WorkCentre Pro 420

Service Manual
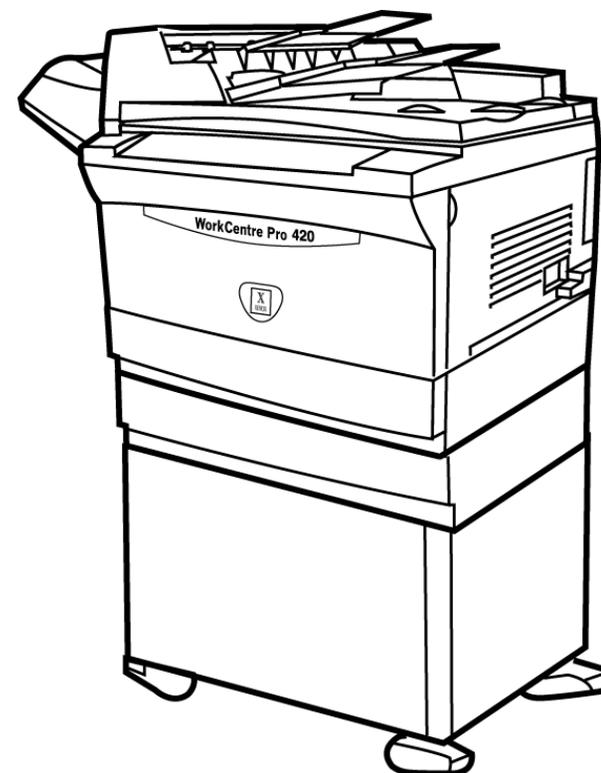
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Fuji Xerox of Shanghai Limited

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Introduction

About This Documentation

Documentation Design and Purpose

This Service Documentation contains diagnostic, repair, and maintenance information, which has been designed to assist the Service Representative in the isolation and repair of faults as well as maintenance of the Printer/Copier.

This documentation assumes that the user is familiar with the electrical and mechanical standards that are commonly used throughout industry, as well as certain Xerox design and documentation conventions. This documentation also assumes that the user has successfully completed any required training and is familiar with the use of any special tools that are required to service this product.

Applicability

The diagnostic, repair, and adjustment procedures found in this documentation apply equally to all 50 Hz and 60 Hz machine versions. Some procedures, however, may be identified as being applicable to a specific version or machine configuration.

Limitations

This service documentation does not support specific electrical, mechanical, or operational considerations of any accessory device or machine modification not authorized by Xerox Corporation for this product.

Service Documentation Revisions

This service documentation may be subject to periodic revision in order to reflect any changes in electrical or mechanical hardware, as well as any possible additions or corrections necessary to ensure the technical accuracy of the documentation.

Service Information (Yellow Pages - hardcopy only)

When appropriate, service information in the form of yellow pages (for those with hard copy only) will be distributed and should be incorporated into their service documentation. Service information may include bulletin information, Tag and Kit information, page revisions, or current top problems relative to the repair and maintenance of the machine.

Field Service Bulletins

Field service information specifically applicable to the machine may occasionally be issued in the form of electronic or critical bulletins. Because bulletins contain important information, they should always be retained within this service documentation for quick reference.

Organization

This documentation is divided into six sections. In addition to the Introduction, the following sections are contained within this documentation.

Section 1 - Service Call Procedures

Section 2 - Status Indicator RAPs

Section 3 - Image Quality RAPs

Section 4 - Repair/Adjustment Procedures

Section 5 - Parts List

Section 6 - General Procedures/Information

Section 7 - BSD

A detailed description of the information contained within each section of the service documentation will be found in the following subsection.

How to Use This Documentation

Introduction

This section provides the Service Representative with information pertaining to the organization and use of this service documentation, and includes the following supportive reference data:

Reference Symbology

Signal Nomenclature

DC Voltage Range Specifications

AC Voltage Range and Current Specifications

Section 1: Service Call Procedures

This section is used by the Service Representative as a structured process for determining the type and sequence of actions that are performed during a service call. The Service Call Procedures section is designed to assist in the effective recognition of machine symptoms and problems, as well as to provide instructions for the maintenance and corrective actions that are required to return the machine to the full operating condition.

Section 1 of this service documentation is the entry level for all service calls. The Service Representative should begin each service call with the Initial Action procedure found in Section 1.

The Service Call Procedures section is composed of five integral elements: Initial Action, System Checks, Subsystem Maintenance, Preventive Maintenance, and Final Action. The maintenance and diagnostic activities in this section may direct the Service representative to perform additional service activities found elsewhere in the documentation, such as RAPs, removal and replacement procedures, and adjustment procedures.

The **Initial Action** procedure identifies certain required actions that are necessary to obtain a basic appraisal of machine operation at the start of the service call.

The **System Checks** subsection is used to test the machine in order to confirm and define the problem areas. This subsection is used to assist the Service Representative in diagnosing the not readily apparent machine problems, or when there are conflicting or ambiguous symptoms present. It is important that this procedure be used in order to ensure that the correct symptom is being diagnosed.

The **Subsystem Maintenance** subsection contains a specific activity procedure that must be performed on the service call.

The **Preventative Maintenance** procedure contains a list of the cleaning and lubrication activities that are designed to extend and enhance the reliability and performance of the machine.

The **Final Action** subsection is used to identify the actions necessary to clear the call with the Customer and to complete any administrative tasks that are associated with completing the service activity.

