information	☒ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☒ Retrofit information
	☐ Other ( )		

Reports have been received from the Japanese field of toner sticking to the surface of the hot roller, causing the hot roller to require replacement before the PM interval (600K).

Cause:
We have found that the diameter of some web cleaning rollers (AE040029) was slightly narrower in the central area, but the degree of variation was within specification (±0.3mm). Due to this decreased diameter, the fusing cleaning ability at the central area tends to decrease. This can cause some toner to remain on the hot roller, resulting in black lines, black dots in the background and/or offset images.

Solution:

Replace the web cleaning roller and cleaning pressure springs with new parts. Please note that both of these parts should be replaced together as a set.

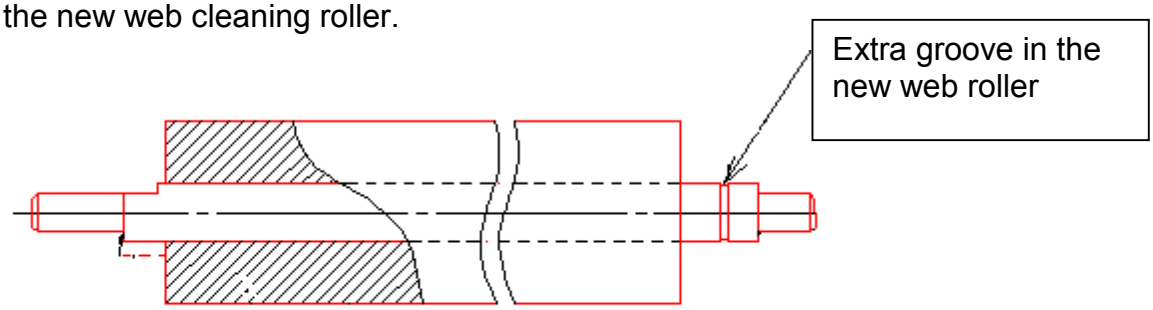
Old part number	New part number	Description	Q'ty	Int	Note
AA063850	AA063862	Cleaning Pressure Spring	2	X/X	X/O as a set
AE040029	AE040033	Web Cleaning Roller	1	X/X	

The web cleaning roller, which previously had a uniform diameter, has been modified so that the diameter at the central area is slightly larger than the sides. Also, the tension of the cleaning pressure spring has been increased from 4.2 N to 8 N.

Model: Bellini	Date: 06-Jul-00	No.: RA294023

Note:

To distinguish the new roller from the old one, the shaft of the new roller has temporarily been marked black on the front face (refer to the illustration in the following procedure). Later, instead of using the black mark, an extra groove will be added to the rear shaft of the new web cleaning roller.



A2949900 (Enhancement Kit - Web Roller) has been prepared for the machines produced before the following cut-in serial numbers. This kit contains the new web cleaning roller and new springs.

A294-14/L0650030010
A294-15/H3600400632
A294-17/H3600300480
A294-22/H3600400536
A294-24/L0650030041
A294-26/4B10400001
A294-27/H3600300131

The installation procedure for the new web cleaning roller and new springs is as follows:

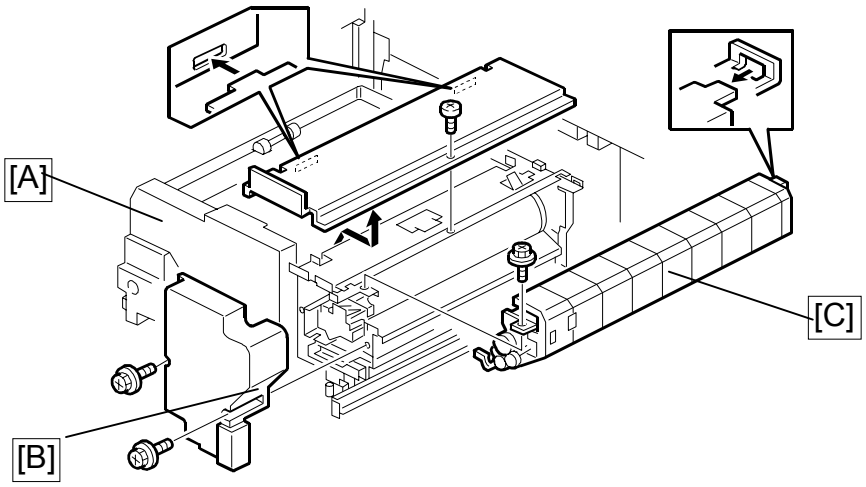
Model: Bellini	Date: 06-Jul-00	No.: RA294023

A2949900:ENHANCEMENT KIT - WEB ROLLER

To improve the cleaning ability of the fusing web cleaning roller, here is the procedure for installing the Web Roller Enhancement Kit (P/N:A2949900).

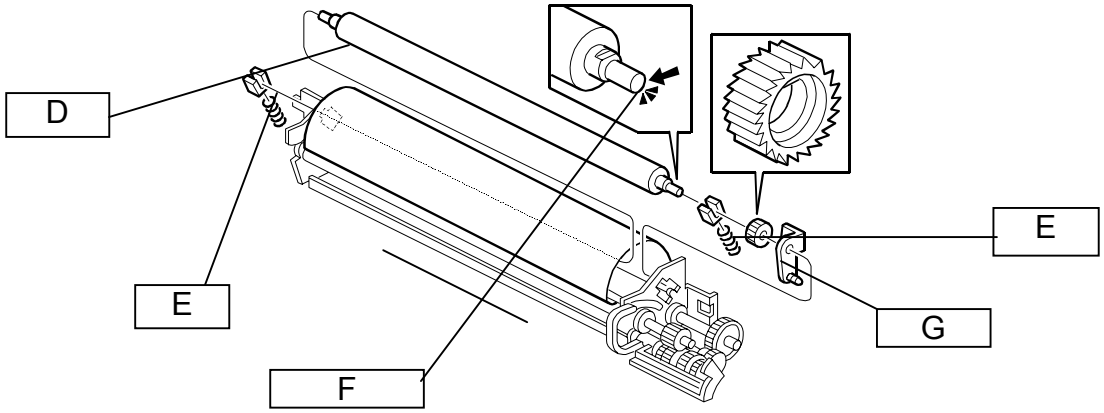
Web Cleaning Roller……1 pcs
Cleaning Pressure Spring … 2 pcs

1. Open the left and right doors, and pull out the fusing and exit unit [A].
2. Remove the fusing unit inner cover [B].
3. Remove the oil supply and cleaning web unit [C] (1 screw).



A294R501.WMF

4. Place the oil supply and cleaning web unit on a stable, flat surface.
5. Slacken the web out to about 200 mm. Then, remove the web cleaning roller [D] (2 bushings, 2 springs [E]).
6. Install the new web cleaning roller and new springs.

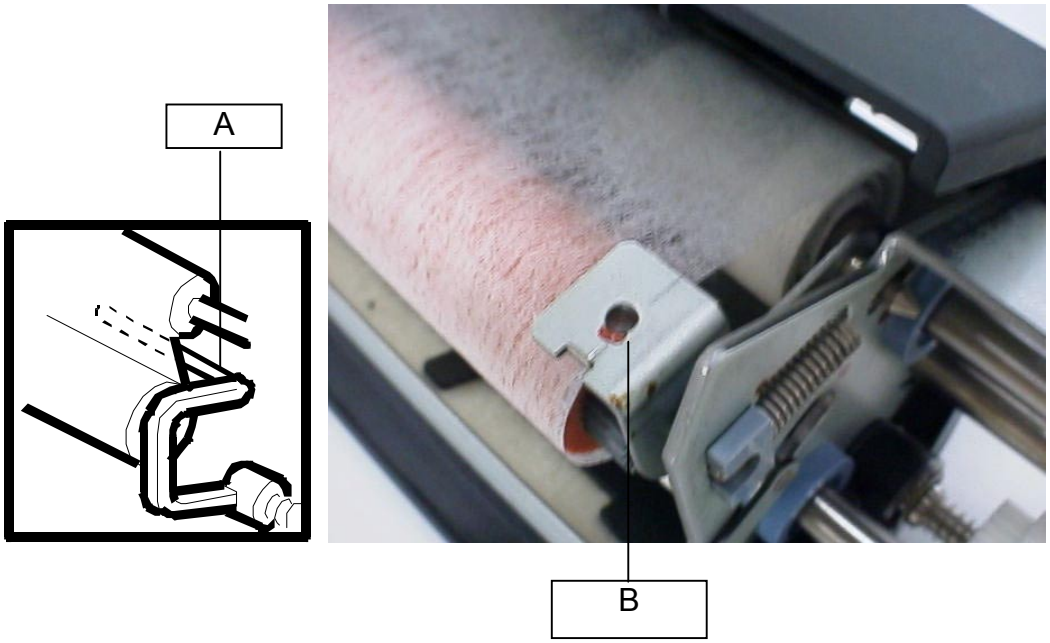


NOTE: To distinguish the new roller from the old one, the shaft of the new roller has been marked black on the front face [F].

6. Re-install all the parts.

NOTE:

1) When re-installing parts, make sure that the feeler lever [A] for the web end sensor is on the web as shown. Otherwise, after re-installing the parts and turning on the main switch, web end (SC550) will be displayed. Make sure that the web is under the bracket [B] ([G] on the previous page) as shown.
2) If there are any buckles in the web between the web supply roll and web collecting roll, turn the web collecting roller gear clockwise (as seen from the front) until the buckles are pulled straight.



Model: Bellini	Date: 19-Jul-00	No.: RA294024

Subject: LCT Tray Heater Kit	Prepared by: H.K.
From: Technical Services Dept., GTS Division	

Classification:	☐ Troubleshooting	☒ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

Part Number of the Tray Heater Kit

The part number for the LCT Tray Heater Kit is not listed in the parts catalogue or service manual. This kit can be ordered as a spare part.

The part number is as follows:

Old part number	New part number	Description	Q'ty
	A2949500	Tray Heater Kit - 230V 18W	1

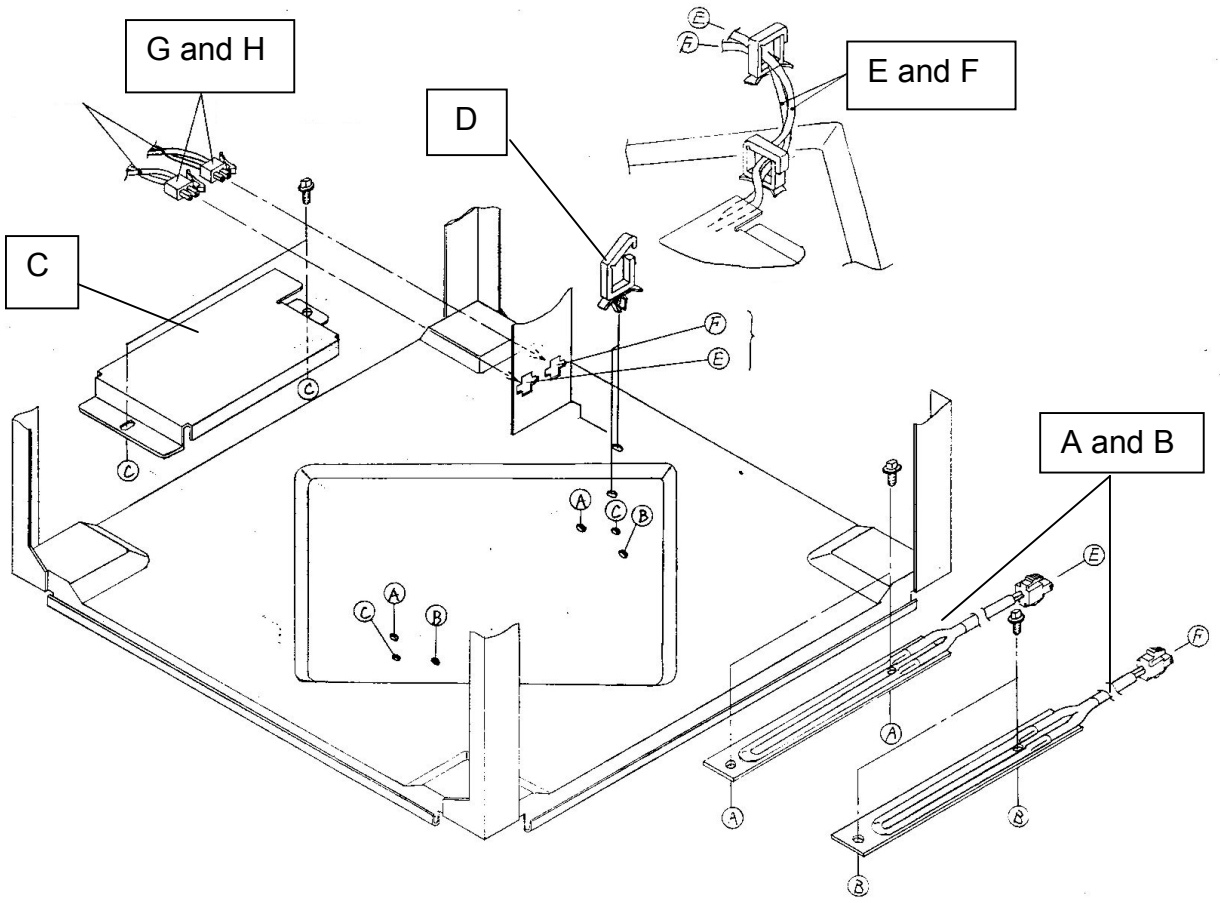
This kit includes the following components:

Old part number	New part number	Description	Q'ty
	AX400053	Anti-Condensation Heater - 240V 18W	2
	B3033841	Heater Cover	1
	B3035324	Interface Harness	1
	04514008B	Philips Tapping Screw - M4x8	6
	11050310	Harness Clamp - LWS-1S	2
	11050292	Wire Saddle	1

Model: Bellini	Date: 19-Jul-00	No.: RA294024

Installation procedure for the Tray Heater Kit

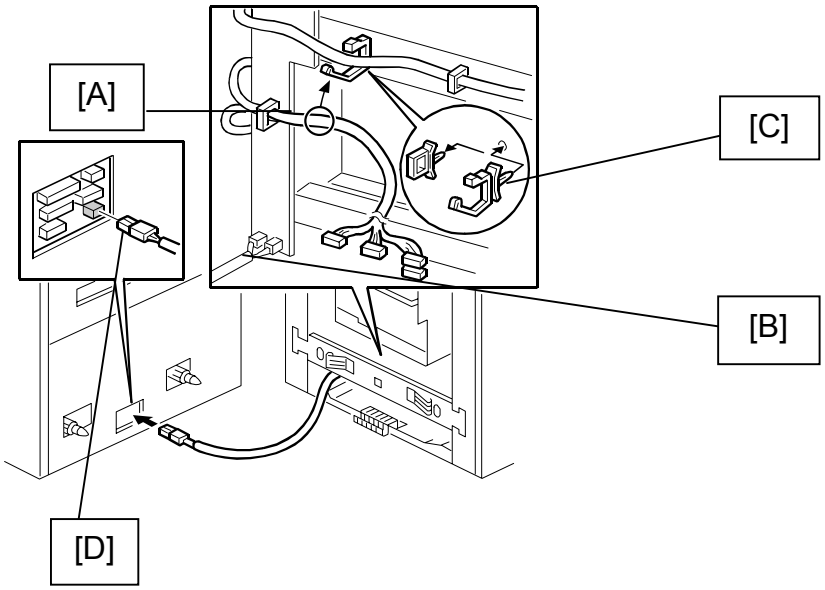
1. Remove the LCT unit from the main copier and remove the LCT right cover.
2. Attach the two anti-condensation heaters [A and B] (2 screws each) to the LCT bottom plate.
3. Attach the heater cover [C] (2 screws).
4. Attach the two cable clamps [D] to the LCT bottom plate as shown.
5. Lead the heater cables [E and F] through the cable clamps. Insert the connectors into the connector bracket holes shown below.
6. Connect the connectors [G and H] (interface cables) to the connectors that were just inserted into the connector bracket holes (step 5).



For steps 7-10, refer to the second illustration below.

Note: In accordance with safety standards, the connecting cable [A] must not be touching the interface cable [B] when the optional LCT tray heaters are installed. Therefore, be sure to perform steps 7-10 so that the cables remain separated.

7. Replace the wire saddle with the new one ([C] P/N: 11050292), which is included in the optional tray heater kit.
8. Lead the connecting cable [A] as shown.
9. Connect the connector [D] of the interface cable to the mainframe interface.
10. Re-install all parts.

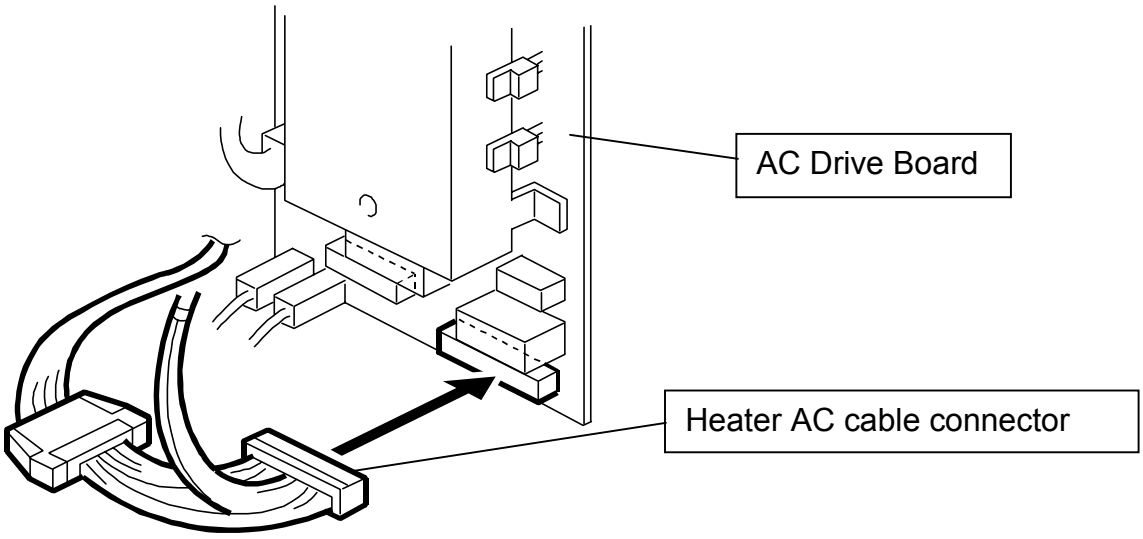


Model: Bellini	Date: 19-Jul-00	No.: RA294024

As mentioned on pg. 2-124 of the Service Manual, all anti-condensation heaters are disconnected from the AC drive board before being shipped.

When the heater AC cable connector [A] is connected to the AC drive board, the transfer anti-condensation (drum) heater will be turned on along with the other optional heaters when the main switch is off.

⚠**Caution:** Before plugging in the heater AC harness connector, be sure to turn off the main switch and unplug the copier power cord.



Note: The heater AC cable connector is hung on the clamp under the AC drive board.

Reissued: 17-Nov-00

Model: Bellini	Date: 19-Jul-00	No.: RA294025a

RTB Correction

The items in bold italics have been corrected or added.

Subject: Toner bottle cap remains in the machine			Prepared by: J. Mochizuki
From: Technical Services Dept., GTS Division			
Classification:	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

SYMPTOM

The toner bottle cap remains in the toner chuck when the bottle is removed. This problem can occur if a customer sets the upper toner bottle first at toner end and then removes the bottle according to the displayed instructions. From the firmware version J, a message is displayed instructing the user to set the lower toner bottle first at toner end.

CAUSE

Toner chuck layout.
The bottle cap can get caught by the toner chuck when the bottle is lifted upward and removed.

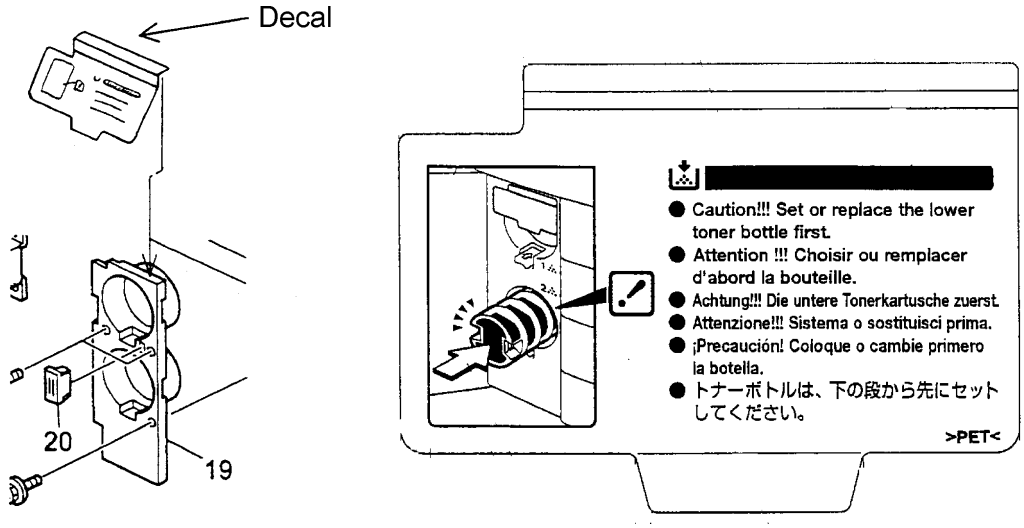
SOLUTION

Temporary countermeasures:

1. Firmware version 7.44 (suffix L) displays the following caution message when the machine reaches toner end. **"Set or replace the lower toner bottle first"**

2. A caution decal has been added to the inner cover of the toner bank.

This decal has been registered as a service part. The part number is A2949903.



Model: Bellini	Date: 19-Jul-00	No.: RA294025a

This decal has been attached in production machines from the following cut-in serial numbers:

A294-14 From August ’00 production
A294-15 H3600700244
A294-17 H3600700347
A294-22 H3600700063
A294-24 From August ’00 production
A294-26 From August ’00 production
A294-27 H3600700157
A295-14 L0660070001
A295-15 H3700700042
A295-17 H3700700056
A295-22 H3700700001
A295-26 4A90700001
A295-27 H3700700016

This decal will be removed when the permanent countermeasure mentioned below is applied to the production machines. Until this permanent countermeasure is implemented, please apply the two temporary countermeasures described above to your field units.

Permanent countermeasure:

The layout of the toner chuck will be modified from September ’00 production. We will issue an MB for details.

Model: Bellini	Date: 21-Jul-00	No.: RA294026

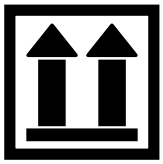
Subject: Oil Supply & Cleaning Web	Prepared by: H.K.
From: Technical Services Dept., GTS Division	

Classification:	☐ Troubleshooting	☒ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

Service Remarks for the Oil Supply & Cleaning Web

The oil supply and cleaning web cartons should always be laid horizontally (level) before being shipped or stacked in warehouses. If they are stacked vertically, silicone oil may leak from the lower end of the oil supply and cleaning web carton.

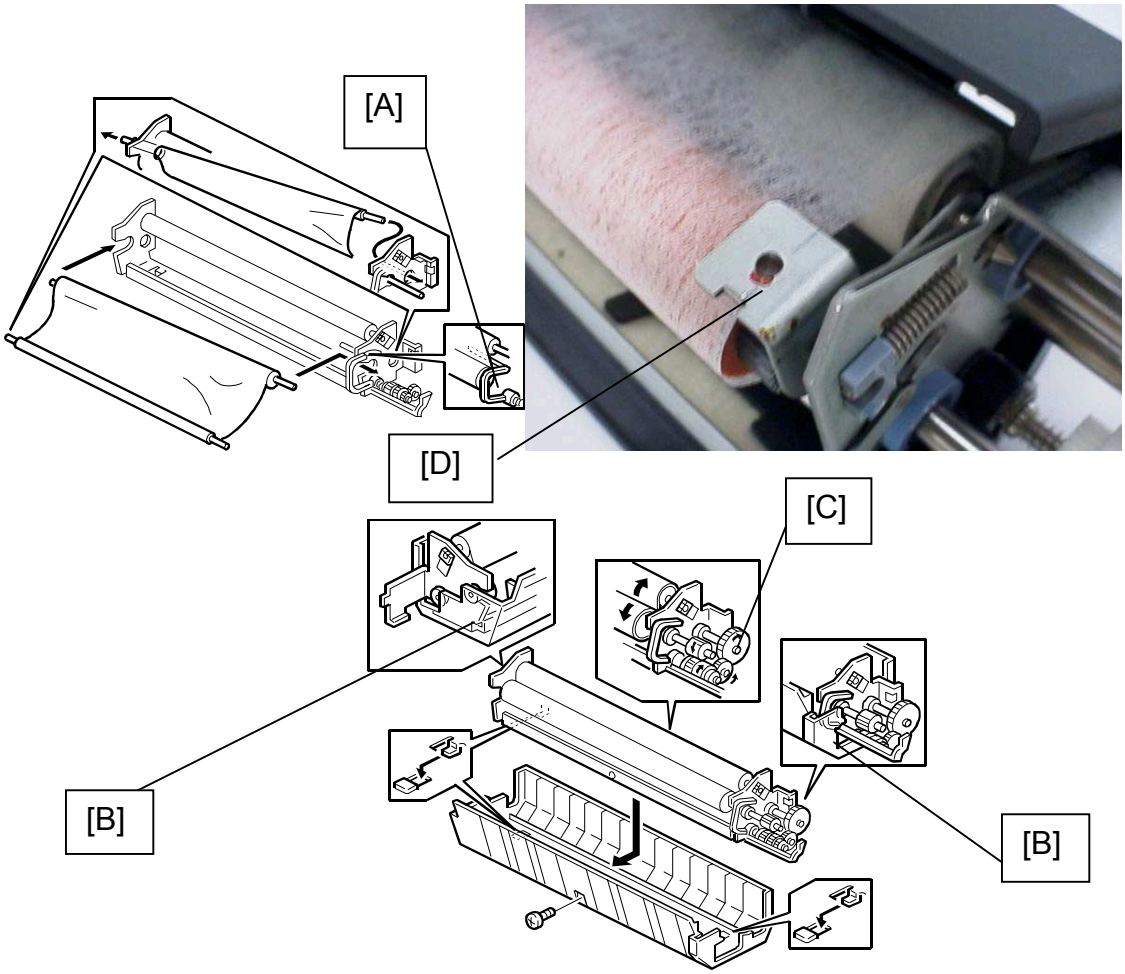
We are currently considering the option of printing the following international mark on the spare part carton:



Oil Supply & Cleaning Web Replacement

We have heard that there are cases in which the oil supply and cleaning web is replaced incorrectly. This is probably because some technicians are not accustomed to replacing this part yet, as it is a unique item for this machine. We ask that all technicians not familiar with this part carefully read and practice the Oil Supply & Cleaning Web Replacement procedure in the service manual. Your cooperation is essential to preventing any further incorrect installations and is greatly appreciated.

The check points from the service manual are shown on the following page.



Check Points for re-installing parts (Page 6-89 in the service manual)

NOTE: 1) When re-installing parts, make sure that the feeler lever [A] for the web end sensor is on the web as shown. Otherwise, after re-installing the parts and turning on the main switch, web end (SC550) will be displayed. Make sure that the web is under the bracket [D] as shown.
2) When putting back the oil supply and cleaning web assembly, make sure that the flange for the bushings does not ride on the side edges [B] of the oil supply and cleaning web unit cover.
3) If the web has a buckle between the web supply roll and web collecting roll, turn the web collecting roller gear [C] clockwise (front view) until the buckle is pulled straight.

1. Reassemble the fusing unit.
   NOTE: Make sure that the web collecting roller gear engages with the gears on the fusing unit exit unit after re-attaching the oil supply and cleaning web unit.
2. Access SP1-902-1 (web consumption counter), and change the value to 0.

Model: Bellini	Date: 25-Jul-00	No.: RA294027

Subject: Web end Mis-detection	Prepared by: J. Mochizuki
From: Technical Services Dept., GTS Division	

Classification:	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

SYMPTOM

Web end (SC550) is detected prematurely.

CAUSE

1. The oil supply and cleaning web end feeler sometimes drops if the web felt is twisted towards the center.
2. The web end feeler is not set properly.

SOLUTION

With the firmware update to version 7.40 (suffix K), the maximum display for SP1-902-1 (Web Consumption) has been increased from 100% to 102%. This is because 102% web consumption has been added as a detection condition for SC550 (Web End). Therefore, the web end condition is activated when SP1-902-1 reaches 102% and the feeler drops.

- Note: When temporarily installing the oil supply and cleaning web from another machine, be sure to input the same web consumption value used in that machine inside SP1-902-1. If this is not done, the oil supply and cleaning web end condition may not be detected, even if the feeler drops to activate web end.

Model: Bellini	Date: 03-Aug-00	No.: RA294028

Subject: Paper Guide Fence			Prepared by: H.K.
From: Technical Services Dept., GTS Division			
Classification:	☐ Troubleshooting	☒ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

SYMPTOM

The end fence may detach due to vibration during transport.

CAUSE

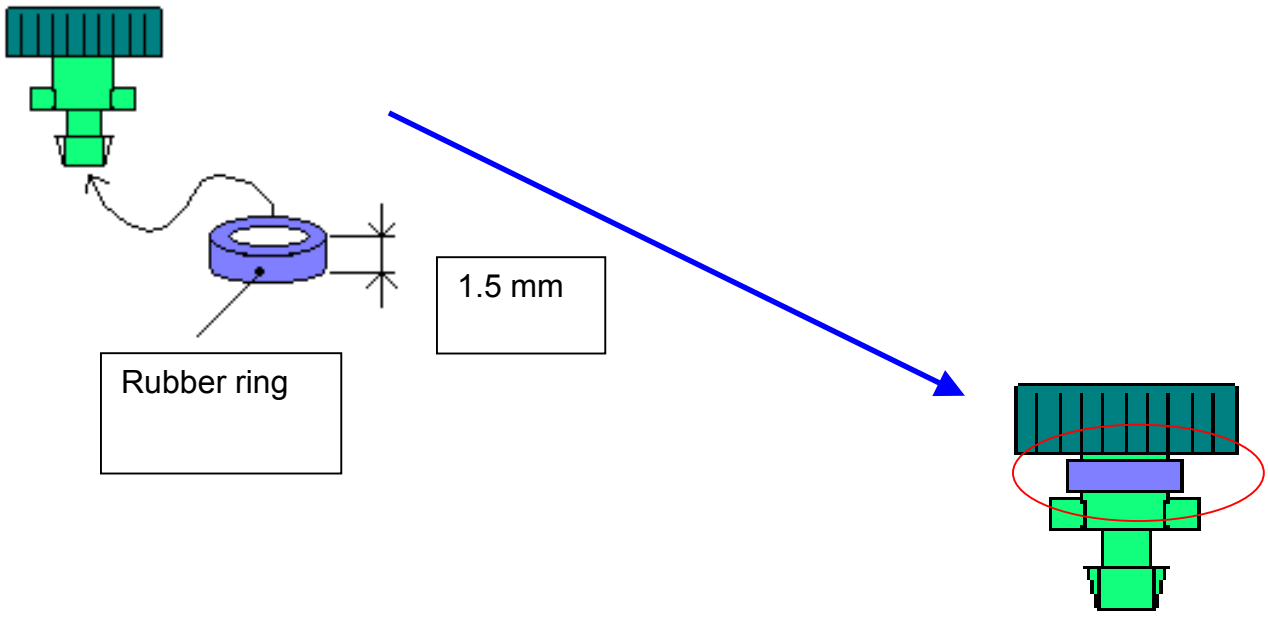
The diameter of the holes in the paper guide fence for inserting the end fence was slightly too large (i.e. Knob Screw with Rubber Tube). This is a side effect from the previous modification (LCT MB No.004).

SOLUTION

Final countermeasure on the production line

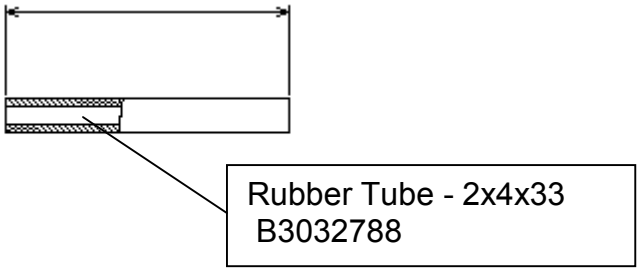
The diameter of the holes in the paper guide fence for inserting the end fence has been decreased from 5.5 mm to 4.5 mm. Please refer to LCT MB No. 006.

Temporary countermeasure on the production line



An extra rubber ring (1.5 mm) has been attached to the end fence to prevent it from dropping. This rubber ring is made by cutting the Rubber Tube (B3032788) in the production line to a thickness of 1.5 mm.

Model: Bellini	Date: 03-Aug-00	No.: RA294028



Note: When the new paper guide fence (B3032789: MB No.006) is installed in machines with the extra rubber ring, it is not necessary to remove the rubber ring from the end fence.

Note:
We have applied the temporary solution at the factory from the same cut-in serial numbers listed in MB No.004, except for the machines listed below. These units have already been shipped and do not contain the countermeasures. However we estimate the occurrence rate to be very low. Please reattach the end fence if it has come off during transport.

B30317 33 units:

H3900400592 to H3900400624

Model: Bellini	Date: 07-Aug-00	No.: RA294029

Subject: Low ID / Poor Solid Fill	Prepared by: S. Hizen
From: Technical Services Dept., GTS Division	

Classification:	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

SYMPTOM

Low ID / Poor solid fill

Please do the procedures below when:

1. The customer is not satisfied with the image density during a long copy job.
2. The customer is not satisfied with the solid fill quality during a long copy job.
3. The customer is not satisfied with the image density or solid fill quality, or text characters have fuzzy edges.

Procedure to improve the ID/Solid fill

1. Check TD sensor output (SP2-226: Vt Display)
If Vt is lower than 3.3V, go directly to step 2.

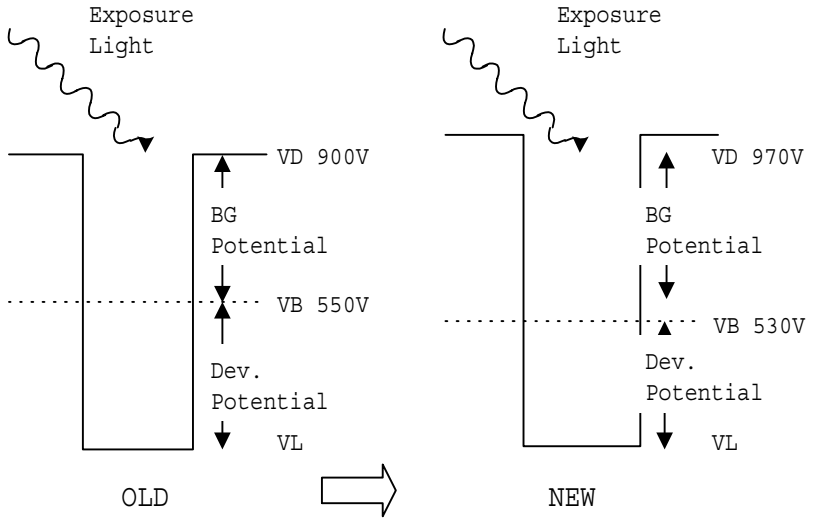
If Vt is equal to or greater than 3.3V, do the following:
A. Check the drum. Replace the drum if there appears to be a white film on the area corresponding to the width of the paper.
B. Replace the developer. Do the TD sensor initial setting (SP2801) after replacing the developer. This is because a Vt of 3.3V often indicates that the developer has deteriorated.

