TECHNICAL BULLETIN
CS 250ci/300ci400ci/500ci

SUBJECT:	**BULLETIN INDEX**	**02/11/11**

SUBJECT: **BULLETIN #**

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Kyocera Technology

RECOMMENDED ACTION FOR FIELD MACHINES

☐ AT SETUP ☐ NEXT SERVICE CALL

☐ NEXT PM ☑ INFORMATION ONLY

TECHNICAL BULLETIN CS 250ci/300ci/400ci/500ci

Bulletin #	**Model**	**Date**
CS 250ci/300ci/400ci/500ci-10	CS 250ci/300ci/400ci/500ci	02/11/11

Updated Serial Number
N/A

Subject
500ci SERIES TROUBLESHOOTING GUIDE

Technical Services has documented the most common solutions to 500ci Series field problems in one convenient Guide. This Guide should be reviewed at your next technical meeting and distributed to your field personal. The information provided is a good troubleshooting tool if you have a specific problem that has been addressed in the following pages.

If you have any additional questions regarding the information in this Technical Bulletin, please contact the Kyocera Mita Diagnostic Center at 1-800-255-6482, or email us at support@kyoceramita.com.

500ci Series Troubleshooting Guide

Revision 1.0, 01/14/11

Table of Contents

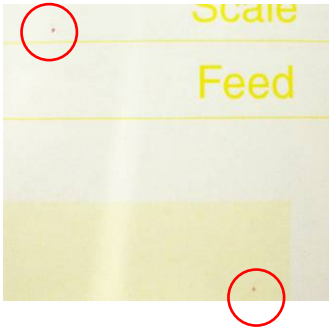
Toner Dot (Dev/Toner Leaking, etc)

(Always complete all steps in order under each number)

1. **Random dot**
   Donut dot (random color dot), see Sample 1

   a. Update Firmware to the latest Version on KMAconnect.
   b. Identify the color of the dot.
   c. U464 AC CALIBRATION TYPE, set from “0” Normal setting to “2” Color Dots Mode 1.
   d. This sets the Dev ROLL2 DUTY to 317 and the AC Calibration Magnification to -5.
   e. Next perform U464 AC Calibration execution for the color of the dot.
   f. Check for dots.
   g. If not resolved, set from “2” Color Dots Mode 1 to “3” Color Dots Mode 2
   h. Next perform U464 AC Calibration execution for the color of the dot.
   i. If not resolved, replace the DLP Unit that matches the color dot and set to “4” Default Mode and execute AC Calibration for that color.

Sample1



*See the following pages for detailed information on the above adjustments.

2. **Random dot cloud**
   Dev/toner leaking (a cloud of random dots), see Sample 2

   a. Update Firmware to latest Version on KMAconnect
   b. U464 perform AC Calibration execution for the color of the dot.

Sample2

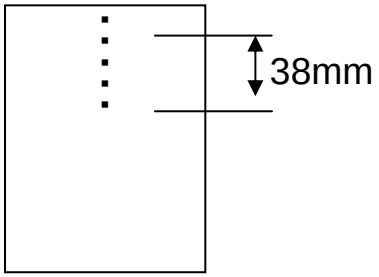
3. **Main Charger pitch dot**
   Dots in sub-scan direction, MC roller pitch (38mm) repeating, see Sample 3

   a. Replace the Charge Roller matching the color if the dot

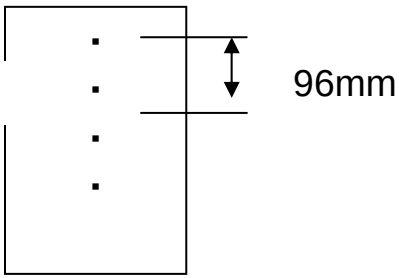
4. **Drum pitch dot**
   Dots in sub-scan direction, Drum pitch (96mm) repeating, see Sample 4

   a. Replace the Drum Unit that matches the color of the dot.

Sample3



Sample4



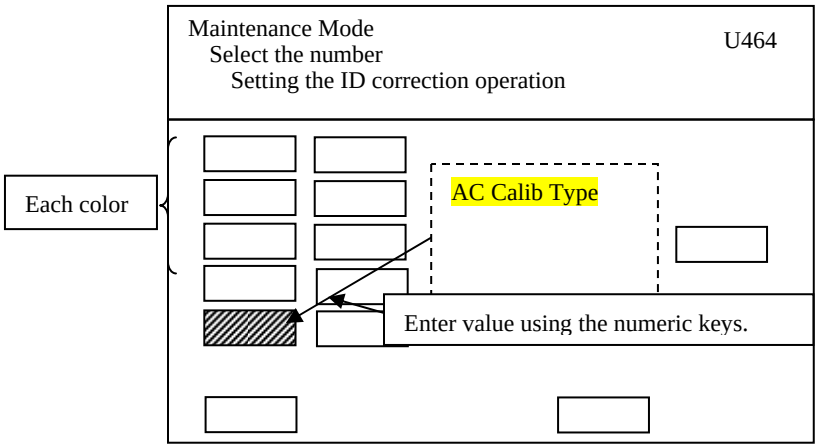
Pitch: The distance between a repeating defect in a copy or print. It is used to help determine the source of the defect. If a dot is repeating every 96mm on a 500ci Series machine, the source is the Drum. We know that because the circumference of the Drum is 96mm. If the defect is every 38mm, we know it is the Main Charge Roller because the circumference of that roller is 38mm. The defect is repeated on the paper each time the drum or roller makes one rotation.

