WORKCENTRE 3119

SERVICE MANUAL

XEROX®

Part Number 708P88471 06/06

Service Documentation

708P88471

June 2006

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NOTICE

While every care has been taken in the preparation of this manual, no liability will be accepted by Xerox Europe arising out of any inaccuracies or omissions.

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Introduction

1. Service Call Procedures

2. Repair Analysis Procedures

3. Image Quality

4. Repairs/Adjustments

5. Parts List

6. General Procedures/Information

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Introduction

Precautions

In order to prevent accidents and to prevent damage to the equipment, please read the precautions listed below carefully before servicing the machine and follow them closely.

Warnings, Cautions and Notes

WARNING

A warning is used whenever an operating or maintenance procedure, practice, condition or statement, if not strictly observed, could result in personal injury.

CAUTION

A caution is used whenever an operation or maintenance procedure, practice, condition or statement, if not strictly observed, could result in damage to the equipment.

Note: *A note is used where it is essential to highlight a procedure, practice, condition or statement.*

Safety Warning

1. Only to be serviced by appropriately qualified service engineers.

High voltages and lasers inside this product are dangerous. This machine should only be serviced by a suitably trained and qualified service engineer.

2. Use only Xerox replacement parts

There are no user serviceable parts inside the machine. Do not make any unauthorized changes or additions to the machine, these could cause the machine to malfunction and create electric shock or fire hazards.

3. Laser Safety Statement

The machine is certified in the U.S. to conform to the requirements of DHHS 21 CFR, chapter 1 Subchapter J for Class 1(1) laser products, and elsewhere, it is certified as a Class I laser product conforming to the requirements of IEC 825. Class I laser products are not considered to be hazardous. The laser system and machine are designed so there is never any human access to laser radiation above a Class I level during normal operation, user maintenance, or prescribed service condition.

WARNING

Avoid exposure to laser beam. Invisible laser radiation.

Caution for safety

Toxic material

This product contains toxic materials that could cause illness if ingested.

1. If the LCD control panel is damaged, it is possible for the liquid inside the display to leak. This liquid is toxic. Contact with skin should be avoided, wash any splashes from eyes or skin immediately and contact your doctor. If the liquid gets into the mouth or is swallowed see a doctor immediately.
2. Please keep print cartridges away from children. The toner powder contained in the print cartridge may be harmful. If swallowed, contact a doctor immediately.

Electric Shock and Fire Safety Precautions

Failure to follow the following instructions could cause electric shock or potentially cause a fire.

1. Use only the correct voltage, failure to do so could damage the machine and potentially cause a fire or electric shock.
2. Use only the power cable supplied with the machine. Use of an incorrectly specified cable could cause the cable to overheat and potentially cause a fire.
3. Do not overload the power socket, this could lead to overheating of the cables inside the wall and could lead to a fire.
4. Do not allow water or other liquids to spill into the machine, this can cause electric shock. Do not allow paper clips, pins or other foreign objects to fall into the machine these could cause a short circuit leading to an electric shock or fire hazard.
5. Never touch the plugs on either end of the power cable with wet hands, this can cause electric shock. When servicing the machine, remove the power plug from the wall socket.
6. Use caution when inserting or removing the power connector. The power connector must be inserted completely otherwise a poor contact could cause overheating and possibly leading to a fire. When removing the power connector grip it firmly and pull.
7. Take care of the power cable. Do not allow it to become twisted, bent sharply round corners or otherwise damaged. Do not place objects on top of the power cable. If the power cable is damaged, it could overheat and cause a fire or exposed cables could cause an electric shock. Replace a damaged power cable immediately, do not reuse or repair the damaged cable. Some chemicals can corrode the coating on the power cable, weaken the cover or exposing cables causing fire and shock risks.
8. Ensure that the power sockets and plugs are not cracked or broken in any way. Any such defects should be repaired immediately. Take care not to cut or damage the power cable or plugs when moving the machine.
9. Use caution during thunder or lightning storms. Xerox recommend that this machine be disconnected from the power source when such weather conditions are expected. Do not touch the machine or the power cord if it is still connected to the wall socket in these weather conditions.
10. Avoid damp or dusty areas, install the machine in a clean well ventilated location. Do not position the machine near a humidifier. Damp and dust build up inside the machine can lead to overheating and cause a fire.
11. Do not position the machine in direct sunlight. This will cause the temperature inside the machine to rise possibly leading to the machine failing to work properly and in extreme conditions could lead to a fire.
12. Do not insert any metal objects into the machine through the ventilator fan or other part of the casing, it could make contact with a high voltage conductor inside the machine and cause an electric shock.

Handling Precautions

The following instructions are for your own personal safety, to avoid injury and so as not to damage the machine

1. Ensure the machine is installed on a level surface, capable of supporting its weight. Failure to do so could cause the machine to tip or fall.
2. The machine contains many rollers, gears and fans. Take great care to ensure that you do not catch your fingers, hair or clothing in any of these rotating devices.
3. Do not place any small metal objects, containers of water, chemicals or other liquids close to the machine which if spilled could get into the machine and cause damage or a shock or fire hazard.
4. Do not install the machine in areas with high dust or moisture levels, beside on open window or close to a humidifier or heater. Damage could be caused to the machine in such areas.
5. Do not place candles, burning cigarettes, etc. on the machine, these could cause a fire.

Assembly / Disassembly Precautions

Replace parts carefully, always use Xerox parts. Take care to note the exact location of parts and also cable routing before dismantling any part of the machine. Ensure all parts and cables are replaced correctly.

Please carry out the following procedures before dismantling the machine or replacing any parts.

1. Check the contents of the machine memory and make a note of any user settings. These will be erased if the mainboard is replaced.
2. Ensure that power is disconnected before servicing or replacing any electrical parts.
3. Disconnect printer interface cables and power cables.
4. Be sure to remove the print cartridge before you disassemble any parts.
5. Only use approved spare parts. Ensure that part number, product name, any voltage, current or temperature rating are correct.
6. When removing or re-fitting any parts do not use excessive force, especially when fitting screws into plastic.
7. Take care not to drop any small parts into the machine.
8. Handling of the OPC Drum

   - The OPC Drum can be irreparably damaged if it exposed to light.

   Take care not to expose the OPC Drum either to direct sunlight or to fluorescent or incandescent room lighting. Exposure for as little as 5 minutes can damage the surface's photoconductive properties and will result in print quality degradation. Take extra care when servicing the machine. Remove the OPC Drum and store it in a black bag or other lightproof container. Take care when working with the covers (especially the top cover) open as light is admitted to the OPC area and can damage the OPC Drum.

   - Take care not to scratch the green surface of OPC Drum Unit.

   If the green surface of the Drum Cartridge is scratched or touched the print quality will be compromised.

Releasing Plastic Latches

Many of the parts are held in place with plastic latches. The latches break easily; release them carefully.

To remove such parts, press the hook end of the latch away from the part to which it is latched.

Figure 1

Disregarding this warning may cause bodily injury

1. The fuser unit works at a high temperature. Use caution when working on the machine. Wait for the fuser to cool down before disassembly.
2. Do not put fingers or hair into the rotating parts (paper feeding entrance, motor, fan, etc.). Doing so may cause injury.
3. When you move the machine.
   This machine weighs 12kg (26.7lb) including packaging. Use safe lifting and handling techniques. Back injury could be caused if you do not lift carefully.
4. Ensure the machine is installed safely.
   The machine weighs 9.7kg (21.4lb) including toner cartridge, ensure the machine is installed on a level surface, capable of supporting its weight. Failure to do so could cause the machine to tip or fall possibly causing personal injury or damaging the machine.
5. Do not install the machine on a sloping or unstable surface. After installation, double check that the machine is stable.

ESD Precautions

Certain semiconductor devices can be easily damaged by static electricity. Such components are commonly called “Electrostatically Sensitive (ES) Devices”, or ESDs. Examples of typical ESDs are: integrated circuits, some field effect transistors, and semiconductor “chip” components.

The techniques outlined below should be followed to help reduce the incidence of component damage caused by static electricity.

CAUTION

Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

1. Immediately before handling a semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, employ a commercially available wrist strap device, which should be removed for your personal safety reasons prior to applying power to the unit under test.

2. After removing an electrical assembly equipped with ESDs, place the assembly on a conductive surface, such as aluminium or copper foil, or conductive foam, to prevent electrostatic charge buildup in the vicinity of the assembly.
3. Use only a grounded tip soldering iron to solder or desolder ESDs.
4. Use only an “anti-static” solder removal device. Some solder removal devices not classified as “anti-static” can generate electrical charges sufficient to damage ESDs.
5. Do not use Freon-propelled chemicals. When sprayed, these can generate electrical charges sufficient to damage ESDs.
6. Do not remove a replacement ESD from its protective packaging until immediately before installing it. Most replacement ESDs are packaged with all leads shorted together by conductive foam, aluminium foil, or a comparable conductive material.
7. Immediately before removing the protective shorting material from the leads of a replacement ESD, touch the protective material to the chassis or circuit assembly into which the device will be installed.

8. Maintain continuous electrical contact between the ESD and the assembly into which it will be installed, until completely plugged or soldered into the circuit.

9. Minimize bodily motions when handling unpackaged replacement ESDs. Normal motions, such as the brushing together of clothing fabric and lifting one’s foot from a carpeted floor, can generate static electricity sufficient to damage an ESD.

Super Capacitor or Lithium Battery Precautions

1. Exercise caution when replacing a super capacitor or Lithium battery. There could be a danger of explosion and subsequent operator injury and/or equipment damage if incorrectly installed.
2. Be sure to replace the battery with the same or equivalent type recommended by the manufacturer.
3. Super capacitor or Lithium batteries contain toxic substances and should not be opened, crushed, or burned for disposal.
4. Dispose of used batteries according to the manufacturers instructions.

Toner Cartridge Service

Only toner cartridges supplied by Xerox should be used. Printing defects or set damage caused by the use of non-approved print cartridges or un-licensed toner refills are not covered by the guarantee.

Precautions on Safe-keeping of Print Cartridge

Excessive exposure to direct light for more than a few minutes may cause damage to the cartridge.

Service for the Life of Print Cartridge

If the printed image is light due to the toner supply becoming low you can temporarily improve the print quality by redistributing the toner (Shake the print cartridge), however you should replace the print cartridge to solve the problem permanently.

Redistributing Toner

When the print cartridge is near the end of its life, white streaks or light print occurs. The LCD displays the warning message, “Toner Low.” You can temporarily re-establish the print quality by redistributing the remaining toner in the cartridge.

1. Open the Front Cover.
2. Lightly pushing the used cartridge down, pull it out.

Note: *Help the environment by recycling your used toner cartridge. Refer to the recycling brochure packed with the toner cartridge for details.*

3. Unpack the new toner cartridge and gently shake it horizontally four or five times to distribute the toner evenly inside the cartridge.
4. Save the box and the cover for shipping. Slide the new toner cartridge in until it locks into place.

Standard of guarantee for consumable parts.

Please refer to User Manual or Instructions on Fax/Printer Consumables SVC manual for the criteria for judging the quality of consumable parts the standard of guarantee on those parts.

How to identify a refilled toner cartridge.

One way security screws are used in the manufacture of the cartridge – check if these are damaged.

Health and Safety Incident Reporting

I. Summary

This section defines requirements for notification of health and safety incidents involving Xerox products (equipment and materials) at customer locations.

II. Scope

Xerox Corporation and subsidiaries worldwide.

III. Objective

To enable prompt resolution of health and safety incidents involving Xerox products and to ensure Xerox regulatory compliance.

IV. Definitions

Incident:

An event or condition occurring in a customer account that has resulted in injury, illness or property damage. Examples of incidents include machine fires, smoke generation, physical injury to an operator or service representative. Alleged events and product conditions are included in this definition.

V. Requirements

Initial Report:

1. Xerox organisations shall establish a process for individuals to report product incidents to Xerox Environment Health & Safety within 24 hours of becoming aware of the event.
2. The information to be provided at the time of reporting is contained in Appendix A (Health and Safety Incident Report involving a Xerox product).
3. The initial notification may be made by any of the following methods:
   - For incidents in North America and Developing Markets West (Brazil, Mexico, Latin American North and Latin American South):
     - Phone* Xerox EH&S at: 1-800-828-6571.
     - Electronic mail Xerox EH&S at: Doris.Bush@usa.xerox.com.
     - Fax Xerox EH&S at: 1-585-422-6449 [intelnet 8*222 6449].
   - For incidents in Europe and Developing Markets East (Middle East, Africa, India, China and Hong Kong):
     - Phone* Xerox EH&S at: +44 (0) 1707 353434.
     - Electronic mail Xerox EH&S at: Elaine.Grange@GBR.xerox.com.
     - Fax Xerox EH&S at: +44 (0) 1707 353914 [intelnet 8*668 3914].

   *Initial notification made by phone must be followed within 24 hours by a completed incident report and sent to the indicated electronic mail address or fax number.

Note: *If sending a fax, please also send the original via internal mail.*

Responsibilities for Resolution:

1. Business Groups/Product Design Teams responsible for the product involved in the incident shall:
   a. Manage field bulletins, customer correspondence, product recalls, safety retrofits.
   b. Fund all field retrofits.
1. Field Service Operations shall:
   a. Preserve the Xerox product involved and the scene of the incident inclusive of any associated equipment located in the vicinity of the incident.
   b. Return any affected equipment/part(s) to the location designated by Xerox EH&S and/or the Business Division.
   c. Implement all safety retrofits.
2. Xerox EH&S shall:
   a. Manage and report all incident investigation activities.
   b. Review and approve proposed product corrective actions and retrofits, if necessary.
   c. Manage all communications and correspondence with government agencies.
   d. Define actions to correct confirmed incidents.

VI. Appendices

The Health and Safety Incident Report involving a Xerox Product (Form # EH&S-700) is available at the end of the manual.

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1. Service Call Procedures

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SCP 1 Service Call Actions

Procedure

Throughout this manual, observe the following Warnings:

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

WARNING

Do not touch the fuser while it is hot.

WARNING

Take care during this procedure. Sharp edges may be present that can cause injury.

1. Take note of symptoms or error messages.
2. Ask the operator to describe or demonstrate the problem.
3. Make sure that:
   - The power cord is connected to the wall outlet and to the machine.
   - All cables are connected correctly.
4. If available, check the machine service log book for any previous actions that may be relevant to the call.
5. Review any defective print or copy samples.
6. Perform ‘1 Initial Checks RAP’.

SCP 2 Final Actions

Final Actions are used to evaluate the total operation of the system and to identify the actions required to complete the service call.

Procedure

- Exercise the machine in all modes.
- Make a proof copy or print of a customer document.
- If any of the customers selections were changed, return them to the customers preferred settings.
- Mark off any hardware/software options and modifications installed and/or enabled in the Service Log book.
- At the first service and at any subsequent service where changes are made or options are added, print the configuration report and store it with the machine log book. Discard any previous versions of the configuration report.
- Remove and destroy any copies of test patterns.
- Complete the machine service log book, refer to GP 17 Service Log.
- Ensure the machine and service area are clean before leaving the customer premises.
- Provide customer training if required.

2. Status Indicator RAPs

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1 Initial Checks RAP

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

Basic Check List

1. Check the Power.

- Does "Warming Up" appear on the display?
  --> If not check power cable, switch or SMPS/HVPS, PL 1.
  --> Does the wall socket work?
- Do the motors or other components initialize (listen for the main motor, fan and LSU, PL 1 sounds)?
  --> If not or there are none of the normal startup sounds, check the cable, switch and/or SMPS/HVPS, PL 1.
  --> Does the wall socket work?

2. Check the LCD Panel.

- Refer to General Procedures.
- Is there any display at all?
  --> If not, check the power cable, switch and/or SMPS/HVPS, PL 1.
- Is the display showing an error message? Are there any broken or badly formed characters?
- Is the message on the LCD Panel, PL 8 a standard error message? Refer to GP 9.
  --> Does the wall socket work?
  --> Check the main PBA and cable harness, PL 1.
  --> Check for paper jams, refer to GP 6.

3. Check the Paper Path

- Is there a Paper Jam?
  --> Remove any paper fragments caught in the paper path, refer to GP 6.
- Paper Jam occurs repeatedly at a specific point in the Paper Path
  --> Open the fuser cover, REP 9 and clear the jam, refer to GP 6.
  --> Dismantle the machine and carefully inspect the region where the jam occurs.
  Check if paper fragments are caught in the Fuser, refer to GP 6.

4. Print a test page.

- Try printing a test page from a computer.
  --> If there is an error, check cables and driver installation.

5. Check the Print Quality.

- Is there a Print Quality Problem?
  --> Go to Section 3, Image Quality.

6. Check consumables (toner etc.).

- Using the keys print the Test Pattern.
  --> Expected life of various consumable parts, compare this with the figures printed and install new parts as required, GP 7. If necessary, install a new toner cartridge, PL 1.

Initial Inspection

1. Check the power.

1. The machine does not work no matter how long you wait.
   A. Is the Power Switch (machine and wall socket) turned on?
   B. Is the Power Cord connected to the machine correctly?
   C. Is the Power cord connected to the wall socket correctly?
   D. Is wall socket working?
   E. Is the unit rated at the same voltage as the supply?
2. Does the Fan work when power is turned on?
   A. Check the connectors on the SMPS/HVPS, PL 1.
   B. Check the fuses in the SMPS/HVPS, PL 1.

2. Check the Installation Environment.

1. Ensure the installation surface is flat, level and free from vibration.
   If necessary move the machine.
2. Ensure that the temperature and humidity of the surroundings are within specification
   If necessary move the machine.
3. Ensure that the machine is positioned away from any air conditioning or other heating or cooling equipment. Also ensure that is not positioned in a direct draft from any air conditioning, fan or open window.
   If necessary move the machine.
4. Ensure the machine is not positioned in direct sunlight.
   If it is unavoidable use a curtain to shade the machine.
5. Ensure the machine is installed in a clean dust free environment.
   Move the machine to clean area if necessary.
6. Some industrial or cleaning processes give of fumes which can affect the machine.
   Move the machine away from this type of air pollution

3. Check the paper type.

1. Use only paper which is of suitable quality, weight and size.
   See the user guide.

4. Check the overall condition of the machine

1. Clean the Paper Transport areas.
   Any rollers with dirt surfaces should be cleaned. If necessary, install new rollers.

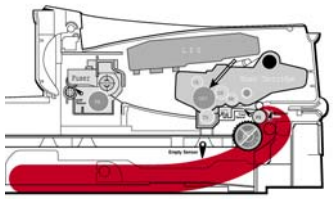
2 JAM 0 RAP

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

Description

Paper is not fed from the cassette.
Jam-0 occurs if the paper feeds into the machine.



Check and Cause	Solution
1. If continuous jams occur, check the following parts: • Pickup roller, PL 1 • Paper feed sensor, PL 1 • Feed roller, PL 4 • Feed roller 1, PL 4 ***Note:*** *The Paper Feed Sensor is mounted onto the Main PBA, PL 1.*	1. Ensure all rollers are clean and operate correctly, PL 4.
2. Check the RPR-friction pad and IPR plate, PL 9.	2. Clean with soft cloth dampened with IPA (Isopropyl Alcohol) or water. Install new parts as necessary: • RPR-friction pad, PL 9 • IPR plate, PL 9
3. Check the pickup roller, PL 4 for contamination or damage.	3. Clean with soft cloth dampened with IPA (Isopropyl Alcohol) or water. Install a new pickup roller, PL 4 if necessary.
4. Check the solenoid HB (Pickup), PL 3 by using 'Pickup Test' in Engine Test Mode, GP 4.	4. Install a new solenoid HB (Pickup), PL 3 if damaged.

Check and Cause	Solution
5. Check the following parts: • Cassette assembly, PL 9 • Paper guides, PL 4 • Spring-ETC TR, PL 4	5. Adjust or install new parts as necessary: • Guide paper, PL 4 • IPR-Plate, PL 9 • RPR-Friction Pad, PL 9 • Cassette assembly, PL 9
6. If the paper feeds into the machine and Jam 0 occurs, perform 'Feed Sen Test' in Engine Test Mode, GP 4 to check the feed sensor. ***Note:*** *The feed sensor is mounted on the SMPS/HVPS, PL 1.*	6. Install new parts as necessary: • Feed sensor actuator, PL 4 • SMPS/HVPS, PL 1 • Main PBA, PL 1
7. Check the motor operation using Engine Test Mode, GP 4. Check the motor harness and connectors, PL 1 and stepper motor (drive), PL 6.	7. Install new parts as necessary. • Motor harness, PL 1 • Drive assembly, PL 6 • Main PBA, PL 1

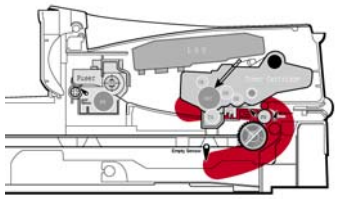
3 JAM 1 RAP

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

Description

Paper is jammed in front of or inside the fuser.
Paper is jammed in the exit roller and in the fuser after passing through the feed sensor actuator.



Check and Cause	Solution
1. If paper is jammed in the exit roller, PL 3 and the fuser, PL 5 after passing through the feed sensor actuator, PL 4, the feed sensor actuator may be defective.	1. Check the feed sensor actuator, PL 4 for damage, install a new feed sensor actuator if necessary.
2. If paper is jammed in front of or inside the fuser, PL 5.	2. Install new parts as necessary: • Exit sensor actuator, PL 4 • SMPS/HVPS, PL 1 • Main PBA., PL 1

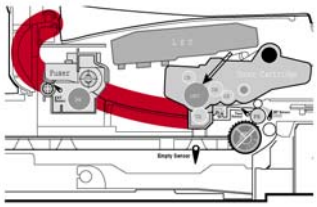
4 JAM 2 RAP

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

Description

Paper is jammed in front of or inside the fuser.
Paper is jammed in the discharge roller and in the fuser after passing through the Actuator-Feed.



Check and Cause	Solution
1. If the paper is completely fed out of the machine, but Jam 2 occurs: • The exit sensor is defective. ***Note:*** *The exit sensor is mounted onto the SMPS/HVPS, PL 1.* • After the paper is completely fed out, the exit sensor actuator, PL 5 should return to its original position to deactivate the photo-sensor. Sometimes it takes longer than it should and does not return to its original position.	1. Check the exit sensor actuator, PL 5.
2. If the paper is rolled up in the fuser , PL 5: • A stripper finger, PL 5 is damaged. • The heat roller or pressure roller, PL 5 is seriously contaminated,	2. Disassemble the fuser, refer to REP 9. Remove the jammed paper and clean the surface of the pressure roller, heat roller, and the stripper fingers, PL 5. Install new parts as necessary: • Heat roller, PL 5 • Pressure roller, PL 5 • Fuser, PL 5

5 Multi-Feeding RAP

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

Description

Multiple sheets of paper are fed together.

Check and Cause	Solution
1. Ensure that the paper size guides, PL 9 are set correctly.	1. Adjust the paper guides, PL 9.
2. The RPR-friction pad and/or IPR plate, PL 9 is contaminated with foreign matter (e.g oil).	2. Clean with soft cloth dampened with IPA (Isopropyl Alcohol) or water. Install new parts as necessary: • RPR-friction pad, PL 9 • IPR plate, PL 9
3. Paper has a rough surface texture	3. Use paper with a smoother surface finish.
4. Check the solenoid HB (pickup) operation using Engine Test Mode, GP 4.	4. Install new parts as necessary: • Solenoid HB (Pickup), PL 3 • Main PBA, PL 1

6 Fuser Jam RAP

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

Description

Paper rolled around fuser rollers or ‘Concertina’ jam.

Check and Cause	Solution
1. Contamination of the pressure roller or heat roller, PL 5.	1. Disassemble the fuser, REP 9 and clean the surfaces of the rollers with IPA or water. Clean the contamination between the heat roller and thermistor, PL 5.
2. Damaged stripper fingers or stripper finger springs, PL 5.	2. Check the stripper fingers for damage. Install a new fuser, PL 5 if necessary.

7 Paper rolled in the OPC Drum RAP

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

Description

Paper is rolled up in the Toner Cartridge.

Check and Cause	Solution
1. Paper is out of specification.	1. Clear the jam, refer to GP 6. Use paper within specification. Refer to the User Guide. Recommend the use of good quality ‘long grain’ paper.

8 Fuser Error RAP

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

Description

A message “Open Heat Error/Over heat/Heating Error” is displayed.

Check and Cause	Solution
1. Drive gear, PL 6 has melted.	1. Check the drive assembly, PL 6. Install a new drive assembly if necessary.
2. Check the halogen lamp operation using Engine Test Mode, GP 4.	2. Install new parts as necessary: • Halogen lamp, PL 5 • Fuser, PL 5
3.Check the thermistor, PL 5 for damage.	3. Install new parts as necessary: • Thermistor, PL 5 • Fuser, PL 5
4. Check the following parts: • Thermostat, PL 5 • Fuser harness, PL 5 • Halogen lamp, PL 5	4. Install new parts as necessary: • Fuser harness, PL 5 • Thermostat, PL 5 • Halogen lamp, PL 5 • Fuser, PL 5

9 LSU Error RAP

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

Description

A message “LSU Error” is displayed.

Check and Cause	Solution
1. The LSU cable or connector, PL 1 is faulty.	Check the LSU operation using Engine Test Mode, GP 4. Install new parts as necessary: • LSU, PL 1 • Main PBA, PL 1
2.The LSU, PL 1 is damaged.	
3. Check the LSU HSYNC signal using Engine Test Mode, GP 4.	

10 Melting Fuser Gear RAP

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

Description

Constant Jam when paper enters the Fuser unit.
The Fuser rollers do not turn.

Check and Cause	Solution
1. Problem caused due to an overheated machine. Check the following parts: • Halogen lamp, PL 5 • Thermostat, PL 5 • Thermistor, PL 5 • Fuser gears, PL 5	1. Check the fuser operation using Engine Test Mode, GP 4. Install new parts as necessary: • Halogen lamp, PL 5 • Thermostat, PL 5 • Thermistor, PL 5 • Fuser, PL 5 • SMPS/HVPS, PL 1 • Main PBA, PL 1

11 Paper Empty RAP

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

Description

Paper Empty is displayed when paper is loaded in the cassette.
The paper empty message is not displayed when the paper cassette is empty.

Check and Cause	Solution
1. Faulty cables or connectors.	1. Check the cables and connectors.
2. Check the paper empty sensor operation using Engine Test Mode, GP 4. The paper sensor actuator (cassette), PL 4 may be deformed. ***Note:*** *The Paper Empty Sensor is mounted onto the SMPS/HVPS, PL 1.*	2. Install new parts as necessary: • Paper sensor actuator (cassette), PL 4 • Main PBA, PL 1
3. The SMPS/HVPS or Main PBA, PL 1 is faulty.	3. Install new parts as necessary: • SMPS/HVPS, PL 1 • Main PBA, PL 1

12 Cover Open RAP

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

Description

The Cover Open message is displayed when the front cover is closed.
The Cover Open message is not displayed when the front cover is open.

Check and Cause	Solution
1. The tab on the front cover may be damaged or broken.	1. Install a new front cover, PL 2.
2. The Cover Open Switch may be stuck or faulty. ***Note:*** *There are two Cover Open Switches. One is fitted on the Cover-M-Side R, PL 2 and the other is mounted on the SMPS/HVPS, PL 1.*	2. Check the cover open switch mounted on the HVPS/SMPS using Engine Test Mode, GP 4. Check the connection between the cover open switch, PL 2 and the SMPS/HVPS, PL 1. Install new parts as necessary: • Cover open switch, PL 2 • SMPS/HVPS, PL 1

13 No Power RAP

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

Description

When system power is turned on the LCD panel does not come on.