2. Make sure that the firmware is version 7.3 or newer.
If the firmware is older than version 7.3, install the latest firmware.
Reason: Version 7.3 or later maintains the background potential (Vd ~Vb) even when Vb is increased to 620V. Please refer to the table below.
“OLD” refers to an older firmware version, “NEW” refers to version 7.3 or newer (NEW is a firmware to increase a latitude for the background problem)and “Isolate” refers to the Vd/Vb condition recommend in step 3. (Isolate is recommended SP mode settings to incease a latitude for the low ID problem with the firmware version 7.3 or newer).
Therefore, the background symptom may occur if the old firmware version is installed.

	Vd	Vb	Vd-Vb
OLD	900	550	350
NEW	970	530	440
Isolate	970	620	350

The following is just for your reference:

- BG countermeasure from Mass-production Firmware Version 7.30 -
The drum charge (Vd) was changed from 900V to 970V.
The development bias (Vb) was changed from 550V to 530V.



3. Change the following SP mode settings:
SP2201-004: From 280V (default) to 240V (ID sensor development potential)
SP2201-001: From 530V (default) to 620V (Development bias)
Note: The development rollers must be cleaned using a dry cloth at a 300K interval.
Make sure that SP2967 is set to OFF (Auto image density adjustment).

4. (a) Change SP2969 from OFF to ON, OR (b) Change the value of SP2968 from 0 to 2.

Note:
(a) is for checking toner concentration by ID pattern 20 times every 70 seconds during a long copy job just after the machine power is turned on. This results in a productivity decrease from 85 CPM to 77 CPM.
(b) is for shifting the Vt reference 0.06V every 100 copies during a 2K copy run just after the machine power is turned on.
Note: The above procedure is to prevent an ID decrease during long copy jobs made following a period of not being used (e.g. first thing in the morning).

5. Image processing for copier functions

Press the following keys in the listed order:
-User tools key
-Copier/Document server features key
-General feature key
-Original mode level.

Select the setting for Text to Soft.
Change the value of SP 4904-20 from 1 to 0.

Note:
As a side effect, text characters will tend to appear thicker. If the customer is not satisfied with this, please return the settings in step #5 back to their original values.

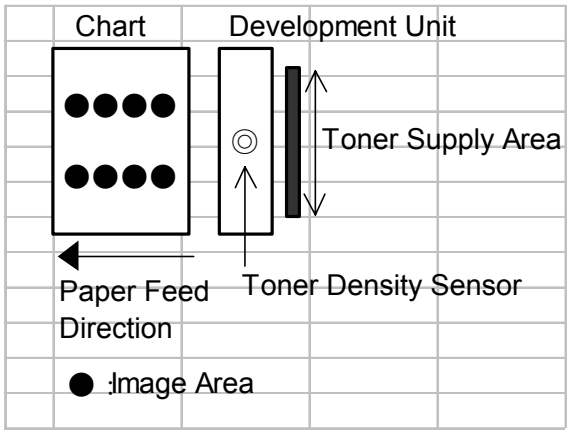
6. Image processing change for printer functions
Enter SP mode. Press Printer SP and then Setting. Change the setting of the printer dot edge parameters from Normal to Mode.

Confirm the following printer dot edge parameter settings:
SP2114-001: 80%
SP2114-002: 80%
SP2114-003: 100%
SP2114-004: 80%

Note:
Regarding the image process condition settings of the printer driver, open the Print quality screen and confirm that the following Print quality settings are displayed:
Edge smoothing should be OFF.
Toner saver should be OFF.

Information for your reference :
The effectiveness of these countermeasures (#1 to #6) will depend on the type of original used. Specifically, the effectiveness may be lower than customer expectations with originals that have solid image areas along either side. The ID in these areas tend to be low.

Toner Supply Mechanism and Cause of Low ID with an original containing solid image areas along either side.



The toner density sensor, which controls the amount of toner supplied, is located in the middle of the development unit. However, there is no image in the center of the chart. The images are concentrated in the two areas between the center and left/right edges.
During continuous copying, the toner density is regulated by the output of the toner density sensor so that the target level is maintained. The amount of toner supplied to the development unit is then determined by the sensor's output and the chart's image ratio.

For example, when you make continuous copies using an original with an image area/toner density calculated to correspond to 100 mg of toner per sheet, the machine activates the toner supply clutch and supplies 100 mg of toner. The toner is evenly distributed inside the development unit, but the supply area is slightly narrower than the chart width (as shown in the illustration above). Therefore, if you make continuous copies of the original containing solid image areas along either side shown above:
-The toner consumption in areas where the images are concentrated tends to be higher than the toner supplied (sides).
-The toner consumption in areas where there are no images tends to be lower than the toner supplied (center).

In charts like this one, where the image ratio and therefore toner consumption are completely different from one area to another, the toner is not properly distributed across the copy.
This causes areas with particularly high image ratios to experience an ID drop.

Model: Bellini	Date: 23-Aug-00	No.: RA294030

Subject: Interface Board Installation	Prepared by: A. Sasaki
From: Technical Services Dept., GTS Division	

Classification:			
	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

SYMPTOM

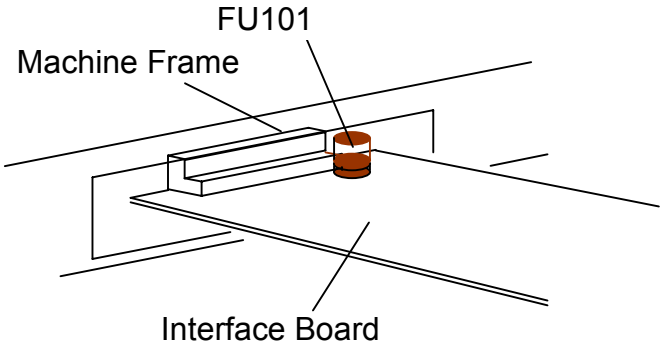
After inserting the interface board during installing any of the following optional equipment, the copier does not recognize them.

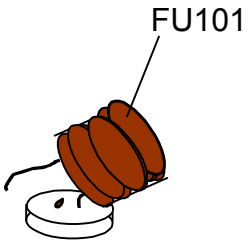
- Printer Controller
  The printer feature menu in the user tools and SP mode does not appear on the operation screen.
- CD-RW
  The CD-RW cannot be accessed in the Document Editor.
- Tandem Copy Kit
  The “Copy Connect” key does not appear on the operation screen.

CAUSE

The fuse FU101 on the interface board is damaged.

When the interface board is inserted, the top part of the fuse brushes against the machine frame and a leg of the fuse comes loose.





ACTION

Please make sure that the fuse on the interface board does not touch the machine frame when you insert the interface board.

Model: Bellini	Date: 12-Sep-00	No.: RA294031

Subject: Image Quality of Half Tone and Gray Scale	Prepared by: A. Sasaki
From: Technical Services Dept., GTS Division	

Classification:			
	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☒ Other (Recommended action)		

SYMPTOM

The image quality of half tone or gray scale areas on printouts is not clear or sharp enough.

ACTION

1. Recommend customers to set the **Edge Smoothing** function to the **OFF** position in the printer driver.
   The default setting of the Edge Smoothing function for each driver language and printer controller type is as follows:

Driver Language	Controller Type A	Controller Type B
PCL5e	ON	OFF
PCL6	ON	OFF
PostScript3	OFF	OFF

2. Change the printer dot edge parameter in the printer SP mode (Printer SP – Settings – Printer Dot Edge Parameter) from “Normal” (default) to “SP mode”.

   Note: With this change, the print line width can be thickened. This change is valid only when the Edge Smoothing function is set to “OFF”.

3. Change Copy SP2114 (Printer dot edge parameter setting) to the original settings.

SP Number	Original Setting
SP2114-1	80
SP2114-2	80
SP2114-3	100
SP2114-4	80

4. If the customer wants an even thicker line width, change Copy SP2114 (Printer dot edge parameter setting) from the original settings to the thicker settings.

SP Number	Original Setting	Thicker Setting
SP2114-1	80	100
SP2114-2	80	100
SP2114-3	100	100
SP2114-4	80	100

   Note: Do not set any other combinations of the four settings other than in the above table. Otherwise, an unexpected image appears on printouts.

   This SP is valid only when the Edge Smoothing function is set to “OFF” and the Printer Dot Edge Parameter in the printer SP mode is set to “SP mode”.

Model: Bellini	Date: 26-Sep-00	No.: RA294032

Subject: Toner Dust	Prepared by:
From: Technical Services Dept., GTS Division	

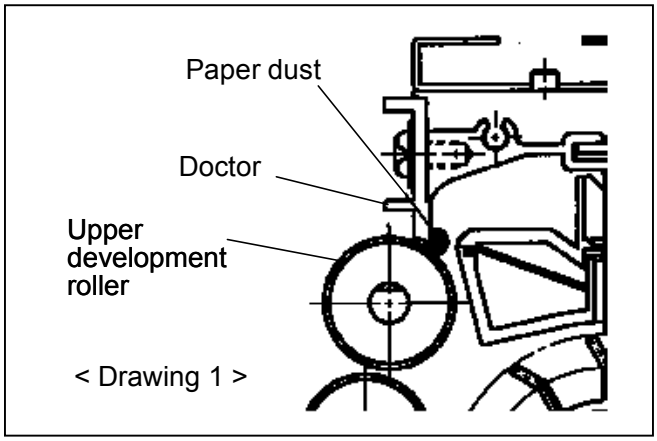
Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

SYMPTOM

Toner dusting from the edges of the development unit.

CAUSE

Paper dust is gathered at the front and rear sides of the doctor gap in the development unit. This gap becomes narrower, causing a drop in the airflow from the development lower casing. This can cause toner dusting from both edges of the development unit.

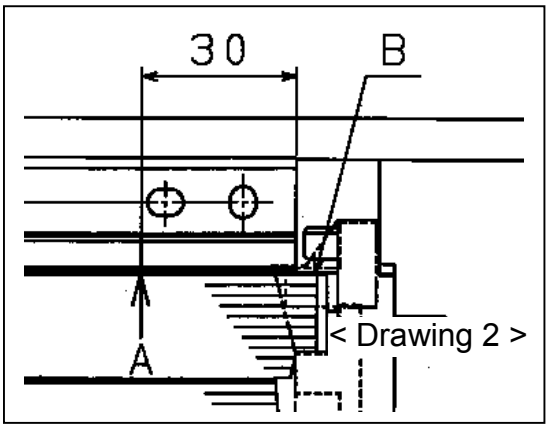


< Drawing 1 >

ACTION

When replacing the developer, do the following:

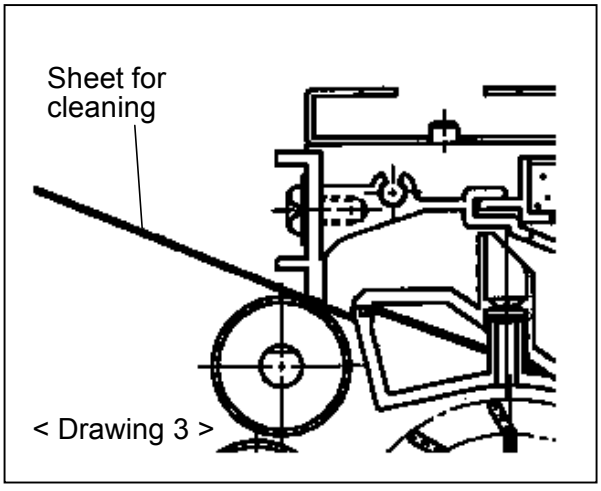
1. Prepare a sheet of paper 5 mm x 50 mm x 0.5 mm (or thinner). This will be used in step 4 below.
2. Remove the toner hopper (2 screws).
3. Turn the development unit upside-down and rotate the paddle roller knob to empty the remaining developer onto a separate large sheet (not the sheet from step 1).



< Drawing 2 >

The cycle of steps 4-6 should be done several times for each side of the development unit (one at a time). Continue until the paper dust is completely removed.

4. Center the sheet of paper from step 1 at 30mm from both edges of the doctor gap (A, Drawing 2). Insert the sheet approximately 8 mm (Drawing 3).



< Drawing 3 >

5. Move the sheet toward the edge to force the paper dust out of the doctor gap (B, Drawing 2). Repeat this action several times.
6. Rotate the upper development roller 10 mm forward and remove the paper dust together with developer using a vacuum cleaner or magnetic screwdriver.
7. After steps 4-6 have been done several times for each side, turn the development unit upside-down and shake it gently to remove the remaining paper dust.

Model: Bellini	Date: 06-Oct-00	No.: RA294033

Subject: SC729(Punch Motor Failure)	Prepared by: S. Hizen
From: Technical Services Dept., GTS Division	

Classification:	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

SYMPTOM

SC729 is displayed, or the mainframe does not detect the finisher.

CAUSE

1. Electrical noise generated by the drive motor affects the initial check routine of the punch drive board firmware, so that the motor reset signal is constantly sent out. The only units on which the symptom may occur are the USA two-punch-hole and European fourpunch-hole units.
2. The two screws securing the heat resistor to the IC on the punch drive board come loose. As a result, the temperature of the IC becomes too high.

SOLUTION

1. The software has been changed so that the drive motor reset signal is deactivated at the proper time, even if electrical noise occurs.

   Production units:
   The ROM on the finisher main board has been changed from the beginning of September 2000 mass-production, and on some units from August mass-production.

   Old ROM P/N: B302-5103F
   New ROM P/N: B302-5103G

   Listed below are the serial numbers for August production finishers that contain the new modified ROM.
   Note: These units are marked with yellow circular labels next to the bar code on the carton.

B302-14

L0670080009
L0670080016~L0670080018
L0670080020~L0670080023
L0670080025~L0670080028
L0670080030~L0670080035
L0670080037~L0670080039
L0670080044~L0670080047
L0670080049~L0670080050
L0670080115~L0670080151
L0670080153
L0670080155~L0670080156
L0670080177~L0670080178
L0670080181~L0670080186
L0670080189~L0670080191
L0670080193~L0670080213

Total 99 units

B302-17
H3800800066
H3800800073~H3800800074
H3800800082~H3800800451

Total 373 units

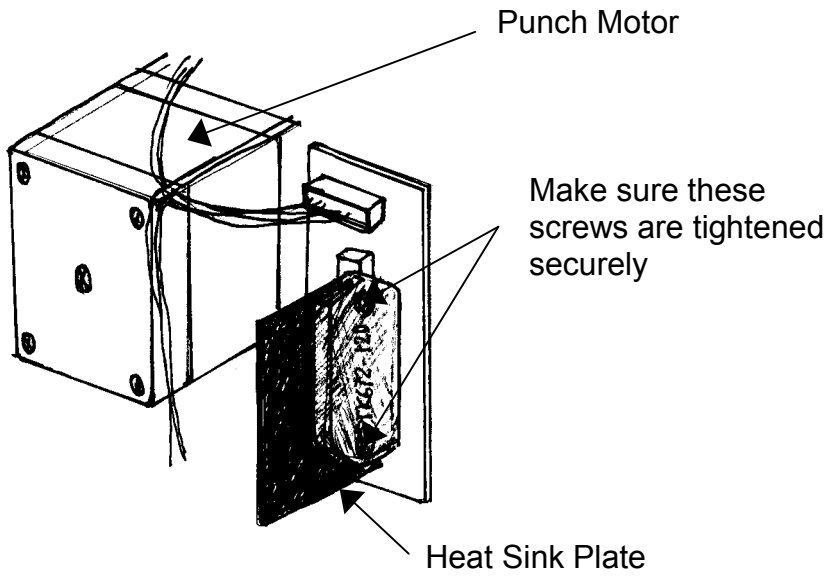
B302-26: None

2 From September 2000 production of the punch units, the heat resistor securing screws have been locked in place with an adhesive.

P/N change:
Old Punch Drive Board P/N: A812-5120
New Punch Drive Board (Heat resistor screw lock) P/N: A812-5150

3 Action required for field units:

3-1 Please check the two heat resistor screws when visiting the machine site and tighten them if they are loose.



3-2 Replace the finisher ROM only in the following finishers:

-USA: 2-punch hole unit
-Europe: 4-punch hole unit

Reissued: 09-Nov-00

Model: Bellini	Date: 13-Oct-00	No.: RA294034a

RTB Correction

The items in bold italics have been corrected or added.
The serial number list have been changed.

Subject: PSU Broken			Prepared by: J. Mochizuki
From: Technical Services Dept., GTS Division			
Classification:	☐ Troubleshooting	☐ Part information	☒ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

Symptom:

The machine cannot be powered on.
No display on the operation panel.
LEDs on the power supply board do not light.

Cause:

PSU broken: The high voltage line is shorted to the low voltage line by anti-static brush fibers drawn into the PSU by the cooling fan.

Mass-production units:

High voltage areas of the PSU circuit were insulated by silicone resin to protect the circuit from conductive fibers like those of the anti-static brush.
The part number has been changed from AZ250012 to AZ250013. ***Please refer to MB MA294035.***

Although the countermeasure (silicone coating) was implemented from June 2000 production, the P/N of the PSU was changed from September production. The cut-in serial numbers on the last page are from June production, and the solution below is only required for field units produced before these numbers.

Solution:

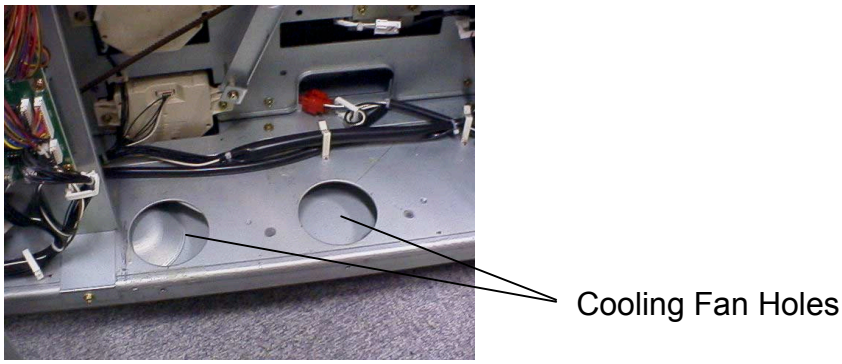
Field units (units produced prior to the attached serial numbers or units containing the old PSU.)
Install the filters (P/N A294-9450) to seal the two cooling fan holes .
The filters are available as service parts at no charge. P/N: A294-9450: Filters: Two filters to a set.

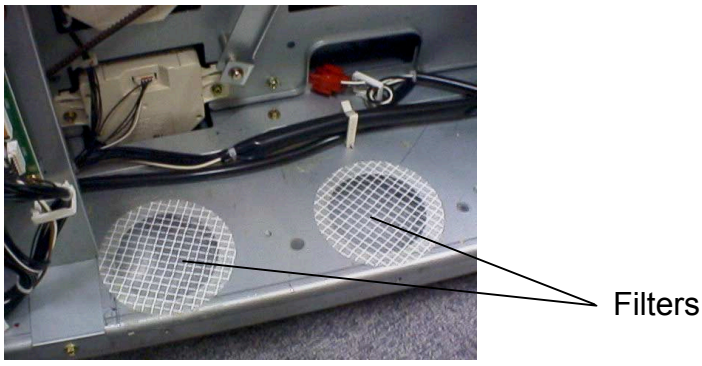
Model: Bellini	Date: 13-Oct-00	No.: RA294034a

Filters installation procedure:

1. Turn off the main switch.
2. Pull the power plug out and wait for 5 minutes until the charge remaining in the PSU is discharged.
3. Remove the machine lower/rear cover (6 screws).
4. Remove the PSU (4 screws and connectors).
5. Install the filters as shown in the illustration.

Note: Clean out the dust and oil on the frame before installing the filters.





6. Reassemble the unit.

Model: Bellini	Date: 13-Oct-00	No.: RA294034a

RCL (Japan) Production

MODEL NAME	V/Hz	DESTINATION	CODE	SERIAL NO.
Lanier 5485AG	240/60	USA, Canada, S. America	A294-14	L0650070001
Savin 2085DP Gestetner 3285	240/60	USA, Canada, South America	A294-15	H3600600531
Ricoh Aficio 850	240/60	USA, Canada. South America	A294-17	H3600600058
Gestetner 3285 Nashated D485 Rex Rotary 2885	220,230, 240/50,60	Europe, etc.	A294-22	H3600600389
Lanier 5485AH	220,230, 240/50,60	Europe	A294-24	L0650060036
Infotec 4850 MF	220,230 240/50,60	Europe, etc.	A294-26	4B10600001
Ricoh Aficio 850	220,230, 240/50,60	Europe etc.	A294-27	H3600600421
Lanier 5505AG	240/60	USA, Canada, S. America	A295-14	From 1st production
Savin 2105DP Gestetner 32105	240/60	USA, Canada, South America	A295-15	H3700600056
Ricoh Aficio 1050	240/60	USA, Canada, South America	A295-17	H3700600081
Gestetner 32105 Nashated D 4105 Rex Rotary 28105	220,230, 240/50,60	Europe, etc.	A295-22	H3700600001
Lanier 5505AH	220,230, 240/50,60	Europe	A295-24	From 1st production
Infotec 4105MF	220,230 240/50,60	Europe, etc.	A295-26	4A90600001
Ricoh Aficio 1050	220,230, 240/50,60	Europe, etc.	A295-27	H3700600021

Model: Bellini	Date: 13-Oct-00	No.: RA294035

Subject: Multi-feeding fom LCT	Prepared by: S. Hizen
From: Technical Services Dept., GTS Division	

Classification:	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

SYMPTOM

Multi-feeding from the LCT.

CAUSE

The paper stack height is too high.

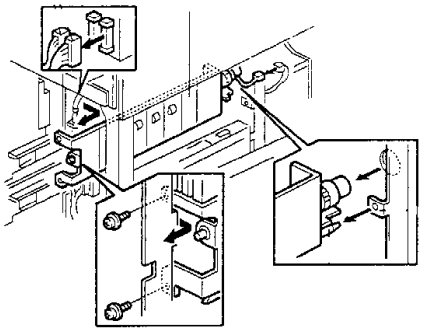
SOLUTION

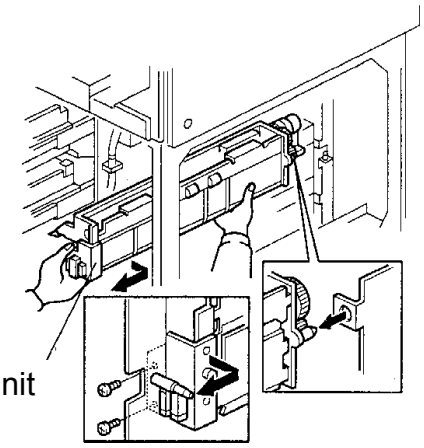
Lower the paper stack height by shifting the tray lift sensor.

The procedure is as follows:

1. Remove the LCT right cover and inner cover and pull out the tray.
2. Remove the paper feed unit (see the service manual, page 6-62).

Paper Feed Unit

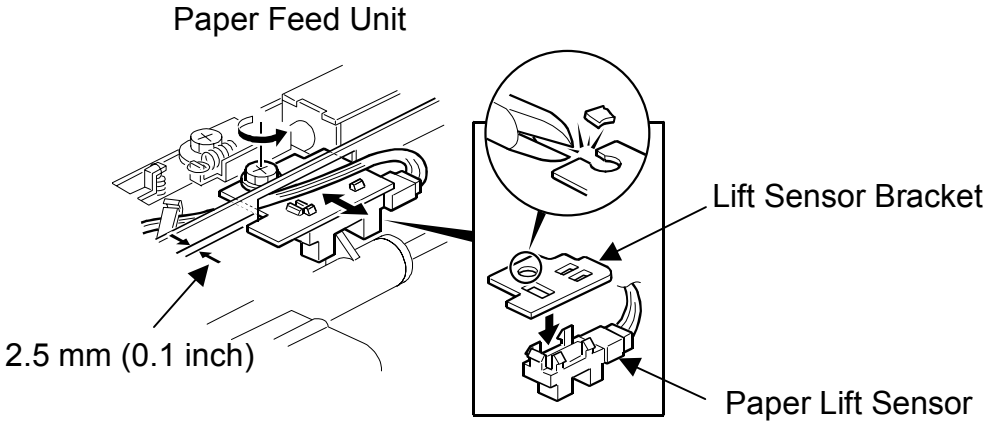




Paper Feed Unit

3. Remove the sensor bracket.
4. Remove the paper lift sensor.

5. Remove the cut-out from the bracket with a pair of wire cutters as shown in the illustration.
6. Install the paper lift sensor on the bracket.
7. Install the bracket as shown in the illustration. The gap between the bracket and the unit is 2.5 mm (0.1 inch): **If the customer uses thicker paper and non-feeding occurs, shift the sensor bracket to reduce the gap.**



Model: Bellini	Date: 16-Nov-00	No.: RA294036

Subject: Printer Controller (B336) System Firmware History	Prepared by: A. Sasaki
From: Technical Services Dept., GTS Division	

Classification:			
	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☒ Other (Information)		

This is to inform about the modification history of the Printer Controller Type 850 (B336) system firmware.

As there are two types of the firmware, use an appropriate one for the product brand.

Destination	Part Number	Product Codes/Brands
Generic	B336 5800	B336-01, -10, -15, -17
		Ricoh, Savin, Gestetner, Nashuatec, Rexrotary, Infotec
Lanier	B336 5814	B336-14
		Lanier

Firmware Version and Part Number Suffix for Each Destination

Destination	Generic	Lanier
Part Number	B336 5800	B336 5814
Version	Suffix	Suffix
0.35	A	None
0.43	B	A
0.46	C	B

Version 0.35

Destination	Generic	Lanier
Part Number	B336 5800 A	B336 5814

This is the first version of the mass production.

Version 0.43

Destination	Generic	Lanier
Part Number	B336 5800 B	B336 5814 A

1. Blank Sheet as Last Page of a Duplex Job with Odd-numbered Pages

Symptom

When a duplex job with odd-numbered pages is printed using the sample print function, the second side of the last sheet is stored as a blank page.

Modification

The blank page is deleted when the file of the job is stored as a document server file.

Note

This modification is valid only with the engine firmware version 7.44 onwards.

2. **Indication when Staple Waste is Full on Finisher B302**
   Modification
   SC737 is displayed as a message when a printing job starts while the staple waste is full on Finisher B302.
   In this condition, the printing job continues without the staple function.
   Note
   This modification is valid only with the engine firmware version 7.44 onwards.

3. **Error when Deleted Files are Accessed**
   Symptom
   An error occurs when deleted files in the deletion list of the engine are accessed.
   Note
   This modification is valid only with the engine firmware version 7.44 onwards.

4. **Unnecessary Characters when Downloading User Defined Symset of PCL5e**
   Symptom
   Unnecessary characters are also included when Downloading User Defined Symset of PCL5e.

5. **Wait State of Flash ROM**
   Symptom
   The wait state of the flash ROM is valid with not only 70-ns ROM but also 90-ns ROM.

Version 0.46

Destination	Generic	Lanier
Part Number	B336 5800 C	B336 5814 B

1. Measure for 10” x 14” Paper.

2. **Symptom**
   A print job with more than 1000 pages stops printing.

3. **Symptom**
   The user tools are not accessible and SC955 occurs if a print job is canceled after more than 1000 pages are stored in the document server.

4. **Symptom**
   SC2002 occurs with Portuguese, Czech, Polish, Hungarian, and Finnish.

5. The value of prtAlertTrainingLevel when a MIB error occurs is changed from 5 (fieldService) to 2 (unknown).

6. **Symptom**
   Job histories are not logged if a user code is not entered.

7. **Symptom**
   PJL job end is not correctly returned.

8. ASI commands have been added.

9. Some errors are not logged in MinorErrorLog.

Model: Bellini	Date: 07-Nov-00	No.: RA294037

Subject: Poor Black Solid Fill	Prepared by: A. Sasaki
From: Technical Services Dept., GTS Division	

Classification:	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☒ Other (Recommeded adjustment)		

This bulletin will explain the recommended adjustment procedure for the following symptom. This is a follow-up procedure to the adjustment explained in RTB #RA294029.

SYMPTOM

Black solid fill is poor or becomes lighter and lighter during a copy run.

POINTS TO KEEP IN MIND

1. MAINTENANCE

Some parts will require regular cleaning, as the toner amount increases with this adjustment. This is different from the adjustment in RTB #RA294029.

Please be sure to follow the points outlined in the Maintenance section below.

2. TROUBLESHOOTING

After doing the adjustment procedure beginning on the following page, any one or more of the following symptoms may appear as a side effect, after a certain amount of prints/copies. If this occurs, refer to the Troubleshooting section below.

- Black spots
- Dirty background on entire copy
- Dirty background with bands

3. APPENDIX

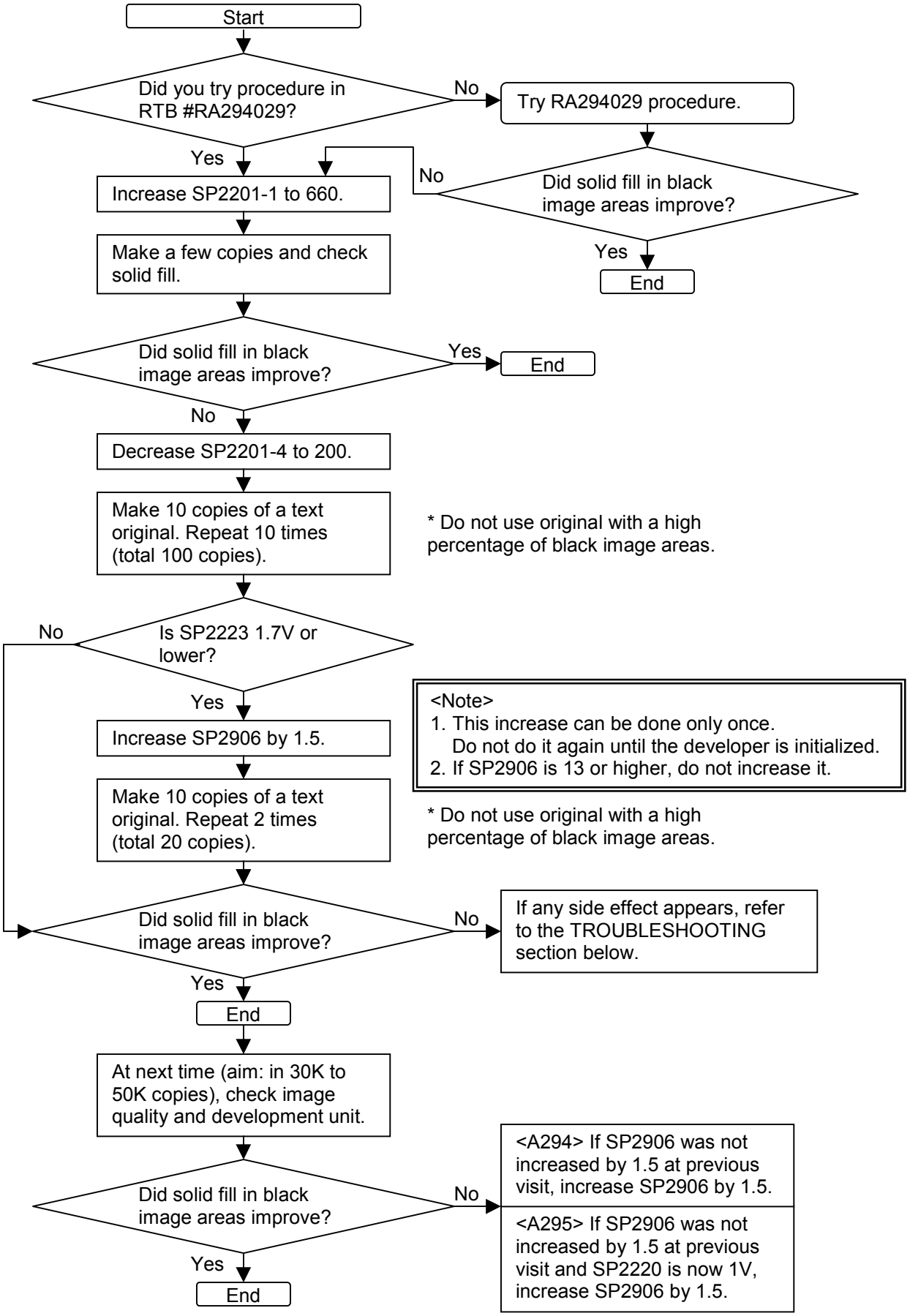
Refer to the Appendix section below about the explanation of the Development Bias (SP2201-1) and ID Sensor Development Bias (SP2201-4).

ADJUSTMENT PROCEDURE

Do the following both before and after the adjustment:

- Print out the SMC sheets (SP5990-1).
- Take several copies and check the image density.

Model: Bellini	Date: 07-Nov-00	No.: RA294037



MAINTENANCE

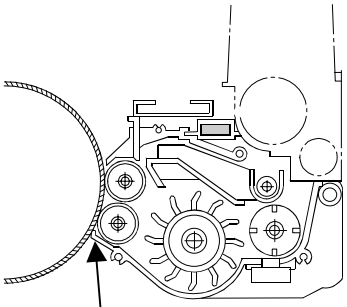
Check whether there is toner in or on the following parts and remove any toner present.

Target cleaning interval: 100K to 150K prints/copies or at every visit

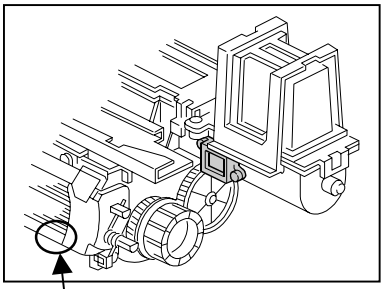
1. Lower Casing of Development Unit (especially at front and rear)
2. Transfer Entrance Stay of Drum Unit (all surfaces)

Note: a) The stay can be cleaned when the drum is removed.