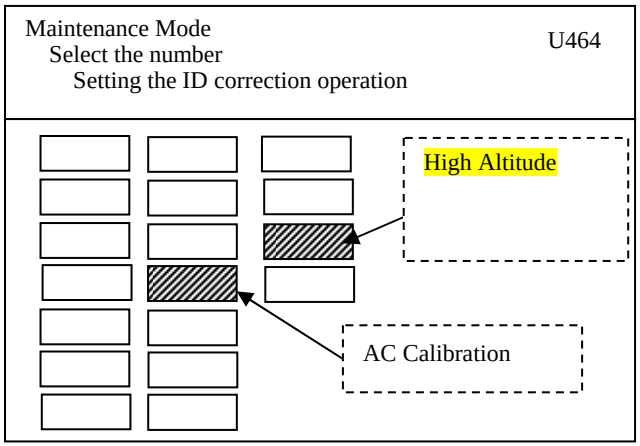
Toner Dot (Dev/Toner Leaking, etc） continued

Random dot reference Adjustment

Menu on the U464 screen is changed as follows.

"AC Calibration Type" under "AC Calibration" Normal setting "0"
"High Altitude"　(MODE1, MODE2)　Default: MODE1





1. When color dots appear on the image, set the "AC Calib Type" to "2" (Color dots mode 1) or "3" (Color dots mode 2) if the previous setting does not help.
2. Set the color C/M/Y/K to (ON) that requires Dev unit calibration with reference to the color dot and then execute the AC Calibration.
3. When Normal Mode "0" (OFF) is entered for "AC Calibration Type", the value will be internally set to the value acquired after executing the previous AC Calib Type operation. Reference (C) and (D) on the chart below. **Normal Mode "0" is set when firmware is upgraded in the field.**
4. (Default mode) "4" is set in new MFP's from the Factory. Leave at this initial setting unless there is a problem.

Note: When executing calibration after a new developing unit is installed, set to "4" (Default mode), select the applicable color unit and then execute AC calibration.

Toner Dot (Dev/Toner Leaking, etc） continued

Random dot reference Adjustment

When setting **High altitude mode**, you need to set the following combination.
”High Altitude” is set to “MODE 2” and “AC Calibration Type” is set to “1” in U464.
Note: do not set High Altitude Mode unless advised by a Regional Rep or the Diagnostic Center.

When making a setting under AC Calibration, please follow the order below.

1. ***Enter the value for ”AC Calibration Type”, and then press the “Start” key to enter the setting.***
2. ***Select the applicable color, and then change the setting to “ON”.***
3. ***Press the “Execute” button on the operation panel to execute the calibration.***

The setting is fixed by pressing the Start key and is executed by pressing the EXECUTE button.

Enter the value using numeric keys (A)	Enter the value using numeric keys (B)		Mode	Setting for each color when entered using numeric keys	AC Calibration Operation	(C)	(D)
0	0		OFF	All OFF	OFF	Value from previous execution	Value from previous execution
---	1	→	High altitude mode	All ON	Always executed for four (4) color units at the same time.	---	---
2	2		Color dots mode1	All OFF	Only the selected color unit is turned ON and executed	317	-5
3	3		Color dots mode2	All OFF	Only the selected color unit is turned ON and executed	265	-10
4	4		Default mode	All OFF	Only the selected color unit is turned ON and executed	373	0

(A) High Altitude is set to Mode1
(B) High Altitude is set to Mode2
(C) U140 Dev Roll2 Duty value
(D) U464 AC Calibration Magnification value

Void Areas

1. **DLP sleeve roller pitch**
   Sub-scan direction, 32mm pitch

   Print a sample test chart in U89 for each color GRAY C/M/Y/K

<u>Sample1</u>

b. Update Firmware latest Version on KMAconnect
c. Execute Developer Refresh
d. Replace the color DLP Unit which is causing the problem when the developer refresh does not help.

<u>Sample2</u>

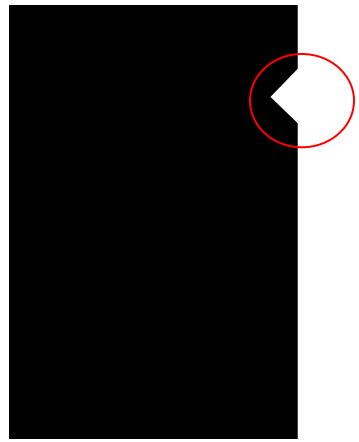
a. Clean **DLP sleeve roller** with a clean dry lint free cloth.
b. Replace the color DLP Unit which is causing the problem when cleaning does not help.

2. **Drum pitch (Sample 3)**
   Sub-scan direction, 96mm pitch.

a. Clean the **Drum** area with a clean dry lint free cloth.
b. Replace the Drum Unit for the color when cleaning does not help.

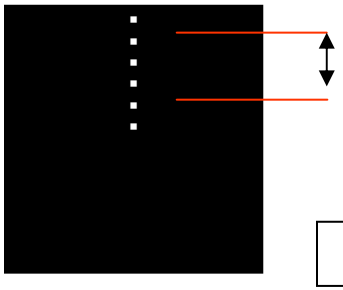
Sample 1

DLP sleeve pitch

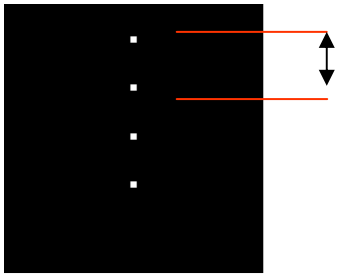


Belt damage

Sample 2



Sample 3



Void Areas (continued)

3. **Primary Transfer roller pitch (No Sample)**
   Sub-scan direction, 63mm pitch

   a. Each color has to be checked.
   b. Check whether the Transfer Belt is in its position and if not reposition it.