Check and Cause	Solution
1. Check the power supply cord, PL 1. Check the SMPS/HVPS output using Engine Test Mode, GP 4.	1. Install new parts as necessary: • Power supply cord, PL 1 • SMPS/HVPS, PL 1 • Main PBA, PL 1
2. LCD panel does not come on but normal start up sounds are heard.	2. Install a new PBA sub-panel, PL 8.

14 SPOOL Error RAP

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

Description

Insufficient disk space to spool the document.

Check and Cause	Solution
1. Check the print queue.	1. Ask the customer to manage the print queue.
2. Insufficient space of the hard disk in the directory assigned for the basic spool.	2. Ask the customer to delete the unnecessary files to provide more space to start printing job.
3. There may be conflict with other drivers or programs.	3. Ask the customer to shut down all other programs except the current one, if possible.
4. When an application program or the printer driver is damaged.	4. Uninstall the print driver. Re-install the latest driver. Refer to Xerox.com.
5. When some files related to OS are damaged or virus infected.	5. After rebooting the computer ask the customer to check for viruses, restore the damaged files and reinstall the application program which is not working properly. There may be files from previous failed print jobs on the hard disk with the name in the form '*.jnl'. Delete these files and Reboot Windows to restart the machine.
6. Insufficient memory.	6. Ask the customer to add memory to the PC.

How to delete the data in the spool manager.

In the spool manager, the installed drivers and the list of the documents waiting to be printed are shown.

Select the document to be deleted and check delete in the menu.

If the job you are deleting is the current job, when you delete the job data that has already been transferred to the machine's memory will still be printed. If there is a problem with the machine (out of toner, off-line, out of paper etc.) the job may take a long time to delete as it must wait for a time out.

15 Abnormal Noise RAP

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

Description

There is an abnormal noise from the printer during operation.

Check and Cause	Solution
1. If the abnormal noise is only heard during scanning, check the Scan Motor Assembly and gears, PL 7. Ensure no parts are damaged and there are no foreign objects in the mechanism or scan path.	1. Install new parts as necessary: • Belt timing gear, PL 7 • Scan motor assembly, PL 7 • CIS, PL 7
2. Check the LSU motor, step motor (drive) and toner fan using Engine Test Mode, GP 4. Check the Step Motor (Drive) connector on the Main PBA, PL 1.	2. Install new parts as necessary: • Toner Fan, PL 1 • LSU, PL 1 • Motor Assembly, PL 6 • Main PBA, PL 1

16 Scanning RAP

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

16A PC Scanning Problems

Description

Unable to scan using a PC.

Check and Cause	Solution
1. Check that the driver is installed properly.	1. Uninstall the print driver. Reinstall the latest driver, refer to Xerox.com. If printing is OK, check that the Scan driver is also installed (refer to User's Manual).
2. Check that the USB cable is properly connected and that the machine can print correctly.	2. Reconnect the PC and machine, install new cables if necessary. Ask the customer to check the BIOS of the PC to ensure that there are no IRQ conflicts and to check that the input/output range is 0378.
3. Check that the copy function operates normally.	3. Install new parts as necessary: • Main PBA, PL 1 • CIS, PL 7

16B Poor Quality of PC Scanned images

Description

Poor quality of scanned to PC images.

Check and Cause	Solution
1. Check if the resolution is set too low in PC Scan options. (Refer to the User Manual.)	1. Teach the user about scanner resolution – refer to the User Guide.
2. Use Tech Mode, GP 5, to carry out a shading test and examine the waveform printout.	2. If the CIS waveform form is abnormal, install a new CIS, PL 7.

17 Print Cartridge Problems RAP

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

This section explains messages on the LCD that are related to the data stored in the EEPROM in the toner cartridge.

Toner Low

- Explanation: The amount of toner remaining is less than 10%. The toner cartridge is almost empty or at end of life.
- Solution: Install a new toner cartridge, PL 1.

Toner Empty

- Explanation: The toner cartridge is empty
- Solution: Install a new toner cartridge, PL 1.

Drum Warning

- Explanation: This message appears when the OPC drum is nearing the end of its life (14,000 pages). This means that the life of the mechanical parts in the toner cartridge has expired (this is not an indication of toner remaining).
- Solution: After printing about 15,000 pages, the waste toner collector might overflow and cause the system to fail. The OPC drum surface will be worn out and print quality will degrade. It is therefore necessary to install a new toner cartridge even if there is remaining toner left in the used cartridge. When this message occurs, there are approximately 1,000 pages left.

Expired Toner Cartridge

- Explanation: The toner cartridge mechanical life is expired.
- Solution: Install a new toner cartridge, PL 1.

18 Software Problems RAP

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

18A The machine is not working (1)

Description

While Power turned on, the machine is not working in print mode.

Check and Cause	Solution
1. Ensure that the customer knows how to install the correct printer driver and to select the WorkCentre 3119 as the default printer.	1. Refer the customer to the WorkCentre 3119 User Guide.
2. Perform the pattern test, GP 5.	2. If the test print works that means there are no problems in the machine. If the test printing does not work, the machine is faulty and the problem is not due to computer software or driver settings.
3. Check that the PC and the machine are properly connected and that the toner cartridge is installed correctly.	3. Install a new printer cable. If the problem still persists, check the amount of the remaining toner (refer to GP 7).
4. Printing is not working in Windows.	4. Check if the connection between PC and printer port is correct. Uninstall the driver, then re-install new drivers. Refer to Xerox.com. Ask the customer to check the BIOS of the PC to ensure that there are no IRQ conflicts and to check that the input/output range is 0378.
5. Check that the printer cable is directly connected to the machine.	5. If you have other devices that need to share the printer port, try temporarily disconnecting these devices and perhaps even uninstalling their drivers to ensure the machine works by itself. If you are using a USB hub try connecting directly to the back of the PC instead.

18B The machine is not working (2)

Description

After receiving the print command there is no response at all or print speed is low due to wrong setup of the environment rather than malfunction of the machine itself.

Check and Cause	Solution
1. Ensure that the customer knows how to install the correct printer driver and to select the WorkCentre 3119 as the default printer.	1. Refer the customer to the WorkCentre 3119 User Guide.
2. Ensure you have sufficient free hard disk space for the temporary work files created during printing.	2. The message 'insufficient printer memory' means there is a hard disk space problem on the PC, rather than a printer RAM problem. Inform the customer.
3. Printing error occurs even if there is enough space in the hard disk.	3. The connection of the cable and printer port is not correct. Check that the cable is properly connected. Ask the customer to check the BIOS of the PC to ensure that there are no IRQ conflicts and to check that the input/output range is 0378.
4. Reboot the system to print.	4. If the regular font is not printing, the cable or the printer driver may be defective. Turn the PC and machine off, and reboot the system to print again. If not solved, double-click the printer in My Computer. If the regular fonts are not printed this time the cable must be defective. Install a new cable.

18C Abnormal Printing

Description

Printing does not work – even after replacing the cable
Machine does not work at all or strange fonts are printed.

Check and Cause	Solution
1. Printer Driver Error.	1. Ensure that the correct driver is loaded. Use the driver supplied on the CD or down-loaded from the Xerox.com. DO NOT use the Microsoft driver supplied with the Windows operating system. If the machine is a GDI printer ensure that ALL OTHER GDI drivers are un-installed as Windows allows only 1 type of driver to be loaded.
2. Error message “insufficient memory”. (The printing job sometimes stops due to insufficient virtual memory, this is caused by insufficient space on the PC hard disk.)	2. Inform the customer.

3. Image Quality

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IQ 1 Vertical Black Lines and Bands

Description

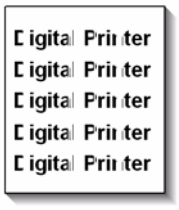
Straight thin black vertical lines occur in the printing.
Dark black vertical band occurs in the printing.

	Check and Cause	Solution
	1. Damaged developer roller or deformed doctor-blade in the toner cartridge, PL 1.	1. Install a new toner cartridge, PL 1 and retest.
	2. Scratched surface of the charge roller in the toner cartridge, PL 1.	2. Install a new toner cartridge, PL 1 and retest.

IQ 2 Vertical White Line

Description

White vertical voids in the image.

	Check and Cause	Solution
	1. Contamination of the window or internal lenses of the LSU mirror	1. Clean the LSU window with recommended cleaner (IPA). Clean the window with a clean cotton swab. If necessary, install a new LSU, PL 1.
	2. Foreign matter, contamination or burr on the edge of the toner cartridge window, PL 1.	2. Clean the exposure window, PL 1.
	3. If the fuser, PL 5 is defective, voids occur periodically at the top of a black image. Check for sharp edges in the paper path that may correspond to the position of the voids.	3. Open the front cover, PL 1 and clean inside the frame assembly, PL 3.
	4. Contamination of the OPC drum, PL 1 or toner.	4. Install a new toner cartridge, PL 1.
	5. The toner in the toner cartridge, PL 1, is about to deplete.	

IQ 3 Horizontal Black Band

Description

Dark or blurry horizontal stripes on print periodically.

	Check and Cause	Solution
	1. Bad contacts on the toner cartridge contacts, PL 1, MEC-TERMINAL and IPR-P-Terminal CON, PL 3.	1. Clean all the following parts: • Toner cartridge contacts, PL 1 • MEC-TERMINAL, PL 3 • IPR-P-Terminal CON, PL 3 Ensure all toner and paper dust particles are removed.
	2. The rollers used in the image development process may be contaminated. Charge Roller = 37.8mm Supply Roller = 44.9mm Develop Roller = 35.2mm Transfer Roller = 45.3mm	2. Clean all the gears on the toner cartridge, PL 1. If the problem still persists, replace the Toner Cartridge, PL 1.

IQ 4 Black/White Spot

Description

Dark or blurry black spots occur periodically on the print.
White spots occur periodically on the print.

	Check and Cause	Solution
	1. If dark or blurry black spots occur periodically, the rollers in the Developer may be contaminated with foreign matter or paper particles. (Charge roller: 37.8 mm interval OPC drum: 75.5 mm interval)	1. Run Clean Drum, GP 3 several times.
	2. If a black image is partially broken, the transfer voltage is abnormal or the transfer roller's life has expired.	2. Clean all the following parts: • Toner cartridge contacts, PL 1 • SMPS/HVPS contacts, PL 1 • MEC-TERMINAL, PL 3 • IPR-P-Terminal CON, PL 3 Install new parts as necessary: • Toner Cartridge • SMPS/HVPS
	3. If faded areas or voids occur in a black image at intervals of 75.5 mm, or black spots occur elsewhere, the OPC drum surface is damaged.	3. - 75.5mm repitition:Examine the surface of the OPC drum in the toner cartridge, PL 1, and carefully clean with a soft, lint free cloth. If the problem still persists, Install a new toner cartridge, PL 1. - 38.8mm repetition: Install a new toner cartridge, PL 1.

IQ 5 Light Image

Description

The printed image is light, with no ghost.

	Check and Cause	Solution
	1. Toner Save mode enabled.	1. Ensure the Toner Save mode is off, GP 3. Check printer and driver settings.
	2. Check shading profile in Tech Mode, GP 5.	2. Redo shading profile in the Tech mode, GP 5.
	3. Bad contact caused by dirty contacts on the toner cartridge.	3. Clean the following parts: • Toner cartridge contacts, PL 1 • MEC-TERMINAL, PL 3 • IPR-P-Terminal CON, PL 3 Clean all dirt from inside the frame assembly, PL 3.
	4. Ambient temperature is below than 10°C.	4. Wait 30 minutes after the printer has powered on before you start printing.
	5. The toner is not properly distributed in the cartridge.	5. Remove the toner cartridge, PL 1, gently shake it and replace.
	6. A ticking noise occurs. Measure the time between ‘ticks’.	6. If the ticks occur between 2 second intervals, the toner cartridge is almost exhausted. Install a new toner cartridge, PL 1.
	7. The toner cartridge life has expired.	7. Install a new toner cartridge, PL 1.
	8. Develop roller is contaminated when the toner has almost depleted.	8. Install a new toner cartridge, PL 1.
	9. Check the HVPS output using Engine Test Mode, GP 4.	9. If necessary, install a new SMPS/ HVPS, PL 1.

IQ 6 Dark Image or Black Image

Description

The printed image is dark.

	Check and Cause	Solution
	1. Check the connection between the CIS and the Main PBA.	1. Ensure the CIS harness, PL 7, is properly connected.
	2. Check shading profile.	2.Redo shading profile in Tech Mode, GP 5.
	3. No charge voltage.	3. Clean the MEC-TERMINAL and IPR-P-Terminal CON, PL 3.
	4. Charge voltage fault due to bad contacts between the toner cartridge contacts, PL 1, MEC-TERMINAL and IPR-P-Terminal CON, PL 3.	4. Clean the MEC-TERMINAL and IPR-P-Terminal CON, PL 3. If the problem still persists, install a new SMPS/HVPS, PL 1.
	5. Check the LSU operation using Engine Test Mode, GP 4.	5.Install new parts as necessary: • LSU, PL 1 • Main PBA, PL 1

IQ 7 Uneven Density

Description

Print density is uneven.

	Check and Cause	Solution
	1. The toner level is uneven on the developer roller due to a damaged blade.	1. Remove the toner cartridge, PL 1, gently shake it and replace.
	2. The transfer roller, PL 1 is improperly installed	2. Adjust the transfer roller, PL 1.
	3. The life of the toner cartridge has expired.	3. Install a new toner cartridge, PL 1.

IQ 8 Background

Description

Light or dark background on the print.

	Check and Cause	Solution
	1. The customer has been printing large quantities of low coverage prints or the printer has not been used for a long time.	1. Inform the customer that low area coverage will cause background problems.
	2. Is the vertical movement of the transfer roller smooth?	2. Clean the bushings on the transfer roller, PL 4.
	3. A recycled toner cartridge is being used.	3. Install a new toner cartridge, PL 1.
	4. The life of the developer has expired, refer to GP 7.	4. Install a new toner cartridge, PL 1.
	5. The SMPS/HVPS, PL 1 maybe defective.	5. Clean the MEC-TERMINAL and IPR-P-Terminal CON, PL 3. If the problem still persists, install a new SMPS/HVPS, PL 1.

IQ 9 Ghost (1)

Description

Ghost occurs at 75.5 mm intervals of the OPC drum on the print.

	Check and Cause	Solution
	1. Abnormal low temperature (below 10°C).	1. Wait about 30 minutes after power on before using the machine.
	2. The life of developer has expired, refer to GP 7.	2. Install a new toner cartridge, PL 1.
	3. Transfer roller lifetime has expired, refer to GP 7.	3. Check the transfer roller lifetime and if necessary install a new transfer roller, PL 1.
	4. Bad contacts caused by contamination from toner particles between IPR-P-Terminal CON, PL 3 and the contacts on the Toner Cartridge, PL 1.	4. Clean the following parts: • Toner cartridge contacts, PL 1 • MEC-TERMINAL, PL 3 • IPR-P-Terminal CON, PL 3 Install new parts as necessary: • SMPS/HVPS, PL 1 • Toner Cartridge, PL 1
	5. Bad contacts caused by contamination from toner particles between IPR-P-Terminal CON, PL 3 and the SMPS/HVPS contacts, PL 1.	5. Clean the SMPS/HVPS contact terminals. If the problem persists, install a new SMPS/HVPS, PL 1.

IQ 10 Ghost (2)

Description

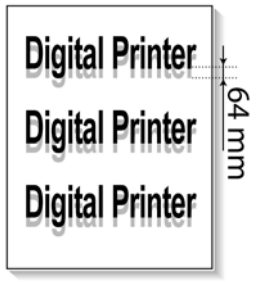
Ghost occurs at 75.5 mm intervals of the OPC drum on the print.
(When printing on card stock or transparencies using bypass feeder)

	Check and Cause	Solution
	When printing on card stock thicker than normal paper or transparencies such as OHP, higher transfer voltage is required.	Inform the customer to Select 'Thick Mode' on paper type menu from the software application and after using returning to the original mode is recommended.

IQ 11 Ghost (3)

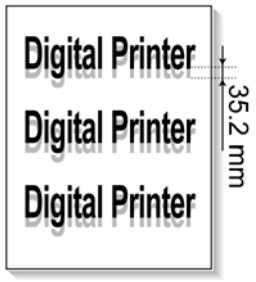
Description

White ghost occurs in the black image printing at 64mm intervals.

	Check and Cause	Solution
	1. Fuser contamination	1. Disassemble the fuser, REP 9 and remove any contamination on the rollers. Clean any contamination from between the thermistor, and the heat roller, PL 5. **CAUTION** *Take care not to deform the rollers.*
	2. Possible abnormal voltage and bad contact of the terminal of the supply roller in the toner cartridge, PL 1.	2. Install a new toner cartridge, PL 1.

IQ 12 Ghost (4)

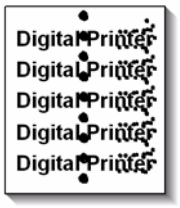
Description
Ghost occurs at 35.2mm intervals.

	Check and Cause	Solution
	1. The life of the developer may have expired.	Install a new toner cartridge, PL 5.
	2. Check the SMPS/HVPS output using Engine Test Mode, GP 4.	2. Clean the following parts: • Toner cartridge contacts, PL 1 • SMPS/HVPS contacts, PL 1 • MEC-TERMINAL, PL 3 • IPR-P-Terminal CON, PL 3. If the problem persists, install a new SMPS/HVPS, PL 1.

IQ 13 Contamination on the Face of Page

Description

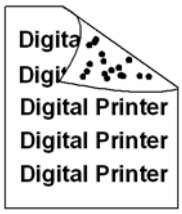
The background on the face of the printed page is contaminated.

	Check and Cause	Solution
	1. The transfer roller, PL 1 maybe contamInated.	1. Run Clean Drum, GP 3 several times.
	2. Toner leakage due to improperly sealed developer.	2. Install a new print cartridge, PL 1.

IQ 14 Contamination on Back of Page

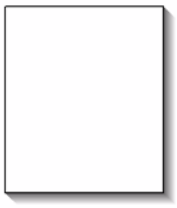
Description

The back of the page is contaminated at 45.3mm or 75.3mm intervals.

	Check and Cause	Solution
	1. 45.3mm: Transfer roller, PL 1, is contaminated.	1. Run Clean Drum, GP 3 several times. Install a new transfer roller, PL 1 if necessary
	2. 75.3mm: Pressure roller, PL 5, is contaminated.	**CAUTION** *Take care not to bend or break the thermistor.* 3. Disassemble the fuser, GP 9. Clean the heat roller, pressure roller, and thermistor, PL 5. If necessary install a new fuser, PL 1.

IQ 15 Blank Page Print out (1)

Description
Blank page is printed.

	Check and Cause	Solution
	1. Room light is passing through a thin original while copying.	1. Ensure the cover platen, PL 7 is properly closed while copying.
	2. Check shading profile.	2. Perform shading test in Tech Mode, GP 5.
	3. Bad ground contacts in toner cartridge.	3. Clean the toner cartridge contacts, PL 1 and frame contacts, PL 3. Install new parts as necessary: • HVPS, PL 1 • Toner cartridge, PL 1
	4. The CIS harness may be faulty.	4. Check the CIS harness. Install new parts as necessary: • Scan assembly, PL 7 • Main PBA, PL 1

IQ 16 Blank Page Print out (2)

Description

Blank page is printed.
One or several blank pages are printed.
When the machine turns on, several blank pages print.

	Check and Cause	Solution
	1. Abnormal solenoid HB (pickup), PL 3.	1. Check the solenoid HB (pickup) operation using Engine Test Mode, GP 4. Install new parts as necessary • Solenoid HB (pickup), PL 3 • Main PBA , PL 1

IQ 17 Defective Image Quality

Description

The copied image is excessively light or dark

Check and Cause	Solution
Check shading profile	Perform shading test in tech mode, GP 5.
Check the gap between original and scanner glass, PL 7.	A gap of more than 0.5mm can cause blurred images. Ensure the cover is closed correctly.

IQ 18 Printed Vertical Lines Not Straight

Description

When printing, vertical lines are not straight.

Check and Cause	Solution
1. Check the LSU operation usint Engine Test Mode, GP 4. Check the stability of +24V supply to the LSU, PL 1.	1. 24V stable - Install a new LSU, PL 1. 24V unstable - Install a new SMPS, PL 1. If the problem persists, install a new Main PBA, PL 1.

IQ 19 Blurred Image

Description

Image is blurred.

Check and Cause	Solution
1. Check the gap between original and platen glass, PL 7.	1. A gap of more than 0.5 mm can cause a blurred image. Ensure rollers and cover close correctly. Install new parts as necessary, PL 7.

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4. Repairs/Adjustments

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REP 1 Front Cover

Parts list on PL 2

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

1. Remove the cassette assembly, Figure 1.

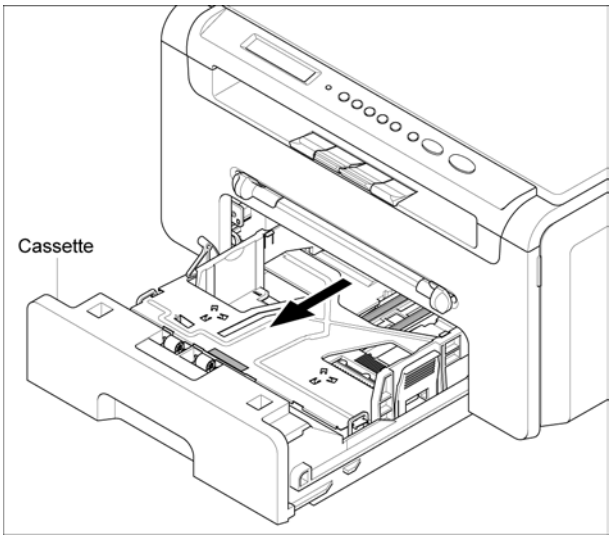


Figure 1

2. Open the front cover, Figure 2.

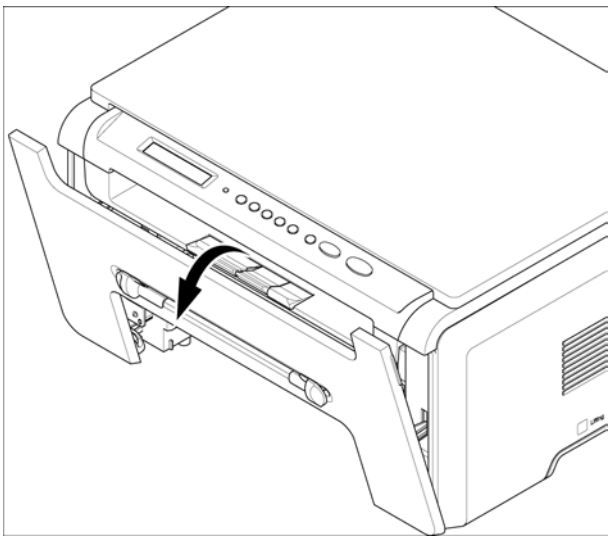


Figure 2

3. Gently flex the front cover in the direction of the arrows and remove the front cover, Figure 3.

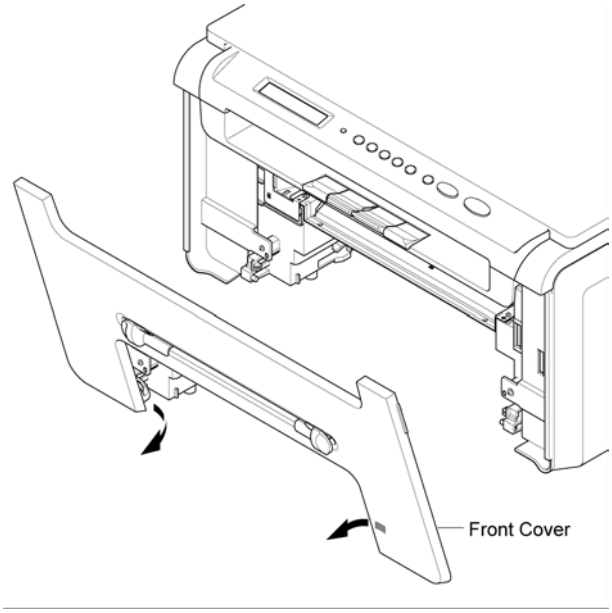


Figure 3

REP 2 Rear Cover

Parts list on PL 2

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

1. Remove 4 screws, Figure 1.

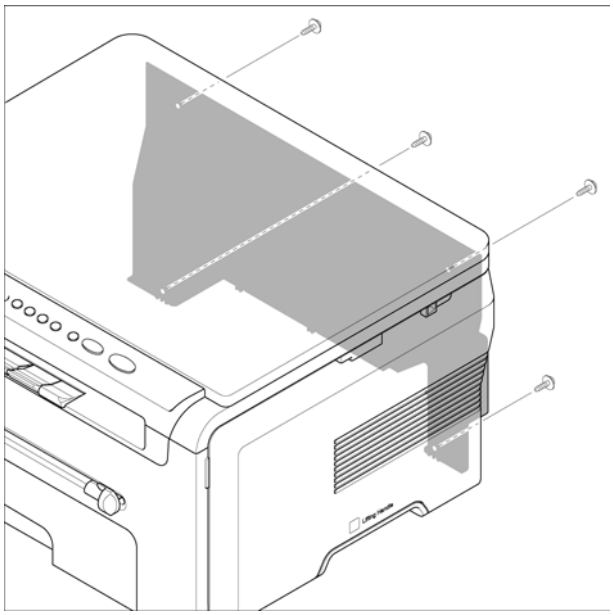


Figure 1

2. Remove the Rear Cover and disconnect CN 7 from the Main PBA, Figure 2.

Note: *Make sure the power switch does not obstruct the removal of the Rear Cover.*

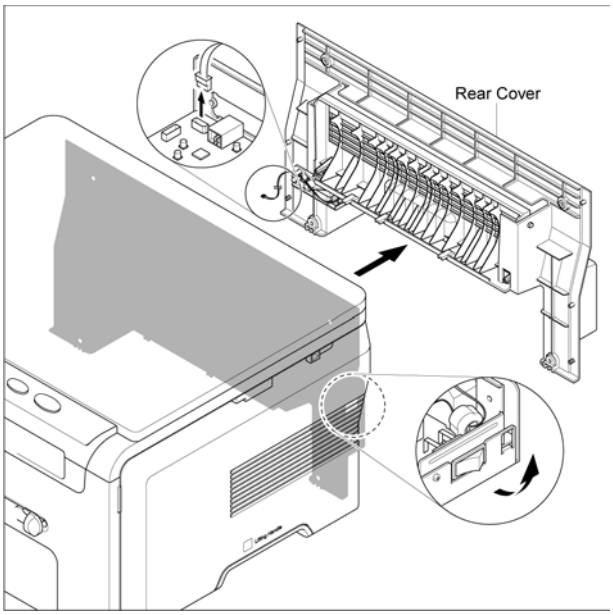


Figure 2

3. If necessary, remove the Rear Door in the direction of the arrows, Figure 3.

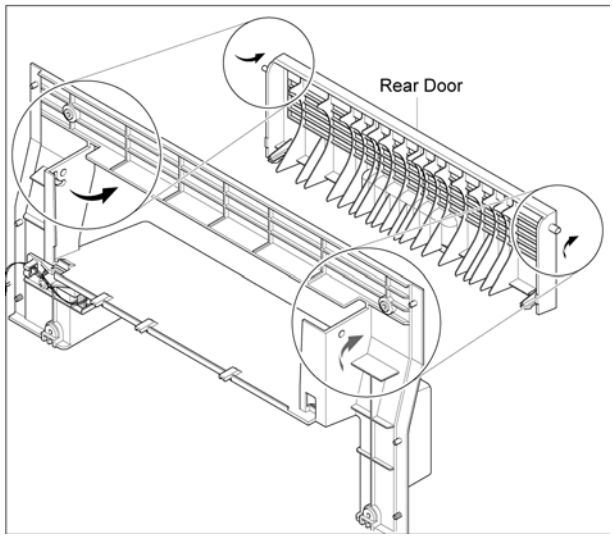


Figure 3

REP 3 Fuser Fan

Parts list on PL 2

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

1. Remove the Rear Cover. (Refer to REP 2)
2. Release the harness from the Harness Holder. Remove 1 screw, then the Harness Holder, Figure 1.