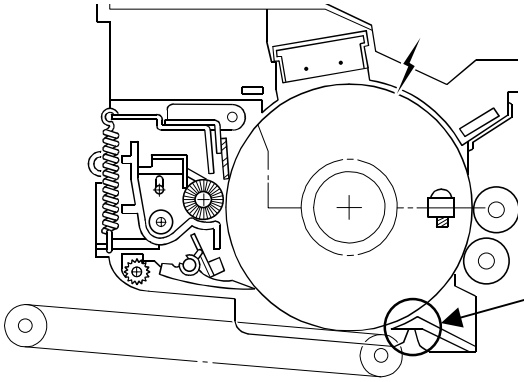
b) If toner is not thoroughly cleaned off these parts, some of the toner may drop onto prints/copies (especially with thick paper)



Lower Casing



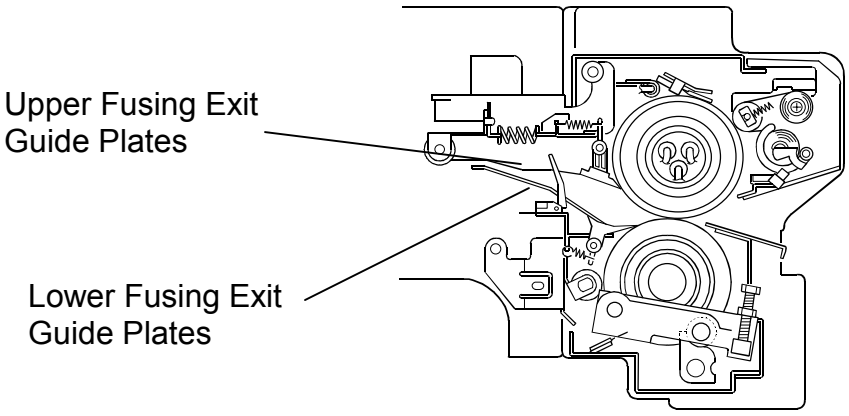
Especially at front and rear ends



Transfer Entrance Stay

3. Upper and Lower Fusing Exit Guide Plates

Note: If toner is not cleaned off this part, paper jam may occur.



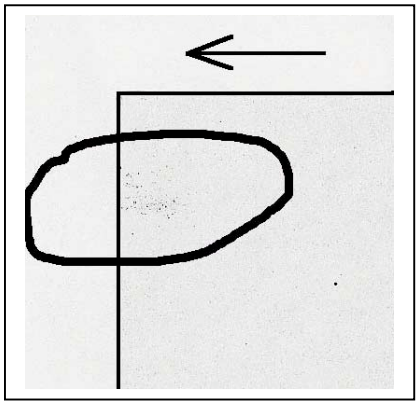
Upper Fusing Exit Guide Plates

Lower Fusing Exit Guide Plates

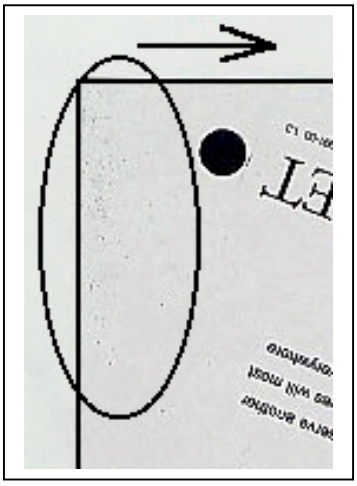
TROUBLESHOOTING

Please follow the flowchart below if any of the following symptoms appear.

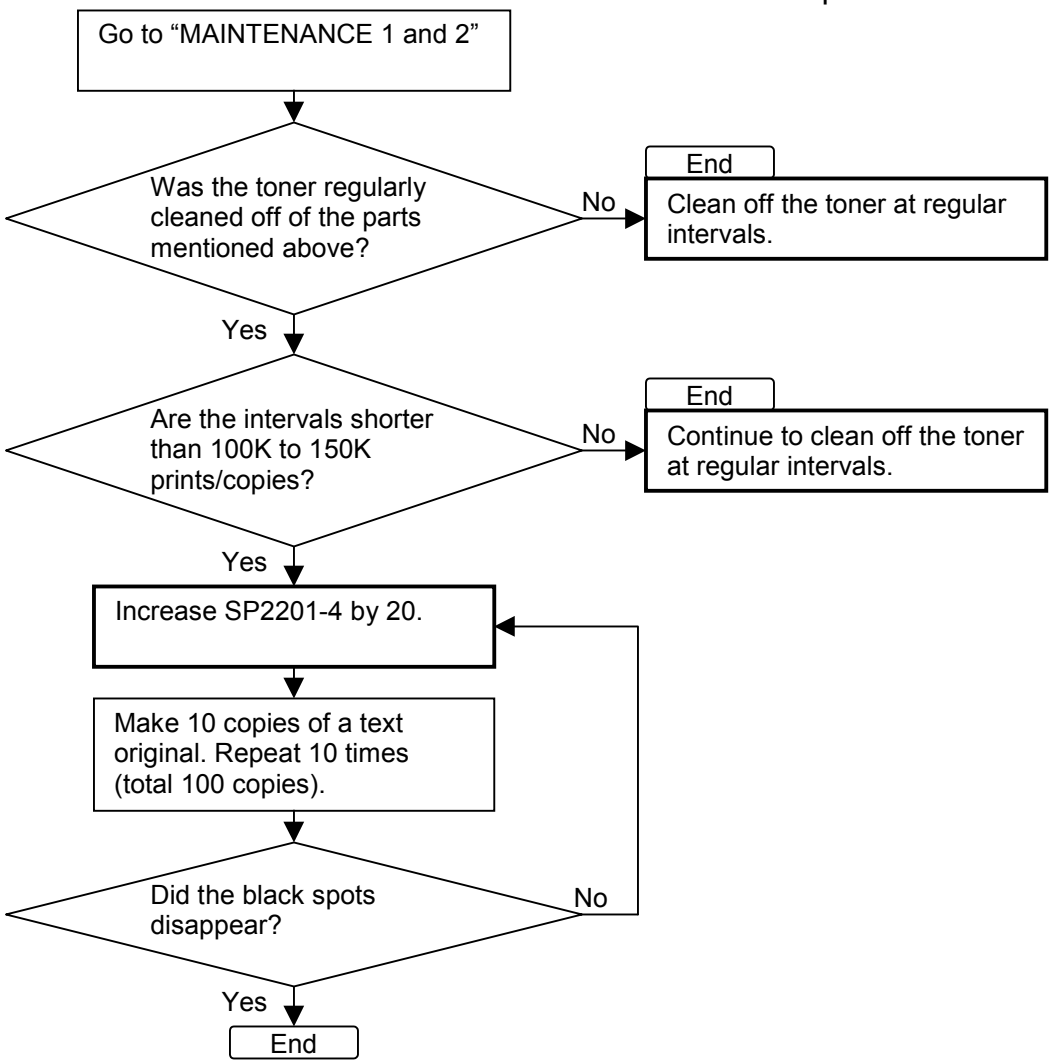
1. Black Spots



<Sample 1>



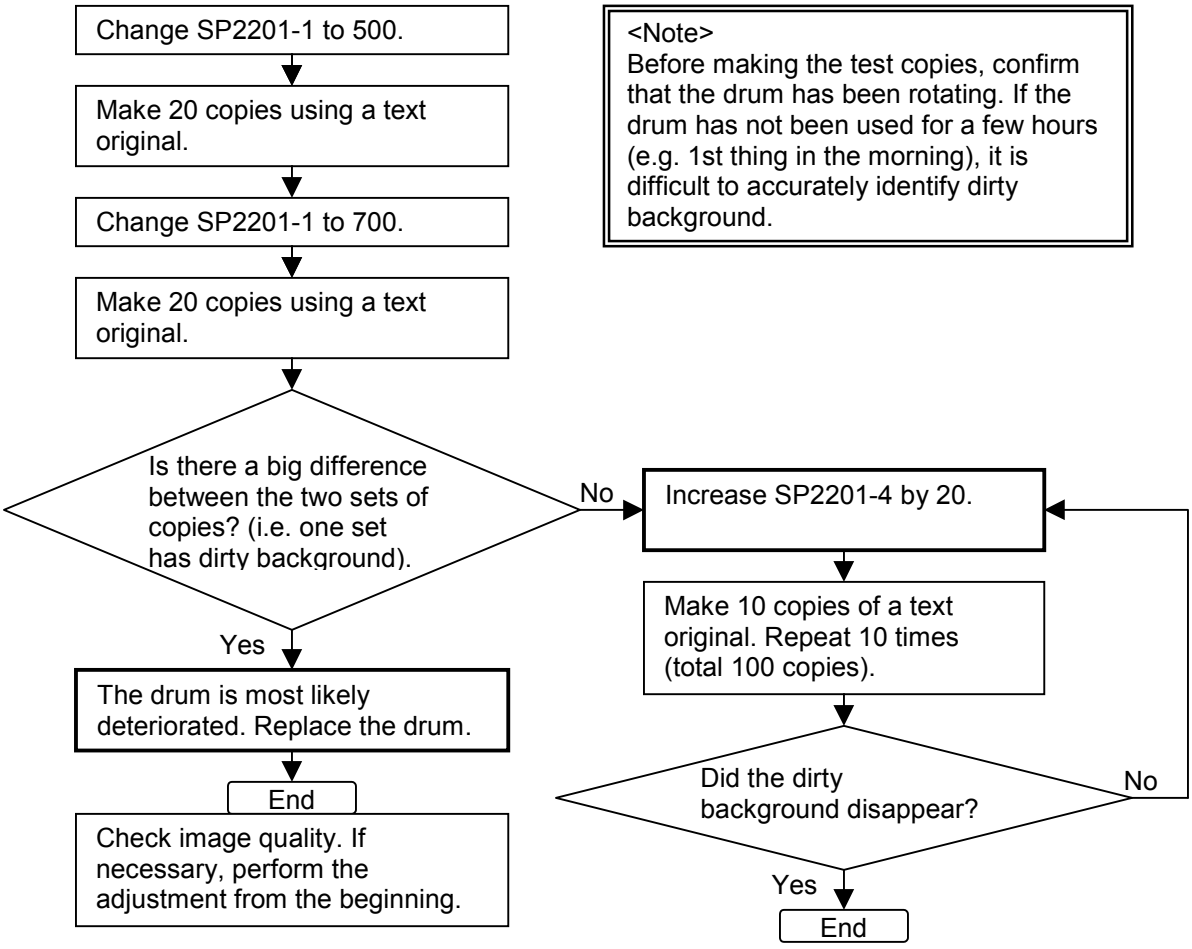
<Sample 2>



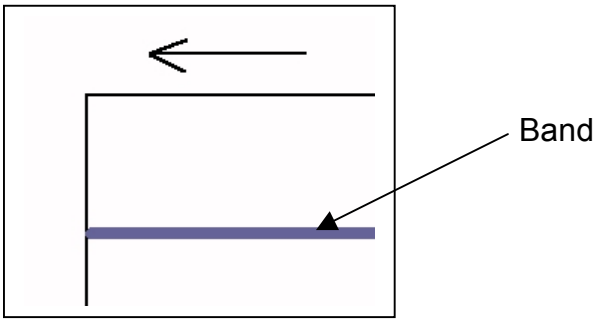
2. Dirty Background on Entire Copy

There are two possible causes for this. Use the following procedure to determine which one it is.

1) The drum has worn out.
2) The value of SP2201-4 is too low.



3. Dirty Background with Bands

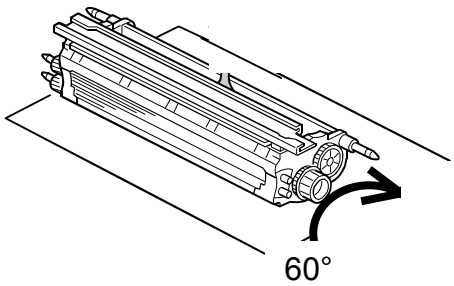


<Sample>

The most likely cause is that the development roller surface has become dirty with toner. Clean the surface by following the steps below.

If the developer is not in the development unit, steps 1) and 2) can be skipped. We strongly recommend that you perform this cleaning whenever replacing the developer.

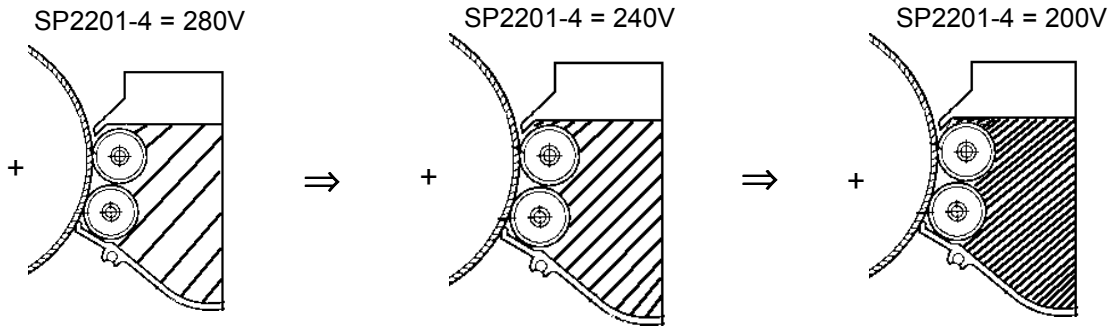
1) Remove the development unit
2) Tilt the unit 60° to the right so that the development roller surfaces face up.
   Note: Be careful not to tilt the unit to horizontal (90°).



3) Rotate the rollers so that the developer separates from the roller surfaces.
4) Clean the roller surface by wiping it firmly with a dry cloth.
5) Repeat steps 3 and 4 until the entire surface of each roller is clean.
6) Reinstall the development unit.
7) Make 10 sky-shot copies.
8) Make 10 copies using a text original.
9) Check whether or not dirty background occurs.

APPENDIX

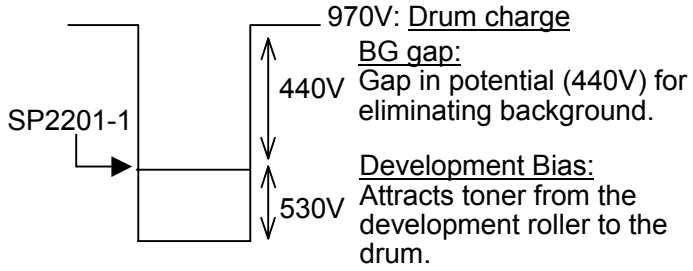
• Increasing the toner concentration in the development unit by decreasing the value of SP2201-4 (ID Sensor Development Potential).

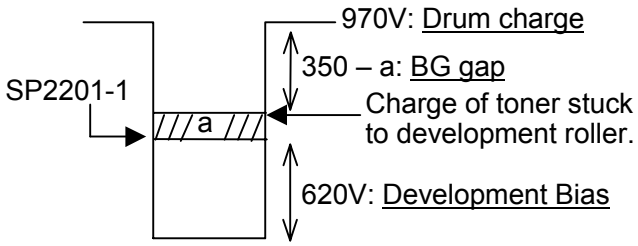


*Side Effects:

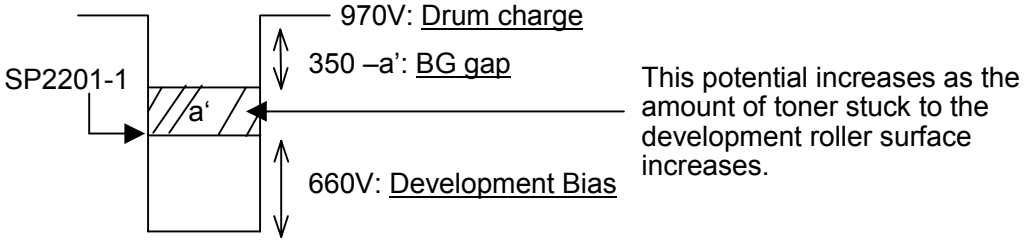
Although various machine settings and copy conditions also play a part, there is a greater tendency for toner scattering and dirty background to occur as the sensor bias is decreased. Dirty background is caused by toner that sticks to the development roller surface.

• Increasing the development bias (SP2201-1)
The following was announced in RTB #RA294029 as a way to increase the image density. Generally, as the development bias increases, so does the ID.





If the ID is still too low for the customer, the development bias can be increased to a maximum of 660V.



Note: The charge of the toner stuck to the development roller surface (a and a') does not depend on the development bias setting. Rather, it increases as more and more copies are taken (i.e. with a higher copy volume).

Model: Bellini	Date: 09-Nov-00	No.: RA294038

Subject: LCT Guide Plate Kit	Prepared by: J. Mochizuki
From: Technical Services Dept., GTS Division	

Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☒ Retrofit information
	☐ Other ( )		

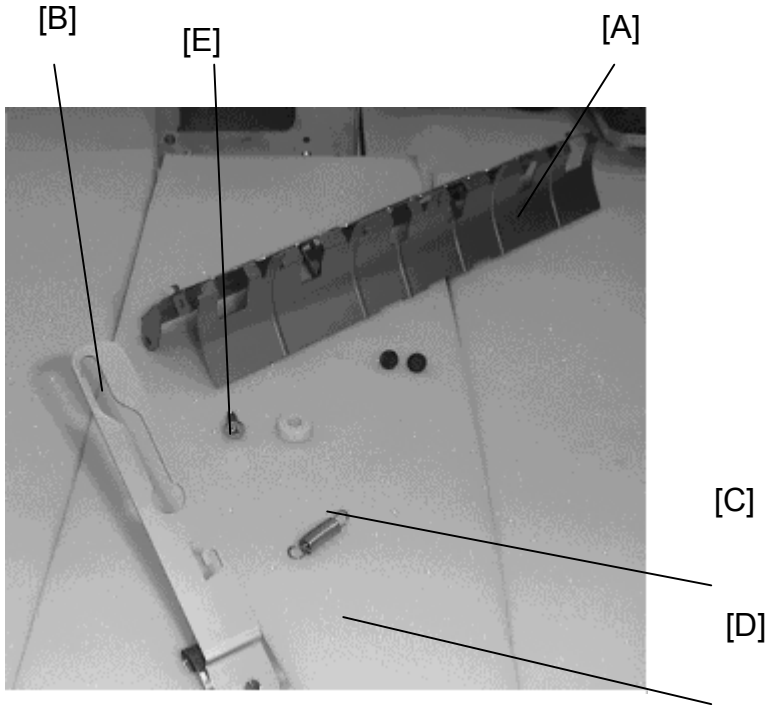
To improve durability, the guide plate B3033645 and related parts have been modified. For details please refer to MB303007. A2949902 (LCT Guide Plate Kit) has been registered as a service part to supply the modified parts as a set.

This kit includes the following parts:

[A] B3033646	Guide Plate (1 pc)
[B] B3033680	Linkage Bracket (1 pc)
[C] B3033685	Collar (1 pc)
[D] AA060830	Tighten Spring (1 pc)
[E] 68032273	Stepped Screw (1 pc)
[F] B3031330	Decal - Misfeed

[A] to [E] of the above list have been used for mass production machines from the following cut-in serial numbers. Please refer to MB303007.
B30314 L0680080001
B30317 H3900700001
B30324 L0680080029
B30326 4B30800001
B30327 H3900800146

B3031330 [F] includes three decals which will be stuck on the LCT inner cover from November production.

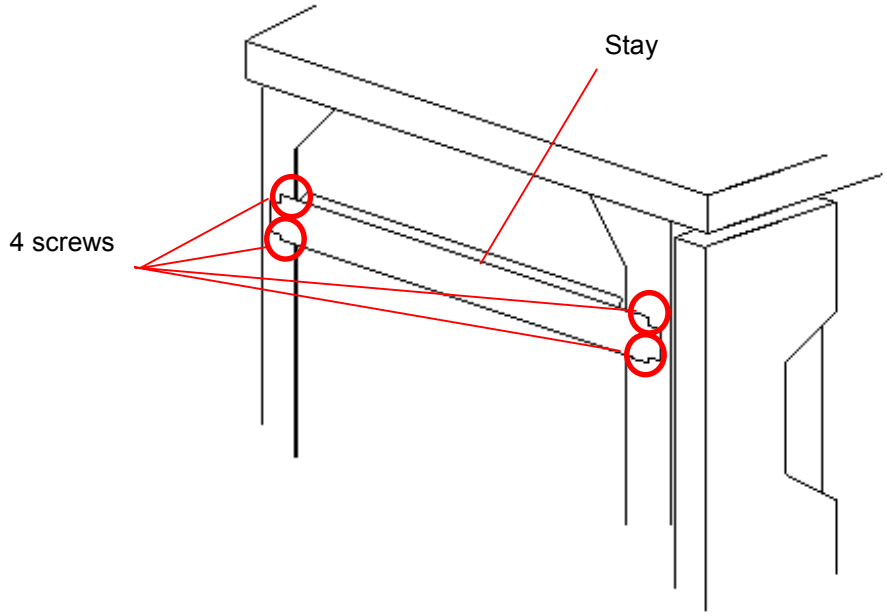


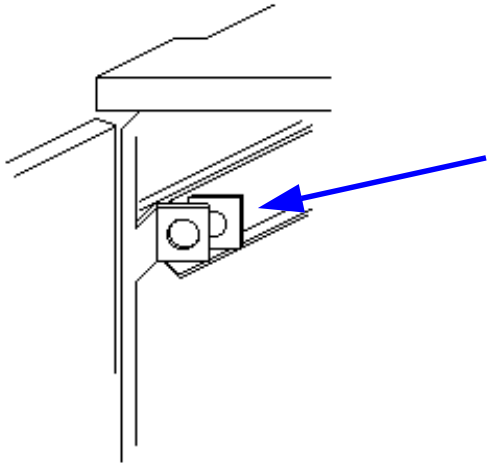
Model: Bellini	Date: 09-Nov-00	No.: RA294038

Guide plate installation procedure

1. Removal of Relay Transport Unit from LCT.

(1) Remove the stay from the LCT (4 screws).

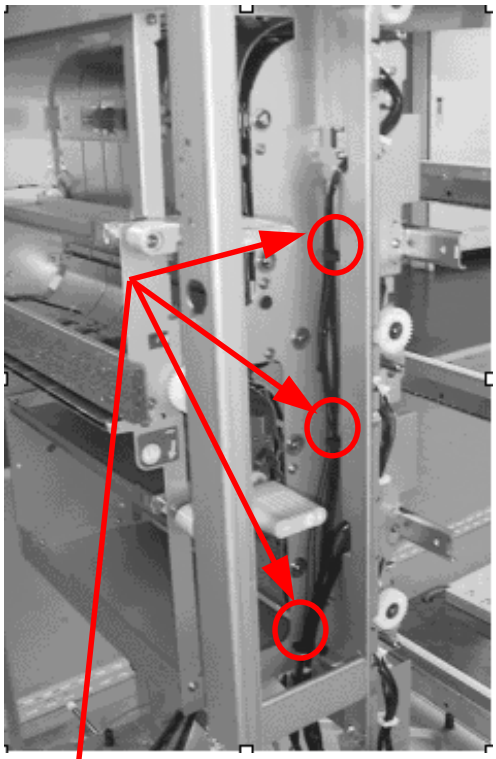




Note: When removing the stay, be careful not to deform the part shown in the illustration to the left.

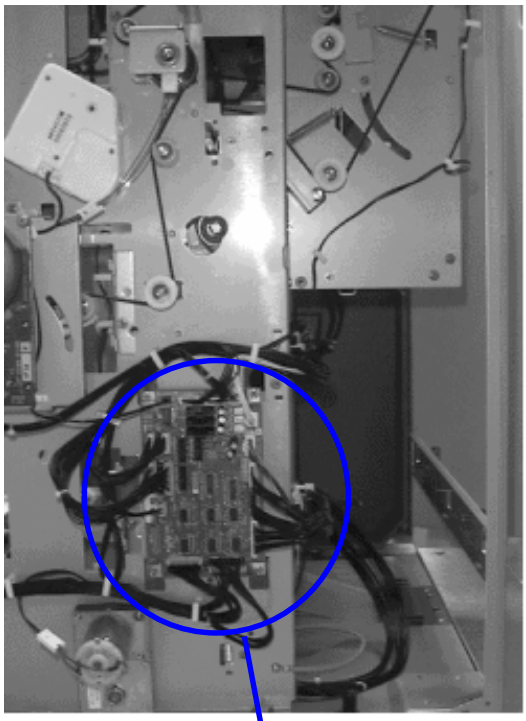
(2) Remove the harness around the relay transport unit from the harness clamps and board.

[Front view of Relay Transport Unit]

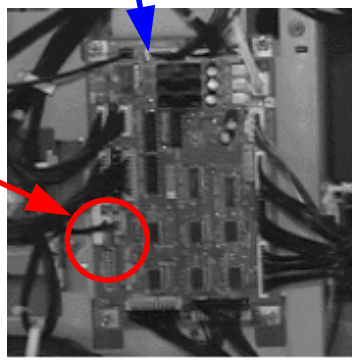


Remove harness from clamps.

[Rear view of Relay Transport Unit]



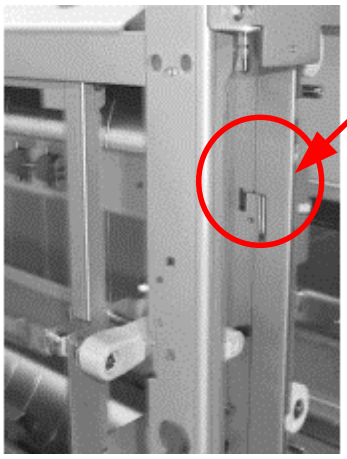
Remove the connector on the right.



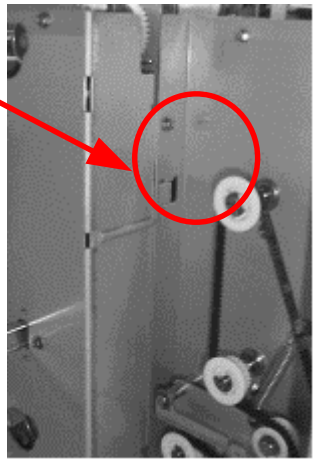
(3) Remove the relay transport unit from the LCT (4 screws).

Note: As there are hooks, please lift and remove the relay transport unit.

[Front view of Relay transport unit]



[Rear view of Relay transport unit]



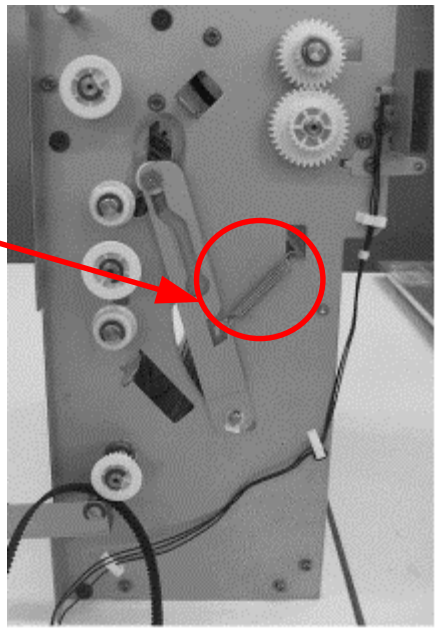
Caution: Please be careful when handling the relay transport unit because there are sharp edges on the unit.

2. Removal of Old Parts on the Relay Transport Unit

P. 4/7

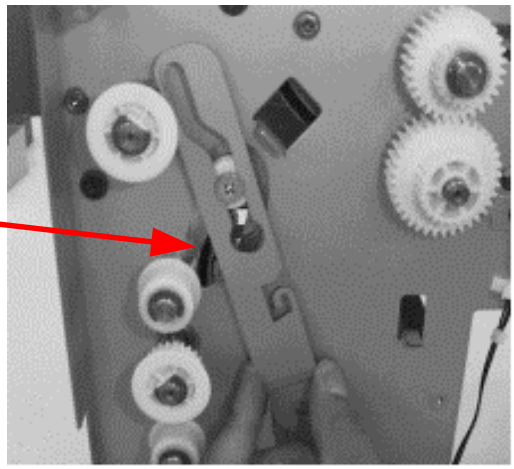
(1) Remove the spring.

AA060817
Tighten Spring



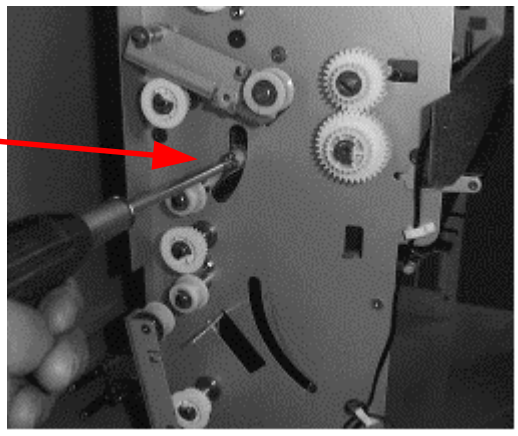
(2) Remove the linkage bracket.

B3033681
Linkage Bracket



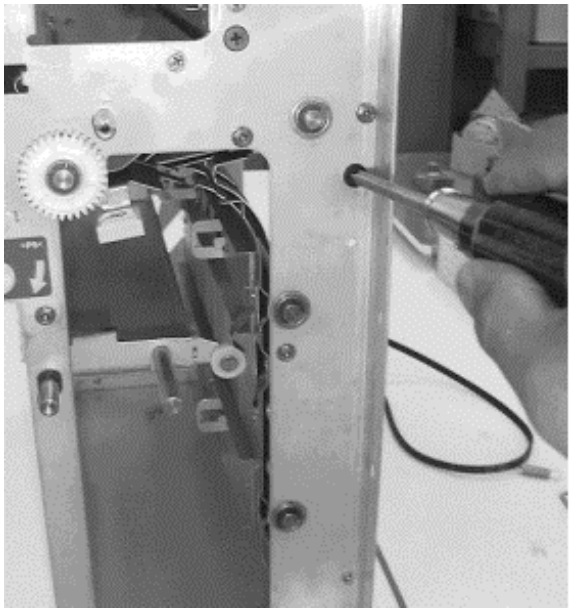
(3) Remove the Stepped Screw.

AA143444
Stepped Screw

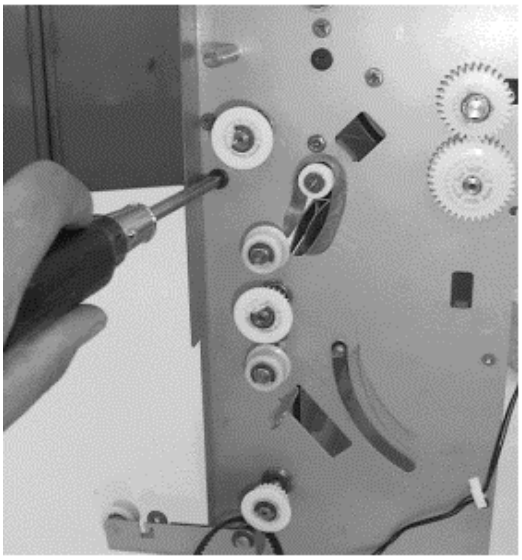


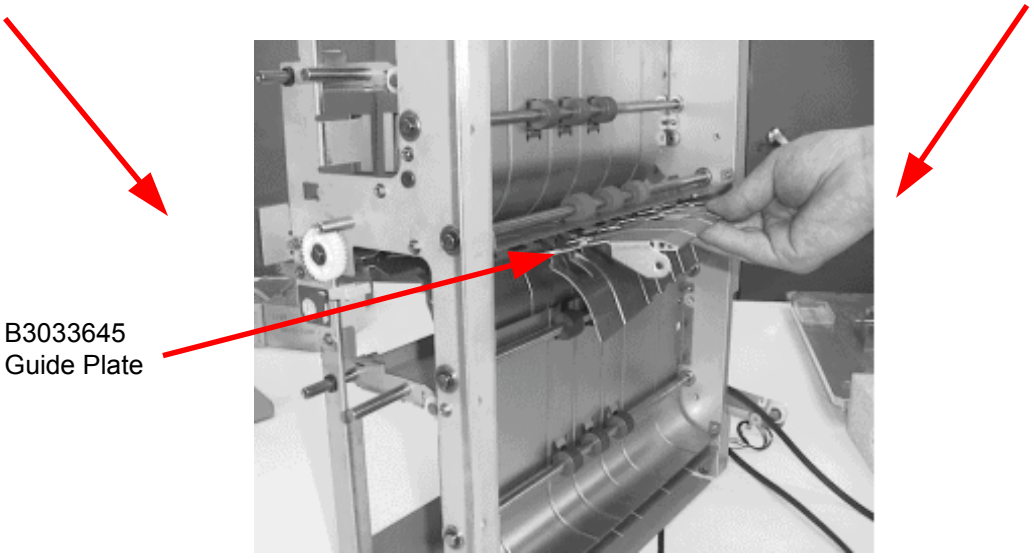
(4) Remove the guide plate (2 stepped screws).

