Reissued: 1-Sep-04

Model: Bellini-C1	Date: 28-Aug-03	No.: RA294000b

Subject: Troubleshooting	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 bulletin is a troubleshooting guide for Bellini-C1.

This bulletin consists of the following sections.

- Section 1: Paper Jams
- Section 2: Print/Copy Quality
- Section 3: SC errors
- Section 4: Other Problems
- Section 5: PM

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Revision Table

Description	Suffix
1st release	**-**
- Added **"Jam Code 53"** (page 27 to 29) - Added **"Toner Scattering from Development Unit"** (page 80 to 85) - Added **"Toner Scattering from Rear Side Of Machine"** (page 86 to 92) - Added **"Toner Bank Unit Malfunction"** (page 93 to 97)	**A**
- Added **"Multi-feeding from LCT (Paper height sensor adjustment)"** (Page 27 to 28) - Added **"Troubleshooting for light image"** (Page 42 to 44) - Added **"Carrier accumulates on the lower drum unit"** (Page 51 to 53) - Added **"SR860 Problems"** (Page 106) - Added **"Paper jam in the finisher exit"** (Page 106 to 110) - Added **"Jogger fence adjustment"** (Page 111 to 124) - Added **"Customized adjustment for booklet skew"** (Page 125 to 135) - Added **"Error code: E32, E44 appeared"** (Page 136 to 137) - Added **"LCDC firmware update failure"** (Page 138 to 139)	**B**

Troubleshooting Guide for Bellini-C1

1. Paper Jams

Paper Jams

Step	Questions/Actions	Yes	No
1.	Ensure that the paper conforms to the correct specification. **Is the paper ok?**	Go to Step 2.	Obtain the correct paper before continuing.
2.	Clear the paper jam and try the print job again. Ensure the paper path is clear of all paper scraps and no other blockage is visible. **Did the printer jam again?**	Go to Step 3.	1. Try to recreate the jam condition by running several small print jobs. 2. If the paper jam cannot be recreated, document the steps already taken
3.	Either the paper did not make it to the sensor in time or it remained at the sensor too long. Go to SP7507 and review the jam code history. **Was the latest jam code between 1 and 35?**	Codes numbered 1 to 35 indicate the paper did not get to a specific sensor within the allotted time. Go to "General troubleshooting tips for paper jams" on page 2 for service hints or go directly to "Jam code definitions and suggested causes" on page 3 for specific causes and/or remedies.	Jam codes between 53 and 73 indicate the paper got to the specific sensor on time but did not leave the sensor within the allotted time. Go to "General troubleshooting tips for paper jams" on page 2 for service hints or go directly to "Jam code definitions and suggested causes" on page 3 for specific causes and/or remedies.

General troubleshooting tips for paper jams

1. Try to reset the jam message.
    a) Open and close all doors (front, LCT, Finisher). Jams must be reset with a door reset.
    b) If you are using the interlock overrides, you will need to remove and reinstall them
2. Analyze your jam problem:
    a) Reload all trays with fresh paper of the correct size.
    b) Make sure the paper size guides are against the paper.
    c) Make sure the paper size selector is set to the exact size and orientation of the paper. The size sensor is on the size selector, not the paper guides.
    d) Check for any mechanical obstructions in or around the tray.
    e) Print or copy from each tray
3. Repeat the previous step. Try using different feature combinations (different trays, multiple copy masters, simplex/duplex, different outputs.)
4. If you suspect a bad sensor, test the sensor with the relevant input test in SP5-803. If needed, install a new sensor. If that does not solve the problem, suspect a bad sensor circuit.

Jam code definitions and suggested causes

A. Jam code 10 and 58

We have found the jam codes 10,12 and 58 frequently in the field. Please check the following points:

Jam Code	Meaning	Check part	Check points /method
10	Paper did not activate the LCT Exit sensor in time	• Paper path.	• Make sure that there is no abnormal condition in the paper path. • Jammed paper does not remain in the paper path. • Paper transport roller is not dirty. • Guide plate is not scratched/ deformed. • Guide plate span is 4mm when the U3 jam release lever is closed. (The ribs are not measured.)
		• Exit sensor condition	• Make sure that the exit sensor works properly.
12	Paper did not activate the engine Relay Sensor in time.	• Paper feed from trays 2 & 3	• First, second and third vertical transport clutches failure (Torque or stop failure) • Feed motor upper drive belt for correct operation • Second and third paper feed torque limiters failure • Ensure paper guide area A1 is closed correctly. • Inspect the paper path from the upper transport guide plate (area A1) and the entry area of the paper registration unit for a blockage. • Verify correct operation of the relay sensor using SP5803-7, bit 2. • Static charge on the vertical paper guide

Jam Code	Meaning	Check part	Check points /method
12	Paper did not activate the engine Relay Sensor in time.	• Paper feed from Duplex	• Duplex Feed Clutch located in the left side of the duplex unit (Stop failure) • Obstructions in duplex transport • Drive belts of duplex transport. •
58	Tray 6 jam; paper stays at LCT 3rd Paper Feed Sensor too long.	• Front and rear side fence positions. • Paper guide mylar condition. (This part is to prevent paper skewing)	• Make sure each side fence is in the correct position for the paper size. • Make sure that the guide mylar is not deformed.
		• Paper guide fence set condition	• Make sure the guide fence is in the correct position for the paper size.
		• Paper size	• Make sure that each paper size is correctly set. • SP mode is used to set the 6th tray paper size.
		• Lift sensor bracket position	• Make sure that there is no clearance between the bracket and feed stay.
	Tray 6 jam; paper stays at LCT 3rd Paper Feed Sensor too long.	• Feed rollers and feed clutches condition	• Make sure that there is no abnormal condition in the following. • Feed/Reverse/Pick-up rollers are not dirty. • Feed /Paper transport clutches movement and electrical harnesses condition. • Torque limiter movement.

Jam Code	Meaning	Check part	Check points /method
		• Paper path	• Make sure that there is no abnormal condition in the paper path. • Jammed paper does not remain in the paper path. • Paper transport roller is not dirty. • Guide plate is not scratched/ deformed. • Guide plate span is 4mm when the U3 jam release lever is closed. (The ribs are not measured)
		• 6th feed sensor condition.	• Make sure that the 6th feed sensor works properly.

B. Others

- Codes 1 thru 35 indicate a failed-to-reach-sensor (or stuck off) condition
- Codes 53 thru 73 indicate a failed-to-leave-sensor (or stuck-on) condition

Jam Code	Meaning	Hints and Example Causes
1	Jam at Power On	Check for paper in the paper path
3	Paper did not activate the tray 1 Paper Feed Sensor in time.	• Pickup or feed roller • 1st Pickup solenoid • 1st Feed clutch • 1st Feed sensor • Separation roller • 1st Separation roller solenoid • Feed motor upper drive belt • Paper feed motor
4	Paper did not activate the 2nd Paper Feed Sensor in time.	• Pickup or feed roller • 1st Pickup solenoid • 2nd Feed clutch • 2nd Feed sensor • Separation roller • 2nd Separation roller solenoid • Feed motor lower drive belt • Paper feed motor

Jam Code	Meaning	Hints and Example Causes
5	Paper did not activate the 3rd Paper Feed Sensor in time.	• Pickup or feed roller • 3rd Pickup solenoid • 3rd Feed clutch • 3rd Feed sensor • Separation roller • 3rd Separation roller solenoid • Feed motor lower drive belt • Paper feed motor
6	Paper did not activate the LCT 1st Paper Feed Sensor in time.	• Pickup or feed roller • LCT 1st Pickup solenoid • LCT 1st Feed clutch • LCT 1st Feed sensor • Separation roller • LCT 1st Separation roller solenoid • LCT Transport motor drive belt • LCT Transport motor
7	Paper did not activate the LCT 2nd Paper Feed Sensor in time.	• Pickup or feed roller • LCT 2nd Pickup solenoid • LCT 2nd Feed clutch • LCT 2nd Feed sensor • Separation roller • LCT 2nd Separation roller solenoid • LCT Transport motor drive belt • LCT Transport motor

Jam Code	Meaning	Hints and Example Causes
8	Paper did not activate the LCT 3rd Paper Feed Sensor in time.	• Pickup or feed roller • LCT 3rd Pickup solenoid. • LCT 3rd Feed clutch • LCT 3rd Feed sensor • Separation roller • LCT 3rd Separation roller solenoid • LCT Transport motor drive belt • LCT Transport motor
9	Paper did not activate the LCT Relay Sensor (in the engine) in time.	• The paper did activate the LCT exit sensor on time but did not activate the sensor at the entrance to the copier. • Check for any signs of blockage in the paper path between the LCT exit sensor and the LCT relay sensor. • Check the alignment of the LCT exit guide plate with the engine/LCT guide plate. • Verify correct operation of the LCT Relay sensor using SP5803-7, bit 3.
10	Paper did not activate the LCT Exit Sensor in the LCT in time.	• As shown above (section “A”, code 10)
12	Paper did not activate the engine Relay Sensor in time.	See the above (section “A”, code 12)
13	Paper did not activate the Registration Sensor in time.	• The paper did get to the relay sensor in time but did not activate the registration sensor correctly. • Verify correct operation of the registration sensor using SP5803-7, bit 0. (Remove the sensor and then reattach the cable to test the sensor out of the machine.) • Ensure the relay motor is operating correctly; and that it drives the feed rollers immediately following the relay sensors. • Check the operation of the relay clutch or the LCT relay clutch

Jam Code	Meaning	Hints and Example Causes
15	Paper did not activate the Fusing Exit Sensor in time.	• The paper did get to and leave the registration sensor in time but did not arrive at the fusing exit sensor in time. • Check the sensor actuator for freedom of movement and then verify that the sensor is operating correctly with SP5803-9, bit 1. • Check for condensation in the fusing exit area, specifically on the exit guide plate. Remove any moisture. • If condensation occurs at the beginning of each day, consider using the weekly timer settings for each day to power on the printer 30 minutes prior to use. Anti-condensation heaters are available as a customer orderable feature. • Ensure the transfer belt lift solenoid is working correctly during printing.
16	Paper did not activate the Exit Sensor in time.	• The paper is leaving the print engine paper path, going to the finisher paper path. All previous sensors were activated correctly within the allowable time. • Verify correct operation of the sensor using SP5803-9, bit 2. • If a simplex page is exiting face up, check the path from the fuser exit plate through the cooling roll and the inverter junction gate for a blockage. Check for correct operation of the inverter gate solenoid using SP5804-48. • If a simplex page is exiting face down, check the paper path from the fusing exit plate through the inverter section of the duplex unit and back up through the exit unit to the finisher. Check for correct operation of the reverse roller solenoid in the duplex unit, using SP5804-53.
19	Paper did not activate the Duplex Entrance Sensor (S40) in time.	• The paper did not activate the duplex entrance sensor within the allotted time after leaving the fuser exit sensor. • Check the paper path for a blockage from the fuser exit sensor through the cooling roller, inverter junction gate and into the duplex unit to the duplex entrance sensor. • Check for correct operation of the inverter gate solenoid using SP5804-48. • Verify correct operation of sensor S40 using SP5803-3, bit 6.

Jam Code	Meaning	Hints and Example Causes
20	Paper did not activate the Duplex Transport Sensor 1 in time.	• The page left the inverter paper tray correctly but did not activate the first duplex transport sensor within the allotted time. • Check the lower duplex guide plate fingers for damage. • Verify correct operation of the first duplex transport sensor using SP5803-3, bit 2. • Check the operation of the reverse roller solenoid using SP5804-53. • Check the operation of the duplex inverter guide plate solenoid using SP5804-52.
21	Paper did not activate the Duplex Transport Sensor 2 in time.	• The page activated the first duplex transport sensor correctly but did not activate the second transport sensor within the allotted time. • Verify correct operation of the second transport sensor using SP5803-3, bit 3. • If the sensor is working correctly, check the paper path for obstructions. • Turn on the fusing/duplex motor using SP5804-44 and then check the operation of the duplex transport clutch using SP5804-49. • Check the drive belt and the associated rollers.
22	Paper did not activate the Duplex Transport Sensor 3 in time.	• The page activated the second duplex transport sensor correctly but did not activate the third transport sensor within the allotted time. • Verify correct operation of the third transport sensor using SP5803-3, bit 4. • If the sensor is working correctly, check the paper path for obstructions. • Turn on the fusing/duplex motor using SP5804-44 and then check the operation of the duplex feed clutch using SP5804-50. • Check the drive belt on the rear of the duplex unit and drive belt on the front of the duplex unit along with the associated rollers.

Jam Code	Meaning	Hints and Example Causes
23	Paper did not activate the Inverter Tray Paper Sensor 1 in time.	• Paper activated the duplex entrance sensor correctly on its way into the inverter paper tray but did not activate the tray exit sensor within the allotted time on its way out of the tray. • Verify correct operation of the inverter tray paper sensor using SP5803-3, bit 1. • Check the operation of the reverse roller solenoid using SP5804-53. • Check the roller condition and all linkages.
25	Paper did not activate the Finisher Entrance Sensor in time.	• Paper activated the print engine exit sensor correctly on its way to the finisher but did activate the entrance sensor within the allotted time. • Either the paper path between the exit sensor and the entrance sensor is blocked or misaligned or the sensor itself is faulty. • Ensure the finisher is attached to the printer both electrically and mechanically. • Ensure the exit guide on the printer and the entrance guide on the finisher line up. • Verify correct operation of the finisher entrance sensor using SP6117-1, bit 0. • Testing has shown possible problems with Fin-SOL3 (pre-stack junction gate) and Fin SOL4 (pre-stack paper stopper). Ensure both solenoids function correctly (use SP 6118-17 and -18). • Testing has shown that even though the paper got to the finisher entrance sensor in time, if the path is blocked and the paper remains visible to the sensor, a jam code 25 will appear in the log.

Jam Code	Meaning	Hints and Example Causes
26	Paper did not activate the Finisher Upper Tray Exit Sensor in time.	• Paper activated the finisher entrance sensor correctly on its way to the upper tray but did not activate the upper tray exit sensor within the allotted time. • Ensure that guide plate R2 is correctly positioned to guide the paper to the upper tray (Proof Tray). • Ensure the paper path between the entrance sensor and the upper tray exit sensor is not blocked. • Verify correct operation of the finisher upper tray exit sensor using SP6117-1, bit 1. Ensure that the sensor actuator arm has free movement. • Check the operation of the Stapler Junction Gate solenoid using SP6118-9. The solenoid must not energize to direct the paper up to the proof tray. • Check the operation of the Tray Junction Gate solenoid using SP6118-3. The solenoid must energize to direct the paper up to the proof tray. • Check the secondary drive belt • Check the connecting springs between the inverters and the solenoids and the retraction springs as well.

Jam Code	Meaning	Hints and Example Causes
27	Paper did not activate the Finisher Shift Tray Exit Sensor in time.	• Once the paper clears the finisher entrance sensor, there are two paths available; one for stapling and one for without stapling. We will look at the " without stapling " path but a similar check should be made for the "stapling" path. The key is that paper activated the finisher entrance sensor correctly on its way to the shift tray but did not activate the shift tray exit sensor within the allotted time. • For the straight through path to the shift tray, ensure that guide plates R2 and R3 are correctly positioned to guide the paper to the shift tray. • Ensure that the paper path between the entrance sensor and the shift tray exit sensor is not blocked by paper scraps or other debris. Verify correct operation of the finisher shift tray exit sensor using SP6117-1, bit 2. • Check the operation of the Stapler Junction Gate solenoid using SP6118-9. If the paper is not being stapled, the solenoid must not energize during paper feed; if staple mode is selected, the solenoid must activate to pull the inverter gate into position to direct the paper down to the stapler before exiting to the shift tray. • Check the secondary drive belts. • Testing has shown that the finisher motors M1 (upper transport), M9 (exit guide), M10 (shift tray exit) and their associated sensors can also provide jam code 27.

Jam Code	Meaning	Hints and Example Causes
28	Paper did not activate the Finisher Stapler Entrance Sensor in time.	• Paper activated the finisher entrance sensor correctly on its way to the stapler tray but did not activate the stapler tray entrance sensor within the allotted time. • Ensure that guide plate R2 is correctly positioned to guide the paper downward to the pre-stack paper tray. • Ensure that paper guide plates R4 and R5 are correctly positioned and the path is free of all obstructions. • Verify correct operation of the finisher stapler tray entrance sensor using SP6117-1, bit 3. • Check the operation of the Stapler Junction Gate solenoid using SP6118-9. The solenoid must energize to direct the paper down to the pre-stack tray. • Check the operation of the pre-stack gate solenoid using SP6118-17. The solenoid must either energize to direct the first sheet to the pre-stack path B, or remain de-energized to direct the paper straight down to the stapler. In either case, the pre-stack gate must not delay the paper travel to the stapler. • Check the operation of the pre-stack stopper solenoid using SP6118-18. The pre-stack stopper gate must not delay the paper travel to the stapler. • Check the drive belts, connector springs on the solenoids and the retraction springs as well.

Jam Code	Meaning	Hints and Example Causes
29	Paper did not activate the Finisher Stapler Tray Paper Sensor (Fin-S5) in time.	• The first sheet of paper did activate the stapler tray entrance sensor correctly but did not activate the stapler tray paper sensor within the allotted time. • Ensure that guide plate R6 is correctly positioned to guide the paper into the stapler paper tray. • Ensure that the jogger fences are opening wide enough to allow the paper to enter the paper tray correctly and the path is free of all obstructions. • Verify correct operation of the finisher stapler tray paper sensor using SP6117-2, bit 5. • Check the operation of the positioning roller solenoid using SP6118-10. The solenoid must energize to drive the paper back and down toward the stapler position fence after it arrives in the tray. • Check the drive belts, connector springs on the solenoids and the retraction springs as well.
35	Unexpected operation of stapler related motors or sensors: the stapler motor, the stapler rotation motor or the stack feed out motor. In addition, this jam code may also be related to the stapler home position, stapler rotation home position sensor, stapler return sensor or the staple waste hopper sensor.	• This problem could be the result of problems with motors M5, M6 or M8 or any of the sensors, S7, S8, S12 or S25. • Check the operation of the motors and sensors using the "free run" setting on the finisher controller dip switch DPS100. Normal setting for all four switches on DPS100 is "0" or off. To run the test, power off the printer. Place switch 2 on DPS100 to "1" (on). Switches 1, 3 and 4 remain at "0" (off). Power on the printer and observe the operation of the finisher sensors using SP6117-1, 2, 3 and 4. All three motors and sensors S7, S8 and S25 can be observed during the continuous operation. • Sensor S12 for the staple waste hopper can be manually activated to observe correct operation.

Jam Code	Meaning	Hints and Example Causes
53	Tray 1 jam; paper stays at 1st Paper Feed Sensor too long.	• The paper pick-up and feed mechanism got the paper to the 1st paper feed sensor correctly but the page failed to leave the sensor within the allotted time. • Check for multiple sheet feeds. Replace the separation roller if required. • Ensure that the upper transport guide plate and backup rollers are in place and functioning correctly. • Check for any paper path blockage immediately past the feed unit.
54	Tray 2 jam; paper stays at 2nd Paper Feed Sensor too long.	• The paper pick and feed mechanism got the paper to the 2nd paper feed sensor correctly but the page failed to leave the sensor within the allotted time. • Check for multiple sheet feeds. Replace the separation roller if required. • Ensure that the upper transport guide plate and backup rollers are in place and functioning correctly. • Check for any paper path blockage immediately past the feed unit.
55	Tray 3 jam; paper stays at 3rd Paper Feed Sensor too long	• The paper pick and feed mechanism got the paper to the 3rd paper feed sensor correctly but the page failed to leave the sensor within the allotted time. • Check for multiple sheet feeds. Replace the separation roller if required. • Ensure that the upper transport guide plate and backup rollers are in place and functioning correctly. • Check for any paper path blockage immediately past the feed unit.

Jam Code	Meaning	Hints and Example Causes
56	Tray 4 jam; paper stays at LCT 1st Paper Feed Sensor too long.	• The paper pick and feed mechanism got the paper to the LCT 1st paper feed sensor correctly but the page failed to leave the sensor within the allotted time. • Check for multiple sheet feeds. Replace the separation roller if required. • Ensure that the upper transport guide plate and backup rollers are in place and functioning correctly. • Check for any paper path blockage immediately past the feed unit.
57	Tray 5 jam; paper stays at LCT 2nd Paper Feed Sensor too long.	• The paper pick and feed mechanism got the paper to the LCT 2nd paper feed sensor correctly but the page failed to leave the sensor within the allotted time. • Check for multiple sheet feeds. Replace the separation roller if required. • Ensure that the upper transport guide plate and backup rollers are in place and functioning correctly. • Check for any paper path blockage immediately past the feed unit.
58	Tray 6 jam; paper stays at LCT 3rd Paper Feed Sensor too long.	See the above (section"A", code 58).
59	Paper stays at the LCT Relay Sensor (inside the main copier) too long.	• The paper did activate the LCT relay sensor correctly but did not appear to leave the sensor within the allotted time. • Verify correct operation of the LCT Relay sensor using SP5803-7, bit 3. • Binding of the relay motor will also cause a jam code 59. Ensure the motor is freely turning.

