# **Troubleshooting: TCRU**

**Model Name:** 

Pro C900S/Pro C900

## **Table of Contents**

1.	BEFORE	YOU BEGIN	3
	1.1 GUIDE	TO COMPONENTS	3
	1.2 ADJUS	TMENT: USING THE TCRU SD CARD	4
2.	TROUBL	ESHOOTING SERVICE CALL PROBLEMS (SC CO	DES)5
	2.1 WHAT	ARE SC CODES?	5
	2.2 SC CO	DE LIST	5
3.	TROUBL	ESHOOTING IMAGE QUALITY PROBLEMS	7
	3.1 IMAGE	QUALITY PROBLEMS	7
	3.1.1	PROBLEM 1: WHITE SPOTS	7
	3.1.2	PROBLEM 2: SHARP SPOTS	9
	3.1.3	PROBLEM 3: VERTICAL STRIPES	11
	3.1.4	PROBLEM 4: DENSITY TOO LOW	13
	3.1.5	PROBLEM 5: DENSITY TOO HIGH	15
	3.1.6	PROBLEM 6: DIRTY BACKGROUND	17
	3.1.7	PROBLEM 7: PATCHY	19
	3.1.8	PROBLEM 8: STREAKS (1)	21
	3.1.9	PROBLEM 9: STREAKS (2)	23
	3.1.10	PROBLEM 10: WHITE LINES OR DRAG MARKS	24
	3.1.11	PROBLEM 11: TONER STAINS	27
	3.1.12	PROBLEM 12: DIFFERENCE IN GLOSSINESS	
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# 1. BEFORE YOU BEGIN

If the machine will not print, does not print as expected, or exhibits any other problem, find the problem in this manual and troubleshoot accordingly.

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Before you replace any unit:

- Always turn the machine off and unplug the power cord from the power source.
- Let the machine sit idle for at least 10 minutes before you carry out any procedures. This time allows time for the fusing unit to cool.

## 1.1 GUIDE TO COMPONENTS

This section introduces the names of the components.

Refer to the following diagrams when replacing units or troubleshooting.



- 1. Development unit (Yellow)
- 2. OPC drum (Yellow)
- 3. Development unit (Magenta)
- 4. OPC drum (Magenta)
- 5. Development unit (Cyan)
- 6. OPC drum (Cyan)
- 7. Development unit (Black)
- 8. OPC drum (Black)
- 9. Charge corona unit
- 10. ITB (Image Transfer Belt)



- 1. ITB (Image Transfer Belt) unit
- 2. PTR (Paper Transfer Roller) unit
- 3. Paper transport belt unit
- 4. ITB cleaning unit

## **1.2 ADJUSTMENT: USING THE TCRU SD CARD**

The TCRU card enables you to change to the machine's SP adjustment item values when troubleshooting. To change these values, display the [Adjustment] menu using the following procedure.

**Important**: Before opening the [Adjustment] menu, turn the machine's main power off. For details about turning the power off, see "Turning On/Off the Power", About This Machine.

- 1. Insert the TCRU SD card into a free SD card slot on the back of the machine.
- 2. Turn the main power on, and then wait for the machine to warm up.
- 3. After the machine has started up, press the Printer function/[fierydriven] key on the control panel for users of Pro C900. For users of Pro C900S, press the [Program] key to display the Main Menu.
- 4. On the Main Manu, press [Adjustment]. The [Adjustment] menu appears.

#### NOTE:

- For users of Pro C900, each time you press the Printer function/[fierydriven] key, the control panel display switches between the [Adjustment] menu and the printer function screen.
- After you finish using the [Adjustment] menu, remove the SD card from the card slot. You do not need to switch the machine off to do this.

## 2. TROUBLESHOOTING SERVICE CALL PROBLEMS (SC CODES)

## 2.1 WHAT ARE SC CODES?

If an error occurs during operation, the machine displays an SC code ("SCnnn", where "nnn" is a three-digit number). The machine stops and cannot be used when an SC code is displayed.