Section 2: Status Indicator RAPs

Section 2 of this documentation contains the Repair Analysis Procedures (RAPs) necessary to repair all faults other than the image quality faults. The Service Representative will be referred to this section from some other section of this documentation during the service call. When a machine defect or fault has been resolved by using a RAP, the Service Representative should immediately return to the point in the service call from which section 2 was entered.

There are two types of RAPs found in section 2. The first type is a RAP that is associated with the display of a status code or fault code in the RAP title. The second type is the Other Fault RAP. Other Fault RAPs are diagnostic procedures that are designed to address symptoms or problems that are not identified by, or associated with, a displayed status or fault code.

Section 3: Image Quality RAPs

Contains the Image Quality Repair Analysis Procedures (IQ RAPs) that are used to diagnose image quality defect problems. The RAPs that are associated with image quality defect symptoms will contain the prefix "IQ" to differentiate them from other types of machine failure symptoms.

Section 4: Repairs / Adjustment Procedures

Contains all repair and adjustment procedures for the machine. Repairs (REPs) and adjustments (ADJ's) are identified by the use of a standard chain prefix number.

Section 5: Parts List

Contains a list of spare parts for the machine. All parts list page reference numbers begin with the letters "PL", followed by a prefix number, a decimal point, and a sequential number used within the subsystem.

Section 6: General Procedures / Information

Contains procedures and information of a general nature that apply to the machine. This section is divided into two basic parts.: General Procedures and General Information.

The General Procedures subsection contains frequently used procedures that relate to the diagnosis, the setup, or the operation of the machine.

The General Information subsection contains specific information that is pertinent to the operation of the machine, but will not be found in any other part of the service documentation. This information may include product codes, environmental operating data, installation space requirements, and paper and electrical specifications. This subsection may also contain information regarding supplemental tools and supplies, general service notes, a glossary of commonly used terms, and a Change Tag Index of authorized machine modifications and retrofits.

Section 7: Wiring Data (Optional)

Contains support information to assjst in the electrical diagnosis of machine problems.

Other Information

The Use of Caution, Warning, and Note statements

Information relative to the completion of a task in a safe or thorough manner will be supplied in the form of a Caution, a Warning, or a Note statement. These statements are found throughout the service documentation.

Cautions, Warnings, and Note statements appear before the steps to which they apply. These statements should be read before continuing to the next step in a procedure.

The definition of a Caution, Warning, or Note is as follows:

Caution - A Caution statement indicates an operating or maintenance procedure, practice, or condition that, if not strictly observed, could result in damage to, or destruction of, equipment.

Warning - A Warning statement indicates an operating or maintenance procedure, practice, or condition that, if not strictly observed, could result in personal injury or loss of life.

Note - A Note statement indicates an operating or maintenance problem, practice, or condition that is necessary to accomplish a task efficiently.

The Use of Acronyms, Abbreviations, Specific or Unique Terms, and Conventions

A list of acronyms and abbreviations used in this service documentation will be found in the Reference Symbology subsection, contained elsewhere in this section.

Specific Terms

Test Pattern 82P524 (inch) and 82P523 (metric) will be referred to in this documentation as the Standard Test Pattern.

The terms "dry ink" and "toner" are interchangeable.

The following bolding convention is used in this service documentation:

Bolded numbers or words following the words "Press the" represent the actual keypad button on the Control Console.

Reference Symbology

Introduction to Reference Symbology

This section describes and defines the various acronyms, abbreviations, reference symbols, Signal Nomenclature, and AC and DC power specifications. The following is a description of some of the terms found in this section:

Acronyms

Acronyms are used throughout this service documentation to denote common terminology. Although some acronyms may be unique to this product, most acronyms used in this document are known throughout the service industry. Table 1 lists the acronyms that are found in this service documentation that enable use of the documentation. A complete list of all acronyms is in Section 6

Reference Symbols

Reference symbols consist of various icons used in this documentation to denote supportive data that can be found in other sections of this documentation. The purpose of these symbols is to inform the Service Representative of procedures, adjustments, or other information that is important for successful diagnosis and repair.

Schematic Symbols

These symbols represent various electrical and mechanical components or devices that are commonly found in Xerox equipment. These symbols are included as an aid to understanding the representations used in the Circuit Diagrams (CD's).

AC and DC Voltage References

The expected AC and DC voltage levels found in this machine are defined in this section. These specifications represent the expected range for AC (machine input power source) and DC (machine internal power supplies) voltages that are encountered during normal operation.

Abbreviations

Table 2 lists the electrical wire colors that are identified in this service documentation and reflects the use of standardized abbreviations.

Table 1 General Acronyms

Acronym	Definition
AC	Alternating Current
ACH	Alternating Current High
ACN	Alternating Current Neutral
AMP	Ampere
BSD	Block Schematic Diagram
BTU	British Thermal Unit
CD	Circuit Diagram
IQ	Image Quality
DC	Direct Current
ESD	Electrostatic Discharge
HFSI	High Frequency Service Item
LED	Light Emitting Diode
PL	Parts List
PWB	Printed Wiring Board
RAP	Repair Analysis Procedure
VAC	Volts Alternating Current
VDC	Volts Direct Current

Table 2 Wire Color Abbreviations

Abbreviation	Wire Color
BLK	black
BLU	blue
BRN	brown
GRAY	gray
GRN	green
G/Y	green/yellow
ORN	orange
PINK	pink
RED	red
VIO	violet
WHT	white
YEL	yellow
Y/G	yellow/green

REFERENCE SYMBOLOGY

Notes, adjustments, and parts lists, support the checklists and the RAP information. The symbols that refer to this supportive data are shown below.