Jam Code	Meaning	Hints and Example Causes
60	Paper stays at the LCT Relay Sensor (inside the LCT, at the exit) too long.	• The paper did activate the exit sensor in time but did not leave the sensor within the time allowed. • Verify correct operation of the LCT Relay sensor using SP5803-20, bit 1. • Ensure that the paper path guide load springs at user locations U1, U3 and U6 are holding the guide plates firmly in position and are not bent out of position. • Check the drive belt for the paper path feed rollers. • This error may show up as a jam code 9 or 10 instead of 60
62	Paper stays at the Relay Sensor too long.	• Paper did activate the relay sensor in time but did not leave the sensor within the allowed time. • Ensure that paper guide area A1 is closed correctly. • If the paper was feeding from tray 2 or tray 3, check the feed motor upper drive belt for correct operation. • Inspect the paper path from the upper transport guide plate (area A1) and the entry area of the paper registration unit for blockage. • Verify correct operation of the relay sensor using SP5803-7, bit 2. • Check for blockage of the paper path in the registration unit. • This problem may show up as a late to registration sensor error, jam code 13.
63	Paper stays at the Registration Sensor too long.	• Paper did activate the registration sensor in time but failed to leave the sensor within the allowed time. • Verify correct operation of the registration sensor using SP5803-7, bit 0. (Remove the sensor and then reattach the cable to test the sensor out of the machine.) • Ensure the relay motor M14 is operating correctly; M14 drives the feed rollers immediately following the relay sensors. • Check the operation of the relay clutch or the LCT relay clutch

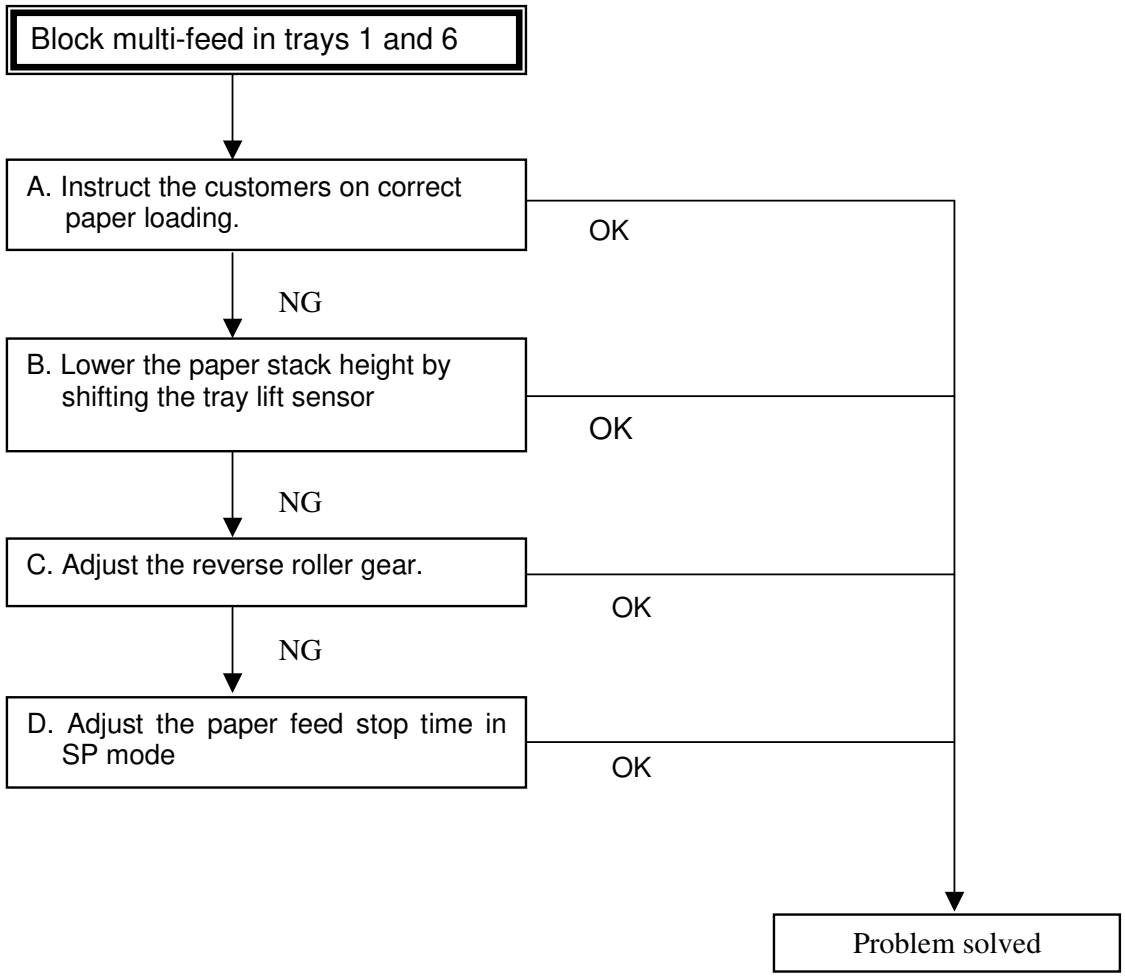
Jam Code	Meaning	Hints and Example Causes
65	Paper stays at the Fusing Exit Sensor too long.	• The paper did get to the fusing exit sensor in time but did not leave the sensor within the allotted time. • Check the sensor actuator for freedom of movement and then verify that the sensor is operating correctly with SP5803-9, bit 1. • Check for condensation in the fusing exit area, specifically on the exit guide plate. Remove any moisture. • If condensation occurs at the beginning of each day, consider using the weekly timer settings for each day to power on the printer 30 minutes prior to use. Anti-condensation heaters are available as a customer orderable feature.
66	Paper stays at the Exit Sensor too long.	• The paper is leaving the print engine paper path, and going to the finisher paper path. The exit sensor activated correctly within the allowable time but indicated the paper did not leave. • Verify correct operation of the sensor using SP5803-9, bit 2. • Ensure the communication cable from the finisher is connected to the printer.
69	Paper stays at the Duplex Entrance Sensor too long.	• The paper did activate the duplex entrance sensor within the allotted time but did not appear to leave the sensor within the allotted time. • Check the paper path for blockage from the entrance sensor to the inverter paper tray. • Verify correct operation of the sensor using SP5803-3, bit 6.

Jam Code	Meaning	Hints and Example Causes
70	Paper stays at Duplex Transport Sensor 1 too long.	• The page left the inverter paper tray and activated the first duplex transport sensor within the allotted time but did not appear to leave the sensor within the allotted time. • Verify correct operation of the sensor using SP5803-3, bit 2. • Check the operation of the reverse roller solenoid using SP5804-54. • Check the operation of the duplex inverter guide plate solenoid using SP5804-52. • If the sensor is working correctly, check the paper path for obstructions. • Turn on the fusing/duplex motor using SP5804-44 and then check the operation of the duplex transport clutch using SP5804-49. • Check the drive belt and the associated rollers.
71	Paper stays at Duplex Transport Sensor 2 too long.	• The page activated the duplex transport sensor but appeared to stay at the sensor too long. • Verify correct operation of the sensor using SP5803-3, bit 3. • If the sensor is working correctly, check the paper path for obstructions. • Turn on the fusing/duplex motor using SP5804-44 and then check the operation of the duplex transport clutch using SP5804-49. • Check the drive belt and the associated rollers. • Turn on the fusing/duplex motor using SP5804-44 and then check the operation of the duplex feed clutch using SP5804-50. • Check the drive belt on the rear of the duplex unit and drive belt on the front of the duplex unit along with the associated rollers.

Jam Code	Meaning	Hints and Example Causes
72	Paper stays at Duplex Transport Sensor 3 too long.	• The page activated the duplex transport sensor correctly but did not leave sensor within the allotted time. • Verify correct operation of the sensor using SP5803-3, bit 4. • If the sensor is working correctly, check the paper path for obstructions. • Turn on the fusing/duplex motor using SP5804-44 and then check the operation of the duplex feed clutch using SP5804-50. • Check the drive belt on the rear of the duplex unit and drive belt on the front of the duplex unit along with the associated rollers.
73	Paper stays at the Inverter Tray Paper Sensor too long.	• Paper activated the inverter tray paper sensor in time but appears to have remained under the sensor too long. • Verify correct operation of the sensor using SP5803-3, bit 1. • Check the operation of the reverse roller solenoid using SP5804-54. • Check the roller condition and all linkages.

MULTI-FEED PROBLEM:

Please follow the flow chart as shown below:



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, place the paper in the tray.

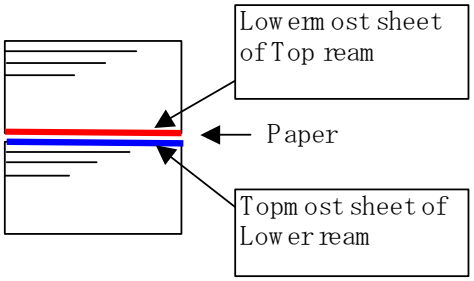


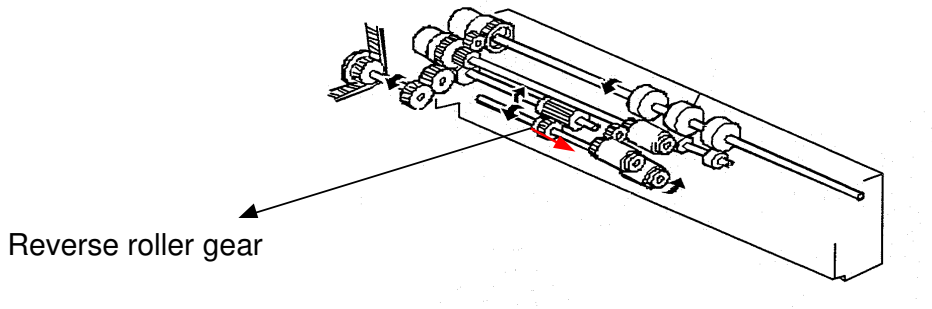
Fig.1

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 nips:
Move the reverse roller gear toward the separation roller, until it contacts the D-cut section as shown below.

Note: This is only effective for block multi-feeds, i.e. not for multi-feeds of just a few sheets.



D. Adjust the paper feed stop time in SP mode

We have prepared the firmware (SICU_BCU: V8.8) to change the paper feed stop time with the following SP mode as a countermeasure to block multi-feed for machines in the field with this problem.

New SP mode:

SP 1907-001 to 006 (Paper feed stop time adjustment) [0-100/**0**/1x10msec]

Note: For the correct setting, multiply the step X 10msec

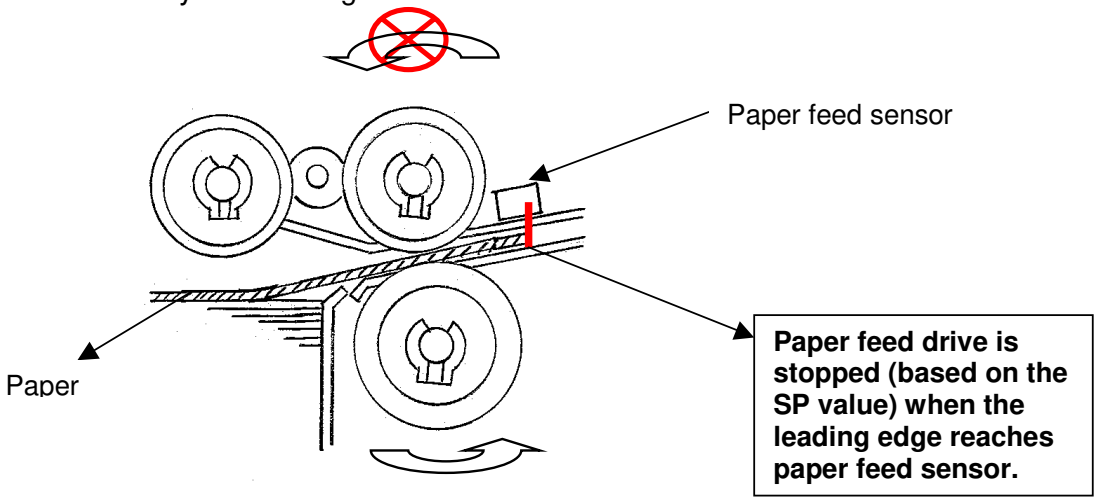
Example: 1X10=10msec (Input "1")

5X10=50mesc (input "5")

20X10=200msec (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** / 10msec] *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 by 1x10msec, then check the result.
2. If it does not succeed, increase by 10msec again. Change in 10 ms steps until you eliminate this problem..

Note: As a side effect, this will reduce the CPM.

Multi-page feeding from LCT (Paper Height Sensor Adjustment)

SYMPTOM

Multi-page feeding from the LCT.

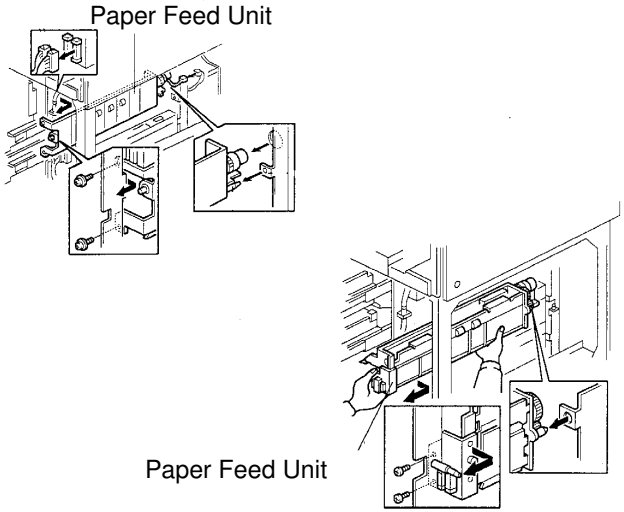
CAUSE

The top of the paper stack is too high.

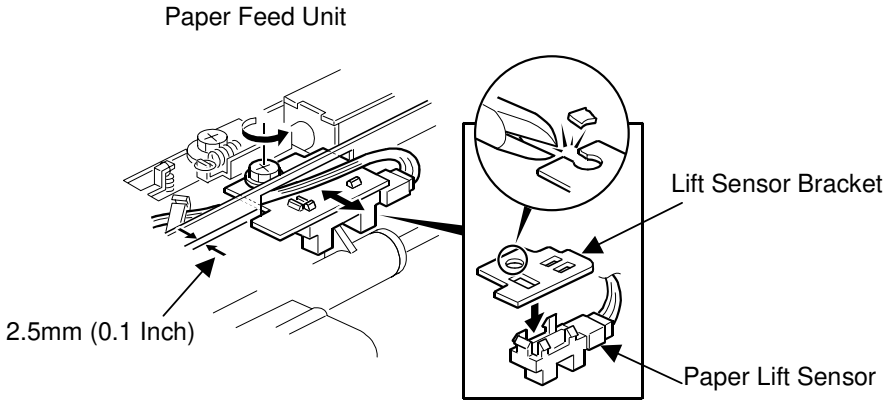
SOLUTION

Lower the paper stack height by moving 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. Please refer to the service manual page 6-62 for paper feed unit removal.



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 unit is 2.5mm (0.1 Inch): **If the customer use thicker paper and a non-feed problem occurs, move the sensor bracket to reduce the gap.**



JAM CODE 53:

NOTE: This symptom only occurs in Bellini-C2

SYMPTOM

Jam code 53 sometimes occurs when LT LEF is fed from the tandem tray.

Note:

- Jam code 53: The tandem tray paper feed sensor detects the presence of paper past the predetermined time period (a certain number of ms after detecting the paper's leading edge).
- This symptom only occurs under the conditions described above, and not with any other paper sizes or feed trays.

CAUSE

The paper sometimes slips and does not clear the paper feed sensor in time, allowing the next sheet fed to catch up with it and cause the jam.

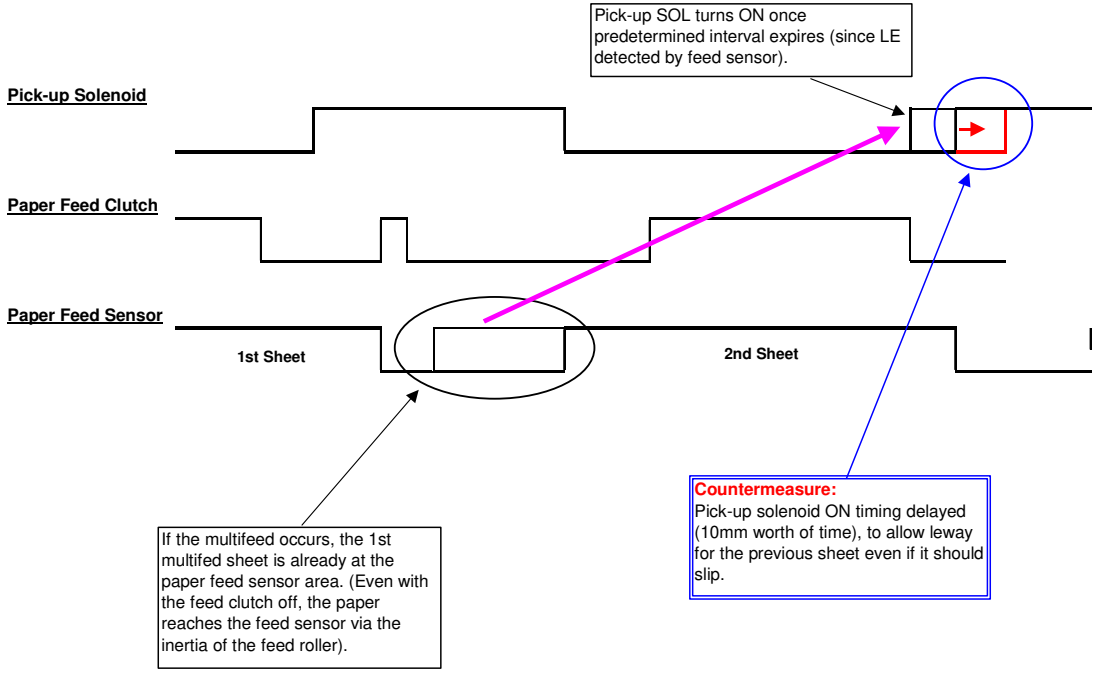
SOLUTION

Update the BCU firmware to v4.10 (released in October 2003).

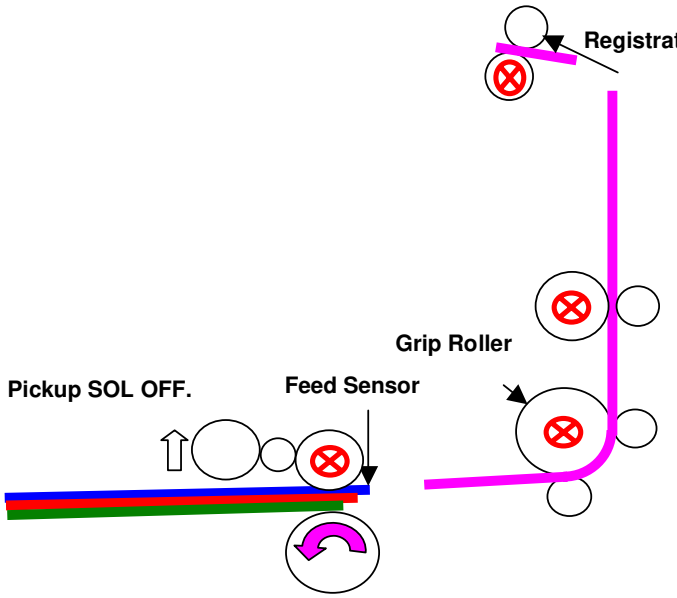
Tandem Tray Paper Feed Sensor Jam

★ Symptom: Feed sensor jam from mis-feed of 3 or more sheets.
Before the trailing edge of the first sheet clears the feed/reverse rollers, the pickup roller, (already rotating) from drive supplied through the feed roller, lowers and begins feeding the next sheet. Then the trailing edge of the first sheet crosses the leading edge of the next sheet around the area of the feed sensor.

Bellini-C2 Jam Code 53 Timing Chart (LT LEF - Tray 1)



With multi-feeds of 3 sheets or more, the previous sheet stops at the registration section and then the next sheet (blue) is fed to the feed sensor via the inertia of the feed roller. The paper feed sensor then turns ON, followed by the pick-up solenoid a certain number of ms later. If the paper slips at all on the way to the grip roller, it can collide with the previous sheet around the feed sensor (which detects the presence of paper and triggers jam).
Note: This symptom occurs only for LT LEF fed from Tray 1.



NOTE:
★ Pickup solenoid ON/OFF timing (ON: pickup roller contacts paper, OFF: separates):

-The solenoid turns OFF when the paper's leading edge reaches the feed sensor.

-The solenoid turns ON X ms after the paper has reached the feed sensor (extended 10mm worth).

2. Print/Copy Quality

Step	Questions/Actions	Yes	No
1.	If possible, print the SMC report, SP5990-1. If unable, review the following items and compare the values against the last printed SMC report: • SP2220 (Toner supply Vref)and 2223(Vt display) • SP2906 (Vcont manual setting:9.7v) • SP3103-1,-3 (ID sensor output : Vsg ,Vsp) • SP7403-1 thru 7403-10 (SC history) • The PM counter list **Did the results provide any information related to the print quality problem you are experiencing?**	• Ensure all of the PM items are up to date. If not, consider completing the required PM items before proceeding. • Go to step 3.	• Ensure all of the PM items are up to date. If not, consider completing the required PM items before proceeding. • Go to step 2.
2.	Decide if the problem is related to copy mode, print mode or both. **Is the problem only during copying?**	• Suspect a problem with the scanner unit • Or see “PQ symptom table” and look for a print quality symptom.	See “PQ symptom table” and look for a print quality symptom.
3.	If the prints are light, compare the value of SP2906 against the default value of 9.7 volts. Values in the range of 14 to 24 volts usually indicate a faulty developer unit toner density sensor. **Was the value 9.7 +/- 1.0 volts?**	Go to step 4.	• Consider replacing the TD sensor for better toner control in the developer unit. • Otherwise, see “PQ symptom table” and look for a print quality symptom.
4.	Check the value of SP3103-3. If the value is 0.3 to 0.4, the drum patch viewed by the ID sensor is indicating a toner density within the normal range. **Was the value less than 0.3?**	• The toner density in the developer is high. Toner feeding into the mix should decrease the overall toner density in the mix. • See “PQ symptom table” and look for a print quality symptom.	Go to step 5.

Step	Questions/Actions	Yes	No
5.	**Was the value more than 0.4 volts?**	• The toner density in the developer is low Toner feeding into the mix should increase the overall toner density in the mix. • See “PQ symptom table” and look for a print quality symptom.	• The patch is indicating a toner density within the normal range. • See “PQ symptom table” and look for a print quality symptom.

PQ symptom table

System	Remarks
A. Background or dark image	
B. All black print	
C. All blank print	
C. Not fused or partially fused	
E. Light print	
F. Image registration problems	
G. Residual image or ghosting	
H. Skewed image	
I. Spot on prints	
J. Light or dark streaks parallel to the paper feed direction	
K. Voids in solid fill areas	

A. Background or dark image

Symptom Explanation	Conditions That Could Cause This Symptom	Probability
There is toner contamination on all or part of the page. The contamination can vary from a very light gray dusting to a very dark print.	• Setting problems • PM not up-to-date • Engine problems.	

Step	Questions/Actions	Yes	No
1.	1. Make some copies. 2. Print some print jobs. The Printer SP / White print job will be especially helpful. **Is the problem only with Copy jobs (print jobs ok)?**	Check the Darkness setting on the Copy screen. Check that the Text/Photo option on the Copy screen is set correctly. If a text original is scanned with a “Photo” option, there can be background problems. If the settings are correct, suspect a scanner problem.	Go to Step 2.
2.	**Is the problem only with Print jobs (copy jobs ok)?**	Suspect a problem with the Printer Features settings or the print job.	The problem is with Copy jobs and Print jobs. There is an engine problem. Ensure that PM is up to date. Check the general troubleshooting information below for additional tips and suggestions.

B. All black print

Symptom Explanation	Conditions That Could Cause This Symptom
The entire printed page is black	• Faulty charge corona assembly • Defective charge/bias/grid power pack

C. All blank print

Symptom Explanation	Conditions That Could Cause This Symptom	Probability
The entire printed page is blank.	• Setting problems • Transfer problem	

Step	Questions/Actions	Yes	No
1.	**Is the problem only with Copy jobs (print jobs ok)?.**	Check the Lightness setting on the Copy screen. If the setting is correct, suspect a scanner problem.	Go to Step 2.
2.	**Is the problem only with Print jobs (copy jobs ok)?**	Suspect a problem with the Printer Features settings or the print job.	• The problem is with Copy jobs and Print jobs. • There is an engine problem. Ensure that PM is up to date. • Suspect a transfer problem. • Check the transfer bias roller for a good connection.