4. **Transfer belt pitch (No Sample)**
   Sub-scanning direction, Secondary Transfer belt 890mm pitch.
   Output three pages of 11x17 and the void area can be checked on 1st and 3rd page. Check with all colors.

   a. Clean the dirty **Transfer Belt** area with a clean dry lint free cloth
   b. Replace the Belt unit when cleaning does not help.
   c. Replace the Belt unit when there is damage on the belt and change the position of the SEAL TAKEOFF (302H715350) on the Black Developer unit. The SEAL TAKEOFF (302H715350) is bundled with the new Belt unit. Refer to Technical Bulletin #5, Measure to Prevent the Transfer Belt from Tearing.

Void Line

1. **Developing Unit Void lines**
   Line on the surface of the DLP sleeve roller (dust/foreign substance)

   Print a sample test chart in U89, Color Belt

   a. Update Firmware to latest Version on KMAconnect
   b. Run Developer refresh.
   c. Replace the color DLP Unit which is causing the problem when developer refresh does not help.

2. **LSU Void lines**
   Dirty slit glass or internal LSU defect
   Each color has to be checked. (Sample 1)

   a. Execute Cleaning Laser Scanner from System Menu/ Adj/Maintenance/Laser Scanner Cleaning

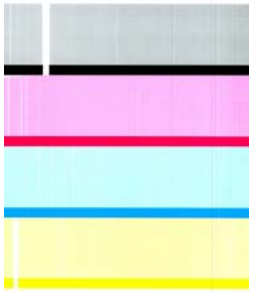
3. **Transfer belt Void lines**
   Void Lines on surface of Transfer belt similar to Sample 2.

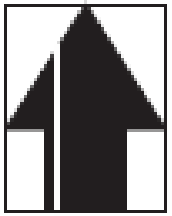
   a. Replace the Transfer belt

4. **CIS Void lines (Document Feeder)**
   Dust/foreign substance on the surface of CIS.

   a. Checked with all colors. (Sample 3)
   b. Clean the dirty **CIS** area with a clean dry lint free cloth.

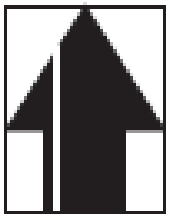
Sample 1





Sample 2

Sample 3



Background

1. Background appears on the image.

a. Update Firmware to latest Version on KMAconnect.
b. Run Developer refresh.
c. Run Color calibration.
d. Replace the DLP unit that corresponds to the color of the background when developer refresh does not help.
e. Check the original coverage ratio on the status page.
f. If the original coverage ratio is between 5% to 10%, change the setting of U325 to Mode4.
g. If the original coverage ratio is between 10% or more, change the setting of U325 to Mode5.
h. If background still occurs, set U147 to Mode1 or Mode2.

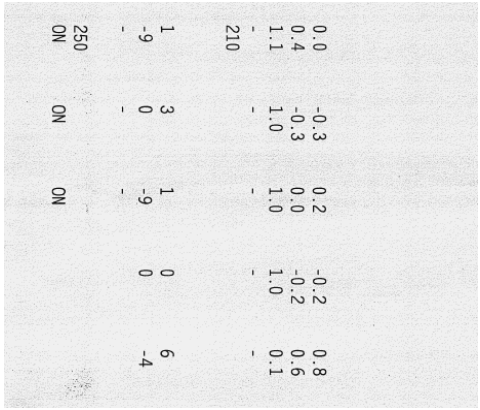
Toner applying mode to U147

U147	
MODE0 (Factory setting)	New mode to review the toner disposal amount in MODE1 (This is added as a measure to prevent toner deterioration due to reduced developing drive time)
MODE1	When background and/or image density deterioration occurs with frequent low coverage printing, etc.
MODE2	When background and/or image density deterioration are not improved with MODE1.

(*) Factory setting is “MODE 0”.

Note
If frequently running low coverage printing or intermittent printing is frequently repeated (Ex. Continuous FaceUp printing from the 3,000-sheet finisher or continuous booklet printing, etc.), background or low image density may occur. Set to MODE1 in U147. If there is no improvement, please set MODE2.

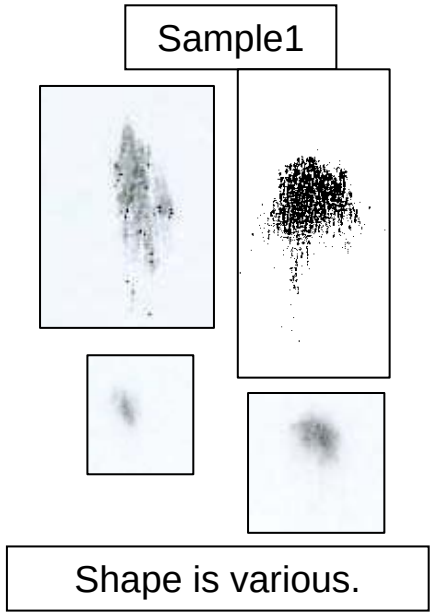
Sample1

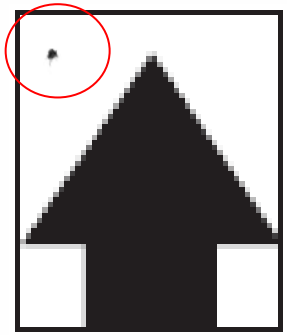


Smudges

1. Smudges appear on the image.

a. Update Firmware to latest Version on KMAconnect.
b. Run Developer refresh.
c. Run Color calibration.
d. Replace the DLP unit that corresponds to the color of the smudges when Developer refresh does not help.
e. Check the original coverage ratio on the status page.
f. If the original coverage ratio is between 5% to 10%, change the setting of U325 to Mode 4.
g. If the original coverage ratio is between 10% or more, change the setting of U325 to Mode 5.