[Front view of Relay Transport Unit]



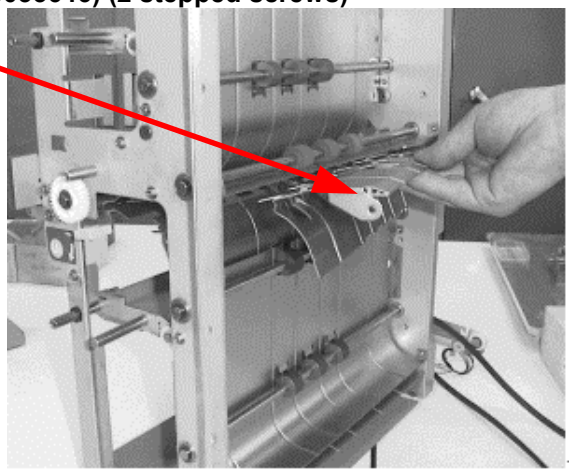
[Rear view of Relay Transport Unit]



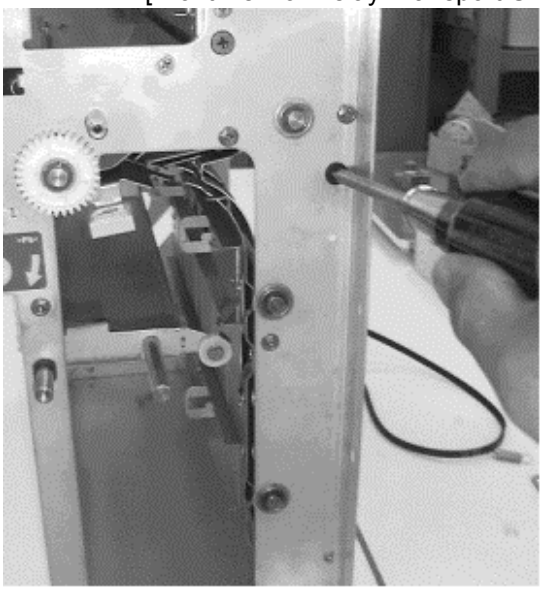


3. Installation of Countermeasure Parts on Relay Transport Unit

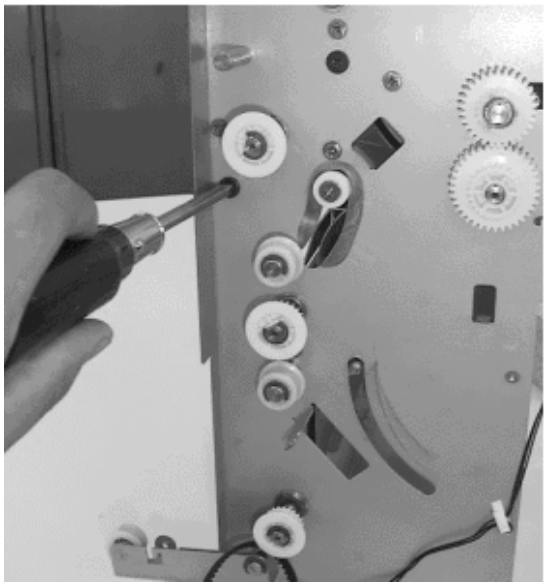
(1) Install the guide plate (B3033646) (2 stepped screws)



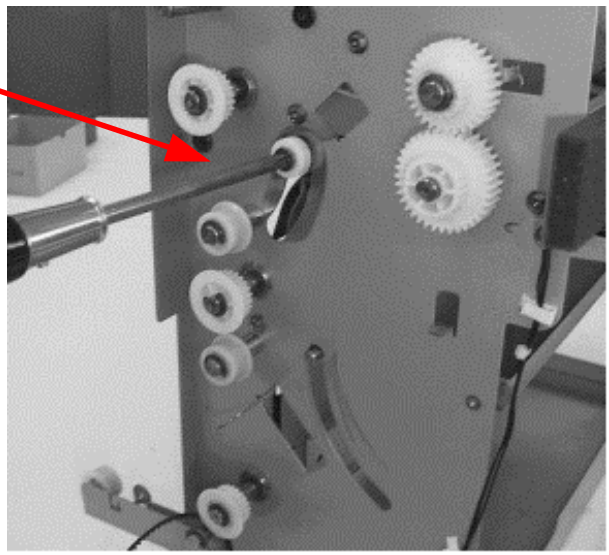
[Front view of Relay Transport Unit]



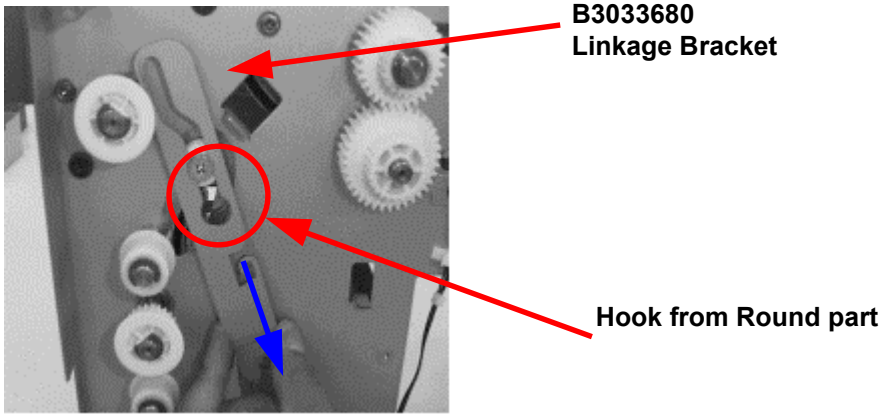
[Rear view of Relay Transport Unit]



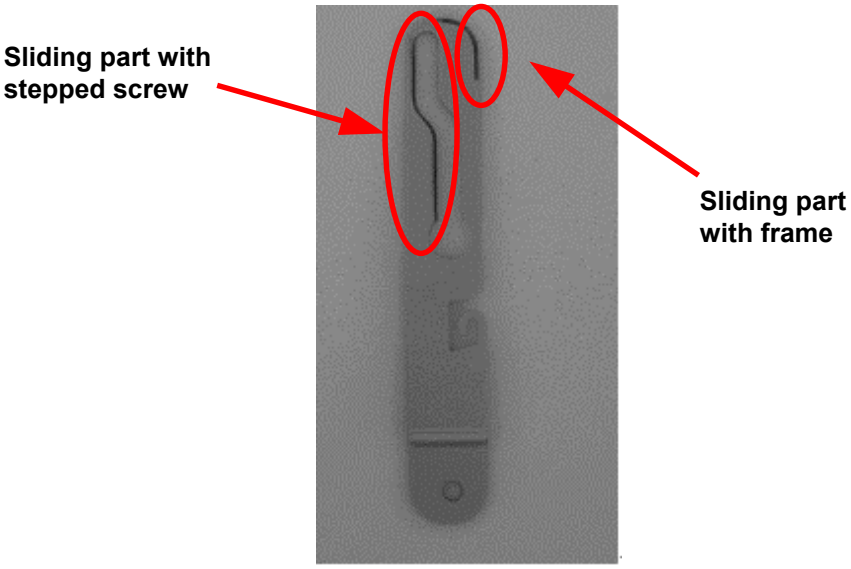
(2) Install the collar (B3033685) with the stepped screw (68032273)



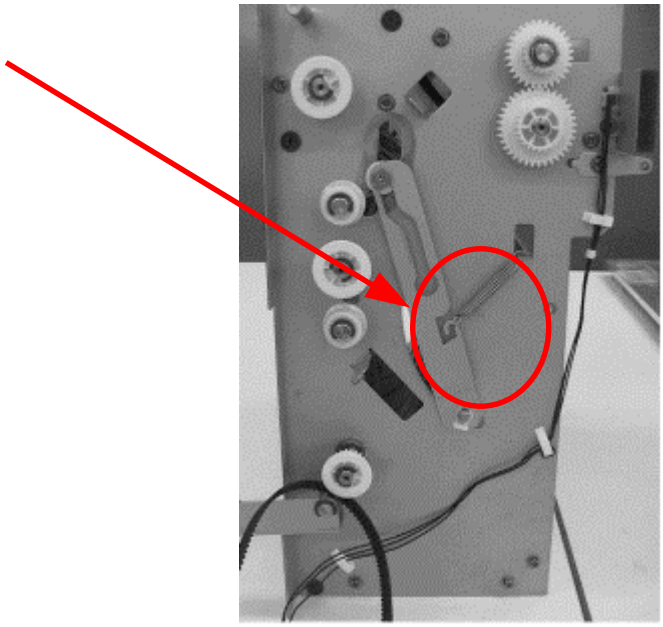
(3) Install the linkage bracket by hooking it on the stepped screw.



(4) Lubricate with Silicone Grease G501 (52039502) at the parts in the photo.



(5) Install the tighten spring (AA060380)



(6) Re-install the relay transport unit.
(7) Re-assemble the LCT.

Reissued: 22-Nov-00

Model: Bellini	Date: 12-Sep-00	No.: RA294031a

RTB Correction

This RTB has been reviewed and modified.

Subject: Image Quality of Half Tone and Gray Scale			Prepared by: A. Sasaki
From: Technical Services Dept., GTS Division			
Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☒ Other (Recommended action)		

We have developed the following procedure for responding to end users who require greater sharpness in halftone or grayscale areas.

POINTS TO KEEP IN MIND

The resulting image will vary depending on the original type, application used and parameters in the table below. These parameters can be changed to attain the maximum sharpness for each original.

	Parameter	Function	a) Who changes b) where
1	Printer Language (PCL5e, PCL6 or PostScript)	Different dither patterns are used, which can make the output vary.	a) Customer b) Application
2	Settings in Printer Driver (a) "Edge Smoothing": Set to OFF. (b) "Halftone": Select "Photographic Images".	• False shadow does not appear. • Photo images can be improved.	a) Customer b) Printer driver
3	Printer Dot Edge Parameter (when Edge Smoothing is set to off). (thicker or thinner)	• Thicker: Pixels in lighter image areas will be darker (clearer). • Thinner: The image becomes smoother but lighter overall.	a) Service Rep. b) SP mode (Printer SP and Copy SP)
4	Fusing Temperature and Nip Band (Note: Some limitations exist.)	Pixels become more uniform, making halftone areas and photo images smoother.	a) Service Rep. b) Fusing unit and SP mode (Copy SP)

Model: Bellini	Date: 12-Sep-00	No.: RA294031a

ADJUSTMENT PROCEDURE

1. PRINTER LANGUAGE

Please recommend an appropriate printer language to customers for printing out, as printer languages such as PCL5e, PCL6 and PostScript3 use different dither patterns.

2. PRINTER DRIVER SETTINGS

(a) Edge Smoothing

Recommend that customers turn the **Edge Smoothing** function **OFF.** This is located in the Print Quality tab of the printer driver.

The Edge Smoothing default values for each driver language and printer controller type is as follows:

Printer Language	Controller Type A	Controller Type B
PCL5e	ON	OFF
PCL6	ON	OFF
PostScript3	OFF	OFF

(b) Halftone

Please recommend **Photographic Images**, **Line Art** or **Scanned Images** in the Print Quality tab, whichever is most appropriate for the original used.

3. PRINTER DOT EDGE PARAMETER

If the customer requests thicker lines, perform the procedure below.

Note: This change is effective only when Edge Smoothing in the printer driver is set to "OFF".

1) Change the printer dot edge parameter in Printer SP Mode (Printer SP – Settings – Printer Dot Edge Parameter) from "Normal" (default) to "SP Mode".

   Note: With this change, the print line width can be thickened.

2) Change Copy SP2114 (Printer dot edge parameter setting) to the following settings:

SP Number	Set to:
SP2114-1	80
SP2114-2	80
SP2114-3	100
SP2114-4	80

3) If the customer would like the lines to be made thicker than this, change Copy SP2114 (Printer dot edge parameter setting) from the settings in #2 above to the thicker settings.

SP Number	Thinner Setting	Settings in #2 Above	Thicker Setting
SP2114-1	50	80	100
SP2114-2	50	80	100
SP2114-3	80	100	100
SP2114-4	50	80	100

Note: **Only** these 3 combinations above should be used (thinner, #2 settings **or** thicker).

These SP settings are valid only when the Edge Smoothing function is set to "OFF" and the Printer Dot Edge Parameter in the printer SP mode is set to "SP Mode".

4. FUSING TEMPERATURE AND NIP BAND

There are some limitations listed below. Please carefully consider the best fusing settings for each customer before performing the procedure below.

1) Change the fusing nip band from 11.5 to 9.0 mm (± 0.5 mm).
Do this by rotating the adjustment screws counterclockwise approx. two rotations.

2) Change the fusing temperature settings in SP Mode (SP1105-001 and -004) to the recommended values in the table below.

SP Number	Function	Default	Recommended
SP1105-1	Temperature in standby condition.	173 °C	178 °C
SP1105-4	Temperature in copying condition.	+10 °C (178 °C)	-5 °C (173 °C)

Note: The following are the reasons why the temperature in standby is 5 °C higher than that during copying:

- The target temperature in the copying condition is 173 °C.
- The hot roller temperature may drop by 5 °C just after a copy job begins when the machine has not been used for a certain time. This is because the pressure roller temperature can drop during this time, which causes it to draw more heat from the hot roller when the next copy job begins.

Note: The value of -5 °C in SP1105-4 cannot be set with the present firmware because the setting range is between 0 and +25 °C. The new software version to be released at the end of September will include an expanded setting range.

Model: Bellini	Date: 12-Sep-00	No.: RA294031a

LIMITATIONS

- Since an offset image may appear with thick paper, we do not recommend the above settings when using thick paper.
- Incomplete fusing may occur with a long print job of A5 or 8.5" x 5.5" paper. (e.g.: 400 to 500 sheets or more).
- Also, incomplete fusing may occur just after the machine reaches the copy ready condition or when the room temperature is low.
- Dirty background near the leading edge may occur or the lifetime of the hot roller, pressure roller and cleaning roller may be reduced. In this case, please increase the nip band.

Model: Bellini	Date: 14-Dec-00	No.: RA294039

Subject: Dirty Background (Process control turns off)	Prepared by: J. Mochizuki
From: Technical Services Dept., GTS Division	

Classification:	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

SYMPTOM

Dirty background appers on the entire face of the copy.

Process control off mode is automatically selected. “0” is displayed in SP3902-1 and an SC code (310 to 314) is logged.

CAUSE

Due to a number of possible factors such as drum wear, auto process control fails and process control off mode is automatically used. SP3902-1 to display “0” and the SC code to be logged.

The auto process control turns off in the following conditions:

1. When calibrating the drum potential sensor during process control initial setting, the drum potential sensor output voltage is out of specification (SC310).
2. When calibrating the drum potential sensor during process control initial setting, the rate of change of drum potential sensor output with voltage on the drum is out of specification (SC311).
3. When adjusting VD for the unexposed drum during process control initial setting, -1000V is applied to the charge grid, but the drum potential sensor detects that VD is more than -970V (SC312).
4. When adjusting the drum potential (VD) during process control initial setting, the drum potential sensor detects that VD is more than VG (grid voltage) (SC313).
5. When adjusting the drum potential (VH) for LD power adjustment during process control initial setting, the first time the VH pattern is mede, the drum potential sensor detects that VH is more than 500V (SC314).

When one of the above conditions occurs, the machine sets Vg to the reference value stored in SP2-001-01 (default 1000V) and the power supply to the LD to the value stored in SP2-103. As these values are design targets for new drums and no compensation is applied, dirty background may appear if the drum has already become worn.

SOLUTION

Check the SMC printout to see if SC310, 311, 312, 313 or 314 are logged in SP7403 or 7402. Take the appropriate action according to the possible causes listed for each SC code (e.g. worn drum, defective potential sensor, dirty corona wire). In addition, check to see that SP3902 has been set to **1** (Auto Process Control ON).

Then, do SP2962 (Auto Process Control) and check whether SP3902-1 displays “1”, which indicates that Process Control was successful.

Model: Bellini	Date: 21-Dec-00	No.: RA294040

Subject: Toner on Hot Roller	Prepared by: S. Hizen
From: Technical Services Dept., GTS Division	

Classification:	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

Symptom

Lines or marks on copies.
Dirty background.

Cause

Toner adheres to the hot roller.
Note: It is not easy to see that toner is adhered on the hot roller surface so as to create the lines/marks, dirty background problem.

Solution:

Change **the web roller springs to AA06-3550** and **the firmware to version 7.51.**

Spring AA06-3550: This is to increase the web roller pressure.
Firmware Version7.51: The web drive motor is on every 10 seconds when the hot roller rotates in the warm up condition just after the main switch is turned on. When the springs AA06-3550 are used on the web unit, firmware version 7.51 is required. If it is not used, the hot roller might be slightly scratched by the web cloth itself.

We also recommend that the hot roller be replaced when doing the above temporary countermeasure. Also, we recommend you use the hot roller cleaner (P/N:A153-9530) at EM calls to remove adhered toner from the hot roller surface.

Model: Bellini	Date: 22-Dec-00	No.: RA294041

Subject: Toner bottle full condition cannot be reset.	Prepared by: J. Mochizuki
From: Technical Services Dept., GTS Division	

Classification:	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

SYMPTOM

The waste toner full condition cannot be reset even after the waste toner collection bottle is replaced with a new one.

CAUSE

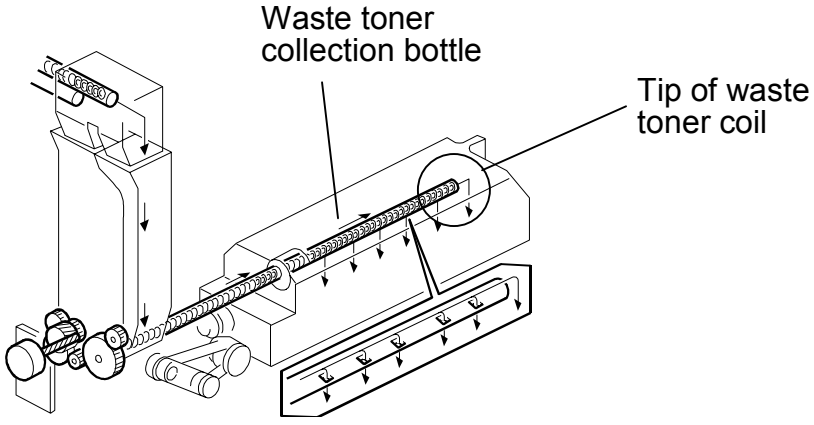
The tip of the waste toner coil located in the toner bottle is blocked with hardened toner. The hardened toner is not broken up even when the coil rotates after a new waste toner collection bottle has been installed.

ACTION

After taking out the full bottle, place a sheet of A3 or 11”x17” paper below the waste toner coil and break up the hardened toner in the coil using a screwdriver until you can see the tip of the coil.

CAUTION: Make sure that your face is not close to the coil when doing this, as some pieces of the hardened toner can chip off in random directions.

We strongly recommend replacing the waste toner collection bottle at PM or EM visits, before the bottle becomes full.



In production:

The waste toner supply coil has been modified as a permanent countermeasure. Please refer to MB MA294062 for details.

Model: Bellini	Date: 22-Dec-00	No.: RA294042

Subject: Tiny fiber spots on copies	Prepared by: J. Mochizuki
From: Technical Services Dept., GTS Division	

Classification:	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

SYMPTOM

Tiny black spots appear on the copy image.

CAUSE

Paper dust gets caught in the toner recycling route (drum surface – cleaning unit – development unit) and is then mixed in with the developer and toner.

SOLUTION

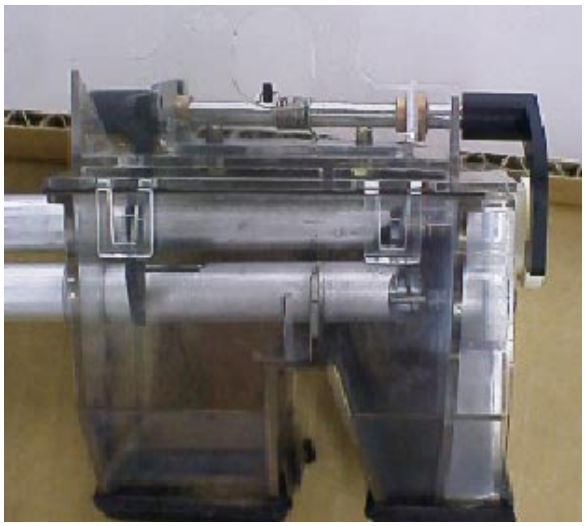
Reduce the toner recycling ratio.

We would like to recommend a 40% cut in toner recycling. Under this system, 60% of the toner would be recycled and the remaining 40% would then be routed to the waste toner bottle. This has the effect of reducing the number of spots by 90%.

This 40% cut requires a new toner recycling pipe. Please refer to MB No. MA294064.

<u>Procedure for setting the collection pipe to 60% recycling</u>

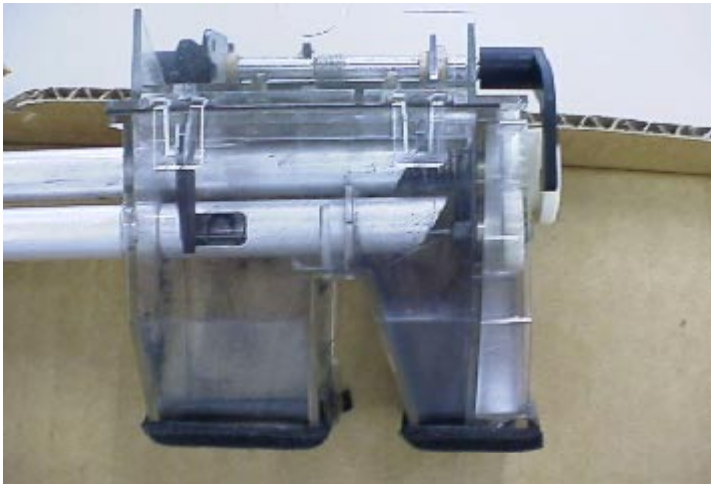
1. Loosen the leftmost screw of the toner collection pipe. Move the pipe 1-2mm to the right and rotate it so that the square opening is facing up (see the photograph below). In addition, make sure that the U-groove on the left face of the pipe is properly lined up with the projection on the case.



2. Slide the pipe to the left until the projection enters the groove. Retighten the leftmost screw.
3. Remove the screw that holds the tapping arm.

Note:

It is also possible to select 0% toner recycling. To do this, set the pipe so that the square opening is facing the non-operation side as shown below. Since the tapping function is not necessary here, do not remove the tapping arm screw.



Side effect:
With 0% toner recycling, toner yield drops approximately 16% and the waste toner bottle becomes full at approximately 200k copies. At 60% recycling, toner yield drops approximately 5 to 6% and the waste toner bottle becomes full at approximately 400k copies.

Model: Bellini	Date: 27-Dev-00	No.: RA294043

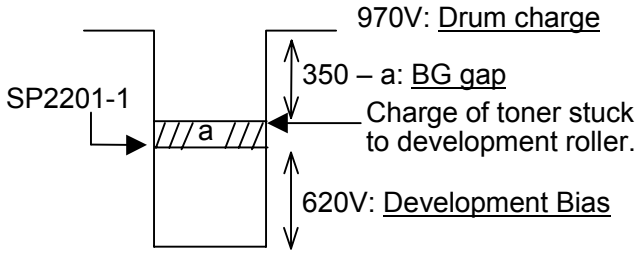
Subject: Dirty Background Image	Prepared by: S. Hizen
From: Technical Services Dept., GTS Division	

Classification:	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

Symptom: Dirty background

Possible cause:

1. **The development sleeves are contaminated with toner.**
   When toner is stuck on the development sleeve surface, the BG potential will be decreased by the same amount as the charge on the toner that is stuck on the sleeves. The development sleeve tends to be contaminated with toner when the toner concentration is increased or when lots of non/low image copies are made.
   Reference:

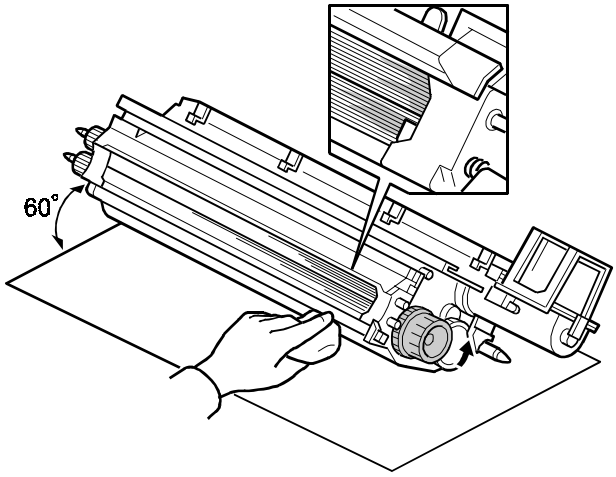


Please refer to RTB RA294037

2. **The developer has deteriorated.**
   The developer also a tendency to deteriorate when lots of non/low image copies are made or toner consumption is extremely low. Once the developer is deteriorated, the toner concentration in the development unit varies. This results in the machine automatically shutting process control off. The drum charge voltage would be decreased because the grid bias should be controlled to around 1000V (this value is lower than the value from process control: please refer to RTB RA294039)

Solution:

1. Clean the development sleeve.



Note:
The development sleeves should be cleaned every PM.
All hardened patches of toner stuck on the sleeve or hardened toner in the grooves in the sleeves should be removed.

2. Replace the developer.

Model: Bellini	Date: 24-Jan-01	No.: RA294044

Subject: Tiny black fiber spots	Prepared by: S. Hizen
From: Technical Services Dept., GTS Division	

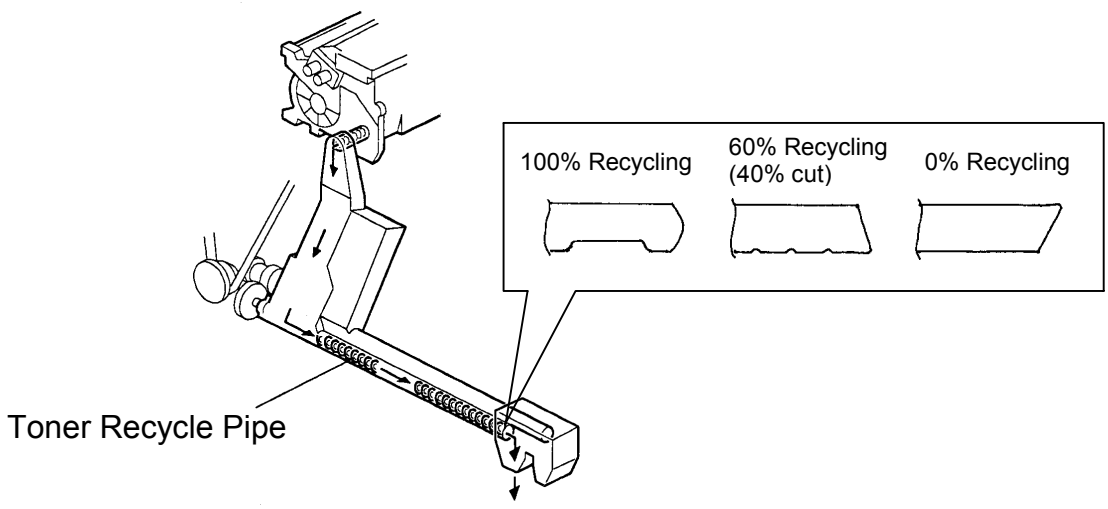
Classification:	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

SYMPTOM

Tiny black fiber spots on copies.

CAUSE

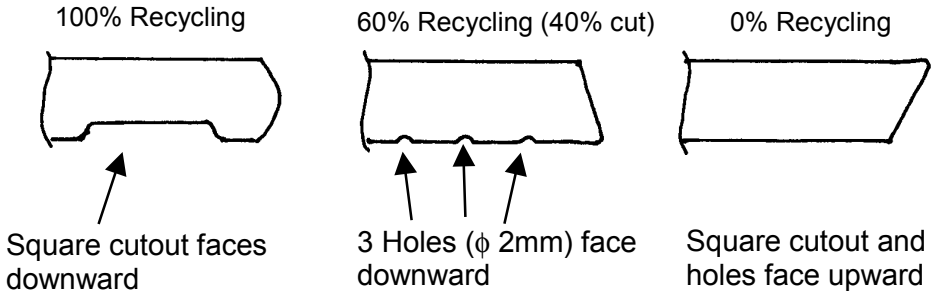
Paper fibers became mixed in with the recycled toner in the development unit.



SOLUTION

A combination of the following will minimize the appearance of the fiber spots:

1. Dispose of the developer in the development unit and clean the unit.
2. Decrease the percent of toner being recycled by changing the angle of the toner recycle pipe (see the illustration below). If the pipe is on 100% recycling, we recommend changing over to 60% recycling at first.



Although there will be an immediate reduction in fiber spots with solutions 1 and 2, wait until the next PM visit before making a final determination on the effectiveness. This is because it takes time for the paper fibers to be removed from the toner path.

3. Use paper that does not shed its fibers easily.

NOTE:

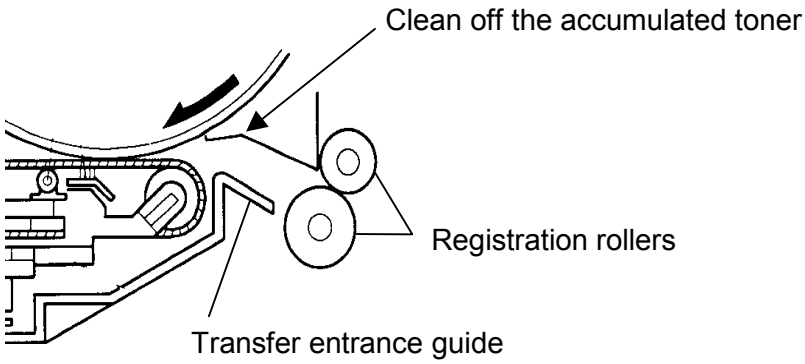
1. The new toner pipe A294-3638 and accompanying parts are required for this action. Please refer to MB# MA294064.

2 Please refer to RTB# RA294011 for the pipe replacement procedure.

3 Two other types of black spots can also occur. The causes and action for both are as follows:

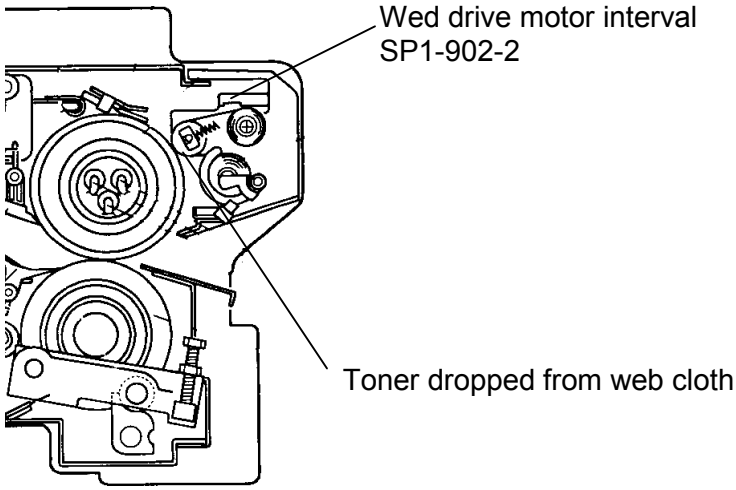
A. . Toner scattering.

Action: Clean off the toner that has accumulated on the drum stay located above the registration rollers/transfer entrance guide.



B. Toner drops from web cloth.

Action: Reduce the setting of the web motor drive interval (SP 1-902-2). However note that if the interval is reduced from 40 s to 20 s, the web cloth yield will reduce to the half of the target.



Model: Bellini	Date: 27-Apr-01	No.: RA294045

Subject: Fusing knob slip	Prepared by: S. Hizen
From: Technical Services Dept., GTS Division	

Classification:	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

Symptom:

The hot roller doesn't rotate even though the fusing knob is turned.

Cause:

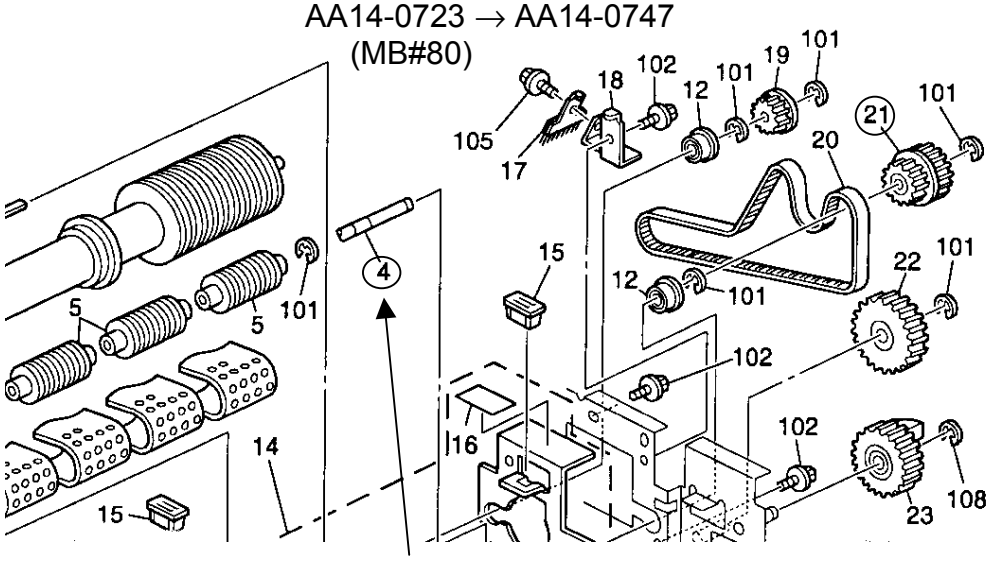
The cooling roller shaft is worn, which causes the roller drive gear to slip.

Solution:

Replace the cooling roller shaft with the new shaft PN: A294-9451, which uses a stronger, wear-resistant material. Please refer to MB MA294080 for serial number cut-ins for this modification.

Note: A294-9451 is the part number for the new cooling roller shaft, which is free of charge.

AA14-0723 → AA14-0747
(MB#80)



Cooling Roller Shaft

The symptom tends to occur at around 3000K copies (10PM cycle).
Therefore we recommend that the older AA14-0723 shaft be replaced with A294-9451 (AA14-0747: This is the part number for the new cooling roller shaft of the mass-production units.) when the pressure roller is replaced at PM.

Model: Bellini	Date: 25-May-01	No.: RA294046

Subject: Toner on Hot Roller (Updated from RTB No.294040)	Prepared by: S. Orita
From: Technical Services Dept., GTS Division	

Classification:	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

This RTB supersedes RTB RA294040.

Symptom

Lines / marks on copies.
Dirty background.

Cause

Toner adheres to the hot roller.
Note: It is not so visible that toner is adhered on the hot roller surface so as to create the lines/marks, dirty background problem.

Solution:

1. Change to the new web roller springs (P/N to AA063652) and update the firmware to version 7.51.

Spring AA063652:
This is to increase the web roller pressure.

Firmware version 7.51:
The web drive motor is on every 10 seconds when the hot roller rotates in the warm up condition just after the main switch is turned on. When the springs AA063652 are used on the web unit, firmware version 7.51 is required. If it is not used, the hot roller might be slightly scratched by the web cloth itself.

Note: We introduced P/N AA063550 as the new part number in RTB RA294040. To distinguish the new and old parts, the color for the spring has been changed from Silver to Black (AA063652: Black, AA063550: Silver). The strength is the same.

2. Decrease the Web Motor Drive Interval (SP1-902-002).
This is to clean the hot roller with the web more frequently

Note: When the setting of SP1-902-002 is decreased, the time until Web Near End will be shortened. See the following table for details:

	85CPM	105CPM	Expected copy volume when the near end display occurs
Web Motor Drive Interval (SP1-902-002) Default setting	42 sec	34 sec	330K copies
Recommended 1st setting	28 sec	22 sec	220K copies
Recommended 2nd setting	21 sec	17 sec	165K copies

We also recommend that the hot roller be replaced when performing the above temporary countermeasure. Also, we recommend you use the hot roller cleaner (P/N:A1539530) at an EM call to remove the adhered toner on the hot roller surface.

Model: Bellini	Date: 10-Aug-01	No.: RA294047

Subject: Operation panel blanks out and SC990	Prepared by: S. Hizen
From: Technical Services Dept., GTS Division	

Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

Symptom:
Operation panel blanks out and SC990 is displayed.

