Model: Cattleya	Date: 15-Jun-99	No.: RA257001

Subject: Silicone Oil for the Fusing Unit	Prepared by: H. Matsui
From: Technical Service Dept., GTS Division	

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

For the Cattleya fusing unit, “Silicone Oil Type SS” P/No. A2579100 should be used.

Please correct your service manual as follows:

Page 3 -16

After “Step 3”, please add the following:

NOTE: “Silicone Oil Type SS” P/No. A2579100 should be used for this copier.

Page 5 - 9

In the PM table for the fusing unit, please add the following remarks for the column on silicone oil:

Remarks: “Silicone Oil Type SS” P/No. A2579100 should be used.

CAUSE

One of the features of the new silicone oil is its (small amount of) low molecular “siloxane”. This has an effect on the volatility of the oil. At around 150 °C, the volatility of the new silicone oil is about 1/3 that of the previous silicone oil. This feature prevents the charge corona wire from getting soiled by the vaporized silicone oil. However, the lubrication properties of this new silicone oil are the same as those of the old type.
For Cattleya, be sure to use the new type of silicone oil. The new silicone oil has been used from the first step of the development of Cattleya and therefore the machine is not designed to operate using the old type of oil. Consequently, it is impossible to predict the performance under the old type of oil (there are no tests on this available).

NOTE:

1. ”Siloxane” is the name of a chemical compound, which consists of silicon and oxygen.
2. The lubrication properties of a mix between the old and new oils would remain unaffected. However, the advantage of the new silicone oil over the older type is that the low volatility will be lost.

Model: Cattleya	Date: 15-Aug-99	No.: RA257002

Subject: Firmware-related Information	Prepared by: H.Matsui
From: Technical Service Dept., GTS Division	

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

This RTB contains the necessary information related to the firmware of Cattleya.

Modification History of the Cattleya Firmware

The following table shows the modification history of the main control and scanner IPU firmware for Cattleya. The major modifications of each version of firmware are listed at the end of this RTB.

	Version	Production Cut in
Main Control	1.501	March '99 production (Start of the production)
	1.502	April '99
	1.514	May '99
	1.542	June '99
	1.561	July '99
Scanner IPU	1.15	March '99 production (Start of the production)
	1.16	May '99
	1.19	July '99

Approved Firmware for connection with the printer controller E-650

To enable the printer functions using the printer controller E-650, it is necessary to use the following version or newer.

Main Control : version 1.561
Scanner IPU : version 1.19

Language

The main control firmware containing Spanish, Dutch, Swedish, and Danish has recently been released. Since the version of this firmware is 1.561, it is necessary to update the scanner IPU firmware to version 1.19 at the same time for machines produced before July.

Interchangeability of the firmware

The main control firmware version 1.561 and scanner IPU firmware version 1.19 are not interchangeable with the older versions unless used as a set. They should be updated at the same time. When version 1.561 main firmware is used with the scanner firmware older than version 1.19, or when scanner firmware version 1.19 is used with the main firmware older than version 1.561, errors in machine operation may be expected.

Recommendation for machines produced before July

It is recommended that the firmware for machines manufactured before July 99 are updated to main firmware version 1.561 and scanner firmware version 1.19 at installation. This is because updating to these versions should be done at the same time. If this is not done, trouble may occur if main or scanner firmware update become necessary in the future.

Interchangeability of the main board and the scanner IPU board

The part numbers of the main board and the IPU board have been changed due to the firmware update to ver.1.561 and ver.1.19. (Please refer to MB No. MA257002.) The only difference between the new and old parts is the version of the firmware.

Because the new firmware is not interchangeable with the older versions, please check the version of the firmware and update as necessary when replacing the main control board or the scanner IPU board.

Description	Old P/N	Firmware	Interchangeability	New P/N	Firmware
Scanner IPU	A2575135	ver. 1.16 or older	x/x	A2575137	ver. 1.19
Main (120V)	A2575107	ver. 1.542 or older	x/x	A2575105	ver. 1.561
Main (230V)	A2575108	ver. 1.542 or older	x/x	A2575106	ver. 1.561

List of Major Modifications

Main Firmware Version 1.502

The following software bug has been corrected:
Some text in the Systems Setting screen on the operation panel display was misaligned.

Main Firmware Version 1.514

The following software bugs have been corrected:
1. When twin color (red and green), poster (2x2), and thick paper modes are selected in combination, a solid image may appear on the leading edge of the copy.
2. Copy may become solid black when using ADF in ACS mode when making more than two continuous copies.
3. In machines without an ADF, the operation panel may be locked when removing the paper waiting for the second side to be copied in the duplex tray.
4. Abnormal image may appear when copying on 13x19 inches paper with an enlargement ratio of 200%.
5. Erase margin may be abnormal when using A6 paper with European models.
6. Some items were not printed out by the SP data printing function.

Main Firmware Version 1.542

1. Drum motor stop timing has been optimized to prevent the possibility of the transfer belt surface scratching the OPC drum.

2. On/off timing of the ITB cleaning brush and cleaning blade has been optimized to prevent toner accumulated on the edge of the blade from falling on the image transfer belt.

3. The following SP Modes have been added.

SP8-115 Fusing temperature setting for Special Mode Program: Copy (for Special Mode 1)
SP8-215 Fusing temperature setting for Special Mode Program: Copy (for Special Mode 2)
SP8-315 Fusing temperature setting for Special Mode Program: Printer (for Special Mode 3)

SP8- (130-138) Paper transfer current setting for Special Mode Program: Copy (for Special Mode 1)
SP8- (230-238) Paper transfer current setting for Special Mode Program: Copy (for Special Mode 2)
SP8- (330-338) Paper transfer current setting for Special Mode Program: Printer (for Special Mode 3)

Main Firmware Version 1.561

The following SP Modes have been added
SP8-(140-148)-(01-08) Gamma setting for Special Mode Program: Copy (for Special Mode 1)
SP8-(240-248)-(01-08) Gamma setting for Special Mode Program: Copy (for Special Mode 2)
SP8-(340-343)-(01-08) Gamma setting for Special Mode Program: Printer (for Special Mode 3)

Scanner IPU Firmware Version 1.16

The following software bugs have been corrected.
1. Small no painted area may appear in the image after having painted inside a closed loop area.
2. SC326 may appear when making A3 copies in Auto Original Type Select and 400% enlargement modes.
3. APS may not function properly immediately after ACC has failed.

Scanner IPU Firmware Version 1.19

1. The following SP Mode is added :

SP8-(140-148)-(01-08) Gamma setting for Special Mode Program: Copy (for Special Mode 1)
SP8-(240-248)-(01-08) Gamma setting for Special Mode Program: Copy (for Special Mode 2)
SP8-(340-343)-(01-08) Gamma setting for Special Mode Program: Printer (for Special Mode 3)

2. When the setting is changed from the default (5) to 6, the ACC target density level for the printer mode (SP mode 4-502-001 to 004) has been changed as follows:

If the setting of ACC target density level for the printer mode (SP mode 4-502-001 to 004, adjustable range:0 to 10, default setting:5) is changed to 6, the level of ID max will become greater (20% up for K, 15% up for Y, M, C).

NOTE:
1. The level of ID max will not change, even if the setting is changed to 7, 8, 9, or 10.
2. If ID max is increased, there is a greater tendency for toner scattering to occur in text areas.

Model: Cattleya	Date: 15-Aug-99	No.: RA257003

Subject: Important notes at installation of E-650.	Prepared by: Chisato Tsuji
From: Technical Service Dept., GTS Division	

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

This Technical Bulletin contains some important notes concerning the installation of the E-650color controller for the Cattleya.

1. Approved Firmware of Cattleya for connection with the E-650printer controller.

   To enable the printer functions using the E-650 controller, it is necessary to use the following version of Cattleya firmware.

   Main Control: Ver. 1.561 or newer
   Scanner IPU: Ver. 1.19 or newer

   If the version is older, please make sure to update the firmware.

   For details regarding the Cattleya firmware, please refer to RTB No. RA257002 (issued on August 15th, 1999.)

2. EMI Shield installation.

   Make sure to intall the EMI shield on the interface unit (“I/F unit”) before installing the controller interface Type F kit in the copier.
   (The EMI shield and the installation procedure sheet are packed with the E-650.)

   Tool required: #2 phillips head screwdriver.

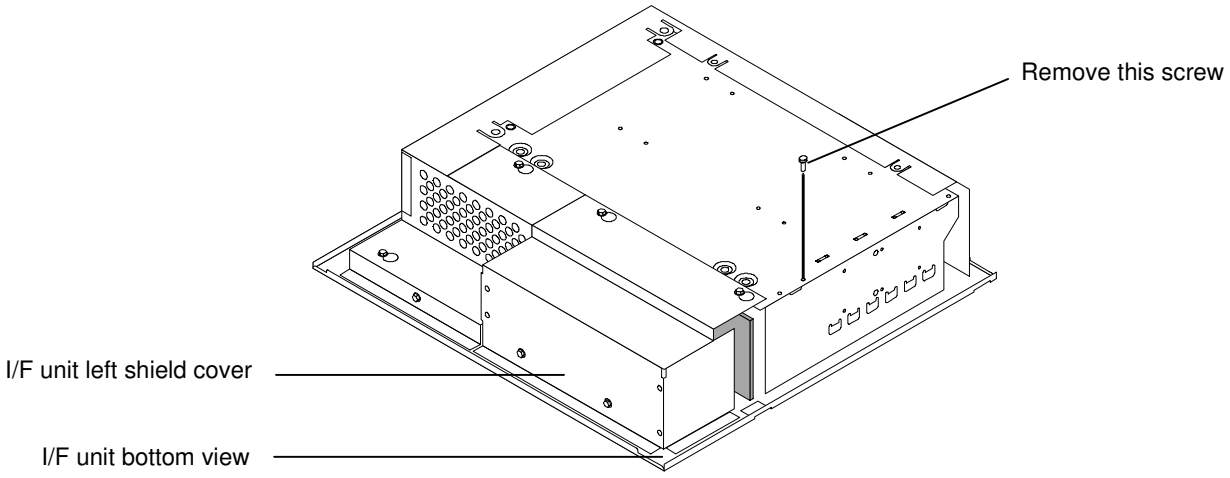
   Note: Attach an ESD grounding wrist strap and follow standard ESD (electrostatic discharge) precautions before doing this procedure.

.

To install the EMI Shield on the I/F Unit.

2-1. Place the I/F unit on a stable static-free surface.

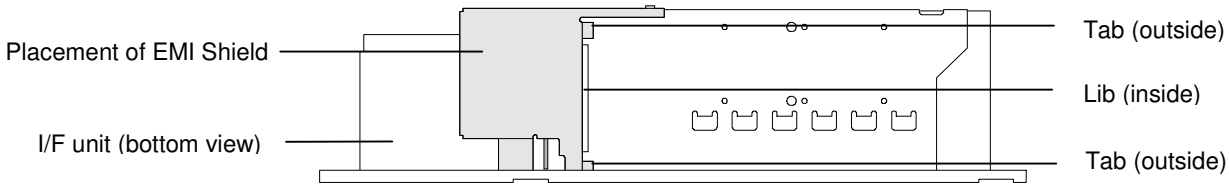
Note: If the I/F unit is already installed in the copier, you may skip this step.



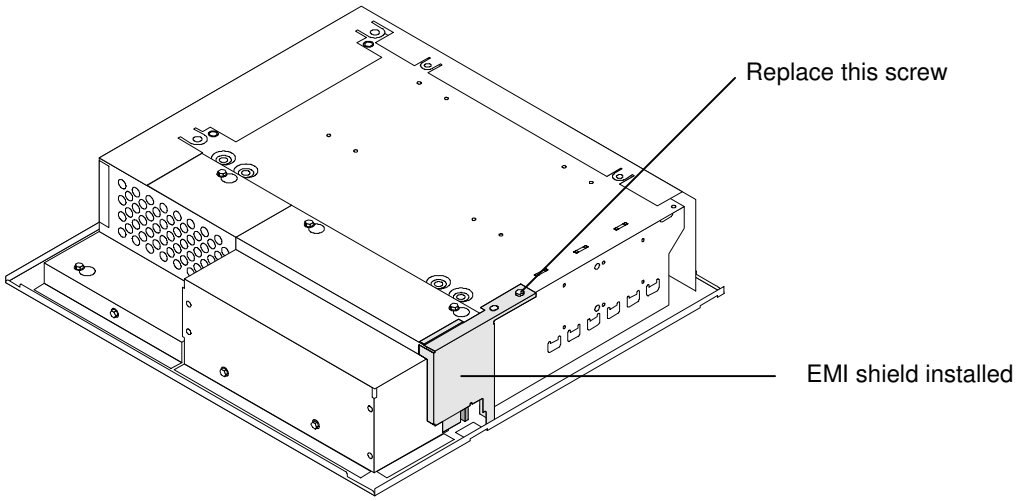
2-2. Remove and set aside the I/F unit screw indicated in the figure above.

2-3. Unpack the EMI shield and align the EMI shield on the bottom of the I/F unit where the copier interface board is exposed. Make sure that the EMI shield's:

- Two tabs are outside of the I/F unit
- Lip is inside the I/F unit
- Other edges are outside the I/F unit's left shield cover



2-4. Make sure the screw holes line up and replace the screw you removed earlier.
While replacing the screw, hold the shield against the I/F unit to ensure a tight fit.



Now you are ready to install the Controller Interface Type F kit and the E-650 controller as described in the *E-650 Installation and Service Guide*.

Model: Cattleya	Date: 31-Aug-99	No.: RA257004

Subject: Drum damage at installation	Prepared by: H. Matsui
From: Technical Service Dept., GTS Division	

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

The positioning of the revolver unit is a critical check item when setting the drum unit in the upper drawer unit. To prevent any problems similar to the symptom described below, please release the following information to all technicians in your regions servicing this machine.

Problem

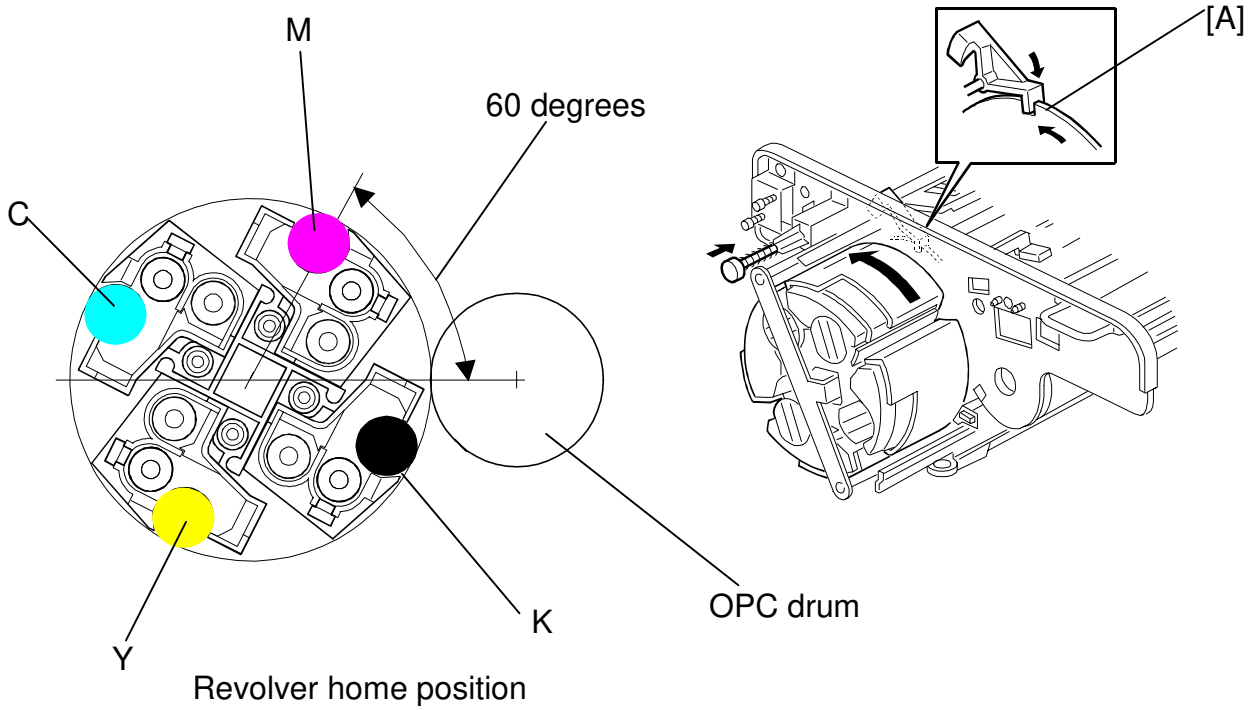
When the drum unit was set in the upper drawer unit, the development unit was placed at 90 degrees (vertical), which is the development unit removal position. Being in this position, the drum came in direct contact with the ribs of the development unit upper cover, causing the drum to be scratched or damaged.

Action required

The above problem would normally happen at the time of installation or developer replacement. To prevent the drum from being damaged, the revolver unit must be set to its home position before the drum unit is set in the upper drawer unit.

Revolver Home Position

As shown in the following illustration, the magenta development roller should be positioned at an angle of 60 degrees (from horizontal). When rotating the revolver unit, you can see the cut-out [A] in the wheel, which locks the revolver unit in the home position.



Revolver home position

Additional Information

In addition to the above information, please note the following remarks for when the revolver unit is set in the machine:

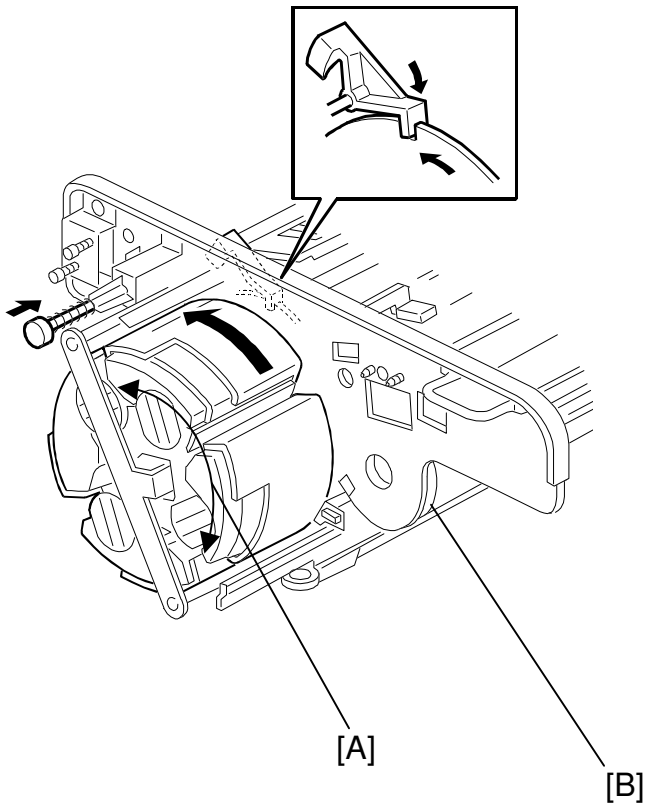
1. Revolver unit

If the gears on the mainframe and revolver unit are not engaged firmly, this may result in a gap between the revolver unit frame and copier frame (thus the unit will not be properly set). This also may cause the gears to be damaged when the revolver starts rotating. To ensure that the gears are properly engaged, it is necessary to manually fit (i.e. lock) the gears together by manipulating the revolver unit back and forth (slightly) as shown in the illustration (arrow [A]). This should be done while holding the toner hoppers.

2. Drum unit

To ensure that the gears between the drum and drum shaft properly engage, the flange [B] of the OPC drum must be pushed toward the back of the machine. (This is explained on S/M page 6-11.)

Since the vibration generated from the image transfer belt drive section is transmitted to the drum section, this vibration may interfere with drum rotation if the gears are not properly engaged. This causes banding on the image (at 1.7 mm intervals).



Model: Cattleya	Date: 15-Oct-99	No.: RA257005

Subject: Dirty or colored background in the area near the leading edge	Prepared by: M. Furusawa
From: Technical Service Dept., GTS Division	

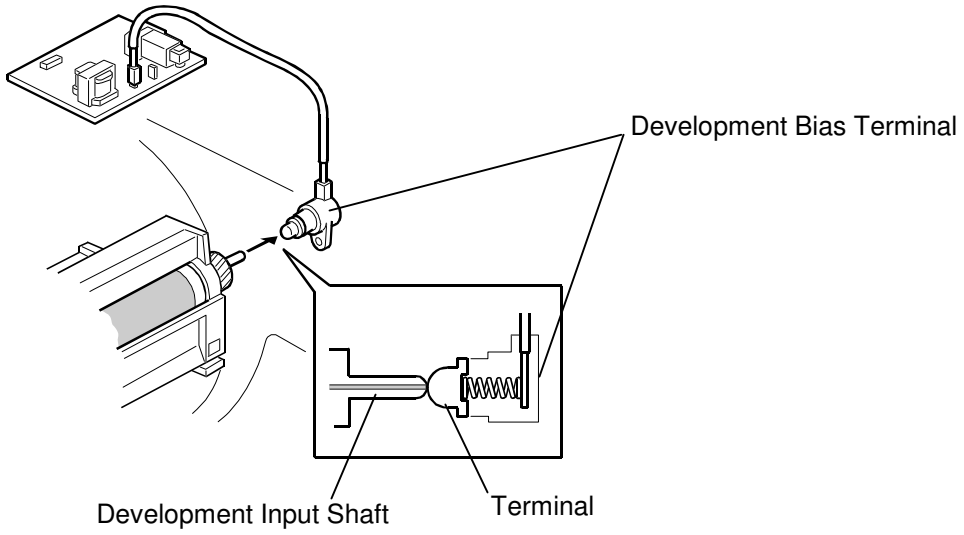
Classification:	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

SYMPTOM

Dirty or colored background appears in the area near the leading edge.
A slightly pale image or normal image appears in the other areas towards the trailing edge.
(The width of the area with this dirty or colored background varies.)

CAUSE

The development bias terminal is pushed against the development input shaft by a spring to ensure proper terminal contact when the development unit reaches the copying position. When the terminal does not move smoothly, poor contact of the development bias terminal results at the beginning of development of the latent image (dirty background will occur under these conditions).
When the contact between the terminal and the development input shaft is not as poor, the image becomes slightly pale (or normal if contact is good).



Model: Cattleya	Date: 15-Oct-99	No.: RA257005

ACTION

Pull out the revolver/drum drawer and clean the development bias terminal.

Turn the terminal counterclockwise then clockwise (more than ten turns each).
Push the terminal repeatedly more than ten times so that terminal movement is smooth.
Reassemble the machine and check the copy quality.

If the above action is not successful (this is a very rare case), replace the development bias terminal with a new one (P/N A2573298).

If the new part is not available, loosen the upper screw that secures the development bias terminal to the copier rear side frame.

- Objective Machines -

The development bias terminal was previously modified from a one-screw type to a two-screw type, effective from around May, 1999.

If the two-screw type terminal is secured too tightly, a slight deformation of the terminal casing can occur.
The machines in the field that could potentially exhibit this problem were produced from May to July, 1999, because the bias terminal was not inspected in these machines.

However, the occurrence rate is expected to be very low.

Countermeasure for machines in mass-production:

The bias terminals have been inspected at the factory since August, 1999.
To ensure proper contact between the bias terminal and the development input shaft without the inspection, a modification of the development bias terminal has been applied to the production line from October, 1999 (the inner diameter of the terminal casing has been slightly increased).
The part number has been changed from A2573297 to A2573298.

Model: Cattleya	Date: 15-Oct-99	No.: RA257006

Subject: Horizontal black or magenta line at 106 mm (4.17") from the leading edge	Prepared by: M. Furusawa
From: Technical Service Dept., GTS Division	

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

SYMPTOM

The following only occurs in thick paper mode and OHP mode.

A horizontal line appears at 106 mm from the leading edge.
The line is normally colored Black but the last one of the multiple copy run is colored Magenta (in the Full Color mode).

CAUSE

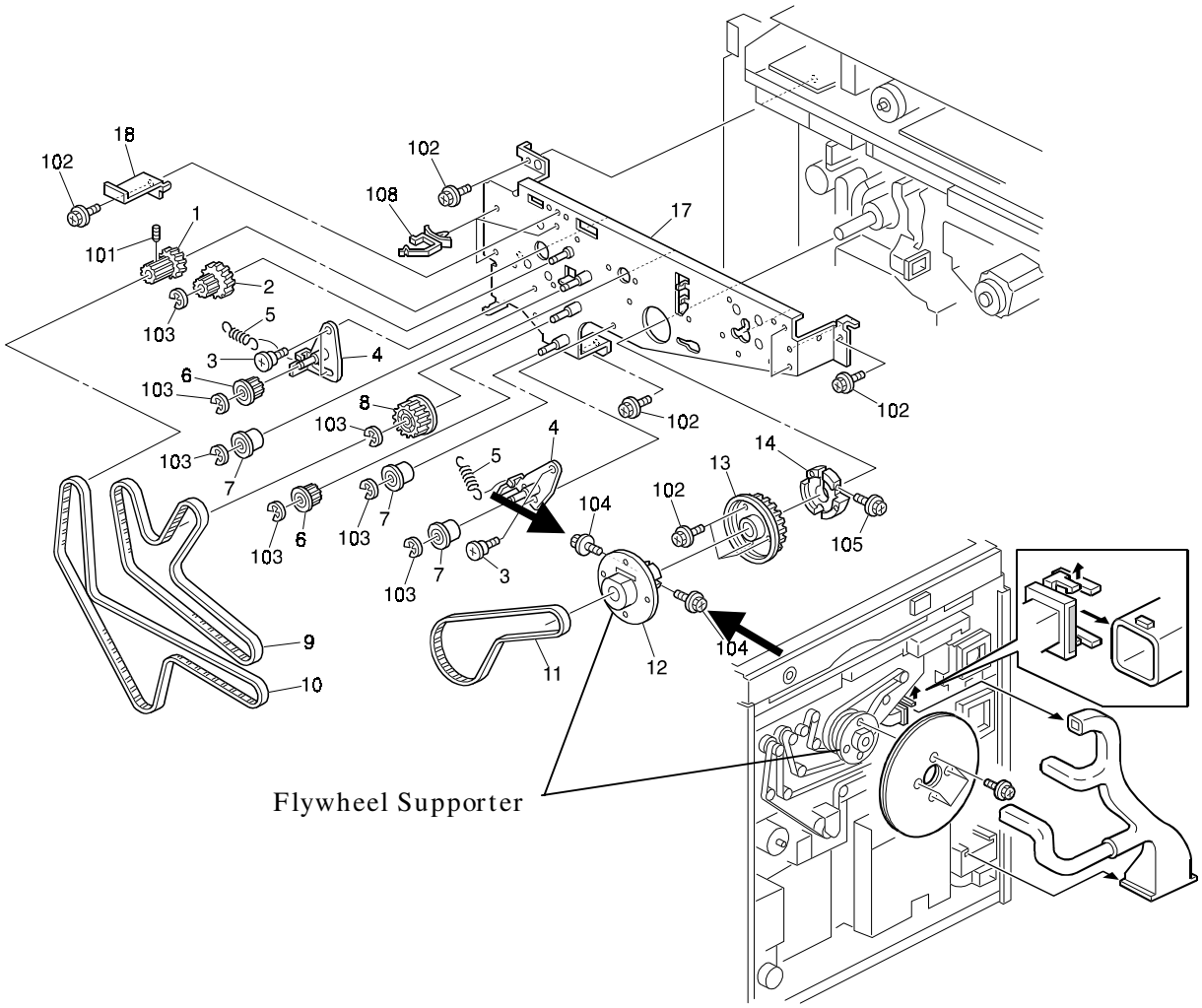
When the drum speed is slowed in thick paper/OHP mode, loose screws that fasten the flywheel supporter to the drum shaft cause the drum to stop for a very short while.

ACTION

Remove the large and small flywheels and tighten the screws for the flywheel supporter. (Refer to the illustration on the next page.)

The flywheel supporter has four cut-outs for the screws. Two out of the four cut-outs have a flat surface (from May production: the cut-in serial numbers were not controlled). Make sure that the screws are positioned on these flat surfaces, especially after disassembling these areas.

Model: Cattleya	Date: 15-Oct-99	No.: RA257006



Model: Cattleya	Date: 15-Oct-99	No.: RA257007

Subject: SC450 (Paper transfer bias current error)	Prepared by: M. Furusawa
From: Technical Service Dept., GTS Division	

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

SYMPTOM

SC450 is displayed when the main switch is turned on or during a copy/print cycle.

CAUSE

Paper transfer belt shift clutch (P/N AX210067) failure.
Some of these shift clutches may overrun the stop position over time.
When the clutch is energized, it rotates for 180 degrees and stops. If it overruns its stop position, the paper transfer belt unit drops and SC450 is indicated.

ACTION

Replace the paper transfer belt shift clutch with a modified one (AX210076).

Clutch modification: AX210067 → AX210076

The clutch shaft has been modified to prevent the possibility of the overrun.
The electric power of the clutch has been increased from 8 W to 15 W to ensure that the armature plate is properly pulled when the clutch is energized.
This modification has been applied to the production line from the end of July, 1999.

Model: Cattleya	Date: 15-Oct-99	No.: RA257008

Subject: Magenta image	Prepared by: M. Furusawa
From: Technical Service Dept., GTS Division	

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

SYMPTOM

Only the Magenta image is transferred to the copy paper in the Full Color mode (only the last color image is transferred in the 2C and 3C modes).

CAUSE

Image transfer belt cleaning shift clutch (P/N AX210067) failure.
When this clutch overruns, the image transfer belt cleaning blade remains in contact with the image transfer belt.
With the exception of the last color toner, the cleaning blade wipes off the toner on the image transfer belt before the toner image is transferred to the copy paper.

ACTION

Replace the image transfer belt shift clutch with a modified one (AX210076).

Note: The image transfer belt cleaning shift clutch has the same part number as the paper transfer belt shift clutch.

Clutch modification: AX210067 → AX210076

The clutch shaft has been modified to prevent the possibility of the overrun.
The electric power of the clutch has been increased from 8 W to 15 W to ensure that the armature plate is properly pulled when the clutch is energized.
This modification has been applied to the production line from the end of July, 1999.

Model: Cattleya	Date: 15-Oct-99	No.: RA257009

Subject: SC457 (Image transfer belt cleaning unit position error)	Prepared by: M. Furusawa
From: Technical Service Dept., GTS Division	

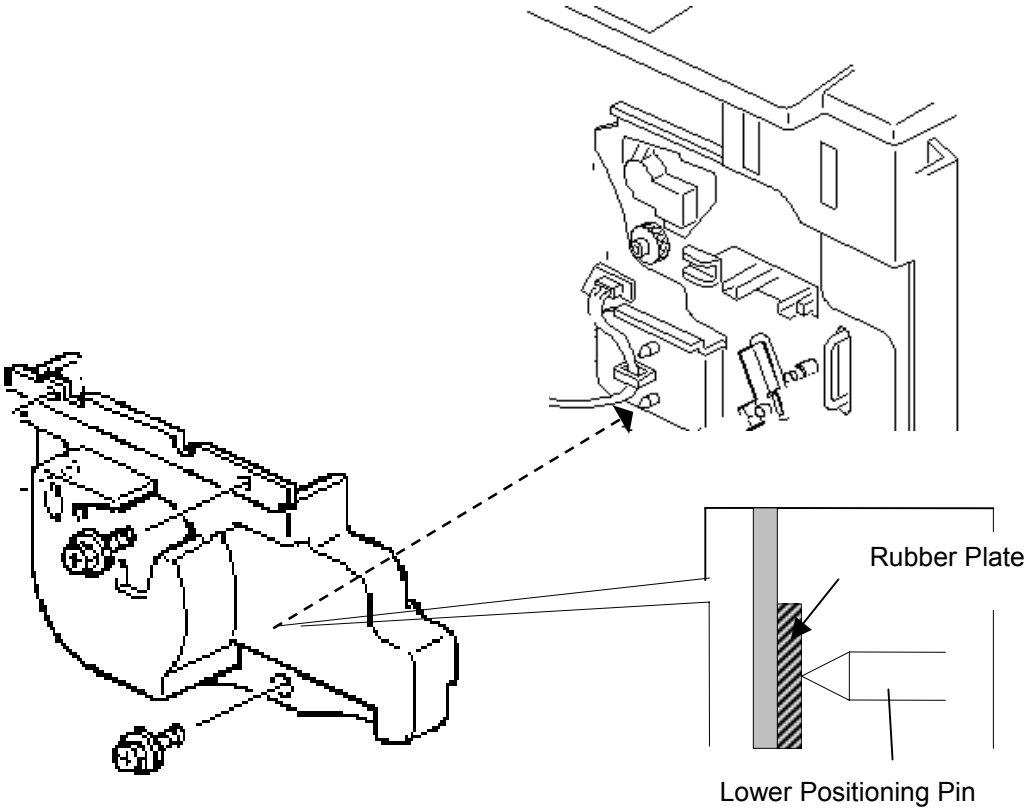
Classification:	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

■ When checking machine operation without the revolver cover:

Symptom:
If operations are attempted on the machine after the revolver cover has been removed, the SC457 indication lights up (error in the setting of the belt cleaner).

Procedure:
Setting the Revolver Cover:

- In order to ensure the accurate setting of the image transfer belt cleaning unit, there is a rubber plate on the rear side of the revolver cover to push the lower positioning pin of the image transfer belt cleaning unit (refer to the illustration below).



- If performing tests (e.g. on machine operation) after the revolver cover has been removed, please do so after pushing the lower positioning pin and properly setting the unit.

If the machine does not operate normally after the installation of the revolver cover:

Check to see if the touch and release mechanism of the blade/brush of the image transfer belt cleaning area is working properly.

- If working properly, there is a problem with the belt cleaning HP sensor.
- If not working properly, there is a problem with the belt cleaning shift clutch.

If such abnormalities occur with this sensor and/or clutch, check to see that the sensors are clean and that the connectors are properly connected to the sensors. Also be aware that it is possible for the belt mark detector to be malfunctioning as well.

Summary of Causes:

1. Faulty setting of the image transfer belt cleaning unit.
2. Problem with the touch and release mechanism of the blade/brush of the image transfer belt cleaning unit.
3. Malfunction of the belt mark detector of the image transfer belt unit.

■ Loose knob for the transfer faceplate

Symptom:

When the knob of the transfer faceplate is loose, SC457 is displayed.