D. Not fused/partially fused image

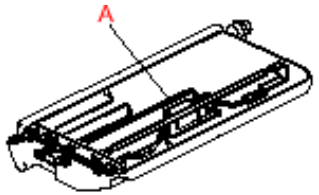
Symptom Explanation	Conditions That Could Cause This Symptom	Probability
The image on the printed page is not completely fused (the toner easily rubs off). If the print also has light density, correct this first (see “Light print”.)	• Media problems • Fusing unit problems	

Step	Questions/Actions	Yes	No
1.	Check the Paper. 1. Ask the customer about the type of paper and input tray that is having the fusing problem. 2. Load fresh, dry paper, in-spec paper. 3. Run some copies. 4. Check the fusing quality on the print. **Is the image fused correctly?**	The problem is with the media.	Go to step 2.
2.	**Is PM up-to-date?**	Go to Step 3.	Do all PM that is due. If the problem still exists, go to Step 3.
3.	Check the SC History, SP7-403 **Are there related SC codes?**	Follow the SC code symptom.	Suspect a fusing unit problem.

E. Light print

Symptom Explanation	Conditions That Could Cause This Symptom	Probability
The entire printed page is lighter than normal or there is poor solid fill.	• The Toner Bottle is nearly empty ("Add Toner" message will also display). • User error • Preventive Maintenance (PM) overdue • TD Sensor or Toner Hopper Sensor connection problem. • ID sensor • Transfer Unit connector problem	

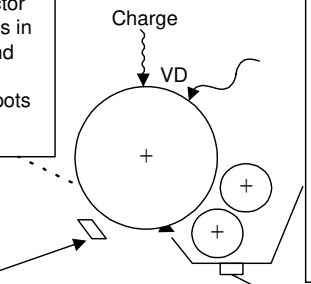
Step	Questions/Actions	Yes	No
1.	Make some copies and print a print job. **Is the problem just for Copies?**	Printing is OK Verify that the darkness setting on the Copy screen is set correctly.	Go to Step 2.
2.	**Is the problem just for Print jobs (copies are ok)?**	Suspect a driver or setting problem.	You have problems with copies and print jobs. There is probably an engine problem. Go to Step 3.
3.	**Is the "Add Toner" message displayed?**	Add a new toner bottle. (If you ignore the message, eventually an SC code will display, and all copying/printing will be disabled.)	Go to Step 4.
4.	**Is this a new Installation?**	Check that the red gear on the development unit has been replaced with the standard gear.	Go to Step 5.

Step	Questions/Actions	Yes	No
5.	**Have all of the PM tasks been completed?**	Go to Step 6.	Do not continue your troubleshooting until the PM tasks are up to date. Go to Chapter 7, “Preventive Maintenance” on page 1162.
6.	Check the SC History, SP7-403 **Are there related SC codes?**	Follow the SC code symptom.	Go Step 7.
7.	Check the two fragile Developer unit connectors. **Are the Developer Unit connectors Ok?**	Go to Step 8.	Repair as needed.
8.	Check ALL Transfer Unit connectors, especially the one shown (A).  **Are the Transfer Unit connectors ok?**	Go to Step 9.	Repair as needed
9.	**Do the SMC settings match the default values?**	Go to Step 10.	Change to default?
10.	**Is the problem with poor image density or poor solid fill?**	Go to the general troubleshooting tips below for additional tips and suggestions.	Go to Step 11
11.	**Is the problem with poor halftone or poor grayscale?**	Go to the general troubleshooting tips below for additional tips and suggestions.	

General Troubleshooting Tip

Paper dust

Paper dust accumurated on the doctor blade causes toner scattering results in the spots mark, dirty background and black band.
Please refer to the attache Black Spots troubleshootin.



Solid Area ID

⑤ Solid image ID drop at edge area
SP2001-7:Vd drum potential

BG: Background potential
No change on drum potential

970V (a,b)
(C2)800V
850V (c,d)
BG
530 (a,b) Dev. Bias
650V Dev. (c,d)
SP2201-1
550V (C2)

660
620 (a,b)
970V(a,b) 900V(c,d)
850V(C2)
Dev. Bias
BG
700V Dev (c,d)
600V (C2)

ID Sensor Bias (SP2201-4)
280V → 240V - - -▶ 200

⑥ White spots in solid area
a,b:970
c,d:850
c2 :800

Dev: Development potential
C1 a,b:530 620
c,d:650 700
C2:550 600

+SP3903
Vd correction
100 → 990
No correction

Note: SP2001-7and SP2201-1 should be changed as a set

ID Sensor

Vsp≥0.6

③ High image ratio

SP2201-4
ID Sensor Bias
C1) 280 → 240
C2) 240 → 200

SP2974
Toner supply interval
1 → 0

② Low duty intermittent copy mode

SP2974
Toner supply interval
1 → 0

SP2969
ID pattern to check toner density
OFF → ON

SP2506-2
Cleaning inverval
30 → 1

T Sensor

④ Repeat copy with low image ratio

① Low duty intermittent copy mode

VT≥3.3 (Low toner density)

SP2223: VT Normal
SP3103-3: VSP Normal
Repeat Copies
(Low image ratio)

SC340
Low Duty

(displays when VT > 4.0)

Developer Charge
(Developer deteriolation)

Note:
Toner recycle cut and toner transportation route cleaning are effective to incraese the developer yield

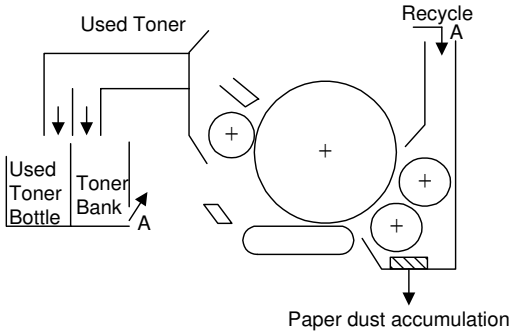
C2 SP2975-1
200 → 0

SP2801
T Sensor Control voltage

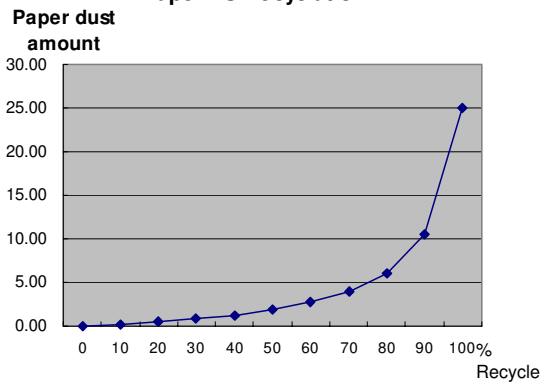
C2
SP2967
ON → OFF

SP2201-4
ID Sensor Bias
C1) 280 → 240
C2) 240 → 200
To increase toner density in Dev. unit.

Black Spots
(Black Fiber Spots)



Paper vs Recyclation



Solution

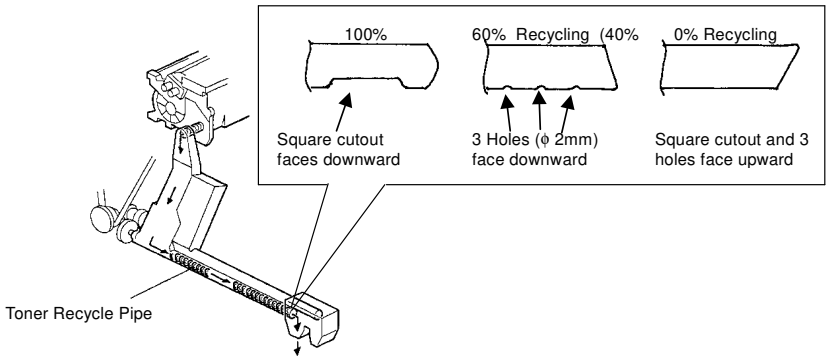
C1

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 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 shred its fibers easily.



C2

SP2975

Toner Recycle	2795-1	Shutter ON
	2795-2	Shutter OFF

Troubleshooting for Light Image

There are several causes that can lead to light images. Because of this, please use the table below to identify the specific conditions and then apply the action recommended.

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 with a low number of sets per job (Type 1)	● SP2223: Vt > 3.3 ● SC340 (triggered when Vt > 4.0)	● Do SP2801 (TD sensor initial setting). ● Change the value of SP2201-4: 280v to 240v	Same as B-C1a/b	On the C1: When SP2967 is ON, both the TD sensor and toner concentration adjustments are done during process control.	When the machine is 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.

			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)**		
2	Light copies with a 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 that 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 with 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.

			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)**		
4	Light copies with a high number of sets per job of low-coverage images	**Note:** In such a case, Vt should be > 3.3 (SP2223), however 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 B-C1a/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.
5	Image density drop in solid areas at edges	● Move the original on the glass so that the edge of 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.

F. Image registration

Symptom Explanation	Conditions That Could Cause This Symptom	Probability
The image is not correctly positioned on the page. If the image is not parallel with the edges of the page, see “H. Skewed image”	• Setting Problem • Engine Problem	

Step	Questions/Actions	Yes	No
1.	**Is the problem only with Copy jobs (print jobs ok)?**	Check the settings on the Copy screen. If the settings are correct, suspect a scanner problem.	Go to Step 2.
2.	**Is the problem only with Print jobs (copy jobs ok)?**	Suspect a problem with the Printer Features settings or the print job.	The problem is with Copy jobs and Print jobs. There is an engine problem. Go to Step 3.
3.	Check the paper supply: 1. Check each tray and verify that the paper guides are adjusted correctly to match the paper size in the tray. 2. Load fresh, dry paper in all trays. 3. Copy from each tray. **Is the image still misregistered?**	Go to step 4.	Problem solved correctly.

Step	Questions/Actions	Yes	No
4.	**Are all trays having the registration problem?**	Engine paper path feed problem. Check the relevant settings in Copy SP. Reset them to the factory defaults. If you still have problems, look for mechanical problems in the engine paper path.	Tray feed problem. Check the relevant settings in Copy SP. Reset them to the factory defaults. If you still have problems, look for mechanical problems in the problem tray(s).

G. Residual image or ghosting

Symptom Explanation	Conditions That Could Cause This Symptom	Probability
The printed page contains random light ghost images. The images may either be from a previous page or the current page.	• Transfer assembly • Transfer unit bias roller or contacts • Charge corona assembly	

Step	Questions/Actions	Yes	No
1.	**Have all of the PM tasks been completed?**	Go to Step 2.	Do not continue your troubleshooting until the PM tasks are up to date. Go to Chapter 7, “Preventive Maintenance” Appendix
2.	Check the SC History, SP7-403. **Are there related SC codes?**	Follow the SC code symptom.	Check the transfer unit. Inspect for poor bias roller contacts. Go to the general troubleshooting tips below for additional tips and suggestions.

H. Skewed image

Symptom Explanation	Conditions That Could Cause This Symptom	Probability
The image on the page is not parallel with the edges of the page. If the image is not positioned correctly on the page, see “Image registration” on page 179.	• Tray problem • Engine problem.	

Step	Questions/Actions	Yes	No
1.	Copy from all the paper supplies: 1. Check each tray and verify that the paper guides are adjusted correctly to match the paper size in the tray. 2. Load fresh, dry paper in all trays. 3. Copy pages from every tray. 4. Determine which trays are having a problem. **Are the Copy jobs skewed?**	Go to step 3.	Copy jobs are ok. Go to Step 2.
2.	Print from all paper supplies. Use Printer Config. pages or Printer SP. **Are the Print jobs skewed?**	Copy jobs are ok. Print jobs are skewed. If you cannot determine the cause, call for support.	Copy and Print functions seem ok. Suspect a problem with the customer jobs.
3.	**Are all trays having the skew problem?**	Check for feed problems in the engine.	Go to step 4.

Step	Questions/Actions	Yes	No
4.	Check the paper path for the tray with the skew problem: 1. Power off the printer. 2. Check the paper path in the tray for fragments of paper. Replace any worn, contaminated, or broken components. 3. Copy from the problem tray. **Are the copies still skewed?**	Go to step 5.	Problem solved. Verify that the original job prints correctly.
5.	Check the mechanical feed components on the tray with the skew problem. **Did you find a problem?**	Replace any damaged parts.	Call for support.

I. Spots on prints

Symptom Explanation	Conditions That Could Cause This Symptom	Probability
The image has spots or other toner markings on the page.	• Fusing cleaning/oiling web • Cleaner brush assembly • Dirty paper path	

Paper dust / change transfer belt speed

Change the cleaning interval (SP 2506-2) from the default of 30 minutes to 15 minutes or 5 minutes ”

Tiny Black Spots” troubleshooting

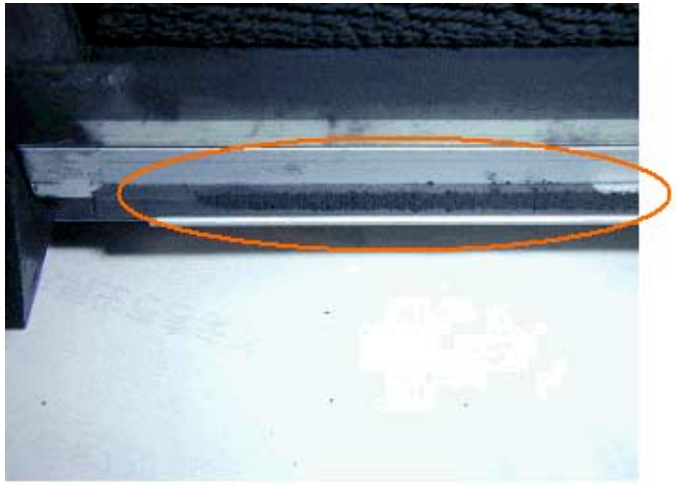
Fusing Cleaning Web not advancing.

Step	Questions/Actions	Yes	No
1.	Check the fusing cleaning/oiling web for proper operation. **Is the web advancing correctly?**	• Check the drum unit cleaner assembly and the paper path. • Go to step 2.	• The web motor is binding and not allowing the web to advance correctly. • Loosen the single screw that is attaching the web drive unit to the fusing assembly and move the drive motor and gear train up and to the right before re-tightening.
2.	**Was the cleaner unit functioning correctly?**	Go to step 3.	Repair or replace the cleaner brush as required.
3.	**Is the paper path clean?**	Go to the general troubleshooting tips below for additional tips and suggestions.	Clean the paper path of excess toner and retry the print job.

CARRIER ACCUMULATES ON THE LOWER DRUM UNIT

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, as 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 if 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 it 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 dirt, 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.

J. Light or dark streaks

Symptom Explanation	Conditions That Could Cause This Symptom	Probability
There are black lines running in the process (feed) direction.	• Charge corona assembly • Transfer unit cleaning blade • Toner clumping in the developer unit	• 90%

Step	Questions/Actions	Yes	No
1.	**Is the PM up-to-date?**	Go to Step 2.	Perform all PM that is due. If the problem still exists, start this procedure again from step 1.
2.	Make some copies and print a print job. **Is the problem just for Copies?**	Printing is ok. Suspect a scanner problem.	The problem is for copy jobs and print jobs. Go to Step 3.
3.	**Are the streaks coming from the transfer unit?**	Replace the transfer belt cleaning blade and the transfer belt.	Go to the general troubleshooting tips below for additional tips and suggestions.

K. Voids

Symptom Explanation	Conditions That Could Cause This Symptom	Probability
There are small areas of the image on the printed page that are extremely light or missing completely.	• The analysis is similar to the analysis for light print symptoms. Go to “PQ-Light print”. • Developer dropping on the page during transfer.	

SC ERROR PROCEDURE

1. SC321: LASER WRITING SIGNAL (F-GATE) ERROR

The laser writing signal (F-gate) does not go to LOW for more than 15 seconds after the copy paper reaches the relay sensor.

Severity Level - Reset with the main power switch.

Check Points:

Please see “Communication Signal Flow for FGATE “two pages later.

If the problem occurs in the Printer mode only

Priority 1. Check the Fuse condition on the Interface Board
Priority 2. Check the harness between Interface board and Memory board.
Priority 3. Check the harness between BCU and SICU (especially the relay connector on the rear side of the fly wheel)
Priority 4. Check the harness between Laser Diode Board (LDB) and SICU
Priority 5. Check if the paper feeding is abnormal (Check the Paper quality, or Relay sensor, or Paper feed unit, check what is creating excessive torque to drive components, etc)
Priority 6. Check the Controller Board, or Memory Board, or Interface Board.
Priority 7. Replace the LDB, or BCU, or SICU

If the problem occurs in both Printer/copy mode or copy mode only

Priority 1. Check the harness between BCU and SICU (especially the relay connector on the rear side of the fly wheel)
Priority 2. Check the harness between Interface board and Memory board.
Priority 3. Check the Fuse condition on the Interface Board
Priority 4. Check the harness between Laser Diode Board (LDB) and SICU
Priority 5. Check if the paper feeding is abnormal (Check the Paper quality, or Relay sensor, or Paper feed unit, check what is creating excessive torque to drive components, etc)
Priority 6. Replace the Controller Board, or Memory Board, or Interface Board, or LDB, or BCU or SICU

Note: If the problem does not occur frequently, there is a lower possibility for board failure.

If SC321 occurs in the following condition:

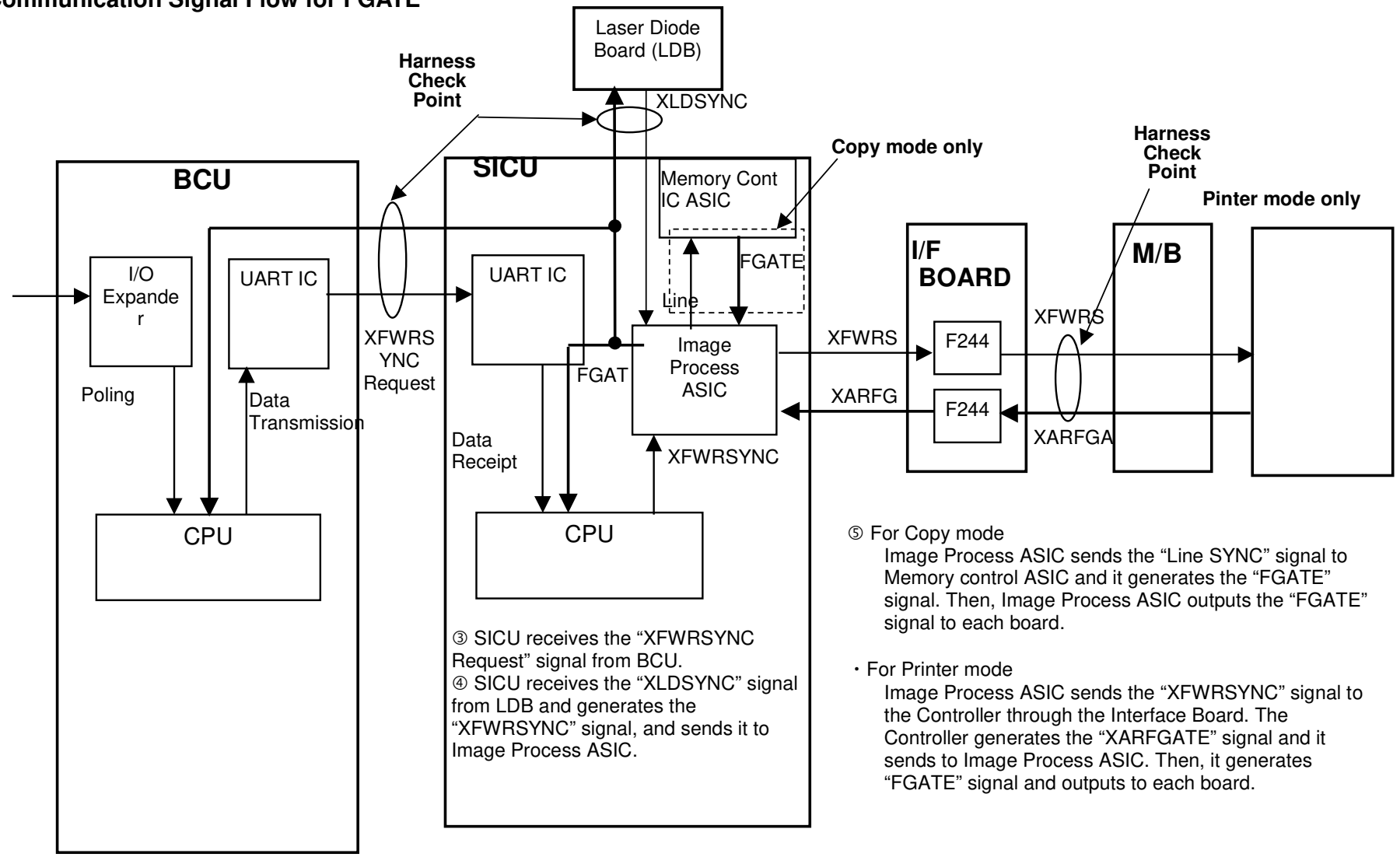
- ◆Copy mode
- ◆LT sideways feeding

Then, we have released the countermeasure firmware to modify the following items:

a) When using the ADF, the image process start timing for LT sideways will be changed. (The timing will be the same as for A4 sideways)

Software Version: 8.8: A2945609－/A2945269－ (US), Sum check: 12C1
A2945659－/A2945269－ (EU), Sum check: A07F

Communication Signal Flow for FGATE



③ SICU receives the “XFWRSYNC Request” signal from BCU.
④ SICU receives the “XLDSYNC” signal from LDB and generates the “XFWRSYNC” signal, and sends it to Image Process ASIC.

⑤ For Copy mode
Image Process ASIC sends the “Line SYNC” signal to Memory control ASIC and it generates the “FGATE” signal. Then, Image Process ASIC outputs the “FGATE” signal to each board.

・For Printer mode
Image Process ASIC sends the “XFWRSYNC” signal to the Controller through the Interface Board. The Controller generates the “XARFGATE” signal and it sends to Image Process ASIC. Then, it generates “FGATE” signal and outputs to each board.

SC495: TONER BOTTLE UNIT ERROR

The toner hopper sensor cannot detect toner even if the toner supply coil clutch turns on for 2 seconds x 10 times during toner supply during copying.

Severity Level - Reset with the main power switch.

Possible Causes:

- Failure to do the relocation procedure before moving the machine
- Toner hopper sensor defective
- Toner supply motor defective
- Toner supply coil clutch defective
- Toner supply motor connector connection
- Toner supply coil clutch connector connection
- Toner near-end sensor defective
- Toner clogged in the supply system

SC592: TONER BANK MOTOR ERROR

The BCU receives an abnormal signal from the toner bank motor.

Severity Level [B] - Reset with the main power switch.