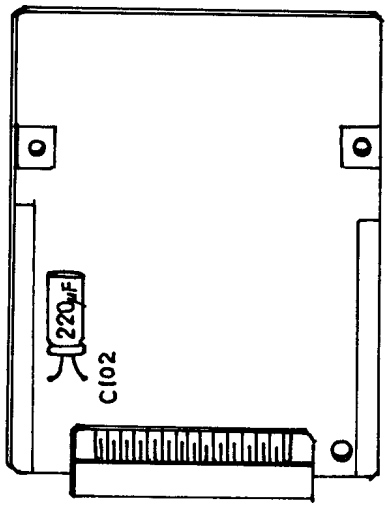
Cause :
As the original is being scanned, more current is consumed and the voltage of the 5V line fluctuates. If this fluctuation exceeds a certain level, the clock signal of the LCD controller IC becomes unstable and the LCD goes blank. At the same time, electrical noise affects the SDRAM data, resulting in SC990.

Note: This does not occur on machines with a controller interface. This is because the interface board circuit has the effect of increasing the capacitance of the SICU capacitors for the 5V line.

Solution:

Countermeasure for mass-production units:
Increase the capacitance of the SICU capacitors for the 5V line, preventing the voltage fluctuation. An MB will be issued as soon as possible.

Countermeasure for field units:
An additional capacitor on the SICU circuit.
Since it would be difficult to install the additional capacitor in the field, we had the manufacturer prepare custom interface boards, which contain a 220 micro F capacitor and are stripped of all unrelated components. We will supply this customized interface board upon your request.



Model: Bellini	Date: 23-Aug-01	No.: RA294048

Subject: SC592	Prepared by: M. Matsuda
From: Technical Services Dept., GTS Division	

Classification:	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

SYMPTOM

SC592 appears.

CAUSE

There are several possible causes for SC592. They fall into the following two categories:

- Transport Screw / Air Pump Motor failure
- Toner Bank Unit component(s) failure

This bulletin provides troubleshooting flowcharts and procedures for determining the root cause, as well as the best course of action. It is divided into two main sections, one for each of the cause categories mentioned above.

TROUBLESHOOTING

SC592 appears

↓

Turn the main switch off

↓

Remove the left lower cover

↓

Try turning the drive pulley on the toner bank unit clockwise (manually). See fig.1

Does the drive pulley rotate easily?

YES → Go to section 2

NO → Go to section 1

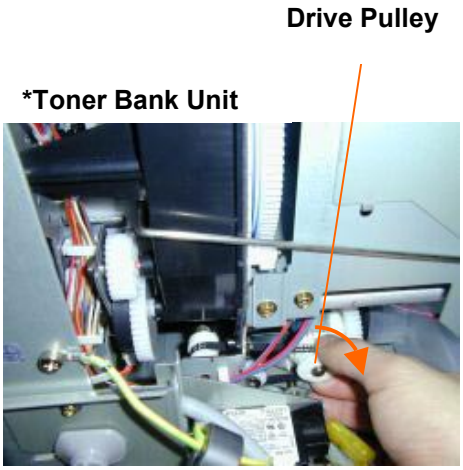


Fig.1

***From left side view**

Section 1 (Transport Screw / Air Pump Motor Failure)

Open the top cover of the toner transport joint. Confirm whether toner reaches the top cover. See fig.2.
Does toner reach the top cover?

NO → Go to Procedure 2

YES → Go to Procedure 1

Fig.2

***From right side view**

● Procedure 1

Possible Cause

The toner transport screw (coil) has locked due to a toner blockage in the air pump motor.

Action

1. Thoroughly clean the entire toner transport tube and transport screw (coil). If necessary, replace the parts (e.g., if the transport screw is bent).
2. Replace the air pump motor. See fig.3.

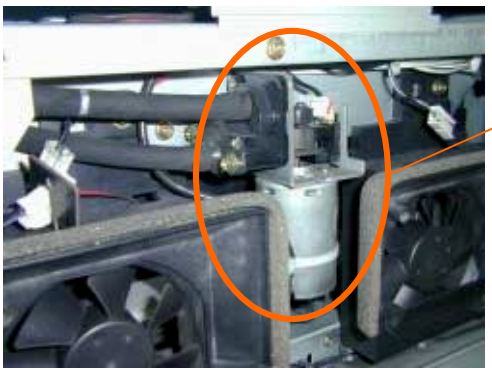


Fig.3

***From right side view**

Note: After performing these 2 steps, perform the following check on the toner discharge area of the PCU frame. See fig.4. This will further ensure the symptom does not reoccur.

- Check for any deformation of the toner transport screw on PSU.
- Check for any toner blockages/clumping.

If either or both above items is YES, replace the PSU and throroughly clean the entire toner transport path.

Fig.4

● Procedure 2

Possible Cause

The toner transport screw (coil) has locked due to a toner blockage in the toner transport tube.

Note: This is a very likely cause with machines that have been moved (transported) with toner still inside the toner transport path.

Action

Thoroughly clean the entire toner transport tube and transport screw (coil). If necessary replace the parts (e.g., if the transport screw is bent).

Section 2 (Toner Bank Unit components failure)

Very gently, try turning the toner bank motor counterclockwise
See Fig.5
Does the toner bank motor rotate?
***Caution:** Do not turn clockwise.

YES → Go to procedure 3

NO →

Using a small screwdriver, turn the spring shaft cam clockwise just a bit. Then, try turning the toner bank motor. See fig.6
Does toner bank motor rotate?

YES → Go to procedure 4

NO →

Check the other drive parts of the toner bank unit.
Are any of these parts broken?

YES → Replace with new parts.

NO →

Replace the toner bank unit

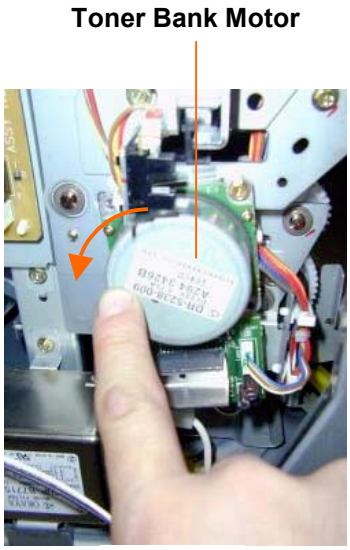


Fig.5

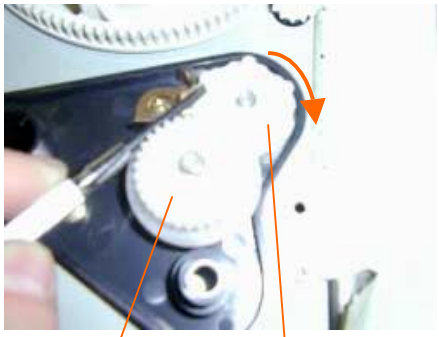


Fig. 6

● Procedure 3

Possible Cause

Aside of the ones mentioned above, in theory SC592 can occur due to other (unknown) causes. In which case, please take the following action.

Action Taken

Try activating the toner bank motor with SP5804-61.

Then, try using the machine to make some copies. Even if SC592 does not occur following this, we recommend keeping watching or replacing the toner bank unit to prevent the future occurrences.

If SC592 still occurs, try turning the toner bank motor again.

→ **See the Section 2 main flowchart on the previous page**.

● Procedure 4

Possible Cause

Toner is blocked in the bushing area of the spring shaft, causing the gear and spring shaft cam to lock (spring shaft does not rotate smoothly).

Action

Apply grease to the 2 bushings of the spring shaft. Then, replace the spring shaft and cam stopper with the modified ones.

→ **See the Grease Application procedure on the next page (incl. description of modified parts).**

Grease Application Procedure

Please note that a lot of toner can spill from the unit during this procedure.

Please make sure to collect the toner using a vacuum cleaner.

A. Preparation - Parts Removal

1. Remove the toner bank unit.
   (→ *Toner Bank Unit Removal*, Service Manual pg.6-105).
2. Remove the joint holder and lever rack joint. See fig.7.
   (→ Service Manual pg. 6-109, Steps 1-3).

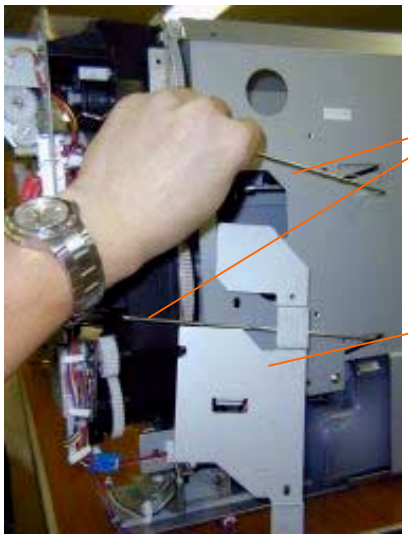


Fig. 7

3. Disconnect the three kinds of connectors. Figs. 8, 9, 10

Fig. 8

Fig. 9

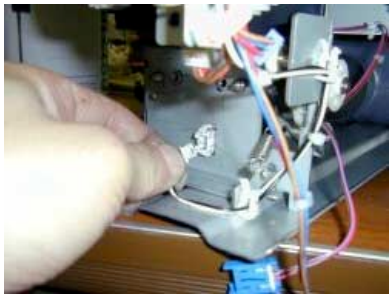


Fig.10

4. Remove the drive section from the toner bank unit (5 screws). See fig. 11.

   Note: Disconnect by unhooking the hook shown in fig.12.

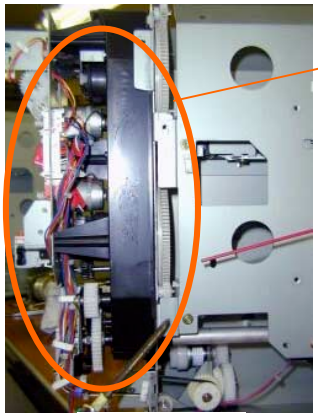


Fig.11

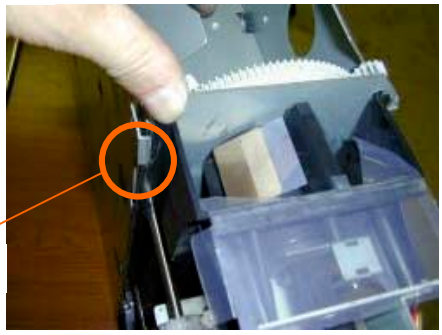


Fig.12

5. Remove the pulley, timing belt and spring.

   Next, remove the clutch bracket (3 screws, 1 connector). See fig.13.

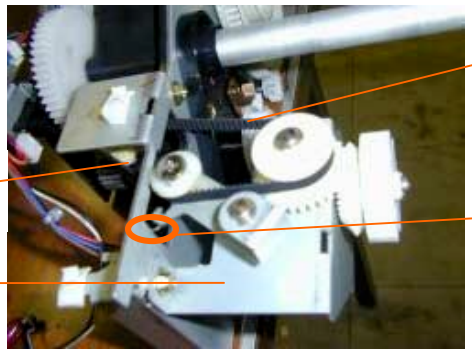


Fig 13

6. Remove the gear (1 e-ring), spring shaft cam and cam stopper. See fig.14.
7. Remove the drive case and spring shaft. See figs. 14 &15.

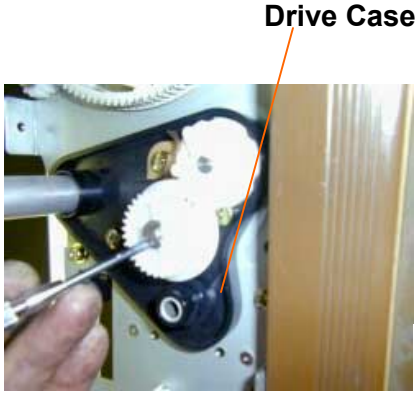


Fig.14

Fig.15

B. Applying the grease

1. With a small screwdriver, break up any toner clumped around the bushing and collect it using a vacuum cleaner. Then, apply the grease to bushing. See fig.16.

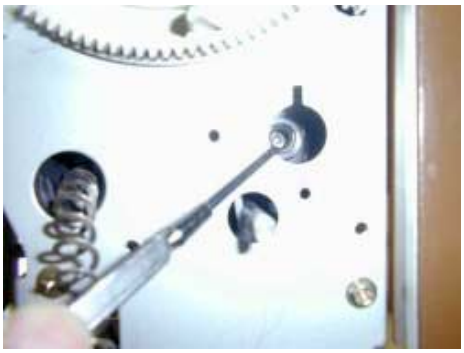


Fig.16

2. Replace the spring shaft and cam stopper with the modified parts. See fig.17.

   (See below for description of modified parts).

Note: When reinstalling the spring shaft, turn it several times so that the grease is distributed evenly.

Modified cam stopper.
(changed → A2943195).

Modified spring shaft.
***(No P/N change).**
-New shaft is longer and has an e-ring groove.

Fig.17

3. Apply grease to the drive case as well. See fig.18.

Fig.18

4. Re-assemble the machine.

Model: Bellini	Date: 04-Oct-01	No.: RA294049

Subject: Firmware Modification History for SICU and BICU	Prepared by: S. Orita
From: Technical Services Dept., GTS Division	

Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☒ Other ( )		

Firmware Modification History

Software Version: 7.40 A2945604K/A2945264K (NA)
A2945654K/A2945264K (EU)

Corrections (Ver. 7.31 to 7.40)

No,	Title	Symptom Corrected/Changes
1	For use with the Bellini-B (105 cpm)	Software modified so that it can also be used with the Bellini-B. (all versions from 7.40 can be used in both Bellini A and B).
2	Margin per Original	To make it possible to use the “Margin per Original” function, the following 2 SP modes have been added: 5924-1 (Margin per Original): Yes/No (default: No). 5924-2 (Per Original Priority): On/Off (default: Off).
3	Web end detection improved	Software changed so that the web end condition will not be detected until the display for SP1902-1 (Web Consumption) has reached 102%.
4	Inch display for Directional Size Magnification (N.A. machines only)	The display for Directional Size Magnification has been changed from mm to inches for N.A. models.

Software Version: 7.44 A2945604L/A2945264L (NA)
A2945654L/A2945264L (EU)

Corrections (Ver. 7.40 to 7.44)

No,	Title	Symptom Corrected/Changes
1	Solution for detached upper toner bottle cap	Software changed so that “Set the lower toner bottle” is displayed at Toner Near End and Toner End.

Software Version: 7.47 A2945604M/A2945264M (NA)
A2945654M/A2945264M (EU)

Corrections (Ver. 7.44 to 7.47)

No,	Title	Symptom Corrected/Changes
1	Copy server index paper printing	When printing out print documents saved on the Copy Server onto index paper, part of the image may be cut off. To correct this, the software has been changed.

Model: Bellini	Date: 04-Oct-01	No.: RA294049

Software Version: 7.49 A2945604N/A2945264N (NA)
A2945654N/A2945264N (EU)

Corrections (Ver. 7.47 to 7.49)

No,	Title	Symptom Corrected/Changes
1	Fusing temp. setting ranges changed	The setting ranges for fusing temperature-related SP modes have been changed to the following: SP1105-1 (Fusing Temperature in Waiting Condition): 85 cpm (Bellini A): 168 to 178℃ 105 cpm (Bellini B): 173 to 178℃ SP1105-4 (Fusing Temperature Correction): 85/105 cpm: -5 to +20℃
2	SC515 (Tandem Rear Fence Drive Motor Error)	Software changed so that paper on the left tray will not be shifted to the right tray after it is pulled out while its bottom plate is lifting (resulting in a Paper End mis-detection).
3	SP2114 (Printer Dot Edge Parameter Setting) initialization correction	Software modified so that SP2114 will take on the correct default value for each destination after SP5801 (Memory All Clear) is performed. Previously, the NVRAM was properly initialized following memory all clear and power off/on, however SP2114 was set to the same value for all destinations (to the value for Japanese models).
4	SC990 or display reset with large-volume, continuous print jobs	After Copier Priority has been selected in UP Mode – Memory Allocation, SC990 or a panel display reset occurs with large-volume, continuous print jobs (A4 LEF, LT LEF or smaller; 1000 pages or more). The timing of the HDD 1 to HDD2 changeover at memory full has been optimized to ensure the error/reset does not occur.
5	SC990 at power on (105 cpm)	When the 105 cpm machine main power is turned on, the HDD does not come on line fast enough, and the mainframe informs the printer controller (Peerless) that there is no hard drive present, resulting in SC990. To correct this, the software has been changed.

Model: Bellini	Date: 04-Oct-01	No.: RA294049

Software Version: 7.50.: A2945604P/A2945264P (NA)
A2945654P/A2945264P (EU)

Corrections (Ver. 7.49 to 7.50)

No,	Title	Details of Errors/Changes
1	The copy server cannot store more than 200 originals	1. When the 200th page is scanned to be stored in the document server, the scanning stops and a message is displayed stating that 1000 is the maximum number of storable pages for a document. 2. SC990 is displayed when the machine starts printing out the pages stored in the document server, even if the number of pages is less than 200. The above problems occur only with version 7.49.

Software Version: 7.51.: A2945604Q/A2945264Q (NA)
A2945654Q/A2945264Q (EU)

Corrections (Ver. 7.50 to 7.51)

No.	Title	Details of Errors/Changes
1	Paper on the left tandem tray does not move to the right	The stack of paper on the left tandem tray does not move to the right if the left tray is installed when the right tray is empty.
2	SC numbers in the SC history area of the SMC print are changed	When original jams occur, SC numbers in the SC history area of the SMC print may be changed. The occurrence ratio is high when the number of original jams is high or the SC counter is often reset.
3	Printing does not start when the drum unit is not correctly installed	A print job does not start when the drum unit is not properly set, even after the original has been scanned.
4	Web roller movement change	While the fusing rollers rotate just after the main power switch is turned on, the toner on the pressure roller cleaning roller is transferred to the pressure roller and web roller. Then, the toner may damage the hot roller. To prevent this, the web roller rotates once every 10 seconds while the fusing rollers rotate just after the main power switch is turned on.

No.	Title	Details of Errors/Changes
5	Lower limit of Vref (A294 model only)	The lower limit of Vref is newly set to 1 V. This is to prevent Vref from becoming too low and causing toner scattering or dirty background when increasing the image density by changing the bias for the ID sensor pattern development. The A295 model already has this limit.
6	SC990 (FILE:timer.c)	SC990 is displayed when the SICU receives an unexpected signal (noise).
7	“Copying” appears on the display	“Copying” appears on the display. Nothing is changed even if the “Stop” key is pressed but the display is changed when the doors are opened/closed.
8	“Custom” size in printer mode	With this version, when a custom (non-standard) size is in a tray, “Custom” is indicated in the printer mode and the paper direction icon disappears.
9	10 x 14 inches size on printer controller type A	“10 x 14” is indicated on the display when the printer controller type A is installed.

Software Version: 7.53: A2945604R/A2945264R (NA)
A2945654R/A2945264R (EU)

Corrections (Ver. 7.51 to 7.53)

No.	Title	Details of Errors/Changes
1	Copy/Print count in the document server	All the copies and prints are currently counted as copies. With the new version, the prints from the document server, which are sent from a PC, can be selected as copies or prints by changing the setting of SP5972. Please refer to the table of SP5972 at the bottom of this table.
2	Abnormal SMC printing on LT lengthwise	An abnormal SMC image appears when printing on LT lengthwise paper due to a lack of memory. There are no problems when printing on LT sideways or A4 paper.
3	Memory full when the main switch is kept on for a long period of time	If the main switch is kept on for a long period of time, the memory full condition comes during scanning or SC990 occurs. The cause is that the memory clearance is not done properly.

No.	Title	Details of Errors/Changes
4	Duplex + booklet maker (Biwako) saddle stitching	Saddle stitching was available only with the magazine and duplex to duplex modes. With the new version, saddle stitching is available with duplex printing in the document server and with simplex to duplex copying in copy mode.
5	SC990 during process control	The machine is reset or SC990 occurs if Vsg is 0 during process control.
6	The machine stops during copying with staple mode	The machine stops during copying in the following conditions: 1. The printer controller is installed. 2. The print priority is set to "Printer". Or, it is set to "Display" and the printer LCD is displayed during copying. 3. The staple mode is selected. 4. Copying in copy mode or printing with the document server is being done. Stapling is done after 256, 512, 768, 1024, … sheets are copied. (i.e.: If the number of originals is 2, the machine stops after 128 sets are copied [total 256 sheets]. If the number of originals is 40, the machine stops after 32 sets are copied [total 1280 sheets]).

SP5972

Setting	Output Mode	Input Mode	Count As
0	Copy	Scanned	Copy
	Document server	Scanned	Copy
		Sent from PC	Copy
	Print	Sent from PC	Print
1	Copy	Scanned	Copy
	Document server	Scanned	Copy
		Sent from PC	Print
	Print	Sent from PC	Print

Software Version: 8.2: A2945609/A2945269 (US), Sum check: C2BA
A2945659/A2945269 (EU), Sum check: 7220

Corrections (Ver. 7.53 to 8.2)

No.	Title	Details of Errors/Changes
1	A294-II/A295-II models	This version onward should be installed in the A294-II/A295-II models. This firmware is commonly used in both A294/A295 and A294-II/A295-II models. The new I/O board can recognize what the model is and automatically uses the appropriate software for the model.

No.	Title	Details of Errors/Changes
2	Slip sheet does not function properly when using more than 256 pages in connect copy mode	When using an original of more than 256 pages in the connect copy mode, slip sheet does not function properly for page 256 and later on the sub-unit only.
3	Slip sheet does not function properly when using specified trays in chapters mode	When specifying the tray for 2 chapters consecutively in the chapters mode and the 1-side to 2-side duplex mode, the first page of the second chapter is printed on the back side of the last page of the first chapter if the number of pages in the first chapter is odd.
4	Productivity improvement when using LCT	The feeding timing of the LCT has been improved when changing from one tray to another within the LCT.
5	Improvement of “B4: registration” paper misfeed removal	When a paper misfeed occurs at the fusing or paper exit section, the paper just fed out from the LCT stops in the registration roller area with an accordion shape. It is difficult to remove it. So, the LCT relay clutch does not turn on when such a jam occurs, to prevent the paper stopping at the registration from becoming an accordion shape.
6	Tray 1 (tandem tray): paper mis-set detection	When only the right tray of Tray 1 is set, the machine does not check the positions of the fences, so that even if paper is incorrectly installed and the fences are not at the closing positions, the bottom tray is lifted up. It should be checked and the “Please re-set papers” message should be displayed.
7	SC398 just after turning on a new CD-R/RW	When a new CD-R/RW is turned on with the following conditions, SC398 is displayed. • The CD-R/RW is the new model MP7122SE. There is no problem with the model MP7040. • There is media in the CD-R/RW. • The CD-R/RW and engine are turned on, in that order. - Instruction to customers - Please instruct customers with the following procedure: 1. Turn on the CD-R/RW. 2. Wait until the LED for the drive access is turned off. 3. Turn on the engine.

No.	Title	Details of Errors/Changes
8	LEF (long edge feed) in booklet and APS modes with the Plokmatic Booklet Finisher	With the Plokmatic Booklet Finisher, when the booklet and APS modes are selected, paper with the LEF direction is fed prior to SEF. This is because the engine does not recognize that the Plokmatic Booklet Finisher is installed. Solution • Set SP6902 (Booklet staple) to "Yes". • Set User Tools -> Copier/Document Server Features -> General Features -> Display/Panel Tone -> Staple Position to "Bottom". The above 2 settings make the engine recognize that "Bottom" staple means "Booklet" staple. The indication of "Bottom" on the operation panel is not changed.

The following are additions and changes in the printer mode.

No.	Title	Details of Errors/Changes
9	Danish Names of buttons are not correct	Some Danish names of buttons have been corrected. Please install the language software (A2945125F, version 8.2) at the same time.
10	Staple end message	The "Staple end. Please add staples" message has been added.
11	Full punch dust hopper message	The "Punch dust hopper is full. Please throw it away" massage has been added.
12	Finisher shift mode	A message to set the shift mode to "for each job and copy set", "for each job", or "no shift", has been added to the SP mode.

Software Version: 8.3: A2945609A/A2945269A (US), Sum check: 5299
A2945659A/A2945269A (EU), Sum check: 01FF

Corrections (Ver. 8.2 to 8.3)

No.	Title	Details of Errors/Changes
1	Default setting in SP1902-4 (Web Near End Setting) (A294-II/A295-II only)	The default setting of SP1902-4 for the new A294-II/A295-II models is 90% for US and 86% for Europe/Asia.
2	300 dpi print from the document server (out of specifications)	600 dpi images are printed out from the document server when 300 dpi images are stored using the EFI controller and PCL language. The specification is that 300 dpi prints are allowed in the direct print mode. As a special solution, the software has been changed to allow 300 dpi images out from the document server. However, there are limitations that abnormal images appear when using stamps.

No.	Title	Details of Errors/Changes
3	Paper jam in the 2nd copy set with duplex, 2-position staple, and rear cover modes	A paper jam occurs in the 2nd set of copies when using the duplex, 2-position staple, and rear cover modes. The jam location number is 62 (Relay sensor (stay on)). e.g. A jam occurs under the following conditions: ● Number of originals: 6 sheets (A4/LT long edge feed) ● Duplex: 1 side to 2 sides ● Staple: 2 positions ● Cover sheet: Back cover (blank) ● Number of copies: 5 sets

Reissued: 17-Oct-01

Model: Bellini	Date: 16-Oct-01	No.: RA294050a

RTB Correction

The items in bold italics have been added.

Subject: Front Side Fence Broken			Prepared by: M. Matsuda
From: Technical Services Dept., GTS Division			
Classification:	☐ Troubleshooting	☐ Part information	☒ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

SYMPTOM

The Front Side Fence of the Tandem Tray is damaged.

CAUSE

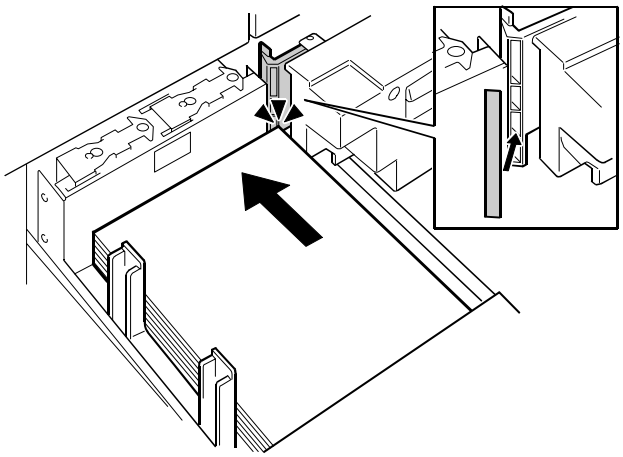
The customer sets the paper in the left tray incorrectly (in cases where the right tray is still being used for copying).

Detailed Description (see illustration below).

After the paper stack is shifted from the left tray to the right tray, the customer may open the left tray to load more paper. At this time, if the paper is not set flush against the left side, a gap is created between the **paper and the Left End Fence**. In this condition, the right rear of the paper stack will hit the hollow portion of the Front Side Fence when the tray is pushed in. The excess load on the fence causes it to bend inward, which can impede the bottom plate from lifting up.

Solution

Attach a mylar ***(A2946713)*** to the hollow portion of the Front Side Fence. This will ensure that the paper stack does not hit and damage the fence, even if the paper is set incorrectly.



Model: Bellini	Date: 16-Oct-01	No.: RA294050a

RCL (Japan) Production (A294/A295 I)

MODEL NAME	V/Hz	DESTINATION	CODE	SERIAL NO.
Lanier 5485AG	240/60	USA, Canada, S. America	A294-14	Service part only
Savin 2085DP Gestetner 3285	240/60	USA, Canada, South America	A294-15	Service part only
Ricoh Aficio 850	240/60	USA, Canada. South America	A294-17	Service part only
Gestetner 3285 Nashatec D485 Rex Rotary 2885	220,230, 240/50,60	Europe, etc.	A294-22	Service part only
Lanier 5485AH	220,230, 240/50,60	Europe	A294-24	Service part only
Infotec 4850 MF	220,230 240/50,60	Europe, etc.	A294-26	Service part only
Ricoh Aficio 850	220,230, 240/50,60	Europe etc.	A294-27	Service part only
Lanier 5505AG	240/60	USA, Canada, S. America	A295-14	Service part only
Savin 2105DP Gestetner 32105	240/60	USA, Canada, South America	A295-15	Service part only
Ricoh Aficio 1050	240/60	USA, Canada, South America	A295-17	Service part only
Gestetner 32105 Nashatec D4105 Rex Rotary 28105	220,230, 240/50,60	Europe, etc.	A295-22	Service part only
Lanier 5505AH	220,230, 240/50,60	Europe	A295-24	Service part only
Infotec 4105MF	220,230 240/50,60	Europe, etc.	A295-26	Service part only
Ricoh Aficio 1050	220,230, 240/50,60	Europe, etc.	A295-27	Service part only

Model: Bellini	Date: 16-Oct-01	No.: RA294050a

RCL (Japan) Production (A294/A295 II)

MODEL NAME	V/Hz	DESTINATION	CODE	SERIAL NO.
Lanier 5685	240/60	USA, Canada, S. America	A294-54	L0651100001
Savin 2585	240/60	USA, Canada, South America	A294-55	H3610900084
Ricoh Aficio 1085	240/60	USA, Canada. South America	A294-57	H3610900298
Gestetner 8502 Nashatec 8505 Rex Rotary 8508	220,230, 240/50,60	Europe, etc.	A294-62	H36110xxxxx
Lanier 5685	220,230, 240/50,60	Europe	A294-64	L0651100126
Infotec 4850e MF	220,230 240/50,60	Europe, etc.	A294-66	4K8101xxxx
Ricoh Aficio 1085	220,230, 240/50,60	Europe etc.	A294-67	H3611000213
Lanier 5705	240/60	USA, Canada, S. America	A295-54	L066110xxxx
Savin 25105	240/60	USA, Canada, South America	A295-55	H3710900120
Ricoh Aficio 1105	240/60	USA, Canada, South America	A295-57	H3711000001
Gestetner 10502 Nashatec 10505 Rex Rotary 10508	220,230, 240/50,60	Europe, etc.	A295-62	H3711000103
Lanier 5705	220,230, 240/50,60	Europe	A295-64	L0661100001
Infotec 4105e MF	220,230 240/50,60	Europe, etc.	A295-66	4K7101xxxx
Ricoh Aficio 1105	220,230, 240/50,60	Europe, etc.	A295-67	H3711000134

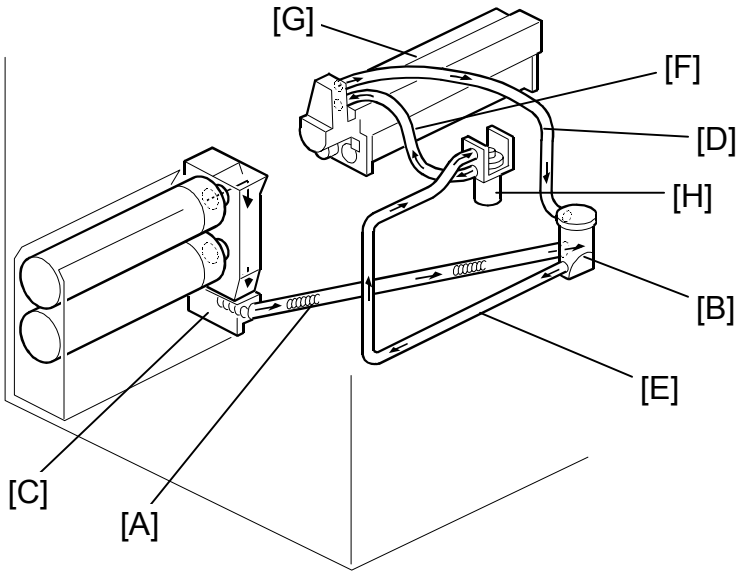
Model: Bellini	Date: 8-Jan-02	No.: RA294051

Subject: SC592/SC495	Prepared by: S.Orita
From: Technical Services Dept., GTS Division	

Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☒ Other ( )		

In regards to SC592, we issued RTB No. RA294048. For additional information, this RTB remarks on the service maintenance and enhancement kit installation.

1. When the upgrade kit is installed or when the toner transport path is maintained.



Parts	Remarks	Possible Failure	Note
Toner Transport Coil [A] (A2943477) Toner Transport Tube [A] (A2943475)	Do not remove the toner transport tube [A] while the toner supply cylinder [B] is in.	The toner transport coil [A] may be damaged.	Remove the toner supply cylinder [B] first.
	Do not deform the toner transport tube [A] and coil [A] while the coil rotates to remove the toner in the tube.	The toner transport coil [A] may be damaged.	Use either a vacuum cleaner or a vinyl bag.

Parts	Remarks	Possible Failure	Note
Toner Transport Coil [A] (A2943477) Toner Transport Tube [A] (A2943475)	Do not strongly grasp the toner transport tube [A] and coil [A] while the coil rotates to remove the toner in the tube.	The toner transport coil [A] may be damaged.	Use either a vacuum cleaner or a vinyl bag.
	Firmly install the toner transport tube [A] on the toner transport coil case [C] when replacing.	Toner leakage may occur if the toner transport tube [A] is out of the case [C] when the toner in the tube is blocked.	The gap between the edge of tube [A] and the case [C] should be less than 1 mm.
Toner Supply Cylinder [B] (A2943485)	Do not clean the toner supply cylinder [B] using a vacuum cleaner when any of the air tubes [D, E, F] are connected between the development unit and the cylinder.	The toner in the toner hopper [G] flows backwards and the air pump [H] and/or the tubes [D, E, F] may be blocked with toner.	Remove the development unit first.
Air Tubes (A2943070 [D], A2943071 [E], A2943072 [F])	Clean the toner in the air tubes [D, E, F].	The air pump [H] and/or tubes [D, E, F] may be blocked with toner when doing SP2207-2 (Toner bank toner supply).	---
	Do not clean the air tubes [D, E, F] using a vacuum cleaner when the tubes are connected to the development unit.	The air pump [H] and/or tubes [D, E, F] may be blocked with toner.	Remove the development unit first.
	When the air tube [D] (A2943070) is removed from the toner supply cylinder [B], do not lean the tube downward. Keep the tube upward.	Toner may fall out from the tube.	(This is not related to SC592.)
Air Pump (A2943062)	Clean the toner in the air pump [H].	The air pump [H] and/or tubes [D, E, F] may be blocked with toner when performing SP2207-2 (Toner bank toner supply).	---

Parts	Remarks	Possible Failure	Note
Air Pump (A2943062)	Do not remove the air pump lid [H].	The power of the pump [H] is lowered, causing the pump and/or tubes [D, E, F] to be blocked with toner.	---
	Do not perform the output check for the air pump [H] when the development unit is out.	Toner scattering may occur.	(This is not related to SC592.)