Light Image

1. **Light image, Toner is over charged (Sample 1)**
   Low toner usage environment

Print a sample test chart in U89, Color Belt

a. Update Firmware to latest Version on KMAconnect
b. Execute Developer refresh
c. Replace the DLP unit corresponding to the color problem when the developer refresh does not help.
d. If it occurs on a color DLP, set U486 from Mode2 (Default) to Mode1.

2. **Light image, open ground (Sample 1)**
   Transfer belt ground contact problem

a. Check the ground contacts for the Driving roller on the Transfer belt.

3. **Light image, poor output transfer voltage (Sample 1)**
   Primary transfer voltage problem

a. Check the ground contacts between the Primary high voltage unit and Primary Transfer roller on the Transfer belt. (Fig 1)

b. Remove the Transfer belt Unit in accordance with the Service Manual.
   Note: If you do not remove the "Left Eject Assy" first, you can destroy the contacts on the HV Unit for the Primary Transfer Belt roller on the Transfer Belt. Primarily the Black which is at the front and is circled in the (Fig 1)

4. **Light image, developing bias (Sample 2)**
   Developing bias problem

a. Run U464, AC Calibration
b. After completing AC Calibration, if a error 11~14 appears, check the following areas.
c. Check the Contact area between the DLP Unit and the Main HV PWB.
d. Check the Wire harness and connector between the ENGINE PWB/MAIN HV PWB
e. Replace the Main HV PWB if the problem still exists.

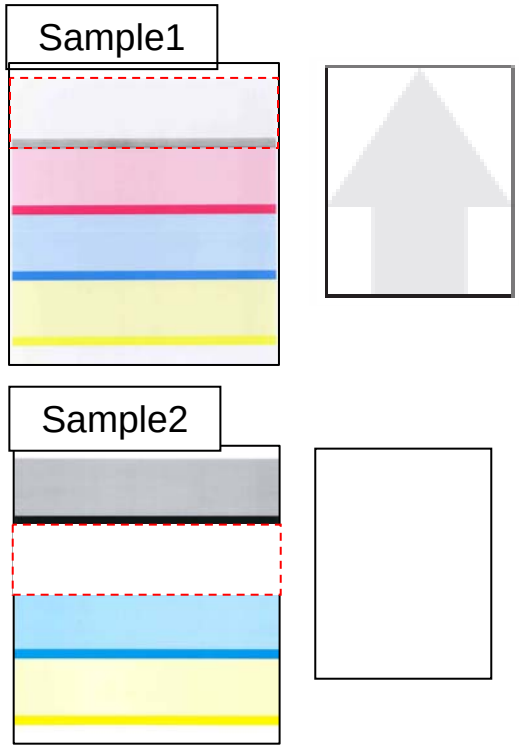
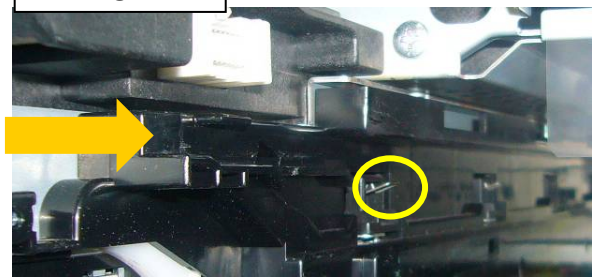


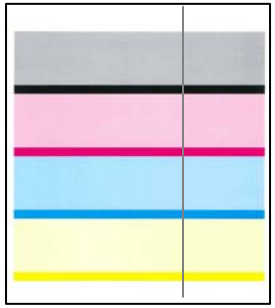
Fig 1

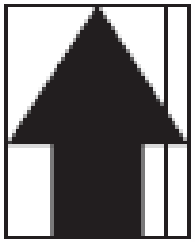


Streaks

1. **Drum streaks, Sample 1**
   Streaks on the surface of the Drum, sub scan direction.

Sample1





Print a sample test chart in U89, Color Belt

a. Verify which color has the problem.
b. Replace the Drum unit corresponding to the color of the streaks.

2. **Transfer belt streaks**
   Streaks on the surface of the Transfer belt, sub scan direction