Possible Causes:

- Too much load on the drive mechanism (failure to do the relocation procedure before moving the machine)
- Too much load on the drive mechanism- Operating in a very hot/wet environment (toner melted) *
- Air pump assembly problem
- Toner bank motor defective
- BCU defective

You can check the status of the toner bottle unit lock signal with input check SP5-803-8, bit 2 (0=no lock, 1=lock).

SC592

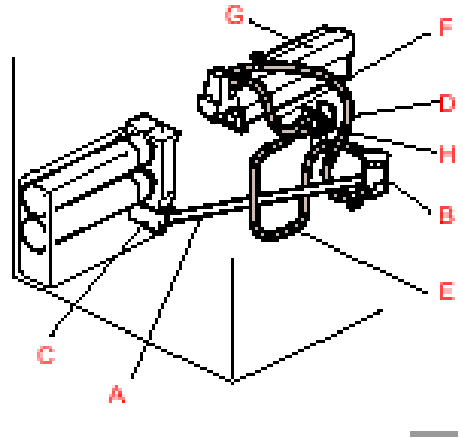
Symptom: SC592 appears.

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

SERVICE REMARKS

These are service remarks to note before maintaining the toner transport path.



Parts	Remarks	Possible Failure	Note
Toner Transport Coil [A]	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.
Toner Transport Tube [A]	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.
Toner Transport Coil [A]	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.

Parts	Remarks	Possible Failure	Note
Toner Transport Tube [A]	Firmly install the toner transport tube [A] on the toner transport coil case [C] when replaced.	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]	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 backward and the air pump [H] and/or the tubes [D, E, F] may be blocked with the toner.	Remove the development unit first.
Air Tubes [D], [E], [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 SP2-207-2 (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 (A2943071) 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	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 SP2-207-2 (Toner bank toner supply).	–
Air Pump	Do not remove the air pump lid [H	The pump's power [H] is lowered, causing the pump and/or tubes [D, E, F] to be blocked with toner.	–

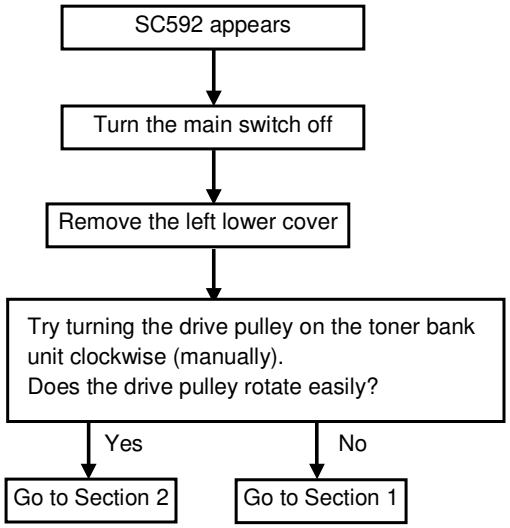
Parts	Remarks	Possible Failure	Note
	Do not perform the output check for the air pump [H] when the development unit is out.	Toner scattering may occur.	(This is not related to SC592.)
Toner Filter Dust Filter	Replace the toner filter at every PM (300 k). Clean the dust filter at every PM (300 k).	The 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.	–

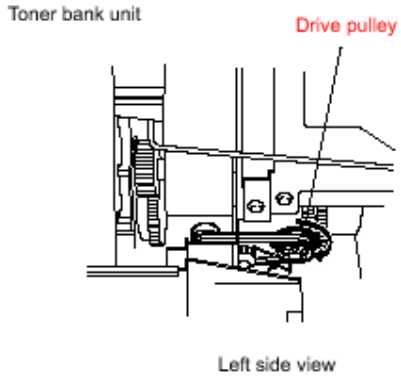
When other units are in trouble

Parts	Remarks	Possible Failure	Note
Developer (Carrier) Fall	Clean the toner transport path when the 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.	–

TROUBLESHOOTING:

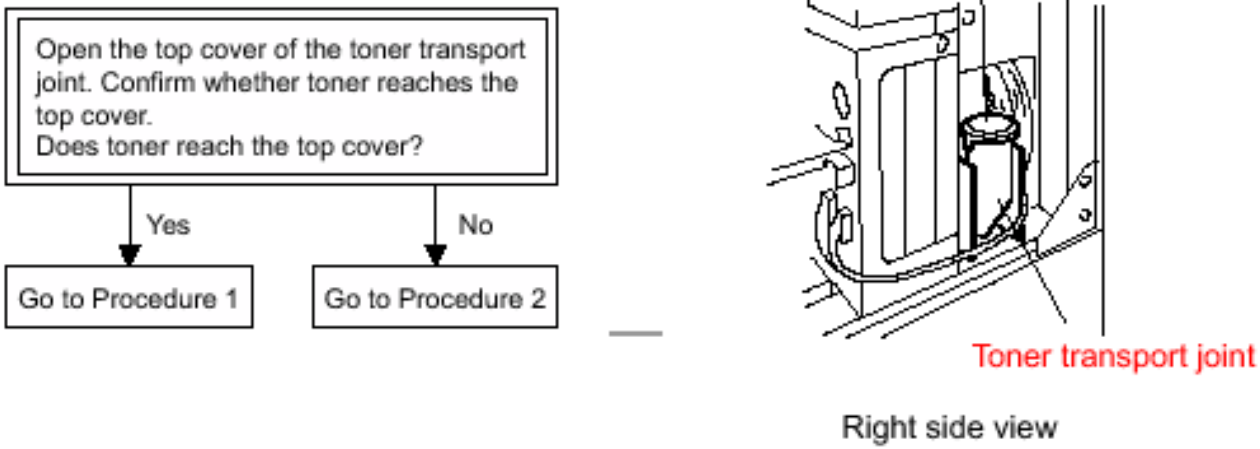
The following flowcharts and procedures are for determining the root cause, as well as the best course of action. It is divided into two main sections, one for each of the cause categories mentioned above.

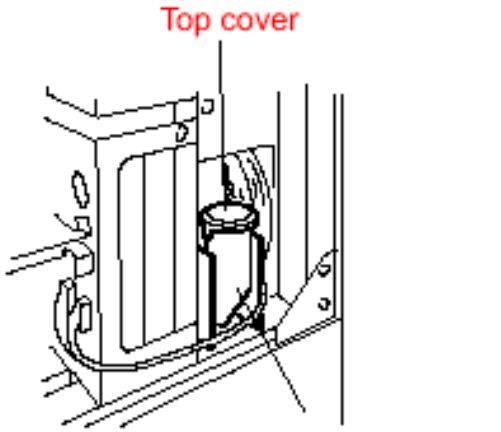




- “Section 1 (Transport Screw/Air Pump Motor Failure)”
- “Section 2 (Toner Bank Unit Components Failure)”

Section 1 (Transport Screw/Air Pump Motor Failure):





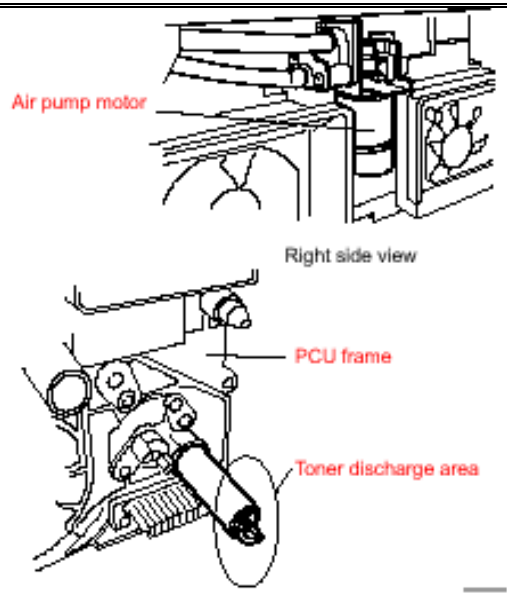
Right side view

- “Procedure 1” on the next page
- “Procedure 2” on the page after next

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.

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

- Check for any deformation of the toner transport screw on the PSU (power supply unit).
- 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.

Procedure 2:

Possible Causes

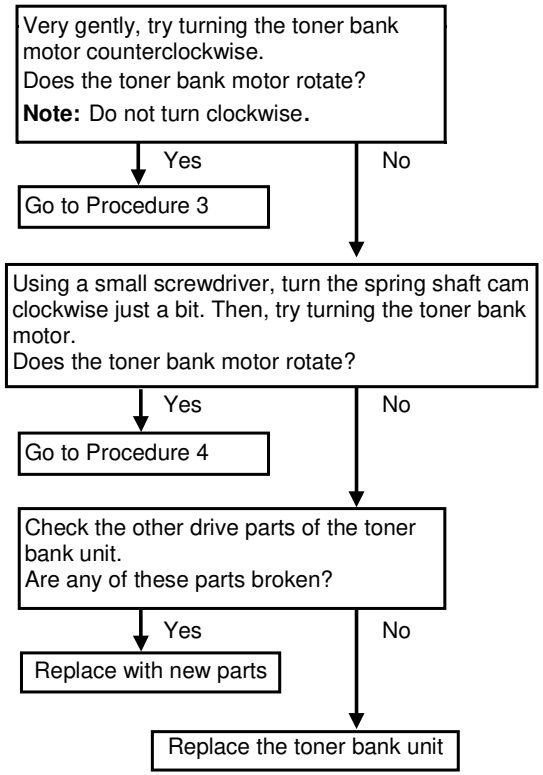
The toner transport screw (coil) has locked due to a toner blockage in the toner transport tube.

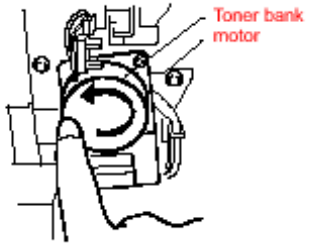
This is a very likely cause with machines that have been moved (transported) with toner still inside the toner transport path.

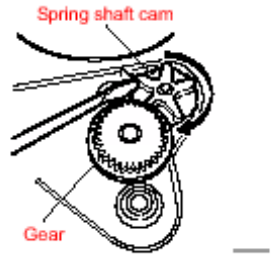
Action

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):







Procedure 3:

Possible Cause

In addition to the causes mentioned, SC592 can, in theory, occur due to other (unknown) causes. In this 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 future occurrences.

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

See the flowchart in “Section 2 (Toner Bank Unit Components Failure)”.

Procedure 4:

Possible Cause

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

Action

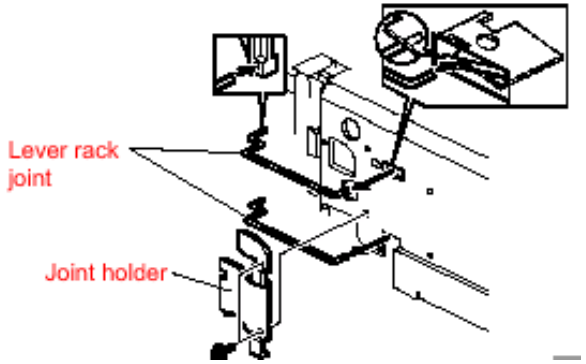
Apply grease to the 2 bushings of the spring shaft. Then, replace the spring shaft and cam stopper with the modified ones.

See “Grease Application Procedure”.

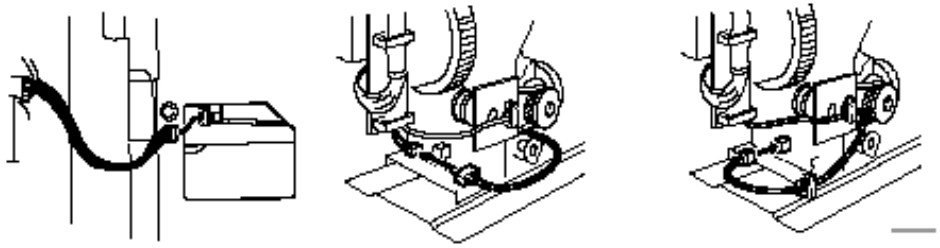
Grease Application Procedure: Please note that a lot of toner can spill from the unit during this procedure.

Please make sure to collect the toner using a vacuum.

1. Remove the toner bank unit.
2. Remove the joint holder and lever rack joint.

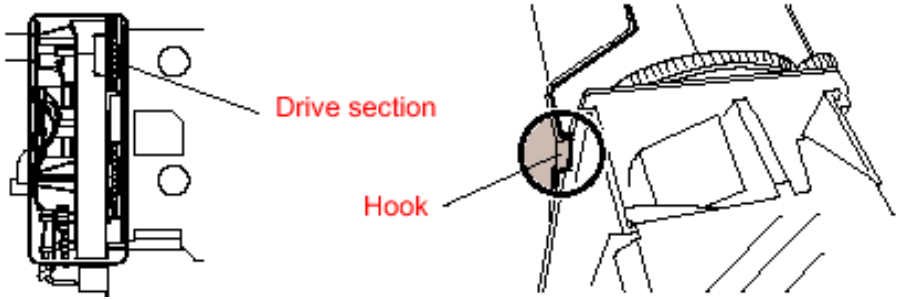


3. Disconnect the three connectors.

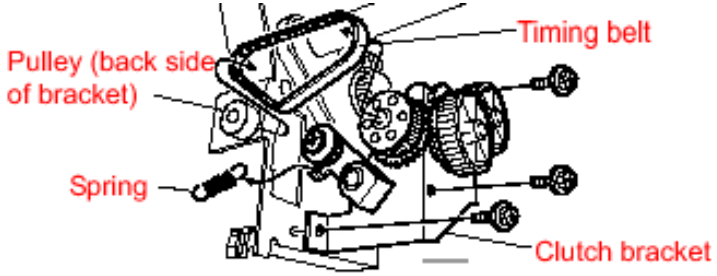


4. Remove the drive section from the toner bank unit (5 screws).

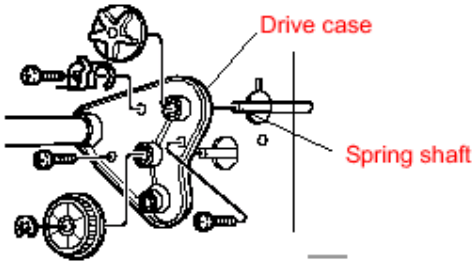
Disconnect by unhooking the hook shown in the following diagram.



5. Remove the pulley, timing belt and spring. Next, remove the clutch bracket (3 screws, 1 connector).

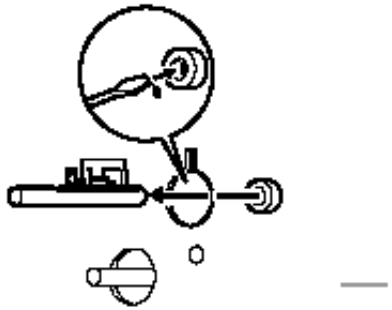


6. Remove the gear (1 e-ring), spring shaft cam and cam stopper. Then remove the drive case and spring shaft.

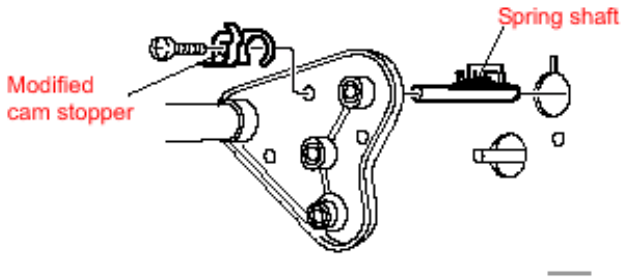


B. Applying the Grease:

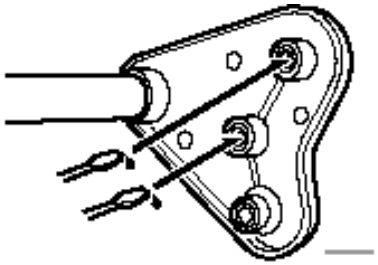
1. With a small screwdriver, break up any toner clumped around the bushing and collect it using a vacuum cleaner. Then, apply grease to the bushing.



2. Re-assemble the spring shaft and cam stopper.
   When reinstalling the spring shaft, turn it several times so that the grease is distributed evenly.



3. Apply grease to the drive case as well.



4. Re-assemble the removed parts.

SC50X: 50X LIFT ERRORS ON MULTIPLE TRAYS

Use this troubleshooting procedure if you have more than one of the Tray Lift errors:

“SC501: 1st tray lift malfunction”

“SC502: 2nd tray lift malfunction”

“SC503: 3rd tray lift malfunction”

“SC504: LCT 1st tray lift malfunction”

“SC505: LCT 2nd tray lift malfunction”

“SC506: LCT 3rd tray lift malfunction”

Step	Questions/Actions	Yes	No
1.	Are there problems for all trays?	Go to Step 2.	Go to Step 4
2.	A common problem is as follows: • Red wrench shown on standard Trays 1, 2, 3. • LCT is installed, but Trays 4, 5, and 6 are not shown on the Copy screen. Do you have this problem?	Check connector LCT-CN550 (LCT 5v and 24v; 4-pin connector at the LCT/Engine interface.)	Go to Step 3
3.	Are there also false paper-empty symptoms?	Suspect a problem with connector CN508 on IOB PCB or connector CN605 on the BCU PCB.	Suspect a 24V problem at the IOB PCB.
4.	Is the problem only for trays 2 and 3?	Suspect a problem with connector CN511 on the IOB PCB.	Go to Step 5.

Step	Questions/Actions	Yes	No
5.	Is the problem only for Trays 4, 5, and 6?	Go to Step 6.	Record your combination of symptoms. Refer to the Point-to-Point diagrams.
6.	Check all of the LCT connectors at the lower right side of the engine, especially: • CN551 (white, 8-pin, sensor signals). Are the LCT/Engine connectors ok?	Go to Step 7.	Repair as needed.
7.	Check the connectors on the LCT PCB, especially • v CN501 (sensor signals) • v CN505 (LCT lift motors) Are the LCT PCB connectors ok?	Go to Step 8.	Repair as needed.
8.	Have SC511 errors also occurred?	Suspect a 24v problem. This can occur if LCT door interlock switch fails on the 24v circuit (The door open message won't occur unless the Door Safety circuit.)	Use the LCT Point-to-Point diagrams.

SC501-506: TRAY LIFT MALFUNCTION

One of the following conditions is detected in a tray.

1. The lift sensor is not activated for 10 seconds after the tray lift motor turned on. (The tray icon on the Copy screen will have a flashing red wrench.)
2. The lift sensor is already activated when the tray is placed in the machine. (The tray icon on the Copy screen will have a solid red wrench.)

Severity Level - Unit Error.

- The red wrench symptoms will usually appear at the end of a power-on initialization.
- The SC501-506 error will appear if you try to Copy from Tray 1-6. It will usually also be logged SC History (SP7-403). You can continue to copy and print from the other trays.

.

Possible Causes:

- The operator overloaded the paper tray or other there is another mechanical problem
- Poor tray lift motor connection
- Poor pick-up solenoid connection
- Lift sensor defective
- Tray lift motor defective

SC 501-506 Table

Step	Questions/Actions	Yes	No
1.	Determine which tray(s) has a lift failure: 1. Load Tray 1, right side. Select Tray 1 and try to make copies (or prints). 2. Try to make copies (or prints) from ALL other trays. 3. Look for red wrench symbol(s) on the Copy screen tray icons. 4. Look for 50x errors in the SC History (SP7-403). Is the problem limited to one tray ?	Go to Step 2.	Go to "SC50x: 50x lift errors on multiple trays" on page 296
2.	Check the tray with the problem 1. Open the tray. 2. Check for a paper loading problem. 3. Close the tray. Did you find a paper loading problem?	Instruct the operator not to overload paper.	Go to Step 3.
3.	Check for mechanical problems in the tray that could prevent proper tray lift. Is the tray Ok?	Go to Step 4.	Repair as needed.
4.	Check for symptoms after a power cycle: 1. Switch the main power switch OFF. 2. Switch the main power switch ON. Wait for the Copy screen to appear. 3. Look for a red wrench on the Tray icon of the Copy screen. Is red wrench shown on Tray ?	Go to Step 5.	Possible intermittent problem.

Step	Questions/Actions	Yes	No
5.	Is the tray red wrench solid?	The lift sensor is probably bad.	The tray red wrench is flashing. Go to Step 6.
6.	Check the pick solenoid and lift sensor interaction: 1. Turn the tray pick-up solenoid ON with Output Test SP5-804-XX. Tray 1: SP5-804-7 Tray 4: SP5-804-10 Tray 2: SP5-804-8 Tray 5: SP5-804-11 Tray 3: SP5-804-9 Tray 6: SP5-804-12 This will allow the lift sensor flag to move. 2. Check the status of the Tray Lift Sensor for each tray with input test SP5-803-4, bits 0 to 5. Tray 1: Bit 0 Tray 4: Bit 3 Tray 2: Bit 1 Tray 5: Bit 4 Tray 3: Bit 2 Tray 6: Bit 5 3. Manually push up the Tray pick-up roller to activate the actuator flag for the lift sensor. (You may need to remove the tray first.) Does the Lift Sensor status change?	The sensor and solenoid are good. Go to Step 7.	There is a problem with the solenoid or the sensor.
7.	Try to run the lift motor. 1. Activate the tray lift motor with Output Test SP5-804-XX. Tray 1:SP5-804-29 Tray 4:SP5-804-32 Tray 2:SP5-804-30 Tray 5:SP5-804-33 Tray 3:SP5-804-31 Tray 6:SP5-804-34 Does the motor operate?	Go to Step 8.	Suspect a problem with the lift motor or circuit.
8.	Use input test SP5-803-4 again to check if the lift sensor status changes as the motor reaches its upper position. Does the sensor status change?	The tray lift system seems to operate correctly.	Repeat the steps in this table to try to determine the failing components.

SC990: SOFTWARE PERFORMANCE ERROR

The software performs an unexpected function.

Severity Level [B] - Reset with the main power switch. This condition can usually be cleared by cycling the power.

Possible Causes:

- SICU Board failure

  Note: This SICU board failure occurs only with phenomenon of "Operation Panel Blinking". During scanning, the operation panel starts blinking. When the scan completes, the blinking stops, or machine operation keeps working, then, SC990 is displayed.

  Two capacitors have been added to the SICU board as a countermeasure as follows:

New part number	Description
A2945605	SICU Board – 240V USA
A2945655	SICU Board – 230V

  .This countermeasure has been applied to the first production of Bellini-c,d

- Software communication problem/ Software defective

  Note: A lot of countermeasures for software problems have been applied to the firmware. Therefore, please install the latest firmware (Version 8.6). If the problem still occurs, please send the SMC print for our investigation.