2. When a PM (Preventive Maintenance) is performed.

	Notice	Possible Failure	Note
Toner Filter (A2942114) Dust Filter (A2942123)	Replace the toner filter every PM (300K). Clean the dust filter every PM (300K).	The temperature in the machine increases and lumps of toner may be generated in the cleaning unit. This may cause the air pump and/or tubes to block up with toner.	---

3. When other units are in trouble.

	Notice	Possible Failure	Note
Developer (Carrier) Fall	Clean the toner transport path when carrier falls from the development unit.	The air pump and/or tubes may be blocked with carrier.	---
Cleaning Unit Blocking	Clean the toner transport path when the cleaning unit is blocked with lumps of toner.	The air pump and/or tubes may be blocked with lumps of toner.	---

Reissued: 7-Feb-02

Model: Bellini	Date: 10-Aug-01	No.: RA294047a

RTB Correction

The items in bold italics have been corrected or added.

Subject: Operation panel blanks out and SC990			Prepared by: M.Matsuda
From: Technical Services Dept., GTS Division			
Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☒ Other ( )		

The updated parts of this MB re-issue are in ***bold/italics*** below.

Symptom:

The operation panel blanks out and SC990 is displayed.

Cause:

As the original is being scanned, more current is consumed and the voltage of the 5V line fluctuates. If this fluctuation exceeds a certain level, the clock signal of the LCD controller IC becomes unstable and the LCD goes blank. At the same time, electrical noise affects the SDRAM data, resulting in SC990.

Note: This does not occur on machines with a controller interface. This is because the interface board circuit has the effect of increasing the capacitance of the SICU capacitors for the 5V line.

Solution:

Countermeasure for mass-production units:

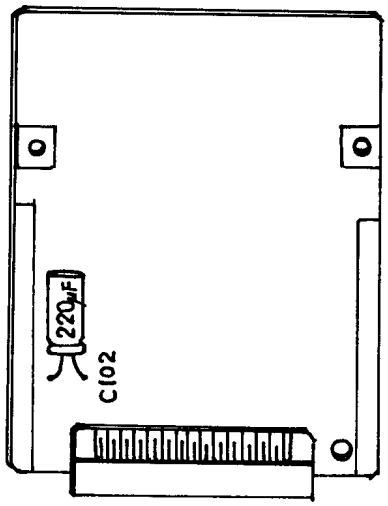
Increase the capacitance of the SICU capacitors for the 5V line, preventing the voltage fluctuation. An MB will be issued as soon as possible.

Reissued: 7-Feb-02

Model: Bellini	Date: 10-Aug-01	No.: RA294047a

Countermeasure for field units:
An additional capacitor on the SICU circuit.
Since it would be difficult to install the additional capacitor in the field, we had the manufacturer prepare custom interface boards, which contain a 220 micro F capacitor and are stripped of all unrelated components.

These custom boards have already been procured and registered as service parts (P/N A2949520). It can now be ordered from vour local SPC as a countermeasure for SC990.



Reissued: 18-Mar-02

Model: Bellini	Date: 15-Feb-02	No.: RA294052a

RTB Reissue

Areas in ***bold italics*** have been revised or added (page 1 and 2 only).

Subject: Toner Transport Screw Lock			Prepared by: M.Matsuda
From: Technical Services Dept., GTS Division			
Classification:	☐ Troubleshooting	☐ Part information	☒ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

Two other RTBs concerning SC592 have already been issued (#48, 51). This RTB has been issued for solutions to toner transport coil bending caused by a coil motor lock.

SYMPTOM

The toner transport coil is bent, causing the drive motor in the Toner Bank Unit to lock and SC592 to be displayed.

CAUSE

After toner gradually builds up inside the toner transport tube, it inhibits the turning of the transport coil, which places an excessive torque on the coil. This in turn can cause the coil to bend.

SOLUTION

To ensure this symptom does not occur, the following 3 countermeasures have been applied to the production line (see MB: MA294122).

As a preventative measure, we recommend that ***all of the following three*** countermeasures also be applied to machines in the field. ***After applying them, make sure to update the engine main firmware to V8.5 or newer.***

1. Replace the Pulley-36Z (AB030542) with a Torque Limiter *(A2943424).*

See 'Replacement Procedure' on next page.

Mechanism of the torque limiter

Under normal operating conditions, the torque limiter transmits drive from the motor to the timing belt. Under abnormal conditions such as those described above, the torque limiter cuts off the drive, preventing excessive torque from being applied to the coil.

In addition, the torque limiter also performs the function of the pulley, and the two are virtually identical in shape and size (interchangeability X/O).

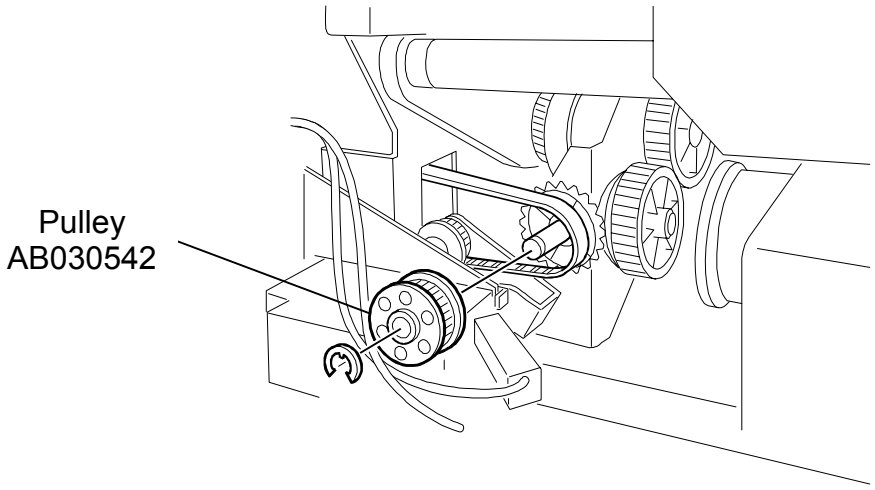
Model: Bellini	Date: 15-Feb-02	No.: RA294052a

Pulley → Torque Limiter Replacement Procedure

Note: Before doing Step 2, turn the machine main power OFF.

1) Remove the Pulley - 36Z (AB030542) (1 retaining ring).

   Note: Make sure that the belt tension spring does not come out of place.



2) Install the Torque Limiter ***(A2943424)*** (1 retaining ring).

Model: Bellini	Date: 15-Feb-02	No.: RA294052a

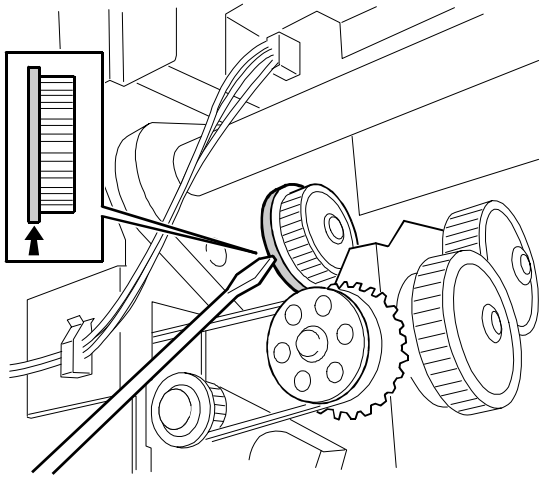
2. Lubricate the edge of Gear - 32Z (A2943391)

Note: If the machine already has the new Cam Stopper (A2943195) installed, there is no need to lubricate the edge of the gear.

Apply lubrication to the edge of Gear - 32Z (A2943391) to reduce the friction between this edge and the Spring Shaft Cam (A2943390).

Grease: Silicone Grease G-501 (52039502)

Note: Make sure to lubricate only the gear's edge, not the surface.



Model: Bellini	Date: 15-Feb-02	No.: RA294052a

3. Change the routing of the Air Pump Motor tubes.

See the procedures on last 2 pages.

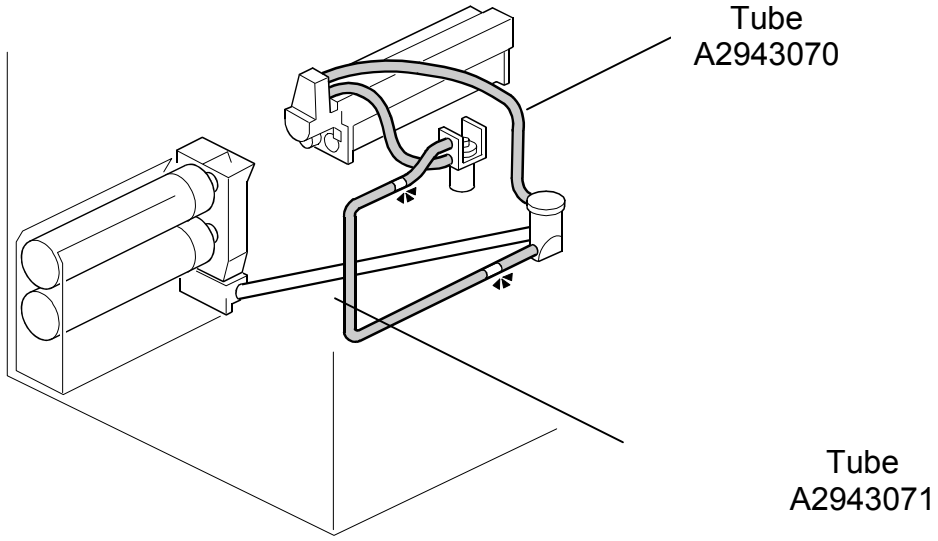
Tube Descriptions

Route	Before countermeasure		After countermeasure		Remarks
	Part Number	Length	Part Number	Length	
Between toner hopper and toner transport joint	A2943070	740 mm	A2943071	1000 mm	
Between toner transport joint and air pump motor	A2943071	1000 mm	**A2943073 (New part)**	1150 mm	**A2943073: New parts**
Between air pump motor and toner hopper	A2943072	170 mm	A2943072	170 mm	**No change**

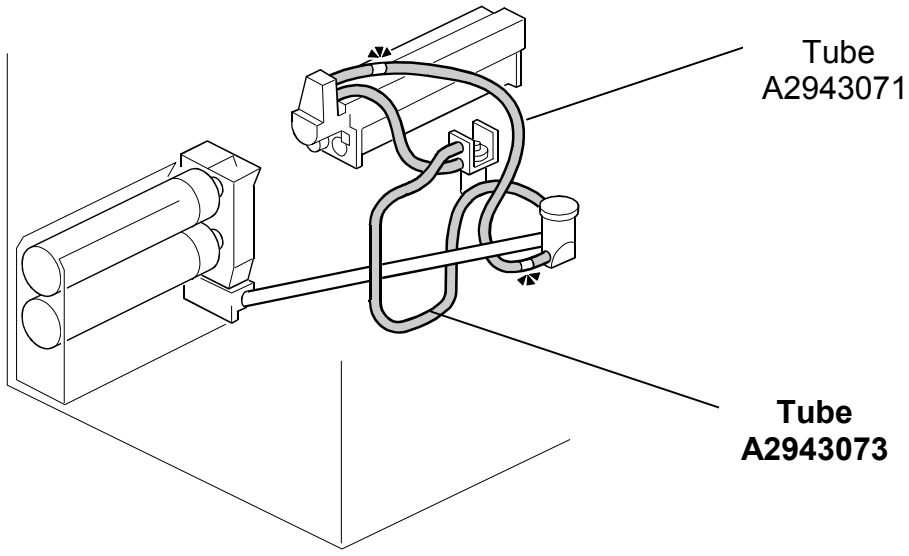
Model: Bellini	Date: 15-Feb-02	No.: RA294052a

Airflow route layout

Old Layout - before countermeasure



New Layout - after countermeasure



Model: Bellini	Date: 15-Feb-02	No.: RA294052a

Tube Rerouting Procedures

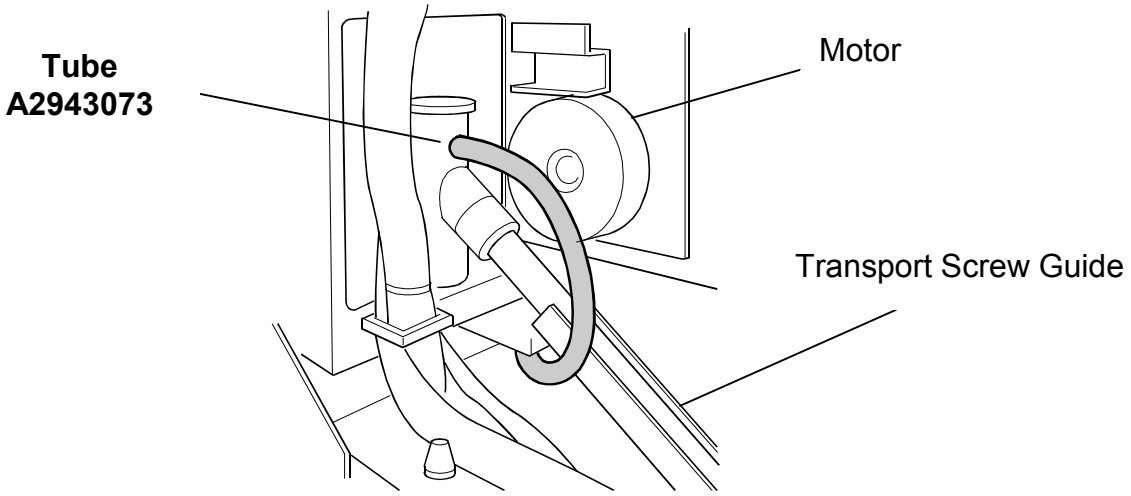
- Between the transport joint and Air Pump Motor

1) Remove Tube – 6x9x1000 (A2943071) that runs between the Air Pump Motor and the lower joint of the transport joint.

   Note: This tube will be reinstalled later, in the procedure on the next page.

2) Install Tube – 6x9x1150 (**A2943073**) between the Air Pump Motor and the **upper joint** of the transport joint.

   Note: To ensure that the Tube does not contact the motor, lead it under the Transport Screw Guide as shown below.

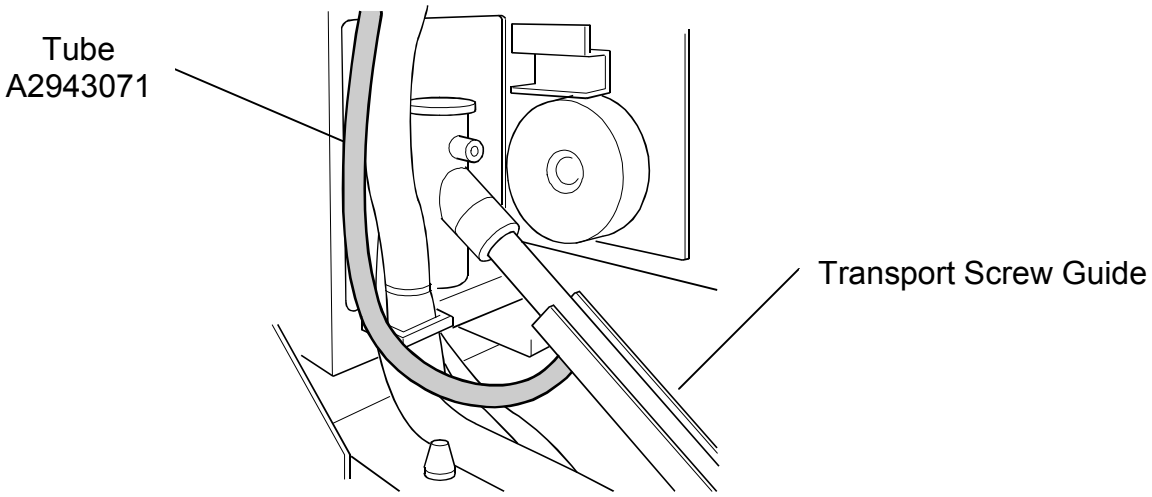


Model: Bellini	Date: 15-Feb-02	No.: RA294052a

- Between the Toner Hopper and the transport joint

1) Remove Tube – 6x9x740 (A2943070) that currently runs between the Toner Hopper and the upper joint of the transport joint.
2) Clean the inside of Tube A2943071 (removed in the previous procedure).
3) Re-install Tube A2943071 so that it runs between the Toner Hopper and the **lower joint** of the transport joint.

Note: Lead the Tube under the Transport Coil Guide as shown below.



MODEL NAME	V/Hz	DESTINATION	CODE	SERIAL NO.
Lanier 5485AG	240/60	USA, Canada, S. America	A294-14	Service part only
Savin 2085DP Gestetner 3285	240/60	USA, Canada, South America	A294-15	Service part only
Ricoh Aficio 850	240/60	USA, Canada. South America	A294-17	Service part only
Gestetner 3285 Nashatec D485 Rex Rotary 2885	220,230,240/50,60	Europe, etc.	A294-22	Service part only
Lanier 5485AH	220,230,240/50,60	Europe	A294-24	Service part only
Infotec 4850 MF	220,230,240/50,60	Europe, etc.	A294-26	Service part only
Ricoh Aficio 850	220,230,240/50,60	Europe etc.	A294-27	Service part only
Lanier 5505AG	240/60	USA, Canada, S. America	A295-14	Service part only
Savin 2105DP Gestetner 32105	240/60	USA, Canada, South America	A295-15	Service part only
Ricoh Aficio 1050	240/60	USA, Canada, South America	A295-17	Service part only
Gestetner 32105 Nashatec D4105 Rex Rotary 28105	220,230,240/50,60	Europe, etc.	A295-22	Service part only
Lanier 5505AH	220,230,240/50,60	Europe	A295-24	Service part only
Infotec 4105MF	220,230240/50,60	Europe, etc.	A295-26	Service part only
Ricoh Aficio 1050	220,230, 240/50,60	Europe, etc.	A295-27	Service part only

RCL (Japan) Production (A294/A295 II)

MODEL NAME	V/Hz	DESTINATION	CODE	SERIAL NO.
Lanier 5685	240/60	USA, Canada, S. America	A294-54	L065202xxxx
Savin 2585	240/60	USA, Canada, South America	A294-55	H3620200257
Ricoh Aficio 1085	240/60	USA, Canada. South America	A294-57	H3620200001
Gestetner 8502 Nashatec 8505 Rex Rotary 8508	220,230,240/50,60	Europe, etc.	A294-62	H3620200367
Lanier 5685	220,230,240/50,60	Europe	A294-64	L0652020001
Infotec 4850e MF	220,230,240/50,60	Europe, etc.	A294-66	4K80220001
Ricoh Aficio 1085	220,230,240/50,60	Europe etc.	A294-67	H3620100112
Lanier 5705	240/60	USA, Canada, S. America	A295-54	L0662030027
Savin 25105	240/60	USA, Canada, South America	A295-55	H3720200128
Ricoh Aficio 1105	240/60	USA, Canada, South America	A295-57	H3720200001
Gestetner 10502 Nashatec 10505 Rex Rotary 10508	220,230,240/50,60	Europe, etc.	A295-62	H3720200166
Lanier 5705	220,230,240/50,60	Europe	A295-64	L0662020001
Infotec 4105e MF	220,230240/50,60	Europe, etc.	A295-66	4K70220001

Reissued: 22-Apr-02

Model: Bellini	Date: 10-Aug-01	No.: RA294047b

RTB Correction
Entire contents revised

Subject: Operation panel blanks out and SC990			Prepared by: S.Orita
From: Technical Services sec. Service Planning Dept.			
Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☒ Other ( )		

The entire contents of this RTB have been changed as follows:

SYMPTOM
Operation Panel blanks out and SC990 is displayed.

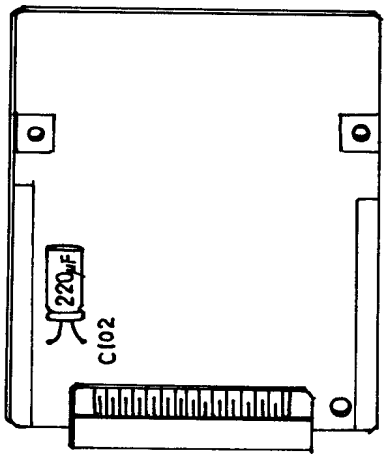
CAUSE
As the original is being scanned, more current is consumed and the voltage of the 5V line fluctuates. If this fluctuation exceeds a certain level, the clock signal of the LCD controller IC becomes unstable and the LCD goes blank. At the same time, electrical noise affects the SDRAM data, resulting in SC990.

SOLUTION - Mass production units
The capacitance of the SICU capacitors for the 5V line was increased, preventing the voltage fluctuation. In accordance with this change, the P/N for the SICU board has been changed as shown below (see MBA294102 and the table below for the cut-in S/N).

Old part number	New part number	Description
A2945600	A2945605	SICU Board – 240V USA
A2945650	A2945655	SICU Board – 230V

ACTION – Field machines
Attach the newly registered “Custom Interface Board”, which contains a 220 micro F capacitor and is stripped of all unrelated components, to the following machines in the field:
1. Those containing an older SICU board (above old P/N or previous).
2. Those without a controller interface.

Note: Attaching this board makes it <u>unnecessary</u> to replace the SICU board.



Part number	Description
A2949520	**Custom Interface Board**

Model: Bellini	Date: 10-Aug-01	No.: RA294047b

Cut-in Serial Numbers for the above Mass Production Modification

MODEL NAME	V/Hz	DESTINATION	CODE	SERIAL NO.
Lanier 5685	240/60	USA, Canada, S. America	A294-54	From first production L0651050001
Savin 2585	240/60	USA, Canada, South America	A294-55	From first production H3610500154
Ricoh Aficio 1085	240/60	USA, Canada. South America	A294-57	From first production H3610500001
Gestetner 8502 Nashatec 8505 Rex Rotary 8508	220,230, 240/50,60	Europe, etc.	A294-62	From first production H3610500094
Lanier 5685	220,230, 240/50,60	Europe	A294-64	From first production L0651060038
Infotec 4850e MF	220,230 240/50,60	Europe, etc.	A294-66	From first production 4K80510001
Ricoh Aficio 1085	220,230, 240/50,60	Europe etc.	A294-67	From first production H3610500002
Lanier 5705	240/60	USA, Canada, S. America	A295-54	From first production L0661050001
Savin 25105	240/60	USA, Canada, South America	A295-55	From first production H3710500087
Ricoh Aficio 1105	240/60	USA, Canada, South America	A295-57	From first production H3710500001
Gestetner 10502 Nashatec 10505 Rex Rotary 10508	220,230, 240/50,60	Europe, etc.	A295-62	From first production H3710500053
Lanier 5705	220,230, 240/50,60	Europe	A295-64	From first production L0661050006
Infotec 4105e MF	220,230 240/50,60	Europe, etc.	A295-66	From first production 4K70510001
Ricoh Aficio 1105	220,230, 240/50,60	Europe, etc.	A295-67	From first production H3710500003

Reissued: 4-Jun-02

Model: Bellini	Date: 21-May-02	No.: RA294053a

RTB Correction

Subject: Developer Leakage			Prepared by: M.Matsuda
From: Technical Services sec. Service Planning Dept.			
Classification:	☒ Troubleshooting	☐ Part information	☒ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

SYMPTOM

Developer may leak from the gap between the front/rear side plates and bottom aluminum case of the development unit.

CAUSE

Seals in these areas do not provide sufficient shielding.

SOLUTION – Mass Production

To maximize development unit sealing, the material of the seals has been changed. Consequently, the P/N for the development unit has been changed from A2943105 → **A2943106** (See MB No. MA294124 and the table below for cut-in S/N).

Note: These seals cannot be replaced in the field – see field action below.

ACTION – Field Machines

For machines in the field that contain the older development unit (A2943105), attach 2 seals to the lower half of the unit – 1 to the front and 1 to the rear side (see the illustration below).

Note: Attaching these seals makes it unnecessary to replace the entire development unit.

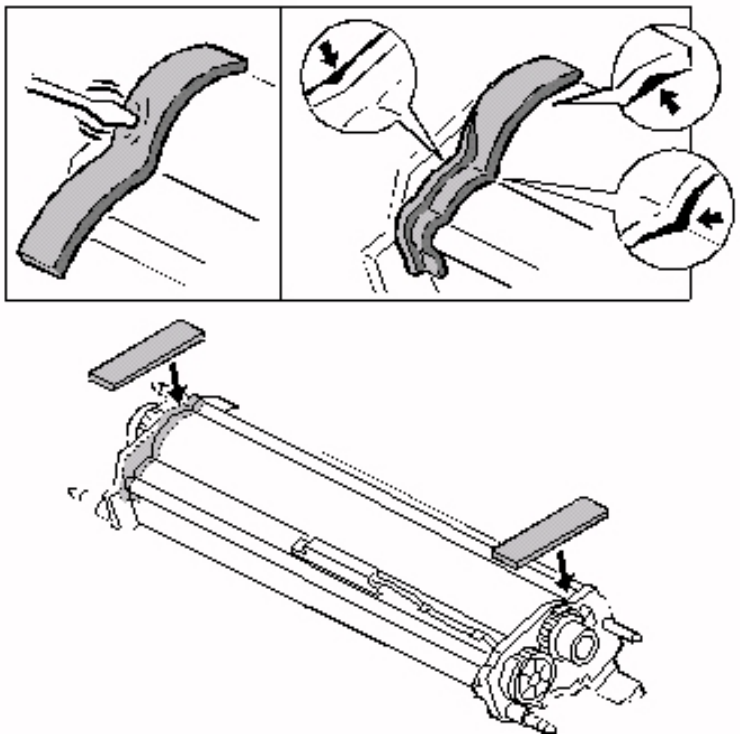
Description
Lower Development Seal Kit -15X100X3

Note:

Since each machine requires 2 seals, this kit contains 2 seals.

IMPORTANT:
As shown below, press the seals firmly against the attachment surface with a screwdriver or similar tool, making sure that **there are no gaps remaining** between the seals and attachment surface.

Model: Bellini	Date: 21-May-02	No.: RA294053a



Cut-in Serial Numbers for the above mass production modification:

MODEL NAME	V/Hz	DESTINATION	CODE	SERIAL NO.
Lanier 5685	240/60	USA, Canada, S. America	A294-54	L065202xxxx
Savin 2585	240/60	USA, Canada, South America	A294-55	H3620200257
Ricoh Aficio 1085	240/60	USA, Canada. South America	A294-57	H3620200142
Gestetner 8502 Nashatec 8505 Rex Rotary 8508	220,230,240/50,60	Europe, etc.	A294-62	H3620200367
Lanier 5685	220,230,240/50,60	Europe	A294-64	L0652020001
Infotec 4850e MF	220,230,240/50,60	Europe, etc.	A294-66	4K80220001
Ricoh Aficio 1085	220,230,240/50,60	Europe etc.	A294-67	H3620200436
Lanier 5705	240/60	USA, Canada, S. America	A295-54	L0662030027
Savin 25105	240/60	USA, Canada, South America	A295-55	H3720200128
Ricoh Aficio 1105	240/60	USA, Canada, South America	A295-57	H37203xxxxx
Gestetner 10502 Nashatec 10505 Rex Rotary 10508	220,230,240/50,60	Europe, etc.	A295-62	H3720200166
Lanier 5705	220,230,240/50,60	Europe	A295-64	L0662020001
Infotec 4105e MF	220,230240/50,60	Europe, etc.	A295-66	4K70220001
Ricoh Aficio 1105	220,230,240/50,60	Europe, etc.	A295-67	H3720200201

Model: Bellini	Date: 10-Jun-02	No.: RA294054

Subject: Printer Controller (G588) System Firmware History	Prepared by: S.Orita
From: Technical Services sec. Service Planning Dept.	

Classification:			
	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☒ Other (Information)		

Modification history of the Printer Controller EB-105 and 105e (G588) system firmware.

Firmware Modification History

1. EB-105

1. System firmware version: 1.0.0

Patch File	Issue(s)
pdfpatch	Win 2000/98: Problems when printing downloaded PDF or PS files.

2. System firmware version: 1.0.1

Note: This version includes the patch (pdfpatch) for Version 1.0.0 and it was released as Version 1.0.1.

Patch File	Issue(s)
1-1TIC1	MSU full for Duplex print jobs.
1-21749	It takes a long time to RIP a document.
1-2HDXH	Jam problem: Part of the print image is missing after recovery.
1-2MK1N_eng	PCL5/300dpi: Print image is not correct after storing at the Document Server.

3. System firmware version: 1.0.2

Note: This version includes the patch (1-1TIC1, 1-21749, 1-2HDXH and 1- 2MK1N_eng) for Version 1.0.1 and it was released as Version 1.0.2

Patch File	Issue(s)
1-2U10T	Edge Smoothing and Auto Continue do not work correctly.

2. EB-105e

1. System firmware version: 1.1.5

Patch File	Issue(s)
1-3R284	DocBuilderPro: Print image is shifted after changing the print size
1-5GWOP	In the case of high volume data, the print performance gets slow during printing.

Reissued: 29-Aug-03

Model: Bellini	Date: 1-Jul-02	No.: RA294055b

RTB Reissue

The cleaning procedure described in pp. 3-4 has been revised (***bold-italic*** areas).

Subject: Toner Scattering From Development Unit			Prepared by: M.Matsuda
From: 2nd Tech Support Sec. Service Support Dept.			
Classification:	☐ Troubleshooting	☐ Part information	☒ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

This RTB is released to announce an additional cleaning procedure required for the entire doctor gap area. This is a supplement to RA294032 which describes the procedure to clean the edges only.

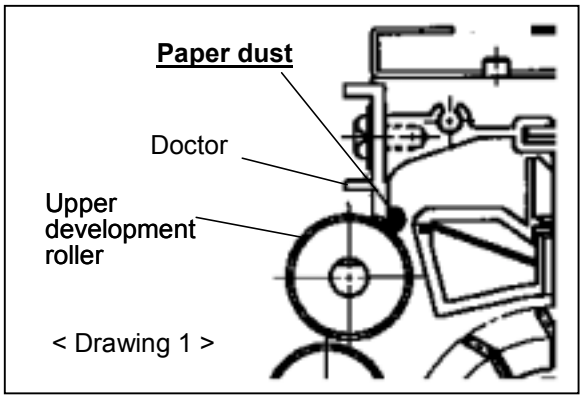
SYMPTOM

- Toner scatters from both ends of the Development Unit.
- White lines on printed images.

CAUSE

Paper dust gathers at the front and rear sides of the doctor blade gap in the development unit, causing the gap to become narrower which decreases the airflow from the lower development casing.

SOLUTION



< Drawing 1 >

Model: Bellini	Date: 1-Jul-02	No.: RA294055b

FIELD ACTION

CAUTION: Do not remove the doctor blade or loosen any screws on the development unit, as this will make it impossible to readjust the doctor gap in the field and leads to image quality problems. ***If the blade has already been removed or screws loosened, contact the key person for this model at the Ricoh regional headquarters in your field.***

Follow the procedure described on the next page to clean the entire length of the doctor blade, especially in the following situations:

- At every PM visit, or whenever replacing the developer

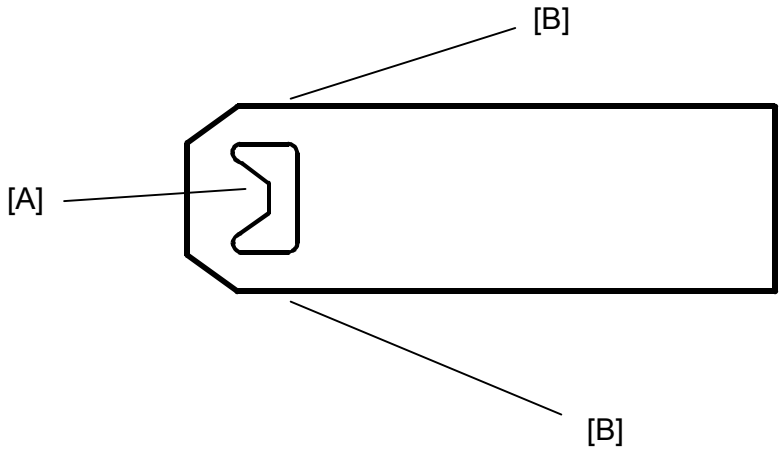
  Note: To prevent occurrences with paper containing a large amount of paper dust, if the customer is using such paper, please perform the cleaning more often than required by the PM cycle.
- When toner scatters or leaks from the development unit.
- When low image density lines appear, especially at the edges of paper

The special tool used for this procedure has been modified (see MB # MA294176).

Part Number:	*Description:*
A2949561	*Paper Dust Cleaner Ver2.0- 5pcs/set*

Note: Since the tool is made of flexible plastic, make sure that it is completely flat before using it.

[A]: Leaf that cleans the rear side of the blade
[B]: Edges that clean between the blade and upper development roller



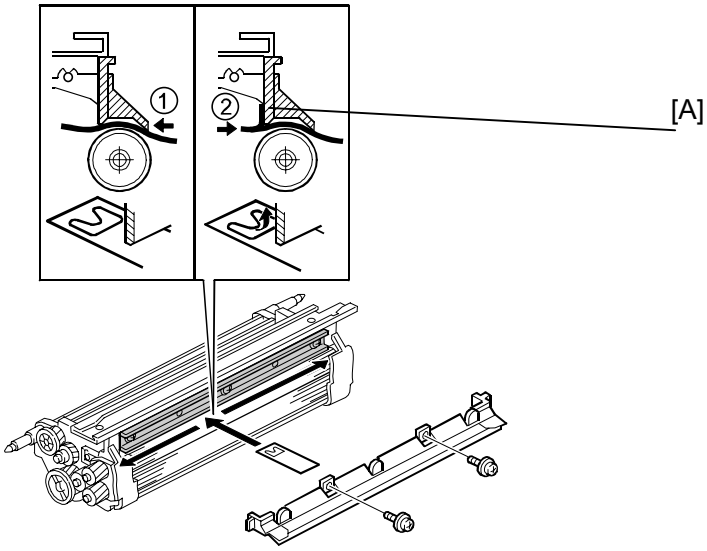
Model: Bellini	Date: 1-Jul-02	No.: RA294055b

Cleaning Procedure

Caution: Switch the machine off before staring this procedure.

Note: If the machine shows this symptom at short intervals, we recommend that you clean the entire toner supply path before performing this procedure so that you can remove all the toner with paper dust from the toner supply path.

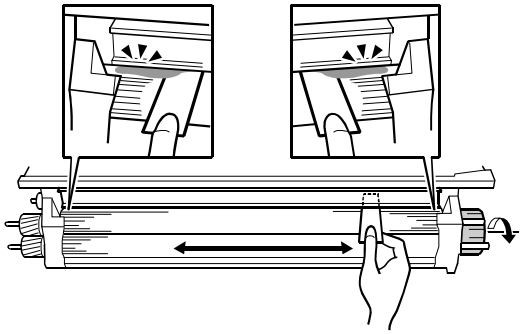
1. Remove the development unit.
2. Remove the developer and entrance seal (2 screws) from the development unit.
3. Insert the tool into the gap between the doctor blade and upper development roller past [A], then pull it back gently so that the leaf hooks on the back of the blade.