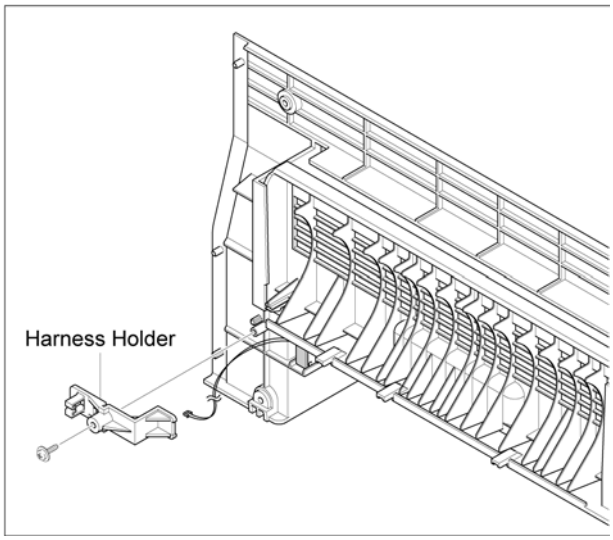


Figure 1

3. Remove the Fuser Fan, Figure 2.

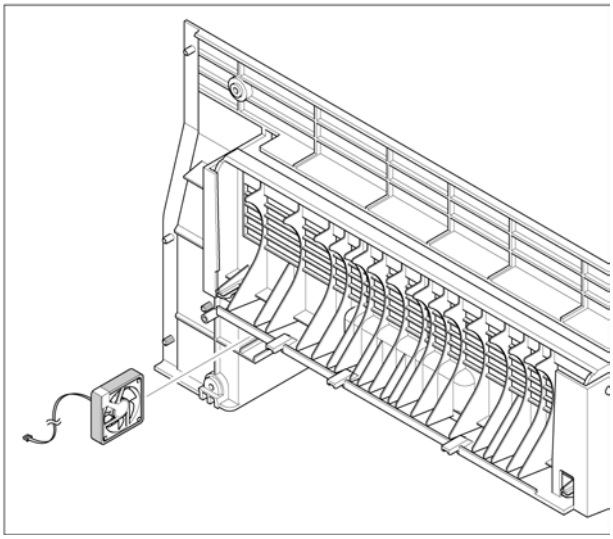


Figure 2

REP 4 Right Side Cover

Parts list on PL 2

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

1. Remove the Front Cover. (Refer to REP 1)
2. Remove the Rear Cover. (Refer to REP 2)
3. Remove 1 screw, Figure 1.

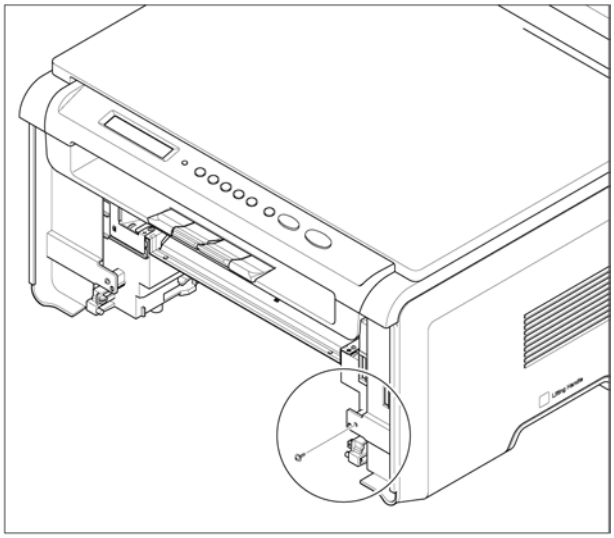


Figure 1

4. Gently flex the Right Side Cover in the direction of the arrows, Figure 2.

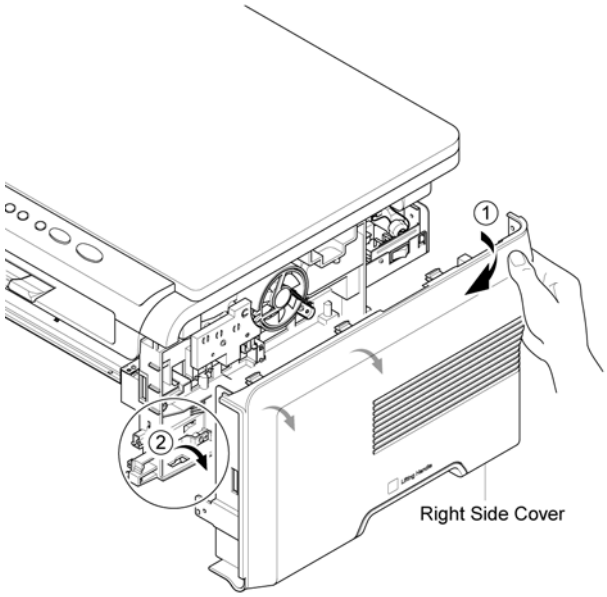


Figure 2

5. Disconnect CON 4 from the SMPS/HVPS, Figure 3.

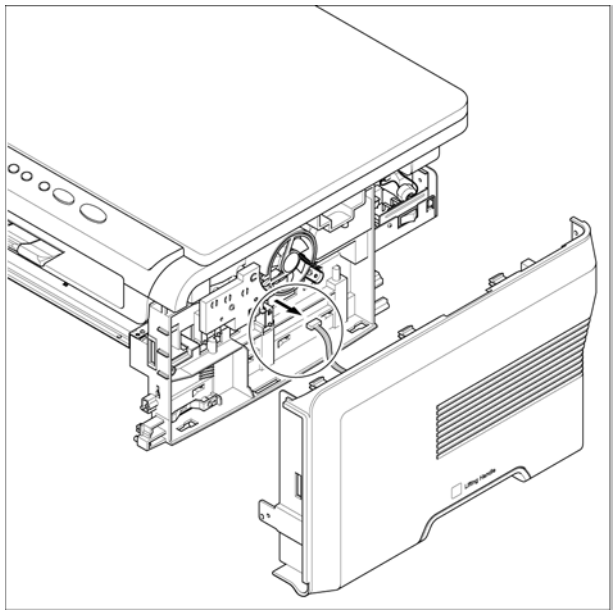


Figure 3

6. If necessary, remove the Cover Open Micro Switch, Figure 4.

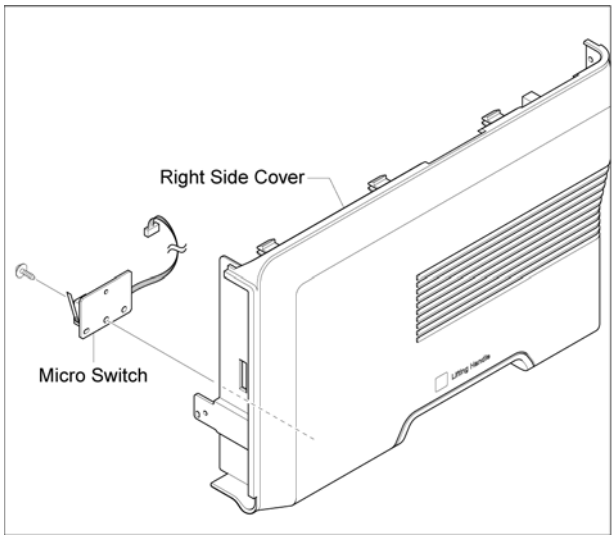


Figure 4

REP 5 Left Side Cover

Parts list on PL 2

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

1. Remove the Front Cover. (Refer to REP 1)
2. Remove the Rear Cover. (Refer to REP 2)
3. Remove 1 screw, Figure 1.

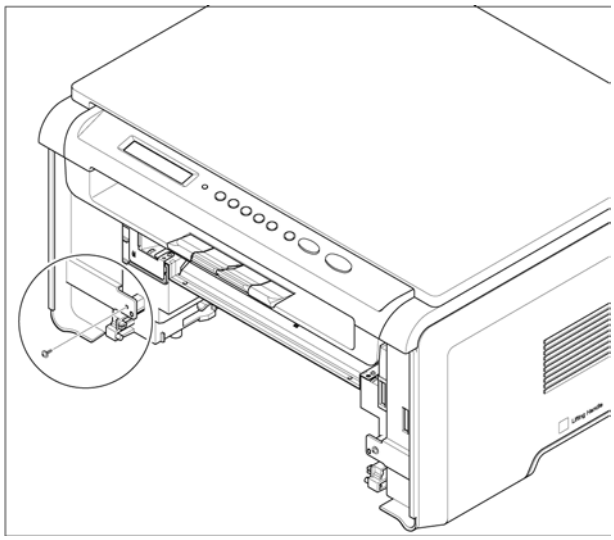


Figure 1

4. Gently flex the Left Side Cover in the direction of the arrows then remove the Left Side Cover, Figure 2.

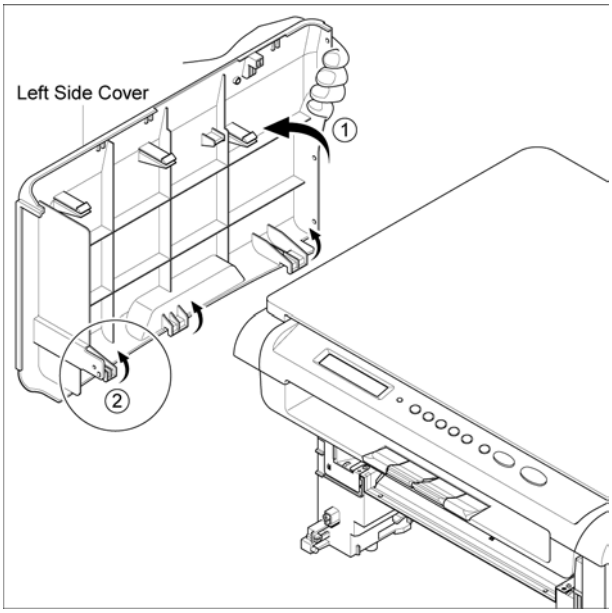


Figure 2

REP 6 Scan Assembly

Parts list on PL 7

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

1. Remove the Right Side Cover. (Refer to REP 4)
2. Remove the Left Side Cover (Refer to REP 5).
3. Release the adjustable cable tie and disconnect CN 8, CN 13 and CON 14 from the Main PBA, Figure 1.

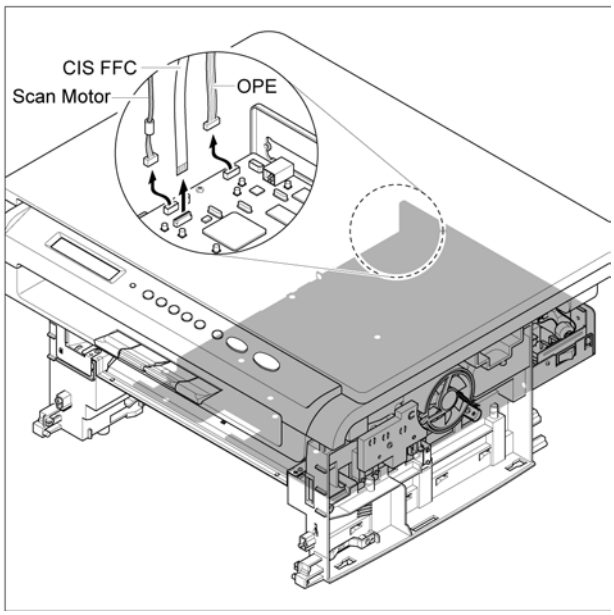


Figure 1

4. Carefully lift the Scan Assembly in the direction of the arrows while threading the cables through the frame, Figure 2.

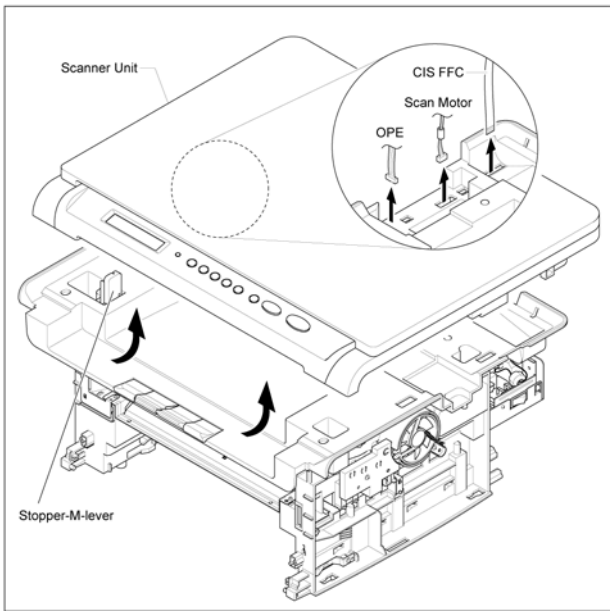


Figure 2

Note: *When replacing the Scan Assembly, push down the Stopper-M-Lever to ensure the ScanAssembly fits into the Middle Cover.*

5. Lift the Platen Cover upwards then remove the Platen Cover, Figure 3.

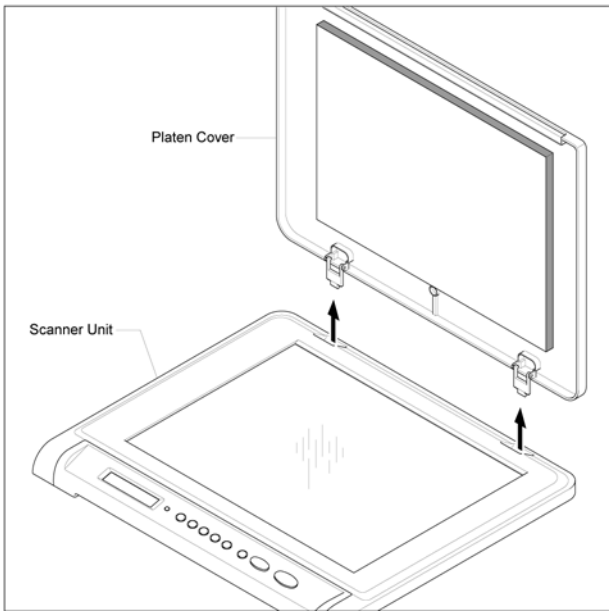


Figure 3

6. Use a flat-bladed screwdriver to unhook the OPE panel clips in the direction of the arrows, Figure 4.

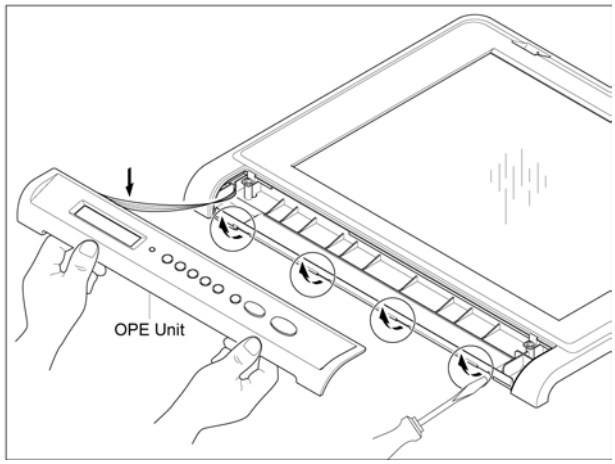


Figure 4

7. Remove 3 screws. Remove the OPE PBA and disconnect CN 1, Figure 5.

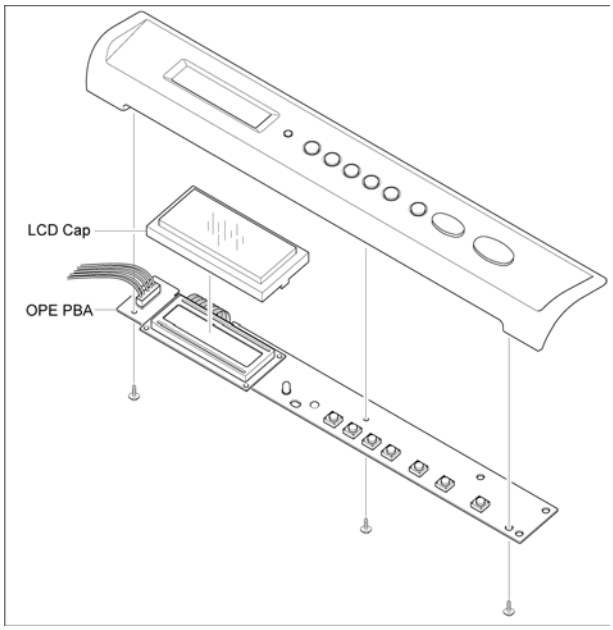


Figure 5

8. Remove 2 screws, Figure 6.

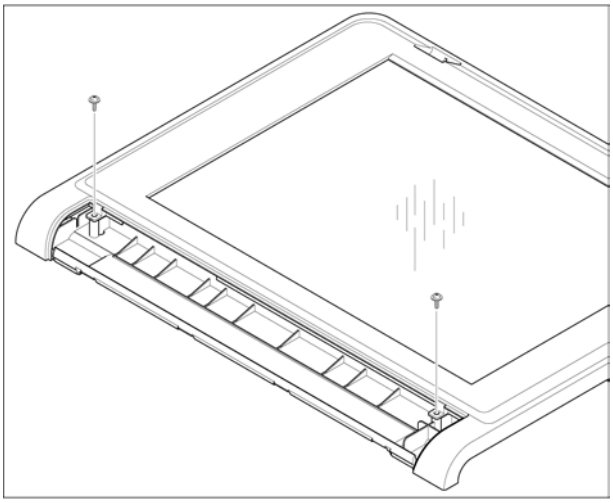


Figure 6

9. Use a flat-bladed screwdriver to release 7 hooks securing the Scan Upper Unit to the Scan Lower Unit, Figure 7.

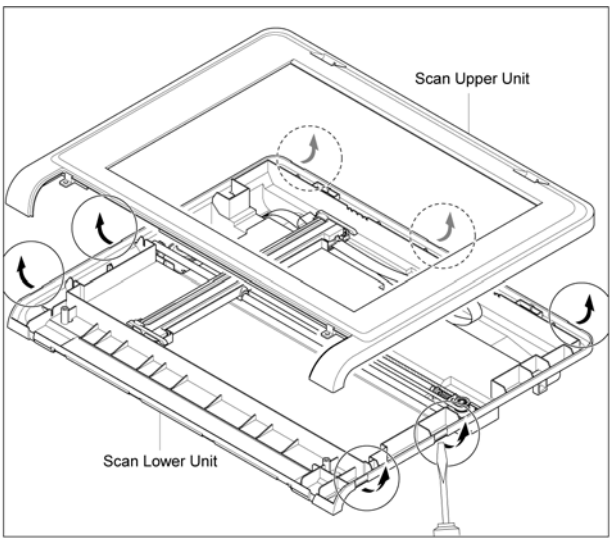


Figure 7

10. Release the Scanner Belt by pushing the Idle Pulley inwards, Figure 8.

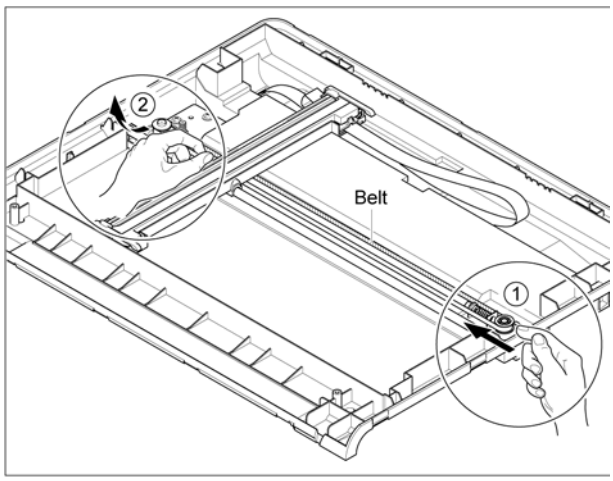


Figure 8

11. Remove the CIS, CIS Harness, Scanner Belt and Carriage, Figure 9.

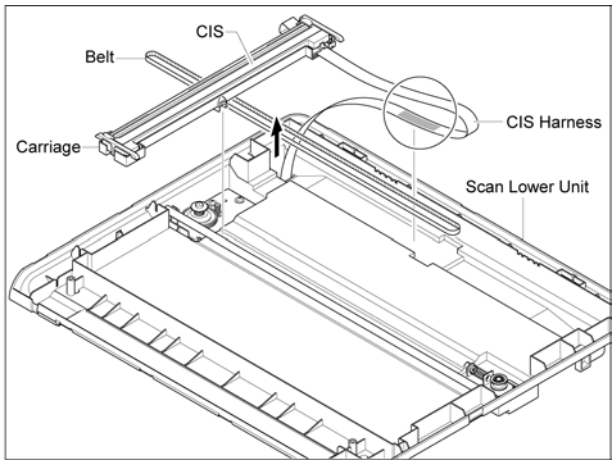


Figure 9

12. Disconnect the CIS FFC from CIS. Remove 2 sliders from each end of the

CIS. Release the CIS in the direction of the arrow, Figure 10.

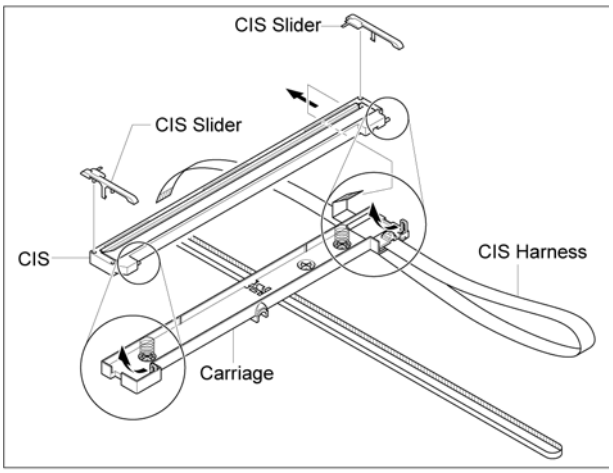


Figure 10

13. Remove the Belt Clip with a screwdriver to release the Scanner Belt, Figure 11.

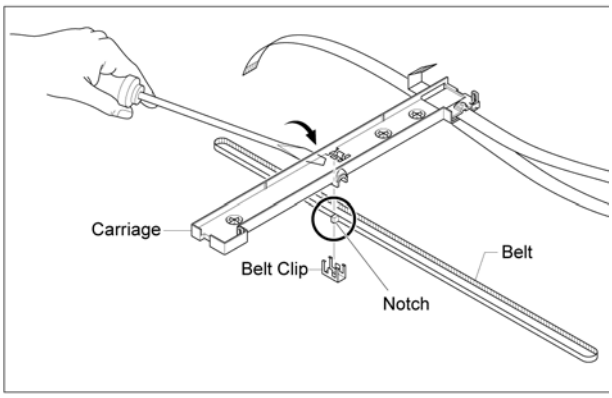


Figure 11

Note: *Take note of the position of the notch to ensure correct replacement when fitting the Scanner Belt into the Carriage.*