If an SC code appears:

- 1. Write down the SC number.
- Turn off the main power switch.
   NOTE: The main power switch is the switch on the lower left side of the machine under the hinged plastic cover.
- 3. Wait a few moments, then turn the machine on again. In most cases, cycling the machine off and on will restore it to full operation.
- 4. If the SC code reappears, check it against the table (see, 2.2 SC CODE LIST). Check for the SC code in the following table (see 2.2 SC CODE LIST). If the SC code is listed in the table, carry out the recommended procedure.

-OR-

If the SC CODE is not listed in the following table (see 2.2 SC CODE LIST), call for service.

## 2.2 SC CODE LIST

This table contains a list of selected SC codes. If the SC code that is displayed on the control panel is listed in this table, carry out the recommended procedure. If the SC CODE is not listed in this table, call for service.

Code	Error	Procedure
SC300	Charge corona wire high voltage error: K	Replace the black charge corona unit
SC301	Charge corona wire high voltage error: C	Replace the cyan charge corona unit.
SC302	Charge corona wire high voltage error: M	Replace the magenta charge corona unit.
SC303	Charge corona wire high voltage error: Y	Replace the yellow charge corona unit.
SC304	Charge grid high voltage error: K	Replace the black charge corona unit.
SC305	Charge grid high voltage error: C	Replace the cyan charge corona unit.

**Important**: If the error persists after replacing the unit, call for service.

Code	Error	Procedure
SC306	Charge grid high voltage error: M	Replace the magenta charge corona unit.
SC307	Charge grid high voltage error: Y	Replace the yellow charge corona unit.
SC308	Charge cleaning unit: Position error: K	Detach and reattach the black charge corona unit or replace it.
SC309	Charge cleaning unit: Position error: C	Detach and reattach the cyan charge corona unit or replace it.
SC310	Charge cleaning unit: Position error: M	Detach and reattach the magenta charge corona unit or replace it.
SC311	Charge cleaning unit: Position error: Y	Detach and reattach the yellow charge corona unit or replace it.
SC420	Potential sensor error: Vd Adjustment K	Replace the black drum unit.
SC421	Potential sensor error: Vd Adjustment C	Replace the cyan drum unit.
SC422	Potential sensor error: Vd Adjustment M	Replace the magenta drum unit.
SC423	Potential sensor error: Vd Adjustment Y	Replace the yellow drum unit.
SC424	Potential sensor error: VI adjustment K	Replace the black drum unit.
SC425	Potential sensor error: VI adjustment C	Replace the cyan drum unit.
SC426	Potential sensor error: VI adjustment M	Replace the magenta drum unit.
SC427	Potential sensor error: VI adjustment Y	Replace the yellow drum unit.
SC432	Potential sensor error 1: Vr adjustment K	Replace the black drum unit.
SC433	Potential sensor error 2: Vr adjustment K	Replace the cyan drum unit.
SC434	Potential sensor error 3: Vr adjustment M	Replace the magenta drum unit.
SC435	Potential sensor error 4: Vr adjustment Y	Replace the yellow drum unit.
SC450	PTR HVPS output error	Detach and reattach the paper transfer roller unit or replace it.
SC460	Separation HV output error	Detach and reattach the paper transfer roller unit or replace it.

## 3. TROUBLESHOOTING IMAGE QUALITY PROBLEMS

This section describes some common image quality problems and tells you what to do about them.

#### **Paper Feed Direction**

Before you begin this section, note that the dark arrow in each illustration indicates the *direction of paper feed*.

## 3.1 IMAGE QUALITY PROBLEMS

#### 3.1.1 PROBLEM 1: WHITE SPOTS



White dots or small lines appear, spaced at 314 mm (12 in.) intervals in the direction of paper feed.

CAUSE: The drum is stained.



- **Step 1** Print three full-page A3 or DLT sheets in each color (cyan, yellow, magenta, and black).
- Step 2 If you can see these white spots, <u>replace the drum unit</u>.
- **Step 3** If unit replacement does not solve the problem, call for service.