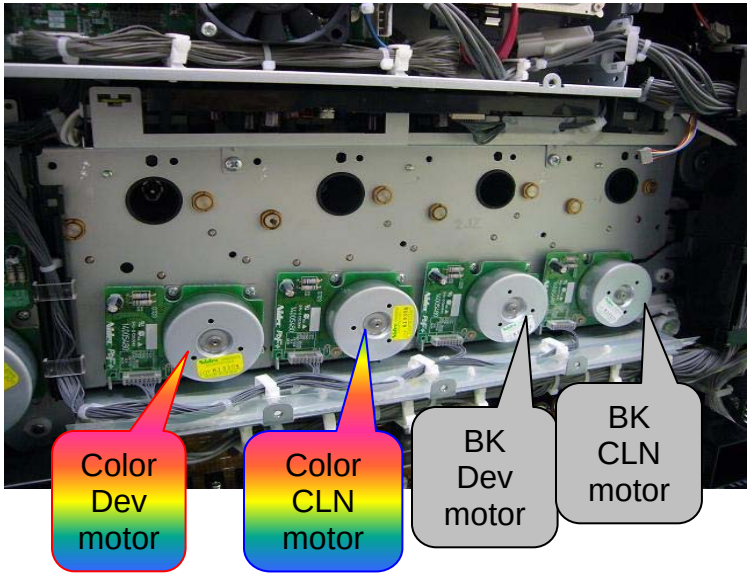
a. Replace the Transfer belt unit

3. **Document Processor scan streaks**
   Dirt on the slit glass

a. Clean the **Slit glass** area with a clean dry lint free cloth

C-Call (CLN Motor/DLP Motor Reference)

Item	Object part	Relating C-Call
PARTS MOTOR DLP (302H79309) Label: Yellow	Color CLN Motor	C2352
	Color Dev Motor	C2102 C7102 C7103 C7104
PARTS MOTOR CLN (302H79310*)	BK CLN motor	C2351
	BK Dev motor	C2101 C7101
	Container Agitator Motor	C7010
PARTS DC MOTOR ASSY (302H79444)	Toner supply Motor	C7000



C-Call (C2101/C2102)

1. C2101/C2102 (Developing Motor Trouble)（C/M/Y/K)

Remove the Rear cover and check whether the Motor in question rotates during operation. (Refer to below Fig.)

If the motor is rotating or tries to rotate, check the following areas:

a. Remove the Developing Unit and manually rotate the Dev Unit gear by hand.
b. If the Gear is hard to turn, shake the unit back and forth and check if the gear is easier to turn. Repeat this a few times.
c. If the gear turns, the unit is OK.
d. If the gear is does not turn or is difficult to turn, replace the Developing Unit.
Note: If the new Developing Unit is not shaken back and forth to loosen developer, the C code can occur again.

If the Developing Unit is OK, check the following areas:

a. Turn the Motor Drive Unit Gear in question after removing the Developing unit for each color.
b. If the Motor Gear is hard to turn, replace the Parts S Main Drive Unit.

If the Motor does not rotate at all.

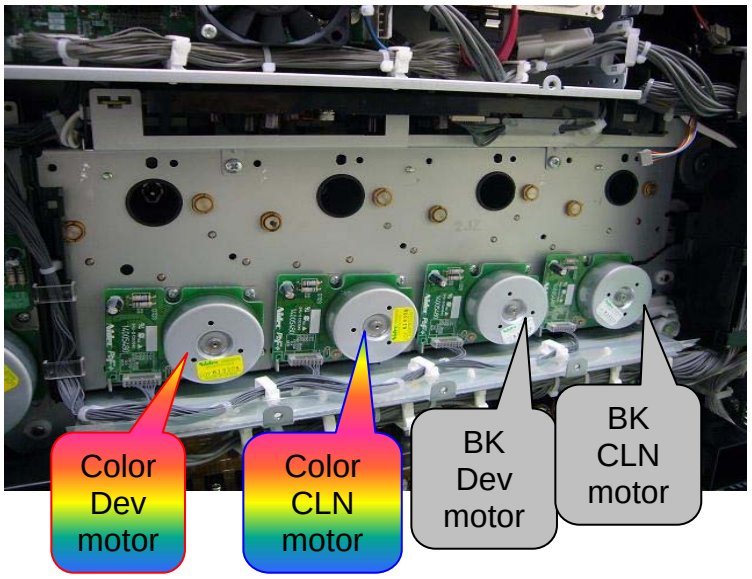
a. Check the Motor connection, connector/wire.
b. Check if the Fuse is bad. See TB#6 for fuse check procedure.
c. Locate the loose connector or pinched wire.
d. Insert the connector or replace the harness.

Check the Engine PCB wiring connection.

a. Locate the loose connector or pinched wire.
b. Insert the connector or replace the harness.
c. Replace the Dev motor if no pinched wires are found.

(*If the following occurs (C710X, image lighter, toner empty lights up, Fuse is OK).
d. Replace the Engine PCB.

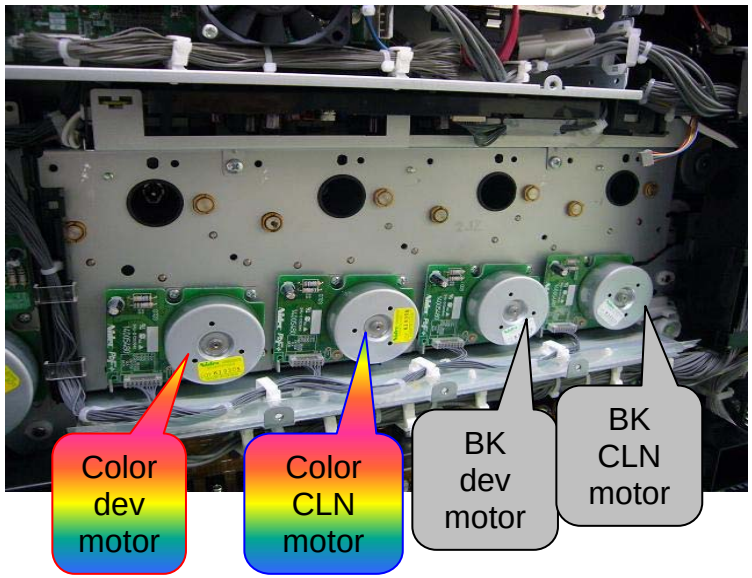
* If the Fuse is bad, a Dev Motor trouble C-call may not be detected (No operation of detection circuit.)
* If the connector is not connected, a C-Call for Dev Motor trouble is detected.