14. Remove the CIS shaft, 3 screws, then the Scan Motor Assembly, Figure 12.

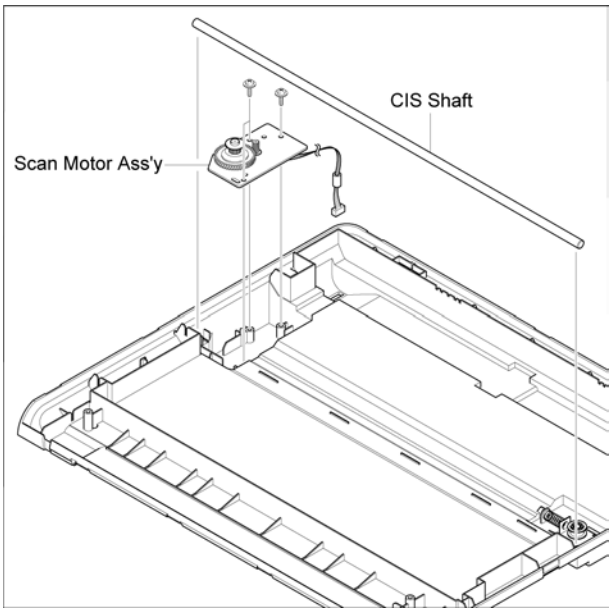


Figure 12

15. Remove the Spring then the Idle Bracket in the direction of the arrow, Figure 13.

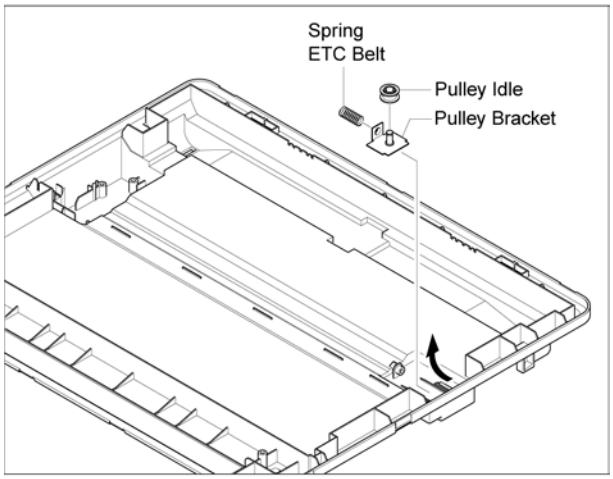


Figure 13

REP 7 OPE Assembly

Parts list on PL 8

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

1. Lift the Platen Cover upwards and remove the Platen Cover, Figure 1.

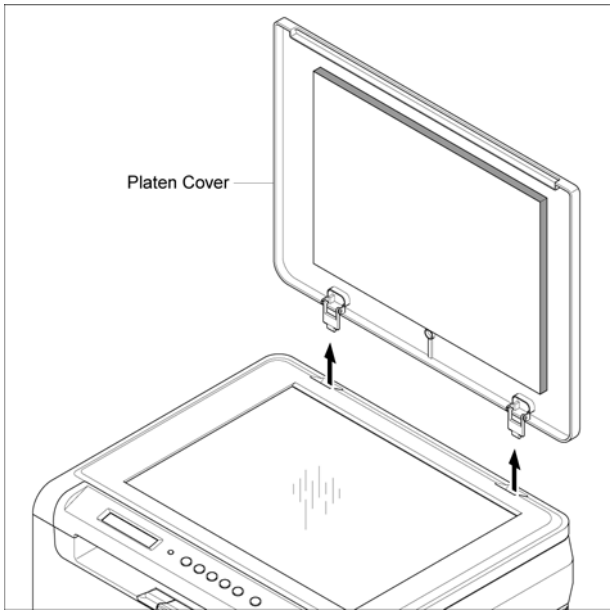


Figure 1

2. Use a flat-bladed screwdriver to unhook the OPE panel clips in the direction of the arrows, Figure 2.

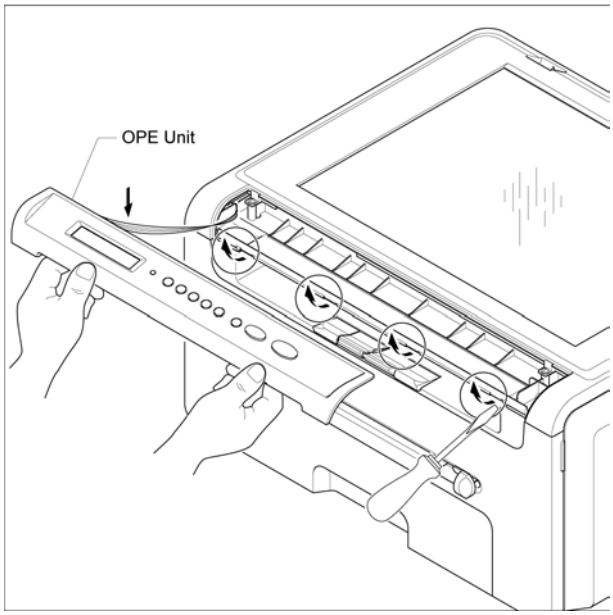


Figure 2

3. Remove 3 screws,then disconnect CN 1 from the OPE PBA. Remove the OPE PBA, Figure 3..

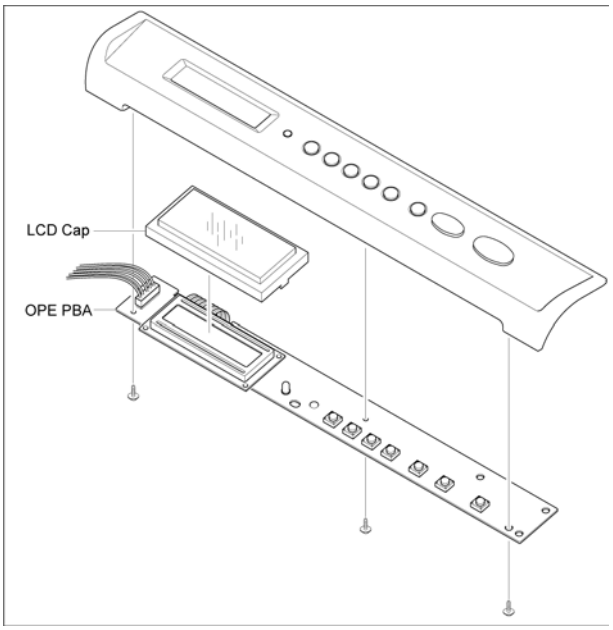


Figure 3

4. Remove the keys, Figure 4.

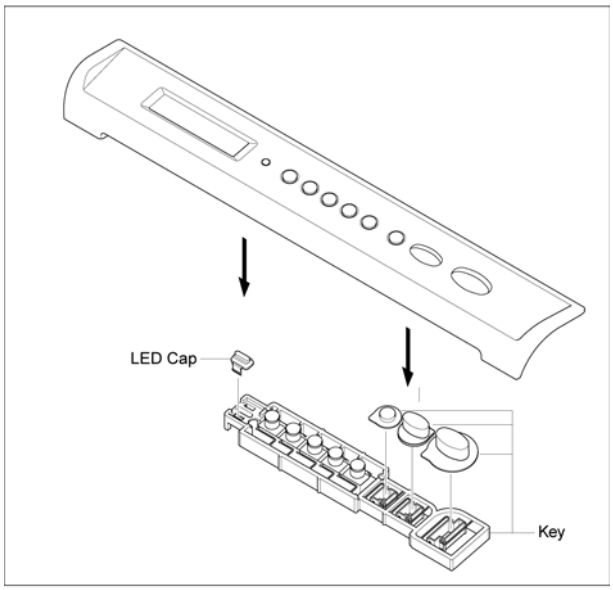


Figure 4

REP 8 Middle Cover Unit

Parts list on PL 2

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

1. Remove the Scan Assembly. (Refer to REP 6)
2. Remove 4 screws, then the Middle Cover Unit, Figure 1.

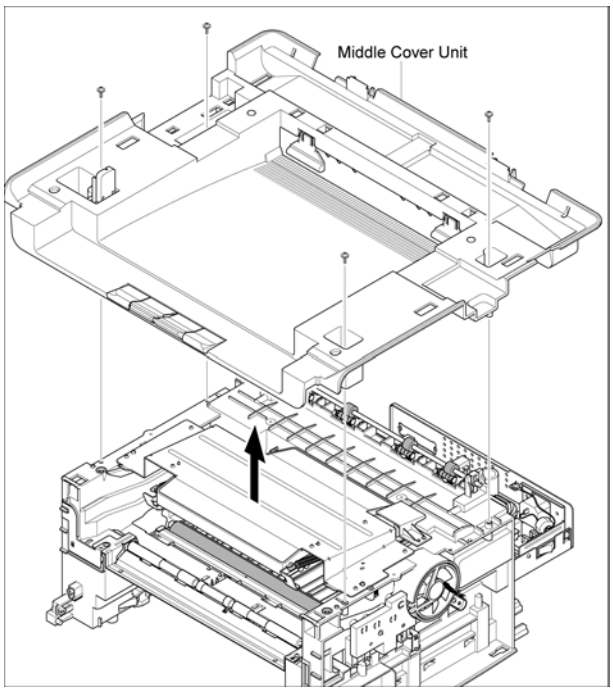


Figure 1

REP 9 Fuser

Parts list on PL 5

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

1. Remove the Rear Cover. (Refer to REP 2)
2. Disconnect CON 1 from the SMPS/HVPS and CN 12 from the Main PBA, Figure 1.

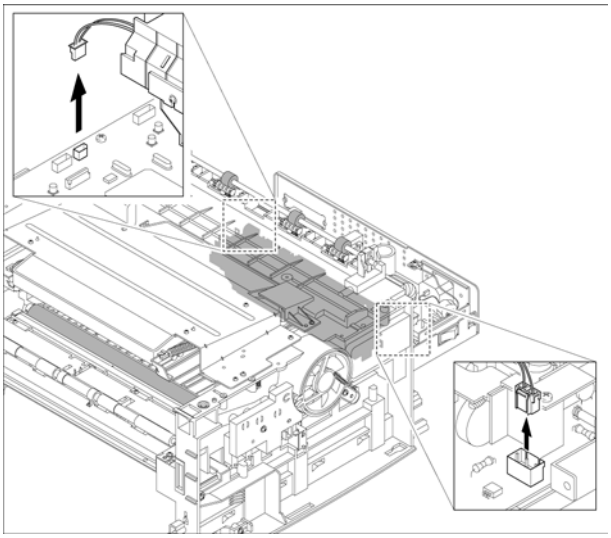


Figure 1

CAUTION

When removing the fuser, take care not to damage the Exit Sensor.

3. Remove 4 screws, then the fuser, Figure 2.

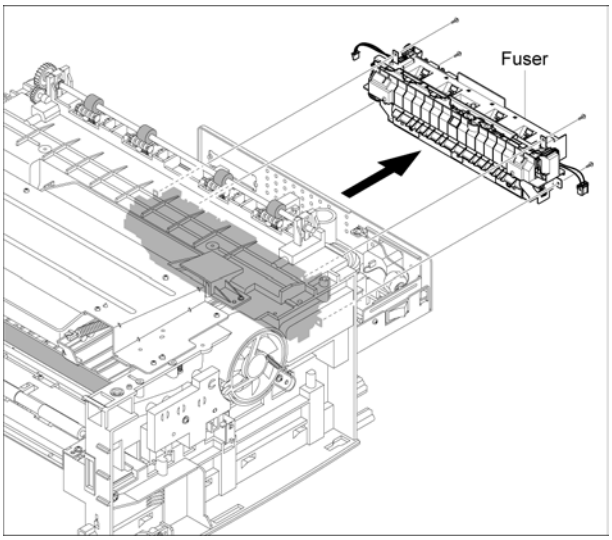


Figure 2

4. Remove 2 screws. Disconnect the Fuser Harness and the Fuser Joint Harness from both sides of the Thermostat, then remove the Thermostat, Figure 3.

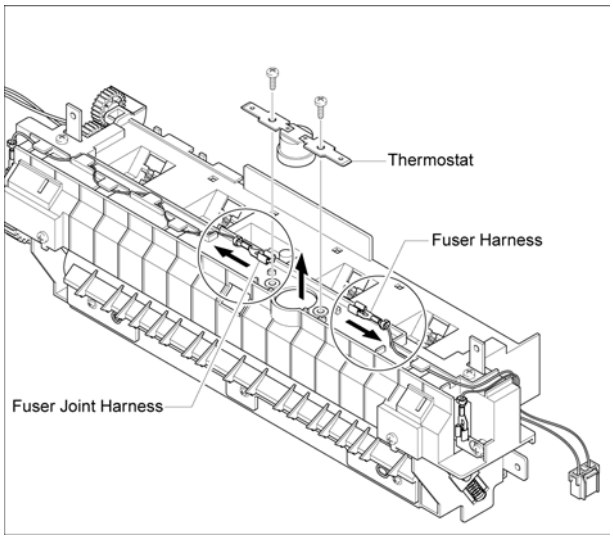


Figure 3

5. Remove 2 screws. Disconnect the Fuser Harness and the Fuser Joint Harness from the Halogen Lamp. Remove the Halogen Lamp by sliding it to the left, Figure 4.

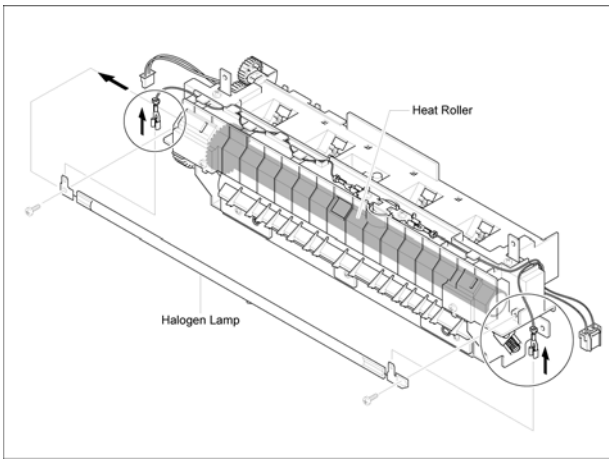


Figure 4

6. Remove 1 screw, Gear RDCN(25/15), then Gear 25, Figure 5.

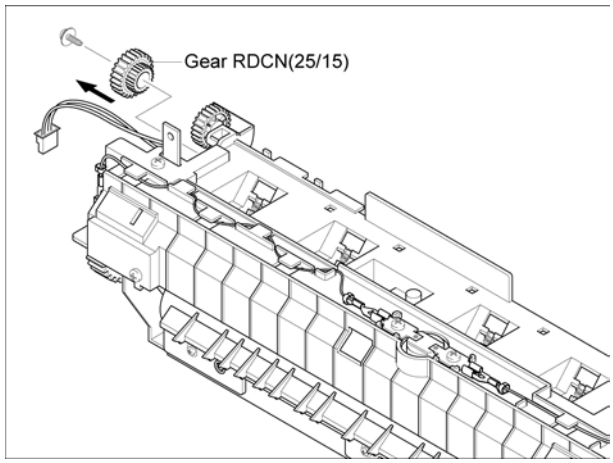


Figure 5

7. Remove 4 screws. Use a flat-bladed screwdriver to unhook the 2 clips, then remove the Cover-M-Fuser, Figure 6.

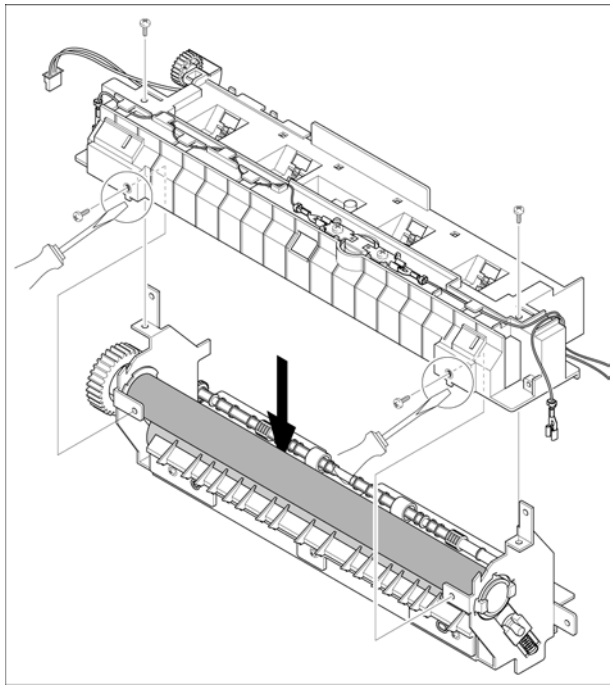


Figure 6

8. Release the Thermistor Harness, Figure 7.

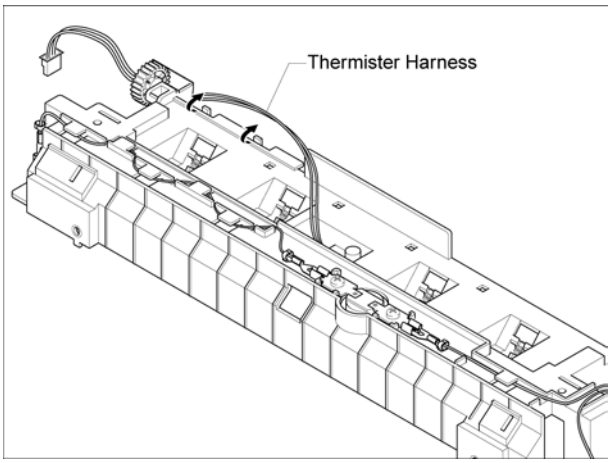


Figure 7

9. Remove 1 screw, then the Thermistor, Figure 8.

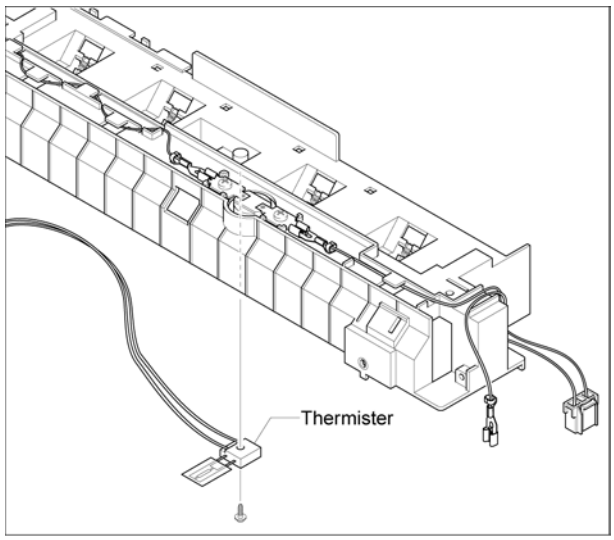


Figure 8

REP 10 LSU

Parts list on PL 1

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

1. Remove the Scan Assembly. (Refer to REP 6)
2. Remove the Middle Cover Unit (Refer to REP 8)
3. Remove 1 screw, then the CAP LSU, Figure 1.

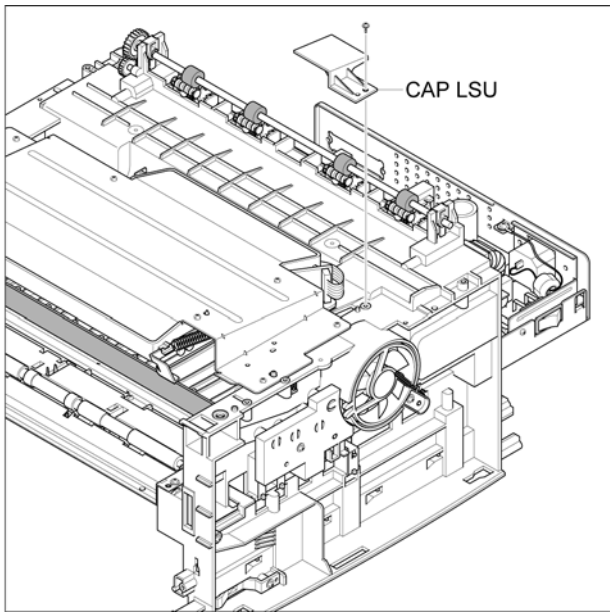


Figure 1

4. Disconnect the LSU connectors, Figure 2.

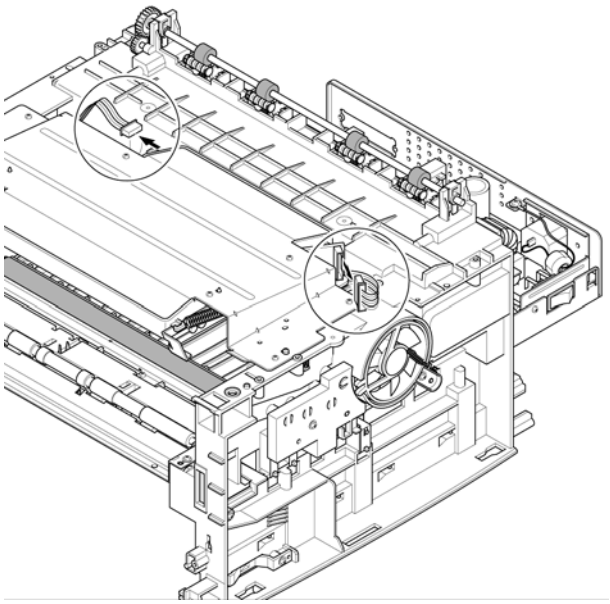


Figure 2

5. Remove 4 screws, then the LSU, Figure 3.

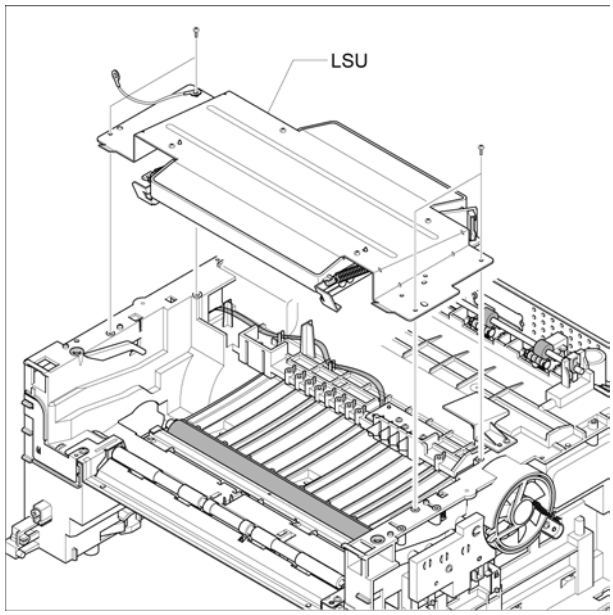


Figure 3

REP 11 Toner Fan

Parts list on PL 1

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

1. Remove the Front Cover. (Refer to REP 1)
2. Remove the Rear Cover. (Refer to REP 2)
3. Remove the Right Side Cover. (Refer to REP 4)
4. Disconnect CON 3 from the SMPS/HVPS.
5. Remove 1 screw, then the Toner Fan. Figure 1.

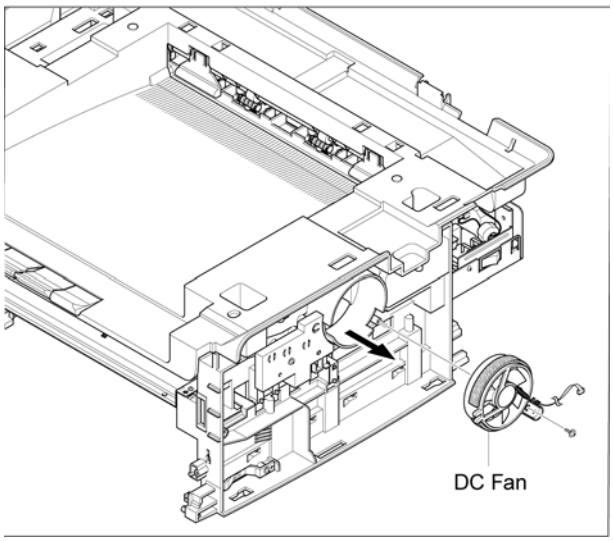


Figure 1

REP 12 Engine Shield Assembly

Parts list on PL 1

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

1. Remove the Scan Assembly. (Refer to REP 6)
   Remove the Fuser Connectors. (Refer to REP 9, Step 2)
   Remove the Toner Fan Connector. (REP 11, Step 2)
2. Remove 11 screws,Figure 1.

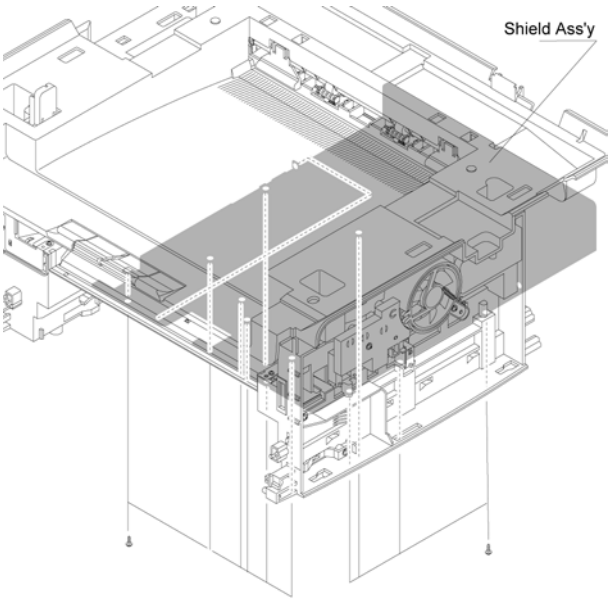


Figure 1

3. Tilt the Engine Shield Assembly to the left and remove the Engine Shield Assembly, Figure 2.

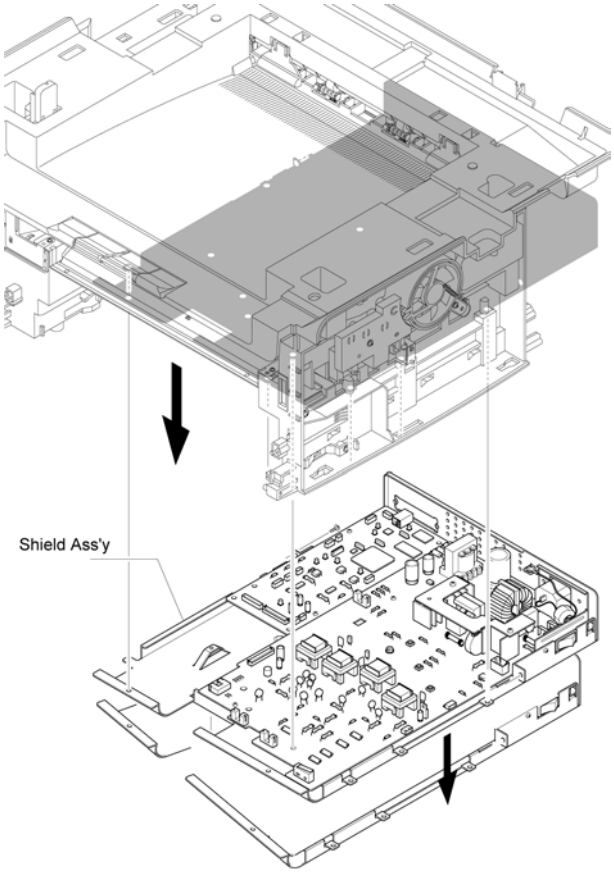


Figure 2

4. Disconnect all connectors from the Main PBA and SMPS/HVPS.

Note: *When replacing the Engine Shield Assembly, replace the Paper Empty Actuator through the gap on the assembly. Ensure all the screws are properly fitted, Figure 3.*

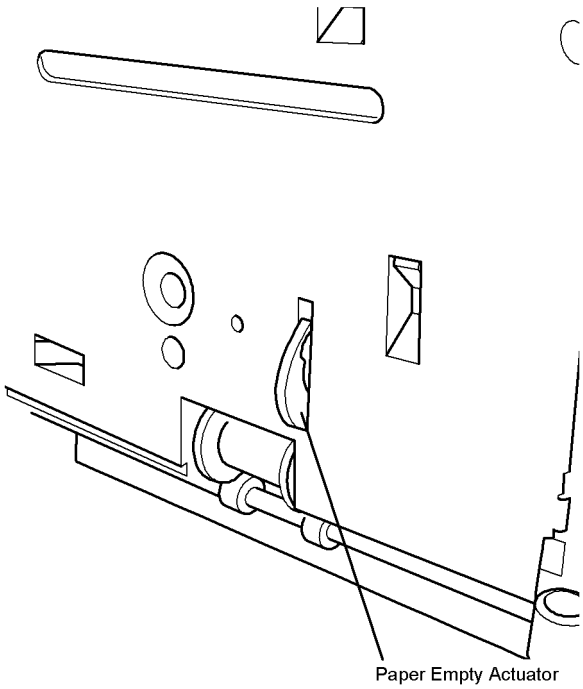


Figure 3

REP 13 Main PBA

Parts list on PL 1

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

1. Remove the Engine Shield Assembly. (Refer to REP 12)
2. Disconnect CN 4. Remove 2 screws, then the Main PBA, Figure 1.

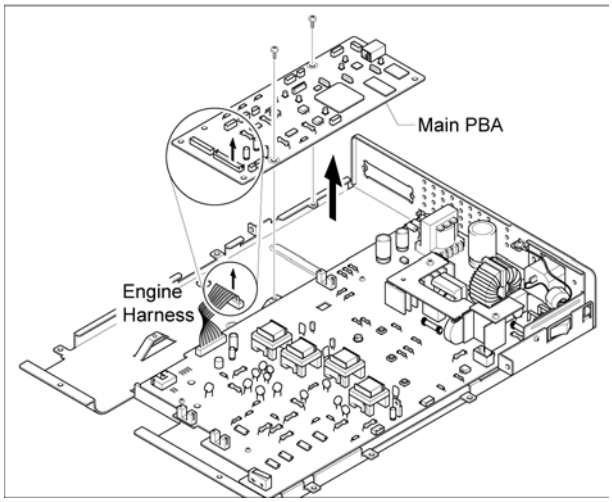


Figure 1

REP 14 SMPS/HVPS

Parts list on PL 1

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

1. Remove the Engine Shield Assembly. (Refer to REP 12)
2. Remove 2 screws, then the Inlet Bracket, Figure 1.

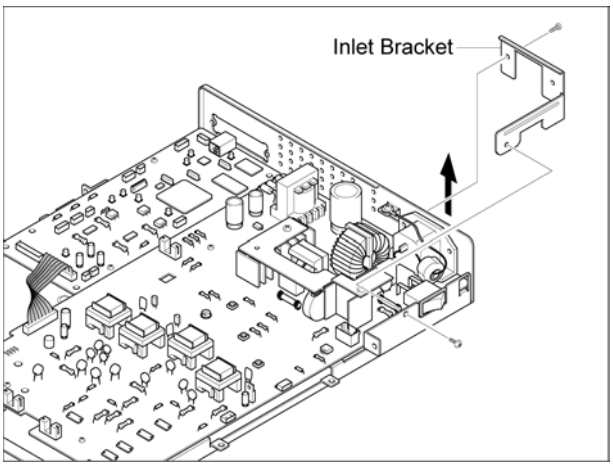


Figure 1

3. Disconnect CON 2, Figure 2.

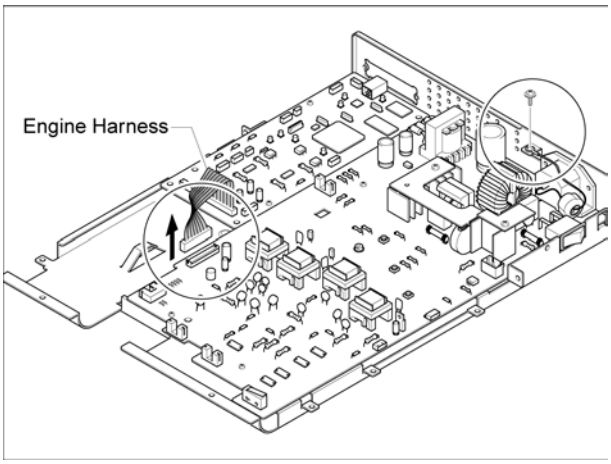


Figure 2

4. Remove 3 screws then the SMPS/HVPS, Figure 3.

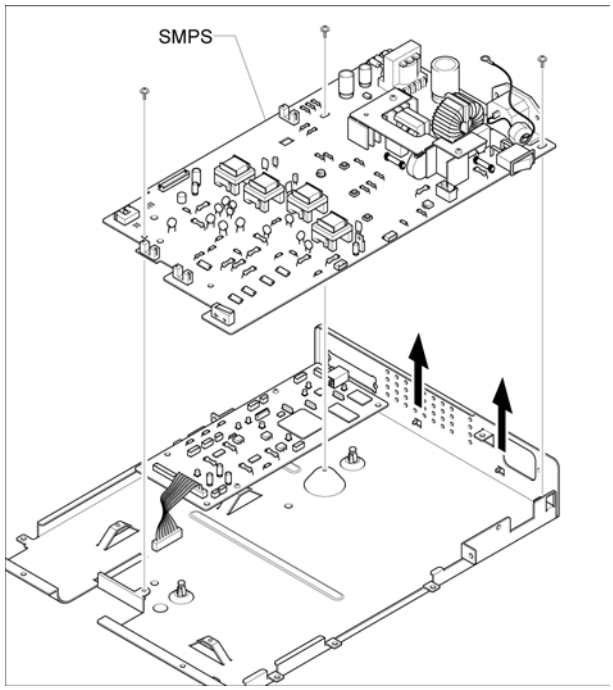


Figure 3

REP 15 CRUM PBA

Parts list on PL 3

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

1. Remove the LSU. (Refer to REP 10)
2. Remove the Engine Shield Assembly. (Refer to REP 12)
3. Remove 4 screws, then the CRUM PBA, Figure 1.