4. OTHER PROBLEMS

STAPLING PROBLEMS

Symptom	Action
Print jobs are not stapled AND Copy jobs are not stapled	• If the staple-empty LED on the op panel is ON, instruct the operator to load staples. If the staple-empty LED stays on after loading staples, suspect a sensor problem (Finisher Staple end or Finisher- Cartridge Set). • If staple-empty LED is OFF, look for mechanical problems in the Finisher. **Note:** You can check the stapler ready signal with input check SP5-803-4, bit 7 (0=ready, 1=not ready).
Print jobs are not stapled (copying/stapling is OK)	Suspect a problem with the printer menus, the application or the print driver.
Copy jobs are not stapled (printing/stapling is OK).	There is probably a problem with the way the user copied the job.
The stapler runs continuously	• Check the stapler head. • Ensure that the staple end sensor (Finisher-S11) actuator is positioned correctly. It can get pushed into a position that causes the sensor to incorrectly call for more staples. Also check the Staple Hammer HP sensor. • Check the connections. For example, an open Ready line (CN210-2) can cause this symptom

Symptom	Action
Staple position not correct	This is usually due to a menu problem or a job submission problem. **Note:** Some staple requests cannot be processed precisely. For example, if the paper loading direction forces the staple to be toward the front of the printer, slanting is not possible. A straight staple is used instead. This is a mechanical limitation. See the operating instructions
Poor stacking	To correct paper curl, turn over the paper in the tray. Correct the alignment of the jogger fence to minimize the friction between jogger fence and the paper guide. Correct the jogger fence position with SP mode 6120.

PUNCH PROBLEMS

Symptom:
Mis-punched paper, SC724 and paper jams in the punch unit.

Cause:
The punch waste (chads) built up in the punch unit assembly due to static electricity generated by the paper.

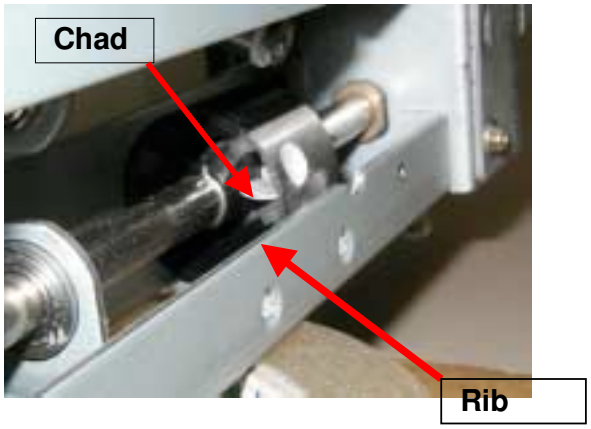
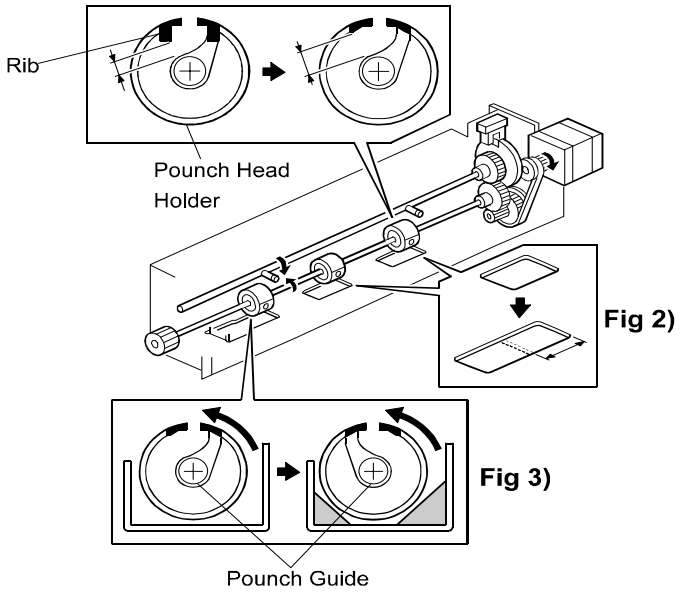


Fig 1)



Solution:
The following countermeasures have been applied:

1) The rib shown above has been removed to widen the opening in the punch head receiver, making it easier for chads to fall out and not collect in this area (fig. 1).
2) The opening of the frame has been widened to prevent the chads from accumulating in this area (fig. 2).

3) The position of the guide on the punch unit has been changed (fig. 3).

- The new part numbers associated with these changes are as follows:

  P/N A812 7183 (Punch Unit – 3 Holes)
  P/N A812 7182 (Punch Unit – 2 Holes (Europe))
  P/N A812 7187 (Punch Unit – 2 Holes (USA))
  P/N A812 7184 (Punch Unit – 4 Holes)
  P/N A812 7186 (Punch Unit – 4 Holes (North Europe))

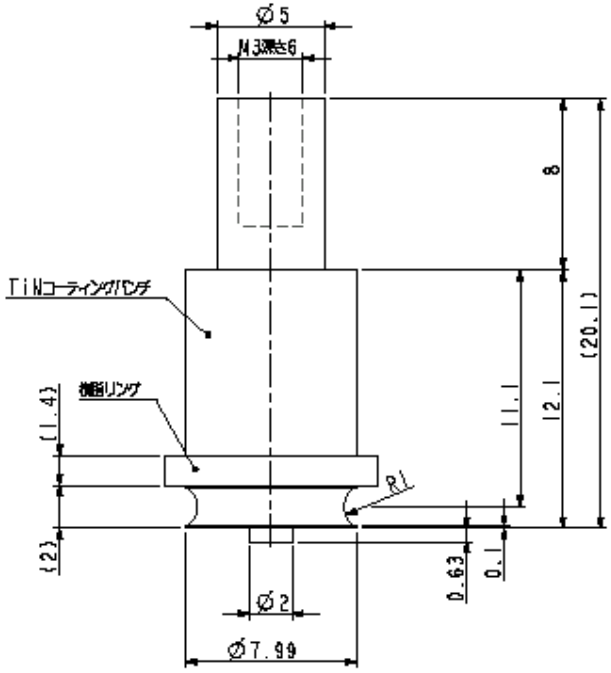
- The cut-in serial numbers are as follows:

MODEL NAME	DESTINATION	CODE	SERIAL NO.
Punch Kit – Type 850 E4	Europe etc.	A812-30	3005682
Punch Kit – Type 850 S4	Europe etc.	A812-31	3101109
Punch Kit – Type 850 NA2	USA, Canada. South America	A812-32	3202101
Punch Kit – Type 850 NA3	USA, Canada. South America	A812-57	5727870
Punch Kit – Type 850 E2	Europe etc.	A812-67	6705442

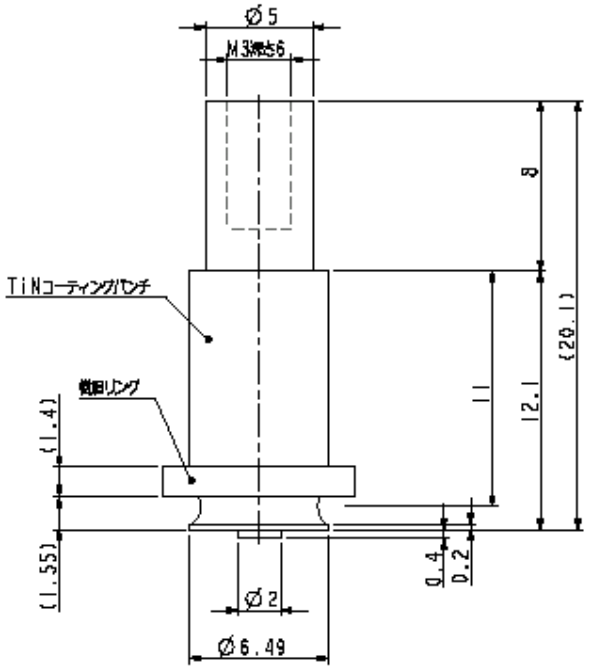
Punch Head (Service Parts)

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 if 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 wearing during the course of operation.

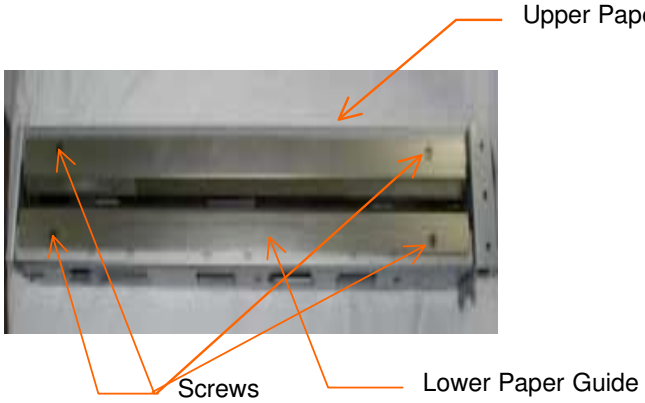
   Visual distinction: The service part punch head is blue.

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.

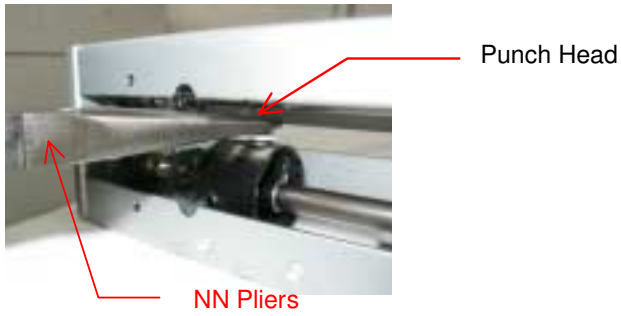
<u>Punch Head Replacement Procedure</u>

1. Remove the upper and lower guides (4 screws).

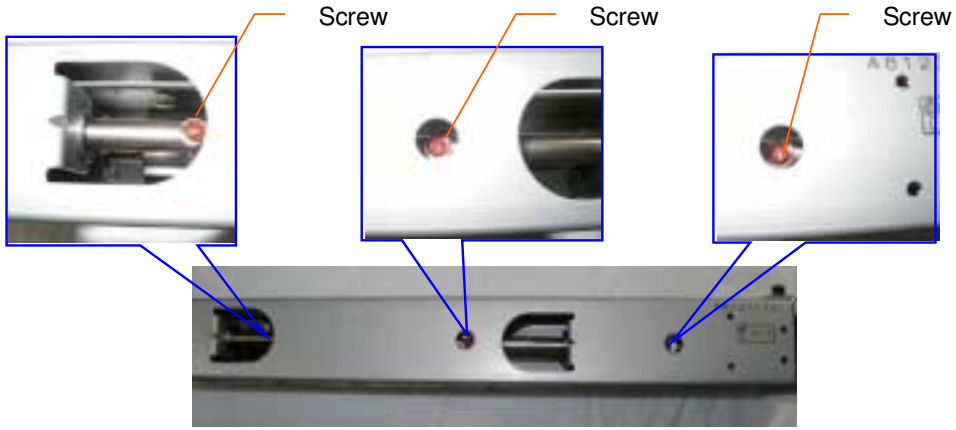


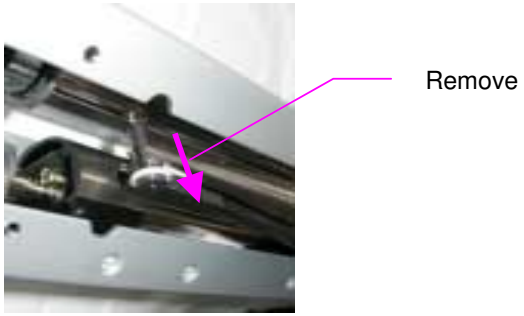
2. Rotate the drive gear until the punch head and punch head receiver are aligned.

3. Remove the punch head, holding the head with a pair of needle-nosed pliers (1 screw).

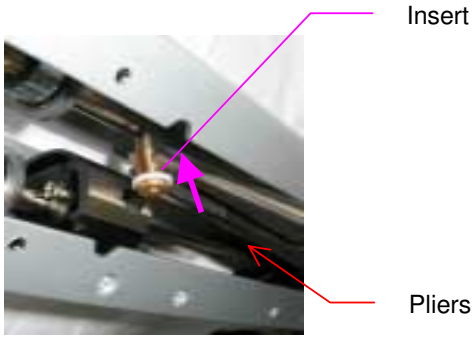


NOTE: a. Do not touch the punch head with bare hands.
b. Do not remove any other screws.

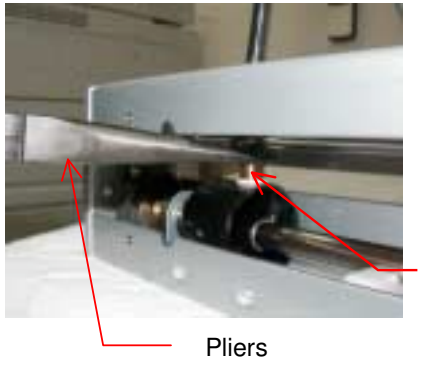


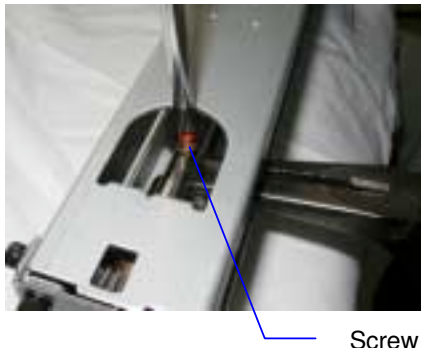


4. Insert the new punch head.



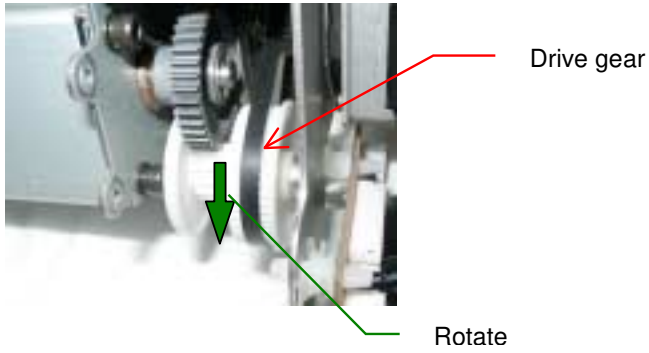
5. Secure the new punch head in place, holding it with a pair of needle-nosed pliers (1 screw).





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.

TONER SCATTERING FROM THE DEVELOPMENT UNIT

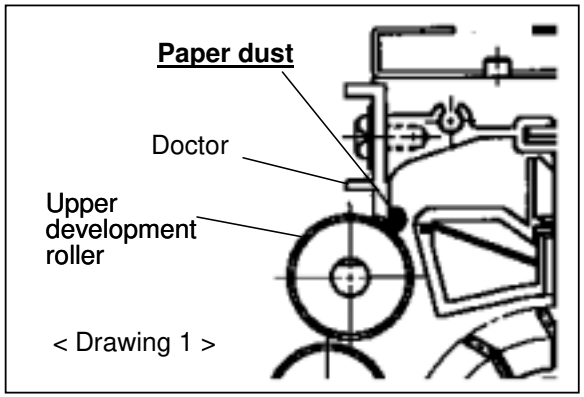
SYMPTOM

- 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 >

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 lead 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.

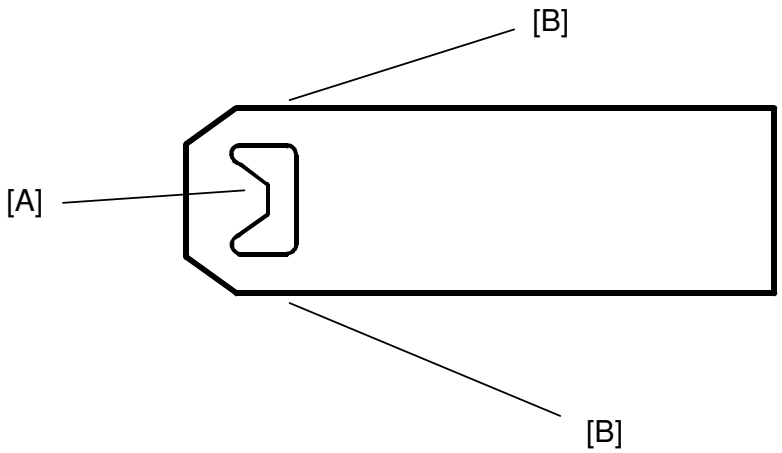
- When toner scatters or leaks from the development unit.
- When low image density lines appear, especially at the edges of paper

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 the upper development roller

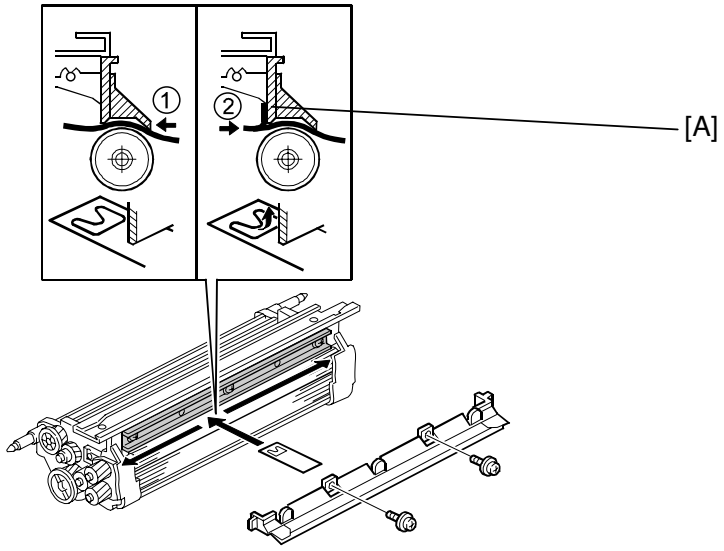


Cleaning Procedure

Caution: Switch the machine off before staring this procedure.

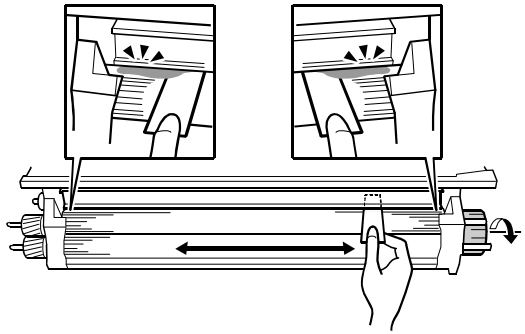
Note: If the machine shows this symptom at short intervals, we recommend that you clean the entire toner supply path before performing this procedure so that you can remove all the toner with paper dust from the toner supply path.

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.

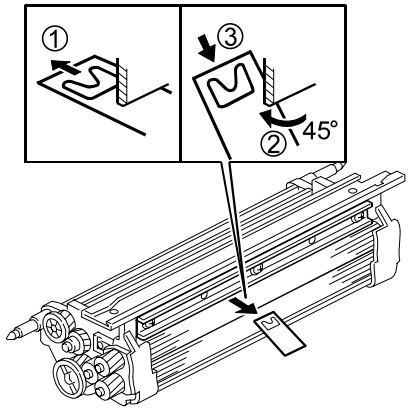


4. Slide the tool left and right several times, all the way the to the left and right ends of the gap.

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.

TONER SCATTERING FROM THE REAR SIDE OF THE MACHINE

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 drum cleaning unit and 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.

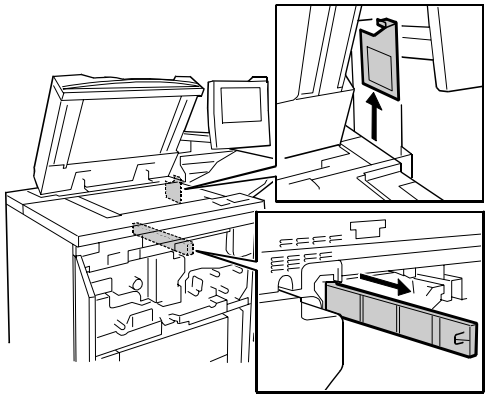
b) Toner clogs in the tube located between the toner hopper and the cylinder case.

SOLUTION

IMPORTANT: Check the following items before performing the solution below.

1. Check the toner filter and drum filter, 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.

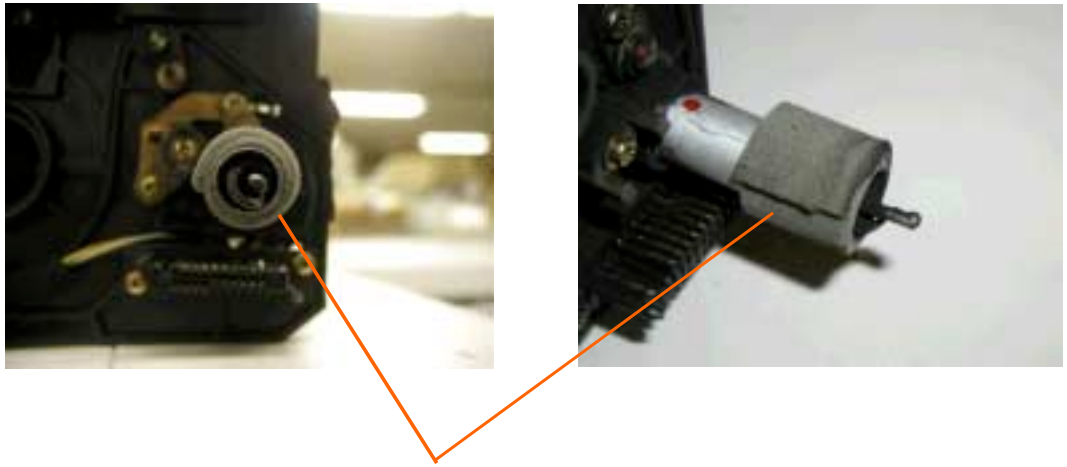


2. If toner scattering still occurs, clean the toner transport path.

Please perform the following if the symptom still occurs, even after performing the above checks.

1. Toner scattering in the rear of the machine

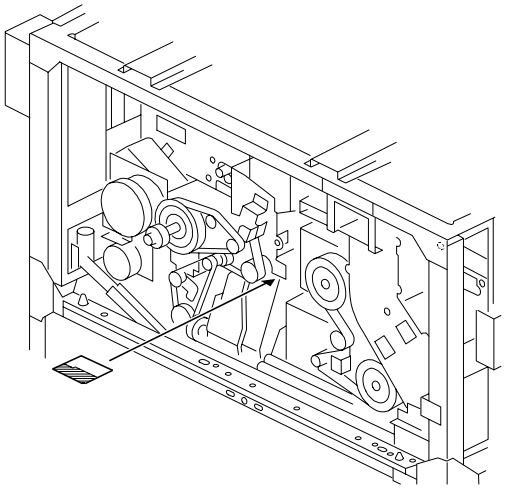
a) Attach the new seal (B0703617) to the drum cleaning unit pipe as shown below, in order to seal the connection between the drum cleaning unit and toner recycling case.



Seal: B0703617

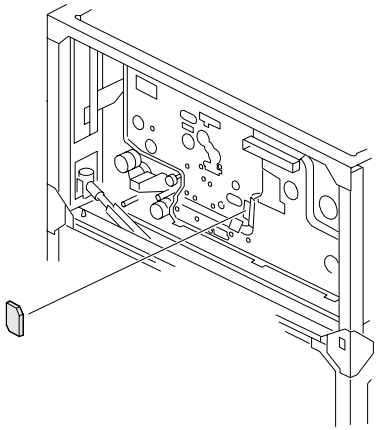
b) Attach the Mylar (B0703618) to the top of the toner recycling case as shown below. This will prevent toner scattering at the connection between the transfer unit toner collection pipe and recycling case.