C-Call (C2351/C2352)

1. C2351/C2352, Cleaning Motor Trouble （CMYK)

Remove the Rear cover and check whether the CLN Motor in question rotates. (Refer to below fig.)



<u>If the CLN Motor is rotating or tries to rotate:</u>

a. Remove the Drum Unit and Rotate the Cleaning Roller Drive Gear.
b. If the Gear is hard to turn, replace the Drum Unit.

a. Turn the Drive Unit Gear for each the developing unit
b. If the Drive Unit Gear is hard to turn, replace the Parts S Main Drive Unit.

<u>The Motor does not rotate at all.</u>

a. Check the Motor connection, connector/wire
b. Check if the Fuse is bad. See TB#6 for fuse check procedure.
c. Locate the loose connector or pinched wire
d. Insert the connector or replace the harness

<u>Check the Engine PCB wiring connection</u>

a. Locate the loose connector or pinched wire
b. Insert the connector or replace the harness
c. Replace the Friction motor if no pinched wires are found

(*If the following occurs (C710X, image lighter, toner empty lights up, Fuse is OK)

d. Replace the Engine PCB

Drum Unit

<u>* If the Fuse is bad, a Dev motor trouble C-call may not be detected (No operation of detection circuit.)</u>
<u>* If the connector is not connected, a C-Call for Dev Motor trouble is detected.</u>

C-Call (C7000)

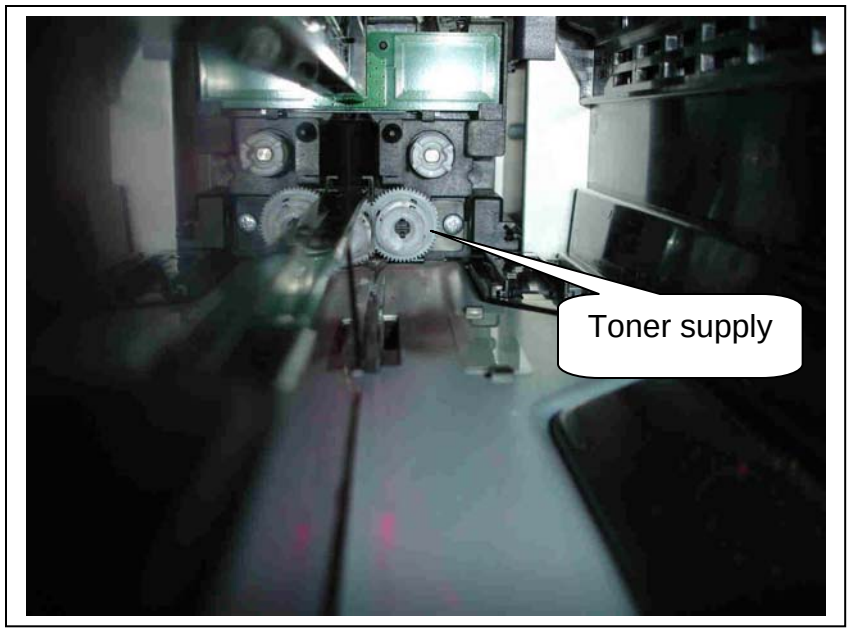
1. **C7000 (Toner Motor Trouble)**

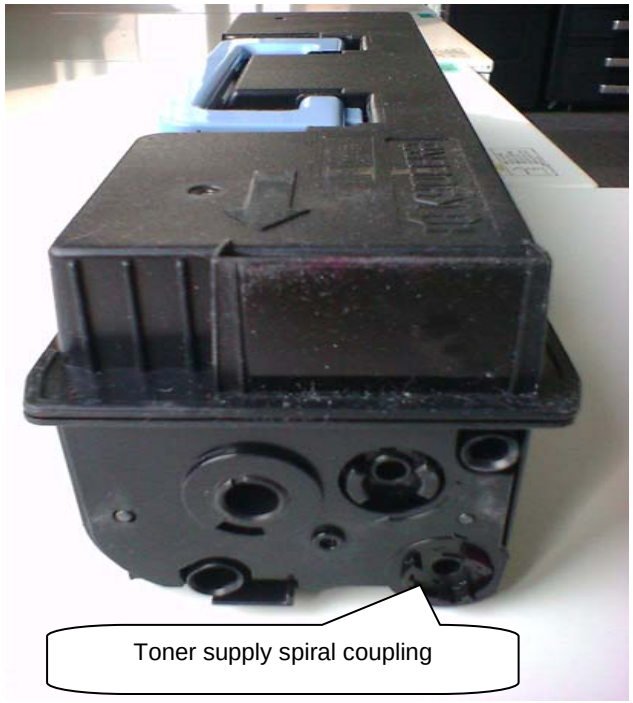
If you are not sure which Toner Motor (total 4 for each color Toner container) has trouble, remove the Toner container and turn the supply spiral coupling in each container to see if it moves freely. (Refer to fig on the right.)

a. If it seems bound, replace the Toner container.