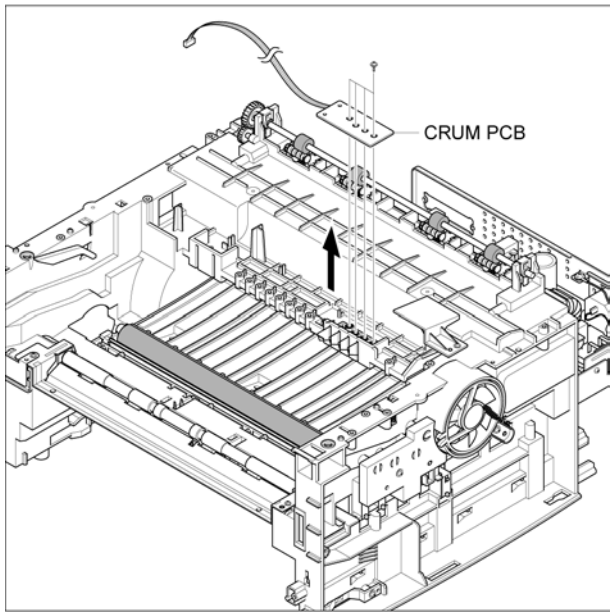


Figure 1

REP 16 Transfer Roller

Parts list on PL 1

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

1. Remove the LSU. (Refer to REP 10)
2. Remove 3 screws, then the Transfer Earth, Figure 1.

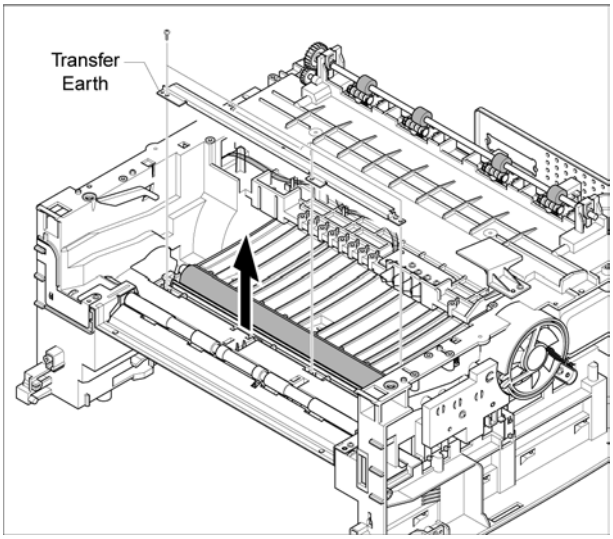


Figure 1

3. Disconnect the PTL PBA Harness then remove the PTL Holder and PTL Lens, Figure 2.

Note: *Take note of the orientation of the PTL Lens to ensure correct replacement.*

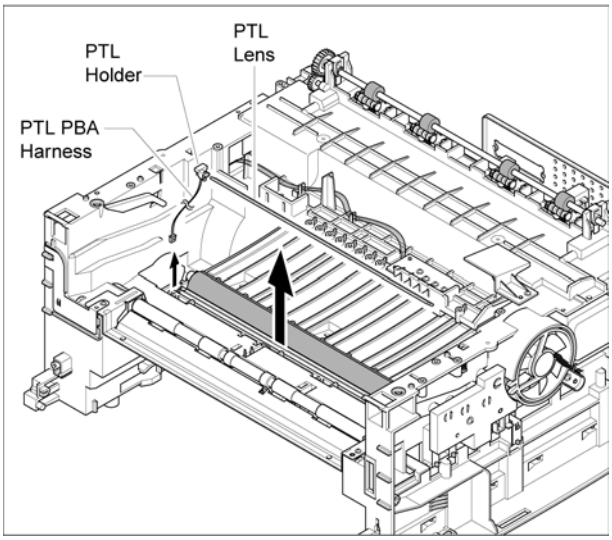


Figure 2

4. Unlatch the bush, then remove the bush. Remove the Transfer Roller in the direction of the arrow, Figure 3.

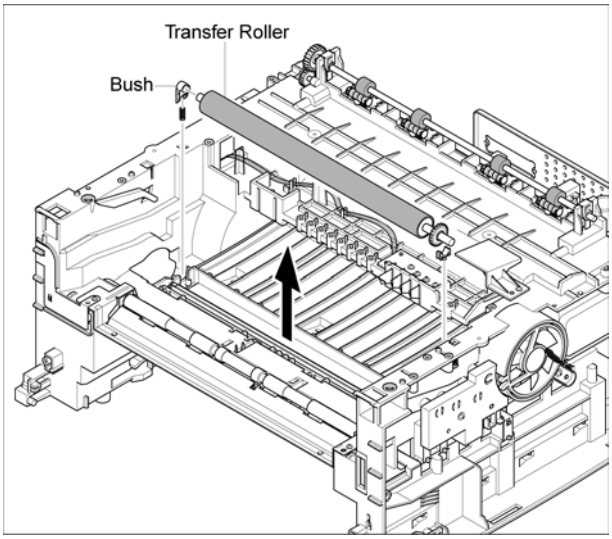


Figure 3

REP 17 Feed Roller

Parts list on PL 4

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

1. Remove the Middle Cover (Refer to REP 8)
2. Remove 2 screws. Adjust the IPR-P-Ground slightly allowing the Guide Paper to be removed, Figure 1.

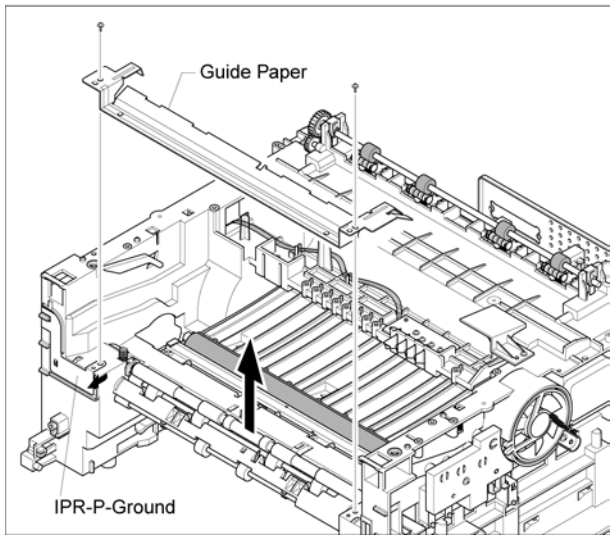


Figure 1

3. Remove the Feed Idle Bush and Feed Idle Shaft, Figure 2.

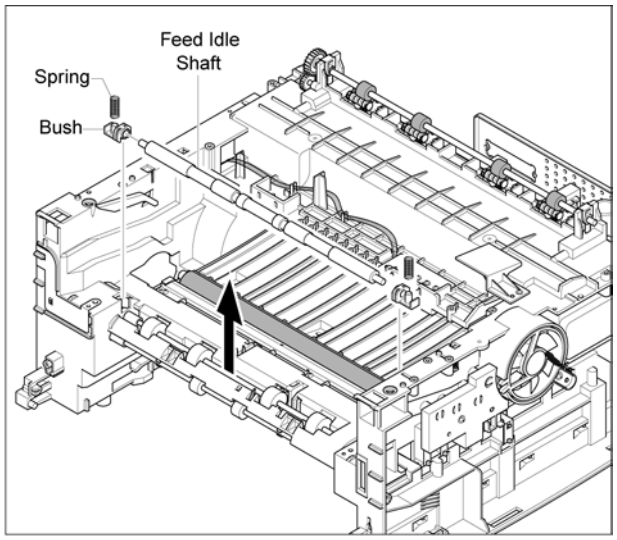


Figure 2

4. Remove 3 screws then the Feed Bracket, Figure 3.

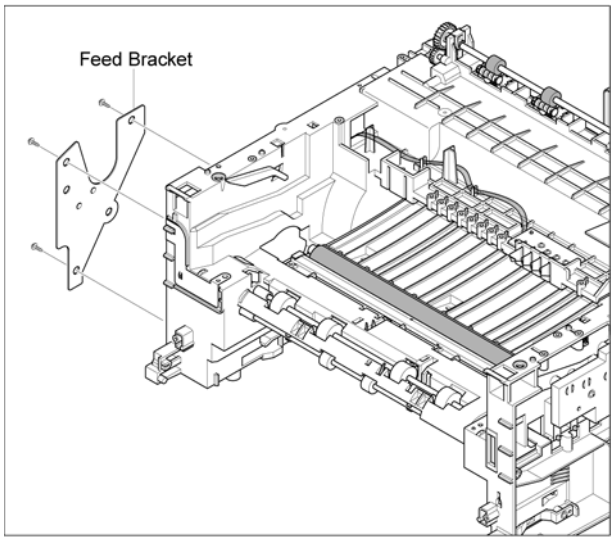


Figure 3

5. Remove the Idle Gear 23 and Feed Gear 2, Figure 4.

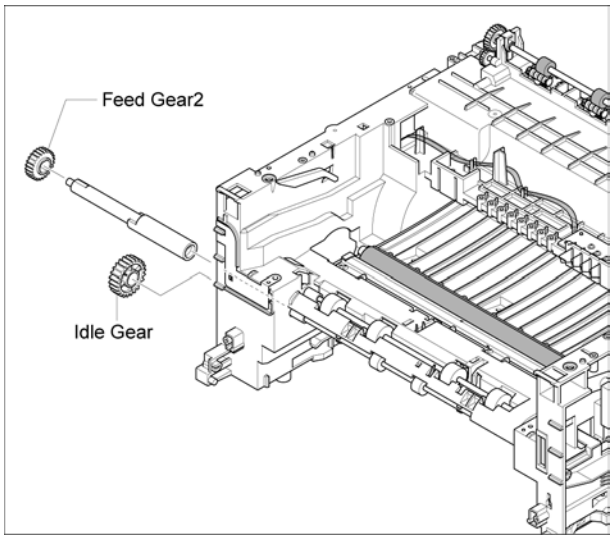


Figure 4

6. Remove the Feed Gear 1 Assembly and Feed Roller 1, Figure 5.

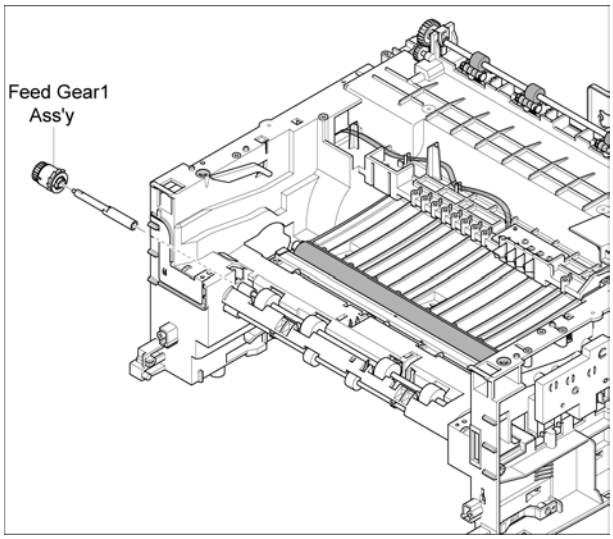


Figure 5

7. Remove the Feed Roller and Feed Roller 1, Figure 6.

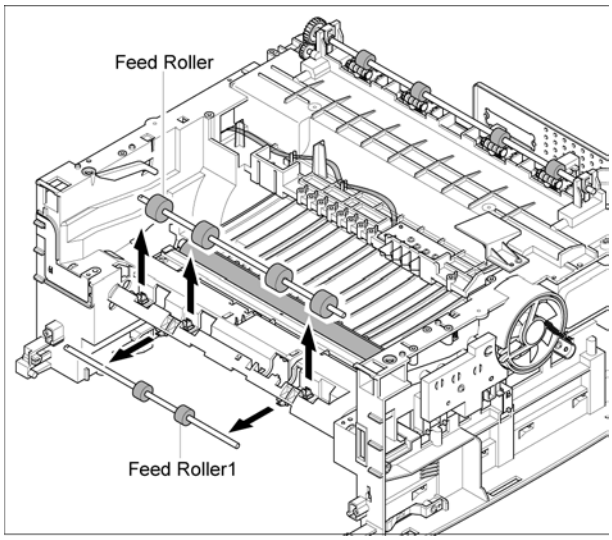


Figure 6

REP 18 Pickup Roller, Solenoid HB (Pickup) and Solenoid HB (Bypass)

Parts list on PL 3

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

1. Remove the LSU. (Refer to REP 10)
   Remove the Drive Assembly. (Refer to REP 20)
   Remove the Feed Bracket and Gear. (Refer to REP 17, steps 4-6)
2. Remove the Pickup Gear Assembly, Figure 1.

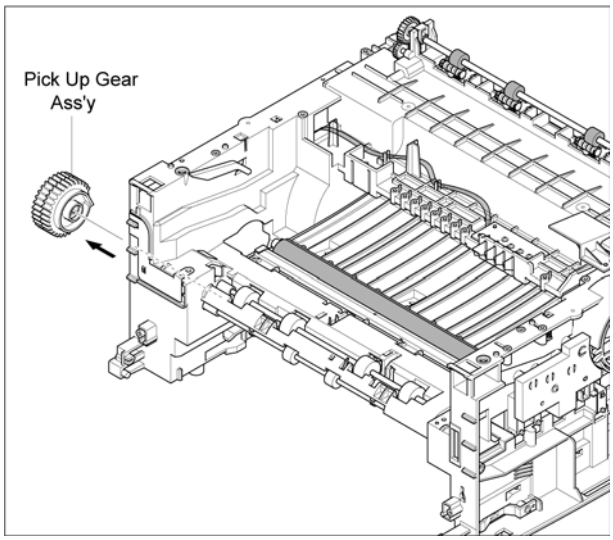


Figure 1

3. Release the notch attached to the Bush, then slide the Pickup Assembly from right to left, Figure 2.

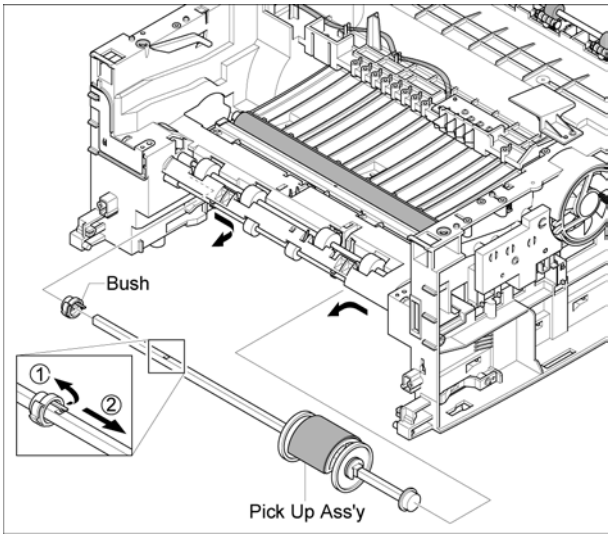


Figure 2

4. Remove 2 screws, then the Solenoid HB (Bypass) and Pickup Solenid HB (Pickup), Figure 3.

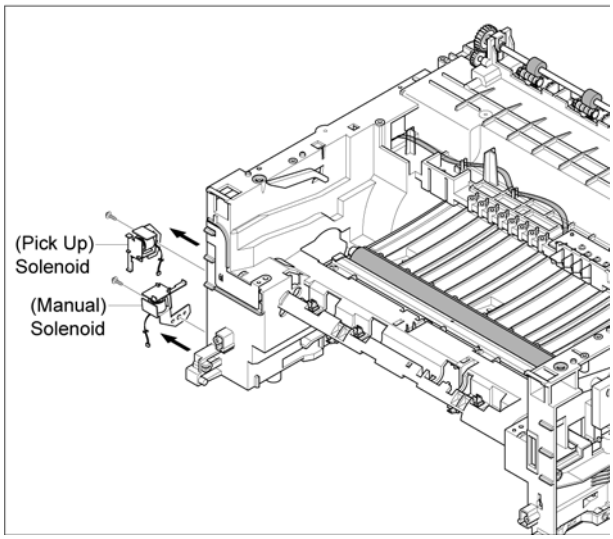


Figure 3

REP 19 Exit Roller

Parts list on PL 3

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

1. Remove the Middle Cover. (Refer to REP 8)
2. Use a screwdriver to remove the Exit Gear and Bearing, then remove the shaft and rollers, Figure 1.

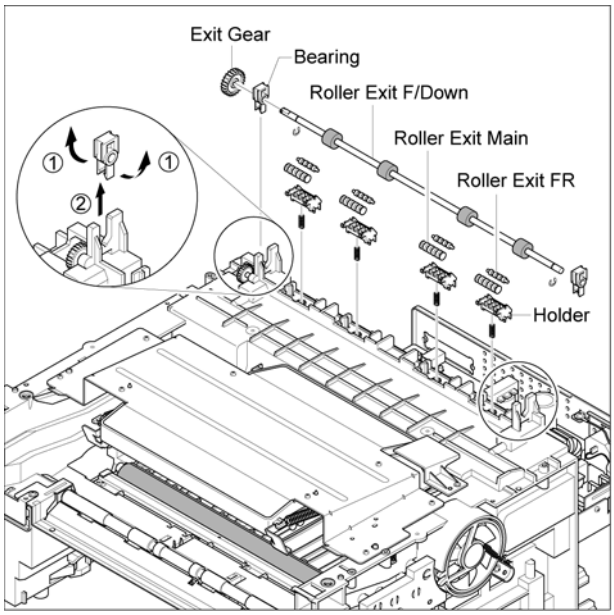


Figure 1

REP 20 Drive Assembly

Parts list on PL 6

WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer supply while performing tasks that do not need electricity. Electricity can cause death or injury. Moving parts can cause injury.

1. Remove the Front Cover. (Refer to REP 1)
2. Remove the Rear Cover. (Refer to REP 2)
3. Remove the Left Side Cover. (Refer to REP 5)
4. Remove the 6 screws, Figure 1.

Note: *When replacing the drive assembly, tighten the screws in the order that they are numbered on the Drive Assembly plate.*

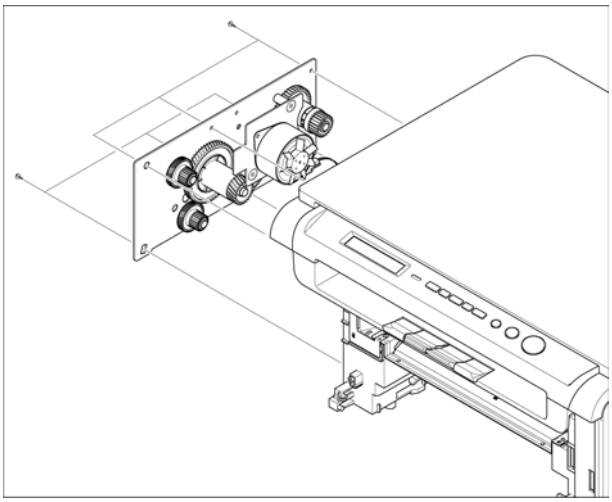


Figure 1

5. Disconnect the motor connector and remove the drive assembly, Figure 2.

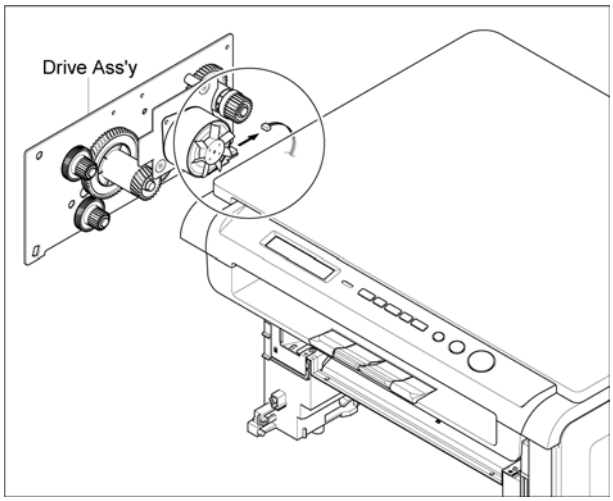
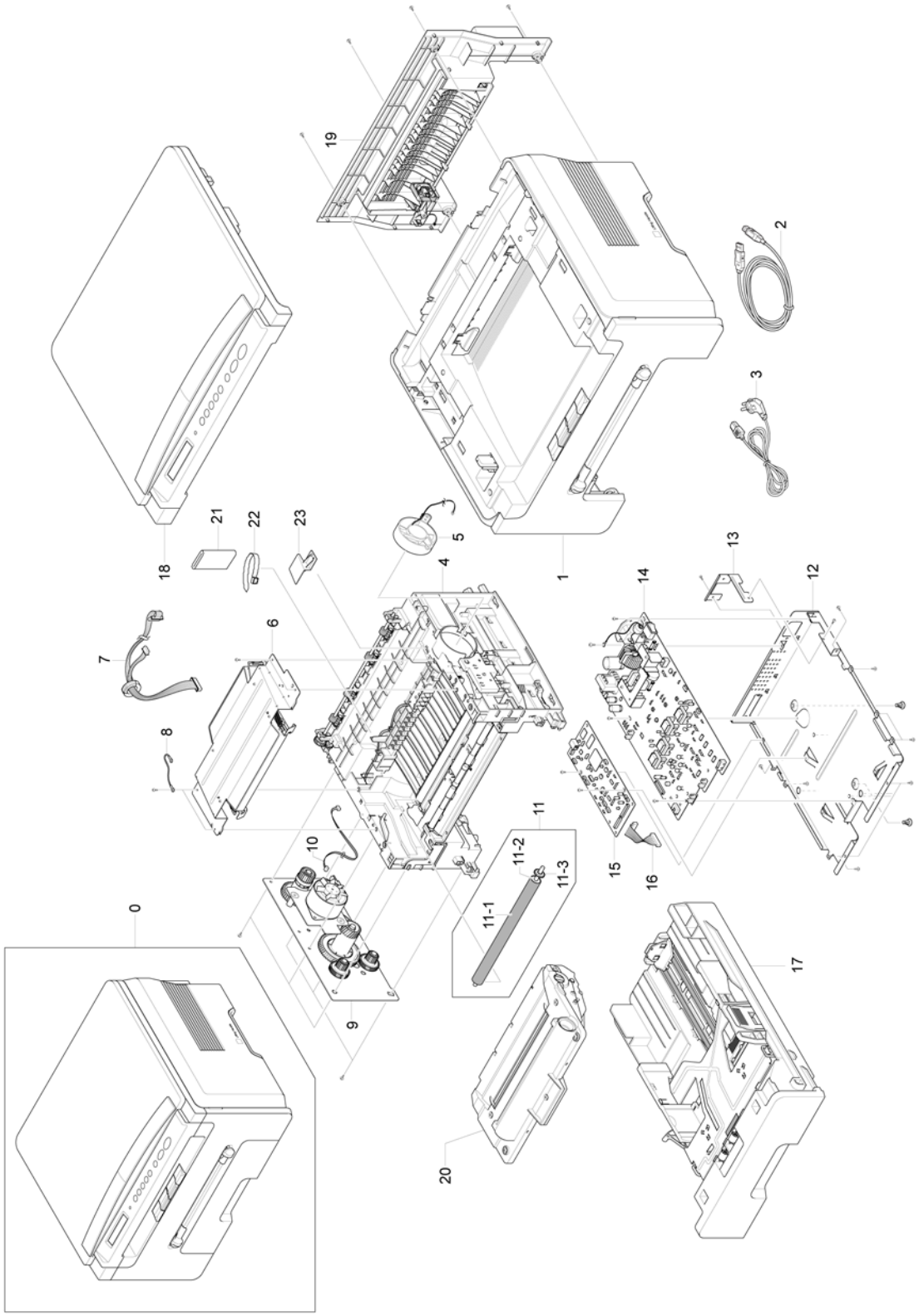