Attaching position: Rear side view



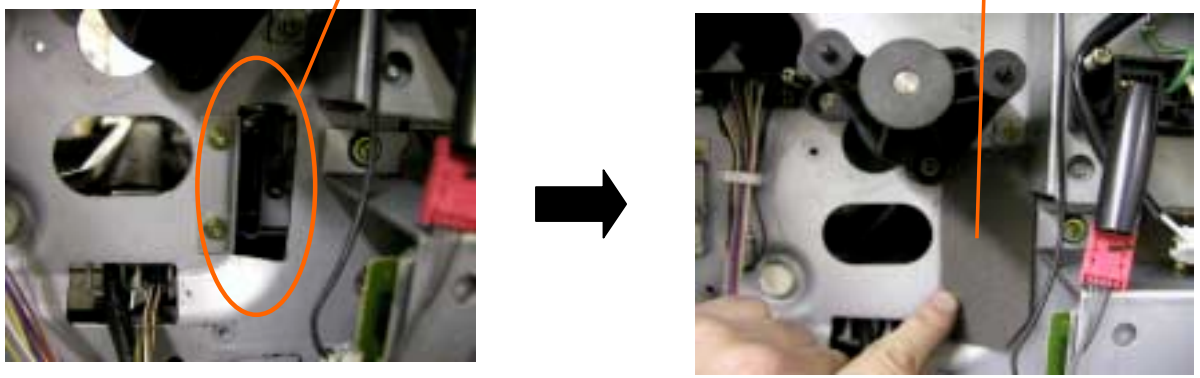
c) Attach the new seal (B0703619) as shown below to the opening in the rear side plate. This will prevent toner scattering in the fusing and duplex areas.

Rear side view



Cover this opening with the seal

Seal (B0703619)

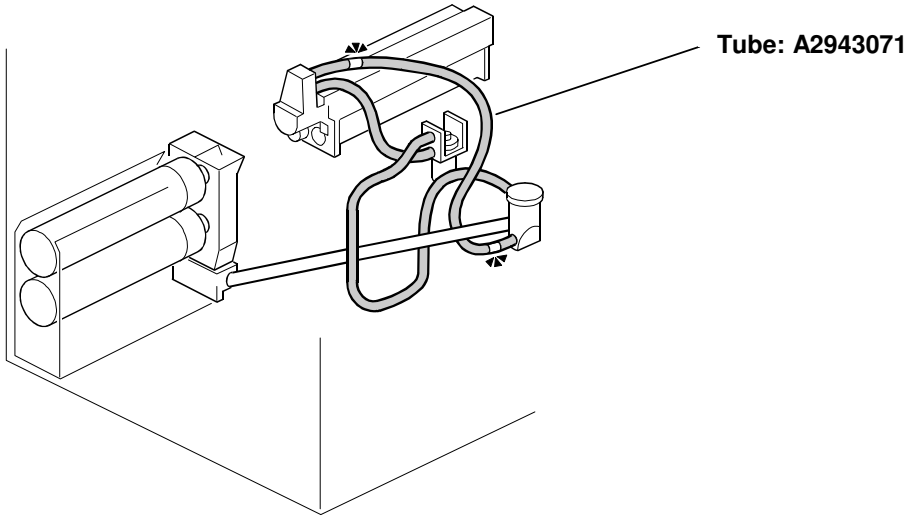


2. Toner scattering from the filters of the toner hopper

a) The material of the cylinder case seal (A2943476) has been changed to one with higher reliability (from Aug '02 production).

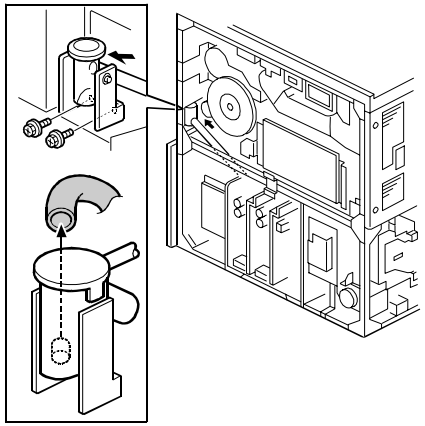
Note: It is easier to replace the entire cylinder case (A2943485).

b) Clean the tube (A2943071) between the toner hopper and the cylinder case (procedure below).

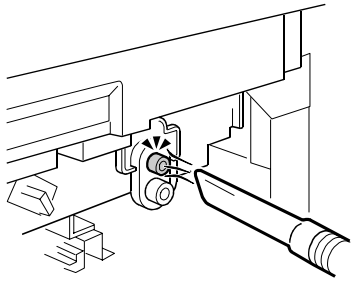


Tube Cleaning Procedure

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.



TONER BANK UNIT MALFUNCTION

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 over flow sensor, causing it to mis-detect the waste toner bottle full condition.

2. Toner bottle cannot be pulled out from the toner bank unit

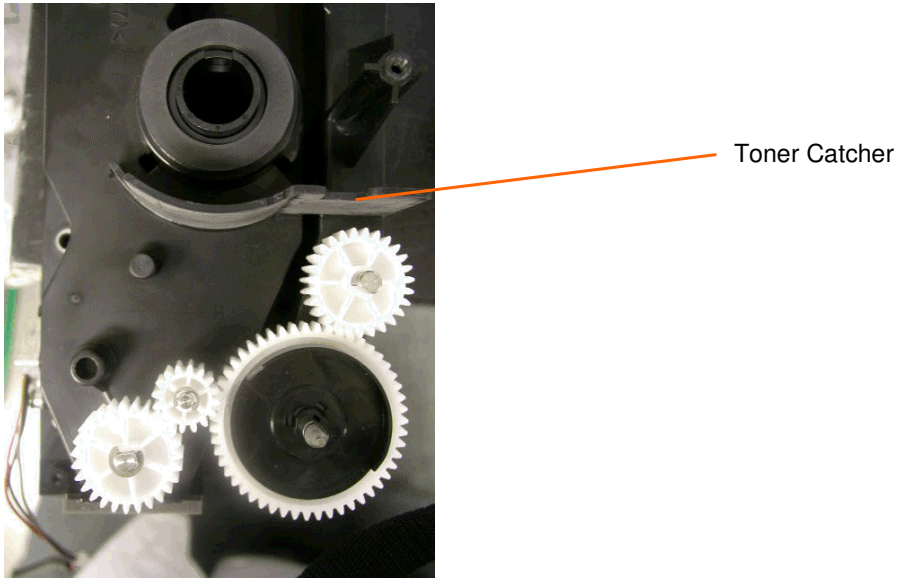
When toner is supplied to the toner bank unit, it may leak out from the bottle and gradually accumulate in the chuck area, eventually preventing the bottle-holding mechanism on the chuck from releasing the bottle.

SOLUTION

The following solutions have been applied from October '03 production.

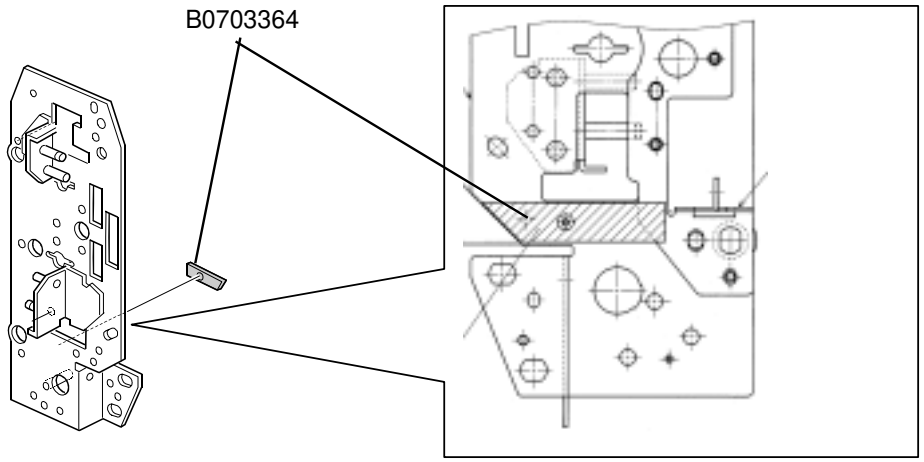
1. Misdetection of the waste toner bottle full condition

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.

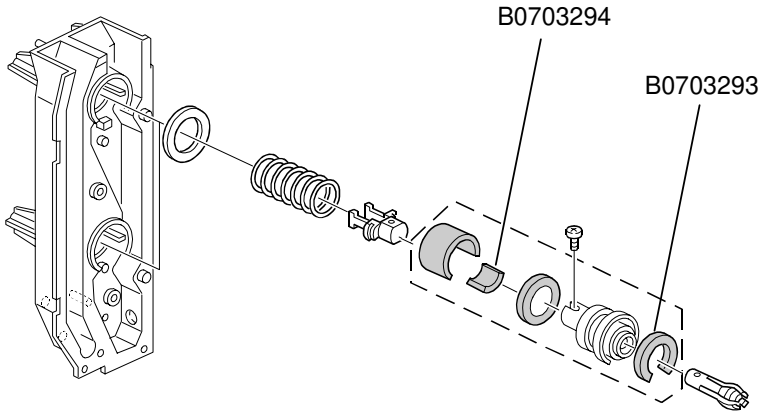
- P/N: B0703364 (Shield: Bracket Chuck)
- Attachment position: Refer to Parts Catalog, pg. 78



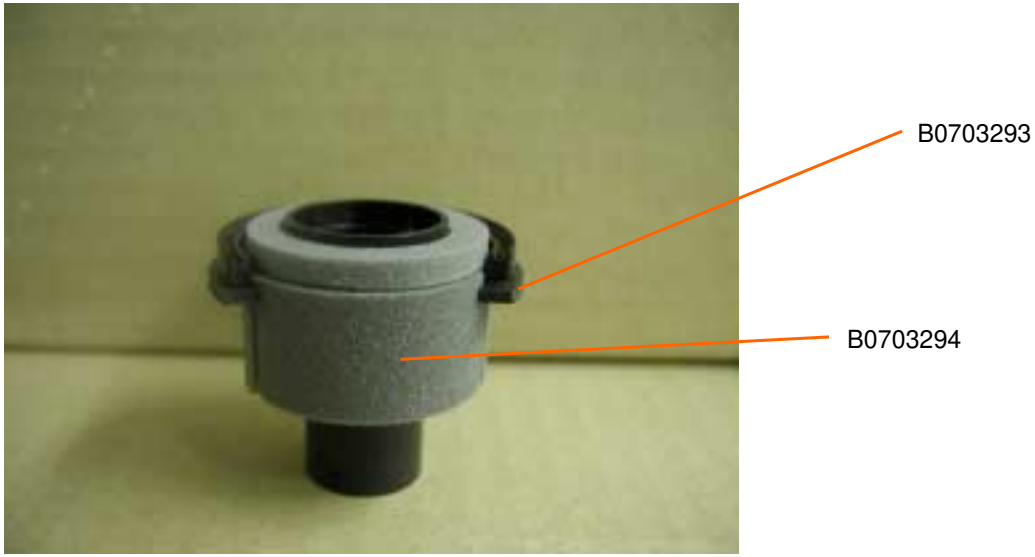
2. Toner bottle cannot be pulled out from the toner bank unit

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:



SR860 Problems

1. Paper jam in the finisher exit

SYMPTOM

Paper jam in the finisher exit area when using the B468/B469.

CAUSE

Insufficient tension in the shift-transfer timing belt causes excess torque in the belt's motor when the paper passes, resulting in a motor lock and paper jam in the finisher exit section.

SOLUTION

Adjust the tension of the timing belt (P/N: AA043054).

Note: The procedure begins on the next page.

Adjusting the Timing Belt Tension

1. Remove all of the following shift-transfer section components (P/C: pg. 13).

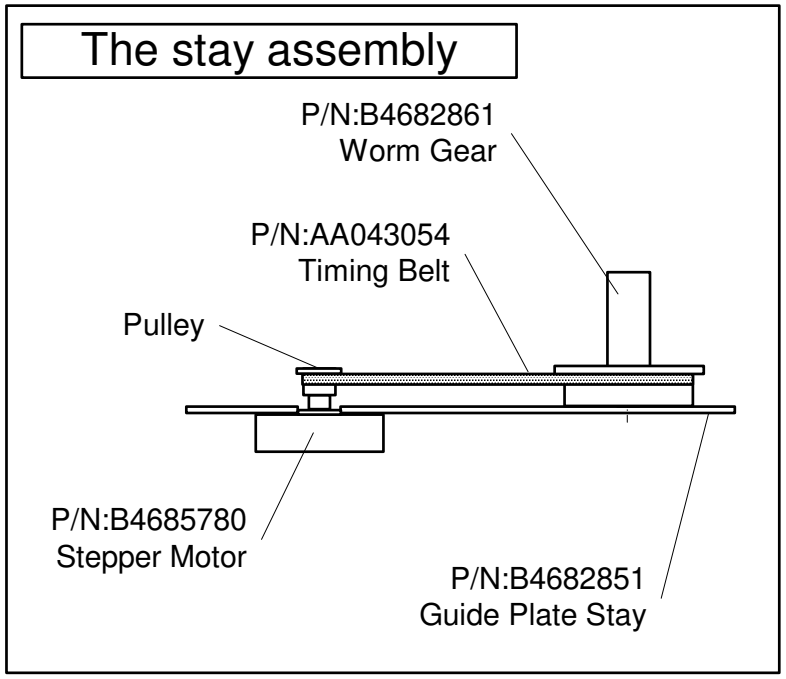


Fig. 1

2. Remove the spring (P/N: A6971518) located in drive section 2 (P/C: pg. 41, index 12).

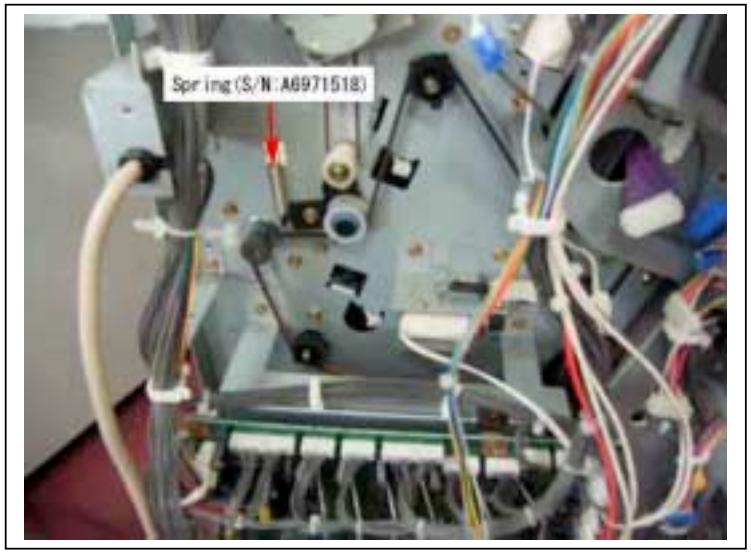


Fig. 2

3. Attach the spring that was removed above to the area shown below (one end to the motor pulley, the other end to the edge of the stay). This spring will be used to apply the optimum tension to the belt (6±3.5N/3mm).

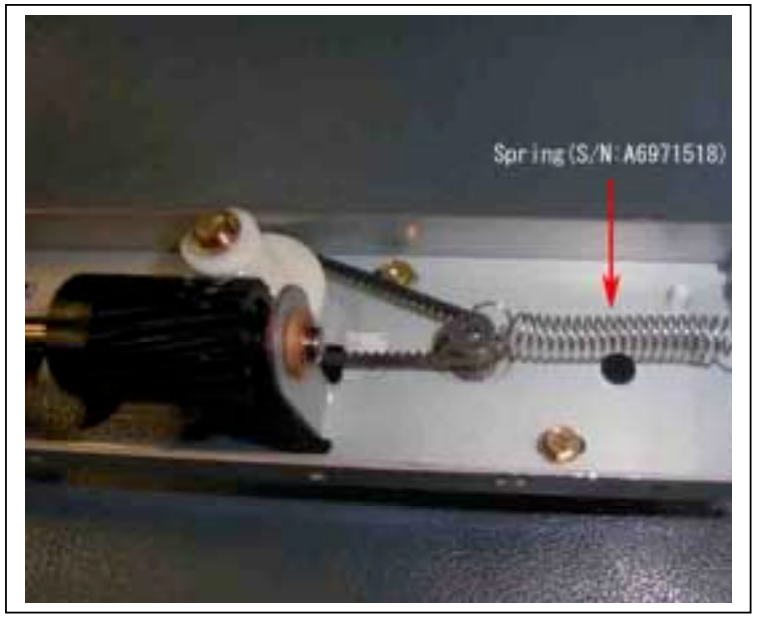


Fig. 3

4. Loosen the two tapping screws shown below (P/N: 04513006B) and allow the belt to settle to its new position (pulled by the spring).

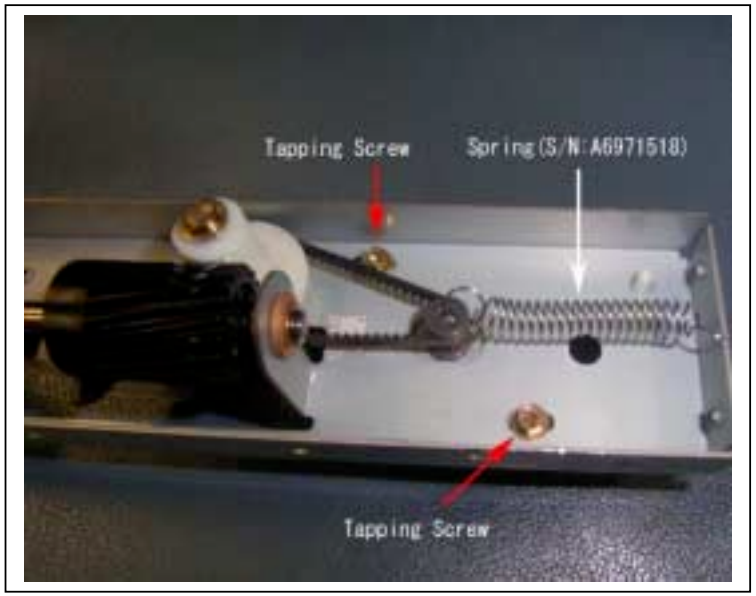


Fig. 4

5. Tighten the screws while the belt is in the new position.

Note: After tightening, make sure that the motor is securely locked in place.

6. Reattach the spring and stay assembly that was removed in Step 1.

2. Jogger Fence Adjustment

SYMPTOM

Booklet skew when using the B468.

CAUSE

1. ***The front and rear jogger fences are not parallel with one another.***
2. ***The jogger fences are too close or too far from the paper edges, and the paper is not fed out of the booklet maker straight.***
3. ***The jogger fence(s) themselves are bent.***

SOLUTION

The following three solutions correspond to each of the three causes above:

1. ***Perform the Adjustment Procedure below to bring the jogger fences parallel to one another.***
2. ***Perform the Adjustment Procedure below to ensure the fences will close to the proper width.***
   Note: To ensure the proper width for each paper size, update to ROM vXXXX (see RTB #RB064038).
3. ***Replace the jogger fences with the modified ones to ensure the fences are not deformed when they expand because of heat (see MB #XXXXX).***

Note: The following Adjustment Procedure has been revised for the following reasons:

- An adjustment board has been registered as a service part for more accurate jogger fence alignment, because paper can tend to slack during the adjustment.

  Adjustment Board – Jogger Fence B4689003
  (250mm x 280mm)

- A new SP mode (SP6120) has been added which allows the fences to be adjusted for different paper sizes (see RTB #RB064038 for the adjustment procedure).

  Important: Specific firmware combinations are necessary to activate this SP mode. See RTB #RB064038 for details.

- Revisions to the procedure below have been applied to ensure that booklet skewing (horizontal and vertical) is kept within the **specification tolerance of 2mm or less.**

  Important: "2mm or less" refers to the amount of skew between the **edges of the innermost sheet** of a folded set (or single sheet).

Adjusting the Jogger Fences

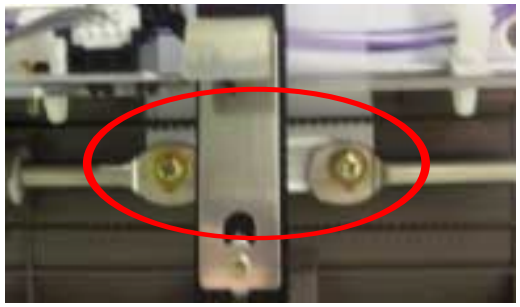
1. Move the belt hook down to the position shown in the photograph to the right. To do this, move the stack feed out belt on the rear side of the unit by hand.

   Important: Do not move the belt by the hook. Also, be sure to move the belt in the correct direction, shown by the arrow in the photograph below.

2. Insert the adjustment board (B4689003) between the jogger fences.

3. By manually moving the stack-feed out belt on the rear side of the unit, bring the adjustment board up until its edge is about at the top edge of the upper stay.

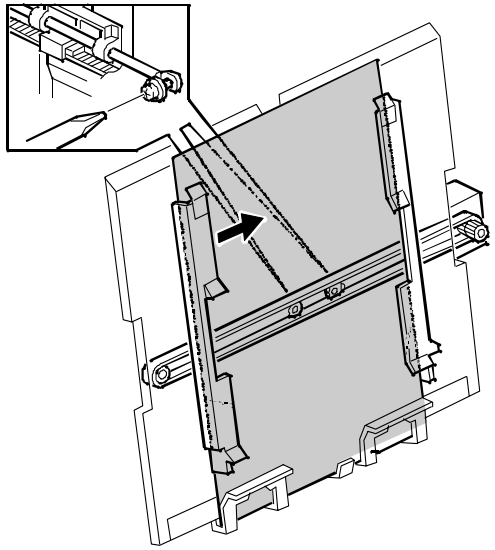
4. Loosen the 2 screws for the lower jogger shafts.



5. Rotate the R7 knob until the upper stay lightly contacts the adjustment board.

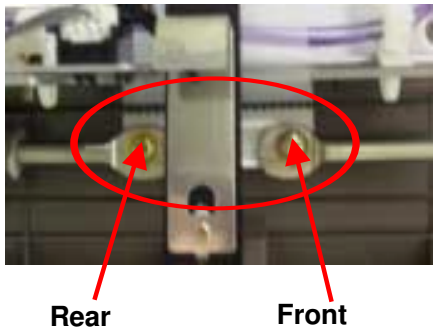
6. By turning the motor pulley (black knob), bring the fences together until they are roughly parallel to one another.
   Note: At this point, the fences should not be tight against the board's edges.