If it moves freely without problem, open the front cover and interlock the safety switch. Perform U135 toner motor operation to see if the gears rotate. (Refer to fig on the right.)

a. Check the motor connection, connector/wire
b. Locate the loose connector or pinched wire
c. Insert the connector or replace the harness
d. Problem with the Motor, Replace the Toner motor
e. Problem on the Engine PCB, Replace the Engine PCB
f. Problem with the Drive unit, Replace the Drive unit





C-Call (C7100)

1. C7100 (Toner Container Motor Trouble)

Remove the Toner container and turn the supply agitator coupling in each container to see if it moves freely. (Refer to fig)

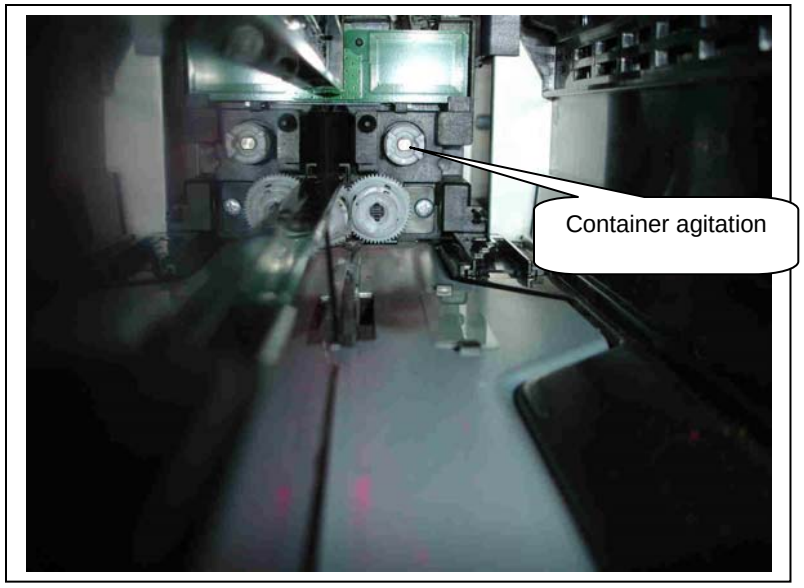
a. If it seems to be bound, replace the Toner container.

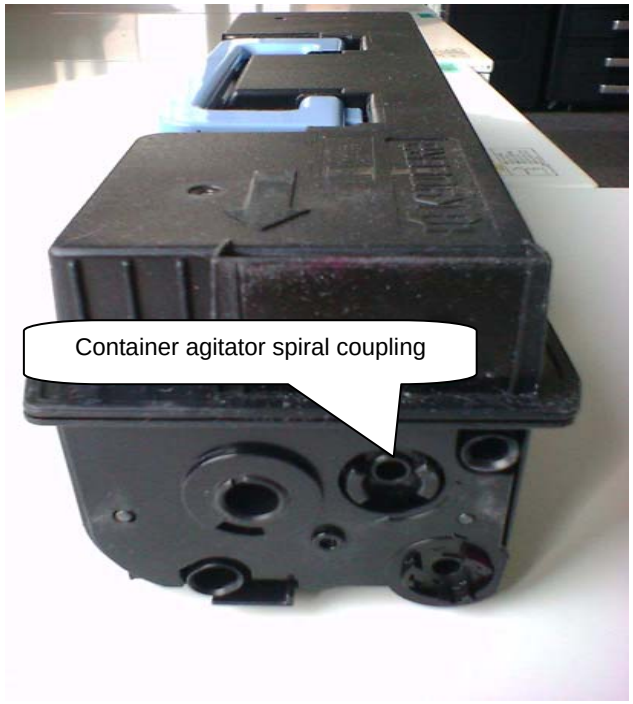
If it moves freely without problem, open the front cover and interlock the safety switch. Perform U135 toner motor operation to see if the gears rotate, Container Motor (CW). Check the rotation of container agitator motor coupling at main body. (Refer to fig.)

a. If one is rotating and other is not rotating, replace the Drive unit on machine rear side.

<u>No rotation at all.</u>

a. Check the motor connection, connector/wire
b. Locate the loose connector or pinched wire
c. Insert the connector or replace the harness
d. Problem with the Motor, Replace the Toner motor
e. Problem on the Engine PCB, Replace the Engine PCB
f. Problem with the Drive unit, Replace the Drive unit





C-Call (C7101/C7102/C7103/C7104)

1. C7101/7102/7103/7104 (Toner Control Sensor Trouble (CMYK)

Remove the Rear cover and check whether the Motor in question rotates during operation. (Refer to below Fig.)

If the motor is rotating or tries to rotate, check the following areas:

a. Remove the Developing Unit and manually rotate the Dev Unit gear by hand.
b. If the Gear is hard to turn, shake the unit back and forth and check if the gear is easier to turn. Repeat this a few times.
c. If the gear turns, the unit is OK.
d. If the gear is does not turn or is difficult to turn, replace the Developing Unit.
Note: If the new Developing Unit is not shaken back and forth to loosen developer, the C code can occur again.