Flag Symbol

Indicates part of circuit referred to in RAP.

Figure 1 Flag Symbol

Parts List

The terminology in the figure below refers to the parts list that is located in section 5 of this Service Documentation. The PL designation is Parts List. The number refers to the 8.5 parts list.

PL 8.5

Figure 2 PL Symbol

Note

Refers to notes, usually on same page.

Figure 3 Note Symbol

Miscellaneous Symbols

Descriptions of all commonly used graphic symbols are included to assist in diagnostics.

Feed Back

Feedback signal.

Figure 4 Feedback Symbol

Ground

Machine ground symbol

Figure 5 Ground Symbol

Connector

Plug / Jack Connector number and pin number

Figure 6 Connector Symbol

LED / Photo transistor Sensor

Symbol identifies sensor used in document and paper path. Blocked and unblocked light switches sensor off and on.

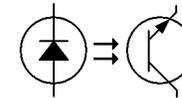**Figure 7 LED Photo transistor Symbol**

Triac

Triac switches AC power via Low Voltage Input.

Figure 8 Triac Symbol

LED

Light Emitting Diode (LED)

Figure 9 LED Symbol

Motor

Motor provides motive force

Figure 10 Motor Symbol

Thermistor
Thermistor Bead, used to sense temperature

Figure 11 Thermistor Symbol

Driver
Driver controls DC components.

Figure 12 Driver Symbol

Solenoid
Relay, Clutch, or Solenoid.

Figure 13 Relay, Clutch, or Solenoid Symbol

Without Tag Change
Symbol indicates that the area to which the triangle points has not been modified by the tag number in the circle.

Symbol indicates that the entire page has not been modified by the tag number in the circle.

Figure 14 Without Tag Symbol

With Tag Change
Symbol indicates that the area to which the triangle points has been modified by the tag number in the circle.

Symbol indicates that the entire page has been modified by the tag number in the circle.

Figure 15 With Tag Symbol

Laser Warning

WARNING

Symbol is used to warn of possible eye damage from a laser beam if service procedures are not followed exactly as written.

Figure 16 Laser Warning Symbol

ESD Warning

CAUTION

Symbol is used when components in the copier are susceptible to damage from electrostatic discharge. Observe ESD procedures to avoid component damage.

Figure 17 ESD Caution Symbol

Warning

<div align="center">

WARNING

</div>

A warning is used to alert the personnel to an operating or maintenance procedure, practice, or condition that, if not strictly observed could result in injury or loss of life.

Caution

<div align="center">

CAUTION

</div>

A caution is used to alert the personnel to an operating or maintenance procedure, practice, or condition that, if not strictly observed, could result in damage to, or destruction of equipment.

Signal Nomenclature

The signal is named to imply the condition of the machine when the signal is available. For example:

MAIN MOTOR ON (L) +5 VDC

1. **MAIN MOTOR ON**= Signal Name

2. **(L)** = Logic State when the signal is available in it's named state. In this case the signal is Lo when the Main Motor is energized.

3. **+5 VDC**= Logic level when the signal is Hi.

DC Voltage Levels

DC Voltages should be measured between the test point and the machine frame, unless instructed otherwise. Table 3 shows the value of the voltages.

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Table 3 DC Voltage Levels

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Voltage	Specification
+5 VDC	+4.75 to +5.25 VDC
+24 VDC	+21.6 to +26.4 VDC

Logic Voltage Levels

Measurements of logic levels must be made with reference to the specified ground point, unless some other point is referenced in a diagnostic procedure.

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Table 4 Logic Voltage Levels

</div>

Nominal Voltage	Logic State	Actual Voltage Ranges
+5 VDC	Hi	+2.4 VDC to +5.2 VDC
	Lo	0.0 VDC to +0.45 VDC
+24 VDC	Hi	+22.0 VDC to +25.7 VDC
	Lo	0.0 VDC to +3.0 VDC

1 Service Call Procedures

Service Call Procedures

Use Service Call Procedures as a maintenance guide when performing any service on printer/ copier. This is designed to be used with printer/copier Service Documentation and is starting point for all service calls.

Call Flow Procedure

Identifies and classifies machine problems and refers to appropriate RAP for repair. When all problems are repaired, perform Final Actions.

- Initial Actions

  Steps to diagnose faults.
- Corrective Actions

  Steps to repair faults.   Choices made based on machine symptom.
  - Status Codes / Other Faults Listing

    List of status codes and other faults with descriptions.
  - Corrective Actions

    Schedule of periodic maintenance to do when copy count reaches specific quantity.

    Maintenance Procedures

    Tables of subsystem components to be maintained with suggested materials and procedures when that subsystem is repaired by direction from a RAP.
- Final Actions

  Steps to verify machine operation and image quality.

Call Flow Procedure

Initial Actions

On Telephone

1. Call Customer and attempt to correct problem over telephone.

2. If problem cannot be resolved over telephone, give Customer your estimated time of arrival.

3. Ask Customer to save copies or prints made when problem occurred.

At Account

1. Check that space requirements and power requirements for machine are met.

2. Ask Operator or Customer to describe problem. If possible, ask Customer to demonstrate problem. Also ask for any additional problems encountered with machine.