### 3.1.2 PROBLEM 2: SHARP SPOTS



These spots mark the page with very sharp dots at 314 mm (12 in.) intervals in the direction of paper feed.

**CAUSE**: The drum unit has worn out or the drum is scratched.



- **Step 1** Print three full-page A3 or DLT sheets in each color (cyan, yellow, magenta, and black).
- Step 2 If these sharp spots appear on the sheets, <u>replace the drum unit</u>.
- **Step 3** If replacing the drum unit does not solve the problem, call for service.



## 3.1.3 PROBLEM 3: VERTICAL STRIPES



Vertical stripes (less than 1 mm wide) appear, parallel to the direction of paper feed.

#### CAUSE:

1. The drum unit has worn out or the drum is scratched.

2. The blade of the drum cleaning unit has worn out and cannot clean properly.

**NOTE**: See the following page for an actual sample. The sample image is not at 1:1 scale.

1. If the drum is scratched:

#### Step 1 Replace the drum unit.

- **Step 2** If replacing the drum unit does not solve the problem, call for service.
- 2. If the drum is not scratched but is stained with toner:

#### Step 1 Replace the drum cleaning unit.

**Step 2** If replacing the drum cleaning unit does not solve the problem, call for service.

Concern for the environment tends to have a dual focus-conservation, on the one hand, and pollution control, on the other. In light of the delicate interrelationships binding all of nature together, however, the two should perhaps be viewed as inseparable. The battle to avoid the greenhouse effect is a case in point. Pollution control is essential. Scientists estimate that CO<sub>2</sub> emissions will have to be reduced by up to 80 percent in the coming years One major stumbling block to progress is economic. Many of the technologies necessary to cut pollution are already available. The U.S. has used technology to keep its CO<sub>2</sub> emissions at the same if we are to succeed. level for several years, despite considerable growth in production. Japan has imposed even stricter standards, as a result of which the air in heavily industrialized cities is far cleaner than during the It is significant that these improvements came after. Japan had passed the development stage, developing years of the 1960s and early 1970s. since the developing countries-the ones least able to afford the new, cleaner technologies-have the most pressing need for them. Nevertheless, there are encouraging signs. Mexico City, for example, until recently enveloped constantly in smog, now enjoys an occasional day with clear skies. The other principal aspect of battling the greenhouse effect concerns conservation. One of the main focuses here is on saving the tropical rain forests with their tremendous ability to absorb CO<sub>2</sub> from the atmosphere and, consequently, to limit the greenhouse effect. Efforts by corporations to save trees by using recycled paper whenever possible can make a real contribution to the battle against global Since pollution-reducing technologies are often more efficient, they can also conserve another important resource, energy. If consumption continues at present levels, the world's oil reserves will most warming. likely be depleted by about the middle of the coming century. It is important that industries everywhere be supplied with the most efficient possible technologies to help conservation. 6%SHEET 2001-09 1.3

## 3.1.4 PROBLEM 4: DENSITY TOO LOW



Sheets are too light, especially in areas of solid fill.

**CAUSE**: The density setting is too low.

- Step 1 In [Adjustment] menu, carry out 3-820-002 (Execute Density Adj).
- **Step 2** If adjusting the density does not solve the problem, call for service.



## 3.1.5 PROBLEM 5: DENSITY TOO HIGH



Sheets are too dark, especially in areas of solid fill.

**CAUSE**: The density setting is too high, or the developer has deteriorated.

**NOTE**: See the following page for an actual sample. The sample image is not at 1:1 scale.

- Step 1 In [Adjustment] menu, carry out 3-820-002 (Execute Density Adj).
- **Step 2** Print a few sheets. Does the image density appear darker?

Yes Finished!

- No <u>Replace the developer.</u>
- **Step 3** If changing the developer does not solve the problem, call for service.