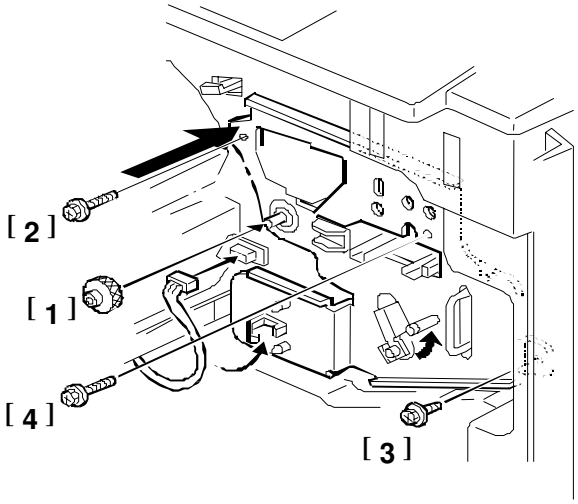
Cause:

Due to a mistake when setting the transfer faceplate, the drum knob loosens and the setting position of the image transfer belt cleaning unit shifts.

Procedure:

Reinstalling the transfer faceplate:

1. Remove the transfer faceplate.
2. Reinstall the transfer faceplate and tighten the knob [1].
3. Pushing the upper left part of the faceplate against the revolver/drum drawer, tighten the three screws in the following order: [2], [3], [4].
4. Re-tighten the knob.
   Note: Re-tighten this knob with the transfer belt tension lever as is (until the drum rotates along with the knob).



Model: Cattleya	Date: 15-Oct-99	No.: RA257010

Subject: Random Jitter	Prepared by: M. Furusawa
From: Technical Service Dept., GTS Division	

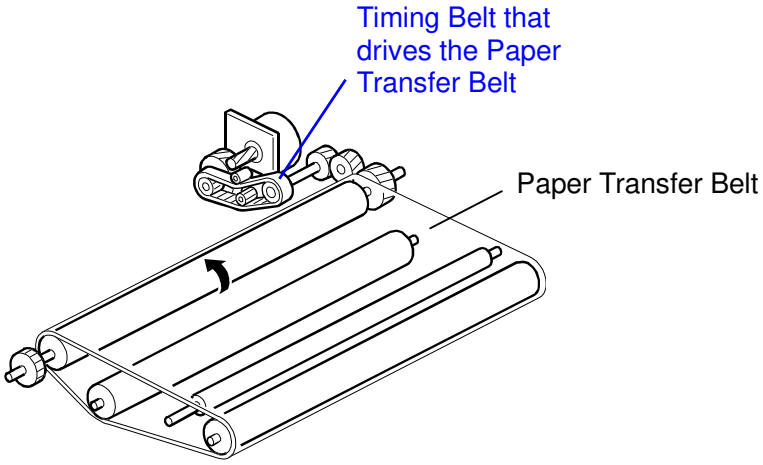
Classification:			
	☒ Troubleshooting	☐ Part information	☒ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

SYMPTOM

Jitter bands appear at random positions on copies.
For an A4 (LT) lengthwise or A3 (DLT) copy, one jitter band is observed (at first occurrence). Later, two or three may be observed on A3 (DLT) copies.
Once it appears, this jitter is likely to occur continuously for certain copy jobs.

CAUSE

The timing belt that drives the paper transfer belt disengages from the cogs of the timing pulley (jumping one cog over) when the movement of the tension roller bracket becomes a little worse.
It has been found that the tension spring for the timing belt does not have enough strength to prevent this random jitter.



SOLUTION

Replace the tension spring with a stronger one at installation or at the next visit to the customer site.
The strength of the original spring (P/N A2573997) is 1.0 Newton and the new one (P/N AA060836) is 2.3 Newtons.
The color of the new tension spring is also different (i.e. old: silver, new: black).
(The new springs will be provided free of charge.)

- Objective Machines -

The Cattleya produced from May to early August, 1999 are the objective machines. The details are shown in the following table.
(About 20% of the objective production machines have been modified in Japan before the shipment.)

Objective machines: Yes = Objective machines, No = Non-objective machines

	May Production	June Production	July Production	August Production
A257-15	No	Yes	Yes	No
A257-17	No	Yes	Yes	Yes (first 53 units)
A257-22	No	Yes	Yes	No
A257-26	Yes	Yes	Yes	No
A257-27	Yes	Yes	Yes	No
A257-29	Yes	Yes	Yes	No
A257-55	---	---	No	No
A269-15	No	Yes	Yes	No
A269-17	No	Yes	Yes	No
A269-22	No	Yes	Yes	No
A269-26	Yes	Yes	Yes	No
A269-27	Yes	Yes	Yes	No
A269-29	Yes	Yes	Yes	No
A269-55	---	---	No	No

NOTE:
The material of timing belt that drives the paper transfer belt has been changed from chloroprene rubber (P/N A2573993) to polyurethane rubber (P/N AA043285). This is to increase its resistance to ozone, thereby increasing durability as well.
This modification has been applied to the production runs from May, 1999 (from June for machines with destination code -15, -17, and -22).
The new spring has been applied to production from August 4, 1999.

The following table explains the possibility of the problem for each combination.

		Tension Spring	
		Old (A2573997)	New (AA060836)
Timing Belt	Old (A2573993)	No problem	Lifetime of the timing belt may be reduced.
	New (AA043285)	Random jitter may occur.	No problem

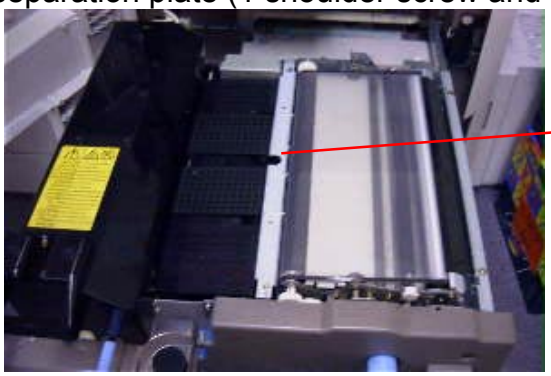
Checking and Replacement Procedure

Since about 20% of the objective production machines have been modified with the new tension spring, the following 2 pages explain how to distinguish between the old and new springs, then how to replace the old spring with the new one.
This procedure will take about 5 minutes.

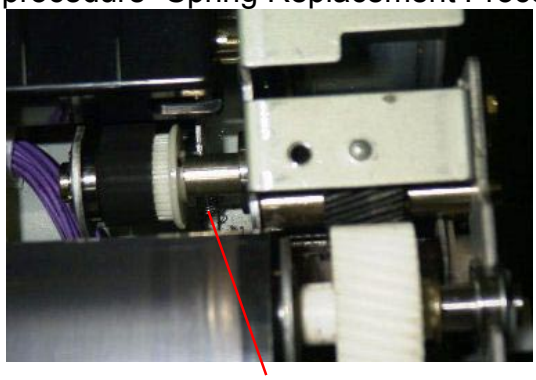
Procedures to prevent random jitter

= Check Procedure =

1. Open the front covers and pull out the fusing/transfer drawer.
2. Remove the separation plate (1 shoulder screw and 1 screw).



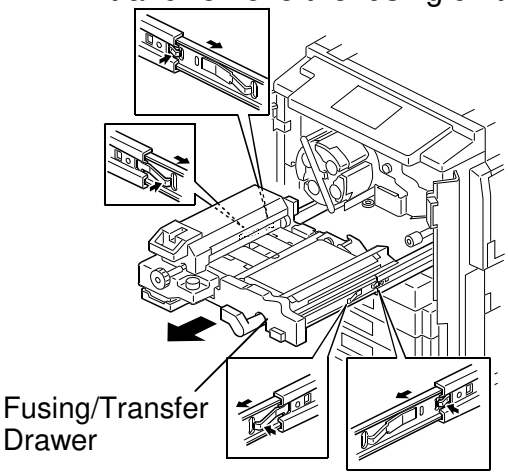
3. Check the color of the tension spring of the PTB (paper transfer belt) drive belt.
   If the color is black, reassemble the machine since this will indicate that the spring is a new one.
   If the color is silver, go onto the next procedure “Spring Replacement Procedure”.

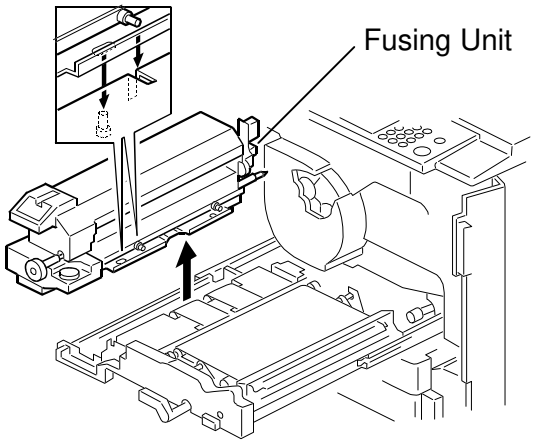


Model: Cattleya	Date: 15-Oct-99	No.: RA257010

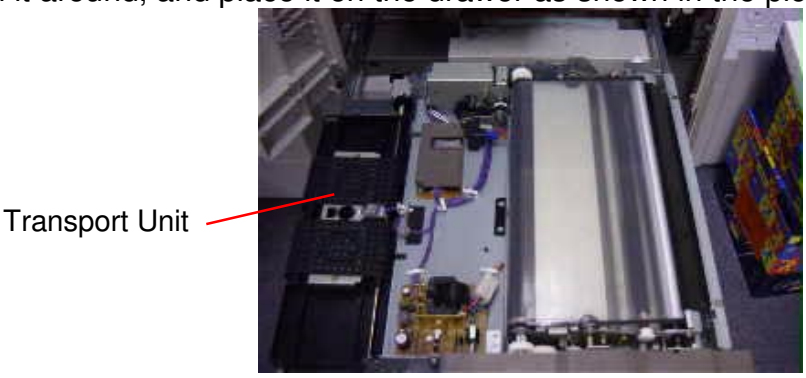
= Spring Replacement Procedure =

1. Press the stoppers on both sides of the fusing/transfer drawer rail and pull out the drawer.
2. Lift and remove the fusing unit.





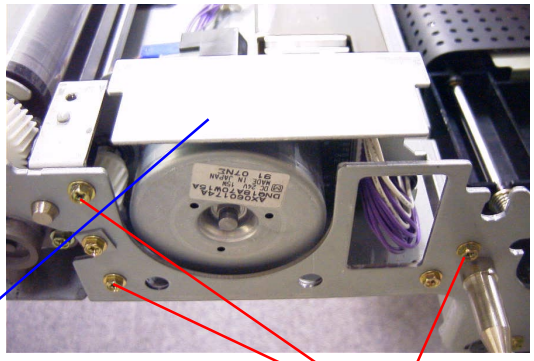
3. Remove the transport unit (2 snap rings and 2 bushings, keep the connector coupled), turn it around, and place it on the drawer as shown in the picture.



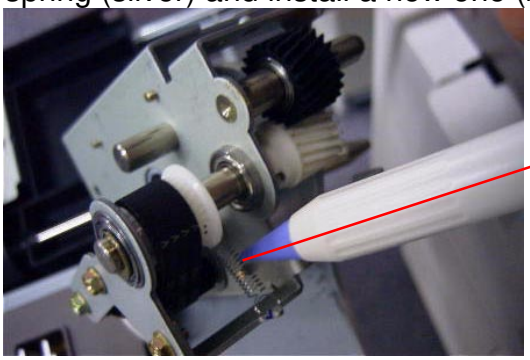
4. Remove the paper transfer belt motor assembly (3 screws).

- Front view -

- Rear View -



5. Remove the tension spring (silver) and install a new one (black).



6. Reassemble the machine.

Model: Cattleya	Date: 15-Oct-99	No.: RA257011

Subject: Notes for when removing the toner cartridge without toner end indication	Prepared by: M. Furusawa
From: Technical Service Dept., GTS Division	

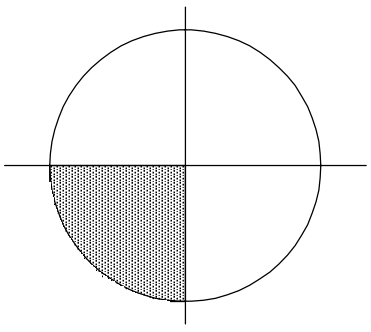
Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☒ Other (Technical Tips)		

Notes for when removing the toner cartridge without toner end indication

If the toner cartridge (which is not empty) is removed from the toner cartridge replacement position, the cartridge lever may not turn smoothly when reinstalling the toner cartridge. If the cartridge lever is not completely turned to its lock position, toner may scatter from the toner hopper.

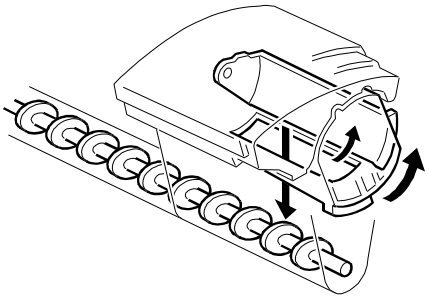
To prevent the above possibility, follow the following procedure:

1. Remove the revolver cover.
2. Rotate the revolver unit until the cartridge you wish to remove is in the removal position (lower left, looking from the front). See the illustration below.
   Note: If the Cyan cartridge is removed in this position, it is possible to reinstall the revolver clamp for machine transportation.
3. Tap the toner cartridge near the cartridge lever (e.g. with a handle end of a screwdriver) and empty the toner into the cartridge from the hopper.
4. (In this position), remove the toner cartridge after having closed the cartridge shutter. (Make sure that the shutter is completely shut).
5. Clean the shutter area of the cartridge with a vacuum (as well as the silver tape on the reverse side).
6. Rotate the revolver clockwise to set the toner cartridge to its proper position.
7. After cleaning the area around the shutter (of the hopper), make sure that the shutter can be moved easily. After closing the shutter completely, set the cleaned cartridge.



Toner Cartridge Replacement Position

Press the lock pin and turn the shutter completely.
Clean the sponge seal around the opening of the cartridge as well.



Model: Cattleya	Date: 15-Oct-99	No.: RA257012

Subject: Notes when installing the paper transfer unit	Prepared by: M. Furusawa
From: Technical Service Dept., GTS Division	

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

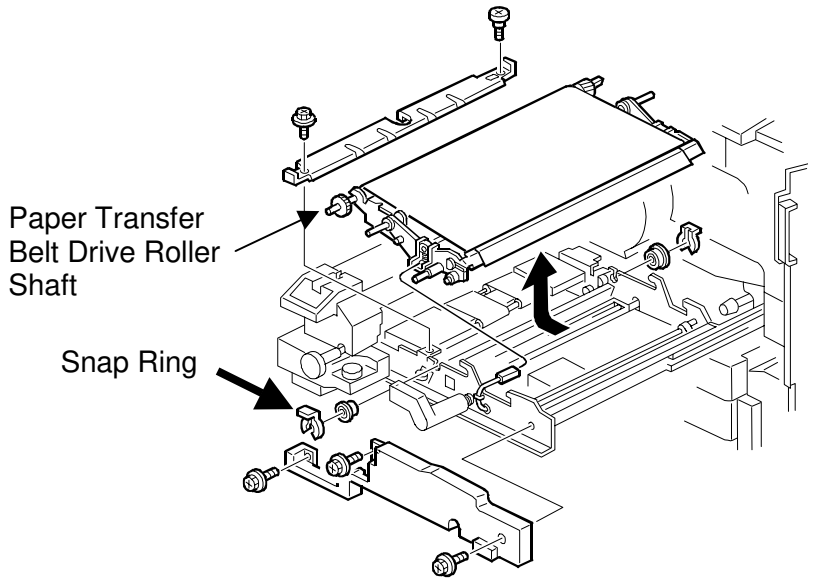
Notes when installing the paper transfer unit

Note:

When installing the paper transfer unit, make sure that the snap ring is set in the groove of the paper transport belt drive roller shaft.

Otherwise, the following problems may occur:

* **SC456 (Paper transfer unit position error)**
* **Damage to the paper transfer belt**



Model: Cattleya	Date: 15-Oct-99	No.: RA257013

Subject: Additional Information for the Image Rotation and Double Transfer Image Mechanism	Prepared by: M. Furusawa
From: Technical Service Dept., GTS Division	

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

The following two items are additional information (detailed explanation of the specifications/features).

1. Image rotation in combination with other functions:

Image rotation is available under the following conditions.

(1) When “Image Rotation ON” is selected in the "General Features" section of the User Tools.
(2) When "Auto Paper Select" is selected at the operation panel.
(3) When paper of the same size as the original on the exposure glass is set in the paper tray perpendicular to the original.
(4) When the Color Mode selected at the operation panel is B&W or Single Color.

The "Image Rotation" cannot be performed in the following copy modes:

- Area editing mode
- ~~Auto Reduce/Enlarge mode~~
  (→ Possible with Main firmware Ver. 1.572 or later)
- Poster mode
- Image Shift mode
- Combine mode
- Book mode
- Image creation mode
- Image overlay
- Film projector
- Staple mode

2. Conditions for the Double Transfer Image Mechanism

The conditions for the Double Transfer Image Mechanism are as follows:

(1) Copy paper size: A4 sideways (11” x 8 1/2”) or smaller
(2) Copy mode: Full Color mode or 1C mode

The copying speed with the Double Transfer Image Mechanism is 10 cpm for Full Color and 40 cpm for 1C mode.

Model: Cattleya	Date: 15-Oct-99	No.: RA257013

The Double Transfer Image Mechanism in the Full Color mode is not available with the following functions (even if the above conditions are satisfied):

- Margin adjustment
- Centering
- Cornering
- Series copy
- Duplex (2 sided → 2 sided, Book → 2 sided)
- Image overlay
- Poster mode
- Projector mode

Note: The copying speed of the Full Color mode is 5 cpm. This also applies to A4 sideways (11" x 8 1/2") or smaller.

Model: Cattleya	Date: 15-Oct-99	No.: RA257014

Subject: Main Firmware ver1.572 Information	Prepared by: H.Matsui
From: Technical Service Dept., GTS Division	

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

This RTB contains the necessary information related to the main control board firmware ver 1.572 NA/EU/EU2/EU3 for Cattleya.

Language

The main control board firmware contains the following languages.

Ver1.572NA: US English, French, Spanish
Ver1.572EU: UK English, French, German, Italian
Ver1.572EU2: Spanish, Dutch, Swedish, Danish
Ver1.572EU3: Norwegian, Portuguese, Polish, Czech

NOTE:
Along with installing the above firmware, it is necessary to update the scanner IPU firmware to version 1.19 or newer in machines produced before July. If main firmware version 1.572 is used with the scanner firmware older than version 1.19, errors in machine operation may occur.

Model: Cattleya	Date: 15-Oct-99	No.: RA257014

Contents of the software change

1	"Copies" or "Developments" is displayed on the counter display (when the Counter Key is pressed). "Copies" is displayed for a machine with the copy counter set. "Developments" is displayed for a machine with the development counter set. NOTE: This change is available only when "English" has been selected as the operating language.
2.	The confirmation button on rhe operation panel is changed from "OK" to "Confirm"
3.	The full color sorting setting button in "Duplex/ADF/Sorter" mode in "Copier Feature" mode in the User Tools is changed from "On" / "Off" to "Off"/ "On". This is because the default setting of Full color sorting is "On".
4.	"Image rotation" and "Auto Reduce/Enlarge" can be used at the same time.
5.	"Area editing" and "Auto Reduce/Enlarge" can be used at the same time.

NOTE:
Due to software modifications 3, 4, and 5 mentioned above, the operating instructions for the Cattleya also need to be modified. This will be effective within the month of October. Errata will be included in the operating instructions. We would like to recommend that copies of the errata be provided to customers updating to ver 1.572 or newer (please refer to the following page). The errata can also be printed out from the attached PDF file (**CattleyaErrata2.pdf**).

Errata

This manual contains some misprints and should be corrected as follows:

P.158	Add	You can also change the Auto Reduce/Enlarge setting during area editing.
P.165	____	The entry in the combination chart for Auto Reduce/Enlarge and "⑤" should read "☆" and not "×".
P.198	____	Full Color Copy Sorting is turned on by default (not off as stated).
P. 56	Add	Auto Off Mode This machine automatically turns itself off 60 minutes after the last copy or print job has finished. If you wish to make copies when the machine is in Auto Off mode, press the operation switch. Reference For how to change the default interval that the machine waits before entering Auto Off mode, see "Auto Timer"on page 191. Note The Auto Off timer does not take effect in the following cases: • When there are originals on the exposure glass or in the document feeder. • When there are copies in the bins of the sorter stapler. • While the machine is making copies. • When a paper misfeed has occurred. • When a cover is open. • When a service call message is displayed.

Model: Cattleya	Date: 15-Oct-99	No.: RA257015

Subject: Additional error code for process control selfcheck results	Prepared by: M. Furusawa
From: Technical Service Dept., GTS Division	

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

An error code for the process control selfcheck results has been added from the Main firmware version 1.542. (The main firmware should be upgraded to Ver. 1.542 or later at installation.)

- Details -

Additional error code: " 89 " (Service manual: page 7-1)

<Conditions for "89" to be displayed>

When any "Process Control Selfcheck" is performed, the error code "89" is displayed under the following conditions:

- When SP3-125-000 (Prosecc control method) is set to "1" (Fixed potential control).
- When toner end or toner near end occurs.

Deleted error code: " 597 " (Service manual: page 7-2)

The error code "597" (Incorrect setting of process control method) for the developer setup results has been deleted, because the same condition is detected by error code "89".

Model: Cattleya (Controller Interface TypeF)	Date: 15-Nov-99	No.: RA257016

Subject: SC326 / Abnormal Image	Prepared by: M. Furusawa
From: Technical Services Dept., GTS Division	

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

It was reported in the Japanese market that image quality problems or SC326 occurs due to a defective BUSSW board in the Interface Kit. This RTB outlines the troubleshooting procedure.

SYMPTOM

1. Blank Image or Vertical Lines
2. SC326

NOTE: This problem occurs in copy or scanning mode only. It does not occur during print jobs.

CAUSE

Normally, the input pins (#12 to 17) of IC18 on the BUSSW board are not used for the function of the IC18. However, due to an error in the software programmed in IC18, these pins were allocated as output pins. The resulting increase in power consumption causes the IC to heat up and malfunction.

NOTE: After analysis and testing of the PCBs returned from the field, it was found that the cause explained above was a majority of the causes. The other causes are isolated cases.

1. Blank Image or Vertical Lines

When the IC does not renew the scanned image data due to the cause explained above, blank image or vertical lines appear on the outputs depending on the image of the first line scanned-in.

- If the first line scanned in is blank, the output is blank.
- If the first line scanned in contains an image, the output will contain vertical lines.

2. SC326

When the IC does not send the LSYNC signal to the ASIC, the FGATE signal cannot be generated (causing SC326).

SOLUTION

On the production line

The BUSSW board has been modified as shown below. The board thought to be causing the problem is #A8485111. The problem does not occur with the Interface Kits containing #A8485112, as this board does not use IC18.

Model Code	Old P/N	New P/N
A839-17, 27, 55, 65	A8485111	A8485112

Cut-in Serial Number

Modification (1)

Product Code	Cut-in Serial Number
A839-17	H1390800151
A839-27	H1390700144
A839-55	From first mass production

NOTE: The same PCB was used for Japanese and overseas versions (with IC18 installed). However, since only the Japanese version actually uses IC18, it was removed from the overseas versions. The board for all overseas versions has then been given a new part number.

The action described on the following pages is required on the field machines equipped with the Interface Kits containing #A8485111. The serial numbers of these Interface Kits are listed on the next page.

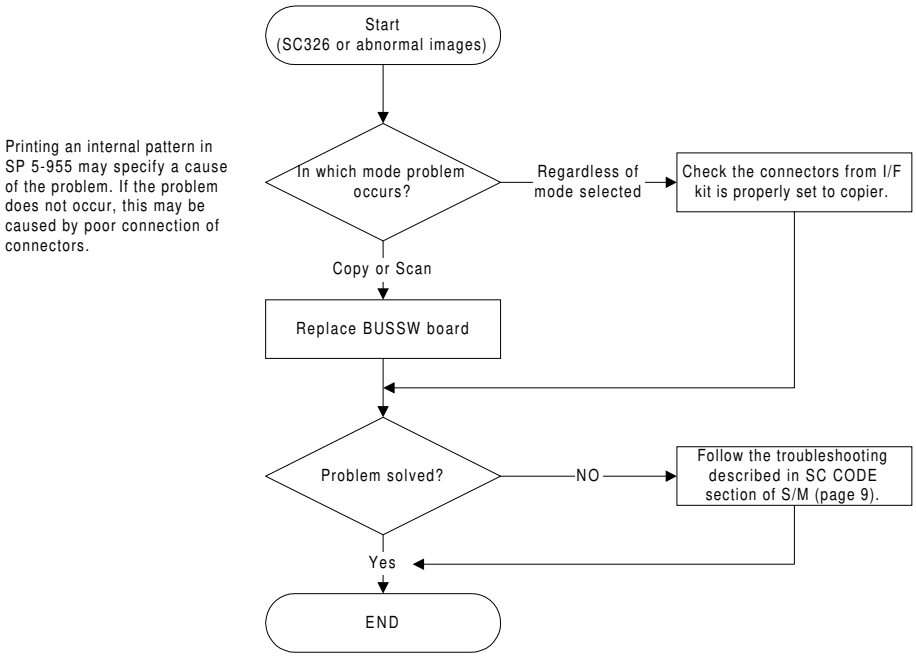
Model: Cattleya (Controller Interface TypeF)	Date: 15-Nov-99	No.: RA257016

In the field

Serial numbers of I/F kits thought to be causing this problem:

Product Code	From	To
A839-17	From the first mass production unit	H1390601212
A839-27	From the first mass production unit	H1390700143
A839-55	No objective units	

[1] Troubleshoot as shown below when the problem is reported.

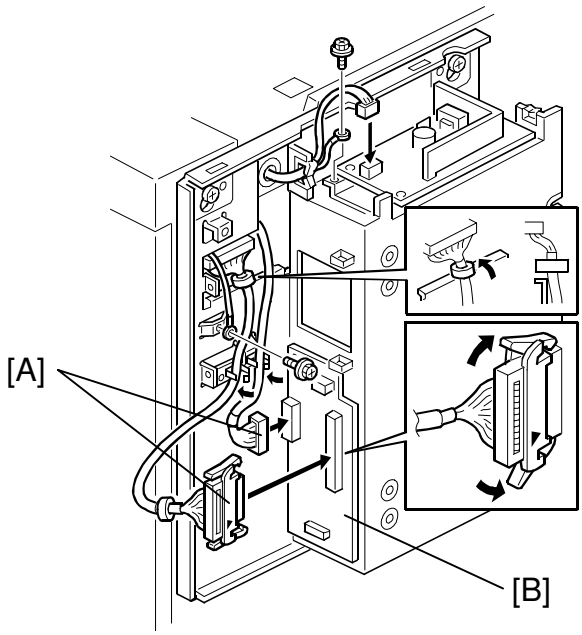


NOTE: If the problem is related to IC18, the replaced (old) PCB can be re-used after cutting pins #12 - 17. If occurrences still continue after cutting the pins, the problem is being caused by another PCB component.

NOTE: If the BUSSW board (IC18) causes the problem and the part is not available, cutting the pins (#12 - 17) of IC18 as explained in section [2] on page 5 of this RTB solves the problem.

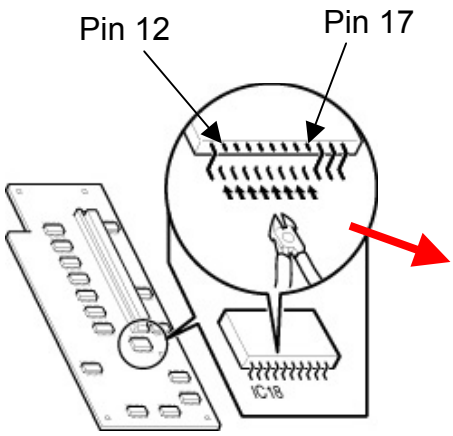
Model: Cattleya (Controller Interface TypeF)	Date: 15-Nov-99	No.: RA257016

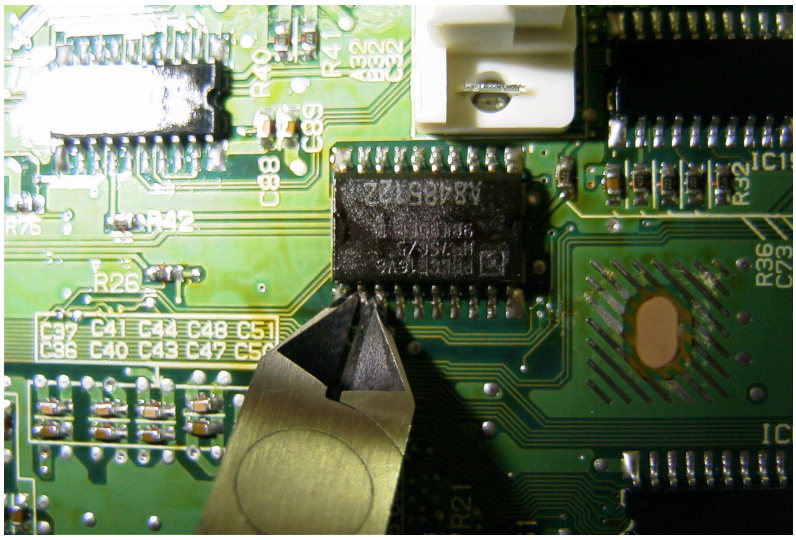
- BUSSW Board Replacement Procedure -

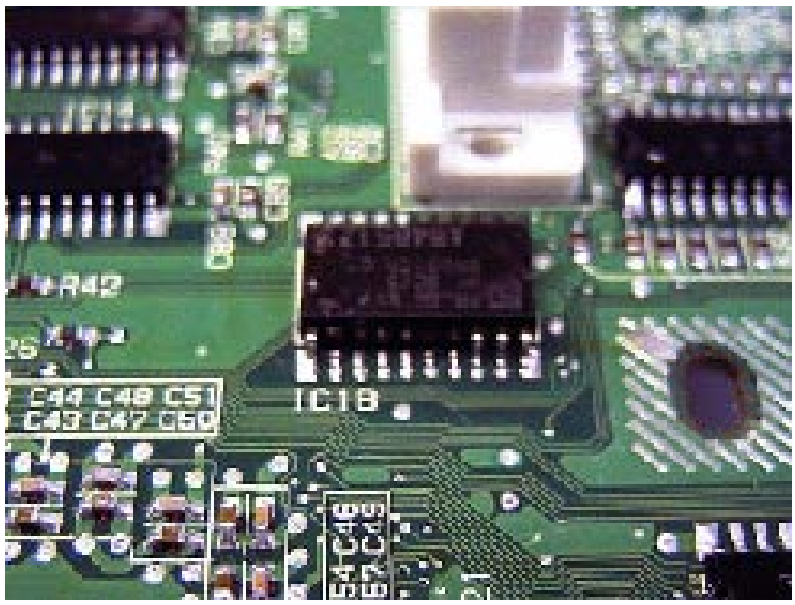


1. Turn off the main switch and unplug the power cord.
2. Disconnect the cable(s) from the controller.
3. Remove the exterior cover of the I/F unit (4 screws).
4. Remove all the shield covers.
5. Remove the controller from the I/F unit.
6. Disconnect the connectors [A]
7. Replace the BUSSW board [B] (4 screws, 1 grounding screw).

[2] Do the following at installation or next visit to prevent any future occurrence.







1. Remove the BUSSW board by following the procedure described on the previous page.
2. Using small cutting pliers, cut pins #12 to 17 so that they do not touch other pins or patterns. This will prevent a short circuit.
3. Remove the cut pins from the board surface.

NOTE: Be careful not to cut other pins or damage the PCB pattern. If pins #11 or 18 are cut, this will cause SC326.

Model: Cattleya	Date: 15-Nov-99	No.: RA257017

Subject: Toner bands around the drum or SC440	Prepared by: M. Furusawa
From: Technical Services Dept., GTS Division	

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

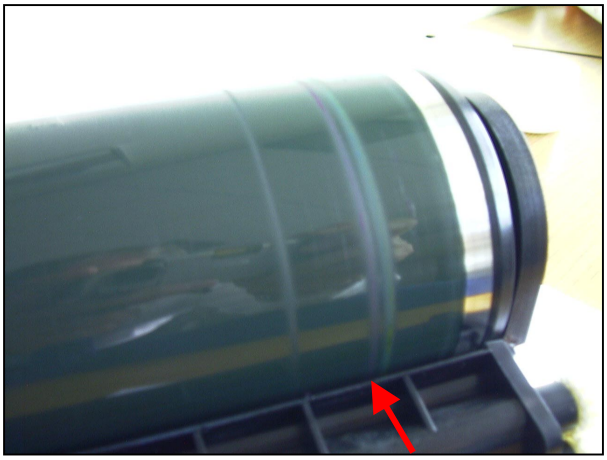
SYMPTOM

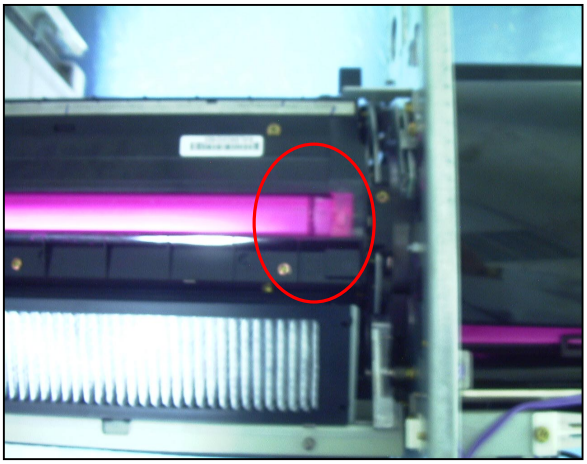
Toner bands form on the front side of the drum surface.

If these toner bands are located in the image area of the drum, they will appear on copies as vertical bands.

If the thickness of the built-up toner is high, the drum locks and SC440 is generated (Drum motor error).

Toner bands around the development sleeve are also observed under the conditions described above. These toner bands are actually formed first and are then transferred to the drum surface.





CAUSE

If the transfer faceplate is fitted incorrectly, the photoconductor gap at the front side may become slightly narrower than the target value. The photoconductor gap at the rear side will not change.

Under these conditions, a toner band may form around the development sleeve due to heat caused by the heavier load on the developer. This is likely to occur in development units which have a relatively wide doctor gap (but still within specification) among the four development units (YMCK).

When the toner band reaches a certain thickness, it is transferred to the drum surface. When this happens, the toner band on the drum will be transferred to the other development sleeves.