7. Bring the board flush against the rear jogger fence.

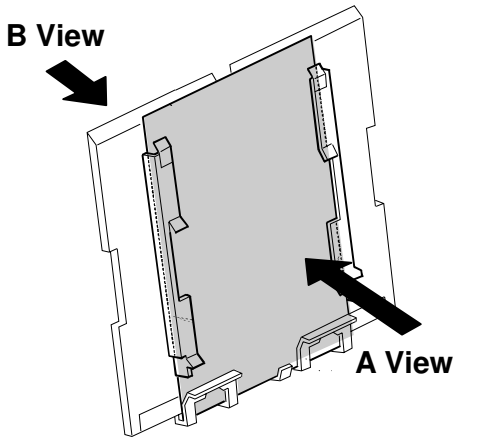


02073006.WMF

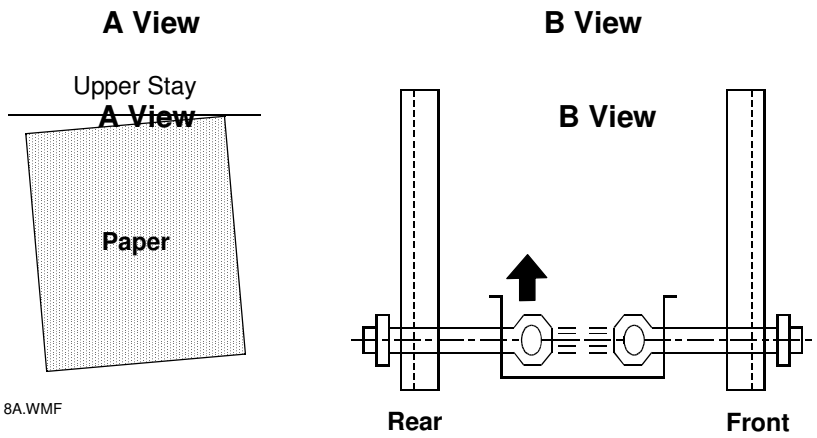
8. Adjust the rear jogger shaft position until the top edge of the upper stay and the upper edge of the board are parallel to one another.
   Left edge height + Right edge height = 0.5mm or less.



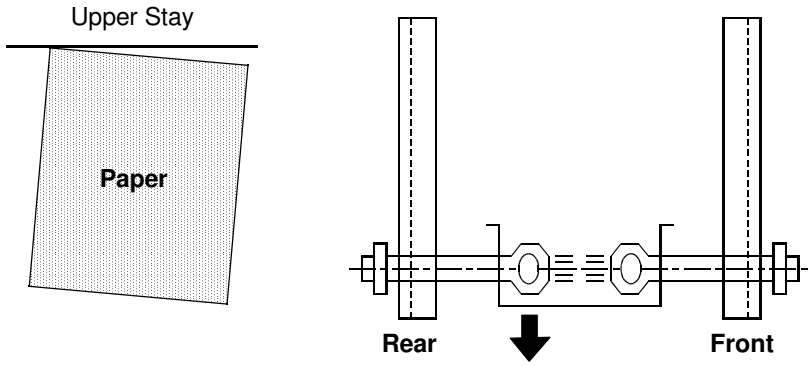
9. Tighten the screw for the rear jogger shaft all the way



ADD1.WMF

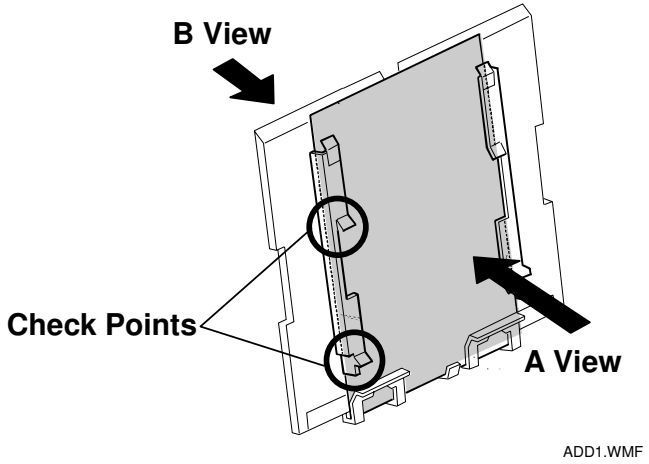

A View
B View
Upper Stay
A View
B View
Paper
Rear
Front

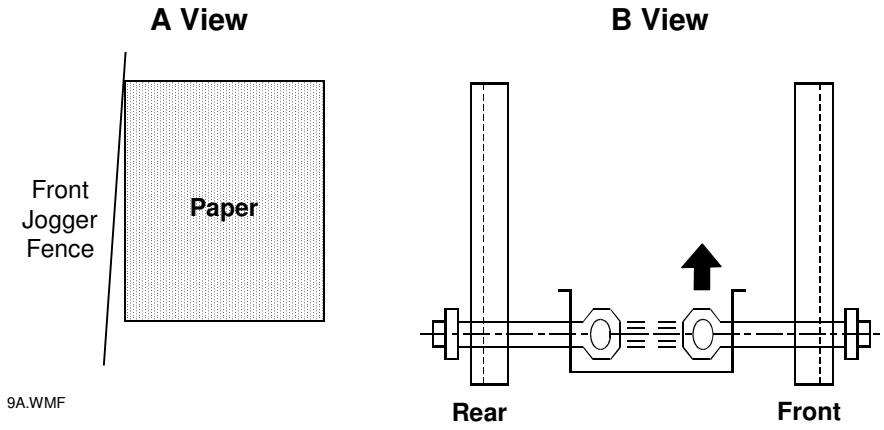
8A.WMF

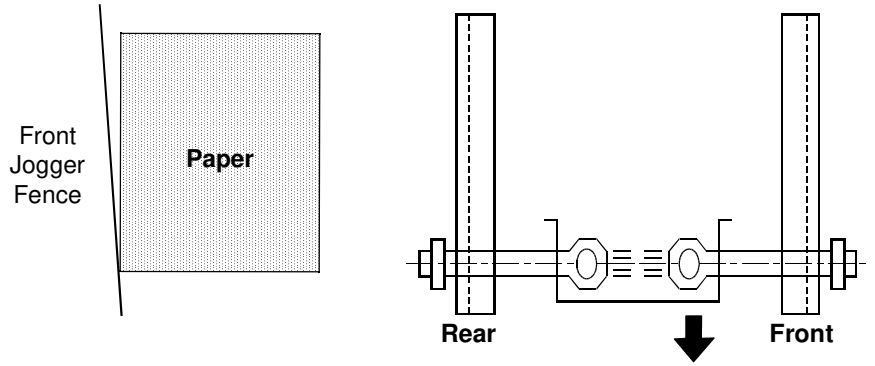

Upper Stay
Paper
Rear
Front

8B.WMF

10. Bring the front jogger fence flush against the edge of the board, then adjust the front fence shaft until the board/fence gaps on both sides are:
    Board/fence gap (top + bottom) = 0 - 0.5mm.



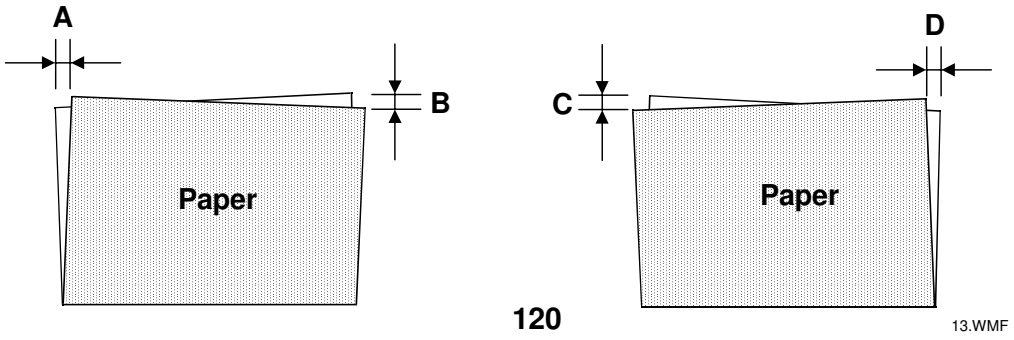




11. Tighten the screw for the front jogger fence all the way.

12. Print out 3 Booklet sets (2-3 sheets each) and check for folding skew.

All distances shown below (A, B, C, D): **2mm or less**.
Note: As mentioned on pg. 1, measure this from the edges of the **innermost sheet**.



13. If A, B, C or D is over 2mm, do the following.

A. Open the finisher front door, then insert a screwdriver or other tool into the door switch to create the door-closed condition. Also, make sure to push in the stapler unit.

B. Print out 3 Booklet sets (2-3 sheets each) using the exposure glass (not the DF).

C. When the paper is fed into the stapler unit and the machine stops operation, pull out the stapler unit.

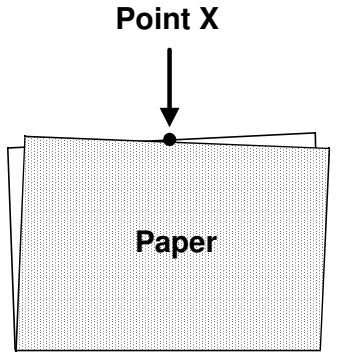
D. Press the "#" key on the operation panel, and then pull out the screwdriver from the door switch as soon as the jogger fences close in to the paper edges from the standby position (10mm outside the paper width).

E. Check to see that the paper/fence gaps on both sides are:
Paper/fence gap (top + bottom) = **0 - 0.5mm.**

If the fences are positioned too wide or too narrow, adjust the gap to 0 – 0.5mm for the given paper size using **SP6120.**

14. Repeat Steps 12 and 13 above, and if A, B, C or D is still above 2mm, go on to Step 15. If A, B, C, and D are all 2 mm or less, go on to step 19.

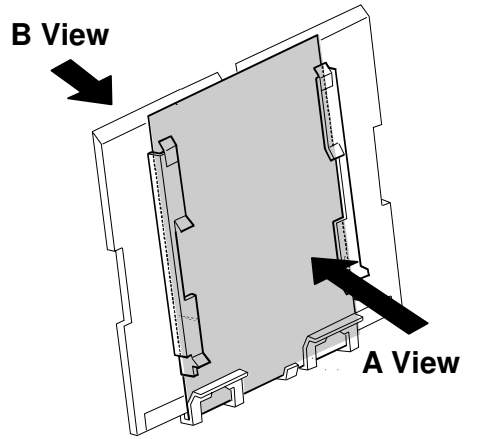
15. Adjust the folding position using SP6902 until the two edges intersect in the middle (point X). This will minimize vertical folding skew, i.e. bring the leading/trailing edges of the sheets closer together.



ADD2.WMF

16. Repeat Steps 12 and 13 above, and if A, B, C or D is still above 2mm, go on to Step 17. If A, B, C, and D are all 2 mm or less, go on to step 19.

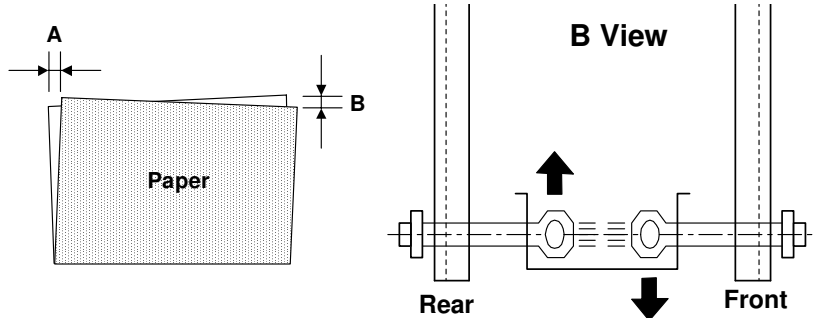
Note: Although the fences may be parallel and 0 – 0.5mm from the paper edges, they may not be 90 degrees with respect to the folding mechanism. Steps 16 can correct this.



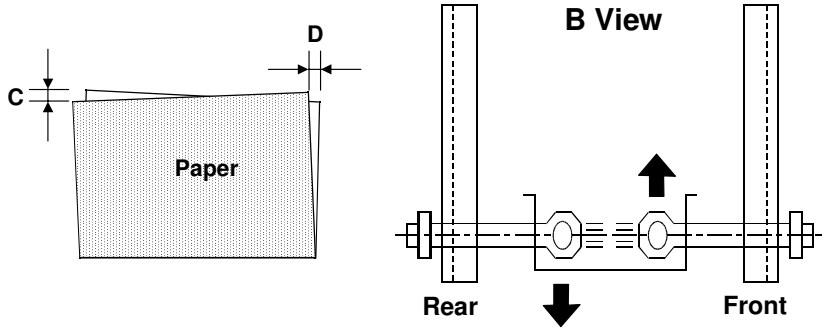
ADD1.WMF

17.

1) If A/B are over 2mm, **raise** the rear jogger fence shaft and re-secure the shaft in place. Then, loosen the screw for the front jogger fence shaft, **lower** the shaft to bring the front jogger fence flush against the paper, and re-secure the shaft in place.



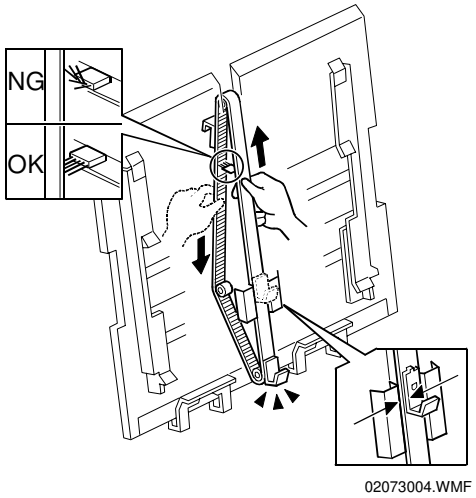
2) If C/D are over 2mm, **lower** the rear jogger fence shaft and re-secure the shaft in place. Then, loosen the screw for the front jogger fence shaft, **raise** the shaft to bring the front jogger fence flush against the paper, and re-secure the shaft in place.



Note: Be sure to raise/lower both shafts by the same number of marked increments.

18. Repeat Step 16 until A, B, C and D are all 2mm or less.

19. Bring the belt hook to the position shown in the photograph below then adjust the hook until it is parallel to the belt itself.



02073004.WMF

20. If the charge-removal brush is bent upwards, adjust it so that its fibers are perpendicular to the belt.

3. Customized Adjustment for Booklet Skew

SYMPTOM

Booklet skew when using the SR860

CAUSE

The jogger fences or other stapling unit components are not aligned properly.

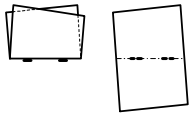
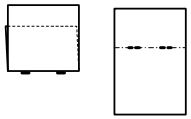
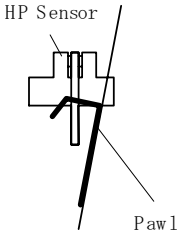
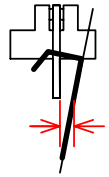
SOLUTION

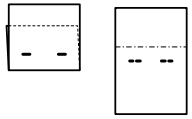
To minimize booklet skew reported from the field and to ensure that future skew is prevented, please perform **all checks and adjustments** mentioned in **I. Check/Adjustment Overview** below.

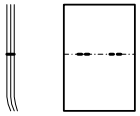
I. Check/Adjustment Overview

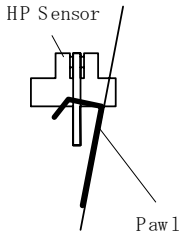
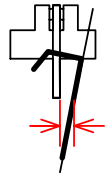
Even when only one type of booklet skew is reported, be sure and perform the checks and adjustments for **all six items** below.

Note: Since booklet skew may recur during the course of the adjustments, it may be necessary to return to a previous step and perform an adjustment again.

Symptom	Cause	Check/Adjustment
1. **Horizontal Folding Skew** The center folding position is not perpendicular to the side edges. 	**The jogger fences are not perpendicular to the center folding position.**	● Adjust the vertical orientation of the jogger fences. → See **RTB #RB064006b.**
2. **Vertical Folding Skew I** **The center folding and stapling positions are perpendicular to the side edges and lined up with each other, but are not centered vertically.** 	a. The belt pawl does not lift the paper stack the correct amount, causing a vertical shift and offsetting the folding position. **Note:** Factors that contribute to this are the paper's curl and stiffness (type/length).	● Adjust the center stapling folding position using **SP6902 (Fold Position Adjustment)**. ● Adjust the position of the belt HP sensor.
	b. Incorrect belt home positioning causes the belt to stop in the wrong position, thereby placing the stack in the wrong position for folding. Note: **This can be caused by deformation in the HP sensor or the pawl.** 	● Make sure there is at least **2.3mm** clearance between the belt and HP sensor feeler (gap shown below), by shifting then re-securing the feeler position. 

Symptom	Cause	Check/Adjustment
3. **Vertical Folding Skew II** **The center folding and stapling positions are perpendicular to the side edges, but the folding position is shifted toward the upper edge (stapling position normal).** 	**a. The jogger fences are not parallel with one another. Specifically, the upper ends of the fences are pointed inward (gap too narrow), causing the stack's trailing edge to fold up and shift the actual folding position.**	● Check to see that the jogger fences are parallel to one another ("**Jogger Fence Parallel Check**" **below**), and bring them parallel if necessary. → See **RTB #RB064006b.**
	b. The jogger fences are parallel to one another, but the gap between the two is too narrow (too tight against the paper). This also causes the trailing edge to fold up and shift the actual folding position.	● Check the current width of the jogger fence gap ("**Jogger Fence Gap Check**" **below**), and if necessary adjust the gap using **SP6120** (in the "+" direction). → See "**Adjusting the Jogger Fence Gap**" **below.**

Symptom	Cause	Check/Adjustment
4. **Jams with Center Stapling I** **Both the center stapling and folding positions are correct and the paper is stacking correctly, but the stack remains in the stapling tray and jams.** 	a. The jogger fences are parallel to one another but the fence gap is too narrow, or the upper ends are in closer than the lower ends (fences not parallel), causing the lower area of the stack to buckle, which then prevents the belt pawl from raising the stack for folding.	● Check the current width of the jogger fence gap ("**Jogger Fence Gap Check**" **below**), and if necessary adjust the gap using **SP6120** (in the "+" direction). → See "**Adjusting the Jogger Fence Gap**" **below**. ● Check to see that the jogger fences are parallel to one another ("**Jogger Fence Parallel Check**" **below**), and bring them parallel if necessary. → See **RTB #RB064006b.**

Symptom	Cause	Check/Adjustment
	b. Incorrect belt home positioning causes the belt to stop in the wrong position, thereby placing the stack in the wrong position for folding. **Note:** This can be caused by deformation in the HP sensor or the pawl. 	● Make sure there is at least **2.3mm** clearance between the belt and HP sensor feeler (gap shown below), by shifting then re-securing the feeler position. 

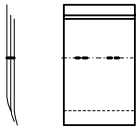
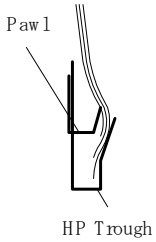
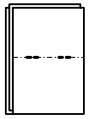
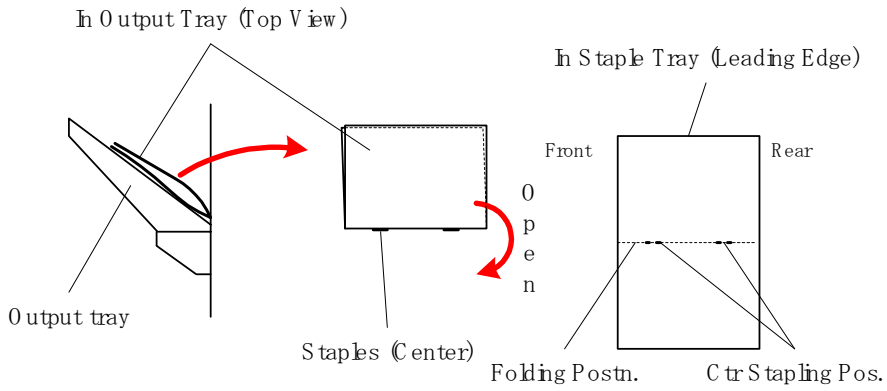
Symptom	Cause	Check/Adjustment
5. **Jams with Center Stapling II** The center stapling position is shifted toward the upper edge, and there is vertical shifting within the stack itself. 	The jogger fence gap is too narrow, causing the central area of the stack to bulge out when aligned and the stack to drop into the pawl's HP trough instead of the pawl. As a result, the pawl is unable to raise the stack. 	● Check the current width of the jogger fence gap ("**Jogger Fence Gap Check**" **below**), and if necessary adjust the gap using **SP6120** (in the "+" direction). → See "**Adjusting the Jogger Fence Gap**" **below**.
6. **Poor Stacking Within a Booklet Stack** **Sheets in the booklet stack shift, primarily in the horizontal (short-edge) direction.** 	The jogger fence gap is too wide, which prevents proper aligning of the stack's side edges.	● Check the current width of the jogger fence gap ("**Jogger Fence Gap Check**" **below**), and if necessary adjust the gap using **SP6120** (in the "–" direction). → See "**Adjusting the Jogger Fence Gap**" **below**.

Fig. 1: The Stack in the Output and Staple Trays



II. Specific Procedures for Settings Checks, Adjustments

Jogger Fence Gap Check

Use the following to make sure the proper gap exists between the front and rear jogger fences.
Note: This procedure assumes that the paper fed from the tray is the same size as the original.

1. Feed one sheet into the staple tray in platen mode with center stapling.
   Note: The machine will stop and remain stopped unless the # key is pressed to continue feeding. Therefore, when performing the following steps, **be sure not to touch the operation panel**.

2. Open the front door of the SR860 and slowly pull out the stapler unit.
3. Place the edge of the stack flush against the rear jogger fence (Photo 1).

Photo 1

Photo 2

4. Measure the distance between the paper contact area on the front jogger fence and the front edge of the paper stack (Photo 2).
   - This distance should be **19mm** for all paper sizes.
   - This same 19mm should be used as the reference target in cases where the jogger fence gap is adjusted with SP6120 (procedure below).

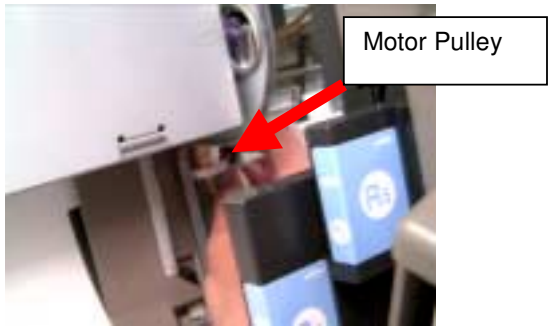
Jogger Fence Parallel Check

Use the following to make sure the jogger fences are parallel to one another, and then if necessary, use the procedure in **RTB #RB064006b** to correct this.

1. Place one A3 sheet (thick paper) in the tray, and then manually move the belt pawl so that the paper position is raised approximately 100mm (Photo 3).

Photo 3

Photo 4



2. Place the paper flush against the rear jogger fence, then slowly close the front fence to the edge of the paper manually by rotating the jogger motor pulley (black knob in Photo 4 above).