## 3.1.6 PROBLEM 6: DIRTY BACKGROUND



Random "powdered" dots appear, creating a dirty background.

**CAUSE**: The developer has deteriorated.

**NOTE**: See the following page for an actual sample. The sample image is not at 1:1 scale.

#### Step 1 <u>Replace the developer.</u>

**Step 2** If changing the developer does not solve the problem, call for service.



### 3.1.7 PROBLEM 7: PATCHY



Printed sheets are patchy.

**CAUSE**: The developer has deteriorated.

- **Step 1** Print three full-page A3 or DLT sheets in each color (cyan, yellow, magenta, and black).
- Step 2 If the sheets are patchy, <u>replace the developer</u>.
- **Step 3** If changing the developer does not solve the problem, call for service.



## 3.1.8 PROBLEM 8: STREAKS (1)



Wide streaks appear in the direction of paper feed.

**CAUSE**: The electrical discharge from the charge corona unit is not constant.

**NOTE**: See the following page for an actual sample. The sample image is not at 1:1 scale.

- Step 1 In [Adjustment] menu, carry out SP 3-820-002 (Execute Density Adj).
   NOTE: If you carry out "Execute Density Adj", the machine cleans the charge corona unit.
- Step 2 Print a few sheets. Is the problem solved?

Yes Finished!

No <u>Replace the charge corona unit.</u>

**Step 3** If replacing the charge corona unit does not solve the problem, call for service.



## 3.1.9 PROBLEM 9: STREAKS (2)



When printing on one side only, toner streaks appear only on the printed side or only on the back.

Toner streaks appear even when printing only in cyan, magenta, yellow, or black.

#### CAUSE:

- 1. The image transfer belt cleaning unit is faulty.
- 2. The paper transfer roller unit is faulty.
- 1. If toner streaks appear only on the printed side of sheets:

#### Step 1 Replace the image transfer belt cleaning unit.

- **Step 2** If replacing the image transfer belt cleaning unit does not solve the problem, call for service.
- 2. If toner streaks appear only on the back of sheets:

#### Step 1 Replace the paper transfer roller unit.

**Step 2** If replacing the paper transfer roller unit does not solve the problem, call for service.

### 3.1.10 PROBLEM 10: WHITE LINES OR DRAG MARKS



White strips (about 314 mm, 12.4 inches wide) or drag marks appear on prints, or if fine white lines appear on the front of prints.

**CAUSE**: There is dirt or oil on the surface of the drum unit.

- Step 1 In [Adjustment] menu, apply 2-810-001 (Clear blurred img).
- Step 2 Enable 3-309-010 (Oil removal mode).
- Step 3 Apply 2-810-001 (Clear blurred img) again.

White lines



Drag marks



### 3.1.11 PROBLEM 11: TONER STAINS



Toner stains appear on the prints. **CAUSE**: There is dirt or oil on the surface of the drum unit.

Step 1 In [Adjustment] menu, enable 3-309-010 (Oil removal mode).

## 3.1.12 PROBLEM 12: DIFFERENCE IN GLOSSINESS



There is a difference in glossiness.

**CAUSE**: This is caused by a difference in the amount of toner on the surface of the fusing belt.

High glossiness areas

**Step 1** Load paper into the paper tray.

You can use A3, SRA A3, DLT, or 12"x18" for test printing.

- **Step 2** For users of Pro C900, press the Printer function/[fierydriven] key on the control panel. For Pro C900S, press the [Program] key.
- Step 3 Press [Print].
- **Step 4** Select the tray containing the paper you have loaded in Step 1.
- **Step 5** Select the black color.

**NOTE:** You may also print in the other colors. Once you have pressed the key, you cannot stop the printing.

**Step 6** Printing starts automatically.

20 sheets will be printed in the selected color on both sides of the paper. Then, 3 sheets will be printed in blue on one side of the paper. The blue color is for checking the image quality.

When the machine has finished printing, "Completed" is displayed.