3. Make a record of copy meter and Status Code.

4. Enter Diagnostic Mode. Enter [3–2] (GP 7 Status Code History) and record most recent status code. Continue with **R/E** button to display all most recent status codes. Press **0** button to display secondary codes.

5. The Service Log and Change Tag Matrix (behind front door) may contain information related to machine problem. Check Service Log and Tag Matrix.

6. Inspect sample copies provided by Customer.

7. Switch off power, wait 5 seconds, and then switch on power.

8. Clear any jammed paper from machine. Make copies (if possible) using Tray 1 (and Tray 2 if present).
   - Select a tray.
   - Load the document(s).
     – **ADF Only:** Load two (2) 8.5 x 11 inch (A4) documents into the ADF.
     – **Without ADF:** Place Standard test pattern on the Document Glass.
   - Make copies.

9. **ADF Only:** Using the copies from the first run, put 10 documents in the ADF.

10. Proceed to Corrective Actions.

Corrective Actions

1. Read following 6 items and respond as required. Go to step 2 after responding to one or more of following items.
   - If a status code is displayed on Control Panel, and any jammed paper is removed, go to Table 1 in this section.
   - If Fault History contains several faults with same status code, service this status code.
   - If an image defect occurs only in printing mode, go to OF 14-1 PRINTER RAP.
   - If an image defect occurs in copying mode (printing mode not relevant at this point), go to Image Quality Diagnostics Overview in Image Quality Section.
   - If an obvious problem occurs, repair as required and refer to Parts List as required for Removal, Reinstallation or Replacement information
   - For other problems not listed above, go to Table 2 in this section.

2. After responding to one or more of previous items in step 1, read following 2 items and respond as required.

- If more than 2000 copies have been made since last service call, or if 20 days have elapsed since last service call, go to Periodic Maintenance in this section and perform actions listed after making repairs required in step 1. Then go to Final Actions

- If less than 2000 copies have been made or if 20 days have not elapsed since last service call, go directly to Final Actions to complete service call.

Final Actions

In this section you will make sure that machine is feeding paper correctly, making copies free of defects, and operating to specification. You will also make sure that machine appearance is satisfactory and that administrative tasks necessary to close out a service call are performed.

If machine will not feed paper from all of paper trays, or if machine makes blank or unfused copies, or if a status code is displayed, return to Corrective Actions and make necessary repairs.

1. Load the document(s).
   - **ADF Only:** Load two (2) 8.5 x 11 inch (A4) documents into the ADF.
   - **Without ADF:** Place Standard test pattern on the Document Glass.

2. Make copies (if possible) using Tray 1, Bypass Tray, and Tray 2 if present.

3. Perform GP 2 Main PWB Generated Image [1–1] to generate ROS Test Pattern. Exit Diagnostic Mode and make 4 copies of standard test pattern. Examine copies for obvious image quality defects. Ensure image quality meets specifications in Section 3.

4. Perform GP3 Main PWB [3–11] to generate Printer Test Pattern. If defects are present, go to OF 14-1 PRINTER RAP in Section 2.

5. If machine is used as a printer perform following:
   - Verify that connections at rear of machine are secure. printer cable must be securely connected.
   - If used as a network printer, check network connection.
   - Ask customer to run a print job to verify print operation.

6. If a new Drum Cartridge was installed in machine and problem continues, reinstall old Drum Cartridge in machine. Put new Drum Cartridge in packaging, and ask Customer to store cartridge.

7. Clean machine covers and area around machine.

8. Make 2 copies. Show copies to operator or Customer.

9. Provide operator training if required.

10. Place remaining copy with Service Log.

11. Update Change Tag Matrix as required.

12. Give appropriate copy credits to Customer.

13. Make a record of copy count meter in Service Log. Make a record in Service Log of all necessary actions performed during service call. Also record any changes that were made to NVM.