Figure 2

5. Spare Parts List

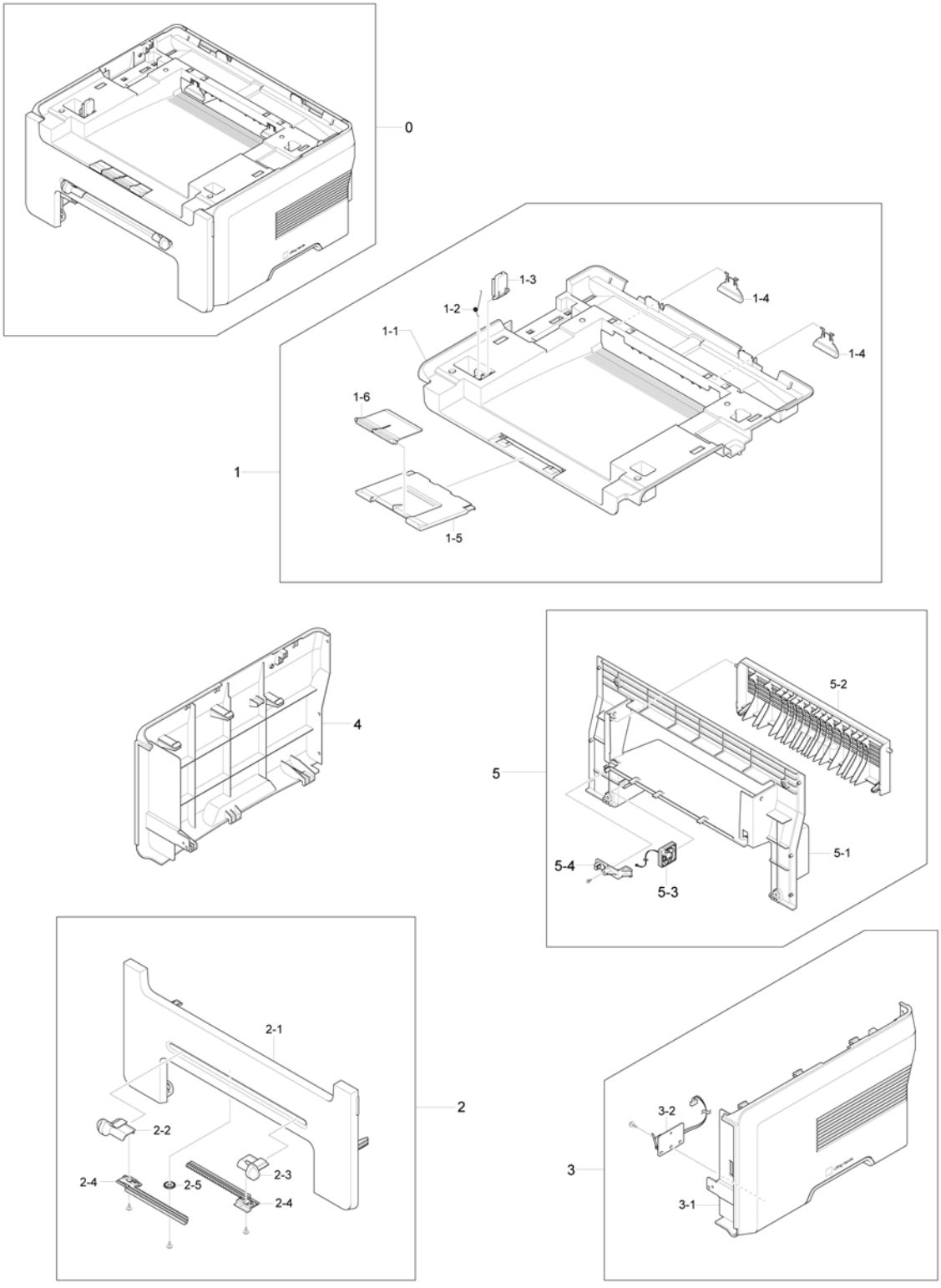
PL 1 Main Assembly



PL 1 Main Assembly

Item	Part Number	Description	Remark
0		WORKCENTRE 3119	
1		ELA HOU BASE-HOUSING	
2		USB CABLE	REFER TO PL 10, ITEM 5
3	105N02072	CBF-POWER CORD	
4		FRAME ASSEMBLY	REFER TO PL 3, ITEM 0
5	127N07521	TONER FAN (DC_HAWK)	REP 11
6	062N00274	UNIT-HUMMING_VE LSU	REP 10
7		CBF HARNESS-OPE	
8	152N11596	CBF HARNESS-LSU	
9		DRIVE ASSEMBLY	REFER TO PL 6, ITEM 0
10		MOTOR HARNESS	
11		TRANSFER ROLLER	REP 16
11-1	022N02266	ROLLER TRANSFER SPONGE	
11-2		PPR-SPACER_TR	
11-3	007N01548	GEAR_TRANSFER	
12	055N00289	SHIELD ENGINE ASSEMBLY	REP 12
13	030N00705	BRACKET-P-INLET	
14	105N02110	SMPS/HVPS 220V	REP 14
	105N02050	SMPS/HVPS 110V	REP 14
15	140N63204	MAIN PBA	REP 13
16	152N11597	CBF HARNESS-ENGINE	
17		CASSETTE ASSEMBLY	REFER TO PL 9, ITEM 0
18		SCAN ASSEMBLY	REFER TO PL 7, ITEM 0
19	002N02611	REAR COVER	REFER TO PL 2, ITEM 5
20		ELA UNIT-DEVE	
21		CIS HARNESS BRACKET	
22		ADJUSTABLE CABLE TIE	
23	021N02254	CAP M LSU	

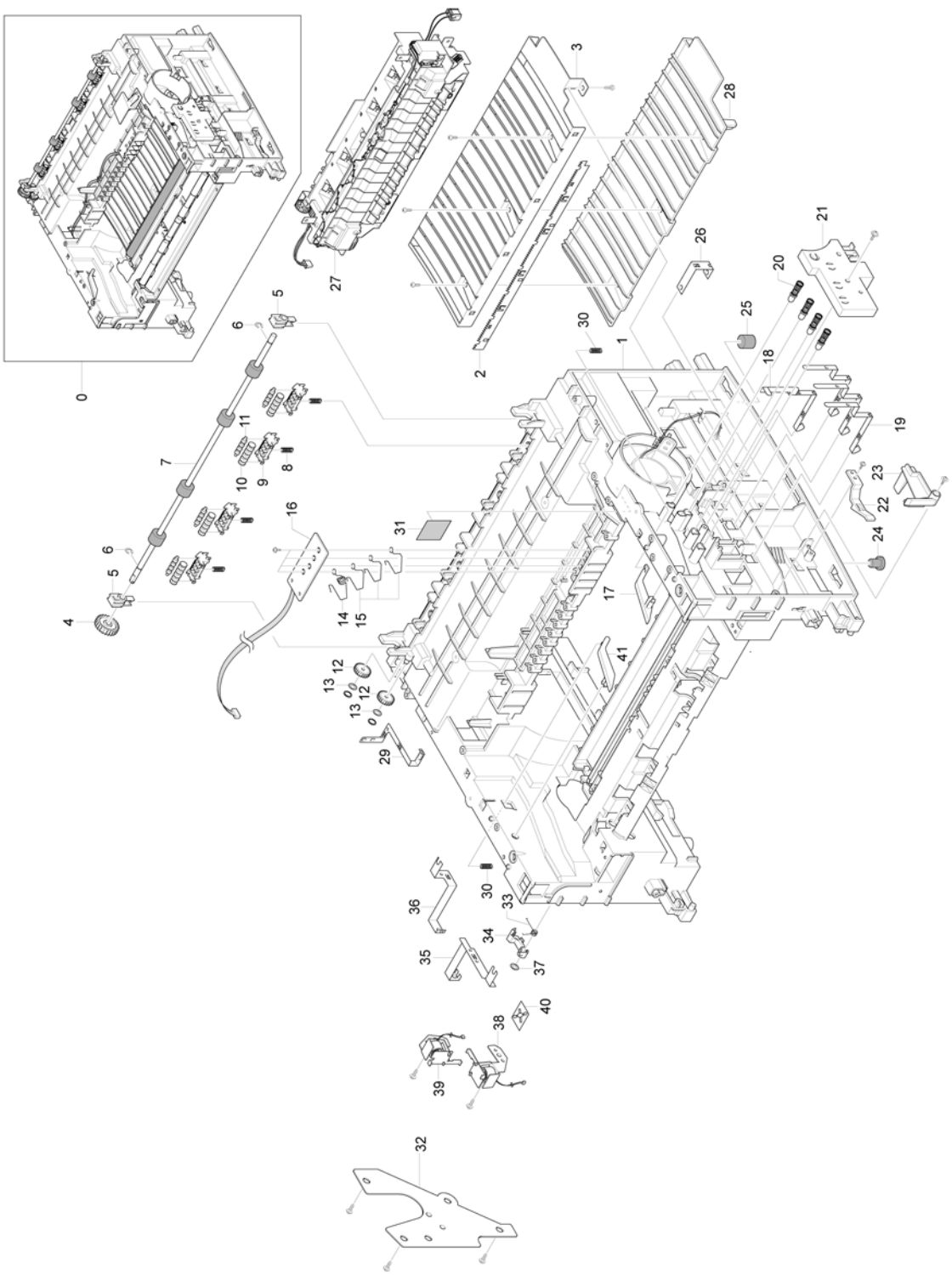
PL 2 Housing Base Assembly



PL 2 Housing Base Assembly

Item	Part Number	Description	Remark
0		HOUSING BASE ASSEMBLY	
1	002N02610	MIDDLE COVER UNIT	REP 8
1-1		MIDDLE_COVER-MAIN_FRAME	
1-2		SPRING ETC-TS-CHARGE APOLLO	
1-3		STOPPER-M-LEVER	
1-4		PMO-SUB_M_STACKER	
1-5	038N00500	STACKER-M-LARGE	
1-6	038N00501	STACKER-M-SMALL	
2	002N02614	FRONT COVER	REP 1
2-1		COVER-M-FRONT	
2-2		ADJUST-M_MANUAL_L	
2-3		ADJUST-M_MANUAL_R	
2-4		ADJUST RACK-M-MANUAL	
2-5		GEAR-RACK_PINION	
3	002N02613	RIGHT SIDE COVER	REP 4
3-1		COVER-M-SIDE R	
3-2		COVER OPEN MICRO SWITCH	
4	002N02612	LEFT SIDE COVER	REP 5
5	002N02611	REAR COVER	REP 2
5-1		COVER-M-REAR	
5-2		COVER-M-REAR DOOR	
5-3	127N07354	FUSER FAN (DC 24V)	REP 3
5-4	152N11729	HOLDER-M_HARNESS	

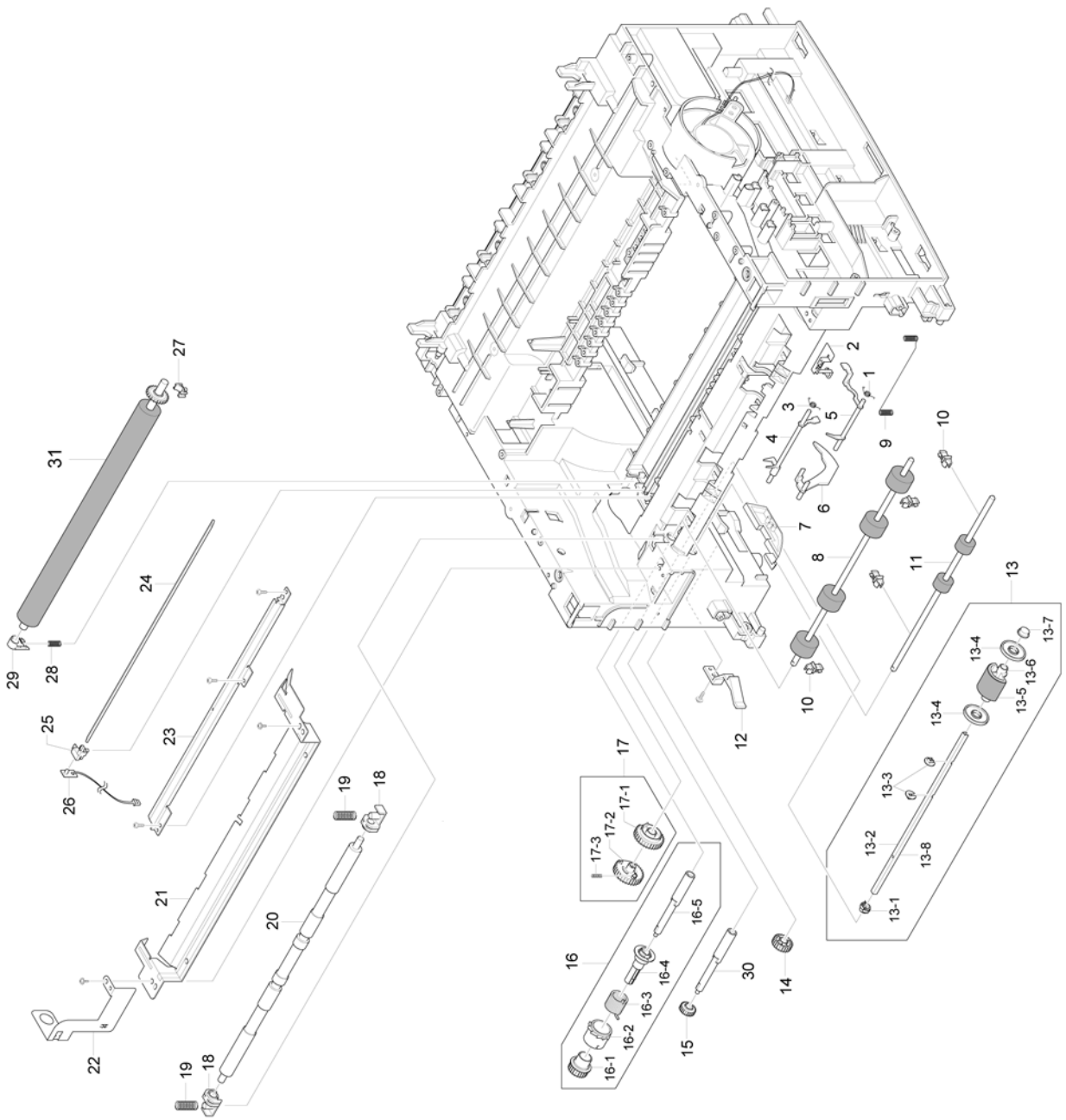
PL 3 Frame Assembly (1)



PL 3 Frame Assembly (1)

Item	Part Number	Description	Remark
0	001N00487	ELA UNIT-FRAME LOWER (220V)	
	001N00488	ELA UNIT-FRAME LOWER (110V)	
1		FRAME_M_BASE	
2	015N00548	PLATE_P_SAW	
3	038N00408	PLATE-M-TR	
4		GEAR-EXIT	
5		HOLDER BEARING EXIT	
6		E-CLIP	
7	022N02269	EXIT ROLLER	REP 19
8	009N01522	SPRING-CS	
9	019N00819	HOLDER-M_EXIT	
10		PMO-M-ROLLER EXIT MAIN	
11		PMO-M-ROLLER EXIT FR	
12		PMO-GEAR_EXIT_DRV16	
13		WASHER	
14		GUIDE-M-KNOCK UP	
15		IPR-P-TERMINAL DEV KEY	
16		CRUM PBA	REP 15
17	032N00433	PMO-PLATE GUIDE DEV RIGHT	
18		PLATE-P-TERMINAL CR	
19		IPR-P-TERMINAL CON	
20	116N00241	MEC-TERMINAL	
21	115N00870	HOUSING-M-TERMINAL	
22	003N00947	PMO-LOCKER CST	
23	120N00460	PMO ACTUATOR CVR OPEN	
24		FOOT-FRONT	
25		FOOT-BACK	
26		IPR-P-GROUND_TR	
27		FUSER UNIT	REFER TO PL 5, ITEM 0
28		GUIDE-M-TR LOWER	
29		IPR-P-GROUND_FUSER	
30		SPRING ETC-GUIDE DEV	
31		LABEL(R)-HV FUSER	
32	022N02131	BRACKET-P-FEED	
33		SPRING-TS	
34	130N01375	CAM-M-PICK_UP	
35		IPR-GROUND_DRIVE	
36		IPR-GROUND_DRIVE2	
37		RING-CS	
38	121N01088	SOLENOID HB (BYPASS)	REP 18
39	130N01376	SOLENOID HB (PICKUP)	REP 18
40		RUBBER SEAT	
41	032N00434	PMO-PLATE GUIDE DEV LEFT	

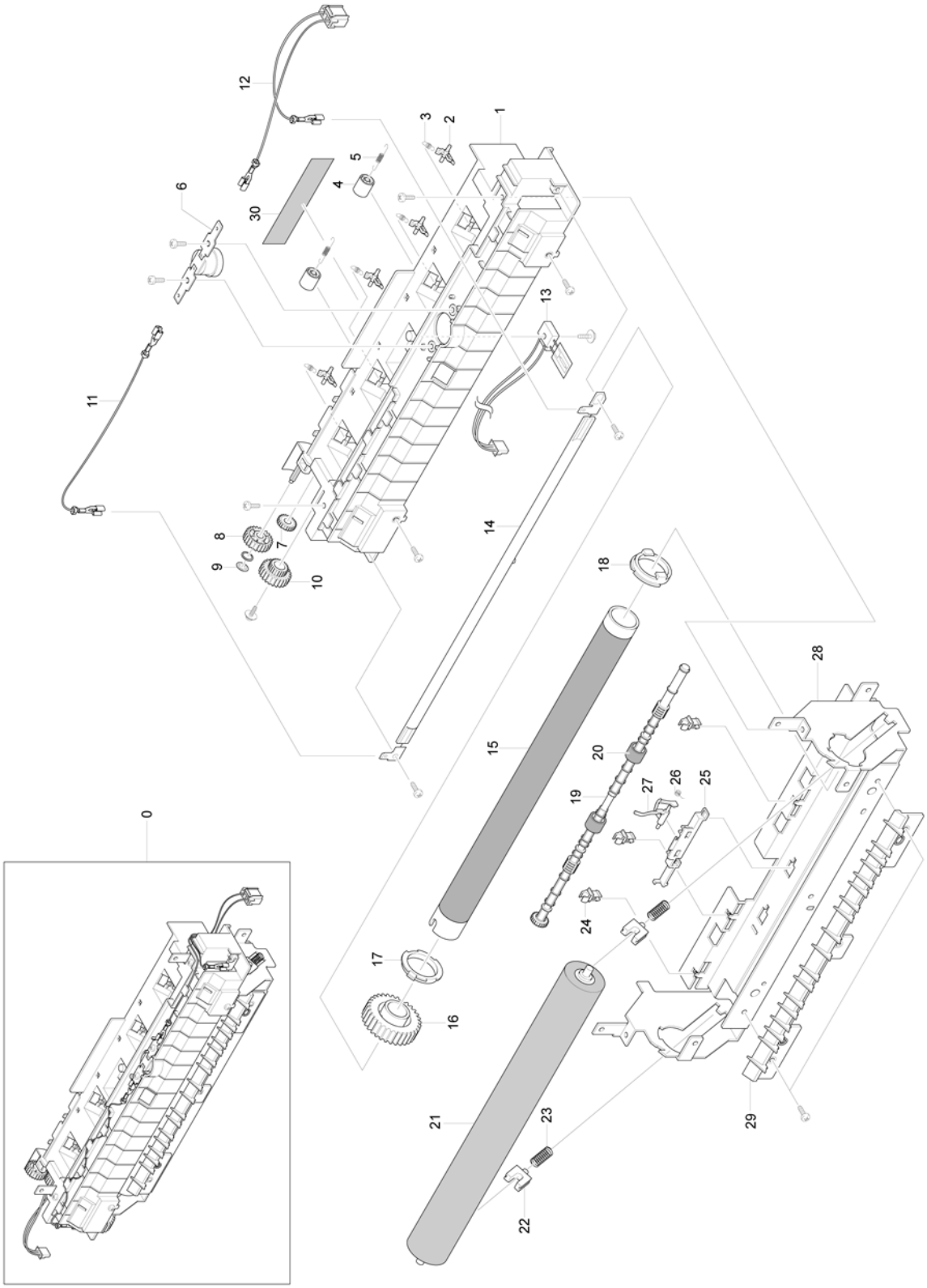
PL 4 Frame Assembly (2)



PL 4 Frame Assembly (2)

Item	Part Number	Description	Remark
1		SPRING TS	
2		IPR-P-GROUND EARTH TR	
3		SPRING TS	
4	022N02127	FEED SENSOR ACTUATOR	
5	709N00007	BYPASS SENSOR ACTUATOR	
6	121N01087	PAPER SENSOR ACTUATOR	
7		FRAME EXT	
8	022N02128	FEED ROLLER 1	REP 17
9		SPRING-ETC	
10	022N02129	PMO-BUSHING FEED	
11	022N02130	FEED ROLLER	REP 17
12		PMO-LOCKER CST	
13	130N01378	PICKUP ROLLER	REP 18
13-1		BUSH-M-PICKUP LEFT	
13-2		SHAFT-P-PICKUP	
13-3		STOPPER-PICKUP	
13-4		PMO-IDLE-PICKUP	
13-5		SPONGE-ROLLER-PICKUP	
13-6		BUSH-M-PICKUP RIGHT	
13-7		HOUSING-M-PICKUP	
13-8		REINFORCEMENT BAR	
14		GEAR IDLE 23	
15		GEAR FEED 2	
16	121N01141	MEA-UNIT_CLUTCH	
16-1		GEAR FEED 1	
16-2		PMO-COLLAR SPRING	
16-3		SPRING TS	
16-4		PMO-HUB CLUTCH	
16-5		FEED1 SHAFT	
17	130N01377	AS GEAR PICKUP	
17-1		PMO-GEAR PICKUP B	
17-2		PMO-GEAR PICKUP A	
17-3		SPRING-CS	
18		BUSH-M-FEED_IDLE	
19		SPRING-ETC TR	
20		SHAFT-FEED IDLE	
21	038N00409	GUIDE PAPER	
22		IPR-P-GROUND_GUIDE PAPER	
23	115N00854	IPR-P-EARTH TRANSFER	
24	062N00259	PTL LENS	
25		HOLDER-PTL	
26	140N62968	PTL PBA	
27		PMO-BUSHING TR R	
28		SPRING ETC-TR LEFT HAWK	
29		BUSH-M-TR-LEFT	
30		SHAFT FEED	

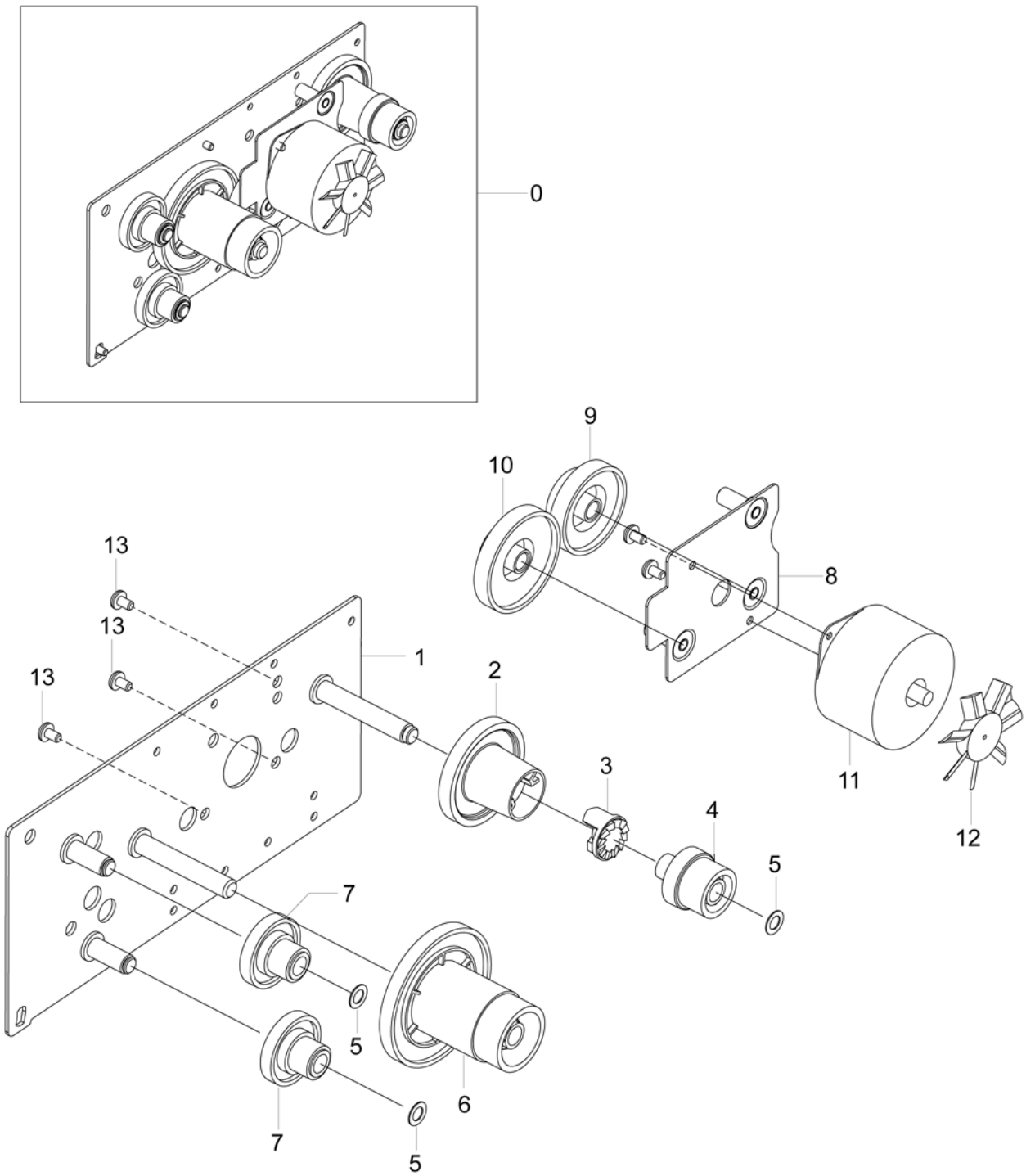
PL 5 Fuser Unit



PL 5 Fuser Unit

Item	Part Number	Description	Remark
0	126N00259	FUSER 220V	REP 9
0	126N00260	FUSER 110V	REP 9
1		COVER-M-FUSER	
2		STRIPPER FINGER	
3		STRIPPER FINGER SPRING	
4		PMO-ROLLER_EXIT	
5		SPRING ETC-FUSER EXIT	
6	130N01485	THERMOSTAT	
7		GEAR 25	
8		GEAR 15	
9		E-CLIP	
10	007N01550	GEAR-RDCN 25/15	
11	152N11628	CBF HARNESS-FUSER JOINT	
12	152N11728	HARNESS-FUSER (220V)	
	152N11730	HARNESS-FUSER (110V)	
13	130N01380	THERMISTOR	
14	122N00256	LAMP-HALOGEN 220V	
	122N00246	LAMP-HALOGEN 110V	
15	022N02267	HEAT ROLLER	
16		GEAR-FUSER	
17		BUSH-M-HR R	
18		BUSH-M-HR L	
19		ROLLER-M-EXIT F/UP	
20		RMO-RUBBER_EXIT	
21	022N02268	PRESSURE ROLLER	
22		BEARING-PRESSURE	
23		SPRING-CS	
24		PMO-BUSHING TX	
25		HOLDER-ACTUATOR	
26		SPRING	
27	120N00461	EXIT SENSOR ACTUATOR	
28		IPR-P-FRAME_FUSER	
29		GUIDE-M-INPUT	
30		LABEL(P)-CAUTION HOT	