Problem with T/C sensor, Replace the Developing unit:

a. Remove the front cover and check the Front PCB/ Front sub PCB connection connector/wire
b. Locate the loose connector or pinched wire
c. Problem with the Front PCB/ Front sub PCB:
d. Replace the Front PCB/ Front sub PCB

Check the Engine PCB connection connector/wire

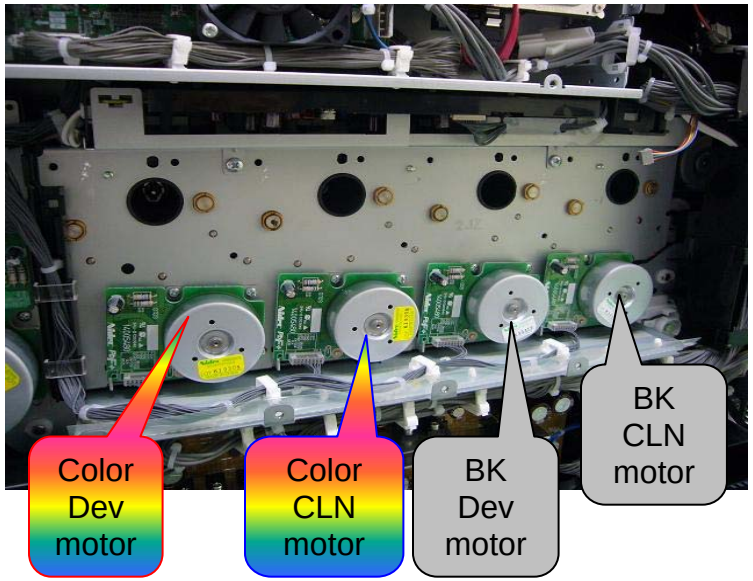
a. Locate the loose connector or pinched wire
b. Problem with the Engine PCB, Replace the Engine PCB

The Motor does not rotate:

a. Check the Motor connection, connector/wire
b. Check if the Fuse is bad. See TB#6 for fuse check procedure.
c. Locate the loose connector or pinched wire
d. Insert the connector or replace the harness

Check the Engine PCB wiring connection:

a. Locate the loose connector or pinched wire
b. Insert the connector or replace the harness
c. Replace the motor
d. Problem with the Engine PCB, Replace the Engine PCB



* If the fuse is bad, the dev motor trouble C-call of may not be detected (No operation of detection circuit.)

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Glossary of Terms

Term	Description
PITCH	The distance between a repeating defect in a copy or print. It is used to help determine the source of the defect. If a dot is repeating every 96mm on a 500ci Series machine, the source is the Drum. We know that because the circumference of the Drum is 96mm. If the defect is every 38mm, we know it is the Main Charge Roller because the circumference of that roller is 38mm. The defect is repeated on the paper each time the drum or roller makes one rotation.
DLP/DEV	Developing
CLN	Cleaning
MC	Main Charger

Models:
250ci/300ci/400ci/500ci/
552ci/300i/420i/520i

Turn the MFP OFF and Disconnect ALL Accessories

Turn the MFP back ON and wait a minimum of 30 minutes to see if an error displays. Check if the Engine and Scanner cycles during warm-up. This ensures that the firmware is OK and not corrupt. **At each Step performed, listen for the Engine and Scanner cycles during warm-up.**

Note:
When Uploading Firmware, always use the MAIN PCB USB Slot and wait the full amount of time for a result on the panel. DO NOT interrupt any Step.

(RUFD)
Remove USB Flash Drive

Display Locked at Welcome Screen

Panel Firmware may be corrupt or incompatible versions

CF000

Reboot the Panel CPU Firmware using the Dip Switch on the bottom of the panel.
PROCEDURE:
Turn the MFP OFF, flip the Dip Switch, & turn the MFP ON. Wait till the Memory Light Stays Lit. Turn MFP OFF, move switch to normal position and Load MMI Panel CPU Firmware. If 100 % complete, successful, Turn the Machine OFF, (RUFD) Remove USB Flash Drive, & turn ON. Wait at least 30 min to see if an error displays. If upload fails or no change in Display, proceed to the next step.

Note:
Firmware upload progress bar will normally display in a few minutes. DO NOT turn the MFP OFF during this process until the firmware shows 100% complete or there is no change or a new display error.

No Error

Load Main Firmware. If 100 % complete, successful, Turn OFF, (RUFD) & turn ON, wait at least 30 min to see if an error displays. If it fails, go to next step.

CF000/F04x or Welcome Screen Displays

Load Main Firmware. If 100 % complete, successful, Turn OFF, (RUFD) & turn ON, wait at least 30 min to see if an error displays.

Upload Fails or Welcome Screen displays

Replace the Main Code DIMM. Go to next step.

If Successful/No Error

Upload successful

Load MMI Panel CPU Firmware again. If 100 % complete, successful, Turn OFF, (RUFD) & turn ON, wait at least 30 min to see if an error displays.

No Error, done

Upload successful, error code displays

F04x

CF000 or Welcome Screen

Enter SM #19. Check that all Firmware Levels are registered on the display or can not access Service mode.

Replace the 2GB Memory DIMM. If Error still occurs, continue to replace Main PCB

Replace the Main PCB

If Engine is missing or can not get to SM, load Engine. If 100% complete successful. Turn OFF, (RUFD) & turn ON, wait 30 min to see if an error displays.

System Error
Ex. F041/F247

Load Scanner Firmware. If 100% complete successful. Turn OFF, (RUFD) & turn ON, wait 30 min to see if an error displays.

Ready to Copy

NO Error

Upload failed

System Error

If Engine upload fails, Check that all connectors are seated correctly and harness is OK. If OK, Replace the Engine PCB

If Scanner upload fails, Replace the Scanner PCB

Enter SM #19 Check that all individual Firmware Levels are registered on the display and ensure each level matches the current Pack Levels. Possible firmware mismatch. Continue to next step if they do not match or can not get into Service Mode.

If MFP comes to Ready after waiting a minimum of 30 min, load the current complete Firmware Upgrade Pack.

No Upload Error, done

Additional Tip
C0840 Error Occurs after replacing Main PCB, perform U906 reset.

02/25/11
Rev-2