Model: Cattleya	Date: 15-Nov-99	No.: RA257017

SOLUTION (Prevention)

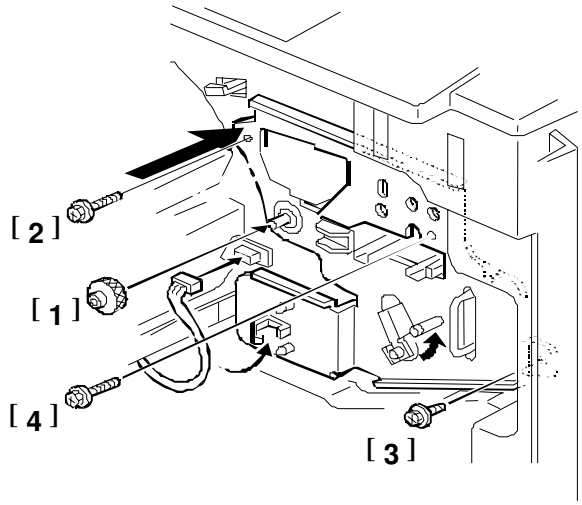
To ensure a correct photoconductor gap for all color development units, the knob and screws for the transfer faceplate should be tightened in the correct order. Please refer to the following procedure.

This procedure has already been announced in RTB No. RA257009 for the purpose of preventing SC457.

Procedure:

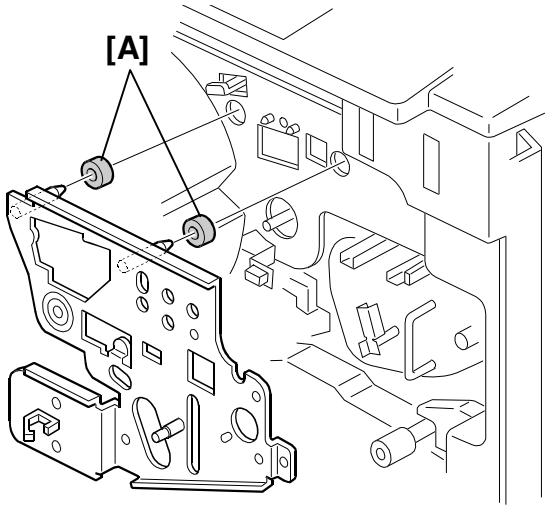
Installing the transfer faceplate:

1. Install the transfer faceplate and tighten the knob [1].
2. Pushing the upper left part of the faceplate against the revolver/drum drawer, tighten the three screws in the following order: [2], [3], [4].
3. Re-tighten the knob.
   Note: Re-tighten this knob with the transfer belt tension lever as is (until the drum rotates along with the knob).



Additional Note:

When installing the transfer faceplate, make sure that the rubber spacers (AA161134) [A] are properly attached to the positioning pins as shown.



Action when toner bands form:

If the toner bands form only on the development sleeve, clean the development sleeve completely and attach the transfer faceplate as described above.

If the toner bands form on the drum surface as well, replace the drum and development unit(s) which show toner banding around the development sleeve. If the development sleeve can be cleaned completely, it is possible to re-use the development unit.
Next, attach the transfer faceplate as described above.

Model: Cattleya	Date: 15-Dec-99	No.: RA257018

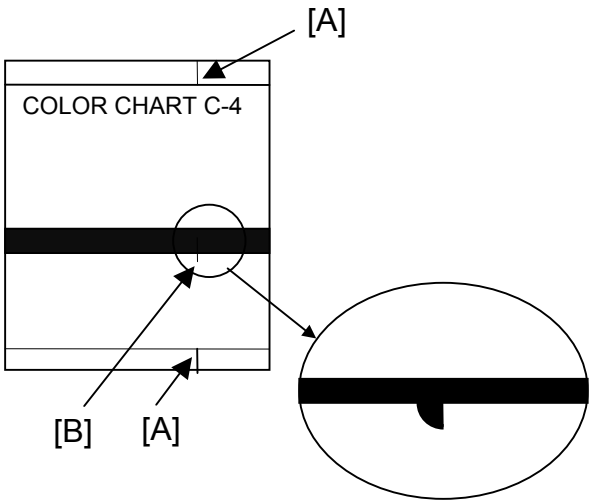
Subject: Vertical lines and smeared image	Prepared by: M. Furusawa
From: Technical Services Dept., GTS Division	

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

SYMPTOM

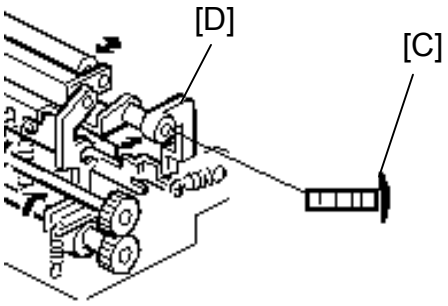
Vertical lines [A] appear across the output (from the leading edge to trailing edge) and smeared images (short lines) [B] appear below the lower edge of solid image areas as shown.

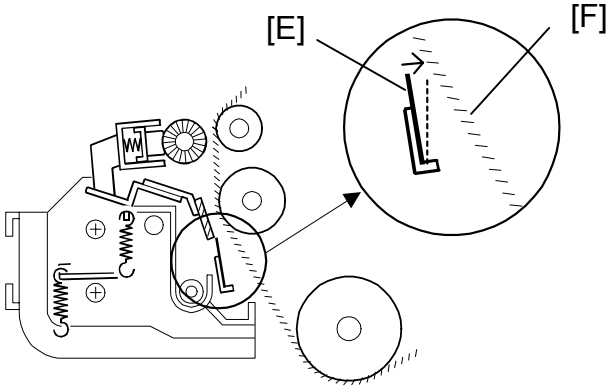
This is particularly noticeable in FC mode.



CAUSE

The screw [C] securing the entrance seal release lever [D] came loose and the entrance seal [E] contacted the image transfer belt [F] during the copy process. This caused the vertical lines in blank areas and the smeared images below the lower edges of solid image areas.



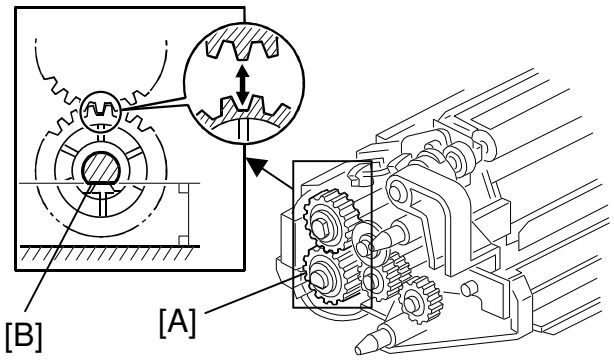


SOLUTION

Remove the image transfer belt cleaning unit from the machine and re-secure the screw by following the procedure explained on the next page.

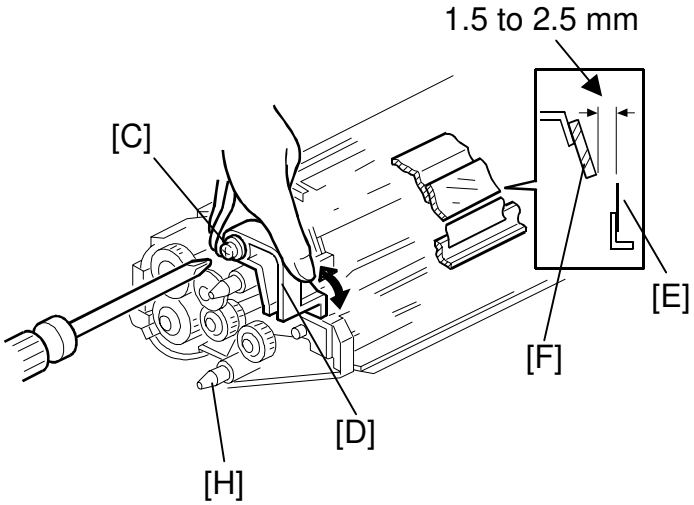
Troubleshooting Procedure

1. Rotate the gear [A] clockwise so that the D-cut [B] in the centre of the gear faces down as shown in the diagram. This is to move the entrance seal to the release position.

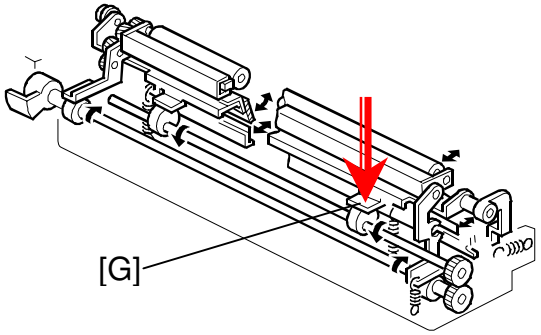


2. After loosening the screw [C] of the entrance seal release lever [D], re-secure the lever so that the gap between the edges of the entrance seal [E] and the cleaning blade [F] is **1.5 – 2.5 mm**. This can be done by turning the lever [D].

3. Check the gap. If it is incorrect, finely adjust by turning the lever while pressing down the front tab [G] of the cleaning blade bracket, and firmly tighten the screw while maintaining pressure on the tab.



4. After securing the screw, turn the gear [A] clockwise 1 revolution and confirm that the gap is within the adjustment range.



NOTE:

If the gap is not adjusted within the specified range (1.5 – 2.5 mm), the following problems may occur.

- If the gap is under 1.5 mm, the toner will tend to spill out.
- If the gap is over 2.5 mm, vertical lines will tend to appear on the outputs.

REMARKS:

Please make note of the following remarks.

- When removing and reinstalling the image transfer belt cleaning unit during servicing, please do so while holding the positioning pin ([H] on the previous page).
- Do not hold the entrance seal release lever. If the lever is held, it will move and the gap will fall out of the adjustment range. This will cause the problems described above.
- The screw that fastens the entrance seal release lever is paint locked. This screw should therefore not be loosened during servicing.

Reissued: 31-Dec-99

Model: Cattleya	Date: 15-Dec-99	No.: RA257019a

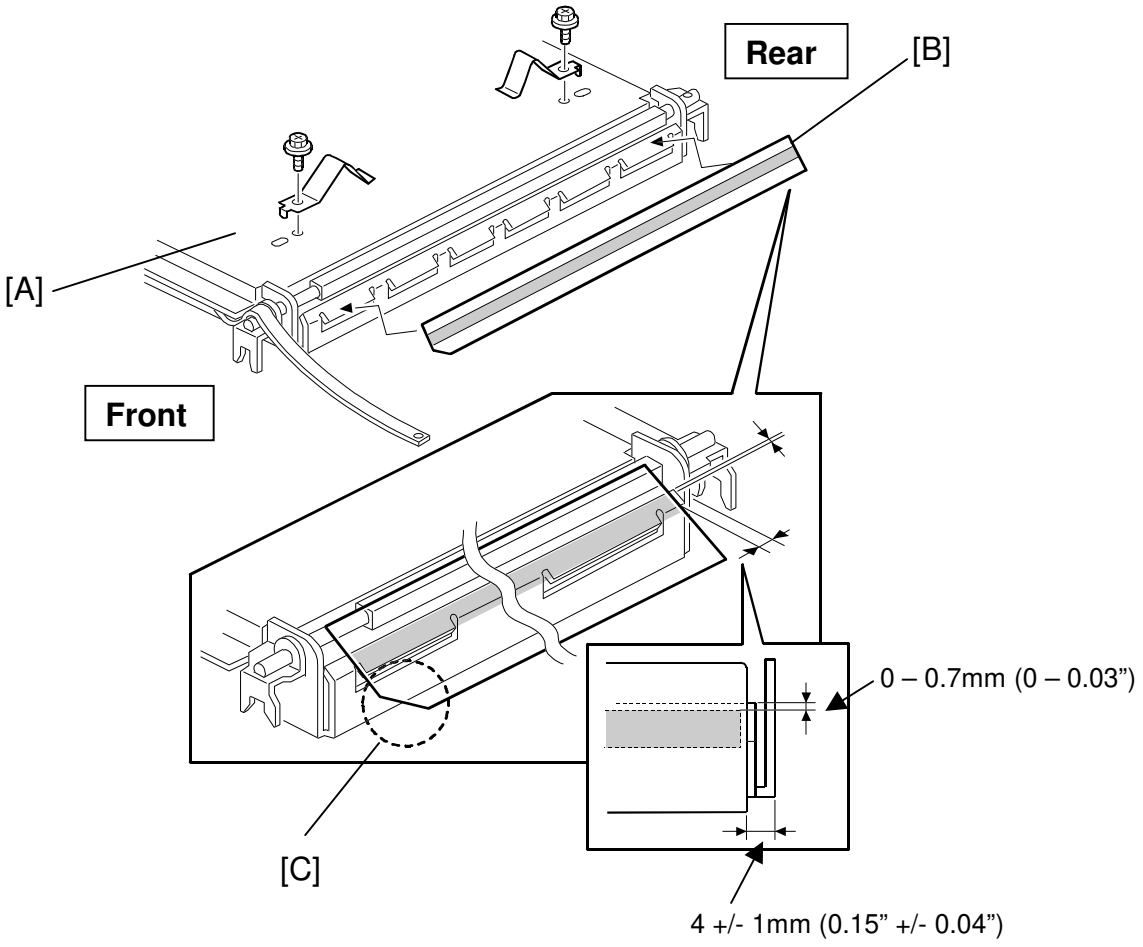
RTB Correction: Call-outs [A] and [B] in the first paragraph have been corrected.

Subject: LCT Installation Procedure			Prepared by: M. Furusawa
From: Technical Services Dept., GTS Division			
Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☒ Other (Supplemental information)		

The service manual (page 3-33, LCT adapter installation) explains where the mylar [B] should be attached onto the vertical transport unit [A]. However, it was found that in the field the mylar was not properly positioned, causing paper to skew or jam.

This RTB shows the proper attachment position of the mylar.

1. Place the vertical unit [A] as shown.
2. Attach the mylar [B] onto the vertical unit to satisfy the following conditions.
   - The cut-out [C] in the mylar must be located at the front of the unit.
   - All gaps must be within the adjustment range.
     Note: Side-to-side positioning should be adjusted using the rear side plate (outer surface).



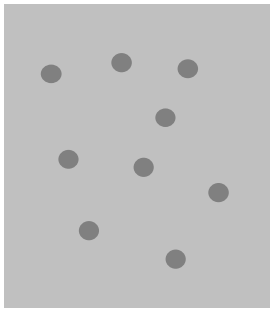
Model: Cattleya	Date: 15-Dec-99	No.: RA257020

Subject: Dark spots in solid image areas	Prepared by: M. Furusawa
From: Technical Services Dept., GTS Division	

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

SYMPTOM

Dark spots appear in solid areas as shown in the illustration.



CAUSE

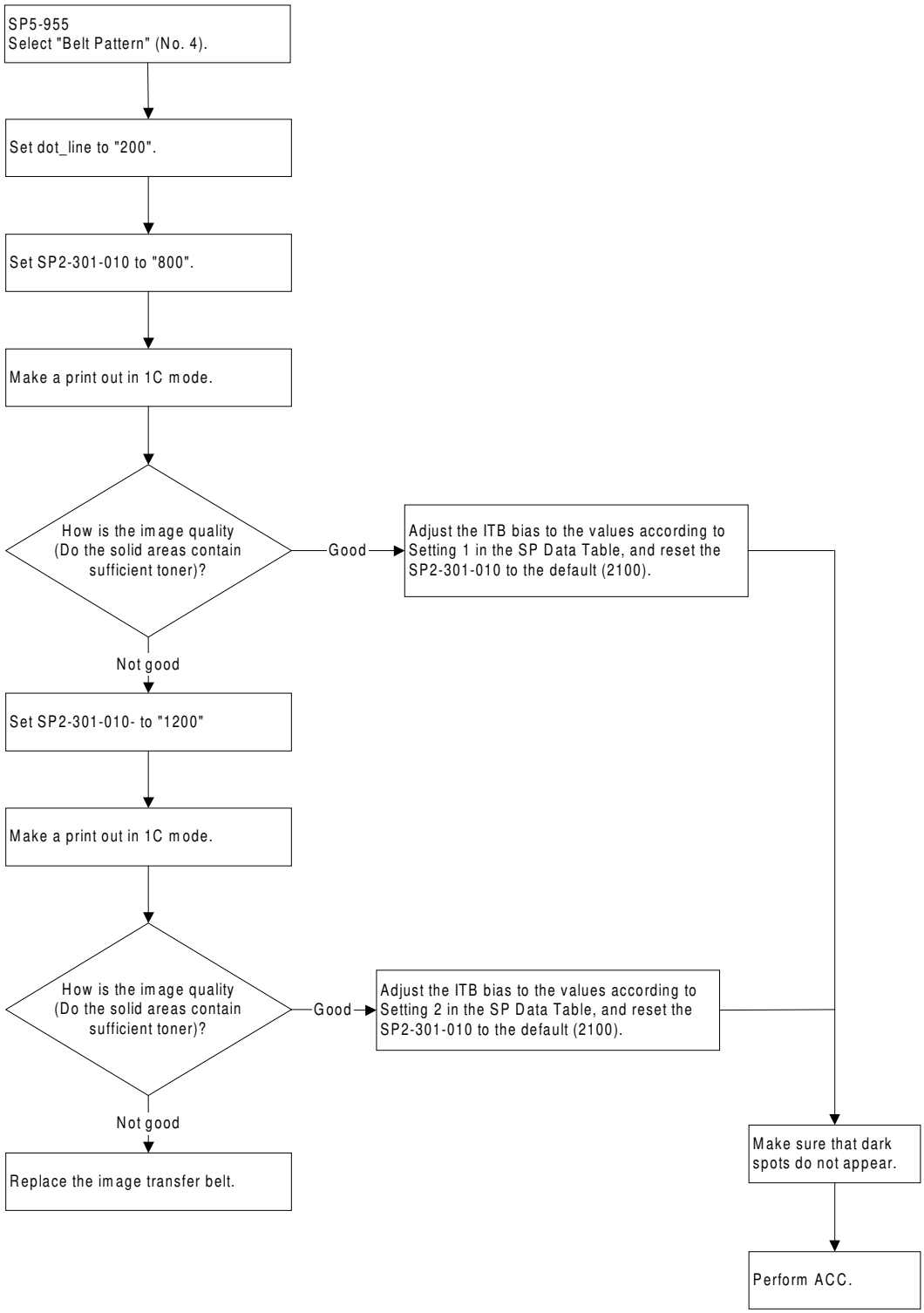
- The electrical resistance of the image transfer belt has a specified range. If the resistance is at the lower end of the specified range, the pre-fixed transfer bias becomes higher than the optimum value. In this case, toner transferred to the belt tends to be re-attracted to the drum.
- Small carrier particles in the development unit tend to be physically attracted to the drum. The carrier particles transferred to the drum create a gap between the drum and the image transfer belt. Toner on some parts of the transfer belt where the carriers are transferred is not re-attracted to the drum due to this gap.

SOLUTION

Adjust the image transfer belt bias according to the work flow on the next page.

Model: Cattleya	Date: 15-Dec-99	No.: RA257020

WORK FLOW



Model: Cattleya	Date: 15-Dec-99	No.: RA257020

SP DATA TABLE

SP Mode		Default	Setting 1	Setting 2
2-301	001	1500	800	1200
	002	1700	1000	1400
	003	1900	1200	1600
	004	2100	1400	1800
	005	1500	800	1200
	006	1700	1000	1400
	007	1500	800	1200
	008	1700	1000	1400
	009	1900	1200	1600
	010	2100	2100	2100
	025	1500	800	1200
	026	1700	1000	1400
	027	1900	1200	1600
	028	2100	1400	1800
	029	1500	800	1200
	030	1700	1000	1400
	031	1500	800	1200
	032	1700	1000	1400
	033	1900	1200	1600

NOTE:

- SP2-301-010 should be returned to the default (2100) after checking the image quality in the work flow.
- After replacing the image transfer belt with a new one, reset the image transfer belt bias to the default settings. Check the image quality and if necessary, adjust the bias according to the procedure in this RTB.
- When the transfer bias decreases, it may cause the image in solid areas to become rough or light because less toner is transferred to the belt. It may also cause firefly spots to occur due to small clogged toner particles that bridge the gap between the drum and belt. When the belt bias is decreased, check the level of both the dark spots and rough image/firefly spots. Select the bias that gives the best overall results.

Model: Cattleya	Date: 15-Dec-99	No.: RA257021

Subject: Effects of Image Transfer Belt Curl	Prepared by: M. Furusawa
From: Technical Services Dept., GTS Division	

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

SYMPTOM

As a result of the bends in the Image Transfer Belt, horizontal bands might be observed, especially in halftone areas.
These bands are located **at 230 mm, 270 mm, and 310 mm** (center of the bands) from the leading edge of long paper such as A3, 11”x17”, 12”x18”, and 13”x19”. (In the case of 1C mode, this location corresponds to only the 1st copy.)

CAUSE

The Image Transfer Belt always stops at the same position (with the belt mark 80 mm away from the ITB HP sensor) when the copy/print job finishes.
In addition, the tension applied to the Image Transfer Belt has been increased from the first mass-production of overseas versions in order to ensure image alignment.
These conditions may cause the bends (curls) in the image transfer belt to be ‘memorized’ on the belt.
The level of curl depends on the usage conditions. (Low copy/print volume and prolonged use will cause heavier curl.)
The appearance of belt curl memory on the copy/print image also depends on the image patterns.

SOLUTION

Change the **main firmware** to **Ver. 1.592** or later.

The following countermeasure has been applied to alleviate the ITB curl memory problem by modifying the main firmware.

The belt stop position at the end of copy/print jobs will shift by 4 mm each time.
The following shows the belt stop positions in sequence (0: current stop position):

0 → +4 mm → +8 mm → +12 mm → +16 mm → +20 mm → -20 mm → -16 mm → -12 mm → -8 mm → -4 mm → 0 → +4 mm → +8 mm → +12 mm → .....

This countermeasure will prevent the ITB curl from being heavily memorized, and will also reduce the curl amount once memorized in the ITB.

This firmware change has been implemented from the first production of October, 1999.

Model: Cattleya	Date: 15-Dec-99	No.: RA257022

Subject: Banding	Prepared by: M. Furusawa
From: Technical Services Dept., GTS Division	

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

Banding problems have been reported from the field.

The following table illustrates causes, countermeasures, and troubleshooting for machines in the field for each type of banding.

Banding Interval	Cause	Countermeasure At Production	Cut-in Production Month	Troubleshooting In The Field
53 mm	The 53 mm interval corresponds to 1 rotation of the development drive timing pulley (A2574733 : #7 on p. 98 in the P/C). When the tightener plate (A2574640: #4 [left one] on p.96 in the P/C) does not move smoothly, banding at 53-mm intervals is likely to appear.	Grease (Barrierta) was added on the reverse side of the tightener plate.	May, 1999	**Action1.** Add Barrierta or attach 2 pieces of ultra smoothing tape (**A2574637**) on the reverse side of the tightener plate.
		"Ultra smoothing tape" (A2574637 x2) has been attached on the reverse side of the tightener plate instead of adding grease.	June, 1999	
	The groove for the E-ring was located at the middle of the drive input shaft (A2574737: #15 on p. 98 in the P/C). Thus, the diameter of the shaft is smaller at the middle, causing a little flexibility in the shaft.	The groove for the E-ring on the drive input shaft has been eliminated and a spacer (A2574741) has been added instead of the E-ring to keep the gear in position. * A2574737 → A2574740 (E-ring) → A2574741	August, 1999 Refer to MB # MA257011	**Action 2.** Change the drive input shaft to **A2574740** and add the spacer (**A2574741**).
3 mm	The 3 mm interval corresponds to the distance between each tooth of the idle gears in the revolver unit. In addition when the idle gear teeth get dirty (e.g. with carrier), banding at 3-mm intervals is likely to appear.	The number of cogs for the timing pulley (#7 on p. 98 in the P/C) has been changed from 27 to 25. This modification changes the line speed of the development sleeve, alleviating the 3 mm banding problem. *A2574733 → A2574732	August, 1999 Refer to MB # MA257007	**Action 3.** Change the timing pulley to **A2574732**.

Banding Interval	Cause	Countermeasure At Production	Cut-in Production Month	Troubleshooting In The Field
1.65 mm	A 1.65 mm interval corresponds to the distance between each tooth of the development output gear (A2574736: #28 on p 98 in the P/C). If the bottom of the gear groove is hit by the teeth of the engaged gear, banding may appear.	The development output gear has been changed from a molded type to a cutting type to keep the bottom of the gear groove from touching the teeth of the engaged gear. (No part number change) The gear has been changed from the cutting type to the molded type after correcting the mold. *A2574736 → A2574739 The functions of these two gears are the same.	April, 1999 Mid. June, 1999 Refer to MB # MA257010.	**Action 4.** Change the development output gear to **A2574739**.
	Gear-26Z (A2573214:#15 on p 60 in the P/C) and Gear-48Z (A2573210: #16 on p 60 in the P/C) must be firmly coupled in parallel. If the ball bearing of each gear is not facing in parallel, the gears might cause a slight error in the rotation of the gears.	A special jig has been used for coupling the two gears to ensure that the ball bearing of each gear is facing each other in parallel. Note: There is no part number for the coupled gear.	July, 1999	**Action 5.** Change the coupled gear (A2573214 & A2573210) to **A2573219**. * 4 Pieces per unit.
		The two gears will be changed from the coupled type to the one molded part to eliminate the usage of a special coupling jig at the factory. * A2573214+ A2573210 → A2573219	Mid. December, 1999	

Supplemental information for troubleshooting

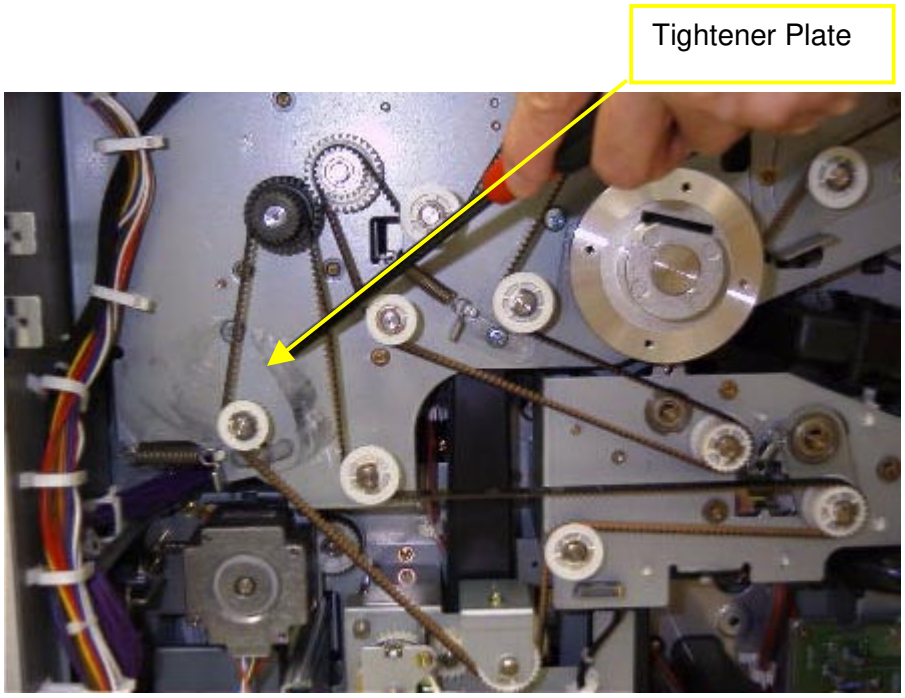
Action 1. (53 mm interval)

(A) Adding Barrierta to the tightener plate

Remove the tightener plate and add grease (Barrierta) on the reverse side of the tightener and put it back into its original position.

Make sure that the tightener moves smoothly.

Note: Barrierta is the recommended grease because it is resistant to toner dust.
Although Barrierta was added to the tightener plate from the May production at the factory, the amount of Barrierta may not have been sufficient.

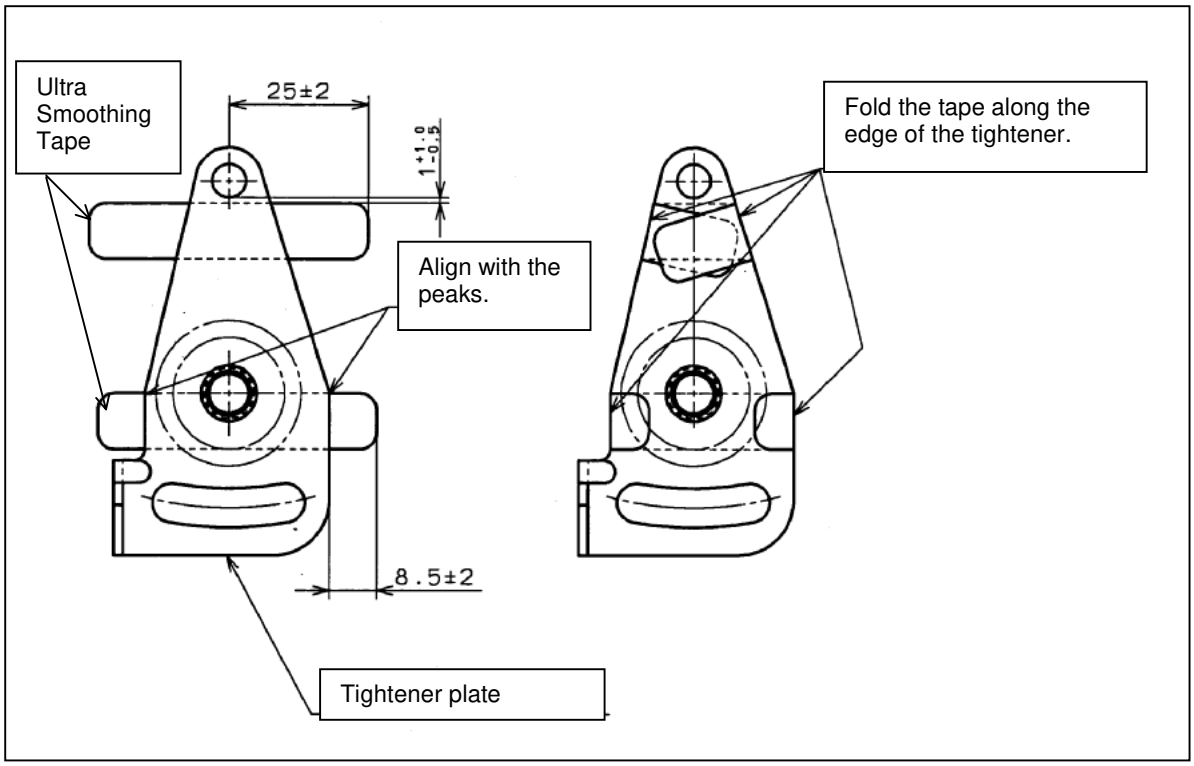


OR

(B) Using ultra smoothing tape:

Remove the tightener plate and clean it and the drive unit bracket with a cloth moistened with alcohol.

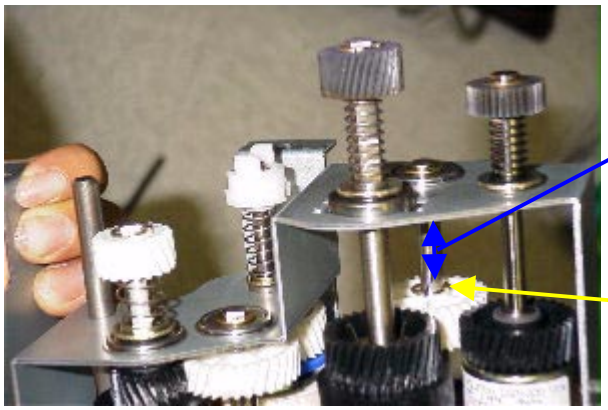
Attach 2 pieces of Ultra smoothing tape according to the following instructions.



Note:
When using the ultra smoothing tape, remove the spacer (0.1 mm) between the tightener and the stepped screw. (March production does not have the spacer.)

Action 2. (53 mm interval)

Picture from an old unit



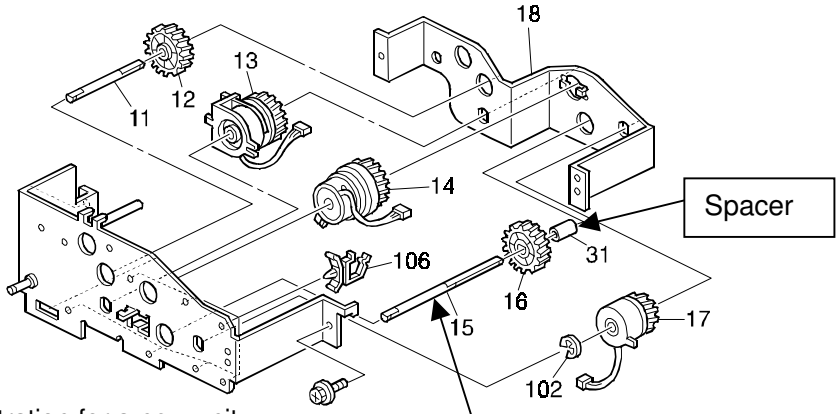
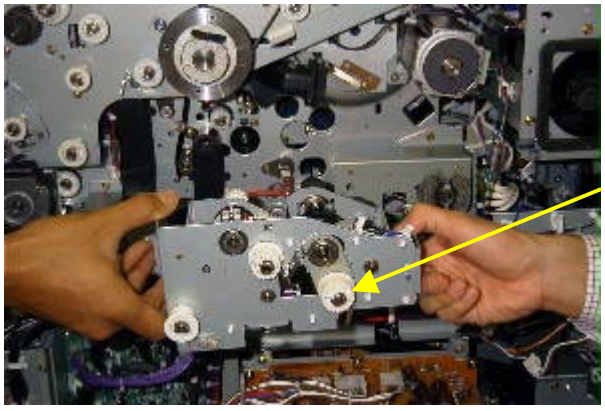
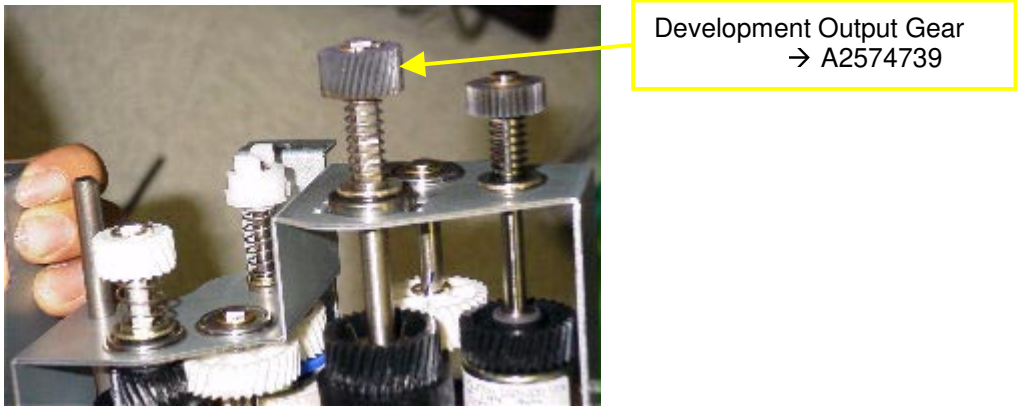


Illustration for a new unit

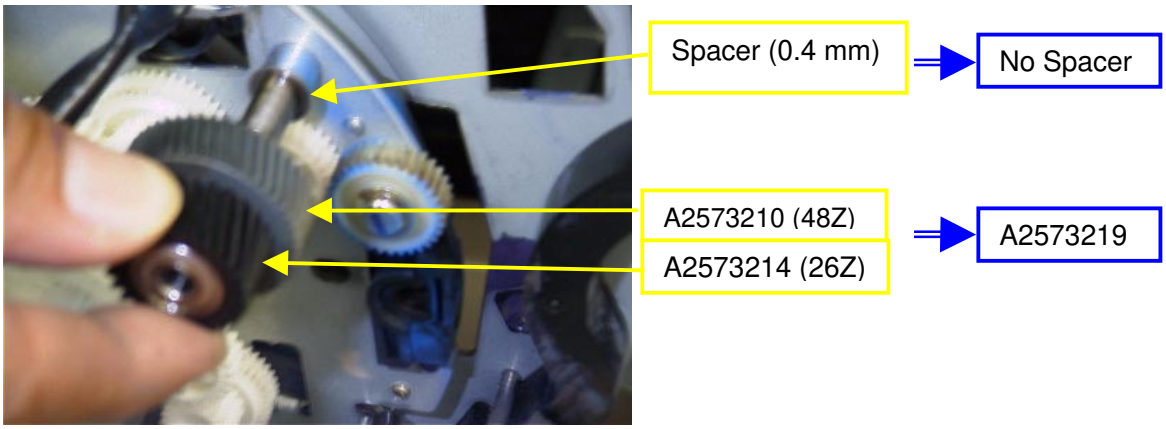
Action 3. (3 mm interval)



Action 4. (1.65 mm interval)



Action 5. (1.65 mm interval)



Note:
When installing the new gear (A2573219), remove the spacer (0.4 mm) on the gear shaft. (March production does not have the spacer.)