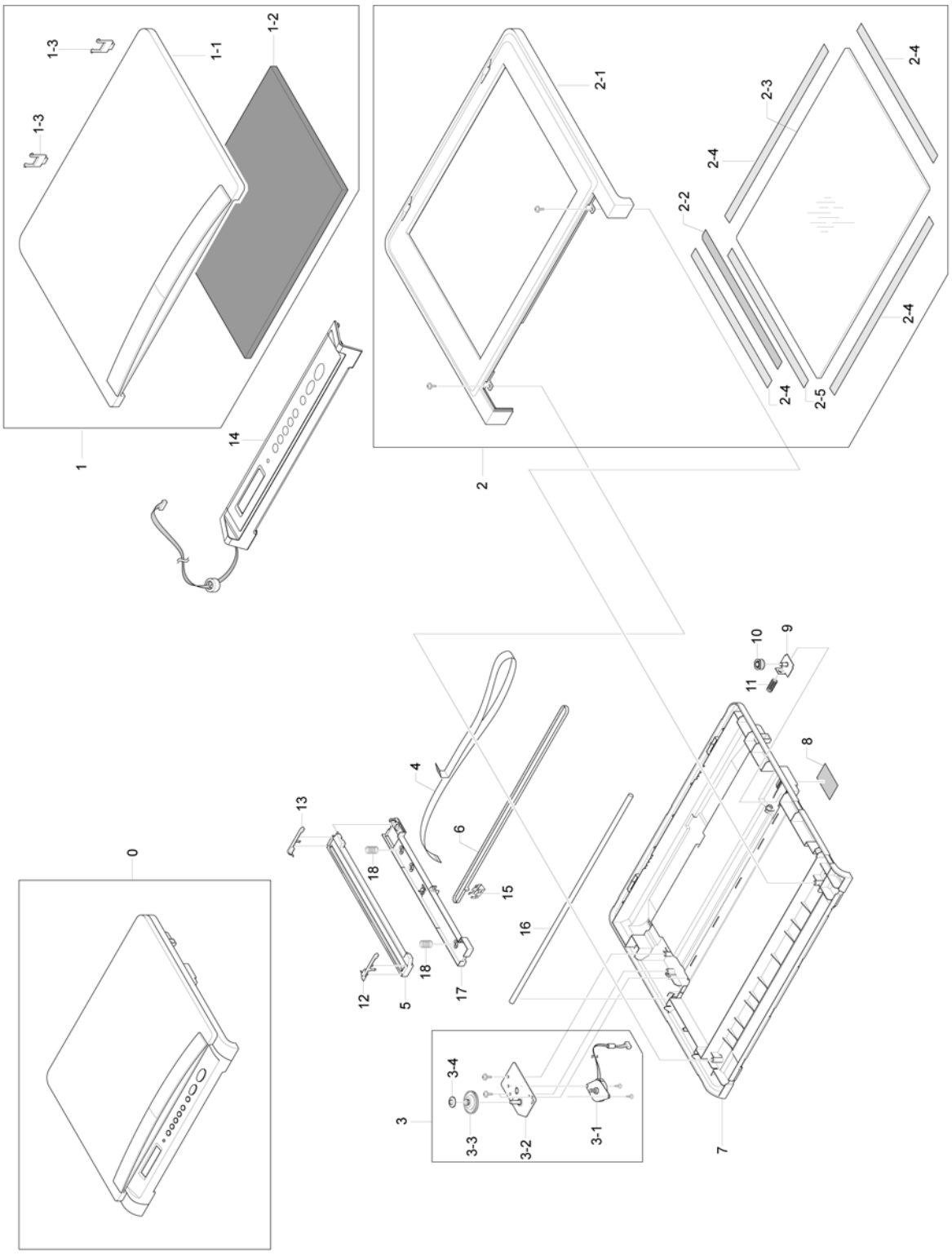
PL 6 Drive Assembly



PL 6 Drive Assembly

Item	Part Number	Description	Remark
0	007N01551	DRIVE ASSEMBLY	REP 20
1		BRACKET-P-GEAR 1400	
2		GEAR-DRV FUSER IN	
3		GEAR-HUB CLUTCH	
4		GEAR-DRV FUSER OUT	
5		WASHER PLAIN	
6		GEAR-RDCN 113/33	
7		GEAR-RDCN 57/18	
8		BRACKET-P-MOTOR 1400	
9		GEAR-RDCN 90/31	
10		GEAR RDCN 103/41	
11		STEPPER MOTOR (DRIVE)	
12		PMO-IMPELLER_DRV	
13		MACHINE SCREW	

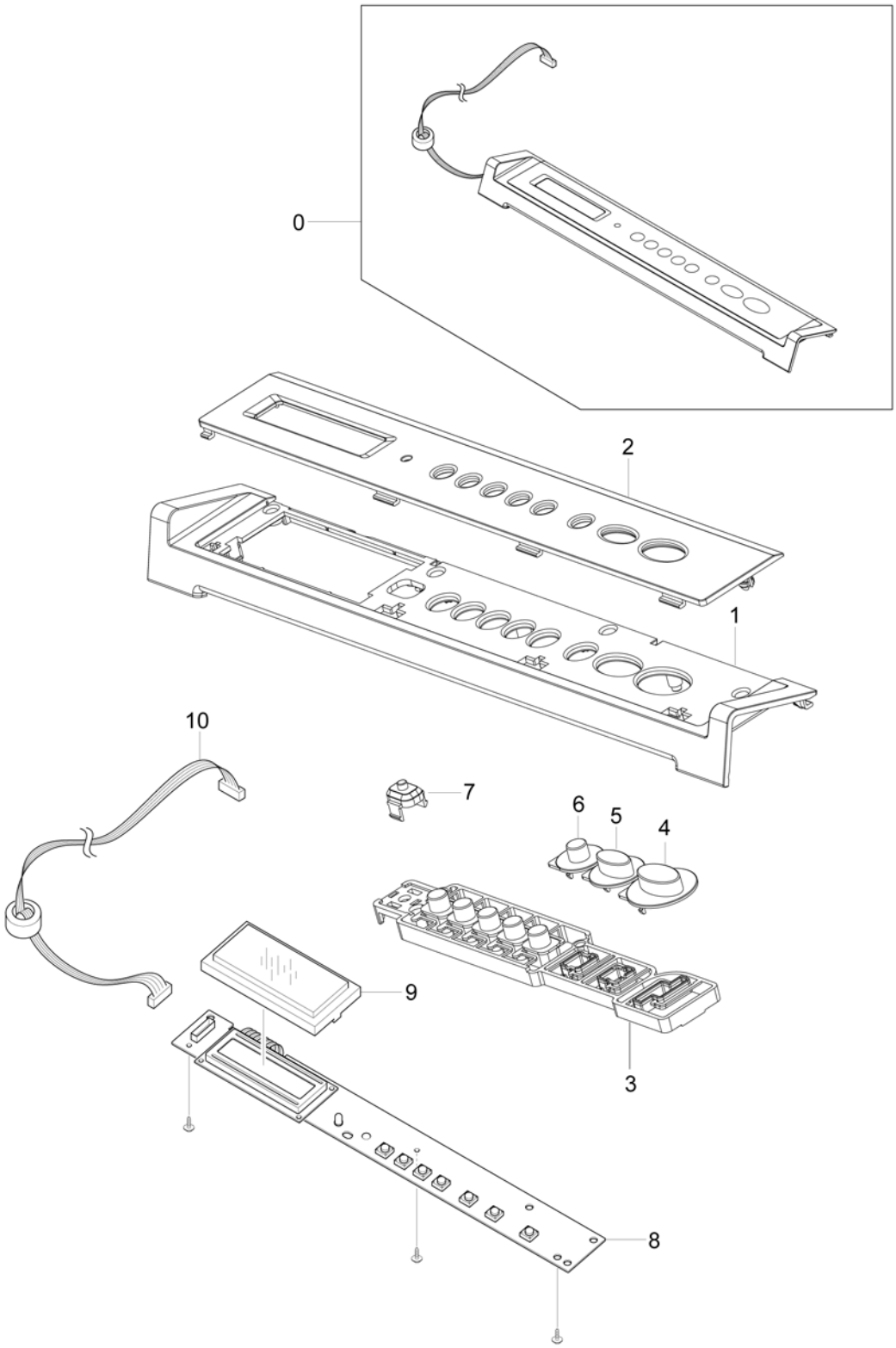
PL 7 Scan Assembly



PL 7 Scan Assembly

Item	Part Number	Description	Remark
0	062N00275	SCAN ASSEMBLY	REP 6
1	002N02615	PLATEN COVER	
1-1	002N02616	COVER-M-PLATEN	
1-2		SHEET-WHITE SPONGE	
1-3		HINGE-M_PIVOT	
2		ELA UNIT- SCAN UPPER ASSEMBLY	
2-1	002N02617	ELA-UNIT-SCAN UPPER	
2-2		LABEL(P)-SHADING	
2-3		GLASS-PLATEN	
2-4		TAPE	
2-5		GLASS-PLATEN TAPE	
3	007N01552	SCAN MOTOR ASSEMBLY	
3-1		MOTOR STEP-SCAN UPPER	
3-2		BRACKET MOTOR-P-SCAN	
3-3	007N01549	BELT-TIMING GEAR	
3-4		GEAR-M_PULLEY	
4		CBF SIGNAL-CIS HARNESS	
5	130N01484	CIS (CONTACT IMAGE SENSOR)	
6		BELT	
7	002N02618	COVER SCAN LOWER	
8		SHEET-SCAN LOWER	
9		BRACKET-P-PULLEY	
10		PULLEY-M_IDLE	
11		SPRING-CS	
12		SLIDER-M_CIS R	
13		SLIDER-M_CIS L	
14		ELA UNIT-OPE	
15		BELT CLIP	
16		CIS SUPPORT BAR	
17		CIS BRACKET	
18		SPRING	

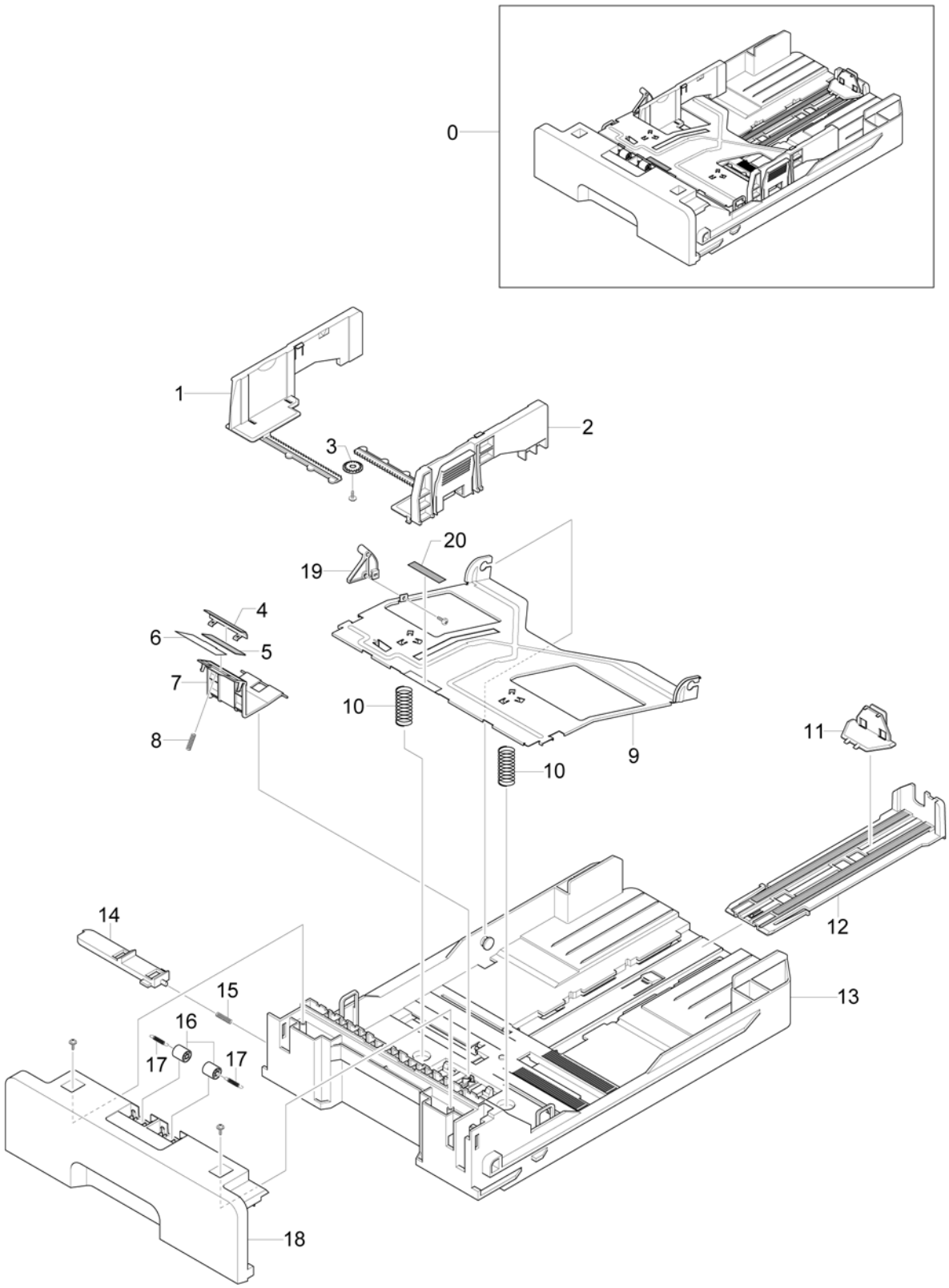
PL 8 OPE Assembly



PL 8 OPE Assembly

Item	Part Number	Description	Remark
0		OPE ASSEMBLY	REP 7
1	002N02619	COVER-M-PANEL	
2	002N02620	OPE PANEL	
3	003N01015	KEY-M-MENU	
4	003N01013	KEY-M-START	
5	003N01014	KEY-M-STOP	
6		KEY-M-COPIES	
7	021N02253	CAP-M-LED	
8	101N01405	PBA SUB-PANEL	
9		DISPLAY SCREEN	
10		HARNESS OPE	

PL 9 Cassette Assembly



PL 9 Cassette Assembly

Item	Part Number	Description	Remark
0	050N00497	CASSETTE ASSEMBLY	
1		ADJUST-M-CASSETTE_L	
2		ADJUST-M-CASSETTE_R	
3		GEAR-PINION	
4	019N00820	IPR-PLATE	
5	019N00821	RPR-FRICTION PAD	
6		SHEET-HOLDER PAD	
7	019N00822	HOLDER-M-PAD	
8		SPRING ETC-LOCKER	
9		PLATE-P-KNOCK_UP	
10		SPRING-CS	
11		PMO-EXTENSION SMALL	
12		GUIDE-M-EXTENSION	
13		FRAME-M_CASSETTE	
14		BRACKET	
15		SPRING	
16		ROLLER	
17		SPRING	
18		CASSETTE-COVER_SIDE	

PL 10 Common Hardware & General Service Items

PL 10 Common Hardware & General Service Items

Item	Part Number	Description	Remark
0	038N00483	QUICK SETUP GUIDE	
1	095N00286	MAIN PACKAGING BOX	
2	705N00022	ELECT USER GUIDE	
3	705N00023	PRINT DRIVE CD	
4	705N00024	SCANSOFT CD	
5	095N00280	CABLE BAG DMO-W	
	095N00281	CABLE BAG BRAZIL	

6. General Procedures/Information

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GP 1 Product Specifications

Product Overview

Table 1:

Item	Description	Remark
Basic Model	WorkCentre 3119	
Target User	Personal users	
Key Specification	-18ppm(Ltr. 19ppm), Chorus2(CPU : Use 16/32 Bit RISC Processor) -Flash memory : 1Mb -USB 2.0 -250 pages input, 50 pages output	

General Specifications

Table 2:

Item			Description
General	Major Features		Copy, Print, Scan
	Net Dimension (WxDxH)		409(W) x 362(D) x 232mm(H) (46.6 x 15.8 x 9.4 inches)
	Net Weight (Exc. Toner Cartridge)		9.5kg (20.9lb)
	Net Weight (Inc. Toner Cartridge		9.7kg (21.4lb)
	LCD		2 Line x 16 characters
	Gross Weight (Inc. packaging)		12.1kg (26.7lb)
	I/O Interface		USB 2.0
Power Consumption	Printing Operation		350 Wh
	Energy Star Compliant		Yes
	Power switch		Yes
Noise	Operating		53 dB
	Standby		38 dB
Warm up time	from Sleep Mode (Recovery time)		Less than 30 seconds
Machine Life	Max. Monthly Volume (Duty Cycle)	Print	4,000 pages
		Scan	800 pages
	Average Monthly Print Volume		500 pages
	Machine Life		5 years, 50,000 pages (whichever comes first)
Approval			Class B
Device Memory			8MB
Page Counter			Yes
Print Configuration Sheet			Yes
Maintenance	Pickup Roller		50,000 pages
	Separation Pad		50,000 pages
	Transfer Roller		50,000 pages
	Fuser Unit		50,000 pages

Print Specifications

Table 3:

Item		Description
Method		Laser Beam Printing
Speed		Up to 20ppm in A4 (20ppm in Letter)
Emulation		GDI
Power Save		Yes (Interval option: 5, 10,15, 30, 45 minute)
Resolution	Normal	600 x 600 dpi
	RET	No
Memory		8MB
First Print Out Time	From Stand by	Approx. 11 seconds
	From Cold Status	Less than 41 seconds
Duplex Print		N/A
WHQL Compliant		Window XP
Printable Area		LTR: 207.6 x 347.6mm (8.17x13.69 inches)
Halftone (Gray Scale)		256 levels

Scan Specifications

Table 4:

Item		Description
Scan Method		Colour CIS
PC Scan Speed through Platen	Lineart, Halftone	15 sec
	Gray	30 sec
	Color 75dpi/300dpi	75 sec
Resolution	Optical	600 x 2400 dpi
	Enhanced	4800 x 4800 dpi (USB)
Halftone		256 levels
Scan Size	Max. Document Width	Max. 216mm (8.5 inches)
	Effective Scan Width	Max. 208mm (8.2 inches)
Scan-to	Key	Yes
	Application	Yes
Scan Depth	Color	24 bit
	Mono	1bit for Line art, Halftone, 8 Bit for Gray scale

Copy Specifications

Table 5:

Item		Description
Copy Quality Selection or Original Image type selection Mode	Text	600 x 300 dpi
	Text / Photo	600 x 300 dpi
	Photo	600 x 600 dpi (Platen)
First Copy Out Time	Stand by	Approx 11 sec.
	From cold status	Less than 41 sec.
Copy Speed		Up to 20ppm fof A4 or Letter

Table 5:

Item		Description
Resolution	Scan	600 x 600 dpi
	Print	600 x 600 dpi
Copy mode		Text, Text/Photo, Photo
Callation Copy		N/A
Auto return to default mode		Yes (after 1 minute) - Time out option: 15, 30, 60, 180 sec., Off
Changeable Default mode		Darkness, Original Type, Reduce/Enlarge, No. of Copies
	ID Card copy	Yes (Platen only)
	Collation Copy	N/A
	AutoFit Copy	Yes (Platen only)
	2 sides on 1 page	Yes (Platen only)
	Clone	Yes (Platen only)
	Poster	Yes (Platen Only)

Paper Handling Specifications

Table 6:

	Item	Description
Input Capacity (20 lbs)	Main Tray	250-sheet
	Bypass (MP Tray)	1 sheet
Optional Cassette		No
Output control		Face down/Face up
Output Capacity		50-sheet Face Down,(75 g/m^2, 20 lbs)
		1-sheet Face Up
Paper size	Main Tray	Legal, A4, Letter, Folio, Executive, B5, A4, A6
	Bypass	Envelope6 3/4, 7 3/4, #9, #10,DL,C5,B5
Paper Weight	Main Tray	60.2 - 90.3gsm (16 - 24lb)
	Bypass	60.2 - 161.78gsm (16 - 43lb)
Paper Path	Standard output	Bottom to Top Front (FIFO)
	Straight Through	Face up, Single sheet
Paper Size	Max	216 x 356mm (8.5 x14 inches)
	Min	76 x 127mm (3 x5 inches)
Compatibility	DOS	No

Software

Table 7:

Item		Description
Compatibility	DOS	No
	Win 2.x	No
	Win 95	No
	Win 98/ME	Yes
	Win NT 4.0	No
	Win 2000	Yes
	Win XP	Yes
	Mac	Yes (10.3)
	Linux	Yes
Driver	Printer	GDI
	TWAIN	Yes
	WIA	Yes
Application	RCP	No
	PC-FAX	No

Package and POP

Table 8:

Item	Description
POP	Yes
Quick Reference guide (including Setup Guide and Function Guide)	Yes

Accessories

Table 9:

Item	Description
Owner's manual	Yes (Electronic)
S/W CD-ROM	1 CD for User Manual, Smart Thru 4, Print Driver, Scan Driver, RCP
Toner cartridge	1 EA
Power cable	1 EA
Telephone jack	No
Printer cable	No
Type	1 piece

Consumables

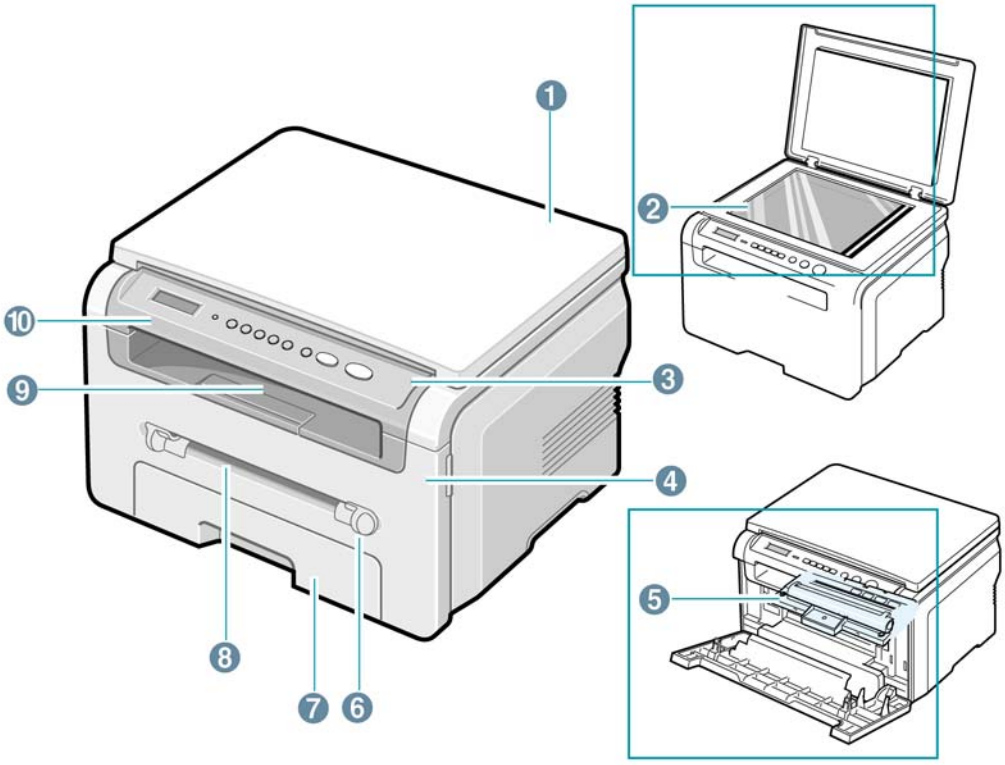
Table 10:

Item		Description
Toner installation method		Front loading
Toner life		1K - Initial 3K - Running
Toner Count	Level Sensor	No
	Software Count	Yes

GP 2 System Overview

System Outline

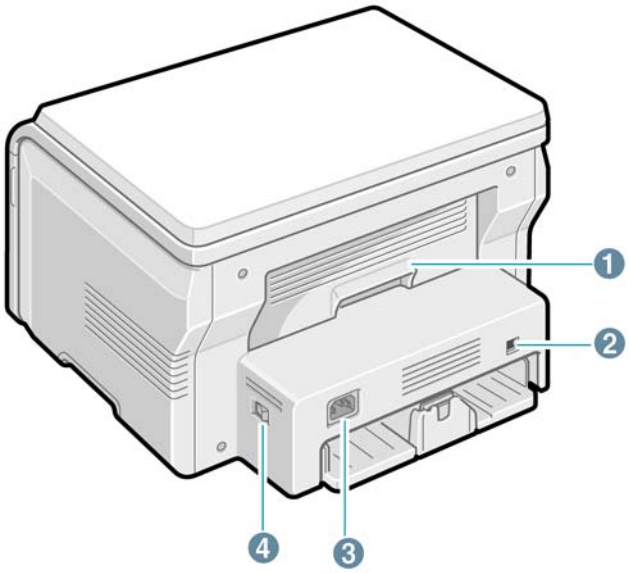
Front View



1	document cover	6	bypass feeder guides
2	document glass	7	paper input tray
3	control panel	8	bypass feeder
4	front cover	9	output tray
5	toner cartridge	10	scanner unit

Figure 1

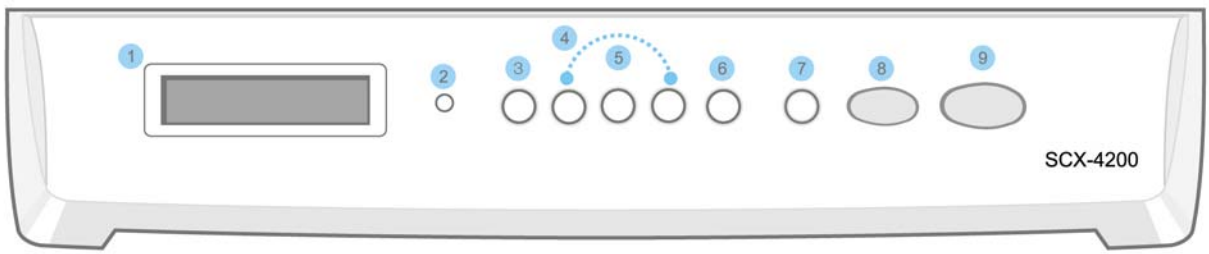
Rear view



1	rear cover	3	main socket
2	USB port	4	main switch

Figure 2

Control panel



1	Displays the current status and prompts during an operation.
2	**Status**- Shows the status of your machine.
3	**Menu**- Enters Menu mode and scrolls through the available menus.
4	Scroll through the options available in the selected menu.
5	**OK**- Confirms the selection on the display.
6	**Back**- Sends you back to the upper menu level.
7	**Copies**- Allows you to enter the number of copies.
8	**Stop/Clear**- Stops an operation at any time. In Standby mode, clears/cancels the copy options, such as the resolution, the document type setting, the copy size, and the number of copies.
9	**Start**- Starts a job.

Figure 3

System layout

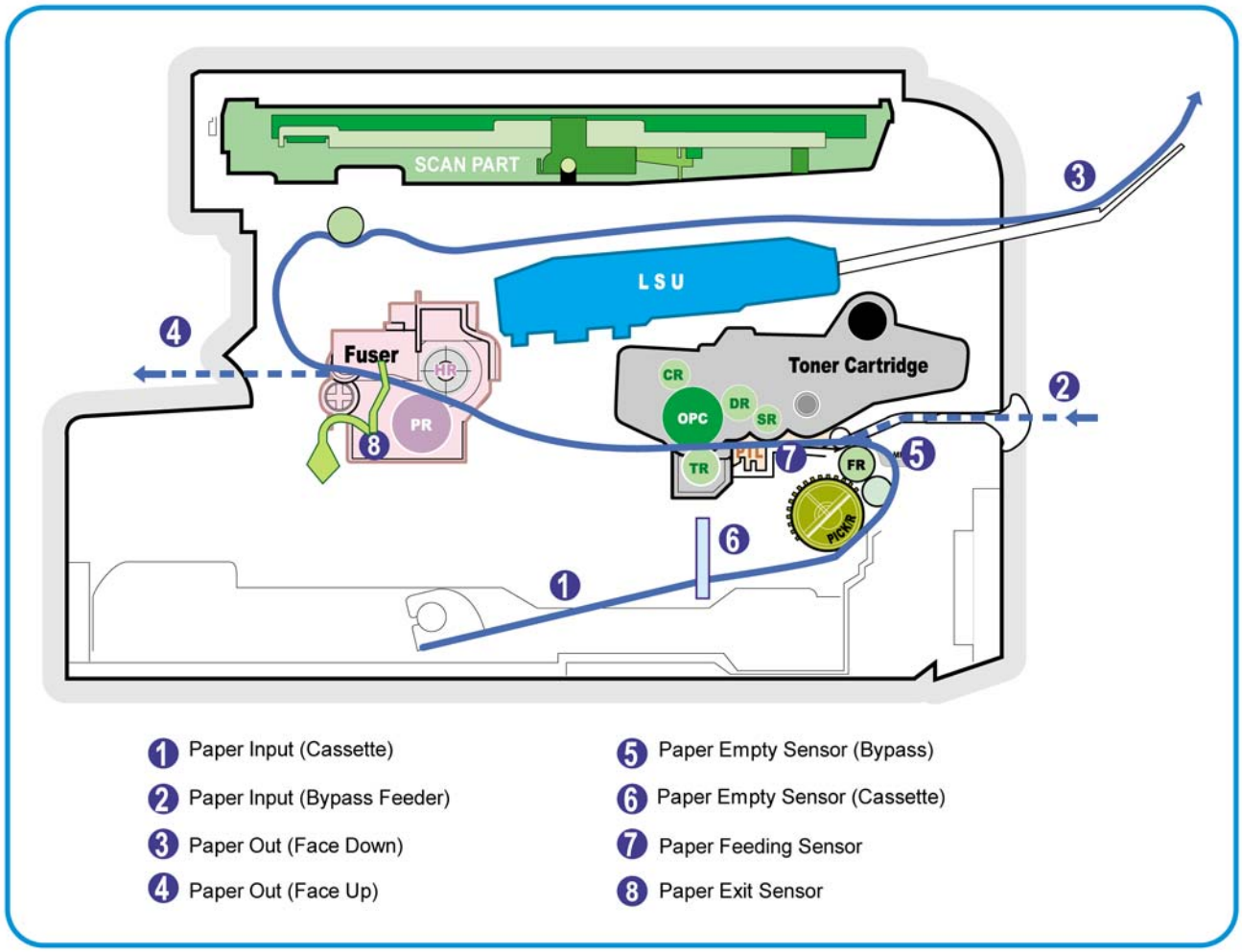


Figure 4

Paper Feed Mechanism

The printer has a 2 types of feeding methods, the universal cassette tray and a bypass feeder. The cassette has a friction pad which separates paper to ensure single sheet feeding as well as a sensor, which senses if the paper tray is empty.