## 4. TROUBLESHOOTING PAPER DELIVERY PROBLEMS

**Important**: For details about the items displayed in [Adjustment] menu, see the Adjustment Item Menu Guide.

Problem	Cause	Solution
Sheets cannot be delivered.	The ends of the sheets are slightly curled.	Remove the sheets from the paper tray, flatten and fan them thoroughly, and then put them back into the paper tray.
Sheets are delivered skewed.	The tray's paper setting does not match the size of the paper loaded in the tray.	Change the tray's paper setting so it matches the size of the loaded paper.
	Sheets of an undetectable type, such as color or preprinted sheets, are being used.	In [Adjustment] menu, select [Detect Side Regist] and [Detect Skew] to disable side-to-side registration and skew detection, and then adjust the image position in [Side-to-Side Registration]. Do this for each affected tray.
	The paper size cannot be detected because sheets no wider than 147 mm (approx. 5.787") are being used.	To print on narrow sheets (139.7-147 mm [approx. 5.5-5.787 in.]), in [Adjustment] menu, select [Detect Side Regist] and [Detect Skew] to disable side-to-side registration and skew detection, and then adjust the image position in [Side-to-Side Registration]. Do this for each affected tray.
	The ends of the sheets are slightly curled.	Remove the sheets from the paper tray, flatten and fan them thoroughly, and then put them back into the paper tray.
	The tray's paper guides are not adjusted correctly.	Adjust the tray's side paper guides and end paper guide according to the paper size.
	Paper or a paper fragment is jammed inside the machine.	Remove the jammed paper.
The side-to-side registration is wrong.	Sheets of an undetectable type, such as color or preprinted sheets, are being used.	In [Adjustment] menu, select [Detect Side Regist] and [Detect Skew] to disable side-to-side registration and skew detection, and then adjust the image position in [Side-to-Side Registration]. Do this for each affected tray.
	The paper size cannot be detected because sheets no wider than 147 mm (approx. 5.787") are being used.	When printing on narrow sheets (139.7- 147 mm [approx. 5.5-5.787 in.]), in [Adjustment] menu, select [Detect Side Regist] and [Detect Skew] to disable side-to-side registration and skew detection, and then adjust the image position in [Side-to-Side Registration]. Do this for each affected tray.

Problem	Cause	Solution
Multiple sheets feed in at once.	The ends of the sheets are slightly curled.	Remove the sheets from the paper tray, flatten and fan them thoroughly, and then put them back into the paper tray.
	Sheets of differing paper types or thickness are loaded in the same paper tray.	Removed mixed sheets from the paper tray, and then reload the paper tray with sheets of one type and thickness only.
	Sheets of an undetectable type, such as color or preprinted sheets, are being used.	In [Adjustment] menu, select [Detect Multi Feed] to disable multi-feed detection.
Double feeding occurs when using	Paper fed from the LCT sticks together.	Change the [Blow Fan Duty Adj.] settings.
		• Specify the same value for both the front and rear fans.
		• Increase the value in increments of 10 starting from 70. If double feeding continues after you have increased the value to 100, contact your service engineer.
		<ul> <li>We recommend that you set the value of both fans to 70 if you are printing on Thin Paper (60-75g/m<sup>2</sup>, 16-20 lb), B5 or 5" x 8" and smaller.</li> </ul>
		Depending on the type and thickness of the paper, misfeeds can occur if you change the [Blow Fan Duty Adj.] settings.
		For details about the [Blow Fan Duty Adj.] (SP1-920) settings, see "Other Adjustment Settings", Adjustment Item Menu Guide.
Sheets are delivered with bent corners.	Sheets are not loaded correctly in the tray.	Set paper in the tray correctly.
	Excessively curled sheets are being used.	In [Adjustment] menu, specify [Paper Curl Adjustment] to flatten out the sheets.
Sheets are delivered curled.	Excessively curled sheets are being used.	In [Adjustment] menu, specify [Paper Curl Adjustment] to flatten out the sheets.