Status Codes / Other Faults Listing

Table 1 Status Codes Entry Chart

Status Code / Description	Corrective Action
A1–1: Document can not actuate Pre Regi. Sensor after Document Solenoid is energized	A1-1 RAP
A2–0: Document can not actuate Document Registration Sensor after actuating Document Presence Sensor	A2 RAP
A2–1: After constant-speed feed motor is energized, Document can not deactivate in time Document Registration Sensor	A2-1 RAP
A2–2: After constant-speed feed motor is energized, document can not actuate in time Document Exit Switch	A2-2 RAP
A2–3: Document can not deactivate in time Document Exit Switch after deactivating Document Registration Sensor	A2-3 RAP
A5–0: ADF Cover is open	A5 RAP
C1–0: Tray 1 fed paper did not actuate Tray 1 Takeaway Sensor in time after Tray 1 Feed Motor energized	C1 RAP
C2–0: Tray 2 fed paper did not actuate Tray 2 Takeaway Sensor in time after Tray 2 Feed Motor energized	C2 RAP
C3–0: Bypass fed paper did not actuate Registration Sensor in time after Bypass Feed Solenoid energized	C3 RAP
C3–1: Bypass fed paper actuated Registration Sensor too early after Bypass Feed Solenoid energized	C3 RAP
C4–0: Tray 1 fed paper did not deactuate Tray 1 Feed Sensor in time	C4-0 RAP
C4–1: Tray 1 fed paper did not actuate Registration Sensor in time	C4-1 RAP
C4–2: Tray 2 fed paper did not actuate Registration Sensor in time	C4-2 RAP
C4–3: Tray 1 fed paper actuated Registration Sensor too early after Tray 1 Takeaway Motor energized	C4-3 RAP
C4–4: Tray 2 fed paper actuated Registration Sensor too early after Tray 2 Takeaway Motor energized	C4-4 RAP
C4–5: Two-side fed paper did not actuate Registration Sensor in time	C4-5 RAP
C4–6: Two-side fed paper actuated Registration Sensor too early	C4-6 RAP
C5–0: The Tray 1 Paper Sensor not actuated	C5 RAP
C6–0: The Tray 2 Paper Sensor not actuated	C6 RAP
C7–0: The Tray 1 Interlock Switch not actuated	C7 RAP
C8–0: The Tray 2 Interlock Switch not actuated	C8 RAP
C9–0: Tray 1 fed paper did not actuate Tray 1 Feed Sensor in time	C9 RAP
E1–1: Paper did not actuate Fuser Switch in time after Registration Clutch energized	E1 RAP
E1–2: The paper did not de-actuate Registration Sensor in time after actuating Fuser Switch	E1 RAP
E1–3: The paper did not de-actuate Fuser Switch in time after deactuating Registration Sensor	E1 RAP
E1–4: The paper did not actuate Exit Sensor in time after actuating Fuser Switch	E1 RAP

Table 1 Status Codes Entry Chart

Status Code / Description	Corrective Action
E1–5: The paper did not de-actuate Exit Sensor in time after de-actuating Fuser Switch	E1 RAP
E2–1: Paper can not actuate in time OCT Exit Sensor after leaving Fuser Exit Switch	E2-1 RAP
E2–2: Paper can not deactuate in time OCT Exit Sensor after leaving Fuser Exit Switch	E2-2 RAP
E5–0: Front Door or Side Door is open	E5 RAP
E6–1: Tray 1 Door interlock is open	E6 RAP
E6–2: Tray 2 Door interlock is open	E6 RAP
J1–0: Toner level is low	J1 RAP
J3–0: Drum Cartridge not installed or incorrectly installed	J3 RAP
J4–1: Billing Counter missing or not installed correctly	J4-1 RAP
J4–2: Billing Counter is not a FXSL uniqueware	J4-2 RAP
J4–3: Billing Counter unit type Error	J4-3 RAP
J6–1: CRUM Communication Error	J6-1 RAP
J6–3: Billing Counter Communication Error	J6-3 RAP
J7–0: Drum Cartridge reached end of service life	J7 RAP
J8–0: Drum Cartridge not correct	J8 RAP
J9–1: CRUM is not a FXSL uniqueware	J9-1 RAP
L9–1: Current login account has no credits	L9-1 RAP
U1–0: Drive Module speed signal failure	U1 RAP
U2–1: Scan Home Sensor circuit, Scan Drive Motor, or carriages failure	U2 RAP
U2–2: The Exposure Lamp not lit or black white strip not sensed	U2 RAP
U3–0: Laser not detected	U3 RAP
U4–0: Previous U4 Status Code not cleared	U4 RAP
U4–1: Fuser overtemperature condition (425° F) is sensed	U4 RAP
U4–2: Fuser warm up failure occurred	U4 RAP
U4–3: Fuser warm up time exceeded	U4 RAP
U5–0: The Fuser temperature dropped below minimum temperature for more than 5 seconds	U5 RAP
U5–1: AC input power problem	U5 RAP
U6–0: Printer control communication failure	U6 RAP
U6–1: Drum Cartridge, or Tray 1, or Tray 2 communication failure	U6 RAP
U6–4: NVM signal failure	U6 RAP
U7: Control Panel communication from Main PWB failure	U7 RAP
U8: Control Panel communication to Main PWB failure	U8 RAP
U9–0: A HVPS output is shorted or overloaded, or intermittent	U9 RAP

Table 2 Other Faults Entry Chart

Other Fault Description	Corrective Action
Cooling Fan not operating	OF 1-3 COOLING FAN RAP
Control Panel is blank	OF 2-1 BLANK DISPLAY RAP
Scanning problem	U2 RAP
Paper Tray problem	OF 7-1 PAPER TRAY RAP
Audible Noise / Odor problem	OF 16-1 NOISE or ODOR RAP
Print problems	OF 14-1 PRINTER RAP
Copies/prints exit machine in non-standard or damaged condition	OF 8-1 PAPER DAMAGE or STACKING RAP
Intermittent copier/printer operation	OF 16-2 GROUND RAP
Ground Checkout	OF 16-2 GROUND RAP
Diagnostics not available	U2 RAP

Periodic Maintenance

Activities to perform if 2K copies or 20 days elapsed since last service call.

NOTE: While performing a repair in a RAP, you may be directed to perform one or more following activities. When returning here after a repair, skip what is already serviced.