3. Make sure the lower area of the front jogger fence and paper stack are touching, then measure the distance between the paper contact area on the upper area of the front jogger fence and the front edge of the upper area of the paper stack.
   - It is essential to make the measurement on the upper area, as shown in Figure 2 below.
   - The allowable distance is **0-1mm**.

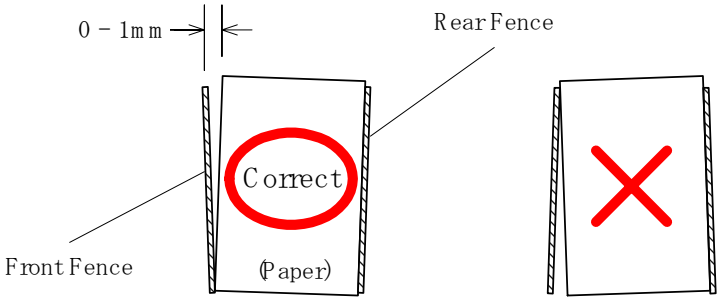


Fig. 2: Upper Area Paper-Fence Gap

Adjusting the Jogger Fence Gap using SP6120-001 to 011

- **Paper Sizes to which the Setting is Applied**

Each subdivision (-001 to –011) corresponds to a specific paper size, as shown in Table 1.

Table 1

-001	-002	-003	-004	-005	-006	-007	-008	-009	-010	-011
A3 SEF	B4SEF	A4SEF	A4LEF	B5SEF	B5LEF	DLT	LG	LT SEF	LT LEF	Other

- **SP Settings and Corresponding Gap Change**

The following are the setting values for SP6120-001 to 011.

Table 2

SP Mode **Setting** (step ±0.5)	-1.5	-1.0	-0.5	0	0.5	1.0	1.5
Jogger Fence **Gap Change** (mm)	-3.0	-2.0	-1.0	0	+1.0	+2.0	+3.0

Note:

- As previously announced, **specific firmware combinations are necessary** to activate the above SP mode. See **RTB #RB064038** for details.
- This gap adjustment is applied to center stapling, and affects all jogger fence gaps for stapling and folding operations.
- The 0.5 step cannot be changed due to structural design limitations.

Error Codes: E32, E44

NOTE: This problem is only for Bellini-C2

SYMPTOM

Error codes E32 and E44 are sometimes displayed when several types of firmware are installed at the same time.

Note: This cannot be cleared with main power Off/On.

CAUSE

A firmware transmission error may occur when installing several types of firmware simultaneously. Since the error data is saved to the NVRAM, the machine is unable to boot up normally, even after the main switch is turned Off/On.

SOLUTION

Clear the error code as follows and install the firmware again.

1. Press ①④③ (“1”, “4”, “3” key) on the operation panel when the error codes appear.
2. Press [C] “Clear” key) three times.
3. When the error is cleared, the machine will indicate this with a beep.

⚠ Important Notice

To ensure that the above error codes do not occur, please be sure to do the procedure below whenever installing several kinds of firmware at the same time:

1. First, install the “System” firmware only.
2. After successfully installing the “System” firmware, turn the machine main power Off/On and confirm that the machine boots up to Ready status normally.
3. Install the remaining firmware simultaneously.

LCDC Firmware Update Failure

NOTE: This problem is only for Bellini-C2

SYMPTOM

The LCDC firmware update stops, and the following message appears.

Warning
Install failure of operation panel program
Turn machine off
Set SD card of operation panel and turn on

CAUSE

1. A service representative turns off the main power before the LCDC update is completed.
2. The main power turns off by itself.

SOLUTION

1. Make sure technicians know about the important note above, which is also mentioned in section 5.10.4 of the Service Manual.
2. If the above symptom occurs, use the procedure below to perform a firmware recovery.
   Note: The recovery program is protected and usually works fine, even if the firmware program is damaged.

LCDC Recovery Procedure

1. Insert an SD card that contains the LCDC firmware.
2. Turn the main power ON. The operation panel will display the following message:

Warning

Install failure of operation panel program

Turn machine off

Set SD card of operation panel and turn on

3. Make sure to wait for the update to begin. This will take about one minute.

As mentioned at the top of this RTB:

Important:

A common cause of firmware update failures is when the main power is turned off during the update. Please make sure to wait until the Main Power ON Key flashes at intervals of about 3 seconds, and then turn the main power off (see Service Manual section 5.10.4).

5. PM PROCEDURE

See the attachment.

BELLINI PREVENTIVE MAINTENANCE (PM) SCHEDULE AND RANK

Activity Type: ● : Replace on a total counter basis ▲ : Inspect, Clean and/or Lubricate : Rank: ※ Important

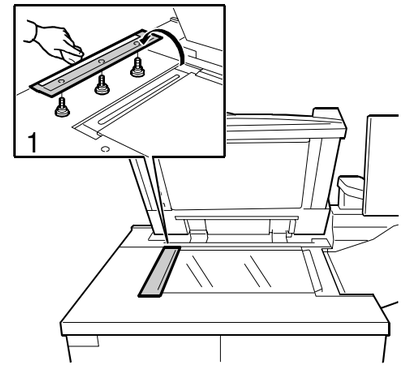
◎ : Replace on a logging counter basis for each part △ : Inspect, Clean and/or Lubricate, if necessary

Description	Activity Type	Interval	Note/Remarks	Rank	Illust No.	Reason			Problems that PM cleaning and replacement can prevent:
						Quality	Damage	Others	
OPTICS									
Exposure Glass	△	300K	Replace when 1000K originals have been fed			○			Image problems from dust or other substances on the exposure glass.
	◎	1,000K				○			Originals can stick to a dirty exposure glass and jam.
1st - 3rd Mirrors	△	300K	Optical cloth			○			White or black lines
APS Sensor	△	300K	Dry cloth			○			Original size misdetection.
Scanner Rail	△	300K	Dry cloth			○			Jitter
Scanner Filter	▲	600K	Blower brush				○		Optical unit internal temperature can rise above the product standard maximum.
Toner Shield Glass	▲	300K	Optical cloth			○			Image problems or reduction in LD beam intensity from dust or other substances on the glass.
LD Filter	▲	300K	Blower brush				○		The temperature inside the LD unit and of its surrounding components rises above product standard maximums.
White Patch	△	300K	Dry cloth	※	1	○			White/black lines or image density problems
DEVELOPMENT									
Side Seal	▲	300K	Blower brush or dry cloth						
Development Unit	△	300K	Blower brush or dry cloth						
	◎	7,500K						○	
Development Roller	▲	300K	Dry cloth	※	2	○			Striped background caused by toner sticking to the development roller surface.
Doctor Blade	▲	300K	Remove paper dust from the back side of the doctor plate with a cleaning tool	※	3	○			The developer is not applied evenly across the development roller surface, leading to toner scattering and uneven image density banding.
Entrance Seal	▲	300K	Blower brush or dry cloth					○	Cleaning the seal's attachment surface is a more efficient method of keeping this area clean than replacing the seals themselves.
Toner Hopper (Outside)	△	300K	Blower brush or dry cloth						
Gears (All Gears)	△	300K	Blower brush						
Toner Filter (Center)	◎	400K							
Toner Filter (Front)	◎	400K							
Developer	◎	300K	TD sensor initial setting (SP2-801) is required. Type A, B: 390K	※	4	○			Decreased image quality - e.g. drop in image density, background.
Waste Toner Collection Bottle	▲	2,400K							
Sucked Toner Collection Bottle	◎	1,200K	Check the operation time with SP2972 (300 hours)	※	5	○			Clogging in the filter decreases the strength of the development suction mechanism, increasing the chances for toner scattering.
Toner Suction Motor Ass'y	◎	2,500K	Check the operation time with SP2973 (600 hours)	※	6	○			The pump valve will be damaged and the toner suction mechanism will fail, causing toner scattering.
AROUND THE DRUM									
Side Seal	△	300K	Blower brush or dry cloth						
Ground Plate/Screw	△	300K	Electrical connection check or Clean with water						

Description	Activity Type	Interval	Note/Remarks	Rank	Illust No.	Reason			Problems that PM cleaning and replacement can prevent:
						Quality	Damage	Others	
Drum Filter	▲	380K	Blower brush	※	7	○			Clogging in the filter decreases the airflow of the drum coolant system. The cleaning unit's internal temperature rises, which can cause the toner inside the unit to coagulate and block the toner transport pathway. In addition, this causes significant machine downtime.
Cleaning Brush Seal	△	300K	Blower brush or dry cloth						
Cleaning Entrance Seal	▲	300K	Blower brush or dry cloth						
ID Sensor	▲	300K	Blower brush or dry cloth						
Transfer Unit Entrance Stay	▲	300K	Blower brush or dry cloth						
Corona Wire Casing	▲	300K	Water	※	8	○			When a lot of scattered toner clings to the casing, wire discharge becomes unstable and can cause an electrical leak to the drum surface.
Drum Potential Sensor	▲	300K	Blower brush						
Quenching Lamp	▲	300K	Blower brush or dry cloth						
Cleaning Brush	●	300K		※	9	○			The fibers of the brush flatten over time, decreasing cleaning efficiency and placing a greater load on the cleaning blade. The blade is then unable to maintain the proper cleaning pace, which can cause vertical lines or 'medaka' patterns on the images and results in EM calls.
Toner Filter	●	300K		※	10	○			Clogging in the filter reduces the air flow around the cleaning unit, removing the escape path for heat. The cleaning unit's internal temperature rises, which can cause the toner inside the unit to coagulate and block the toner transport pathway. In addition, this causes significant machine downtime.
Transfer Belt Cleaning Blade	●	450K		※	11	○			Over time, the blade's edge wears down and cannot clean the toner off the transport belt as efficiently as before, which can lead to vertical stripes on the rear sides of printouts (EM).
Cleaning Blade	●	300K		※	12	○			Over time, the blade's edge wears down and cannot trim the toner off the drum as efficiently as before, which can lead to vertical stripes and 'Medaka' images (EM).
Grid Plate	●	300K		※	13	○			Foreign substances that lead to discharging have a tendency to build up on the charge grid. Although this causes no problems with text, halftone areas tend to show uneven image density. Also, this can lead to voltage leak-related SC errors from toner scattering, or in some cases charge wire breakage.
Charge Corona Wire	●	300K				○			
Wire Cleaner	●	300K				○			
Wire Cushion	●	300K				○			
Pick-off Pawls	●	300K				○			The separation pawls tend to pick up more toner off of the drum as they wear down, and toner drops more frequently from the pawl area.
Transfer Belt	●	450K		※	14	○			Toner can enter and stick to the inside of cracks that tend to form on the transfer belt surface over time.
Transfer Belt Bias Brush	▲	450K				○			Foreign particles can cling to the tips of the brush fibers, creating an uneven resistance across the brush. The resulting uneven transfer current causes some areas on the image to become too dark or too light. Also, increased resistance on the fibers from these materials causes a higher voltage to be applied to the transfer belt, increasing the chances of electrical leaks to the OPC surface.
Rear Casing Guide	▲	300K				○			Toner and/or paper dust can gradually accumulate in the depressed areas on the guide plate, which results in dirty paper stack edges.
Exit Bias Plate	▲	300K				○			Foreign materials tend to adhere to the tip of the discharged plate, causing wire discharge failures, toner dusting and dirty paper stack edges.
Belt Drive Roller	▲	450K				○			Since the paper transfer belt drive and driven rollers perform belt quenching, the charge on the transfer belt surface will increase when the drive roller is dirty. This leads to honeycomb images, dirty paper stack edges and poor cleaning performance.
Belt Roller	▲	450K				○			When the driven roller is dirty, the charge on the transfer belt surface increases and causes toner re-attraction.

Description	Activity Type	Interval	Note/Remarks	Rank	Illust No.	Reason			Problems that PM cleaning and replacement can prevent:
						Quality	Damage	Others	
Cleaning Bias Roller	▲	450K				○			Just as with the transfer belt bias brush, the resistance on the charge roller surface increases when it is dirty, causing the voltage applied to the paper transfer belt to increase. This increases the chances of an electric leak to the OPC drum.
Ozone Filter	◎	1,500K							
Carrier Catcher	△	300K							
FUSING									
Pressure Roller Cleaning Roller Bearings	△	600k	Inspect only			○	○		Noise occurs when the rotation of the pressure roller cleaning roller becomes rough or uneven. If the bushings lock, the cleaning roller may stop rotating, black spots appear on outputs, the pressure roller deteriorates more quickly and/or the roller plate spring is deformed.
Fusing Lamp			Inspect only			○			When the lamp has been disconnected, SC errors have a tendency to occur during machine warm-up or standby, copy waiting time tends to be long and poor fusing dirties the transport rollers - which tends to cause dirty paper stack edges.
Pressure Roller Cleaning Roller	▲	600K				○	○		Black dots appear on outputs when the pressure roller cleaning roller is too dirty. Also, since the roller's diameter increases when it is dirty, this causes the pressure roller to wear out quicker, the cleaning roller plate springs to deform and the cleaning roller itself to lock.
Fusing Entrance Guide	▲	300K	Water or alcohol			○			Dirty paper stack edge (side face).
Oil Supply & Cleaning Web	●	300K	Set the percentage of web consumption to zero with SP1902-1	※	15	○			If this SP web counter is not cleared at replacement, the control will not be properly synchronized with the actual amount on the new web. This leads to rows of black spots on the outputs.
Hot Roller	◎	600K		※	16	○			Black spots, fusing offset, cut images and separation pawl jams can occur.
Hot Roller Stripper	▲	300K	Dry cloth			○			Dirty paper stack edges (side face) have a tendency to result.
	◎	600K				○			The pawls tend to scratch the drum surface when not replaced. In addition, when the outer layer peels off, toner, dust and other materials tend to build up on the pawls. This tends to cause dirty paper stack edges as well as jams at drum separation.
Pressure Roller Stripper			Dry cloth			○			Black spots on copies from toner that had stuck to then fallen off the pawls.
Fusing Exit Roller			Water or alcohol			○			Dirty paper stack edge (side face), roller imprints on paper.
Pressure Roller	◎	700K	Apply grease to bearings	※	17	○			The hourglass shape of the pressure roller wears down over time, which causes wrinkles in the paper. Also, increased wrinkling in the roller's outermost layer (PFA) causes caterpillar images in solid image areas. Applying grease to the bushings prevents noise from occurring during roller rotation.
Pressure Roller Cleaning Roller Cleaner	◎	600K				○			The outer diameter wears down and elasticity decreases over time, causing poor cleaning performance.
Hot Roller Ball Bearing	△	600K	Inspect only	※	18	○	○		Increased friction and rubbing occurs between the ball bearing, heat-insulating bushing and/or roller, causing noise.
Pressure Roller Ball Bearing	△	700K	Inspect only	※	19	○	○		Increased friction and rubbing occurs between the ball bearing, heat-insulating bushing and/or pressure roller shaft, causing noise.
Hot Roller Bushing	△	600K	Apply grease to bearings	※	20	○	○		Noise occurs, as well as wearing and cracking, which can cause the fusing nip band width to narrow and lead to poor fusing. In addition, the connection between the roller gear and drive gear can worsen, causing the gears to be worn down very quickly.
Pressure Roller Bushing	△	700K	Inspect only	※	21	○	○		Wearing and cracking cause the fusing nip band width to narrow, leading to poor fusing.
Hot Roller Gear	▲	300K	Barrierta 55L (A0289300)					○	Gear lifetime is reduced.
Fusing Exit Guide Plate (Upper and Lower)	▲	300K	Scrape off with dry cloth			○			The paper sticks to the toner that accumulates on the guide plate and causes a jam. This can also cause dirty paper stack edges.

Description	Activity Type	Interval	Note/Remarks	Rank	Illust No.	Reason			Problems that PM cleaning and replacement can prevent:
						Quality	Damage	Others	
Fusing Web Brake Pad	◎	600K	Oil removed with dry cloth			○			The web mechanism locks, preventing it from cleaning the fusing roller and resulting in rows of black spots on copies.
PAPER FEED									
Grip Roller	▲	300K	Water						
Relay Roller	▲	300K	Water						
Paper Feed Guide Plate	△	300K	Water						
Registration Rollers	▲	300K	Water						
Registration Sensor	▲	300K	Water						
Relay Sensor	▲	300K	Blower brush						
Paper Dust Remover	▲	300K	Remove paper dust	※	22	○			Image problems caused by paper dust.
Paper Feed Sensor	▲	300K	Blower brush						
Feed Roller	◎	300K	Use each paper feed counter	※	23	○			Non-feed jam
Pick-up Roller	◎	300K	Use each paper feed counter	※	24	○			Non-feed jam
Separation Roller	◎	300K	Use each paper feed counter	※	25	○			Non-feed jam
DUPLEX									
Feed and Transport Rollers:	▲	300K	Water						
Reverse and Inverter Rollers	▲	300K	Water						
Entrance Sensor	▲	300K	Blower brush						
Entrance Anti-static Brush	△	300K	Blower brush						
Duplex Transport Sensor	▲	300K	Inspect sensor feeler						
Duplex Inverter Sensor	▲	300K	Blower brush						
Horizontal Transport Roller	▲	300K	Water						



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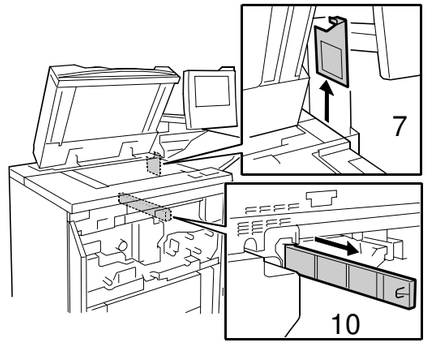

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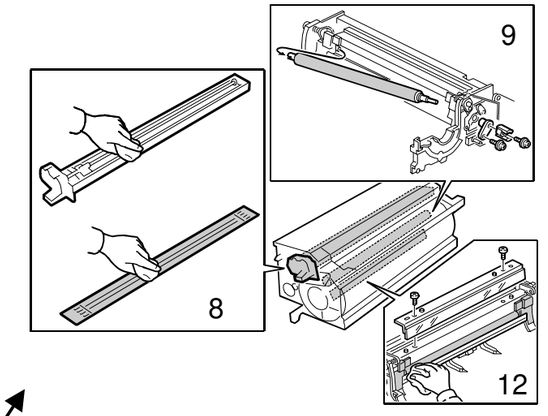

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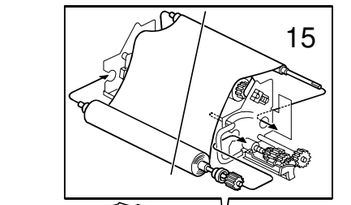

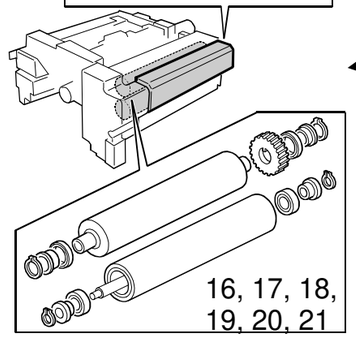

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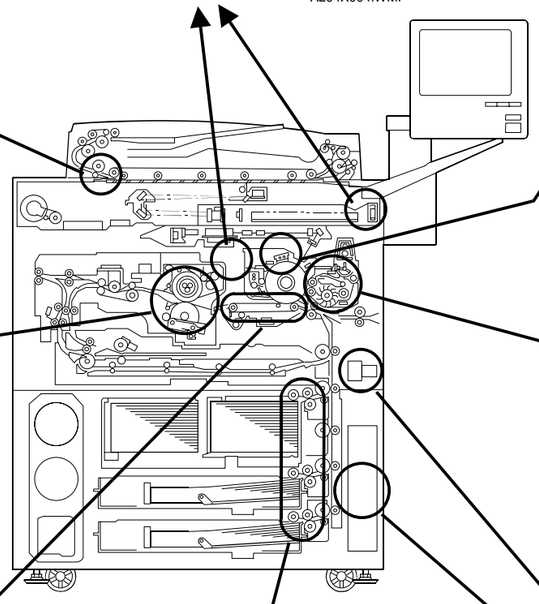

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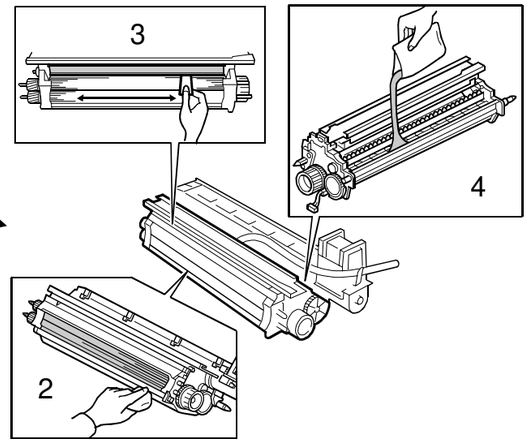

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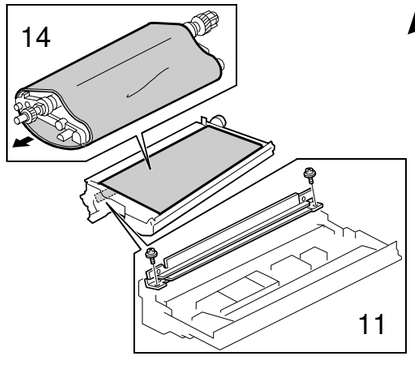

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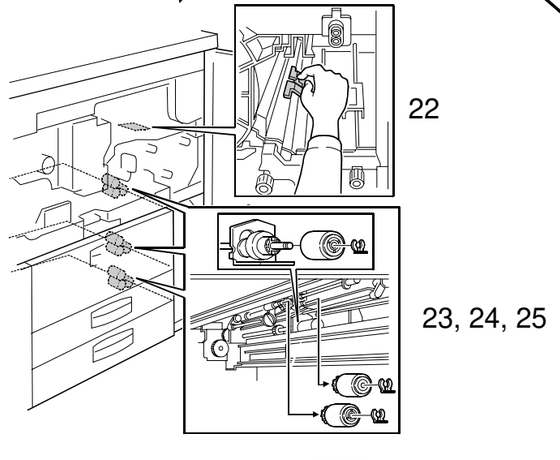

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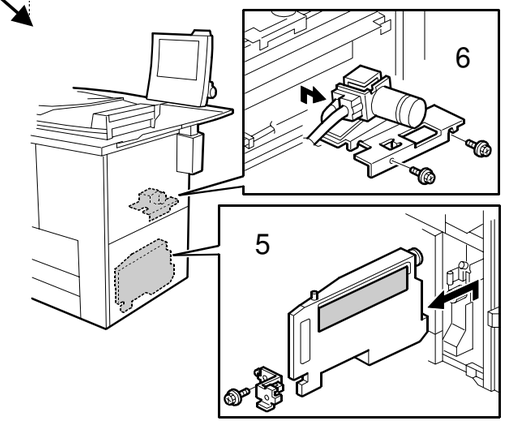

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APPENDIX-5