REMARKS

When using these methods, please note the following:

- The banding described in this RTB did not occur with all the machines which were produced before the cut-in production month.
- Occurrence will depend on such factors as machine conditions, paper type, original image, etc.
- In addition, even if the symptom appears on copies or print outs, some customers may not issue a claim. This of course depends on the appearance of the copy / print out in relation to the customer's expectations.
- Claims for the symptoms described are primarily issued by controller users.

Model: Cattleya	Date: 15-Dec-99	No.: RA257023

Subject: Jitter on Extra Thick Paper	Prepared by: M. Furusawa
From: Technical Services Dept., GTS Division	

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

Occurrences of jitter have been reported from the field. The causes of each type of jitter are different. This RTB explains how to apply the corresponding solution.

SYMPTOM/CAUSE/SOLUTION

Symptom	Cause	Action	
		In production	In the field
140 mm from the trailing edge	The paper feed motor's speed is adjustable to make paper buckle between the registration and grip rollers. If the grip roller speed is faster than the registration roller, the amount of paper buckle increases. Since extra thick paper is very stiff, the paper buckle amount affects the paper transportation speed overcoming the registration roller speed. When the trailing edge of the paper passes the grip rollers, the force pushing the paper by the grip rollers suddenly disappears. This may change the paper transportation speed, shocking the image transfer process and causing jitter. The distance between the grip roller and image transfer point is approximately 140 mm.	The current default settings of SP1-801-005 and 010 were determined by using limited brands of extra thick paper. They were unsuitable for minimizing the 140 mm jitter on various kinds of extra thick paper. These SP modes will be adjusted in the production process to improve this situation. SP1-801-005: Paper feed motor speed/Half speed Adjustment range: -0.2 +/- 0.2 SP1-801-010: Registration motor speed/Standard speed Adjustment range: 0 +/- 0.1	The factory settings may not be suitable for the brand of paper used in the field. If jitter occurs, these SP modes need to be fine-tuned. For the procedure, please refer to page 2. See **NOTE 1**.
355 mm from the leading edge	The shock caused when the leading edge of the paper touches the hot roller causes the jitter.	The fusing entrance guide will be modified. The height of the central part of the entrance guide will be adjustable. P/N: To be announced This modification will be implemented from the January '00 production process.	Users can move up the position of the central part of the entrance guide by shifting the lever when using extra thick paper. For the installation procedure, please refer to page 4. See **NOTE 2**.

Symptom	Cause	Action	
		In production	In the field
365 mm from the leading edge	The shock caused when the leading edge of paper passes the nip band of the fusing rollers causes the jitter.	The same as 355 mm from the leading edge.	Ditto

NOTE 1

- In the service manual (Appendix 2, SP Mode), the columns of SP1-801-005 and 010 are highlighted. This means that these SP modes should not be touched in the field. However, please adjust these settings to handle this problem.
- Jitter may appear at 76 mm from the trailing edge. This is caused by shock produced when the trailing edge of the paper passes the registration roller. This can be reduced by adjusting SP1-801-010. Please make a note that the setting of SP1-801-010 should be adjusted to achieve suitable image quality for both 76 and 140 mm jitter problems.

NOTE 2

- The fusing entrance guide can be shifted to two positions (Normal or High). The high position is only for extra thick paper. The normal position is for all other paper. If 80 g or 100 g paper is fed at the high position of the entrance guide, it may not cause any problems although the normal position is recommended. However, the high position may cause a paper jam if thin paper or small size paper such as post cards are fed.

TROUBLESHOOTING PROCEDURES

[1] Jitter at 140mm from the trailing edge

Please find the best combination of SP1-801-005 and 010 within the following range.

- SP1-801-005 (Paper feed motor speed / Half speed): -0.2 +/- 0.2
- SP1-801-010 (Registration motor speed / Standard speed): 0 +/- 0.1

NOTE:

- Before starting the following procedure, clean the registration rollers and grip rollers with a cloth moistened with alcohol or water.
- The following procedure is the quickest way to find the best combination of SP mode settings. Results may depend on machine condition and type of paper used. You can stop the procedure when you obtain an acceptable improvement. (The 140mm jitter should disappear completely or be significantly reduced after the following procedure.)
- SP1-801-010 should be adjusted for both 140 mm and 76 mm jitter as explained above.

1. Confirm that the setting of SP1-801-010 is **0**. If not, set it to 0.
2. Change the setting of SP1-801-005 from 0.7 to **-0.2**.
   Check the result of the above setting by making copies on extra thick paper.
3. If there is insufficient improvement, change the setting of SP1-801-005 to **-0.1** or **-0.3**. Then, check the result.
4. If the improvement is not sufficient, change the setting of SP1-801-005 to **-0.4** or **0.0**. Then, check the result.
5. If the improvement is not sufficient, change the setting of SP1-801-010 to **-0.1**. Then, check the result.
6. Under this condition, change the setting of SP1-801-005 within the range of **-0.4** to **0.0** to find the best setting.
7. If the improvement is not satisfactory, change the setting of SP1-801-010 to **+0.1**. Then, check the result.
8. Under this condition, change the setting of SP1-801-005 within the range of **-0.4** to **0.0** to find the best setting.

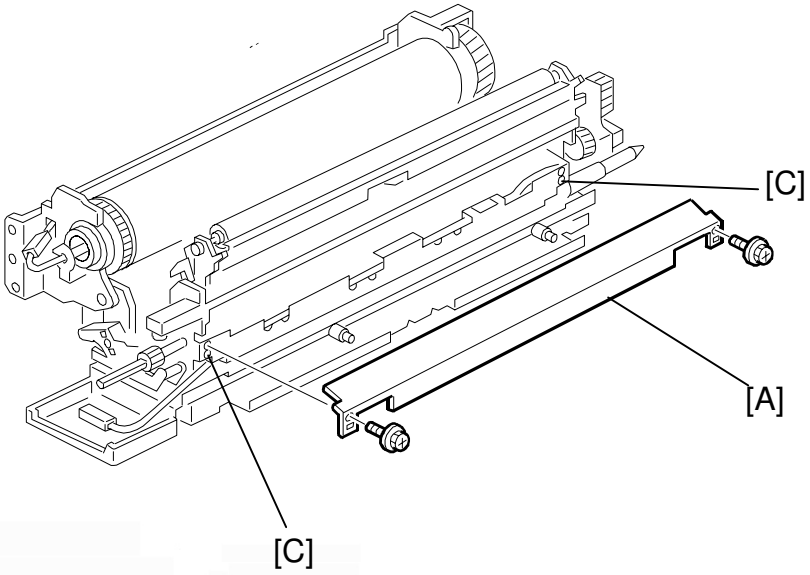
Quick Table

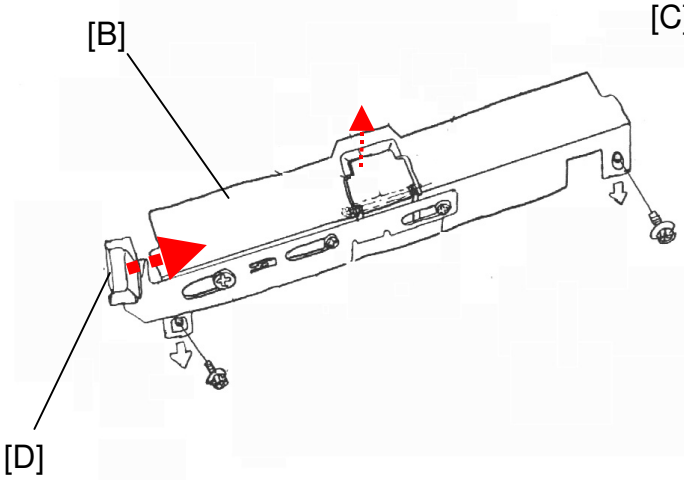
Follow the steps in the table and check the result at each step. If the result is acceptable, stop the procedure.

Step	SP1-801-005	SP1-801-010
1	-	0
2	-0.2	-
3	-0.1 or -0.3	-
4	0.0 or -0.4	-
5	-	-0.1
6	-0.4 to 0.0	-
7	-	+0.1
8	-0.4 to 0.0	-

[2] Jitter at 355mm and/or 365mm from the leading edge

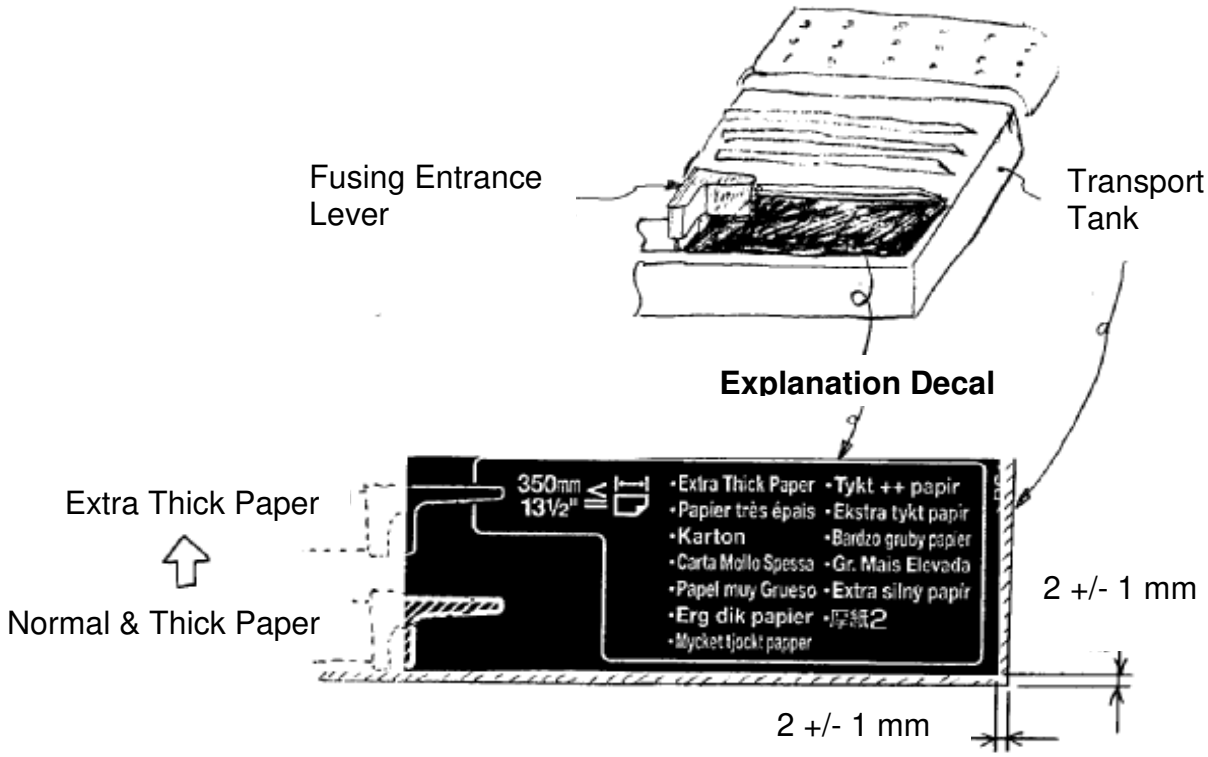
1. Remove the fusing unit from the copier.
2. Remove the fusing entrance guide [A] (2 screws).
3. Install the new fusing entrance guide [B] at the lowest position and secure it by using the screw holes [C] located 10 mm below the original screw holes (2 screws).
4. Stick an explanation decal on the paper transport tank as shown on the next page.
5. Reinstall the fusing unit.
6. Change the fusing entrance lever position [D] depending on the paper thickness:
   - Inward position (in the direction of the dotted arrow): for extra thick paper
   - Outward position: for normal and thick paper





Model: Cattleya	Date: 15-Dec-99	No.: RA257023

Decal sticking position



Reissued: 31-Dec-99

Model: Cattleya	Date: 15-Dec-99	No.: RA257022a

- The troubleshooting described in this document is effective for mechanical banding (related to mechanical drives) which appears as horizontal bands with a certain interval.
- As a characteristic of the copy process of the Cattleya, slight uneven image density bands in the main scan direction might appear in uniform solid / halftone areas. The appearance will vary depending on the original image.

Model: Cattleya	Date: 15-Jan-00	No.: RA257024

Subject: Mylar for PTB/ITB clutches	Prepared by: M. Furusawa
From: Technical Services Dept., GTS Division	

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

To prevent any foreign particles from dropping onto the PTB shift clutch and ITB cleaning shift clutch, two strips of mylar have been added. Please refer to MB #16 for the cut-in serial number. This RTB explains where the mylars should be attached.

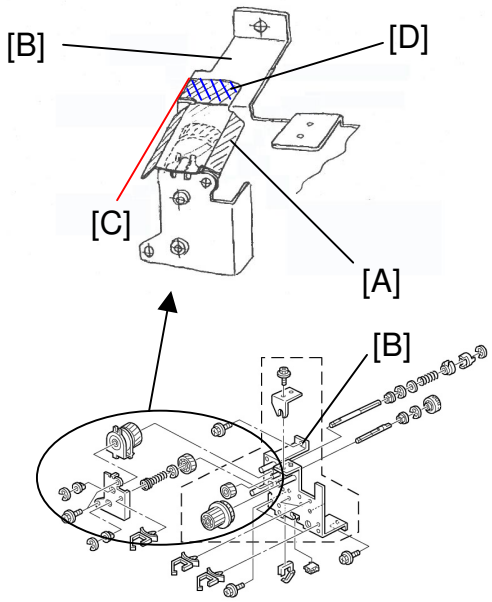
NOTE: If foreign particles drop onto the clutches, the following problems may occur.

- PTB shift clutch: SC450 (Paper transfer belt bias current error) -> Refer to RTB #07 for details.)
- ITB cleaning shift clutch: Magenta image -> Refer to RTB #08 for details.

Mylar for PTB shift clutch (#A2576617)

1. Remove the rear cover.
2. Attach the mylar [A] to the drive bracket [B] so that the edges [C] of mylar and bracket are aligned as shown.

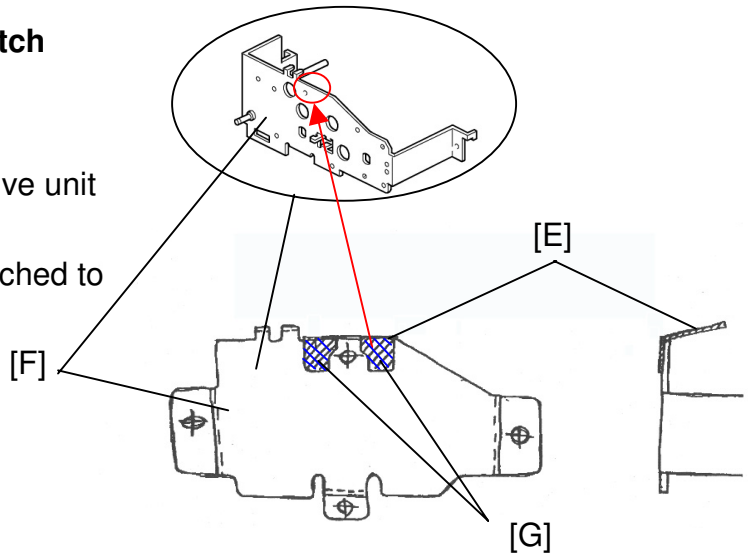
NOTE: Double-sided tape is attached to area [D] of the mylar.



Mylar for ITB cleaning shift clutch (#A2574742)

1. Remove the rear cover.
2. Attach the mylar [E] to the drive unit bracket [F]

NOTE: Double-sided tape is attached to area [G] of the mylar.



Model: Cattleya	Date: 15-Jan-00	No.: RA257025

Subject: Remarks during developer replacement	Prepared by: M. Furusawa
From: Technical Services Dept., GTS Division	

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

Please make note of the following during developer replacement in order to prevent over-toning, which may cause SC452 (Belt mark detection error) or SC385 (ID sensor VSG adjustment error).

	REMARKS	**TECHNICAL BACKGROUND**
1	If the machine is in the Toner Near End or Toner End condition when replacing developer, please replenish toner first to clear the condition.	If toner recovery is performed before TD sensor initialization, the toner density target will be set to a value that is too high.
2	The front doors should be left open when the main switch is turned on following developer replacement. After the power is on, close the doors and perform the TD sensor initialization (SP3-5-00X).	If the initial process control self-check is done before the TD sensor initialization, the toner density may change. The toner density target will be set to an inappropriate value.
3	TD sensor initialization should only be done for the color(s) of developer replaced. SP3-5-001: When replacing Black developer SP3-5-002: When replacing Cyan developer SP3-5-003: When replacing Magenta developer SP3-5-004: When replacing Yellow developer SP3-5-005: When replacing all developers	If TD sensor initialization is performed for developer that was already in the machine (i.e. not replaced), the toner density target will be set to the actual toner density of that developer.

Model: Cattleya	Date: 31-Jan-00	No.: RA257026

Subject: Dirty Background in Thick/Extra Thick Paper Mode	Prepared by: M. Furusawa
From: Technical Service Dept., GTS Division	

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

Symptom

A thin band or overall dirty background appears in Thick and Extra Thick paper modes.
This dirty background is normally colored Black but the last copy of a multiple copy run is Magenta. This is the last color in Full Color Mode.
The four cases listed below occur when using A3. For other paper sizes, the distance from the leading edge varies.

1. Dirty background at the leading edge (up to 110 to 120 mm from the leading edge).
2. Dirty background at the trailing edge (up to 110 to 120 mm from the leading edge).
3. Dirty band at 50 to 60 mm from the leading edge.
4. Dirty band at 110 to 120 mm from the leading edge.

Cause

In OHP and Thick / Extra Thick Paper modes, the line speed of the drum and the ITB (Image Transfer Belt) is 200 mm/s (normal speed) while the latent image is being developed and later transferred to the ITB.
An extra belt rotation is used during which the speed is reduced in half for toner transfer and fusing to the paper. The developer brush on the development sleeve touches the drum during this extra ITB rotation. A separate development bias is applied during this rotation to prevent the toner from being attracted to the drum. However, if the drum or developer has deteriorated, the default value of this development bias may not be enough to prevent the dirty background.

The four varieties listed above correspond to the following causes:

1. The development bias is too low while the belt is rotating at normal line speed.
2. The development bias is too low while the belt is rotating at half line speed.
3. The development bias is too low while the drum and belt are being slowed down from normal to half line speed.
4. Because the drum and belt are slowed down, some areas of the drum surface receive greater LD exposure which decreases the drum potential in those areas. When the drum reaches minimum speed (overshoot in slowing down), the development bias is too low to compensate for the low potential, causing toner to be attracted to the drum.

Note: Slight LD exposure is constantly maintained during a copy job so that it can be increased at any time for LD writing.

The reason for the color of the dirty background is as follows:
During a multiple copy run, the revolver unit rotates to the Black development position just after developing the latent image with the last color.
At the last copy of the multiple copy run, the revolver unit stays at the development position of the last color. The extra belt rotation is then performed under the conditions described above.

Action

- Temporary solution -

[1] SP mode

(No information in the service manual; normally for use by the designers only.)

For Case 1:

Enter **SP2-205-003** using the numeric keys and confirm that "**bVbs**" is displayed.
Ignore the descriptions for SP-2-205 (upper tier). This is the same for cases 2, 3, and 4 below.
Increase the value by 40V until the dirty background disappears.
Do not exceed a maximum value of 240V (default = 40).

For Cases 2, 3, and 4:

(Perform both SP adjustments.)

For the copies / printouts other than the last one

Enter **SP2-205-001** from the numeric keys and confirm that "**bVbhBk**" is displayed.
Increase the value by 40 V until the dirty background disappears.
Do not exceed a maximum value of 240V (default = 160).

For the last copy / printout

Enter **SP2-205-002** from the numeric keys and confirm that "**bVbhCl**" is displayed.
Increase the value by 40V until the dirty background disappears.
Do not exceed a maximum value of 240V (default = 150).

NOTE: If you exceed the maximum of 240V, carrier particles may be attracted to the drum surface.

[2] Drum and Developer

Change the drum and/or developer to reduce the possibility of dirty background occurring.

Note: When changing the drum and/or developer now or in the future, you do not need to return the settings of the above SP Modes to the defaults.

- Permanent Solution -

The main firmware will be modified so that the revolver unit stays at its home position during the extra ITB rotation. During this time, the developer brush will not touch the drum.
The new software is scheduled to be released in March, 2000 (target).

Model: Cattleya	Date: 15-Feb-00	No.: RA257027

Subject: Main scan position dot correction	Prepared by: H.Matsui
From: Technical Services Dept., GTS Division	

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

Please correct your service manual as follows;

Page 6-38

In the table for “MAIN SCAN POSITION DOT CORRECTION”, the following explanation of “Location of new value” for each “Sub condition” is correct.

Sub condition	Location of new value
The edges of the yellow and cyan lines deviate evenly from the black line.	The new value is in the **middle** row, to the left of the current value’s column.
The cyan line’s edge is the most distant edge from the black line.	The new value is in the **top** row, to the left of the current value’s column
The yellow line’s edge is the most distant edge from the black line.	The new value is in the **bottom** row, to the left of the current value’s column

Model: Cattleya	Date: 15-Feb-00	No.: RA257028

Subject: Firmware ver1.612 related information	Prepared by: H.Matsui
From: Technical Services Dept., GTS Division	

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

This RTB contains the necessary information related to the main firmware version 1.612 of Cattleya and **the final COUNTERMEASURE against the jitter at 140 mm and 75 mm from the trailing edge in thick or extra thick paper mode.** Please refer also to RTB #RA257023. The troubleshooting procedure written in RTB #RA257023 has been modified this time.

Interchangeability of the firmware

Main firmware ver 1.612 should always be installed with scanner firmware ver 1.19 or newer. Otherwise, the copier will maintain the " Please Wait " condition, although it has already warmed up.

Important NOTICE when downloading ver 1.612

After downloading ver 1.612, the default settings of the following SP modes should be changed:

SP1-801-005 (Paper feed motor speed adjustment: Half speed): Default should be -2.0
SP1-801-011 (Newly added / Registration motor speed: Half speed): Default should be -0.4

Reason: The above SP settings are important for the countermeasure against jitter in thick or extra thick paper mode. Without inputting the above settings manually, the previous default settings (SP1-801-005: +0.7, SP1-801-011: unknown, because this SP has been newly added) will be downloaded from the copier NV-RAM.

Destination and language

- For A257/A269 - 15, 17, 55 (Ver 1.612NA)
  Languages: US English, French, Spanish, Brazilian
- For A257/A269 - 22, 26, 27, 29 (Ver 1.612EU)
  Languages: UK English, French, German, Italian
- For A257/A269-27 (Ver 1.612EU2)
  Languages: Spanish, Dutch, Swedish, Danish
- For A257/A269-27 (Ver 1.612EU3)
  Languages: Norwegian, Portuguese, Polish, Czech

- For A257/A269-27 (Ver 1.612EU4)
  Languages: UK English, Russian

- For A257/A269-19 (Ver 1.612TWN)
  Languages: UK English, Traditional Chinese

List of major modifications

1.	**Final countermeasure against the jitter at 75 mm and 140 mm from the trailing edge in thick or extra thick paper mode** The following SP modes for motor speed adjustment have been changed or newly added. Previous SP modes and settings SP1-801-002: Paper feed motor speed / normal speed (normal paper mode) default: +0.1, value range: -1.0 to +1.0, step: 0.1 SP1-801-005: Paper feed motor speed / half speed (thick or extra thick paper mode) default: +0.7, value range: -1.0 to +1.0, step:0.1 SP1-801-010: Registration motor speed / normal and half speed default: 0.0, value range: -1.0 to +1.0, step: 0.1 >>This setting was effective for both normal and half speed New SP modes and settings from ver 1.612 SP1-801-002: Paper feed motor speed / normal speed (normal paper mode) default: +0.1, value range: -5.0 to +5.0, step: 0.1 SP1-801-005: Paper feed motor speed / half speed (thick or extra thick paper mode) default: -2.0, value range: -5.0 to +5.0, step: 0.1 SP1-801-010: Registration motor speed / normal speed (normal paper mode) default: +0.0, value range: -1.0 to +1.0, step: 0.1 >>This setting is changed to be effective only in normal speed mode SP1-801-011: Registration motor speed / half speed (thick or extra thick paper mode) default: -0.4, value range: -1.0 to +1.0, step: 0.1 >>Newly added for half speed (thick or extra thick paper) mode. This setting is effective only in half speed mode. **NOTE:** 1. SP1-801-005 is effective for the jitter at 140 mm from the trailing edge. However, this setting should not be adjusted normally from the default value. 2. SP1-801-011 is effective for the jitter at 75 mm from the trailing edge. Adjust this setting according to your machine's condition. However, normally the default setting is the best position.
2.	When you select "A3/DLT double count" with SP5-104-000, double count is available for A3, 13"x19", 12"x18" and 11"x17" paper also in Key Counter mode (SP5-113-000: 2).

3.	The following SP modes for "Process Control Self-check Interval Adjustment" are newly added. SP3-972-002: Timed **initial** process control self-check interval setting - 1 (Timer X) SP3-972-003: Timed **initial** process control self-check interval setting - 2 (Timer Y) Previously, only SP3-972-001 existed (Timer Z: Timed process control self-check interval setting). From ver 1.612, SP3-972-002 and SP3-972-003 can set a timed **initial** process control self-check interval. The "Timed process control self-check" is identical to the "Interval process control self-check" (cf. service manual page 2-3). One of the differences between the "Interval process control self-check" and the "Initial process control self-check" is the toner density control. The toner density control is done only in the "Initial process control self-check". If the copier main switch is kept turned on 24 hours a day, " Initial process control self-check " is never performed. This may cause the toner density in the development unit to be too high. To prevent this, "Timed **initial** process control self-check interval settings - 1, and -2" have been newly added. SP3-972-002 can be used to set the time (unit: hours) after the "Initial process control self-check" or the "Forced process control self check" is performed. SP3-972-003 can be used to set the time (unit: hours) after any copier function ended. If more time than setting -1 AND setting -2 has passed, the "Initial process control self-check" will be performed. The time counter for SP3-972-002 is reset when the "Initial process control self-check" or the "Forced process control self check" is performed.
4.	A mismatching problem on the Printer Gamma Data printout in SP7-904 has been corrected. The printer gamma data printed out with SP7-904 will match the actual printer gamma displayed in SP4-910.
5.	The following combination will be newly available in the "Image Rotation" + "Auto Reduce/Enlarge" function. Original paper size --> Copy paper size and direction B4 A4 Sideways B4 A5 Sideways B4 B5 Sideways A3 A5 Sideways A3 B5 Sideways
6.	The "machine stops & SC452 in print mode" problem has been corrected. The FGATE interrupt timing has been modified.
7.	A problem with black color shift on the second page when using the editing features (save area / enlarge / centering) in thick paper mode has been corrected.
8.	The counter value diagnosed by Remote Diagnostics Systems will be based on the same counter type (development counter or copies/prints counter) which is selected with SP7-008-000 (Counter Display Setting).
9.	The following software bug related to "Manual Call" in the Remote Diagnostics System has been corrected. Corrected bug: The operation panel turns off and the machine reboots unexpectedly if the "Exit" button is pressed before finishing manual call sending after pressing the "Call" button in manual call operation mode.

Model: Cattleya	Date: 29-Feb-00	No.: RA257029

Subject: Winding jam at the fusing roller	Prepared by: H. Someya
From: Technical Services Dept., GTS Division	

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

SYMPTOM

Winding jam at the fusing roller

CAUSE

1. In the fusing unit:
   If the paper is not stiff enough and back-curled, it does not pass smoothly through the area at the exhaust sensor feeler of the lower exit guide plate.
2. In the exit unit:
   If the paper is not stiff enough and face-curled, it is fed above the nip of the exit rollers.

SOLUTION

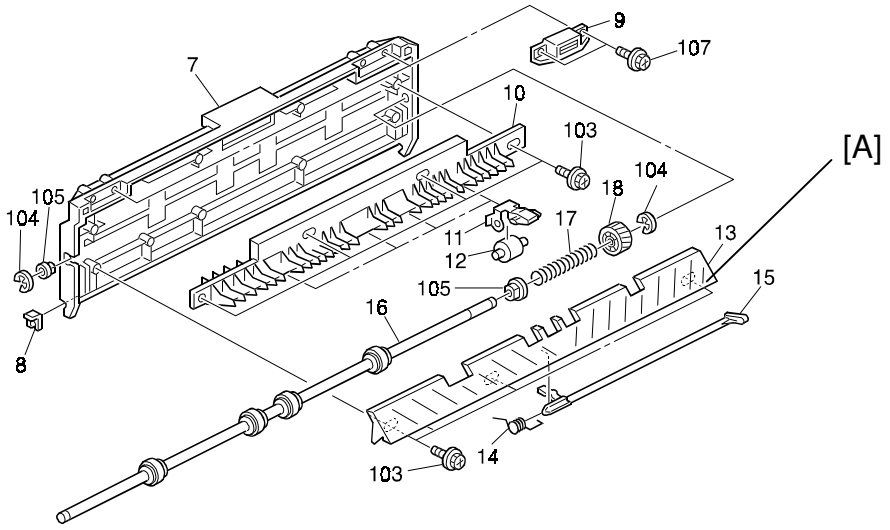
- In the production -

1. In the fusing unit, a mylar strip has been attached to the lower exit guide plate.
2. In the exit unit, 2 mylars have been attached to the exit guide plate.

- In the field -

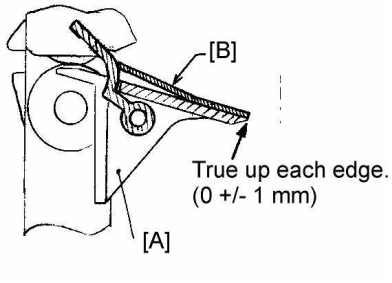
The mylar for the lower exit guide plate in the fusing unit (#A2574247):

1. Pull out the fusing/transfer drawer.
2. Remove the fusing exit assembly from the fusing unit (1 clip).
3. Remove the lower exit guide plate [A] (3 screws). (see #82 on p.13 in the parts catalog.)



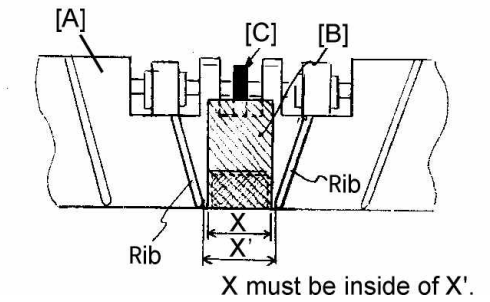
4. With alcohol, clean the center of the guide plate where the mylar is attached.

5. Attach the mylar [B] firmly to the plate as shown below.



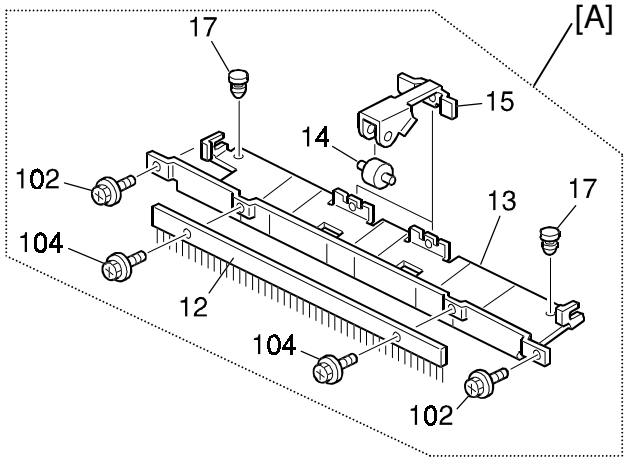
6. Confirm that the exhaust sensor feeler [C] is moved smoothly by the tension of the spring.

Note: This mylar is similar to the mylar for the exit guide plate of the paper exit section, but is shorter.

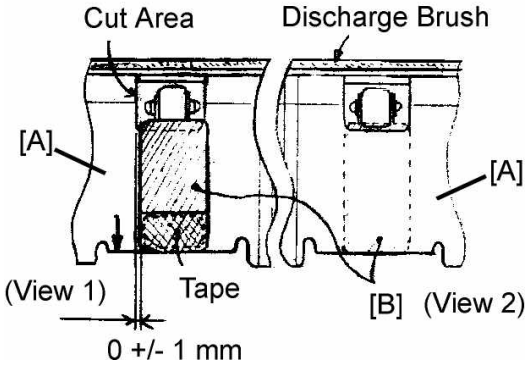


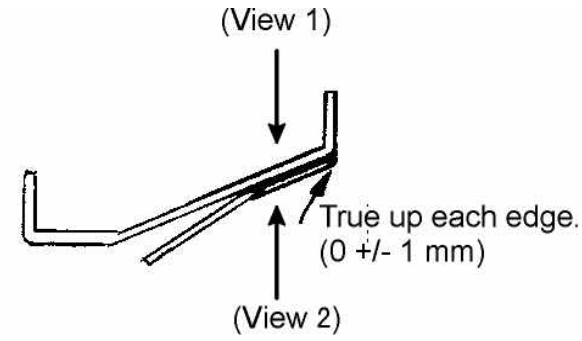
The mylars for the exit guide plate of the paper exit section (#A2574462):

1. Remove the left cover.
2. Pull out the fusing/transfer drawer.
3. Remove the exit guide plate assembly [A] from the main unit (2 screws [102]). (see #86 of p.13 in the parts catalog.)