Procedure

1. Make a copy to run Cooling Fan. If fan is not operating go to OF 1-3 Cooling Fan RAP.
2. Do Paper Feed and Registration Maintenance Procedures   (Table 2).
3. Do Xerographic maintenance (Table 3).
4. Do Copy Transportation and Fusing Maintenance Procedures (Table 4).
5. Do Document Feeder maintenance procedures (Table 5).
6. Clean top of Document Glass with Lens and Mirror cleaner and a Lint–Free Cloth.
7. Clean Document Cover Pad with Lens and Mirror Cleaner and a Lint–Free Cloth.
8. **Every 125K copies:**
    a. Replace Fuser Module (PL 1.4) (REP 10.1).
    b. Replace Bypass Feed Roll (PL 6.3) (REP 8.11) and Bypass Retard Pad (PL 6.2) (REP 8.12).
    c. Go to OF 16-2 Ground RAP and perform Ground Check.

Maintenance Procedures

This section contains a list of machine subsystem components to be maintained and suggested materials and procedures to be used. You will be referred here from Periodic Maintenance, a Status Code, an Other Fault, or an Image Quality RAP.

Procedure

Service following components as directed. Clean any component that appears contaminated with dirt, paper dust, or dry imager, whenever component is made accessible during repair of machine.
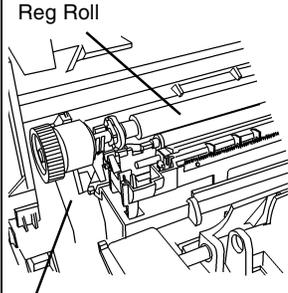
Table 1 Optics Subsystem Maintenance Procedures

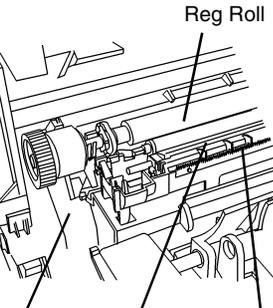| Perform this activity whenever Document Glass (REP 6.5) is completely removed.	Materials
Perform GP 9 R. **CAUTION** *If bottom of Document Glass is cleaned, Image Quality defects will occur if RIS Module is not vacuumed before reinstalling Document Glass.*	• Lens and Mirror Cleaner • Lint–Free Cloth • Vacuum Cleaner

Table 2 Paper Feed and Registration Subsystem Maintenance Procedures

Perform this activity when given direction in Call Flow.	Materials
Clean Bypass Feed Roll **CAUTION** *Do not clean Retard Pad.*	• Film Remover/General Cleaning Solvent • Lint–Free Cloth
Clean Registration Roll and Idler Roll	• Film Remover/General Cleaning Solvent • Lint–Free Cloth

Table 2 Paper Feed and Registration Subsystem Maintenance Procedures

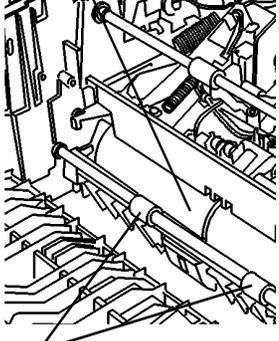| Perform this activity when given direction in Call Flow.	Materials
Clean Registration Roll and Idler Roll. Clean Registration Roll Contacts	• Film Remover/General Cleaning Solvent • Lint–Free Cloth Reg Roll Reg Roll Contacts **Figure 1 Registration**

Table 3 Xerographics Subsystem Maintenance Procedures

Perform this activity when given direction in Call Flow.	Materials
• Clean Transfer/Detack Corotron wire with a cotton swab to remove Toner. • Clean Transfer/Detack Corotron housing with a soft brush. • Clean Transfer Detack contacts and corresponding contacts on HVPS with a Lint–Free Cloth and Film Remover/General Cleaning Solvent. • Clean Transfer Roll Contact with a Lint–Free Cloth and Film Remover/General Cleaning Solvent.	• Cotton Swab • Soft Brush • Film Remover/General Cleaning Solvent • Lint–Free Cloth Reg Roll Reg Roll Contacts Transfer Corotron Detack Corotron **Figure 2 Transfer**
• Remove Drum Cartridge (REP 9.1). • Clean any toner from Drum Cartridge.	• Vacuum Cleaner
Clean Drum Cartridge contacts	• Lint–Free Cloth • Film Remover/General Cleaning Solvent

Table 4 Copy Transportation and Fusing Subsystem Maintenance Procedures

Perform this activity when given direction in Call Flow or RAP's	Materials
Clean Fuser Roll	Make 10 copies of a white document.
Clean Exit Rollers.	• Film Remover/General Cleaning Solvent • Heavy Duty Towel/Cleaning Cloth.

Service Call Procedures
Maintenance Procedures

9/02
1-10

Initial Issue

WorkCentre Pro 420

**Table 5 Document Feeder (ADF)
Subsystem Maintenance Procedures**

Perform this activity when given direction in Call Flow or RAP's	Materials
Clean Feed Roll, gentle push Roll, Output Roll, Output Pressure Roll, Exit Roll and CVT Roll. Remove offset Receiving Tray (REP 5.3) to approach Feed Roll and gentle push Roll.	• Film Remover/General Cleaning Solvent • Lint-Free Cloth.
Clean CVT glass pad. If the bottom of CVT glass is contaminated, do GP9 RIS/Mirror cleaning.	• Film Remover/General Cleaning Solvent • Lint-Free Cloth.
Clean CVT Roll	• Film Remover/General Cleaning Solvent • Lint-Free Cloth.
Clean Exit Roll/Idler Roll	• Film Remover/General Cleaning Solvent • Lint-Free Cloth. CVT Roll Exit Roll/Idler Roll **Figure 3 Registration**

Image Quality defects will occur if machine is on and cleaning solutions are used on covers. Cooling Fan may draw cleaning solution vapor into machine. Switch off machine before cleaning so that Cooling Fan is off.