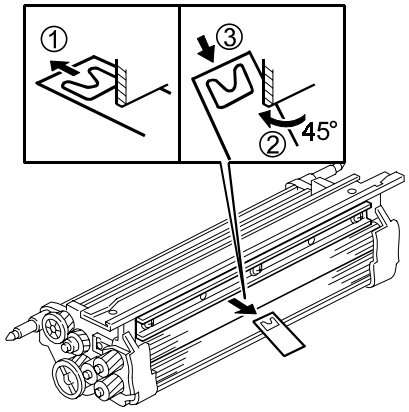
Model: Bellini	Date: 1-Jul-02	No.: RA294055b

4. Slide the tool left and right several times, all the way the to the left and right ends of the gap.

   Caution: To avoid bending the leaf, making it difficult to remove, do not pull it toward you with too much force. Just maintain a steady, even pressure as you move it from side to side.



5. Turn the tool about 45 degrees to either side as shown below then remove it.



6. Rotate the development roller about 10 mm (about ½") toward you, then vacuum away any paper dust or developer that falls away from the roller.

   Note: Be sure to collect all the dust and developer, and do not allow it to touch the development roller surface again.

7. Repeat Steps 3 to 6 about 5 times.
8. Hold the development unit upside-down, gently shake the unit to remove any remaining paper dust, then vacuum-clean the work area.

Model: Bellini	Date: 7-Oct-02	No.: RA294056

Subject: Firmware Modification for SICU and BICU	Prepared by: M. Matsuda
From: Technical Services sec. Service Planning Dept.	

Classification:			
	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☒ Other ( )		

Modification History from version 8.4

Software Version: 8.4: A2945609B/A2945269B (US), Sum check: 5BCC
A2945659B/A2945269B (EU), Sum check: 1861

[Corrections] (Ver. 8.3 to 8.4)

No.	Title	Details of Errors/Changes
1	Malfunction of the slave machine with more than 16 slip sheets	When making Tandem copies with 16 or more slipsheets, the slave machine stalls and resets.
2	SC955 with original set mode	SC955 occurs when all the following conditions are met: ➢ Duplex copies of duplex originals ➢ Sort (stapling on or off) ➢ Large-sized paper (B4, A3) ➢ Original is set in upside-down (rear side facing up).
3	SC related to the charge system	Black copies are sometimes printed out when the following SC codes occur in the middle of a job. The software has been modified so that the machine immediately stops in these cases, avoiding this symptom: SC300, 301, 303, 304, 345.
4	Portuguese	Portuguese display language added (copier only).

Software Version: 8.5: A2945609C/A2945269C (US), Sum check: ADB9
A2945659C/A2945269C (EU), Sum check: 6A4E

[Corrections] (Ver. 8.4 to 8.5)

No.	Title	Details of Errors/Changes
1	Operation Change for Air Pump Motor	To increase the reliability of a previous modification to ensure proper operation of the toner collection coil (torque limiter/tube rerouting), the air pump ON time following coil drive OFF has been increased from 1s → 5s. **Note**: Please update to this version or newer on the Bellini mainframes mentioned in RTB RA294052a.

Model: Bellini	Date: 7-Oct-02	No.: RA294056

Software Version: 8.6: A2945609D/A2945269D (US), Sum check: 12CD
A2945659D/A2945269D (EU), Sum check: CF62

[Corrections] (Ver. 8.5 to 8.6)

No.	Title	Details of Errors/Changes
1	Jam recovery program change	Due to a bug in the jam recovery program on the 85cpm model, the printing speed drops to 12ppm following jam recovery for a 16 or 19 jam with A4 LEF.
2	SP5924-1, 2 settings are not applied to the sub machine.	When two machines are used in tandem with SP5924-1 and 2 both set to "1" (ON) in the main machine, these settings are applied to the sub machine.

Model: Bellini	Date: 6-Nov-02	No.: RA294057

Subject: Troubleshooting for Dirty Background	Prepared by: S. Orita
From: Technical Services sec. Service Planning Dept.	

Classification:			
	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

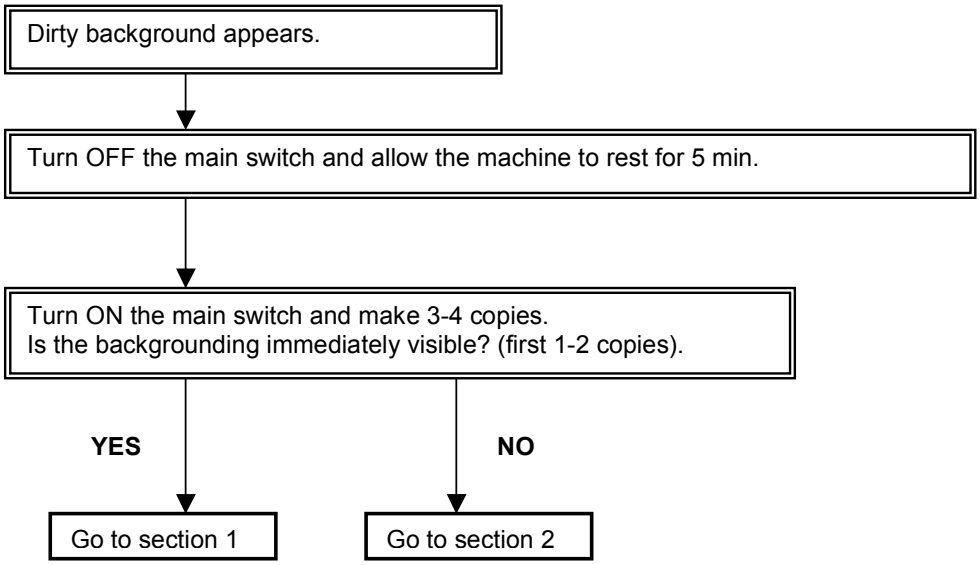
SYMPTOM

Dirty background.

CAUSE

Though there are several possible causes for dirty background, the following troubleshooting flowcharts can be used to determine the root cause and the best course of action.

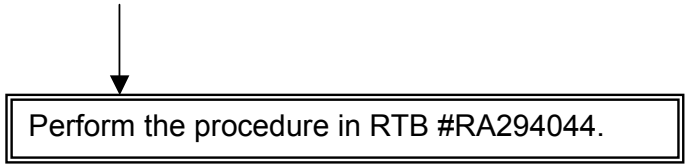
TROUBLESHOOTING



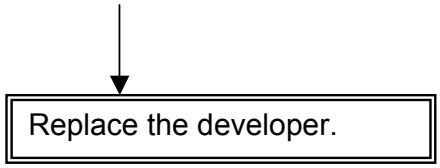
Note: If backgrounding is not immediately visible but then shows up a few copies later, go to section 2.

Section 1

Possible Cause 1: Paper fibers have become mixed with the recycled toner in the development unit.

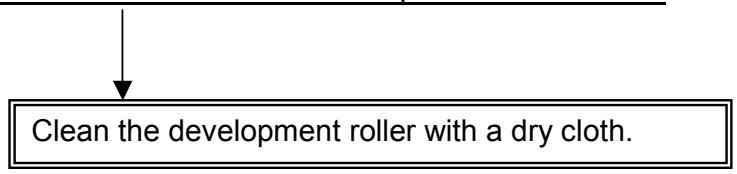


Possible Cause 2: Deterioration of developer



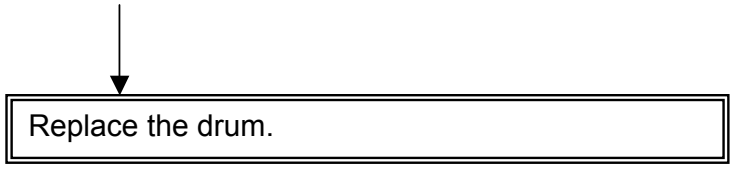
Section 2

Possible Cause 1: Toner adhered to the development roller surface



If backgrounding still occurs after cleaining the roller, see Possible Cause 2:

Possible Cause 2: Drum fatigue (specific lot no. range, specific usage conditions)



- Affected lot numbers:
  - -Lot # on the rear flange of the drum: from XXX2073XXXX to XXX2165XXXX
  - -Lot # on the drum box (6 drums/box): from XXX2074XXXX to XXX2168XXXX

- Specific usage conditions:
  - -High-volume, i.e. monthly CV of 300K or more.
  - -Long copy/print jobs of 3K to 10K
  - -Only occurs on the Bellini series, most commonly on the C/D versions and enhanced A/B units.

Note:

1. "Affected drums": Drums from the above mentioned lot number ranges used under these conditions have a greater tendency to develop drum fatigue. Also, presently, these are the only known lot numbers and conditions for drum fatigue.

2. Although the same drum is used on the Mojito/SP5 series, this issue does not affect these models, as the cleaning systems and bias voltages of the Mojito/SP5 prevent the symptom.

Supplementary information:

Theory behind OPC electrostatic fatigue

a) Greater tendency to occur with higher electrical field intensity:

The electrical field intensity of the OPC layer, a general electrical property of the drum, is measured as E=v/m, where “v” is the charge voltage applied to the drum and “m” is the thickness of the OPC layer in nanometers. The entire OPC layer is given a negative charge during charging, and when exposed to light, the negative ions interact with the positive ions of the other drum layers, and the charge in that area is neutralized, attracting toner to that area. However, the higher the electrical field intensity of the drum, the greater tendency there is for the negative ions on the OPC layer to discharge, even when not exposed to the laser beam. This would then cause toner to be attracted to this area and show up on the output as a "sandy" background.

And, as E=v/m, the higher the charge voltage applied to the drum (v), the higher E would become, i.e. the greater the tendency for backgrounding to occur. Similarly, the lower the OPC layer thickness (m), the greater the tendency for backgrounding. This is why as the OPC layer gets worn down, i.e. thickness decreases, backgrounding is more likely.

b) Greater tendency to occur with continued use:
With continued use, i.e. repeating the charging/exposure cycle, the tendency for backgrounding increases due to electrostatic fatigue of the drum. Therefore the more down time the machine is allowed between operations, the less likely backgrounding is to occur.

c) Rule of thumb:
As a general rule of thumb, the longer the total down time for a given period, the more sheets need to be fed before backgrounding occurs.
With the way most end users actually run the machines in the field, i.e. using the machine during the business day only, turning it off at night, it is necessary to do a continuous run of 10K sheets before backgrounding would occur. Therefore such a situation would only occur with high-duty end users.

Model: Bellini	Date: 6-Nov-02	No.: RA294058

Subject: Printer Controller (B336) System Firmware History	Prepared by: S.Orita
From: Technical Services sec. Service Planning Dept.	

Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☒ Other (Information)		

This is a continuation of RTB #RA294036, and contains the modification histories of the system firmware of Printer Controller Type 850 (B336).

As there are two types of firmware, please be sure to use the appropriate one for each product brand.

Destination	Part Number	Product Codes/Brands
Generic	B336 5800	B336-01, -10, -15, -17
		Ricoh, Savin, Gestetner, Nashuatec, Rexrotary, Infotec
Lanier	B336 5814	B336-14
		Lanier

Firmware Version and Part Number Suffix for Each Destination

Destination	Generic	Lanier
Part Number	B336 5800	B336 5814
Version	Suffix	Suffix
0.49	D	C
0.51	E	D
0.54	F	E
0.58	G	F

Version 0.49

Destination	Generic	Lanier
Part Number	B336 5800 D	B336 5814C

1. Vertical lines do not appear on Excel file prints.

2. Auto tray switching does not function with letter/legal mixed jobs on the AS400.

3. Extra blank prints are printed out from SAP.

4. Maximum number of pages for stapling on the Finisher 3000 did not follow specification.

5. The fax counter has been added to the MIB.

Version 0.51

Destination	Generic	Lanier
Part Number	B336 5800 E	B336 5814 D

1. The product ID of the new Bellini (A294 II and A295 II) for the MIB has been added.

2. Image shift setting can now be performed in SP mode.
   Note: Engine firmware v8.3 or later is required.

3. Auto continue can be enabled or disabled for the staple end or punch waste full conditions.

4. prtInputName and prtOutputName for the MIB are now only in English.

5. Problem when printing cover pages from a Macintosh.
   Note: PostScript Firmware v1.34 or later is required.

6. "Dot Edge Parameter" has been moved from SP mode to User Tools.
   Note: Engine firmware v8.3 or later is required.

Version 0.54

Destination	Generic	Lanier
Part Number	B336 5800 F	B336 5814 E

1. Supports Wide A4 printing. Engine firmware v8.3 or later is required.

2. Supports A4/Letter function. Engine firmware v8.3 or later is required.

3. Problem when printing cover pages from a Macintosh.

4. SC2002 occurs when a print job using a User Code is sent immediately after the power is turned off and on.

5. SC2001 occurs when the "USTATUS TIMED" and "USTATUSOFF" commands are sent.

6. The image comes out as a blank page when printing from UNIX.

Version 0.58

Destination	Generic	Lanier
Part Number	B336 5800G	B336 5814 F

1. Supports Edge to Edge Print.

2. SC2002 occurs when printing Excel files with a certain macro.

3. Printing does not resume after removing the paper from the full exit tray.

4. A job created with User Code #513 does not print even though the LCD says "Printing".

5. With Windows NT/2000, the machine cannot print a letter size document for which a Separator Page is selected.

6. Some data is not printed at the correct position on the page with AS/400.

7. Symbol sets 13U, 9N and 4U have been newly added. Also, symbol sets 5M and 12J have been added to existing Euro fonts.

Reissued: 30-Apr-03

Model: Bellini	Date: 17-Mar-03	No.: RA294059b

RTB Correction

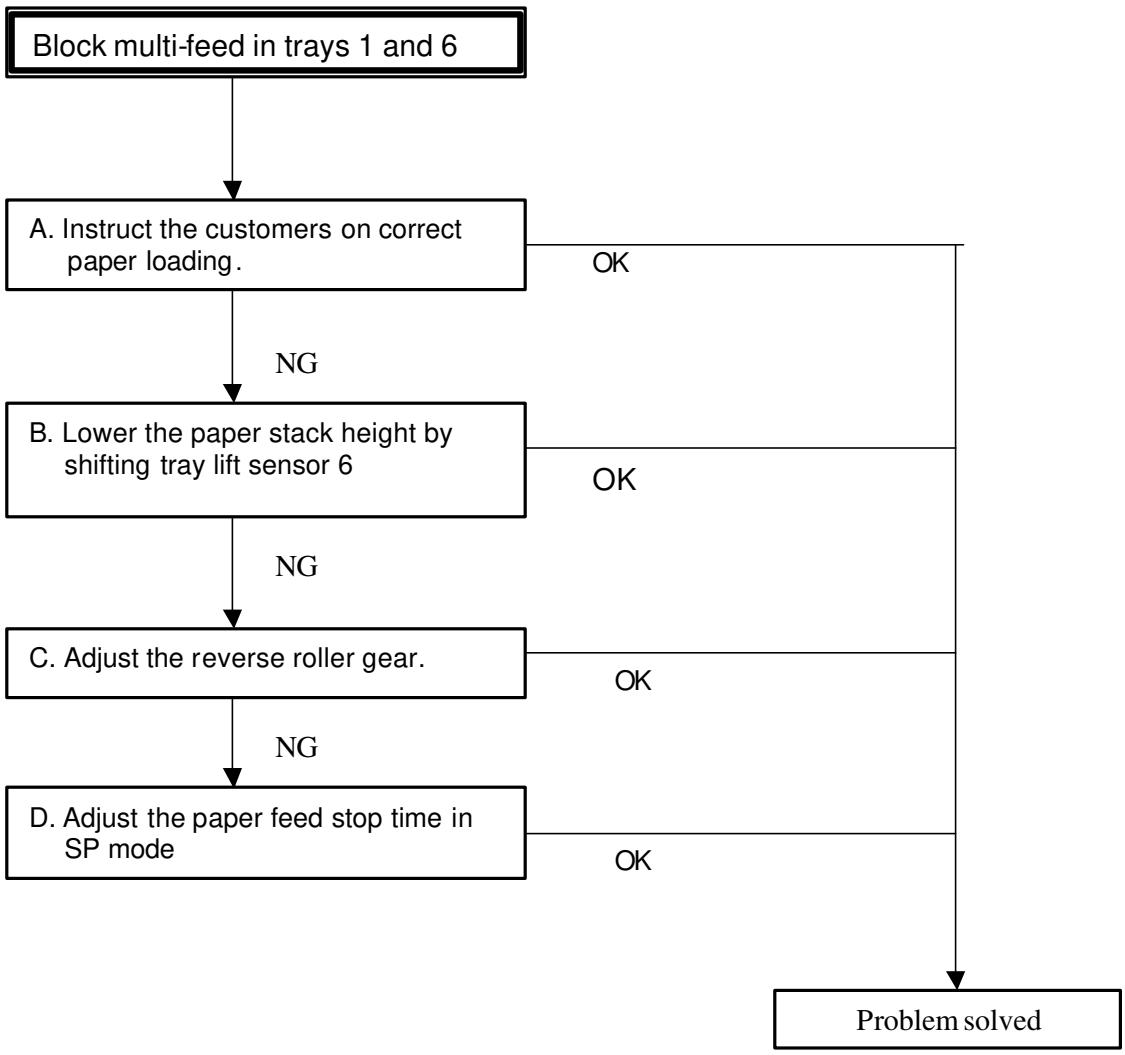
The items in bold italics have been corrected or added.

Subject: Solutions for Block Multi-feeding in Trays 1 and 6		Prepared by: M.Matsuda	
From: 2nd Tech Support Sec. Service Support Dept.			
Classification:	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

This RTB shows the troubleshooting for block multi-feeding in Trays 1 and 6.

Flow Chart:

Please follow the flow chart as shown below:



Model: Bellini	Date: 17-Mar-03	No.: RA294059b

A. Paper loading

1) Fan the leading edges of the top and bottom 50-100 sheets of the paper ream gently.
2) As shown in Fig. 1, remove the lowermost sheet of the top ream, as well as the topmost sheet of the lower ream.
3) Then, load the paper in tray.

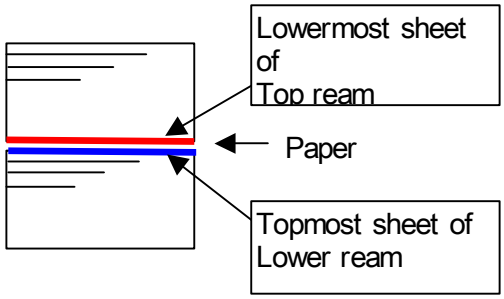


Fig.1

B. Lower the paper stack height by shifting the tray lift sensor.

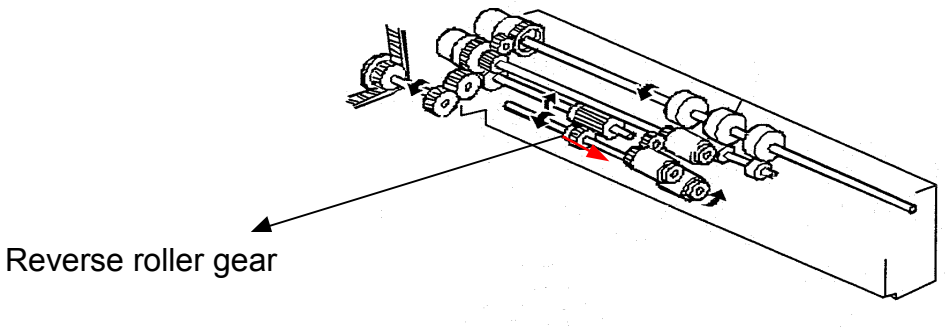
(See RTB No. RA2940035 for details.)

C. Adjust the reverse roller gear

Increase the separation pressure, preventing blockages from forming in the feed and separation nip:

Move the reverse roller gear toward the separation roller, until it contacts the D-cut section as shown in fig. 2.

Note: This is only effective for block multi-feeds, i.e. not for multi-feeds of just a few sheets.



Model: Bellini	Date: 17-Mar-03	No.: RA294059b

D. Adjust the paper feed stop time in SP mode

We have prepared firmware (SICU_BCU: V8.8) to change the paper feed stop time with the following SP mode as a countermeasure for block multi-feed for the machines in the field with this problem.

New SP mode:

SP 1907-001 to 006 (Paper feed stop time adjustment) [0-100/**0**/1x10 ms]

Note: For the correct setting, multiply the step x 10 ms

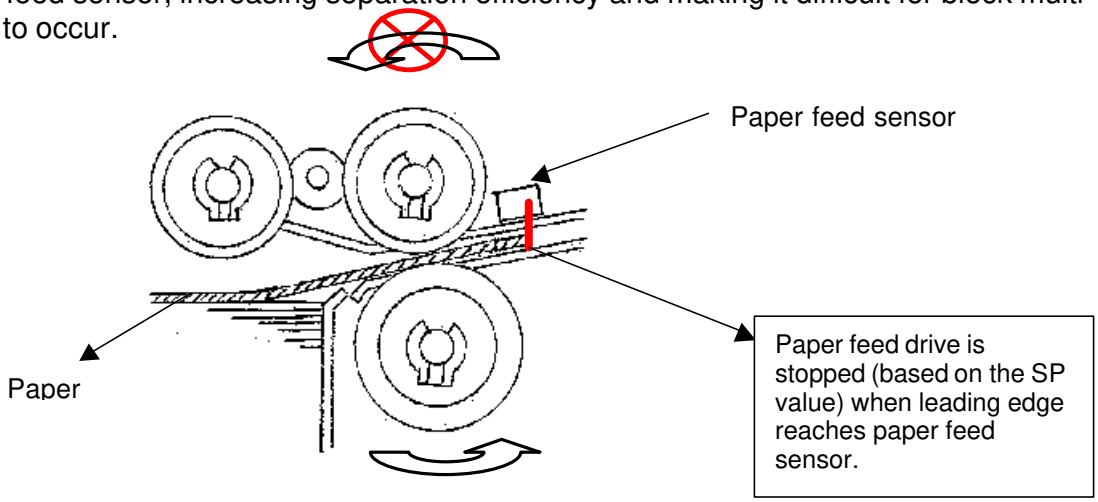
Example: 1 x 10 = 10 ms (input "1")

5 x 10 = 50 ms (input "5")

20 x 10 = 200 ms (input "20")

1907	Paper Feed Timing Adjustment		Specifies when to stop the feed clutch once a sheet of paper reaches the feed sensor and switches it on. [0~100 / **0** / 10 ms] *This SP mode is used as a multi-feed countermeasure. However, copy (print) speed is slightly reduced.*
	001	Tray 1	
	002	Tray 2	
	003	Tray 3	
	004	Tray 4 (LCT Tray 1)	
	005	Tray 5 (LCT Tray 2)	
	006	Tray 6 (LCT Tray 3)	

If the setting is not 0, the machine stops the paper when the leading edge reaches the paper feed sensor, increasing separation efficiency and making it difficult for block multi-feeds to occur.



Procedure:

1. Increase the value of SP1907-001 to 006 in steps of 1 x 10 ms, then check the result.
2. If it did not succeed, increase by 10 ms again. Change in 10 ms steps until you eliminate this problem.

Note: As a side effect, this will reduce the CPM.

Model: Bellini-C1	Date: 7-Apr-03	No.: RA294060

Subject: Fuzzy borders between white and solid areas	Prepared by: M. Matsuda
From: 2nd Tech. Support Sec. Service Support Dept.	

Classification:	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

SYMPTOM

Fuzzy borders between large white text and solid image areas, or large solid text and white backgrounds.

CAUSE

When printing out these types of originals, static electricity causes the toner on the border areas to “bleed over” into the surrounding area after being attracted to the drum.

SOLUTION

- **Perform the following SP adjustments:**

Model	Aficio 850/1050 (Bellini-C1a, b)	Aficio 1085/1105 (Bellini-C1c, d)
Solution	• Change SP2201-4 (ID Sensor potential) from: 280v → **240**v. • Make sure SP2001-7 (Drum potential) is still at **970**v. • Change SP2201-1 (Development bias) from: 530v → **620**v.	• Change SP2201-4 (ID Sensor potential) from: 280v → **240**v. • Make sure SP2001-7 (Drum potential) is still at **850**v. • Change SP2201-1 (Development bias) from: 650v → **700**v. • Change SP3903 (Vd Correction interval) from: 100K to **990**K.

- **Clean the development roller more frequently then the PM interval**

As a side-effect of increasing the development bias, the development roller tends to become dirty with toner and cause dirty background. Therefore, in addition to the above adjustment, please be sure to clean the development roller more frequently than the PM interval.

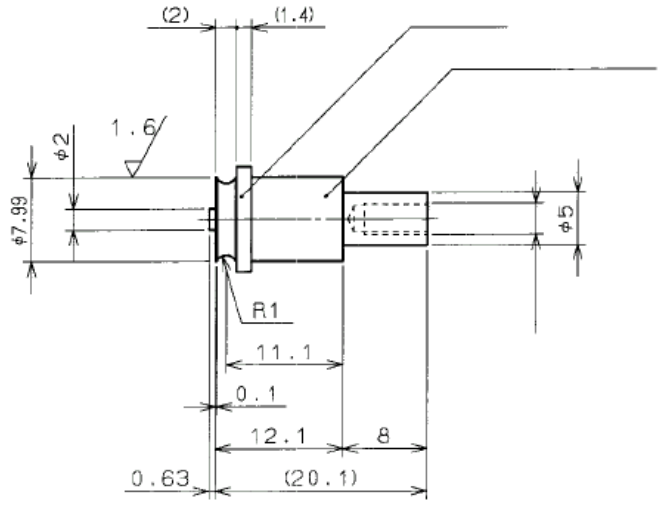
Model: Bellini	Date: 25-Apr-03	No.: RA294061

Subject: Service Parts of Punch Heads	Prepared by: S. Orita
From: 2nd Tech Support Sec. Service Support Dept.	

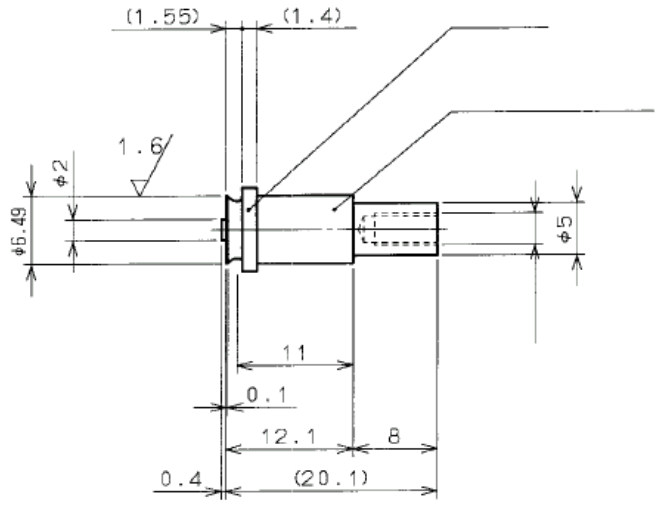
Classification:	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

The following punch heads have been registered as service parts for replacement in the field, so that the entire punch unit does not have to be replaced when the punch heads fail:

P/N A8129501 (Punch Head – 8 mm) --- North America Version
P/N A8129502 (Punch Head - 6.5mm) --- European Version



P/N A8129501



P/N A8129502

Note:

1. To ensure a smoother punch head/receiver operation, the service part punch head is smaller than that fitted in new production machines. This creates a better match between the two, as both experience gradual wear during the course of operation.

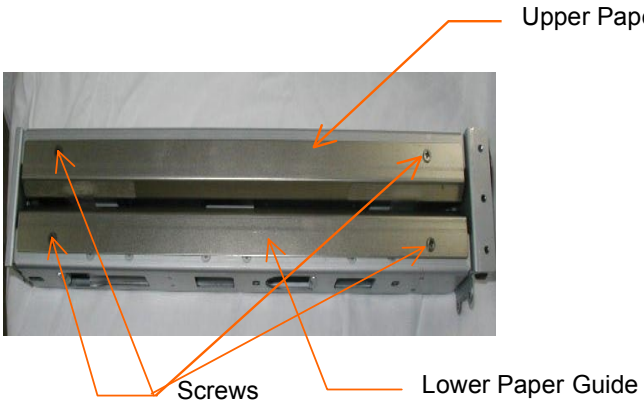
   Visual distinction: Service part punch head is gold (Production head is silver.)

2. If the problem persists even after replacing the punch head, we recommend replacing the entire punch unit.

3. The punch heads can only be supplied as service parts for the Bellini-C1, because for other models such as the B-C2, additional precise adjustments are required.

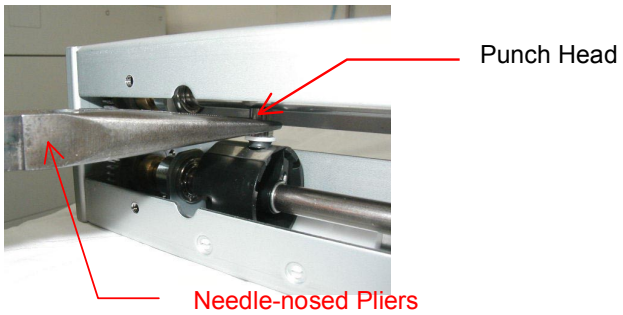
Punch Head Replacement Procedure

1. Remove the upper and lower guides (4 screws).

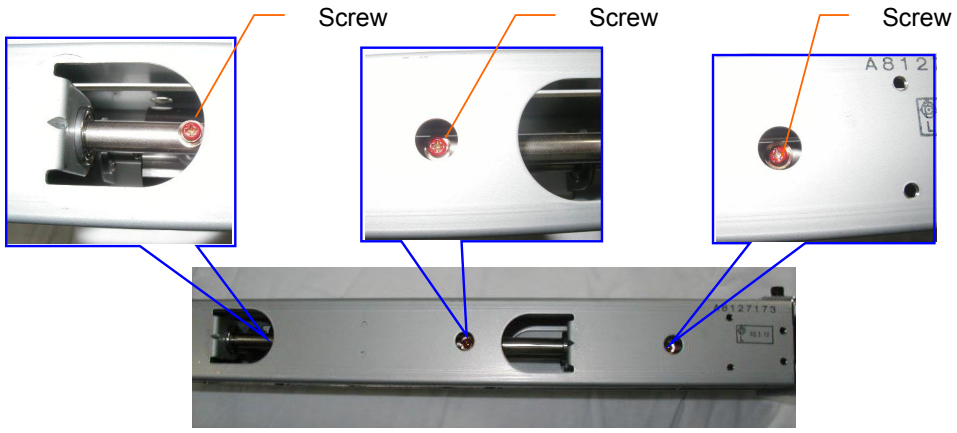


2. Rotate the drive gear until the punch head and punch head receiver are aligned.

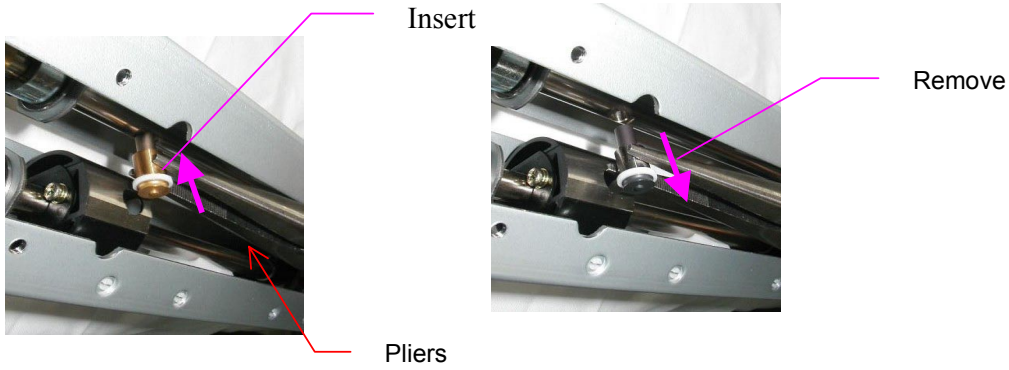
3. Remove the punch head, holding the head with a pair of needle-nosed pliers (1 screw per head).



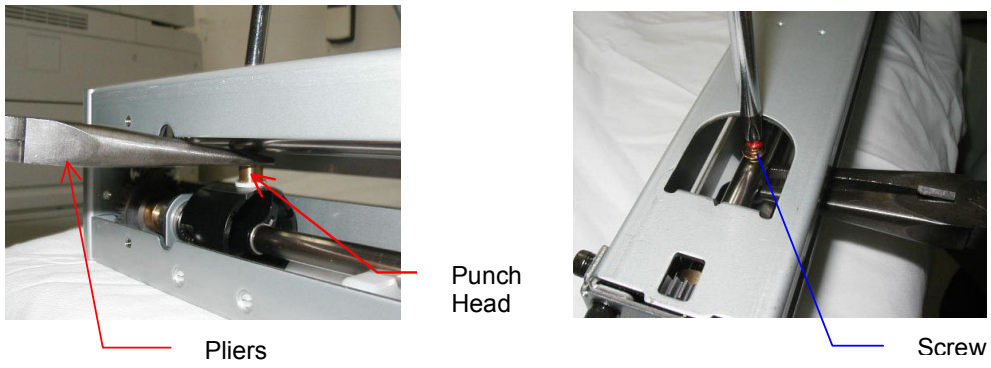
NOTE: a. Do not touch the punch head with bare hands.
b. Do not remove any other screws.



4. Insert the new punch head.

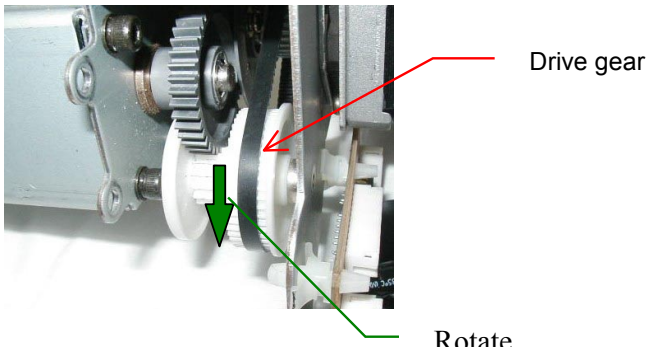


5. Secure the new punch head in place, holding it with a pair of needle-nosed pliers (1 screw).



NOTE: a. Do not touch the punch head with bare hands.
b. Make sure to attach the head perpendicular (90 degrees) to the shaft.
c. Do not remove any other screws.

6. Reinstall the paper guides (4 screws).
7. Rotate the drive gear manually and confirm that the punch head/receiver mechanism functions smoothly (that the two are properly aligned with one another).