4. With alcohol, clean the areas where the mylars are attached.
5. Attach 2 mylars [B] firmly to the plate as shown below.





Model: Cattleya	Date: 29-Feb-00	No.: RA257030

Subject: SC452 / SC326 / Image Shift	Prepared by: H. Matsui
From: Technical Services Dept., GTS Division	

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

SYMPTOM

- SC452 Belt mark detection error
- SC326 FGATE1 error
- Image shift Colors are not properly aligned on an output.

CAUSE

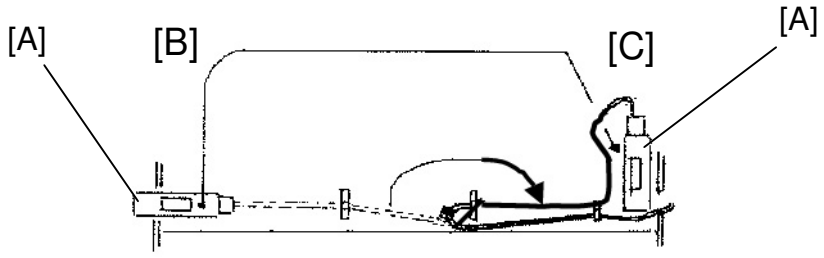
The belt mark sensor located in the image transfer belt unit becomes dirty with toner dust and the belt mark cannot be detected properly. This leads to the “Image Shift Problem”, SC452, or SC326.

SOLUTION

- In the production -

The belt mark sensor [A] has been moved from the front [B] to the rear [C] as shown. This was done because less toner dust flows into the rear side. A positioning sensor holder ass'y (#A2576119) has been newly added to fasten the sensor in the new position. Please refer to the MB #MA257025 for the cut-in serial number.

After this modification, the belt mark sensor mylar (#A2576137) has been eliminated (Refer to the related MB #MA257013 issued on December 15. 1999.).



Model: Cattleya	Date: 29-Feb-00	No.: RA257030

- In the field -

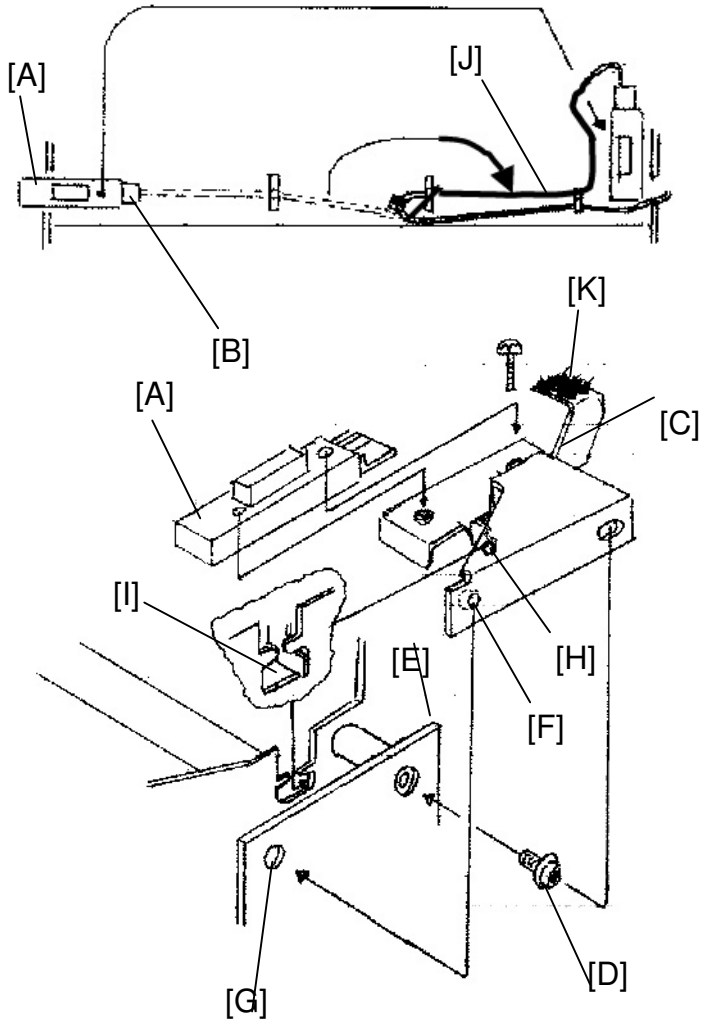
When this problem occurs in the field, please move the sensor from the front to the rear of the unit. The procedure is as follows:

- Procedure -

1. Remove the image transfer belt unit from the machine.
2. Remove the transfer belt from the unit.
3. Place the transfer belt unit onto a clean sheet of paper. (This is to prevent the drive rollers from getting dirty with dust or other particles.)
4. Remove the belt mark sensor [A] (1 screw and 1 connector [B]) and attach it to the sensor bracket [C].
5. Remove the screw [D] securing the belt motor bracket [E].
6. Install the sensor bracket by placing the projection [F] in the bracket hole [G]. Then, secure the sensor bracket together with the motor bracket.

NOTE: The L-shaped section [H] of the bracket should be positioned in the cutout [I] as shown. Make sure that the sensor cable does not get caught on the L-shaped section.

7. Reroute the sensor cable [J] as shown.
8. Reassemble the transfer unit.



REMARKS:

When installing the image transfer belt on the unit, be careful that the belt is not caught on or damaged by the bracket [K] where the fiber brush is attached.

Model: Cattleya	Date: 29-Feb-00	No.: RA257031

Subject: Color mode selection: Key counter	Prepared by: H.Matsui
From: Technical Services Dept., GTS Division	

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

Please correct your service manual as follows;

APPENDIX-2
SP MODE TABLE

- SP-5-114-000 Account color mode setup [Color Mode Selection: Key Card]

When the key counter has been installed or the user code mode has been enabled, it is possible to select color mode(s) which are only accessible by using the key counter or user code. The default setting for this SP mode is 15. This means that the key counter or user code is always required whenever making copies.

Setting	Black/White	Single Color	Twin Color	Full Color
1	Counter			
2		Counter		
3	Counter	Counter		
4			Counter	
5	Counter		Counter	
6		Counter	Counter	
7	Counter	Counter	Counter	
8				Counter
9	Counter			Counter
10		Counter		Counter
11	Counter	Counter		Counter
12			Counter	Counter
13	Counter		Counter	Counter
14		Counter	Counter	Counter
15	Counter	Counter	Counter	Counter

Counter: A key counter or user code is required to make copies. The number is then counted up by the key counter or the user code counter.
No mark: Copies can be made without a key counter or user code.

NOTE: 1. Before setting SP5-114-000, SP5-113-000 [Key counter (User code)/Key card/Coin lock] must be selected. For example, set to 2 [= Key counter (User code)] when you use Key counter.
2. When SP5-104-000 (A3/DLT double count) is set to 1 (double count), the electrical counters of the operation panel, the mechanical counters and **also a key counter** count up double for A3/DLT **after the main firmware ver1.612**.

Model: Cattleya	Date: 04-Apr-00	No.: RA257032

Subject: Misalignment and compressed image (K or Y) in the area of the leading edge	Prepared by: M. Furusawa
From: Technical Services Dept., GTS Division	

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

SYMPTOM

In Full Color mode (copier), black images are misaligned and compressed in the area of the leading edge. Images toward the trailing edge show improved alignment.
With the printer function, yellow images exhibit the same symptom because this is the first color to be used for development in printer mode.

CAUSE

The screw that fastens the Timing Pulley Holder (A2574663) to the drum shaft was loose, causing the initial rotation of the drum to be slow. This occurs with both copy and print jobs.

ACTION

Remove the large and small flywheels, the flywheel supporter, and the timing pulley – 112Z. Refer to the illustration on the next page.
Pull the drum shaft toward you while pushing the Timing Pulley Holder against the ball bearing of the Drum Shaft Supporter. Then fully tighten the screw for the Timing Pulley Holder.

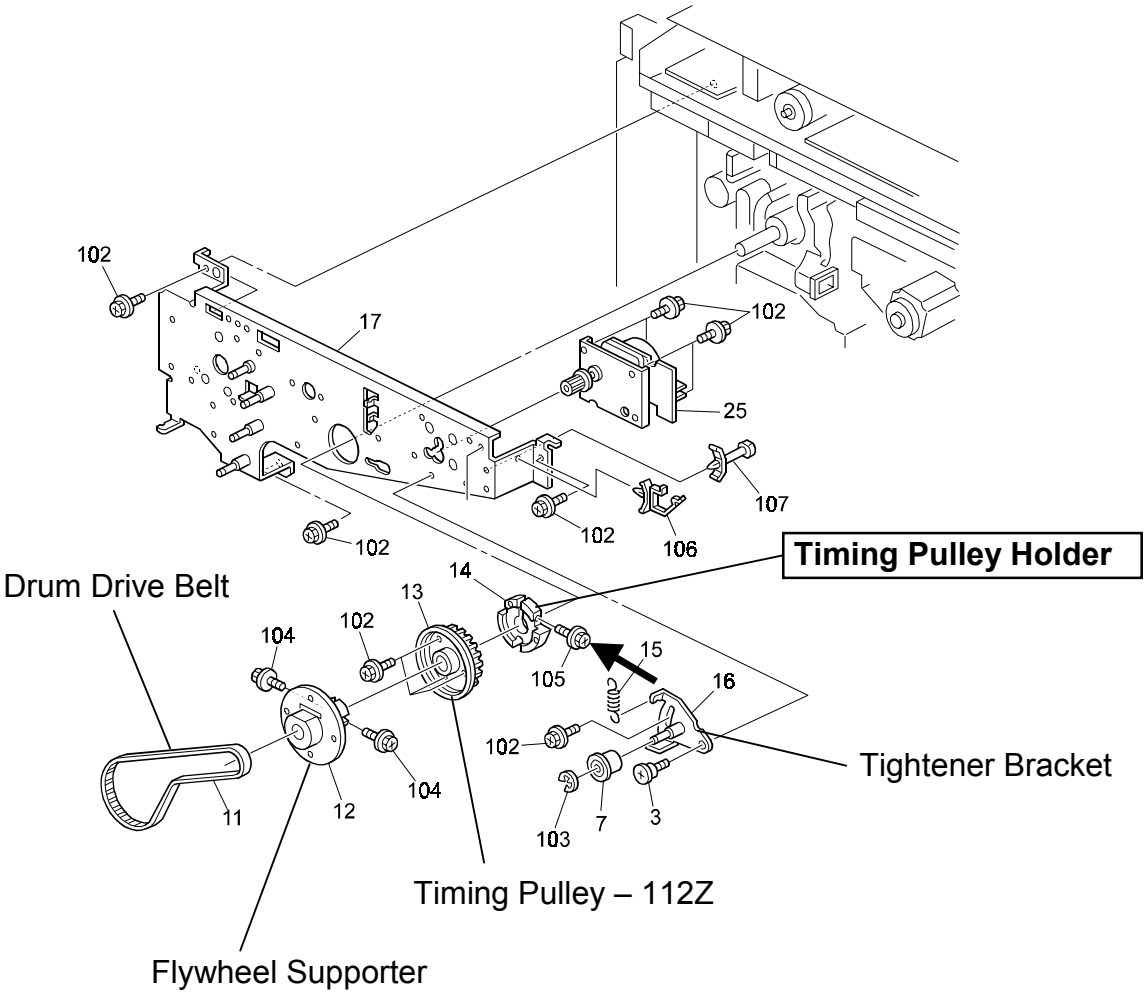
NOTE: The tension of the Drum Drive Belt can be adjusted with the tightener spring. Loosen the screw for the tightener bracket so that the spring can apply the proper tension to the belt. Then re-tighten the screw.

When attaching the flywheel supporter, make sure to tighten the screws firmly on a flat surface. This will prevent horizontal black or magenta lines at 106 mm from the leading edge. Refer to RTB No. RA257006.

Modification for the production line

The Timing Pulley has been modified in order to minimize the image misalignment. This change was applied to the production line from September 1999. In addition, the part number has been changed from A2574663 to A2574680.
Please refer to MB No. MA257029 for details.

Model: Cattleya	Date: 04-Apr-00	No.: RA257032



Model: Cattleya	Date: 06-Apr-00	No.: RA257033

Subject: Firmware and E-800A related information	Prepared by: Chisato Tsuji
From: Technical Services Dept., GTS Division	

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

New firmware

The latest versions for the main control and scanner IPU firmware are as follows:

Main Control: Ver. 1.616
Scanner IPU: Ver. 1.24

For detailed information, please read the release notes included in the archive files of the firmware.

Important notes at installation of E-800A

1. Approved Firmware of Cattleya for connection with the printer controller E-800A.

   To enable the printer and scanner function using the controller E-800A, it is necessary to use the following versions of Cattleya firmware.

   Main Control: Ver. 1.616 or newer
   Scanner IPU: Ver. 1.24 or newer

   If the version is older, please make sure to update the firmware.

2. About SP Mode No. 6-910 (Printer/Scanner Key Setting)

   When the SP6-910 (Printer/Scanner Key Setting) feature is enabled (set to “1”), the copier and E-800A may hang up after scanning. SP6-910 is useful only for internal controller products such as the E-650.

   When installing the E-800A, make sure that SP6-910 is disabled (set to “0”).
   (The default factory setting is “0”)

3. Printer ACC and Autocal

   When installing the E-800A, make sure to do Printer ACC at the copier, then Autocal at the controller.

Reissued: 01-Nov-00

Model: Cattleya	Date: 10-Apr-00	No.: RA257034a

RTB Correction

The items in bold italics have been corrected or added.

Subject: Lines across the sub scan direction at installation			Prepared by: N. Kaiya
From: Technical Services Dept., GTS Division			
Classification:	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

SYMPTOM

Sharp lines are visible across the ***sub*** scan direction at installation. The lines appear at around 283mm intervals.

CAUSE

Memory of the contact pressure of the cleaning blade on the OPC drum surface. This may happen when the machine is kept in the warehouse for a relatively long time.

SOLUTION

Make some copies and the lines will disappear. It is not necessary to replace the OPC drum.

Reissued: 22-Jun-00

Model: Cattleya	Date: 24-Apr-00	No.: RA257035b

Subject: Development unit replacement	Prepared by: H.Matsui
From: Technical Services Dept., GTS Division	

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

RTB Correction:

The Information in RTB correction #RA257035a had some mistakes. This is the correction to #RA257035a. Also, MB#MA257031a has been re-issued as #MA257031b at the same time.
The following are the corrected points from #RA257035a:
Note 4 on page 2/5 has been corrected. This is because P/No.A2573224 "PG Seal" contains only 1 PG seal.
The MB# mentioned in this RTB has been changed from #MA257031a to #MA257031b.

The two procedures described in this RTB should be performed whenever a copier problem requires development unit replacement in machines produced before the cut-in serial numbers mentioned in ***MB# MA257031b***.. These serial numbers are also mentioned on the last page of this bulletin.

As described in ***MB# MA257031b***, the part number for the development unit was changed from A2573055 to A2573056. This was a result of a modification whereby the DG was narrowed from 0.8-0.9 mm to 0.75-0.83 mm. At the same time, a modification was also applied to mainframes in production. Specifically, the PG (photoconductor gap) was narrowed from 0.55-0.7 mm to 0.5-0.6 mm.
The mainframe PG modification was applied to minimize the grainy/sandy level of highlight tone areas in both copies and printouts. The development unit DG modification was applied to prevent compressed toner bands on the development Roller and OPC drum, which would tend to occur on the modified mainframes.

Note:
The purpose of the following two procedures is to make compensations so that the modified development unit can be used with the unmodified copiers in the field (which does not contain a narrowed PG). **It is not to minimize the grainy/sandy level in highlight tone areas.** This can only be done through precise PG measuring and adjustment procedures performed at the factory.

Combination and procedure to be performed:

	Attaching the PG seal (See p. 2/5)	Vref adjustment (See p. 3/5)
Case 1: Installing a *new development unit* on an *old mainframe*	Necessary only for the development units that have been replaced	Necessary only for the development units that have been replaced
Case 2: Installing a *new development unit* on a *new mainframe*	NOT necessary	NOT necessary

Model: Cattleya	Date: 24-Apr-00	No.: RA257035b

>*New development unit* refers to modified development unit (P/No. A2573056).
>*Old mainframe* refers to the unmodified copiers in the field (before the cut-in serial numbers on the last page of this bulletin).

Procedures:

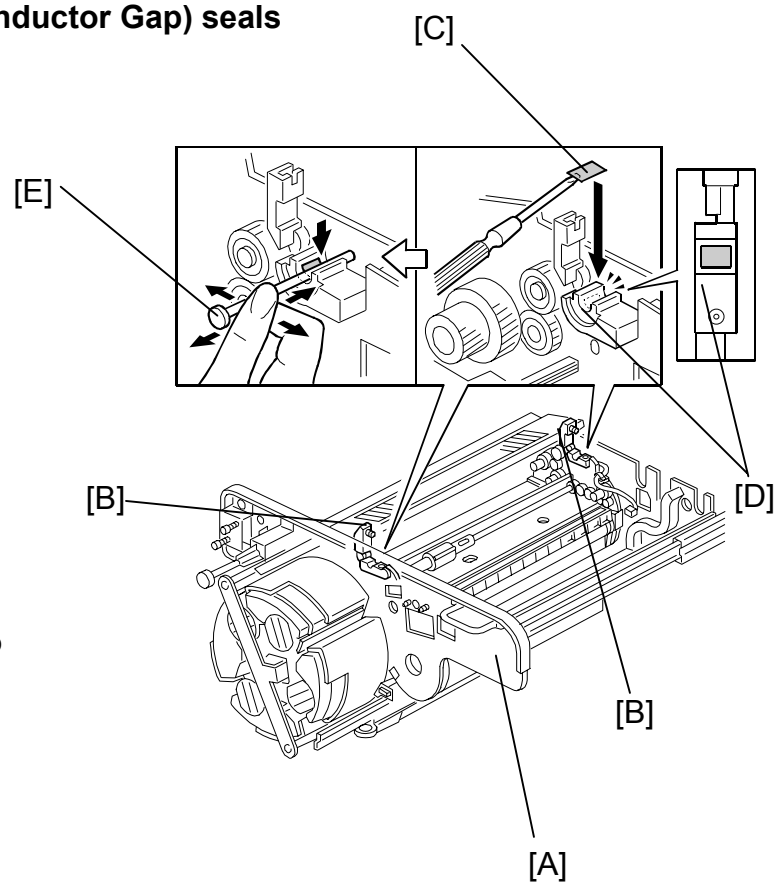
(1) Attaching the PG (Photoconductor Gap) seals

1. Pull out the revolver/drum drawer [A] and open the development unit lock [B] at both ends of the revolver

2. Remove the old development unit.

3. Clean the surface of the development unit supporter [D] with a blower brush. Use alcohol if necessary.

4. Using a small screwdriver, attach **one** PG seal (P/N A2573224), to each of the **two** Development Unit Supporters [D]. As shown in the illustration, the supporters are located at both ends of the revolver unit.



NOTE:

1. Be sure to attach the seals in the center of the Development Unit Supporter as shown.

2. Do not attach more than one seal to each supporter. If two or more seals are attached, the PG will be too narrow. This will cause compressed toner bands on the development roller and OPC drum, leading to drum damage.

3. Using one of the front door hinge pins [E], smooth out the seal so that there are no air bubbles.

4. P/No.A2573224: " PG Seal " contains 1 PG seal.

Model: Cattleya	Date: 24-Apr-00	No.: RA257035b

(2) Vref Adjustment

Change the following SP settings **only for the Development Units that have been replaced**:

SP3-947-001 (Lower limit of the shift range of Vref: K): from 1.0 to **1.3**
SP3-947-002 (Lower limit of the shift range of Vref: Y): from 1.0 to **1.3**
SP3-947-003 (Lower limit of the shift range of Vref: C): from 1.0 to **1.3**
SP3-947-004 (Lower limit of the shift range of Vref: M): from 1.0 to **1.3**

The reasons for these setting changes are as follows:

The new development unit has a narrower DG (doctor gap) than the old unit. This means that the new unit has a lower development capability. Because of this, the image density of the Vsp pattern generated by the new unit will be lower. This causes the machine to detect incorrectly that the toner concentration in the developer is low, leading to an oversupply of toner. This in turn causes toner scattering.
Increasing the lower limits of the Vref shift ranges from 1.0 to 1.3 will prevent this. An increased Vref will mean a narrower control range for the toner concentration in the developer. Please refer to p. 2-14 of the Service Manual.

Model: Cattleya	Date: 24-Apr-00	No.: RA257035b

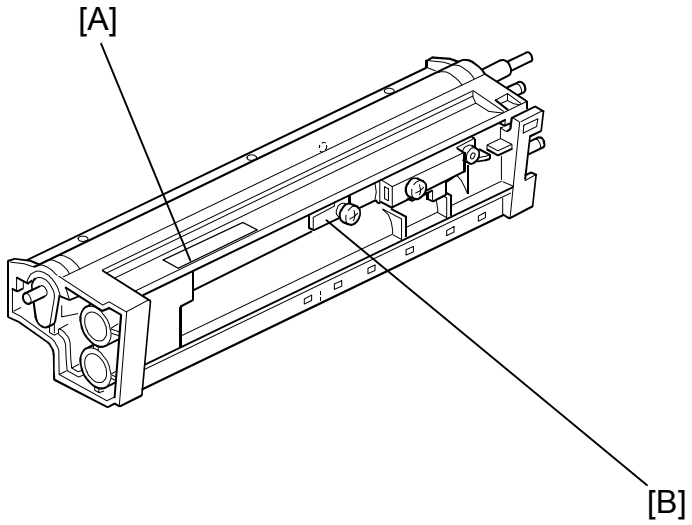
Note for development unit replacement in machines produced after the cut-in serial numbers

For these machines, it is **NOT necessary** to attach PG seals. The PG is already adjusted at the factory so that it can be used with the new development unit.
These machines already contain PG seals, some of which are attached no PG seals, or some at both ends of the development unit supporters, some at the front or back end only. For these machines, **never peel off or add the PG seals**. This will cause the PG to be too wide or too narrow in relation to the DG, leading to grainy images and/or compressed toner bands.

How to distinguish between the new and old development units

To easily distinguish the development units, the new unit (A2573056) has one of the following characteristics. However, these changes are not implemented from the first new development units. Please refer to the part number or the machine serial number to be exact.

(1) The bar-code label [A] is highlighted in magenta.
(2) The color of the harness hook [B] is gray.
Note: The harness hook in the old development unit is black.



Model: Cattleya	Date: 24-Apr-00	No.: RA257035b

Cut-in serial numbers for the mainframe PG modification

Model	V/Hz	Destination	Code	Serial Number
Savin SDC410 Gestetner CS210	120V/60Hz	USA, Canada	A257-15	3B60020001
Aficio Color 6010	120V/60Hz	USA, Canada	A257-17	H1100200001
Aficio Color 6010	110V/60Hz	Taiwan	A257-19	H1100400107
Nashuatec CS510 Gestetner CS210 Rex Rotary CS810	220-240V/50Hz	Europe, etc.	A257-22	AZ90030001
Infotec 7410	220-240V/50Hz	Europe, etc.	A257-26	3T40200001
Aficio Color 6010	220-240V/50Hz	Europe, Middle East, etc.	A257-27	H1100300146
Aficio Color 6010	220-240V/50Hz,60Hz	Asia	A257-29	H1100200221
Lanier 5710	120V/60Hz	USA	A257-55	L052005XXXX
Savin SDC410E Gestetner CS210e	120V/60Hz	USA, Canada	A269-15	3B70020001
Aficio Color 6110	120V/60Hz	USA, Canada	A269-17	H1200200001
Aficio Color 6110	110V/60Hz	Taiwan	A269-19	H1200400036
Nashuatec CS510e Gestetner CS210e Rex Rotary CS810E	220-240V/50Hz	Europe, etc.	A269-22	B020030001
Infotec 7410E	220-240V/50Hz	Europe, etc.	A269-26	3T50200001
Aficio Color 6110	220-240V/50Hz	Europe, Middle East, etc.	A269-27	H1200300076
Aficio Color 6110	220-240V/50Hz,60Hz	Asia	A269-29	H1200400081
Lanier 5710E	120V/60Hz	USA	A269-55	L0530040001

Model: Cattleya	Date: 24-Apr-00	No.: RA257036

Subject: Thin White Lines due to Scratches on the Drum	Prepared by: N.Kaiya
From: Technical Services Dept., GTS Division	

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

SYMPTOM

Thin white lines in the sub scan direction due to fine scratches on the drum, even after upgrading the main firmware to version 1.542 or newer.

CAUSE

The image transfer belt surface may scratch the OPC drum surface when the speed of the image transfer belt and the OPC drum do not match completely.

The main firmware has been updated to version 1.542 to precisely match the speed of the drum and the image transfer belt when they are about to stop. However, a discrepancy in the speed may also exist when the machine operation speed is lowered to half in OHP or thick paper mode or when it is returned to normal speed. Therefore, if the customer's application is mainly thick paper or OHP, drum scratches may appear even with main firmware version 1.542 or newer.

SOLUTION

Replace the Motor Control Board – RPS with a new type that has the part number A2575503. The new board controls the speed of the image transfer belt to match the OPC drum when the machine operation speed is shifted in the thick paper or OHP mode. Refer to MB No.MA257008 regarding the cut-in serial number of the new board.

Model: Cattleya	Date: 08-Jun-00	No.: RA257037

Subject: Process Control Self Check Interval	Prepared by: H. Matsui
From: Technical Services Dept., GTS Division	

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

This RTB provides some additional explanation regarding the following two SP modes which became available with the release of main firmware ver 1.612.

SP3-972-002 Timed initial process control self-check interval setting-1 (Timer X)

SP3-972-003 Timed initial process control self-check interval setting-2 (Timer Y)

Purpose of the SP Modes

These two SP modes allow the timing of initial process control self-check to be specified. As these modes only specify when the self-check is to be performed, there is no change in the operation of the self-check itself. During the self-check, the toner concentration inside the development unit is checked and adjusted automatically (toner added or developer consumed).

This toner concentration self control function is not included in the other self-checks. Therfore, if the initial process control self-check is not performed, toner concentration self control is not performed at all. This may not be a problem in most cases since the toner concentration is controlled during the copy process. However, if a development unit of a certain color is not used for some time, toner scattering may occur since a small amount of toner may pour into that development unit when the revolver is rotated. This may eventually cause the toner concentration to increase.

If the customer always keeps the machine turned on (i.e. main switch always on, and AOF in the User Tools off), it is recommended to use these two SP modes so that the machine will perform a timed initial process control self-check.

Function of the SP Modes

SP3-972-002 (Timer X): The machine will perform the timed initial process control self-check X hours after the previous initial process control self-check.

SP3-972-003 (Timer Y) : The machine will perform the timed intial process control self-check Y hours after the end of a job.

NOTE:

- The default for both modes is 0. In this case, the timed initial process control self-check is not performed.
- The machine performs the timed initial process control self-check only when both timers have exceeded the set values.

Action in the Field

If the customer always keeps the machine turned on, activate the timed initial process control self-check by inputting the appropriate values in SP3-972-002 and –003.

The recommended values are 12.0 for SP3-972-002 and 1.0 for SP3-972-003. With these settings, the timed initial process control self-check is performed 12 hours after the previous initial process control self-check and whenever the machine has not been used for one hour.

Model: Cattleya	Date: 22-Apr-00	No.:RA257038

Subject: Development idle gear wearing out	Prepared by: H. Matsui
From: Technical Services Dept., GTS Division	

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

Symptom
One or more of the colors (C, M, Y, or K) is missing on the copy; sometimes the copy is totally blank.

Cause
Premature wearing out of the development idle gear (A2573155), especially in high copy volume machines. When developer carrier sticks to the development gears, this can accelerate the wearing process. This is particularly noticeable with the development idle gear.

Solution
1. The material of the development idle gear has been changed from plastic to metal.
   A2573155 (plastic) → A2573158 (metal)

2. A strip of Mylar (A2573079: call-out #30, fig.1) has been added between the bearings and the development gears to protect the gears from development carrier.

Please refer to MB #MA257041 for the cut-in serial numbers.

Action in the field
If this problem occurs in the field, replace the old development idle gear (A2573155) with the new type (A2573158).

NOTE:
1. It is recommended to replace the "Gear – 26/48Z" (A2573219) at the same time. This is because if the development idle gear (A2573155) is prematurely worn out, the coupled gear (A2573219) may also be damaged.

2. For the machines in the field, it is not necessary to add the Mylar (A2573079). Replacement of the development idle gear (A2573155) is sufficient to ensure that the symptom will not occur.

Model: Cattleya	Date: 22-Apr-00	No.:RA257038

Procedure

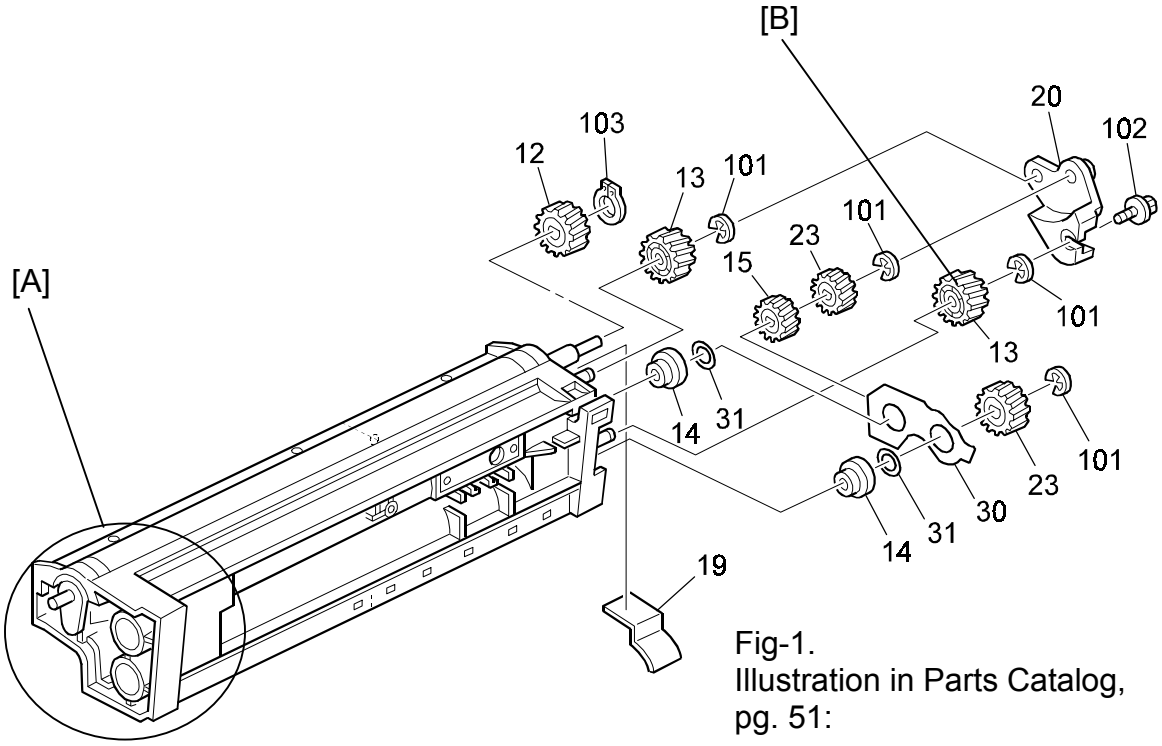


Fig-1.
Illustration in Parts Catalog, pg. 51:

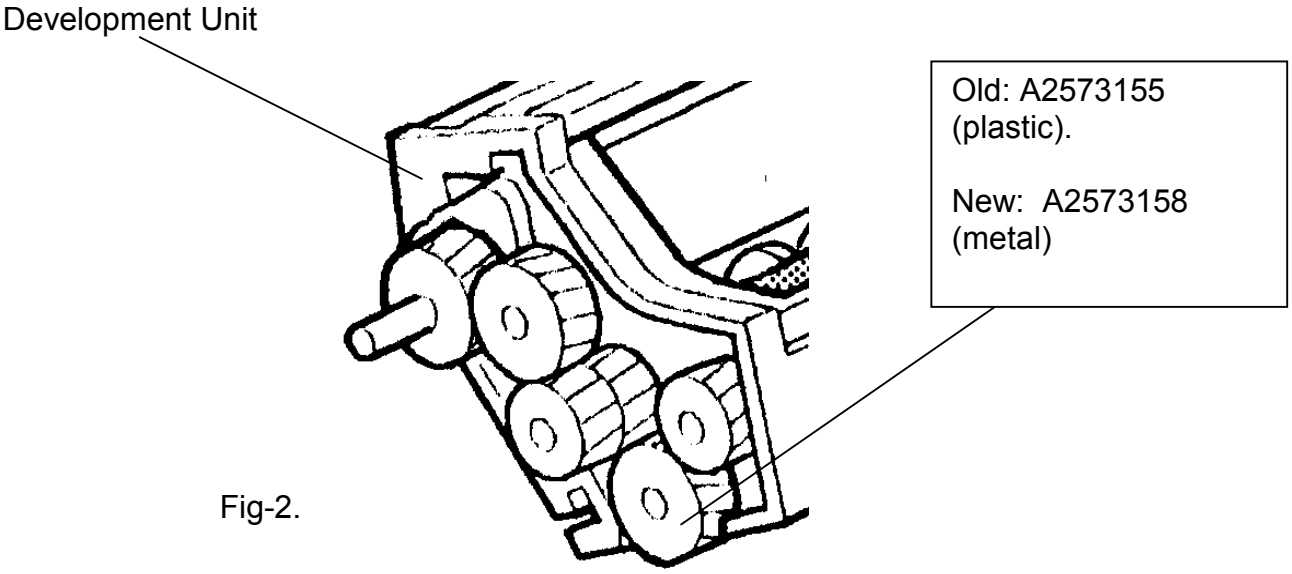
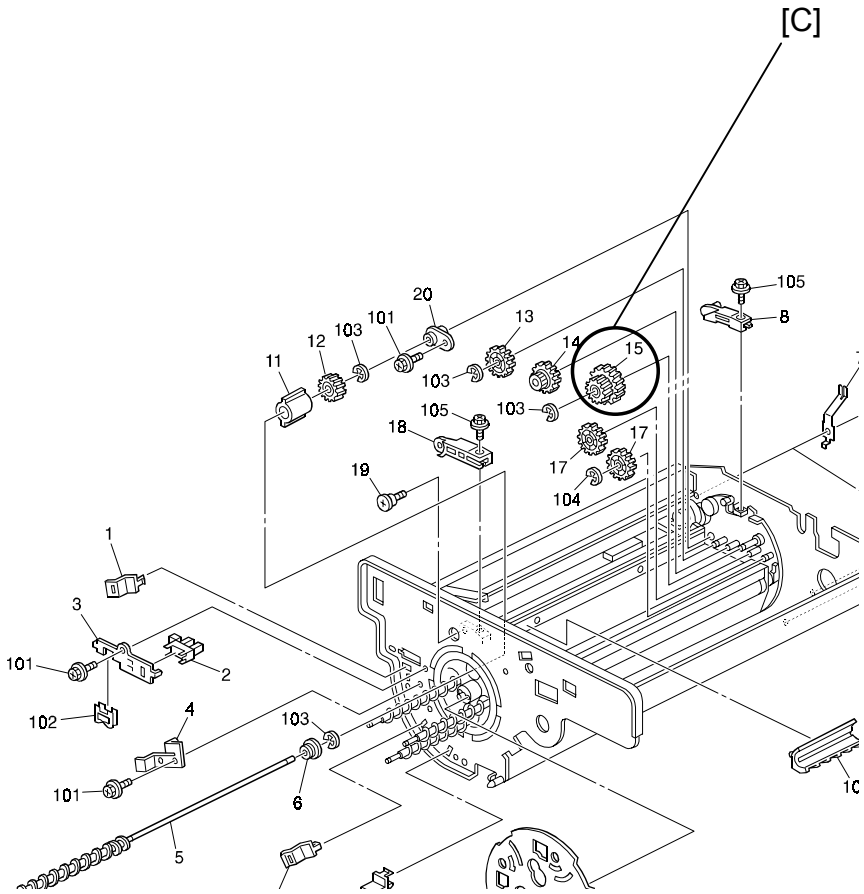


Fig-2.