Table 6 Covers Subsystem Maintenance Procedures

Perform this activity when given direction in Call Flow or RAP's	Materials
Clean covers as necessary.	• Formula A/All Purpose Cleaner • Heavy Duty Towel/Cleaning Cloth

Initial Issue

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Service Call Procedures

Maintenance Procedures

Service Call Procedures
Maintenance Procedures

9/02
1-12

Initial Issue
WorkCentre Pro 420

Status Indicator RAPs

Other Faults

+5VDC POWER RAP

CR2 on MAIN PWB is turned on.
Y   N
 │ Turn OFF the power.
 │ Check the connection between P/J 109 on MAIN PWB and LVPS.
 │ **This connection is in good condition.**
 │ **Y   N**
 │   │ Reconnect MAIN PWB and LVPS.
 │   │
 │ Turn ON the power.
 │ Check the voltage between P109-C9(+) and GND(-) on MAIN PWB.
 │ **Approximately +5VDC is measured.**
 │ **Y   N**
 │   │ **The voltage between P/J205-2 and P/J205-3 on LVPS has approximately 110/220VAC.**
 │   │ **Y   N**
 │   │   │ Check the voltage between ACN and ACH on POWER CORD.
 │   │   │ **Approximately 110/220VAC are measured.**
 │   │   │ **Y   N**
 │   │   │   │ Check the power cord.
 │   │   │   │ If no problems are found, check the customer's power supply.
 │   │   │
 │   │ Replace POWER SUPPLY PWB
 │   │
 │ Replace LVPS.
 │
Replace MAIN PWB.

Check the wire between MAIN PWB and the applicable component for an open circuit or poor contact by referring to BSD CHI.

+24VDC POWER RAP

The voltage between P/J102-(+) and GND(-) on MAIN PWB has +24VDC.
Y   N
 │ Turn OFF the power.
 │ Check the Connection between P/J 109 on MAIN PWB and LVPS.
 │ **This connection is in good condition.**
 │ **Y   N**
 │   │ Reconnect MAIN PWB and LVPS.
 │   │
 │ Turn ON the power.
 │ Check the Voltage between P109-A31(+) and GND(-) on MAIN PWB.
 │ **Approximately +24VDC is measured.**
 │ **Y   N**
 │   │ **The voltage between P/J205-2 and P/J205-3 on LVPS has approximately 110/220VAC.**
 │   │ **Y   N**
 │   │   │ Check the Voltage between ACN and ACH on POWER CORD.
 │   │   │ **Approximately 110/220VAC are measured.**
 │   │   │ **Y   N**
 │   │   │   │ Check the power cord.
 │   │   │   │ If no problems are found, check the customer's power supply.
 │   │   │
 │   │ Replace POWER SUPPLY PWB
 │   │
 │ Replace LVPS.
 │
Replace MAIN PWB.

Check the wire between MAIN PWB and the applicable component for an open circuit or poor contact by referring to BSD CHI.

A1 RAP

A1–1: Document can not actuate Pre Regi Sensor after Document Solenoid is energized.

Initial Actions

- Ensure ADF hinges firmly lean against Top Cover.
- Ensure ADF is securely closed. Repair as required.
- Ensure offset catch tray is correctly installed if it was removed recently.

Procedure

Remove ADF drive cover and offset catch tray. Observe the gentle push roll when switching on or off power source of machine.

The gentle push roll must rapidly moves down and up.

Y   N

    Remove ADF Rear Cover.

    Enter [5-5] and turned ON.

    The voltage between P/J605-4(+) and GND(-) on ADF PWB has +24VDC.

    Y   N

        The voltage between Pin 2(+) and GND(-) on Nudger Solenoid has +24VDC.

        Y   N

            The voltage between Pin 1(+) and GND(-) on Nudger Solenoid has 0VDC.