Note: Do not forcibly rotate the gear. If it is difficult to rotate, replace the entire punch unit.

Model: Bellini	Date: 3-Jul-03	No.: RA294062

Subject: Troubleshooting for Light Image	Prepared by: M.Matsuda
From: 1st Tech. Support Sec. Service Support Dept.	

Classification:			
	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

This bulletin has been issued as a troubleshooting guide for light images on the Bellini-C1a/b/c/d (Aficio 850, 1050, 1085, 1105).

As there are several causes that can lead to light images, please use the table on the next page to identify the specific conditions and then apply the action recommended.

Troubleshooting for Light Copies

In the **Action** column, please perform all items listed.

			Action		Notes/Remarks	Cause of Symptom
	Specific type, conditions	**Check points If Yes, take action in right column**	**C1-a,-b (Aficio 850/1050)**	**C1-c,-d (Aficio 1085/1105)**		
1	Light copies w/low number of sets per job (Type 1)	● SP2223: Vt > 3.3 ● SC340 (triggered when Vt > 4.0)	● Perform SP2801 (TD sensor initial setting). ● Change the value of SP2201-4: 280v to 240v	(same as a/b)	On the C1: When SP2967 is ON, both the TD sensor and toner concentration adjustments are performed during process control.	When the machine is left unused for an extended period, it shifts into a low-ID control mode, which causes the ID on the outputs to temporarily appear light when the machine is then used again. This is not developer deterioration. Note: When the machine is left unused like this, the TD sensor output can rise above 4V, at which time the machine shifts to a fixed-amount toner supply mode.
2	Light copies w/low number of sets per job (Type 2)	● SP3103-3: Vsp > 0.6	● Set SP2969: ON OR Change the value of SP2506-2: 30 to 1 ● Change the value of SP2201-4 (ID Sensor potential): 280v to 240v	● Change the value of SP2974 (Toner supply interval): 1 to 0 ● Set SP2969: ON OR Change the value of SP2506-2: 30 to 1 **Note**: Changing the value of SP2506-2 to 1 will decrease machine productivity. ● Change the value of SP2201-4 (ID Sensor potential): 280v to 240v	For machines primarily used for low volume jobs, and occasionally for continuous printing, the charge on the developer can change, which can cause the toner concentration to fluctuate. This fluctuation can be minimized by frequently performing ID sensor patterns. With machines which are not used primarily for long, continuous jobs, turning SP2629 ON should be enough to control the symptom. However for extra latitude, SP2506-2 can be set to 1. Please note that in this case, productivity with continuous copy jobs will decrease.	
3	Light copies w/high image coverage ratios	● SP3103-3: Vsp > 0.6	● Change the value of SP2201-4 (ID Sensor potential): 280v to 240v	● Change the value of SP2974 (Toner supply interval): 1 to 0 ● Change the value of SP2201-4 (ID Sensor potential): 280v to 240v		Image coverage ratio is high, and the toner supply system cannot compensate quickly enough.
4	Light copies w/high number of sets per job of low-coverage images	**Note:** In such a case, Vt should be > 3.3 (SP2223), but this can occur even when Vt is normal.	● Replace the developer **Note:** ● Instead of replacing the developer, disabling toner recycling or decreasing the cleaning interval (SP2506-2) can be effective in increasing developer yield.	(same as a/b)	This is effective for ID fluctuations during continuous copy runs.	The toner supplied to the development unit goes unused and is continually mixed inside the unit. This decreases its flow and development performance.

			Action		Notes/Remarks	Cause of Symptom
	Specific type, conditions	**Check points If Yes, take action in right column**	**C1-a,-b (Aficio 850/1050)**	**C1-c,-d (Aficio 1085/1105)**		
5	Image density drop in solid areas at edges	● Shift the original on the glass so that the edge solid images are brought to the center of the copy. OR Take sky shot copies	● Change the value of SP2201-4 (ID Sensor potential): 280v to 240v. ● Keep SP2001-7 (Vd) at 970v. ● Increase the value in SP2201-1 (Development bias): 530v to 620v . If this is not improved enough, try again with SP2201-4 at 200v, and SP2201-1 at 660v.	● Change the value of SP2201-4 (ID Sensor potential): 280v to 240v ● Increase the value of SP2001-7 (Vd): 850v to 900v ● Increase the value of SP2201-1 (Development bias): 650v to 700v	As a general rule, SP2001-7 and SP2201-1 should be changed together as a set.	When the original contains solid areas on its edges, farther out than the width of the toner hopper, it is difficult for the necessary amount of toner to reach these areas. In addition, paper dust accumulates more easily at the edges of the doctor gap, making it more difficult for the toner to attach there.

Model: Bellini-C1	Date: 23-Jul-03	No.: RA294063

Subject: Machine power off during copying (Reboot machine)	Prepared by: M. Matsuda
From: 2nd Tech Support Sec. Service Support Dept.	

Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☒ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

SYMPTOM

Copy counter interval reading displayed on the CRD changes to an incorrect value during a copy or print job (sometimes too slow, sometimes too fast), after which the machine stops and reboots.

CAUSE

Connector pins on the drum unit connectors are damaged, triggering a signal to be sent repeatedly from the BCU to the SICU, and the SICU reaches a processing overload.

Note:
Drum unit detection is primarily used for SP mode input checks, but previous BCU firmware versions checked for drum detection during copy/print operation.

SOLUTION

The firmware has been changed to ignore the unit detection signal.

The following firmware has been released:

Software Version: V8.10: A2945609－/A2945269－ (US), Checksum: 0E03
A2945659－/A2945269－ (EU), Checksum: 9BC1

Model: Bellini-C1/C2	Date: 31-Oct-03	No.: RB070029

Subject: Toner Scattering at rear side of the machine	Prepared by: M. Matsuda
From: 2nd Tech Support Sec. Service Support Dept.	

Classification:	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

SYMPTOM

1. Toner scattering in the rear of the machine
2. Toner scattering from the filters of the toner hopper

CAUSE

1. Toner scattering in the rear of the machine

a) Poor shielding at the connecting part between the drum cleaning unit and the toner recycling case.

b) The opening in the toner recycling case that joins with the toner collection pipe of the transfer unit is not an airtight connection.

2. Toner scattering from the filters of the toner hopper

a) Poor shielding at the connecting part between the cylinder case and the toner transport coil tube.

b) Toner clogs in the tube located between the toner hopper and the cylinder case.

SOLUTION

IMPORTANT: Check the following items before performing the solution below.

1. Check the toner filter [A] and drum filter [B], and clean or replace them as necessary.
   Note: The toner filter should be replaced every 300k (Bellini-C1) or 350k (Bellini-C2).

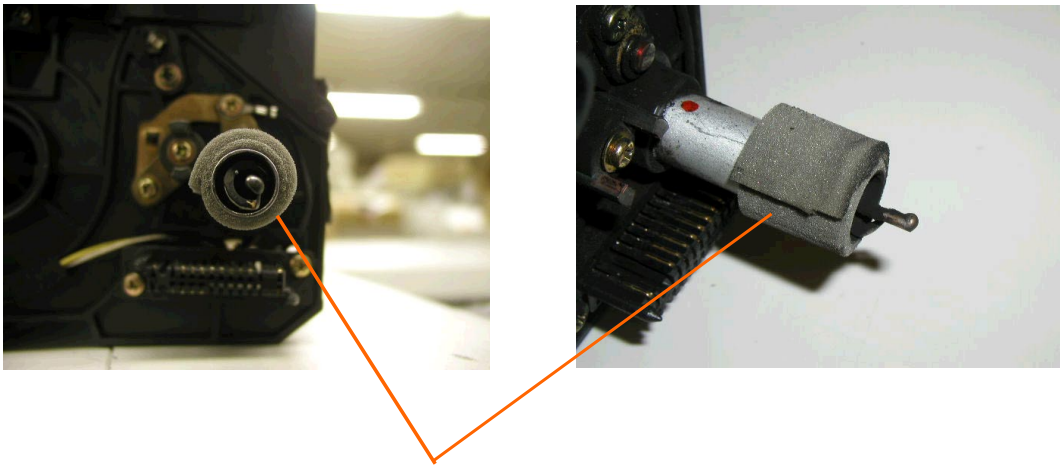
   The above cleaning/replacements are also effective in maintaining proper machine internal temperature, which is key in minimizing scattering since slight rises in temperature can cause scattering to occur more easily.

2. If toner scattering still occurs, clean the toner transport path.

Please perform the following if the symptom still occurs, even after performing the above checks.

1. Toner scattering in the rear of the machine

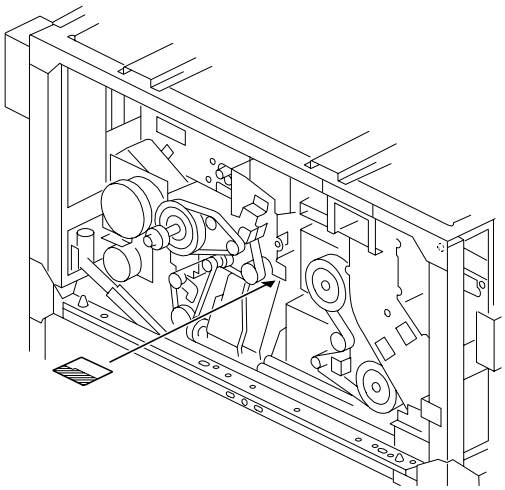
a) Attach the new seal (B0703617) to the drum cleaning unit pipe as shown below, in order to seal the connection between the drum cleaning unit and toner recycling case.

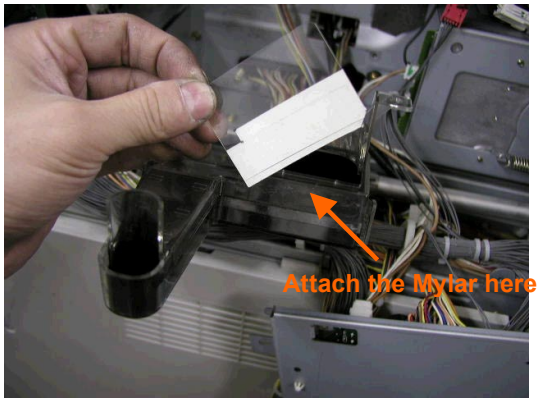


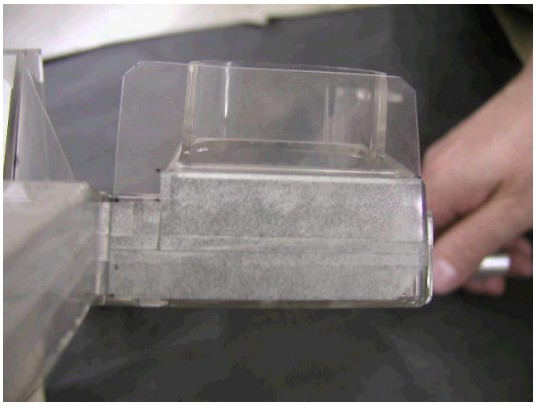
Seal: B0703617

b) Attach the Mylar (B0703618) to the top of the toner recycling case as shown below. This will prevent toner scattering at the connection between the transfer unit toner collection pipe and recycling case.

Attaching position: Rear side view

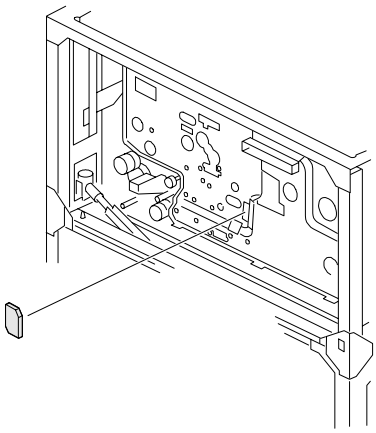






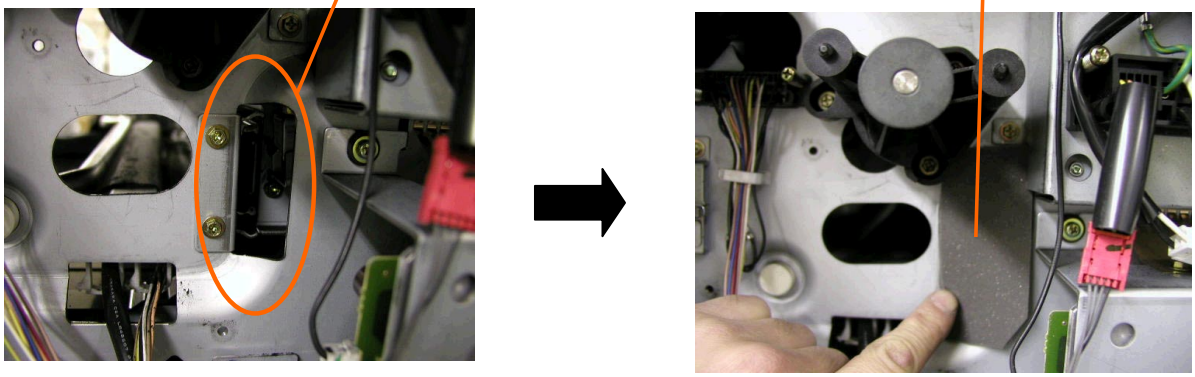
c) Attach the new seal (B0703619) as shown below to the opening in the rear side plate. This will prevent toner scattering in the fusing and duplex areas.

Rear side view



Cover this opening with the seal

Seal (B0703619)

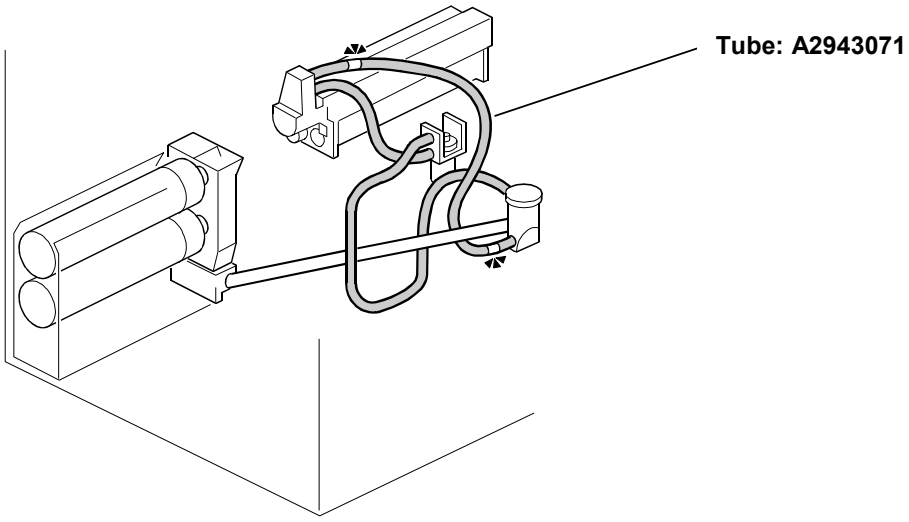


2. Toner scattering from the filters of the toner hopper

a) The material of the cylinder case seal (A2943476) has been changed to one with higher reliability (from Aug '02 production).

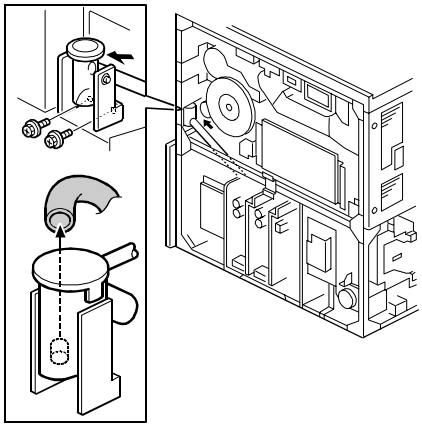
Note: It is easier to replace the entire cylinder case (A2943485).

b) Clean the tube (A2943071) between the toner hopper and the cylinder case (procedure below).

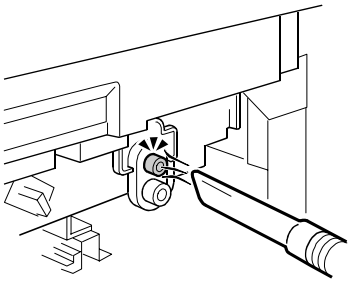


Tube Cleaning Procedure

1. Remove the development unit.
2. Remove the right upper cover and cylinder case bracket.
3. Disconnect the tube (A2943071) from the cylinder case.



4. Remove any clogged toner through the upper hole of the tube joint using a vacuum cleaner.



Cut-in Serial Numbers

TBA

RCL (Japan) Production (B070/B071)

MODEL NAME	V/Hz	DESTINATION	CODE	SERIAL NO.
Ricoh Aficio 2090 Savin 4090 Gestetner 9002 Lanier LD 090	208 - 240V/60Hz	USA, Canada. South America	B070-17	J7030900139
Gestetner 9002 Nashatec 9005 Rex Rotary 9008	220 - 240V/50,60Hz	Europe, etc.	B070-22	J7031000078
Lanier LD 090	220 - 240V/50,60Hz	Europe	B070-24	L1363100001
IS 2090	220 - 240V/50,60Hz	Europe, etc.	B070-26	5Q70930001
Ricoh Aficio 2090	220 - 240V/50,60Hz	Europe etc.	B070-27	J7031000105
Ricoh Aficio 2105 Savin 40105 Gestetner 10512 Lanier LD 0105	208 - 240V/60Hz	USA, Canada, South America	B071-17	J7130900066
Gestetner 10512 Nashatec 10515 Rex Rotary 10518	220 - 240V/50,60Hz	Europe, etc.	B071-22	J7130900035
Lanier LD 0105	220 - 240V/50,60Hz	Europe	B071-24	L1373110001
IS 2105	220 - 240V/50,60Hz	Europe, etc.	B071-26	5Q80930001
Ricoh Aficio 2105	220 - 240V/50,60Hz	Europe, etc.	B071-27	J7130900037

Model: Bellini-C1/C2	Date: 5-Dec-03	No.: RB070035

Subject: Seal Improvement in Toner Bank Unit	Prepared by: M. Matsuda
From: 2nd Tech Support Sec. Service Support Dept.	

Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☒ Other ( )		

SYMPTOM

The following sometimes occur:

1. Misdetection of the waste toner bottle full condition
2. Toner bottle cannot be pulled out from the toner bank unit

CAUSE

1. Misdetection of the waste toner bottle full condition

Toner may scatter to the outer portion of the toner bank unit when the toner bottle chuck opens the bottle. The split toner covers the detection area of the toner overflow sensor, causing it to mis-detect the waste toner bottle full condition.

2. Toner bottle cannot be pulled out from the toner bank unit

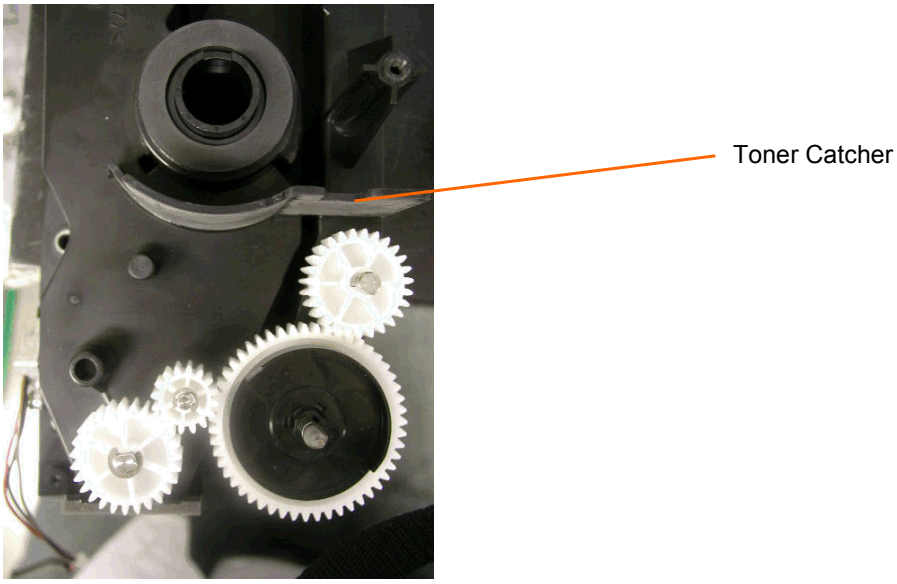
When toner is supplied to the toner bank unit, it may leak out from the bottle and gradually accumulate in the chuck area, eventually preventing the bottle-holding mechanism on the chuck from releasing the bottle.

SOLUTION

The following solutions have been applied from October '03 production.

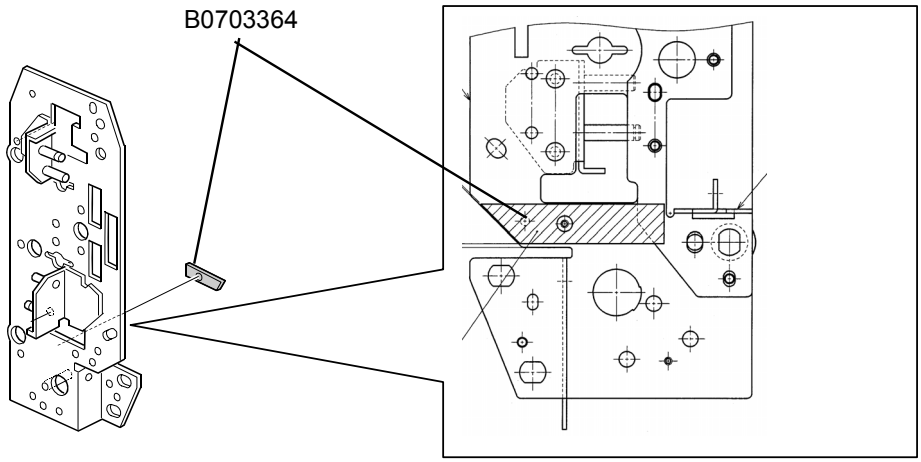
1. Misdetection of the waste toner bottle Full condition

1. A toner catcher has been added to the toner bank case as shown below.



2. A seal has been added to the toner bank base plate, preventing toner from scattering out of this area.

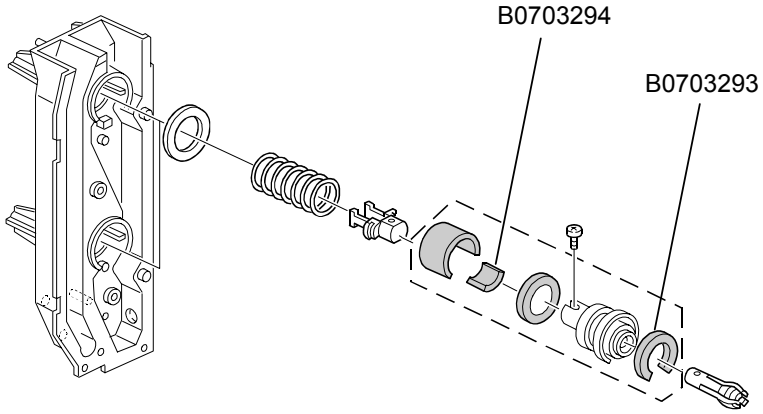
- P/N: B0703364 (Shield: Bracket Chuck)
- Attachment position: Refer to Parts Catalog, pg. 78



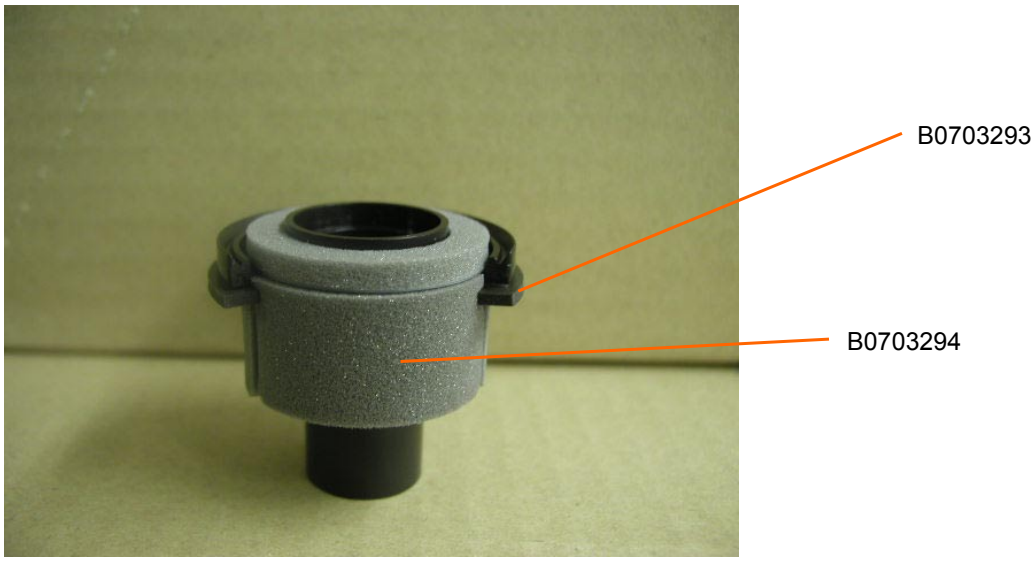
2. Toner bottle cannot be pulled out from the toner bank unit

Two kinds of the shields have been added to ensure toner does not leak out from the toner bottle.

- P/N: B0703293 (Shield Slider), B0703294 (Shield Slider Short)
- Attachment position:



Side view:



RCL (Japan) Production (B070/B071)

MODEL NAME	V/Hz	DESTINATION	CODE	SERIAL NO.
Ricoh Aficio 2090 Savin 4090 Gestetner 9002 Lanier LD 090	208 - 240V/60Hz	USA, Canada. South America	B070-17	J7031000183
Gestetner 9002 Nashatec 9005 Rex Rotary 9008	220 - 240V/50,60Hz	Europe, etc.	B070-22	J7031000104
Lanier LD 090	220 - 240V/50,60Hz	Europe	B070-24	L1363100001
IS 2090	220 - 240V/50,60Hz	Europe, etc.	B070-26	5Q71030001
Ricoh Aficio 2090	220 - 240V/50,60Hz	Europe etc.	B070-27	J7031000105
Ricoh Aficio 2105 Savin 40105 Gestetner 10512 Lanier LD 0105	208 - 240V/60Hz	USA, Canada, South America	B071-17	J7131000062
Gestetner 10512 Nashatec 10515 Rex Rotary 10518	220 - 240V/50,60Hz	Europe, etc.	B071-22	J7131000001
Lanier LD 0105	220 - 240V/50,60Hz	Europe	B071-24	L1373110001
IS 2105	220 - 240V/50,60Hz	Europe, etc.	B071-26	5Q81030001
Ricoh Aficio 2105	220 - 240V/50,60Hz	Europe, etc.	B071-27	J7131000010

Model: Bellini-C1	Date: 23-Jan-04	No.: RA294064

Subject: OPC Drum Change/ Drum Setting Powder	Prepared by: M.Matsuda
From: 2nd Tech Support Sec. Service Support Dept.	

Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☒ Other ( )		

Important Note:

The OPC drum has been changed as follows, which requires the application of setting powder at drum installation. The drum yield and SP mode setting have not been changed.

Change, Background

As of the end of January 2004 (Japan production) and September 2004 (RPL production), the organic solvent dichloromethane will no longer be used for OPC drum production as part of Ricoh's ongoing efforts, through the expanding application of in-house environmental management standards, to eliminate the use of environmentally sensitive materials in the manufacturing process.

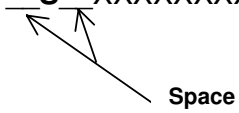
Affected Drums and Models

To distinguish the drums from before and after this change, the drum lot numbers and service parts numbers will be changed as follows.

Lot Number Change:

Old: XXXXXXXXXXXX (12 digits)

New: __**S**__XXXXXXXXX



Service P/N Change:

Old P/N	New P/N	New Drum Production Cut-in Dates		New Drum Service Parts Available:
		Japan Production (NA/Asia):	RPL Production (Europe):	
A2949510	A2959510	End of January 04'	Early September 04' ***See Note below**	End of February 04' or later (US/Asia) End of September 04' or later (EU) ***See Note below**

Note: As the service parts OPC drum from ESPC is produced at RPL, the actual outflow of the new drum to the European market will be from the end of September 2004. The current drum (A2949510) will available for ordering until this time.

Model: Bellini-C1	Date: 23-Jan-04	No.: RA294064

Important Note for Installation of the New Drum

Since the smoothness of the new drum (without dichloromethane) is reduced, it is essential to **make sure to apply Drum Setting Powder (P/N: 54429101) to the drum surface as shown below before installing.**

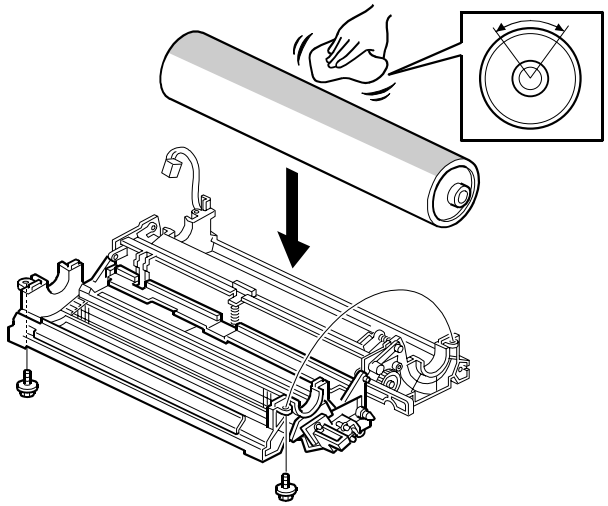
Note: If the setting powder is not applied, the drum's cleaning blade may turn outward, causing a drum cleaning failure.

Application Procedure for Drum Setting Powder

1. Apply the setting powder (P/N 54429101) to the drum by tapping the powder bag across the surface area shown in the illustration below, i.e. spanning the entire length of the drum but covering about a 45-90 degree portion (up to 1/4) of the total surface.

Note:

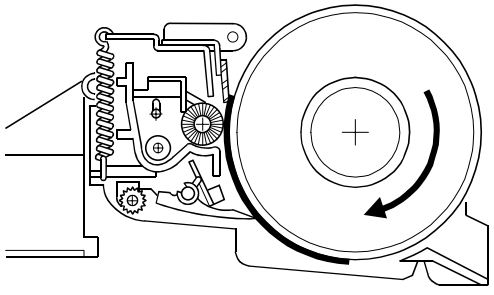
- Be sure to apply enough powder to give the area a moderate dusting (so that the area turns white).
- If setting powder is not available, please apply waste toner in the same manner described above (waste toner is charged and will be attracted to the drum surface). Please note that although dirty background will have a greater tendency to occur, be sure to apply the waste toner if there is no setting powder available.



2. Install the new drum in the OPC unit so that the powdered area (in bold below) faces the cleaning blade.

3. Rotate the drum once in its normal rotation direction (arrow shown below), so that it stops again at the same position.

Note: Be sure not to rotate the drum in the opposite direction.



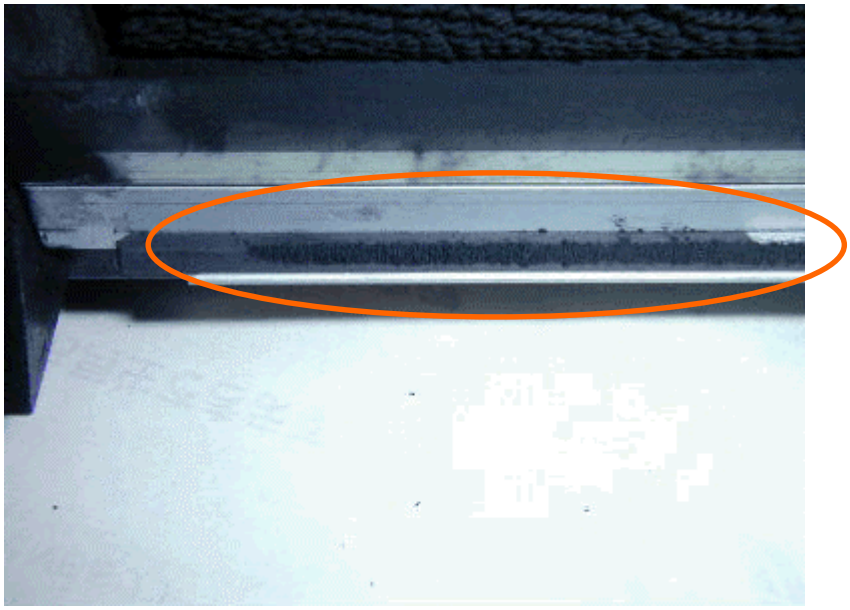
Model: Bellini-C1	Date: 16-Jun-04	No.: RA294065

Subject: Carrier accumulates on the lower drum unit	Prepared by: M. Matsuda
From: 2nd Tech Support Sec. Service Support Dept.	

Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☒ Other ( )		

SYMPTOM

Carrier builds up on the drum unit carrier catcher as shown below, and then falls onto the transfer belt causing dirty paper stack edges (Bellini-C1c/d).



CAUSE

The following are possible causes:

A. Quenching lamp error (turns on/off randomly, or does not come on).

When this error occurs, the charge on the drum surface increases, which can cause too much carrier to stick to the catcher.

- If the last process control has failed and the lamp remains off, the resulting charge on the drum surface increases, because the charge grid voltage is set at a fixed value, causing the extra carrier to stick to the catcher.
  - **Note:** Carrier does not tend to stick to the catcher when the last process control was successful, even in cases where the lamp remains off.

- If the lamp is flickering on and off, this also causes the charge on the drum surface to increase and carrier to be attracted to the drum.

B. The Bellini-C1a/b development unit was installed

The development unit for the Bellini-C1a/b has a wider doctor gap than the unit for the Bellini-C1c/d. Therefore if the C1a/b development unit is installed on the C1c/d, an excessive amount of carrier is attracted to the drum surface.

C. VD value is high

If the VD value is high (actual charge voltage on the drum surface), an excessive amount of carrier is attracted to the drum surface, causing the extra carrier to stick to the catcher.

CHECK POINTS

Please check the following if the symptom is reported from the field:

A. Check whether or not the quenching lamp remains on (normal) during machine operation, and replace the lamp if it flickers or remains off.

Note:

- The quenching lamp should always be on during normal machine operation.
- The lamp is visible during operation if the front door is opened.

  ⚠ When opening the front door during operation, make sure to use the **safety switch holders** in the tandem tray.

B. Check to see that the Bellini-C1c/d development unit is installed and replace if necessary.

C. Check the value of SP3902-1.

- If the value is **0**, the last auto process control was unsuccessful, therefore please check the drum potential sensor for dirtying, defects or poor connection and replace if necessary.
- If the value is **1**, auto process control was successful (SP3902-2 will be within 800+/-20v), which indicates a quenching lamp failure. Therefore please check the lamp operation as described in Check Point A above.