1. With your hand, firmly support the ends of the shafts (in circle [A]) which hold the development gear.

   NOTE: If the shafts slide, developer carrier can get inside the shaft bearing area.

2. Replace the development idle gear [B] (A2573155) with the new type (A2573158).



3. Replace the Gear – 26/48Z (A2573219) [C] with the new one (same P/No).

Model: Cattleya	Date: 22-Sep-00	No.:RA257039

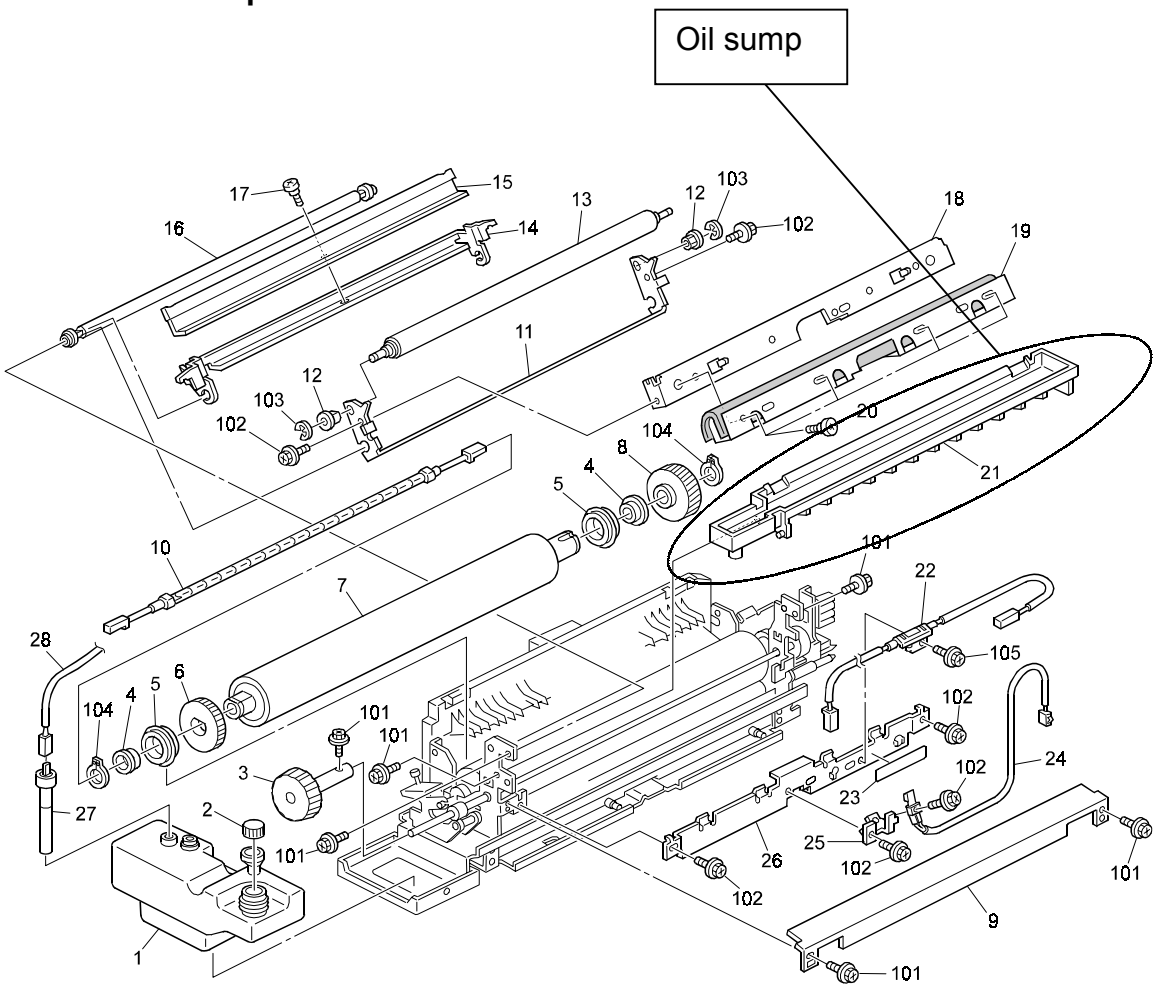
Subject: Oil streaks on copies	Prepared by: H. Matsui
From: Technical Services Dept., GTS Division	

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

Symptom
Oil streaks on copies.

Cause
Fusing oil leaks from a crack in the middle of the fusing entrance guide (A2574135). The crack occurs at the molding line, possibly due to the repetitive heating and cooling of the entrance guide. The molding line is formed at the middle of the entrance guide, where the two flows of plastic meet inside the plastic mold.

Location of oil sump



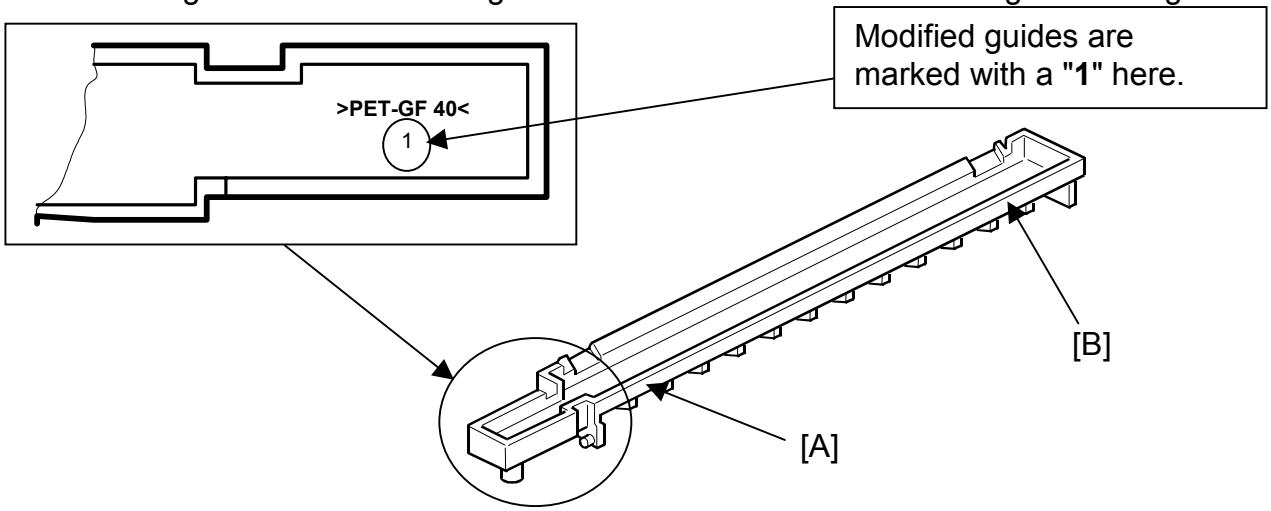
Solution

The plastic mold used for the fusing entrance guide has been improved to remove the molding line. One of the two openings (gates) in the plastic mold for injecting plastic has been removed, creating one flow of plastic inside the mold

The part number of the fusing entrance guide has been changed as follows. For production cut in serial numbers, please refer to MB# MA257045.

A2574135 (old) x/o A2574141 (new)

The following shows how to distinguish between the old and new fusing entrance guides:



Older (pre-modification) guides have **2** burrs created by molding gates, which are located in positions [A] and [B]. Modified guides only have **1** burr, which is located at position [A].

Action in the field

If you receive any customer complaints about oil streaks on copies, check the bottom surface of the fusing entrance guide for an oil leak. If any oil is found, replace the entrance guide with a new type.

Model: Cattleya	Date: 22-Sep-00	No.:RA257040

Subject: Main switch problem	Prepared by: H. Matsui
From: Technical Services Dept., GTS Division	

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

This RTB explains the procedure for adding the main switch cover (A2571295), which should be attached to the safety switch cover (A2574887) to protect the main switch from any leaking fusing oil.

If fusing oil should leak from the fusing unit, it may run down the harness and drip onto the main switch. If this happens, the resulting electrical sparks may cause some chemical compounds to form on the terminals (SiO_2 or carbon compounds). These compounds increase the resistance of the main switch terminals, generating heat in these areas. In the worst case, this may cause the terminals to partially melt.

For the production machine
The main switch cover has been added. Please refer to MB #MA257046 for the cut-in serial numbers.

Action in the field
1. It is recommended to install the main switch cover on all existing units.

2. To prevent oil spillage, whenever transporting the machine following installation, always be sure to drain the fusing oil completely before moving the machine.

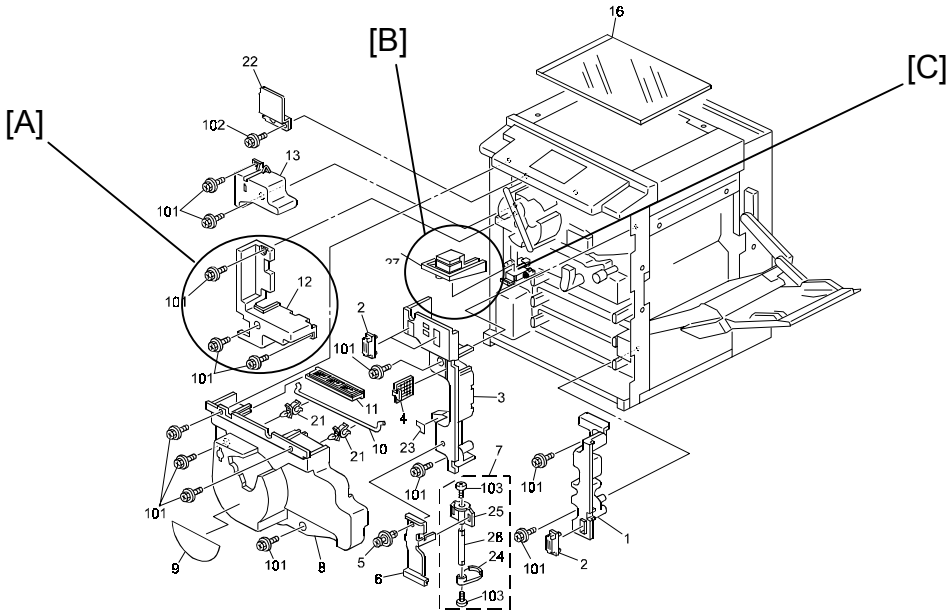
Model: Cattleya	Date: 22-Sep-00	No.:RA257040

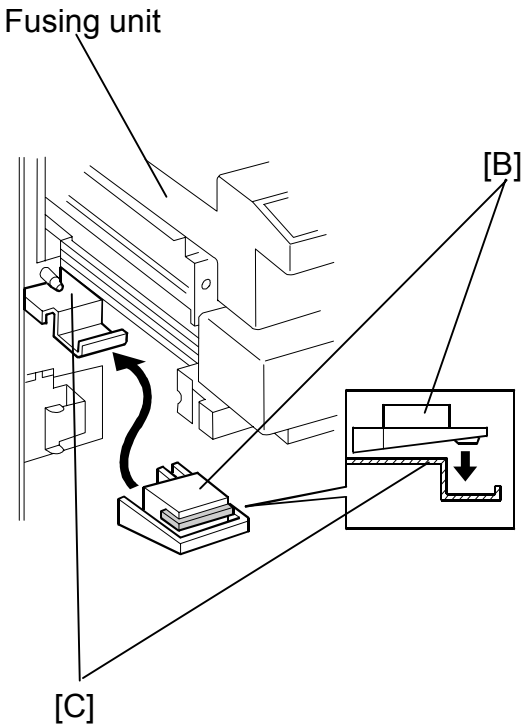
Procedure

1. Remove the inner cover [A].

2. Attach the main switch cover (A2571295) [B] above the safety switch cover [C].

NOTE: No screws are required. Simply lay it on top of the safety switch cover [C].





Model: Cattleya	Date: 22-Sep-00	No.: RA257041

Subject: Fusing oil overflowing from the oil pan (230V machines only)	Prepared by: H. Matsui
From: Technical Services Dept., GTS Division	

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

Symptom

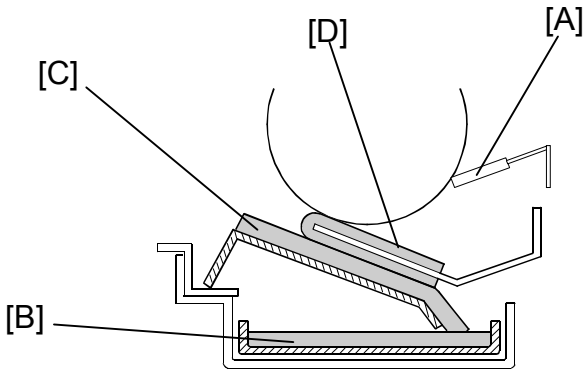
Too much fusing oil accumulates in the oil pan. In some cases, the fusing oil overflows from the pan.

Cause

After the fusing oil is scraped off by the pressure roller blade [A], it is returned to the pressure roller via the pressure roller oil supply pad [D]. However, the actual amount of fusing oil collected varies, depending on conditions such as paper size and the number of copies per original. In some cases, the amount of oil removed from the pressure roller exceeds the amount returned to the roller.

Solution

An oil pan felt [B] has been added to absorb the accumulated oil in the oil pan. Another oil pan felt [C] has also been added to return the oil in the oil pan to the pressure roller, via the existing pressure roller oil supply pad [D].



The part numbers for the newly added parts are as follows:

A2574256 (Oil Pan Felt) 2 pcs
A2574257 (Bracket - Oil Pan Felt) 1 pc
04514006B (Tapping Screw – 4 X 6) 3 pcs
Refer to MB #MA257044 for the cut-in serial numbers.

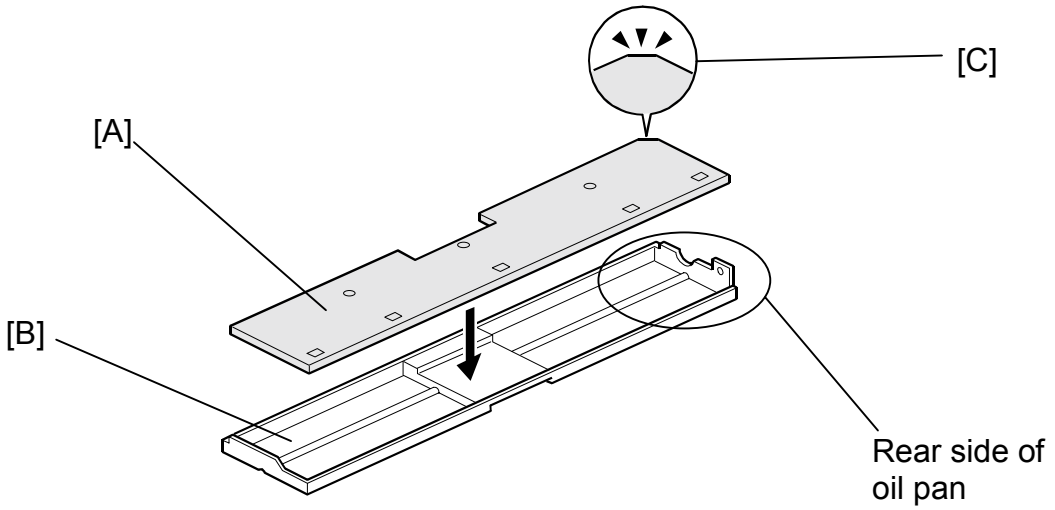
For machines in the field

At the next service visit, please check if there is an excessive amount of fusing oil in the oil pan. If there is, add the oil pan felt and oil pan felt bracket.

Procedure

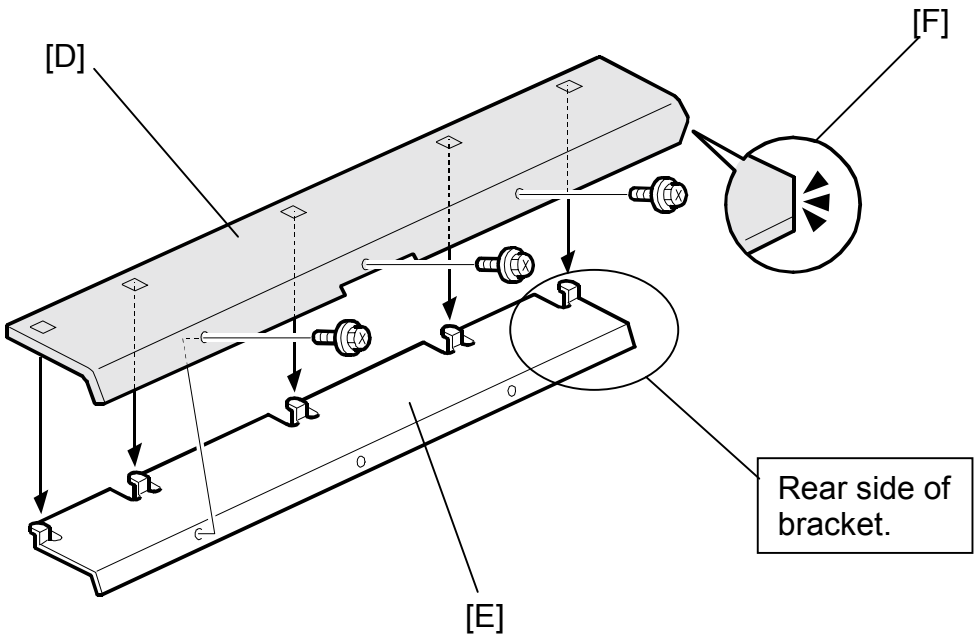
1. Remove the paper exit unit (callout #7, pg. 82 of Parts Catalog) from the fusing unit (1 snap ring).
2. Remove the oil supply pad (callout #26, pg. 84 of Parts Catalog) from the fusing unit (2 screws).
3. Remove the oil pan (callout #13, pg. 84 of Parts Catalog) from the fusing unit.
4. Attach 1 oil pan felt (A2574256) [A] to the oil pan [B].

NOTE: The cut corner of the oil pan felt [C] should be located at the rear of the oil pan.



5. Attach the oil pan felt (A2574256) [D] to the oil pan felt bracket (A2574257) [E], (5 hooks, 3 tapping screws (04514006B)).

NOTE:
When attaching the oil pan felt [D] to the bracket [E], the cut corner [F] should be located at the rear of the bracket [E] as shown below. Otherwise, the pressure roller gear will get caught on the felt.



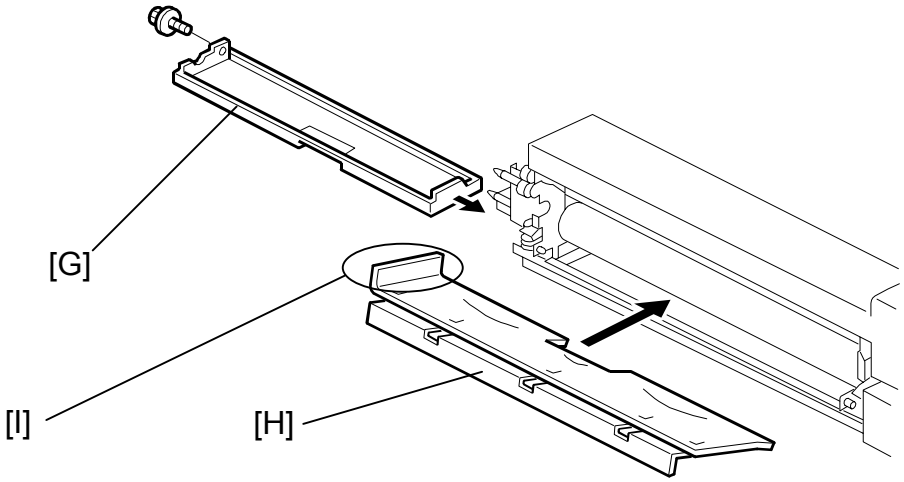
6. Reinstall the oil pan with the oil pan felt [G] (1 screw).

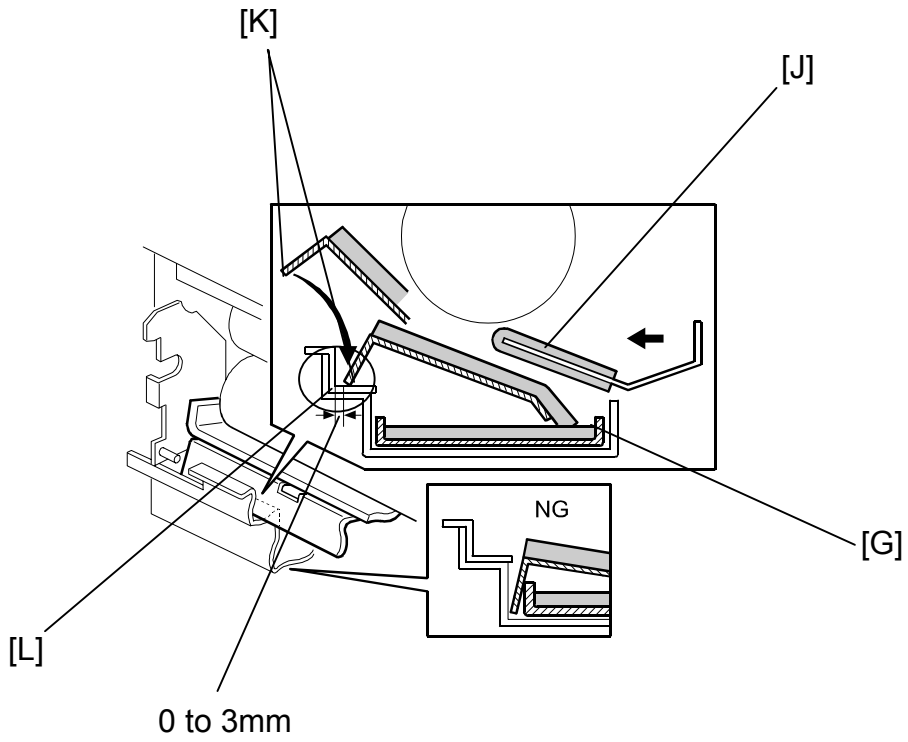
7. Install the bracket in the fusing unit along with the oil pan felt [H].

   NOTE: Fold up the end of the felt as shown [I].

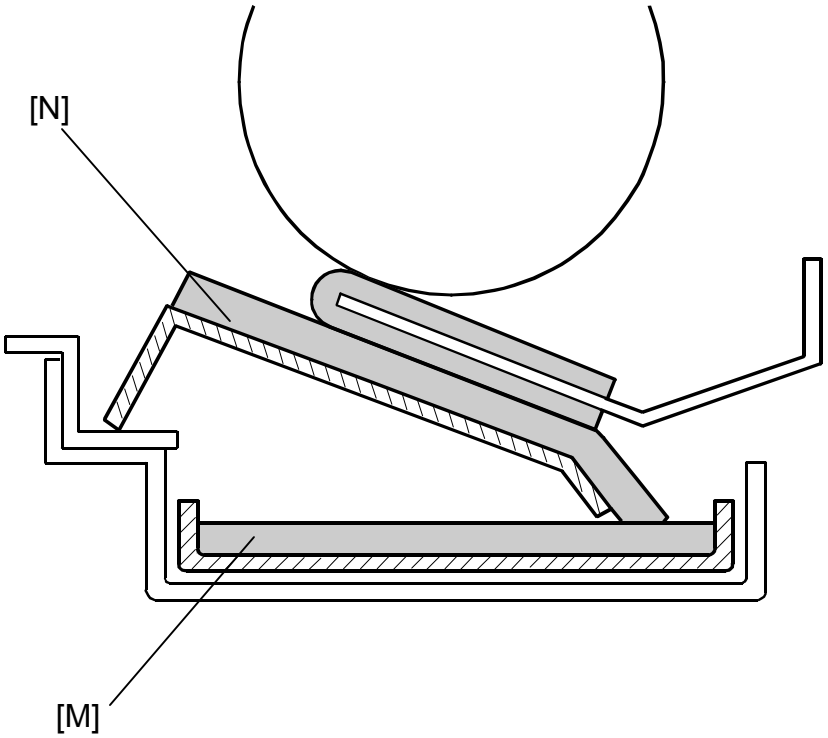
8. Reinstall the oil supply pad [J] (3 screws).

NOTE: The edge [K] of the bracket with the oil pan felt should be resting on the fusing frame [L].





9. After reinstalling these parts, the layout should be as follows:



NOTE

1. At every PM, check if there is an excessive amount of fusing oil in the oil pan. If there is, replace the oil pan felt (A2574256) [M].
2. The bracket included in the oil pan felt assembly (A2574256 + A2574257 +3 screws) [N] does not need to be replaced at a PM visit.

Model: Cattleya	Date: 22-Sep-00	No.: RA257042

Subject: Toner cartridge set problem	Prepared by: H. Matsui
From: Technical Services Dept., GTS Division	

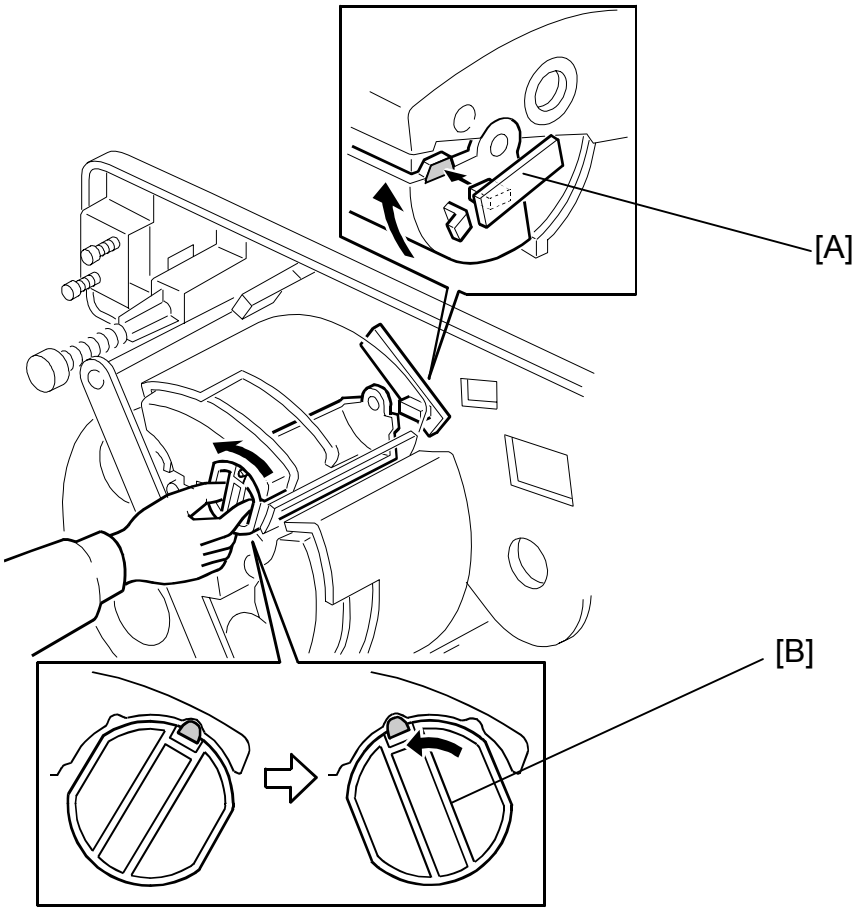
Classification:	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

Symptom

"Toner cartridge set error" is displayed after a new toner cartridge is installed.

Cause

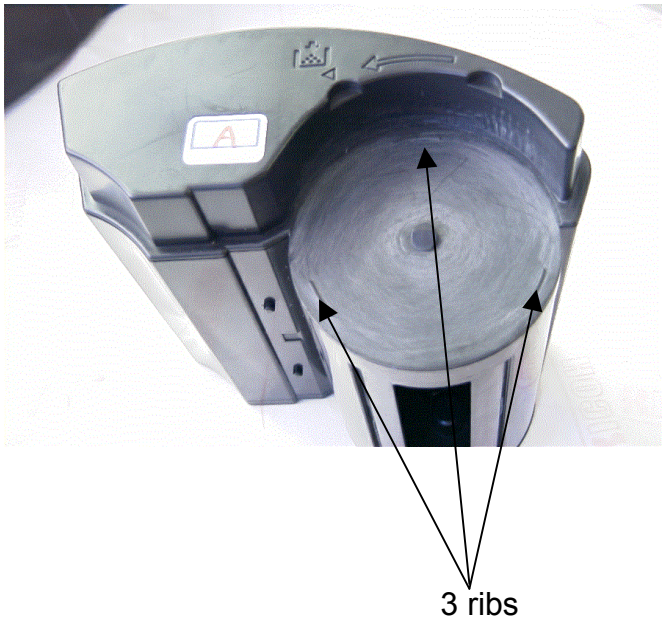
The toner cartridge set sensor [A] is not activated because the toner cartridge lever [B] is not rotated all the way.



Solution

The following modifications have been developed to make it easier for the toner cartridge lever to rotate:

1. To reduce the friction between the toner cartridge and cartridge lever, three ribs have been added to the toner cartridge surface, on which the toner cartridge lever normally slides. This will help to ensure proper lever rotation, since the lever will not directly contact the cartridge surface.



The cut-in lot numbers for the modified toner cartridges are as follows:

K: 0 7 1 6 4 0 1

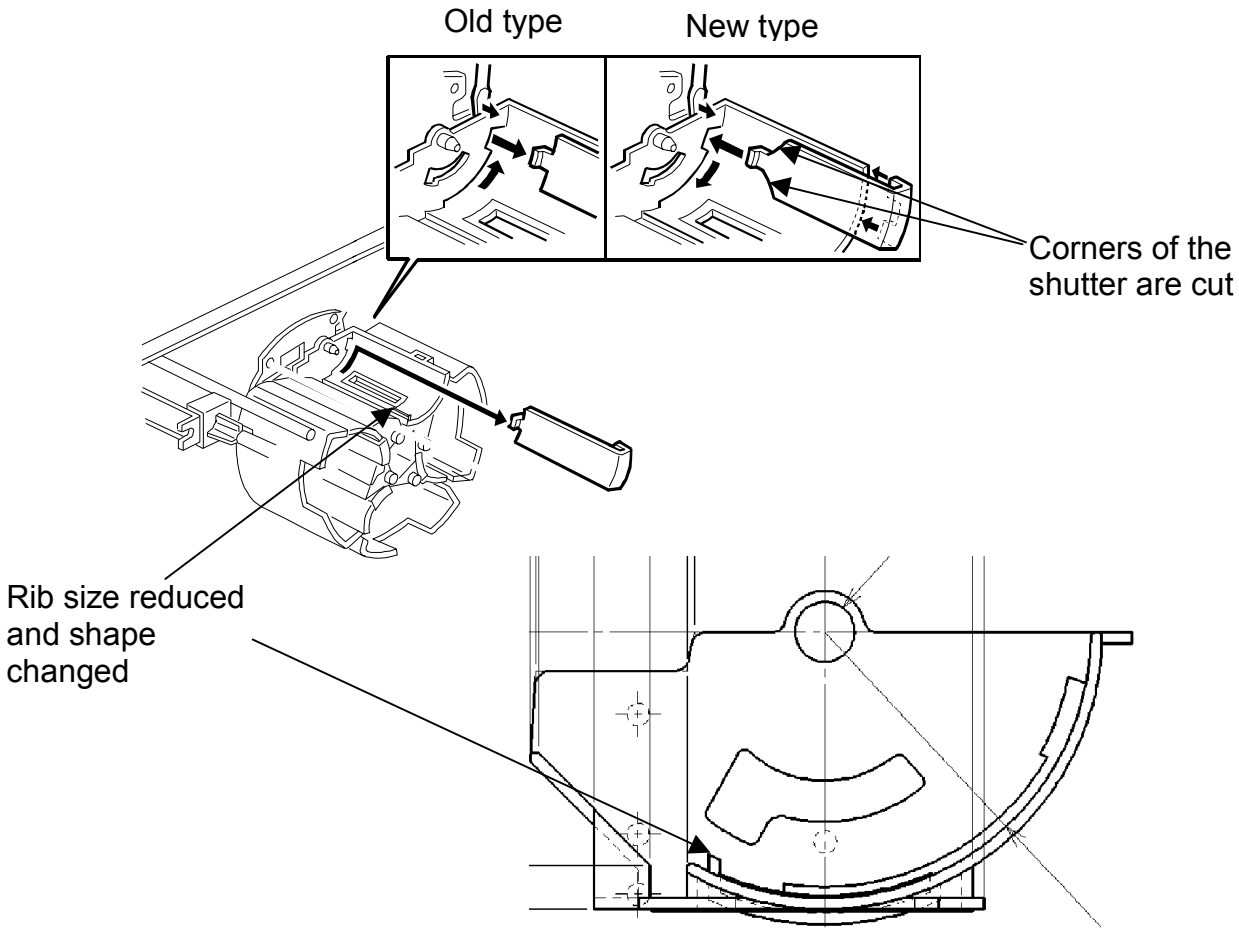
Y: 0 7 1 4 6 0 1

C: 0 7 1 5 0 0 1

M: 0 9 1 5 3 0 1

NOTE: The underlined numbers indicate the day of production after the first production of the year. For example, a yellow toner cartridge with lot number 0 7 1 4 **7** 0 1 was produced after the modification was implemented, whereas 0 7 1 4 **5** 0 1 was produced before.