            Y   N

                Y   N

                    Y   N

                        Y   N

                            Y   N

                                Y   N

                                    Y   N

                                        Y   N

                                            Y   N

                                                Y   N

                                                    Y   N

B

CVT Motor rotates.
Y   N
│   **When [5-1] is turned ON, the voltage between P/J603-1(+) and GND(-) on ADF PWB**
│   **has approximately +1.3VDC.**
│   **Y   N**
│   │   **When [5-1] is turned ON, the voltage between P/J103-1(+) and GND(-) on MAIN**
│   │   **PWB has approximately +1.3VDC.**
│   │   **Y   N**
│   │   │   Replace MAIN PWB.
│   │   │
│   │   Check wire between P/J103-1 on MAIN PWB and P/J603-1 on ADF PWB for an
│   │   open circuit or poor contact.
│   │
│   **When [5-1] is turned ON, the voltage between P/J603-2(+) and GND(-) on ADF PWB**
│   **has approximately +10VDC.**
│   **Y   N**
│   │   **When [5-1] is turned ON, the voltage between P/J603-3(+) and GND(-) on ADF**
│   │   **PWB has approximately +5VDC.**
│   │   **Y   N**
│   │   │   Replace MAIN PWB.
│   │   │
│   │   Check the wire between P/J103-2 on MAIN PWB and P/J603-21 on ADF PWB for an
│   │   open circuit or poor contact.
│   │
│   **When [5-1] is turned ON, the voltage between P/J603-3(+) and GND(-) on ADF PWB**
│   **has approximately +5VDC.**
│   **Y   N**
│   │   **When [5-1] is turned ON, the voltage between P/J103-3(+) and GND(-) on MAIN**
│   │   **PWB has approximately +10VDC.**
│   │   **Y   N**
│   │   │   Replace MAIN PWB.
│   │   │
│   │   Check the wire between P/J103-3 on MAIN PWB and P/J603-3 on ADF PWB for an
│   │   open circuit or poor contact.
│   │
│   **When [5-1] is turned ON, the voltage between P/J601-2(+) and GND(-) on ADF PWB**
│   **has approximately +10VDC.**
│   **Y   N**
│   │   The Voltage between P/J602-1(+) and GND(-) on ADF PWB has +24VDC.
│   │
│   Replace CVT MOTOR.
Enter[5-7] and press START button.

C

C

Document Feed Clutch is energized.
Y   N
│   **When [5-7] is turned ON, the voltage between P/J605-1(+) and GND(-) on ADF PWB**
│   **has +24VDC.**
│   **Y   N**
│   │   **The voltage between Pin 2(+) and GND(-) on Document Feed Clutch has**
│   │   **+24VDC.**
│   │   **Y   N**
│   │   │   **The voltage between Pin 1(+) and GND(-) on Document Feed Clutch has**
│   │   │   **0VDC.**
│   │   │   **Y   N**
│   │   │   │   Replace Nudger Solenoid.
│   │   │   │
│   │   │   **The voltage between P/J605-5(+) and GND(-) on ADF PWB has +24VDC**
│   │   │   │
│   │   │   **Y   N**
│   │   │   │   GO TO +24VDC Power FIP.
│   │   │   │
│   │   │   Check the wire between P/J605-5 on ADF PWB and Pin 1 on Document Feed
│   │   │   Clutch for an open circuit or poor contact.
│   │   │
│   │   Check the wire between P/J605-1 on ADF PWB and Pin 2 on Document Feed Clutch
│   │   for an open circuit or poor contact.
│   │
│   **The voltage between P/J603-10(+) and GND(-) on ADF PWB has +5VDC.**
│   **Y   N**
│   │   **The voltage between P/J103-10(+) and GND(-) on MAIN PWB has +5VDC.**
│   │   **Y   N**
│   │   │   Replace MAIN PWB.
│   │   │
│   │   Check the wire between P/J103-10 on MAIN PWB and P/J603-10 on ADF PWB for
│   │   an open circuit or poor contact.
│   Replace ADF PWB.

Enter [5-9].

D

D

Use hand or paper to actuate or deactuate Document Presence Sensor, display should change between "0" and "1".

Block the Document Presence Sensor with a blank sheet of paper.
"1"(Low) is displayed.

    Y   **N**

        The voltage between Pin 2(+) and GND(-) on Document Presence Sensor has +5VDC.

        Y   **N**

            Check the wire between Pin 2 on Document Presence Sensor and P/J103-18 on MAIN PWB for an open circuit or poor contact. If no problems are found, replace MAIN PWB.

        The voltage between Pin 1(+) and Pin 3(-) on Document Presence Sensor has +5VDC.

        Y   **N**

            The voltage between P/J605-10(+) and P/J605-12(-) on ADF PWB has +5VDC.

            Y   **N**

                Go to +5VDC Power FIP.

            Check wire of the following:
-   Between P/J605-10 on ADF PWB and Pin 1 on Document Presence Sensor for an open circuit or poor contact.
-   Between P/J605-12 on ADF PWB and Pin 3 on Document Presence Sensor for an open circuit or poor contact.

        Check for contamination and improper installation of the Sensor. If no problems are found, replace the Document Presence Sensor.

Remove the blank sheet of paper from the Sensor.
"0"(High) is displayed.

    Y   **N**

        Remove the connector of Document Presence Sensor.
        The display should change to "0" (High).

        Y   **N**

            Check the circuit between Pin 2 on Document Presence Sensor and P/J103-18 on MAIN PWB for a short circuit. If no problems are found, replace MAIN PWB.

        Check installation of the Sensor and the extraneous light diffraction. If no problems are found, replace Document Presence Sensor.

Check installation of the Sensor.
If the failure of A1-1 Status Code continues, replace Document Presence Sensor.

Enter [5-1] and press START button.
When CVT MOTOR rotates, enter [7] and press START button.

E

E

Document Feed Clutch is energized, and Document Feed Roll is rotated.

Y   **N**

Check the mechanical load of Document Feed Roll.

- Check CVT feed area for obstruction.
- Close ADF feed door, put in a sheet of document in Document Feed Tray. Enter [5-14] and press START button. Document should be fed and reach Document Exit Tray. If document is stopped or blocked, repeat the test while observing document and drive.
- If pre-input appears slow, clean or replace Feed Roll/Gentle push Roll.
- Enter [5-7], Document Feed Clutch is energized. Manually rotate counter-clockwise CVT Roll (opposite to normal direction) to check the rotation of Feed Rolls. Repair as required.
- If the failure of A1 status code continues, replace Document Feed Clutch.