2. The shapes of the toner hopper shutter and toner hopper ribs have been modified. Before the modification, excessive torque was applied to the shutter during cartridge lever rotation, causing the edge of the shutter to catch on the toner hopper ribs. After the modification, the shutter does not catch on the toner hopper ribs.



Shutter for K: A2573340 (old) → A2573370 (new)
Shutter for Y: A2573341 (old) → A2573371 (new)
Shutter for C: A2573342 (old) → A2573372 (new)
Shutter for M: A2573343 (old) → A2573373 (new)

Toner hopper ass'y for K: A2573303 (old) → A2573362 (new)
Toner hopper ass'y for Y: A2573304 (old) → A2573363 (new)
Toner hopper ass'y for C: A2573305 (old) → A2573364 (new)
Toner hopper ass'y for M: A2573306 (old) → A2573365 (new)

NOTE: Please refer to MB #MA257037 for the cut-in serial numbers.

For machines in the field

1. Replace the toner hopper shutter with the new type. In almost all cases, this will fix the problem.

2. If this replacement does not improve copy quality to the customer's satisfaction, replace the entire toner hopper assembly.

Procedure

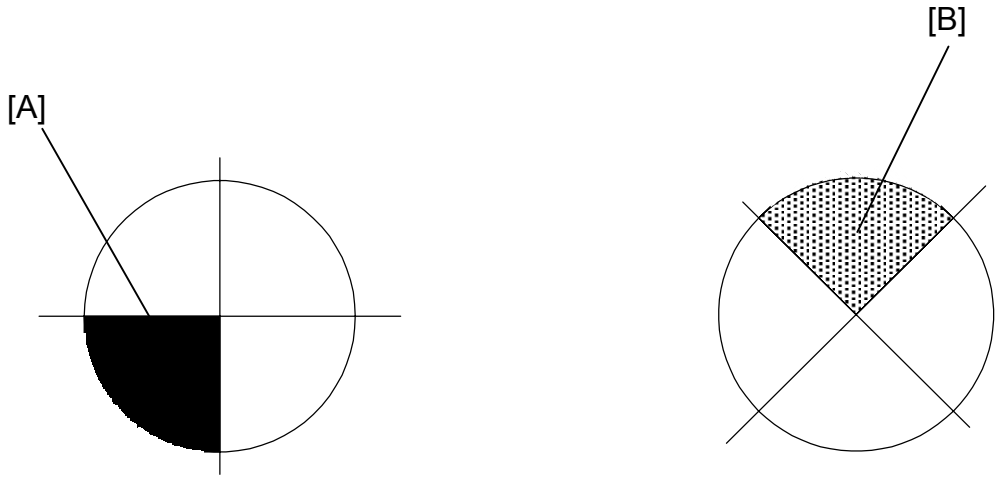
(1) Replacing the toner hopper shutter:

1. Pull out the revolver/drum drawer (see Service Manual pp. 3-9).

2. Remove the toner cartridges for each color at the toner cartridge replacement position [A] (lower left, looking from the front). See the illustration below.

   NOTE: Please refer to RTB #RA257011: "Notes for when removing the toner cartridge without toner end indication".

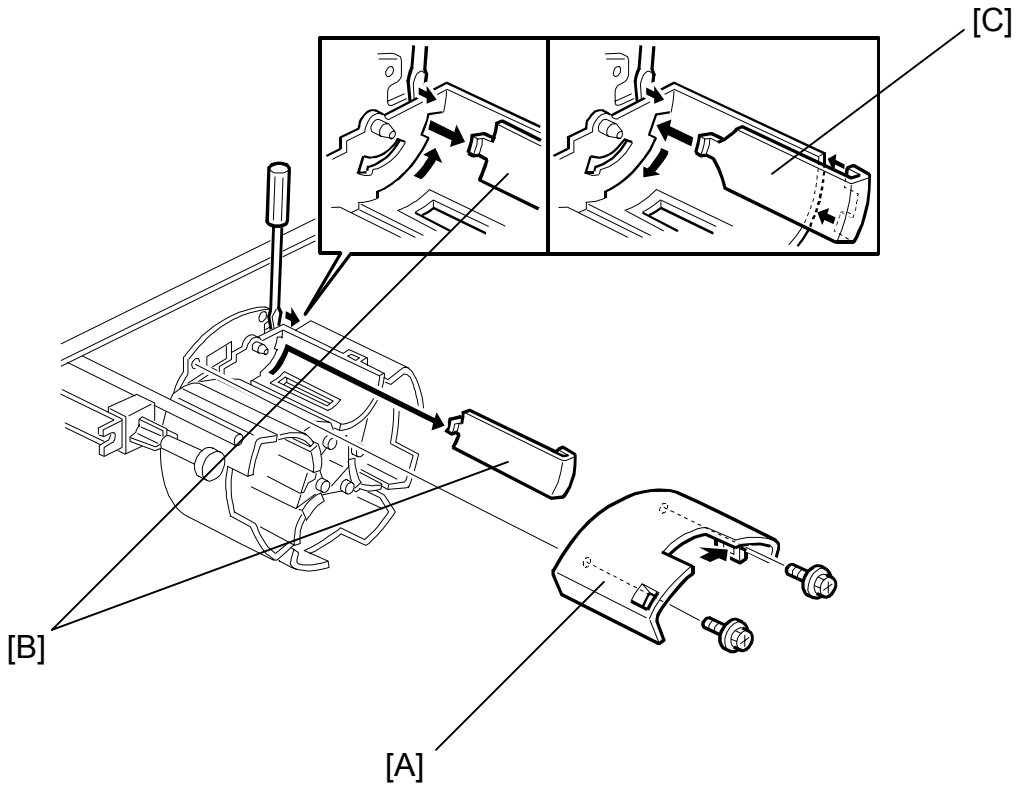
3. After removing all four toner cartridges, rotate the revolver unit to the development unit replacement position [B].



4. Remove the cartridge plate [A] (2 screws).

5. Remove the old toner hopper shutter [B] with a small screwdriver as shown.

6. Install the new toner hopper shutter [C] with a small screwdriver as shown.



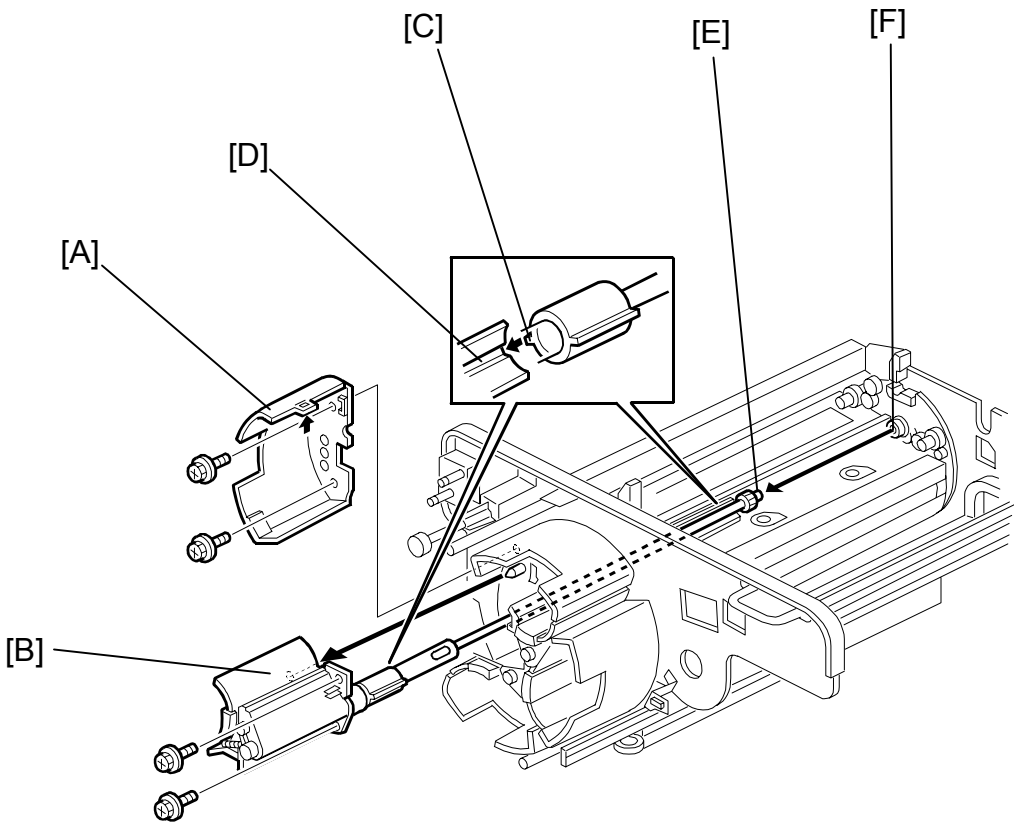
(2) Replacing the toner hopper assembly:

1. Remove the cartridge plate [A] (2 screws).

2. Remove the toner hopper assembly [B] (2 screws).

3. Install the new toner hopper assembly.

NOTE: When installing the new toner hopper assembly, please note the following:
1. Be sure to align the rib [C] with the groove [D].
2. Be sure to align the end of the hopper shaft [E] with the indent [F].



Model: Cattleya	Date: 22-Sep-00	No.: RA257043

Subject: Uneven image density (Hue band)	Prepared by: H. Matsui
From: Technical Services Dept., GTS Division	

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

Symptom

Hue bands occur, causing uneven image density across the face of the copy (particularly with printouts). The bands occur about every 59 mm or 73 mm, and the borders between each are not clearly defined. The hue bands appear perpendicular to the feed direction in middle and shadow tone areas, which is due to variations in the development sleeve line speed (peripheral velocity).

If more than 1 color toner is used, it causes uneven hue bands. For example, when printing a solid blue (cyan + magenta) image, bands with relatively dark magenta tend to appear. In addition, on printouts the bands appear in different phases for each toner color.

Cause

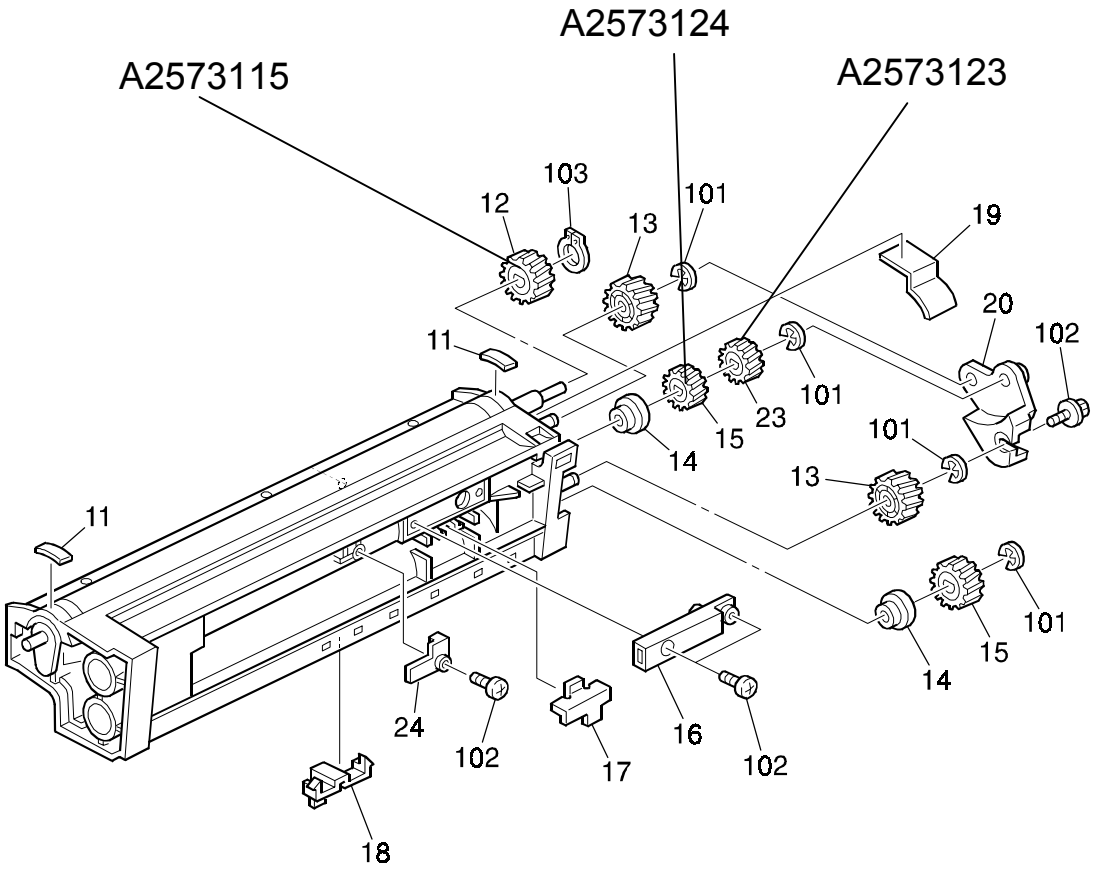
The precision of the development unit gears is not sufficient to limit the unevenness of the development sleeve line speed (peripheral velocity) to completely eliminate the uneven image density.

Solution

The precision of the following development unit gears have been improved. In addition, play between the D shaped holes of these gears and their shafts are reduced. For production cut in serial numbers, please refer to MB No. MA257042. Please note that these improvements do not completely eliminate the unevenness of the development sleeve line speed, and the resulting copy quality may not be satisfactory to all customers.

A2573111 (old) → A2573115 (new): Development Gear
A2573157 (old) → A2573124 (new): Gear 21Z
A2573114 (old) → A2573123 (new): Gear

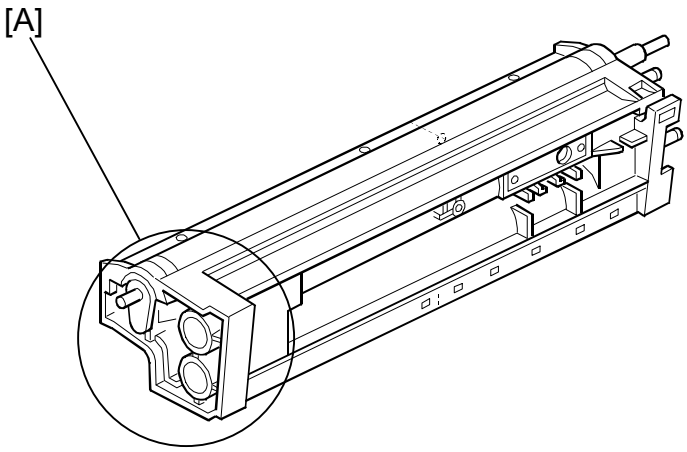
Model: Cattleya	Date: 22-Sep-00	No.: RA257043

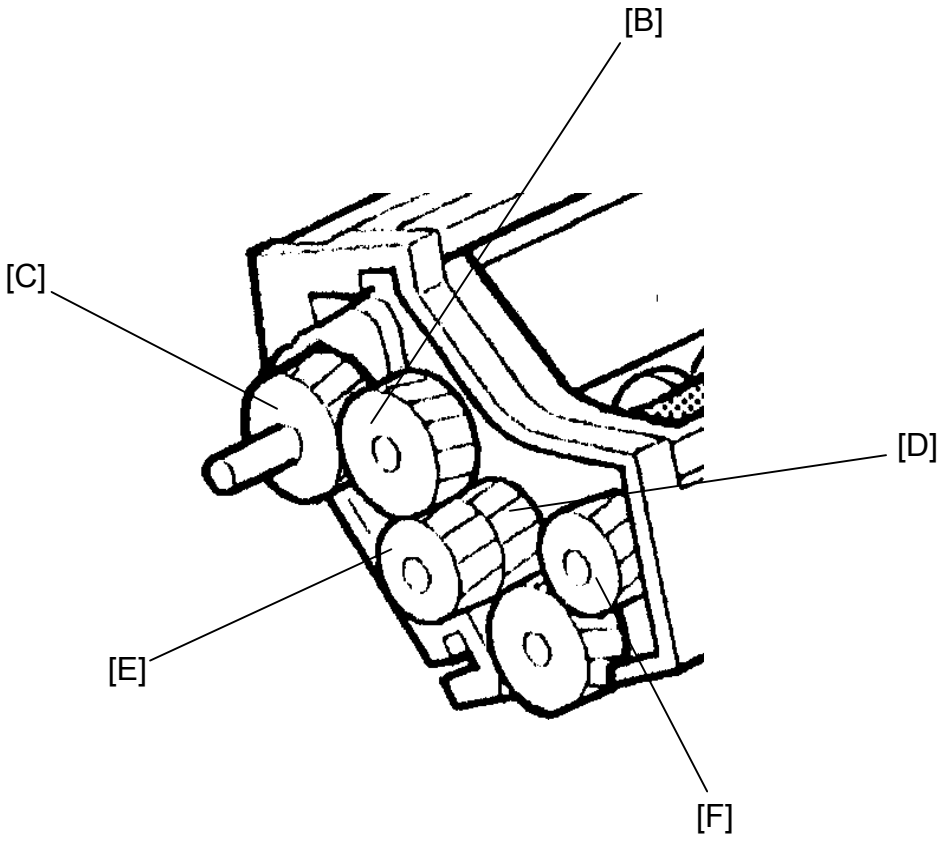


Action in the Field

Please install the new gears mentioned above if a customer should voice dissatisfaction with the copy quality (if related to hue banding). As these cases will depend mainly on the customer's own requirements and the dimension precision of the gears already installed, it is possible that some customers will not be satisfied even after parts replacement.

Procedure





1. With your hand, firmly support the ends of the shafts (in circle [A]) which hold the development gear.

NOTE: If these shafts slide, developer carrier can get inside the shaft bearing area.

2. Remove the gear [B].

3. Replace the gear [C] with the new type (A2573115).

4. Replace the gear [D] with the new type (A2573124).

5. Replace the gear [E] with the new type (A2573123).

6. Reinstall the gear [B].

NOTE:

1. When reinstalling gear [B], make sure that the side containing the ball bearings is facing the development unit.

2. Gear [F] is the same as gear [E]. However, you do NOT need to replace gear [F]. This gear is not related at all to the hue change problem.

Model: Cattleya	Date: 11-Oct-00	No.: RA257044

Subject: Countermeasure to the toner scattering problem	Prepared by: H.Matsui
From: Technical Services Dept., GTS Division	

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

This RTB explains the possible causes of the toner scattering problem and their countermeasures. The countermeasures described below have been implemented in the main firmware from version 1.622 or newer.

The occurrence of the toner scattering problem discussed in this RTB is estimated to be very limited in the field.

Possible Cause No.1
A small amount of toner may leak into the development unit as a result of the revolver rotation. If the usage of toner is less, the toner concentration in the development unit may gradually increase and this may result in toner scattering. Such conditions may exist if the customer's application is mainly full color copying of low coverage originals.

Countermeasure for Possible Cause No.1
Forced toner consumption mode has been added to remove excess toner in the development unit. This is automatically done during the process control self checks and it operates as follows.

If the TD sensor output detected during the self check is more than 0.2V lower than the Vref lower limit stored in SP3-947, the machine determines that there is too much toner inside the development unit and makes a pattern across the whole width of the drum to forcibly consume some toner. This mode continues until TD sensor output is less than 0.2V lower than the Vref lower limit. The default value of SP3-947 has been optimized as shown in the table below. The values in these SP modes can be adjusted manually; however, changing the settings in the field is not recommended.

SP3-947 Vref lower limit

SP Mode No.	Item	Default Value	Value Range
SP3-947-001	Vref lower limit (K)	1.00(old) → 1.30(new)	0.00-5.00
SP3-947-002	Vref lower limit (C)	1.00(old) → 1.30(new)	0.00-5.00
SP3-947-003	Vref lower limit (M)	1.00(old) → 1.30(new)	0.00-5.00
SP3-947-004	Vref lower limit (Y)	1.00(old) → 1.30(new)	0.00-5.00

The following three SP modes are newly added to show the number of times that forced toner consumption mode is done. The first two counters are for forced toner supply mode and forced toner consumption mode done based on development gamma calculated during the process control self check. These two modes existed from the beginning of the production. The three counters will be automatically reset when TD sensor initialization is done.

SP3-131 counter for forced toner supply mode

SP Mode No.	Item	Default	Range
SP3-131-001	counter for forced toner supply mode (K)	0	0 - 999
SP3-131-002	counter for forced toner supply mode (C)	0	0 - 999
SP3-131-003	counter for forced toner supply mode (M)	0	0 - 999
SP3-131-004	counter for forced toner supply mode (Y)	0	0 - 999

SP3-132 counter for forced toner consumption mode 1

SP Mode No.	Item	Default	Range
SP3-132-001	counter for forced toner consumption mode 1 (K)	0	0 - 999
SP3-132-002	counter for forced toner consumption mode 1 (C)	0	0 - 999
SP3-132-003	counter for forced toner consumption mode 1 (M)	0	0 - 999
SP3-132-004	counter for forced toner consumption mode 1 (Y)	0	0 - 999

SP3-133 counter for forced toner consumption mode 2

SP Mode No.	Item	Default	Range
SP3-133-001	counter for forced toner consumption mode 2 (K)	0	0 - 999
SP3-133-002	counter for forced toner consumption mode 2 (C)	0	0 - 999
SP3-133-003	counter for forced toner consumption mode 2 (M)	0	0 - 999
SP3-133-004	counter for forced toner consumption mode 2 (Y)	0	0 - 999

To enable the new forced toner consumption mode, the function of SP3-128-00 has been changed. The tables below describe the combination of selectable functions for each type of self check. With SP3-128-00, one of the three combinations can be selected. However, it is recommended to keep the default value in the field.

If SP3-128-00 is 0 (this is the default, not to be changed in the field)

	Forced toner supply by development gamma	Forced toner consumption by development gamma	Forced toner consumption by TD sensor output	Limit for shifting pointer table
Forced process control self check	Yes	Yes	Yes	None
Initial process control self check	Yes	Yes	Yes	None
Timed initial process control self check	Yes	Yes	Yes	None
Interval process control self check	No	No	Yes	Within 2 steps
Timed process control self check	No	No	Yes	Within 2 steps
ACC-run-time process control self check	No	No	Yes	Within 2 steps

If SP3-128-00 is 1

	Forced toner supply by development gamma	Forced toner consumption by development gamma	Forced toner consumption by TD sensor output	Limit for shifting pointer table
Forced process control self check	No	No	No	None
Initial process control self check	No	No	No	None
Timed initial process control self check	No	No	No	None
Interval process control self check	No	No	No	Within 2 steps
Timed process control self check	No	No	No	Within 2 steps
ACC-run-time process control self check	No	No	No	Within 2 steps

If SP3-128-00 is 2

	Forced toner supply by development gamma	Forced toner consumption by development gamma	Forced toner consumption by TD sensor output	Limit for shifting pointer table
Forced process control self check	Yes	Yes	Yes	None
Initial process control self check	Yes	Yes	Yes	None
Timed initial process control self check	Yes	Yes	Yes	None
Interval process control self check	Yes	Yes	Yes	None
Timed process control self check	Yes	Yes	Yes	None
ACC-run-time process control self check	Yes	Yes	Yes	None

Action in the field

If toner scattering is found and the above possible cause is suspected, upgrade the firmware to version 1.622 or newer and do a forced process control self check. After the self check, check the SP3-133 counter for forced toner consumption mode 2, and determine whether forced toner consumption mode has been done or not.

Possible Cause No.2
If TD sensor initialization is done under one of the following conditions, Vref will not be adjusted properly, and this may result in toner supply control at a higher level, eventually causing toner scattering. This is because under any of the conditions below, the toner concentration in the developer is already shifted from that of fresh developer, which is factory controlled at 5wt% and using such developer for TD sensor initialization results in the wrong Vref setting.

1. Toner end or toner near end condition
2. After developer replacement, the main switch is turned on without opening the front cover, so a process control self check is done.
3. TD sensor initialization is done for color(s) for which the developer is not replaced.

Countermeasure for possible cause No.2

During TD sensor initialization, the TD sensor output is automatically adjusted to 2.5v by changing the TD sensor gain value stored in SP3-944. If TD sensor initialization is done under conditions such as mentioned above, the gain value will become abnormal. If the gain value is lower than the lower limit stored in a newly provided SP mode, the new gain value will be canceled, and the previous gain value will be maintained. Also, value 3∗ (1:K, 2:Y, 3:C, 4:M, for ∗) will be displayed for TD sensor initialization results (SP5-005-006). If the gain value is higher than the higher limit stored in the newly provided SP mode, the new gain value will be canceled, and the previous gain value will be maintained. Also, value 4∗ (1:K, 2:Y, 3:C, 4:M, for ∗) will be displayed for TD sensor initialization results (SP5-005-006). If the previous gain value is also out of the range, the default gain value stored in SP3-006 is used. The default gain value is optimized with this modification as follows.

SP3-006 TD sensor gain setting

SP Mode No.	Item	Default Value	Value Range
SP3-006-001	TD sensor gain setting (K)	128(old) →165(new)	0-225
SP3-006-002	TD sensor gain setting (C)	128(old) → 175(new)	0-225
SP3-006-003	TD sensor gain setting (M)	128(old) → 175(new)	0-225
SP3-006-004	TD sensor gain setting (Y)	128(old) → 175(new)	0-225

The upper and lower limit for the gain values are stored in the newly provided SP modes as follows. The values in these SP modes can be adjusted manually; however, changing the settings in the field is not recommended.

SP3-941,942 TD sensor initial gain lower and upper limits

SP Mode No.	Item	Default	Range
SP3-941-001	TD sensor initial gain lower limit (K)	150	100-300
SP3-941-002	TD sensor initial gain lower limit (C)	160	100-300
SP3-941-003	TD sensor initial gain lower limit (M)	160	100-300
SP3-941-004	TD sensor initial gain lower limit (Y)	160	100-300
SP3-942-001	TD sensor initial gain upper limit (K)	180	100-300
SP3-942-002	TD sensor initial gain upper limit (C)	190	100-300
SP3-942-003	TD sensor initial gain upper limit (M)	190	100-300
SP3-942-004	TD sensor initial gain upper limit (Y)	190	100-300

These two errors will not result in error code 530 (TD sensor initialization error) for developer set up results displayed by SP3-964-00.

Action in the field

When performing TD sensor initialization, always be careful that abnormal conditions such as mentioned above do not exist. If 3∗ or 4∗ is displayed in SP3-005-006 (TD sensor initialization results), do not repeat the initialization as this will result in another error. The toner density will be controlled within the normal range even if the TD sensor initialization is 3∗ or 4∗ since the previous or default value will be used for the TD sensor gain value. If toner density seems abnormal due to TD sensor initialization result 3∗ or 4∗, do the TD sensor initialization using fresh developer.

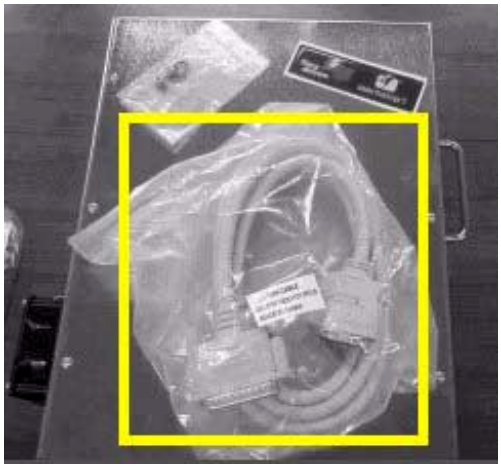
Model: Catleya (E-700 Controller)	Date: 08-Dec-00	No.: RA257045

Subject: E-700 Parallel Cable Included By Mistake	Prepared by: C. Tsuji
From: Technical Services Dept., GTS Division	

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

SYMPTOM

From the beginning of the mass-production of E-700, a parallel cable was included in the carton by mistake.



The following table shows the cut-in serial number for correct production without the parallel cable.

Ship Date	Code & Destination	EFI Part Number	EFI Serial Number	Ricoh Serial Number
10/30/00	G936-01 (US)	45013122	J00002625	P4609400082
10/30/00	G936-02 (INTL)	45015850	J00002639	P4609450550

SOLUTION

If a parallel cable is included, discard it. (This cable cannot be used for system installation or printing. E-700 does not support a parallel interface.)

Model: Cattleya	Date: 19-Mar-01	No.: RA257046

Subject: Troubleshooting for toner scattering	Prepared by: H.Matsui
From: Technical Services Dept., GTS Division	

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

Symptom
- Toner scattering
- SC452 (Belt mark detection error)
- SC385 (ID sensor Vsg adjustment error)

Cause
If the initial process control or toner end recovery process is performed with new developer before TD sensor initialization, the actual toner WT% will be greater than the value calculated from the TD sensor output. This may lead to toner scattering, SC452 or SC385.

Action in the field
The following table is a series of check items that are sometimes overlooked in the field. If these items are not checked, this can lead to toner scattering. So if your answer is No to any of these items, please refer to the action to be taken (right column).

No.	Check items	Technical background	Action in case your answer is "No".
1	Did you open the front cover before turning on the main switch at machine installation or after replacing the developer?	Without opening the front cover, the machine starts the initial process control self-check automatically after the main switch is turned on. If the initial process control self-check is done before the TD sensor initialization, the actual toner wt% will be greater than the value calculated from the TD sensor output. This may lead to toner scattering (SC452, SC385).	At machine installation: Replace the developer for all colors. Then, do TD sensor initialization again according to the correct procedure.
			After the developer replacement: Replace again the developer color(s) that you just replaced. Then do TD sensor initialization according to the correct procedure.
2	Did you replace the toner cartridge before replacing a developer color which was at a toner end or toner near end condition?	If the toner end recovery process is done with new developer before TD sensor initialization, the actual toner wt% for the Vref value will be greater than estimated. This will cause incorrect Vref values to be used for toner supply control. This may lead to toner scattering (SC452, SC385).	At first, replace the toner cartridge with a new one and wait until the completion of toner end recovery. Then replace again the developer color for the toner that was at the end or near end condition. Then do the TD sensor initialization again, according to the correct procedure.

No.	Check items	Technical background	Action in case your answer is "No".
3	Did you do TD sensor initialization only for the color(s) that the developer is replaced?	If the TD sensor initialization is done for the color(s) that the developer is NOT replaced, Vref will be incorrect. If an incorrect Vref value is used for toner supply control, toner scattering may occur.	Replace the developer color(s) that you did not replace. Then do TD sensor initialization only for the color(s) that you replaced just now.
4	Are the following values are at default the setting? • Vref (SP3-950, SP3-949) • Vref lower limit (SP3-947) • Vref upper limit (SP3-948) • Vcnt (SP3-944) • Vcnt lower limit (SP3-941) • Vcnt upper limit (SP3-942)	Vref and Vcnt (TD sensor gain) are used for TD sensor initialization and toner supply control. If these are changed manually, incorrect values will be used for toner supply control.	• Reset the values to the default values. • If Vcnt (SP3-944) has been changed, replace the developer and do the TD sensor initialization.

Model: Cattleya	Date: 19-Mar-01	No.: RA257047

Subject: NV-RAM clear	Prepared by: H.Matsui
From: Technical Service Dept., GTS Division	

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

Symptom

The following symptom may appear after an NV-RAM clear

- Low image density
- Self check process control error 20∗
- Developer setup error 20∗

NOTE: 1: K, 2: Y, 3: C, and 4: M are displayed for the respective colors for items identified by "∗"

Cause

If an NV-RAM clear is performed, SP settings will be reset to the factory set values. However, the inner parameter, which is used to control the machine, will not be reset to the factory set value until the main power switch is turned off and on.

NOTE: "Inner parameter" means the machine control value used in the main control board, but it cannot be seen by SP mode.

Action in the field

If you perform the NV-RAM clearing, please turn the main switch OFF and ON before the machine operation.

Model: Cattleya	Date: 06-Jun-01	No.: RA257048

Subject: Troubleshooting for the TD sensor gain value upper limit error 4∗ (1:K, 2:Y, 3:C, 4:M, for ∗)	Prepared by: H.Matsui
From: Technical Services Dept., GTS Division	

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

Symptom

All four of the following symptoms/conditions occur ***together:***

1. TD sensor gain value upper limit error: Value 4∗ (1:K, 2:Y, 3:C, 4:M, for ∗) is displayed for the TD sensor initialization results (See Notes 1 and 3 below).
2. The copy/print image density is too light.
3. Actual Vref value (SP3-950-∗, 001:K, 002:C, 003:M, 004:Y, for ∗) is 1.35 or lower.
4. Selected pointer table value (SP3-902-∗, 001:K, 002:C, 003:M, 004:Y, for ∗) is 16 or greater.

NOTES:

1. With the latest firmware, SP3-960-000 displays the TD sensor initialization results. If this SP mode is not available, please try SP3-005-006.

2. The troubleshooting procedure below is basically only for cases where all 4 of the above occur. If the procedure is done without all 4 symptoms occurring, unexpected errors can occur.

3. As an example, if only #1 above occurs, (value 4∗ (1:K, 2:Y, 3:C, 4:M, for ∗) displayed for TD sensor initialization results [SP3-960-000 or SP3-005-006]), the new gain value will be canceled, and the previous gain value will be maintained. There is usually no need to take action in this case, as the machine can still be used normally.

   Important: Do not repeat the initialization without replacing the developer for that color. Otherwise, another error may occur (see the related RTB# RA257044 for more details).

Cause:

For some reason, the developer Q/M is slightly higher than usual (but still within specification).

Action in the field

1. Change the TD sensor initial gain upper limits (SP3-942-∗, 005:K, 006:C, 007:M, 008:Y, for ∗) for all colors, according to the following table:

SP3-942 TD sensor initial gain upper limits

SP Mode No.	Item	Upper limit			Range
		Current value	→	Change to this value	Range
SP3-942-005	TD sensor initial gain upper limit (K)	180	→	200	100-300
SP3-942-006	TD sensor initial gain upper limit (C)	190	→	210	100-300
SP3-942-007	TD sensor initial gain upper limit (M)	190	→	210	100-300
SP3-942-008	TD sensor initial gain upper limit (Y)	190	→	210	100-300

2. Replace the developer for the color(s) that displayed 4∗ (1:K, 2:Y, 3:C, 4:M, for ∗).

3. Perform TD sensor initialization for the color(s) that you just replaced.

NOTE: Do not perform TD sensor initialization for a toner color without replacing the developer for that color.

Model: Cattleya	Date: 23-Oct-01	No.: RA257049

Subject: Paper jam in duplex mode	Prepared by: H.Matsui
From: Technical Services Dept., GTS Division	

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

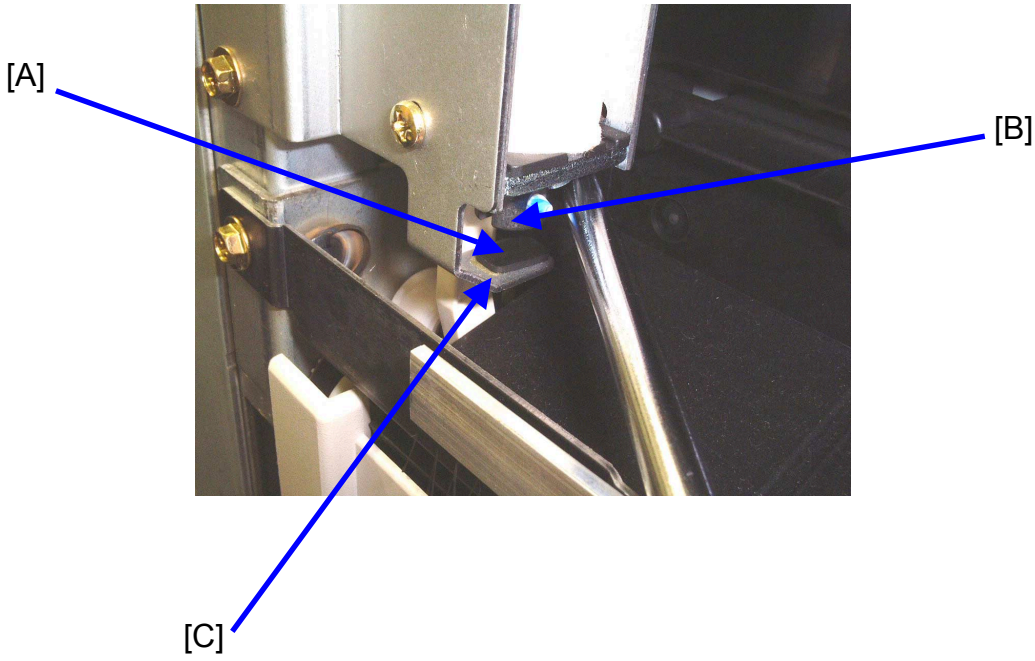
Symptom:
Paper jam in duplex mode only.

Cause:
The duplex junction gate solenoid (AX120059) does not function correctly.

The shock-absorbent rubber plate [A] peels off the bracket (see the attached picture). After the plate comes off, the core of the solenoid [B] sticks to the solenoid bracket [C] (B0234463) because of magnetic attraction. Under this condition, the junction gate does not function correctly even though the solenoid is turned on.

Troubleshooting procedure:
Replace the solenoid bracket (B0234463), which includes the shock-absorbent rubber plate.

NOTE:
1. The rubber plate does not exist as a separate service part.
2. The bracket P/N mentioned above (B0234463) is the new number from a recent modification made to this part (see MB MB023010).



Model: Cattleya	Date: 26-Dec-01	No.: RA257050

Subject: Thick mode, 2nd copy, trail edge band	Prepared by: H.Matsui
From: Technical Services Dept., GTS Division	

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

Symptom:
A light band appears at the trailing edge (last 6 to 10 mm) of the 2nd copy when using Thick / Extra Thick / OHP mode. This light band is NOT always visible. It depends on the paper size, paper feeding direction, and the type of image. Especially, it appears when the following settings are selected at the same time.

1. Paper Size: Letter size (11” X 8.5”)
2. Paper feeding direction: Sideways
3. Copying mode: Multi copy mode (more than two copies)
4. In Thick, Extra Thick, or OHP mode

In other conditions, this symptom is rarely seen.

Cause:
The PTB shift clutch ON timing is not correct. With the above settings, this incorrect timing leads to the light band at the trailing edge.

Action in the field:
Upgrade the main firmware to ver1.627 or newer. In the new firmware, the PTB shift clutch ON timing has been modified.

Model: Cattleya	Date: 8-Jan-02	No.: RA257051

Subject: Jammed paper remains inside the fusing unit	Prepared by: H.Matsui
From: Technical Services Dept., GTS Division	

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

Symptom:
Jammed paper remains between the hot roller and the thermistor. In some cases, this may activate SC545 (Hot roller ready temperature abnormal).

Cause:
Jammed paper remains inside the fusing unit when the following occurs:

1. An accordion jam occurs inside the fusing unit.
2. Following the accordion jam, the operator tries to remove the jammed paper by rotating the fusing unit knob counterclockwise (in the paper feed direction) without opening the fusing paper exit unit.
3. The operator cannot find the jammed paper, because the accordion jam reaches up between the hot roller and the thermistor.
4. The machine function (reset jam condition) is used (after the front cover has been closed), while jammed paper still remains inside the fusing unit.

Jammed paper pushes up on the thermistor. This leads to an incorrect temperature measurement, which in turn activates SC545 (hot roller ready temperature abnormal). SC545 may appear at this time.

Action in the field
1. Upgrade the main firmware to ver1.627 or newer (see the next page).
2. Please advise all operators on the correct D jam recovery procedure:

D Jam Recovery Procedure:

1-1. Pull out the lower drawer unit completely.

1-2. Open the fusing paper exit unit by pulling on the D2 handle.

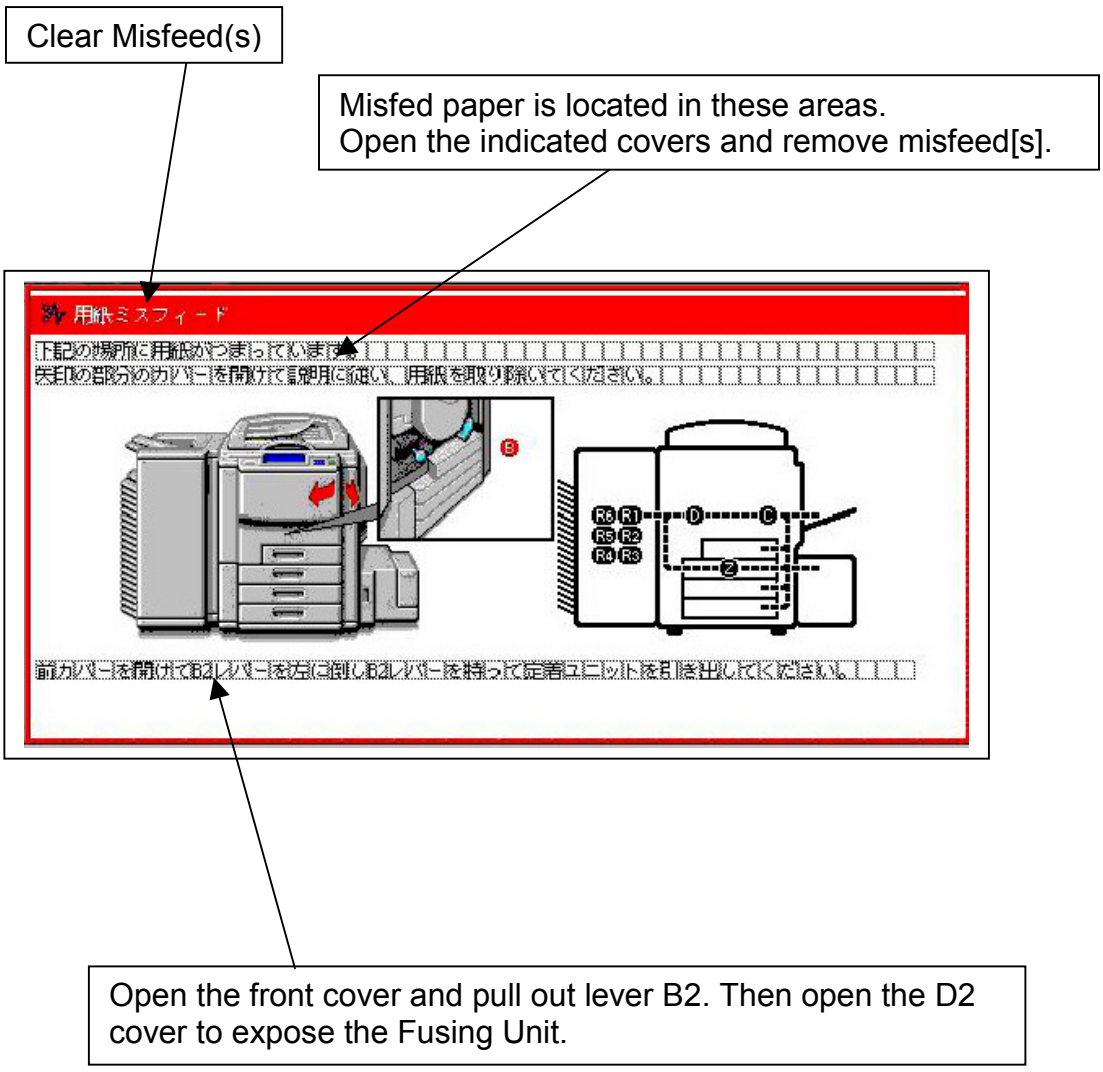
1-3. Remove jammed paper from inside the fusing unit.

Version 1.627 – Modified Items

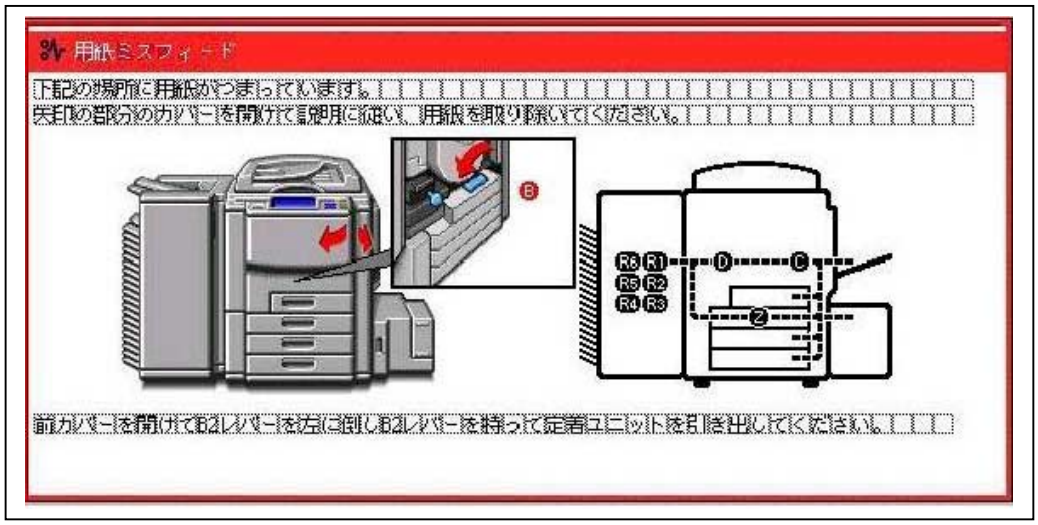
From the main firmware ver 1.627, animated instructions will be displayed on the operation panel when a D jam occurs. These instructions demonstrate the correct way to remove jammed paper from the D area.

The animation consists of pictures 1 through 8 below and is customized for each display language.

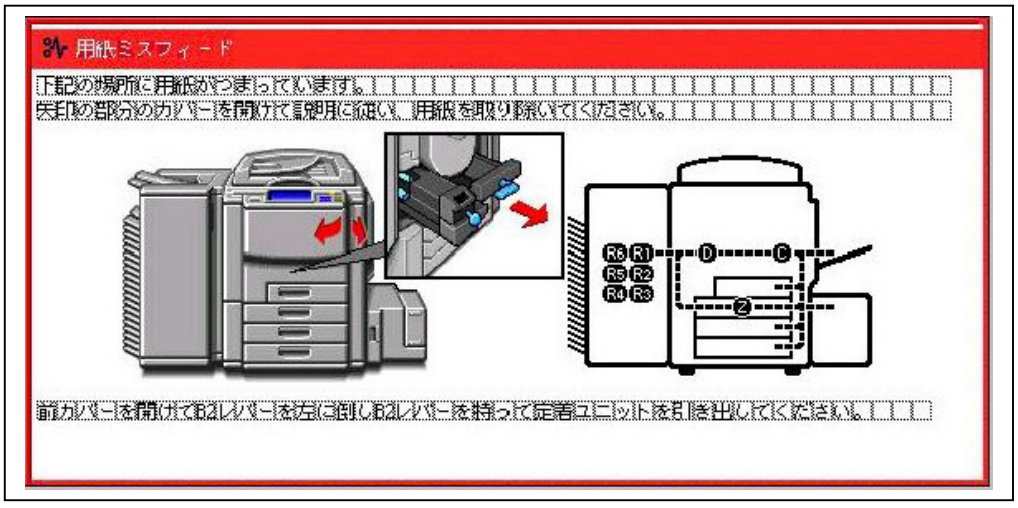
Picture -1



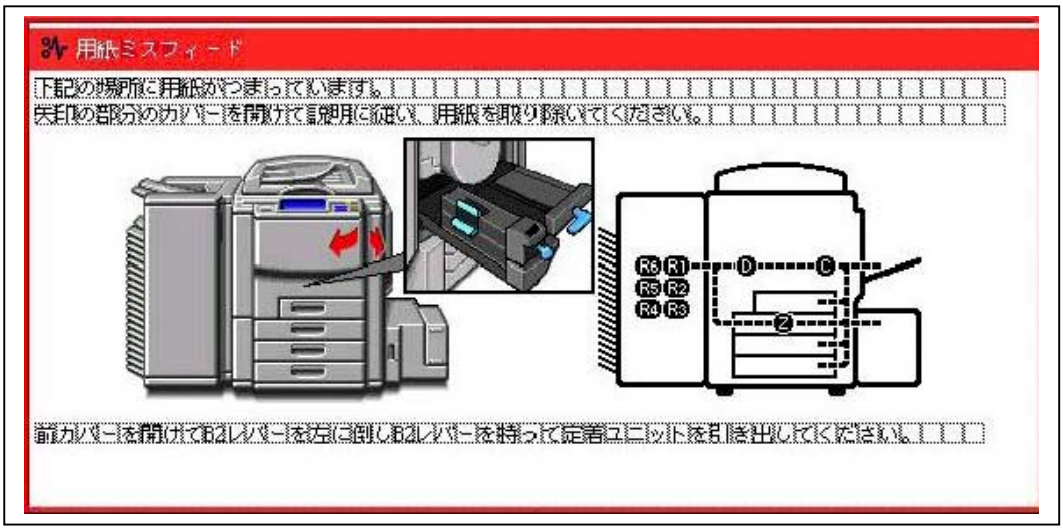
Picture -2



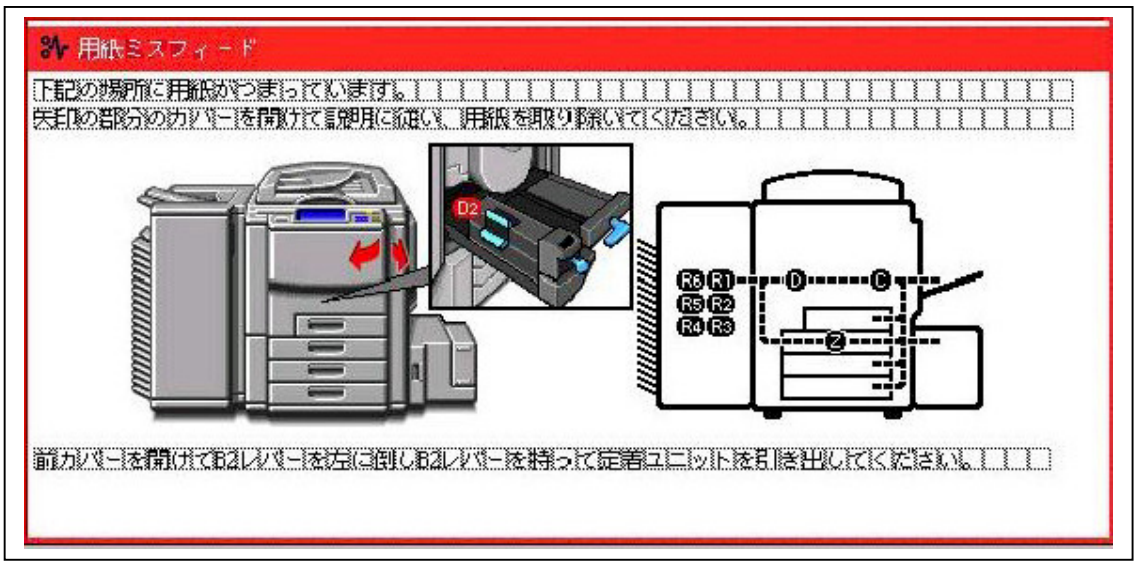
Picture -3



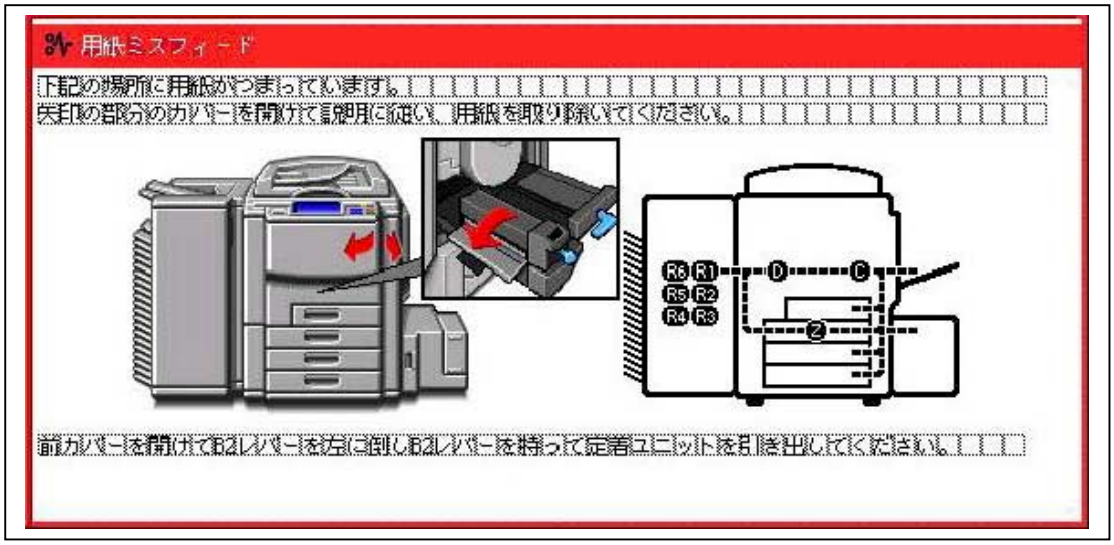
Picture -4



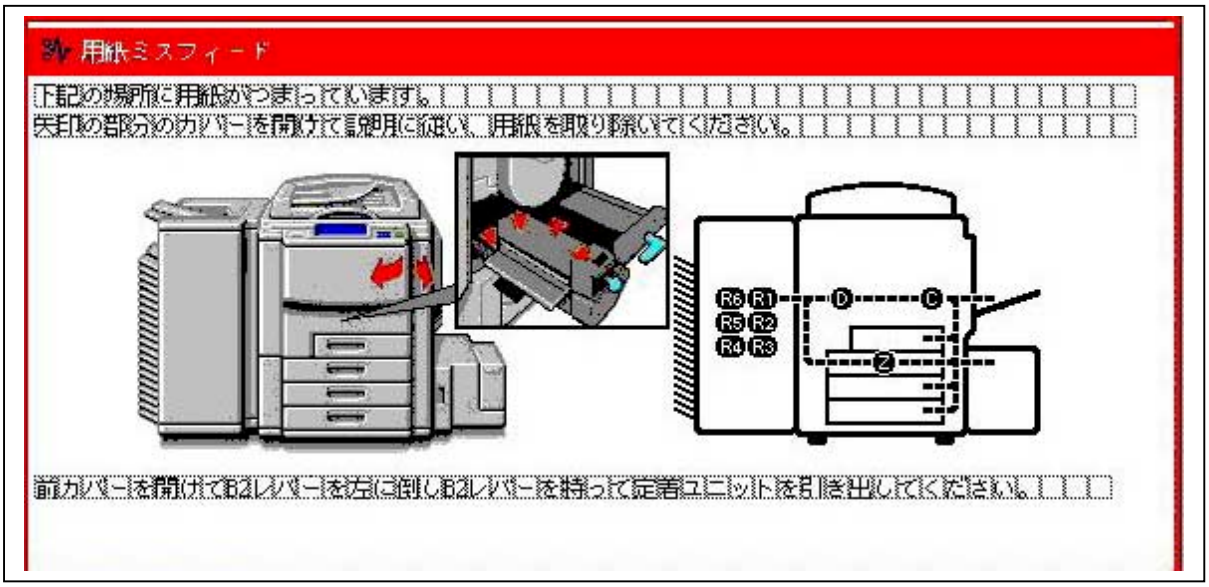
Picture -5



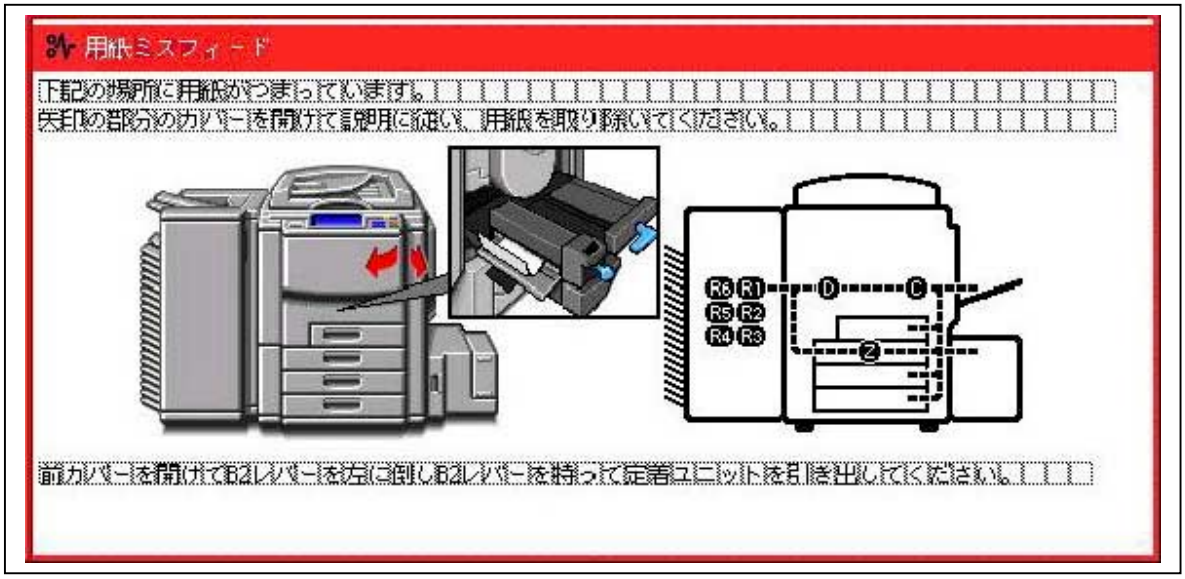
Picture -6



Picture -7



Picture -8

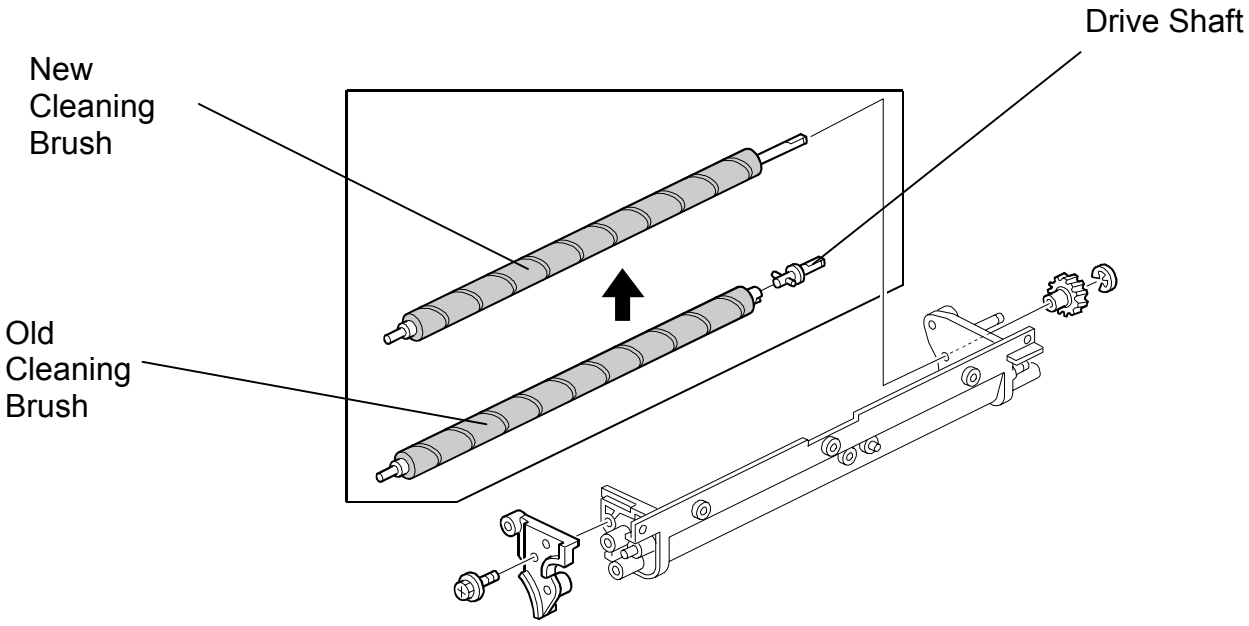

用紙ミスフィード
下記の場所に用紙がつまっています。
矢印の部分のカバーを開けて説明に従い、用紙を取り除いてください。
R6 R1
R5 R2
R4 R3
D
C
2
前カバーを開けて右2レバーを左に倒し右2レバーを持って定着ユニットを引き出してください。

Model: Cattleya	Date: 31-Jan-02	No.: RA257052

Subject: New Drum cleaning brush replacement procedure	Prepared by: H.Matsui
From: Technical Services Dept., GTS Division	

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

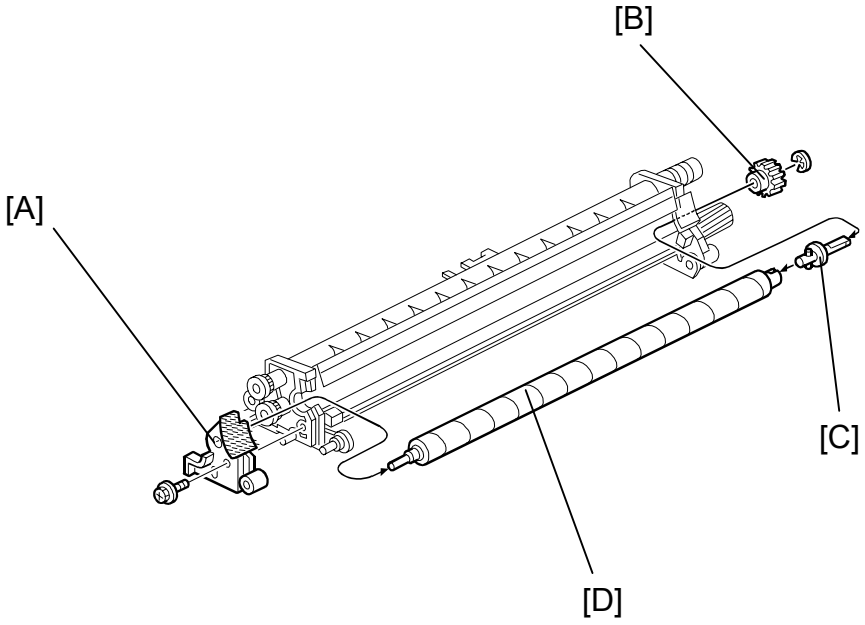
As announced in MB #MA257099, the Drum Cleaning Brush has been changed to include the Drive Shaft (illustration below). This RTB contains the PM replacement procedure for the Drum Cleaning Brush.



Model: Cattleya	Date: 31-Jan-02	No.: RA257052

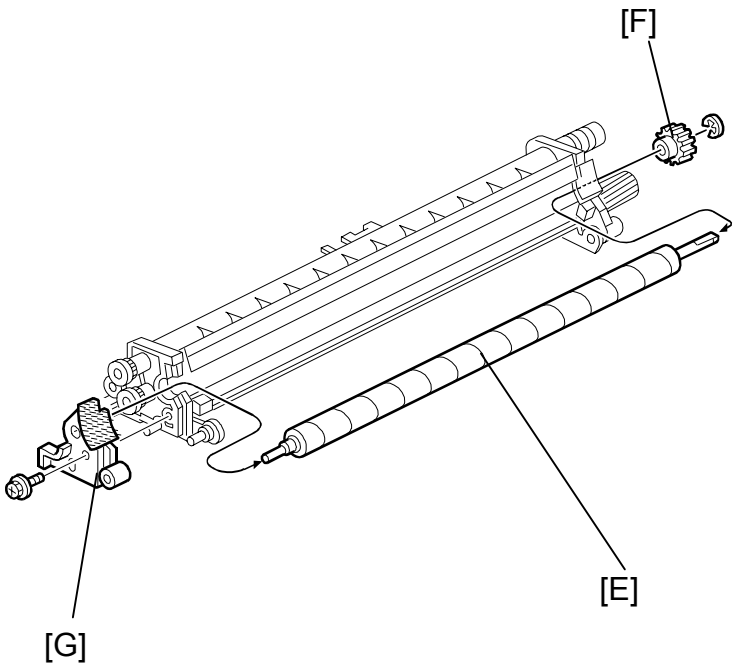
Drum Cleaning Brush replacement procedure (PM visit):

1. Remove the Bush Holder [A] (1 screw).
2. Remove the Brush Gear [B] (1 E-ring).
3. Remove the Drive Shaft [C].
4. Remove the old Drum Cleaning Brush [D].



5. Attach the new Cleaning Brush [E]
6. Re-install the Cleaning Brush Gear [F] (1 e-ring).
7. Re-install the Brush Holder [G] (1 screw).

NOTE: The Drive Shaft [C] is no longer required.



Reissued: 23-Jan-03

Model: Cattleya	Date: 19-Sep-02	No.: RA257053a

RTB Reissue

The information in ***bold italics*** has been added.

Subject: ITB rubber bands peeling off			Prepared by: H.Matsui
From: Technical Services Sec. Service Planning Dept.			
Classification:	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

Symptom:

Following ITB replacement, the rubber positioning seals around the inside edge of the belt peel off at about 1-2 kD, causing SC326 or SC452.

Cause:

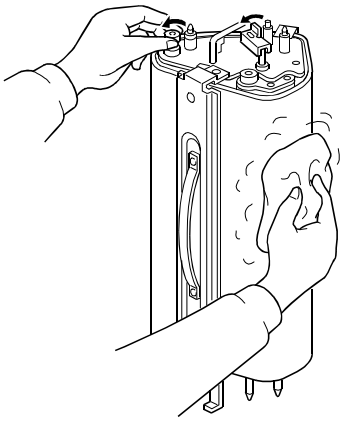
An insufficient amount of setting powder is applied to the ITB, causing the belt to catch the blade and bend it backwards. The blade then pushes against a different area of the belt (one with no roller underneath), causing the belt to bend inward and the positioning seals to contact the Grounding Plate. The seals are then peeled off at their “joint” areas.

Troubleshooting:

1. Please be sure to apply **a sufficient amount** of setting powder to the entire surface of the belt at replacement. As a reference, the picture below shows the belt after a sufficient amount has been applied.

   Note: When in doubt, it is better to apply slightly more powder than less.

2. In addition to the above, replace the Brush Roller Ground Plate with the new type mentioned in MB #MA257119.



Model: Cattleya	Date: 3-Sep-03	No.: RA257054

Subject: NV-RAM replacement procedure	Prepared by: H.Matsui
From: 1st Tech. Support Sec. Service Support Dept.	

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

NV-RAM Replacement Procedure Revision

The replacement procedure on pg. 6-105 of the Service Manual has been revised as follows (bold areas).

Replacing the NV-RAM

Make sure you have the factory settings that come with the copier before beginning the following procedure.

1. Use the SP7-902 mode to output the SP mode values that have been modified from their default value.
2. Set the main power switch OFF and unplug the power cord.
3. Replace the NV-RAM (IC115) on the main board.
4. Reassemble the machine.
5. **Open the front cover, then turn ON the machine main power.**
   NOTE:
   - **Be sure to leave the front cover open until Step 13 has been completed. This is to prevent the machine from starting the initial process control self-check.**
   - **A four-digit SC may appear at this time (SC4xxx) and remain displayed until the RAM clear is performed in Step 8 below. However, please ignore this SC and continue with the procedure.**
6. **Perform Touch Panel Calibration (see pg. 6-106).**
7. **SC195 (Serial number error) appears on the display. Then, enter the machine serial number in the factory set mode (consult with your manager for details).**
   NOTE: Sometimes, SC195 does not appear while the four-digit SC remains displayed. Even in this case, enter the machine serial numbers in the factory set mode.
8. Perform SP5-801 (RAM clear) to reset SP and UP values to their defaults**.**
9. **Turn the main power OFF/ON and confirm that no SC is displayed.**
10. **Perform Touch Panel Calibration again.**
11. **Set SP7-008-000 (Counter display setting) to the appropriate value:**
    - **1: Developments counter value**
    - **2: Copies/Prints counter value**

    NOTE: If this SP is not set to a value of 1 or 2, the abnormal value in the SP (e.g. 102, 65) will prevent the electrical counter panel button from functioning.

12. **Perform SP7-808 (Counter all clear).**
    NOTE: If this is not performed, the counters will take on abnormal values. See logging data sheet (SP7-809-003) to confirm.

13. **Perform SP7-825 to reset the electrical counter values to 0, unless you are using P/N A2579590 or newer (NV-RAM Zero Counter), in which case this step is unnecessary.**
    NOTE:
    - **If this step is not performed for previous NV-RAMs (negative counters), the mechanical counter will not increment.**
    - **See MA257122 for the 0-counter modification P/N change.**

14. **Use the electrical counter panel button to confirm that all electrical counters have been successfully set to 0.**
15. Enter SP mode changes you output in step (1).
16. Perform the auto color calibration procedure.
17. If the image needs adjustment after being subject to auto color calibration, calibrate the target using the SP4-501/502/503 modes.