- Feeding Method: Universal Cassette Type
- Feeding Standard: Center Loading
- Feeding Capacity: Cassette-250 sheets (75gsm , 20lb paper standard)
- Bypass Feeder - 1 sheet (Paper, OHP, Envelop, etc.)
- Paper detecting sensor: Photo sensor
- Paper size sensor: None

Transfer Assembly

This consists of the PTL (pre-transfer lamp) and the Transfer Roller. The PTL shines a light onto the OPC drum.

This lowers the charge on the drum's surface and improves transfer efficiency.

The transfer roller transfers toner from the OPC drum surface to the paper.

- Life expectancy: Over 50,000 sheets (at 15-30^{o}C)

Drive Assembly

A gear driven power unit. The motor supplies power to the paper feed unit, the fuser unit, and the toner cartridge.

Fixing Part (Fuser)

The Fuser consists of the Heat Lamp, Heat Roller, Pressure Roller, Thermistor, and Thermostat. It fixes toner to the paper using pressure and heat to complete the printing job.

Heat Lamp power cut-off (Thermostat)

The thermostat is a temperature sensing device, which cuts off the power to the heat lamp to prevent overheating fire when the heat lamp or heat roller overheats.

Temperature Detecting Sensor (Thermistor)

The Thermistor detects the surface temperature of the heat roller, this information is sent to the main processor which uses this information to regulate the temperature of the heat roller.

Heat Roller

The surface of the Heat Roller is heated by the Heat Lamp. As the paper passes between the Heat and Pressure rollers the toner is melted and fixed permanently to the paper. The surface of the roller is coated with Teflon. This ensures that toner does not adhere to the roller surface.

Pressure roller

The Pressure Roller mounted under the heat roller is made of a silicon resin and the surface of the roller is coated with Teflon. This ensures that toner does not adhere to the roller surface.

Safety Features

To prevent overheating

- 1st protection device: Hardware cuts off when overheated.
- 2nd protection device: Software cuts off when overheated.
- 3rd protection device: Thermostat cuts off mains power to the lamp.

Safety device

- Fuser power is cut off when the front cover is opened.
- LSU power is cut off when the front cover is opened.
- The temperature of the fuser cover's surface is maintained at less than 80°C to protect the user and a caution label is attached where the customer can see it easily when the rear cover is opened.

Scan Assembly

- Scan Image Controller
  1.Scan Line Time : 1.63ms
  2.Scan Resolution : Color : Max 600DPI
  3.Scan Width : 216mm
  4.Function
    - White Shading Correction
    - Gamma Correction
    - CIS Interface
    - 256 Gray Scale

CIS Operating Part: CIS use +3.3V

- CIS Max Operating Freguency: 5MHz

LSU (Laser Scanner Unit)

This is the core of the laser printer. It converts the video data received from the computer into an electrostatic latent image on the surface of the OPC drum. This is achieved by controlling the laser beam and exposing the surface of the OPC drum to the laser light. A rotating polygon mirror reflects the laser light onto the OPC and each side of the mirror is one scan line. The OPC drum turns as the paper feeds to scan the image down the page.

The /HSYNC signal is created when the laser beam from the LSU reaches the end of the polygon mirror and this signal is sent to the controller. The controller then detects the /HSYNC signal and adjusts the vertical line of the image on paper. In other words, after the /HSYNC signal is detected the image data is sent to the LSU to adjust the left margin on the paper.

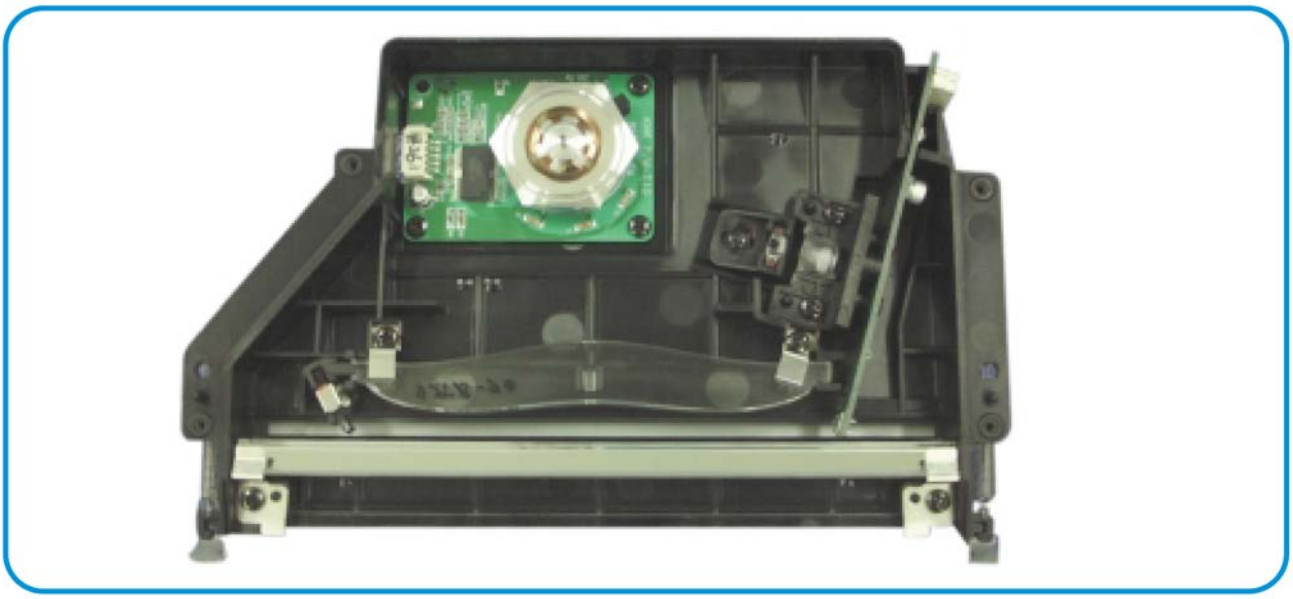


Figure 5

Toner Cartridge

The toner cartridge is an integral unit containing the OPC unit and toner unit. The OPC unit consists of the OPC drum and charging roller, and the toner cartridge unit consists of the toner, supply roller, developing roller, and blade (Doctor blade)

- Developing Method: Non magnetic 1 element contacting method
- Toner: Non magnetic 1 element shatter type toner
- The life span of toner: 3,000 sheets (ISO standard)
- Toner remaining amount detecting sensor: No
- OPC Cleaning: Electrostatic process
- Management of waste toner: Electro static process(Cleanerless Type)
- OPC Drum protecting Shutter: No
- Classifying device for toner cartridge: ID is classified by interruption of the frame channel

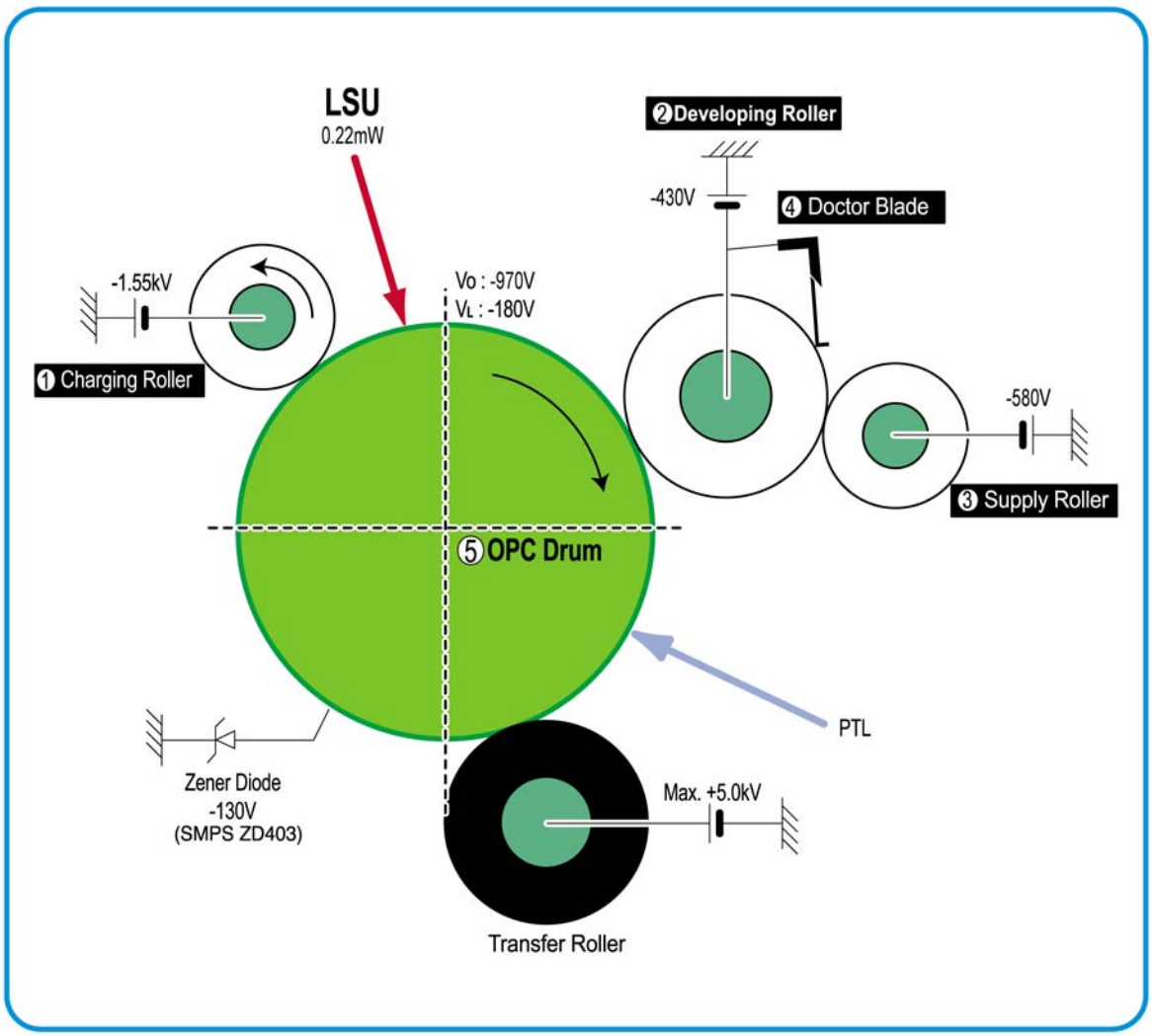


Figure 6

Hardware Structure and Descriptions

The WorkCentre 3119 can be broken down to several elements which are; the Main PBA, OPE Assembly, Scan Assembly, Print Engine, Copier and the power supply. Each element is a separated Module which focuses on the common and standard design for different kind products.

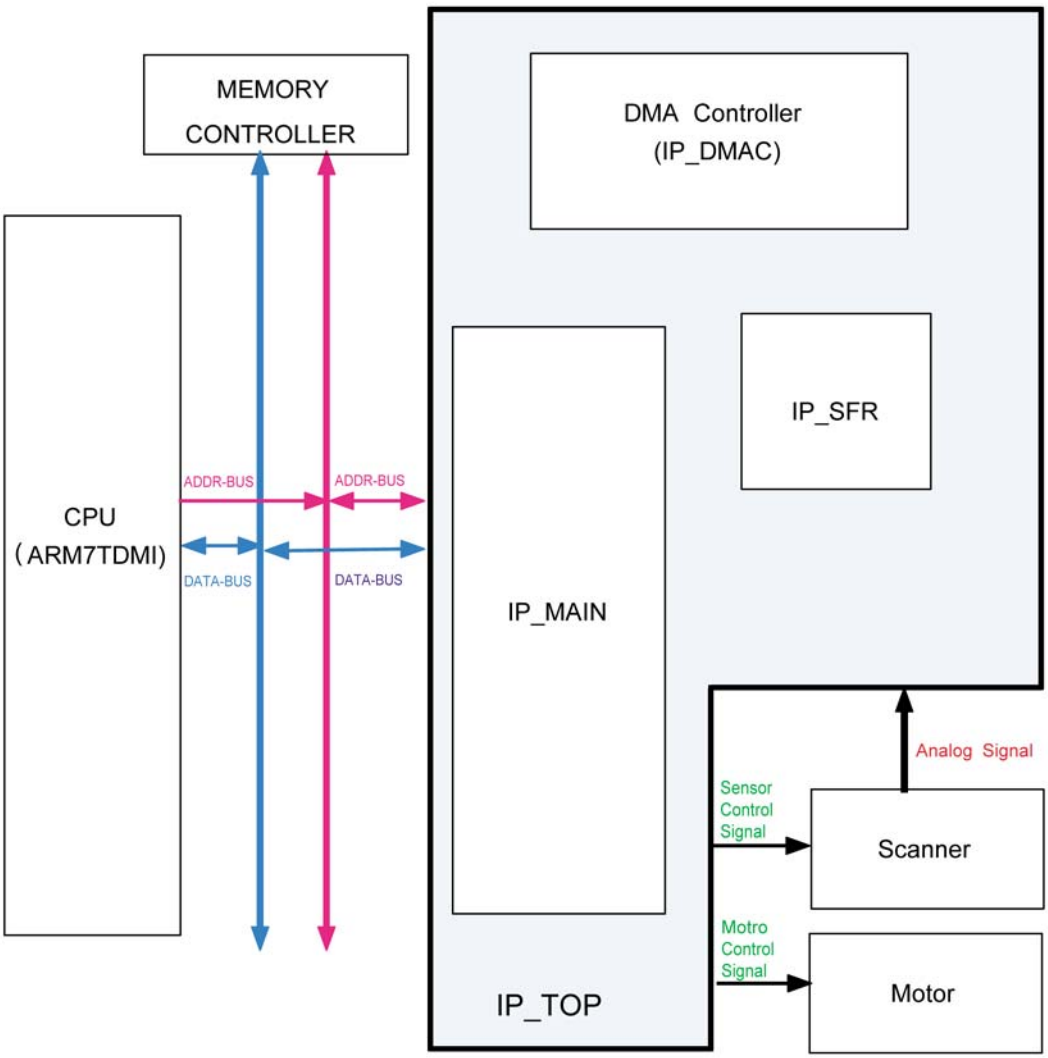


Figure 7

Main Control-ASIC

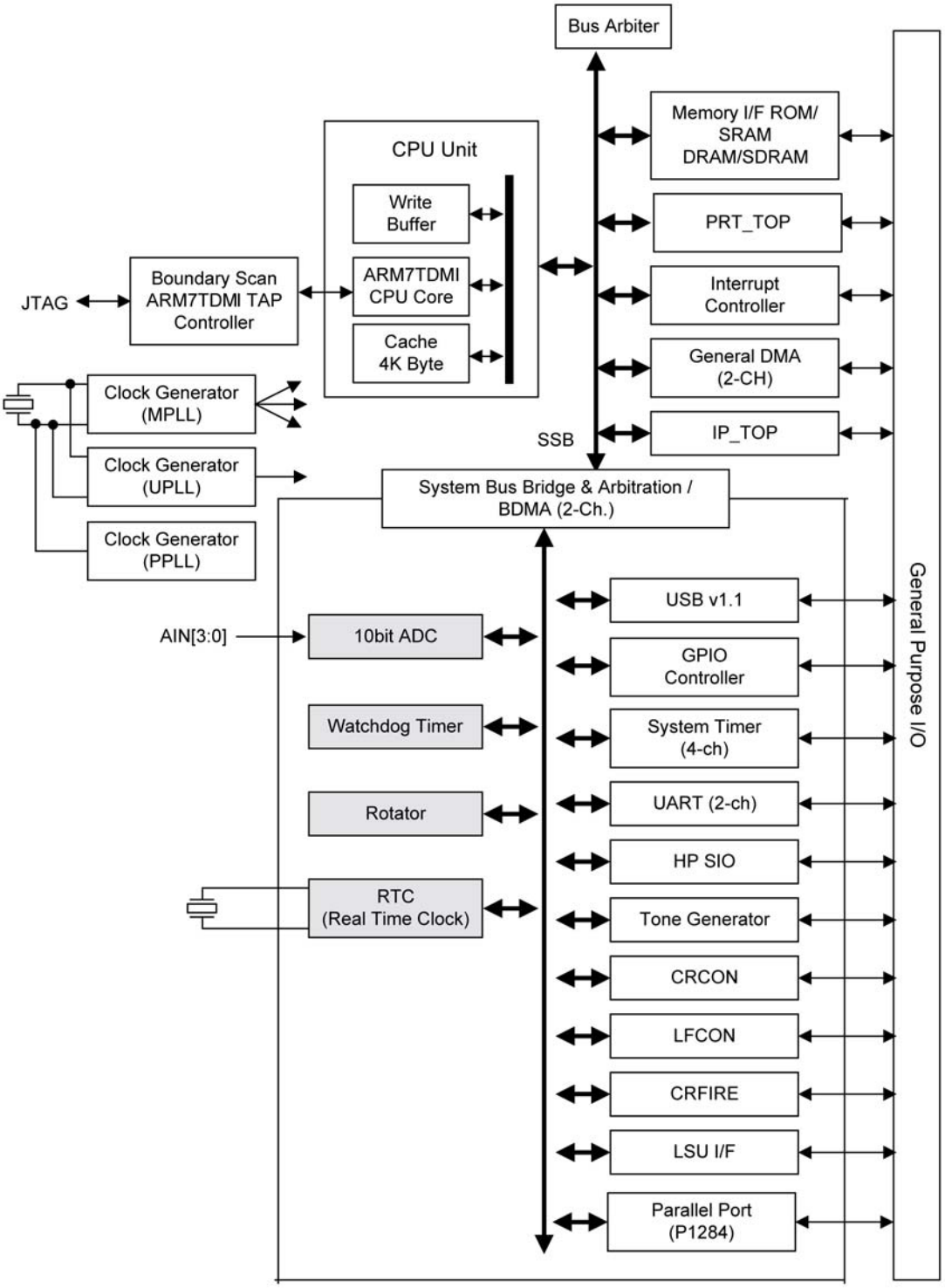


Figure 8

CPU

The use of a 16/32Bit RISC Processor, Chorus 2,which is an exclusive controller to control the Printer and to execute operation blocks using flash memory within the system program. It also controls the whole system.

- Main function block
  - Completely Integrated System for Embedded Applications,
  - 16/32 Bit Risc Architecture, Efficient and Powerful ARM7 Core.
  - LSU Interface Module for Interfacing PVC with LSU
  - 5 Channel General Purpose DMA Controllers for High Speed I/O
  - Operation Frequency: System: 66MHz, Bus: 66MHz
  - Operation Voltage : 3.3V
  - 4KB instruction cache and 4KB data cache
  - No Tightly Coupled Memory
  - Memory Protection Unit & CP15 control program
- Printer Video Controller for LBP engines
- Graphic Execution Unit for banding support of Printer Languages
- Printer Video Controller for LBP engines
  - PVC: Printer Video Controller without RET Algorithm
- Engine Controller
  - Motor Control Unit
  - Motor Speed Lookup Table Memory (128 x 16 x 2)
  - Pulse Width Modulation Unit
  - 2 Channels are supported
  - ADC Interface Unit
  - 2 ADC Channels are available
  - ADC Core maximum clock frequency: 2.5 MHz
- USB 2.0 Interface
- Package : 208-LQFP-2828
- Power : 1.8V(Core), 3.3V(IO) power operation

Speed : 66MHz core(ARM7TDMI) operation, 60MHz bus operation

2) Flash Memory

Record System Program, and download System Program by PC INTERFACE.

- - Size: 1M Byte
- - Access time: 70 nsec

3) SDRAM

Used as Page Buffer in Printing, Scan Buffer in Scanning and System Working Memory Area

- - Size: 8Mbyte
- - 3.5 MB: System Working Memory Area and Scan Buffer
- - 4.5 MB: Printing System Working Memory Area
- - Max Frequency: 133MHz

OPE Assembly

1) Configuration

The OPE Panel is consists of the Micom Controller, Matrix part and LCD.

2) Micom controller

Micom has ROM, RAM, built-in I/O Port, displays and LCDs which is controlled by the CPU commands of the Main Controller. It also sends Key recognition data to the Main Control Board.

Print Engine

The mechanical aspect of the print engine consists of the frame, feed element, developer, drive, toner transfer and fuser. The print engine is controlled directly by the Main PBA which handles all Image and video data to the LSU and manages the printing. The Main PBA also has mounted paper jam sensors to recieve signals directly.

Scanner

1. Pictorial signal input part:

The output signal of the CIS passes through the Bypass Cap and goes to the ADC at the IP Main. AFE then accepts each pixel, CDS (Correlated Double Sampling) technique which samples arm-level twice is used on each pixel by using IP signal.

2. Pictorial image processing part

This read CIS Pixel data in terms of 600dpi Line and process LAT algorithm on text mode, Error Diffusion Algorithm on Mixed mode, and stores data at the Scan Buffer on PC Scan mode without algorithm. On every mode, Shading Correction and Gamma Correction are executed ahead then processing is executed later.

*Scan Image Control Specification

- Minimum Scan Line Time: 1.23ms
- Scan Resolution: Max. 600 x 2400 DPI (optical)
- Scan Width: 216mm
- main function
  - Internal 10bit ADC
  - White Shading Correction
  - Gamma Correction
  - CIS Interface
  - 256 Gray Scale

CIS Operating Part **:** CIS use +3.3V

- - CIS Maximum Operating Frequency : 5MHz
- - CIS Line time : 1.63ms
- - White Data output Voltage : 1.7V -(Mono Copy, 5ms/line)

Copier Part

- Copy Mode: Black and White
- Scanner Type: CIS with Flatbed/Platen
- Maximum Size of Original: Platen: 216 x 297 mm
  (max. width = 216 mm, max length = 297 mm)

- Optical Resolution: 600 x 600 dpi
- Copy Quality - H x V: Text : 600 x 300 dpi (default)
  (User selectable via Content button) :Mixed : 600 x 300 dpi, Photo : 600 x 600 dpi
- Supported Media Types: Plain, Label, Cardstock, Transparency
- Copy Speed: Platen, SDMP: 19cpm (Letter) (SDMP = Single Document, Multiple Printout)
- Reduce/Enlarge: Platen: 50% - 200% (1% increments)
- Non-printable Area: 4 mm (Top, Bottom, and each Side)
- Copy Count: 1 to 99 (Page count displayed on LCD during copy operation)
- Copy Modes: Text, Text/Photo, Photo
- Fixed R/E Setting: 100%, Auto-fit
- Darkness Control: 3 levels
- First Copy Output Time (FCOT): Platen: 11 sec. (600 x 300 dpi)
- Duplex Copy Manual

Power supply

1. SMPS & HVPS

The SMPS and HVPS are combined together as a single board.

The SMPS supplies DC Power to the entire system. It takes 110V/220V and outputs the +5V, +24V to supply the power to the Main PBA.

The HVPS board creates the high voltage of THV/MHV/Supply/Dev and supplies it to the developer part for making best condition to display the image. The HVPS part takes the 24V and outputs the high voltage for THV/MHV/BIAS, and the outputted high voltage is supplied to the toner, OPC cartridge, and transfer roller.

2. HVPS (High Voltage Power Supply)
   - Transfer High Voltage (THV+)
     - Input Voltage : 24 V DC 15%
     - Output Voltage : MAX +5.0KV 5 %,(Duty Variable, no loading)
     - Input contrast of the Voltage stability degree : under 3 % (fluctuating input 21.6V-26.4V) Loading contrast : 3 % or less
     - Output Voltage Rising Time : 100 ms Max
     - Output Voltage Falling Time : 100 ms Max
     - Fluctuating transfer voltage with environmental various : +650 V- 5 KV
     - Environment Recognition Control Method : The THV-PWM ACTIVE is transfer active signal. It detects the resistance by recognizing the voltage value, F/B, while permits the environmental recognition voltage.
     - Output Voltage Control Method : Transfer Output Voltage is outputted and controlled by changing Duty of THVPWM Signal.
   - Charge Voltage (MHV)
     - Input Voltage : 24 V DC 15%
     - Output Voltage : -1.3KV to -1.8KV DC 3%
     - Output Voltage Rising Time : 50 ms Max
     - Output Voltage Falling Time : 50 ms Max
     - Output Loading range : 30 M - 1000 M
     - Output Control Signal(MHV-PWM) : CPU is HV output when PWM is Low

- Cleaning Voltage (THV-)
  - The (+) Transfer Voltage is not outputted because the THV PWM is controlled with high.
  - The (-) Transfer Voltage is outputted because the THV-Enable Signal is controlled with low
  - The output fluctuation range is big because there is no Feedback control.
  - Input Voltage : 24 V DC 15%
  - Output Voltage : -1KV 15%
  - Output Voltage Rising Time : 100 ms Max
  - Output Voltage Falling Time : 100 ms Max
- Developing Voltage (DEV)
  - Input Voltage : 24 V DC 15%
  - Output Voltage: -200V to -600V DC 3%
  - Output Voltage Fluctuation range: PWM Control
  - Input contrast of the output stability degree : 3 % or less

  Loading contrast : 3 % or less
  - Output Voltage Rising Time : 50 ms Max
  - Output Voltage Falling Time : 50 ms Max
  - Output Loading range : 10M - 1000 M
  - Output Control Signal (BIAS-PWM) : the CPU output is HV output when PWM is low.
- Supply
  - Output Voltage : -400 V to -800V DC 5%(ZENER using, DEV)
  - Input contrast of the output stability degree : under 3 %

  Loading contrast : 5 % or less
  - Output Voltage Rising Time: 50 ms Max
  - Output Voltage Falling Time: 50 ms Max
  - Output Loading Range: 10 M - 1000 M
  - Output Control Signal (BIAS-PWM): the CPU is HV output when PWM is low.

3. SMPS (Switching Mode Power Supply)
   - AC Input
     - Input Rated Voltage: AC 220V - 240V AC 110V - 127V
     - Input Voltage fluctuating Range: AC 198V - 264V AC 99V - 135V
     - Rated Frequency: 50/60 Hz
     - Frequency Fluctuating Range: 47 - 63 Hz
     - Input Current: Under 5.0Arms / 2.5Arms (But, the status when lamp is off or rated voltage is inputted/outputted)
   - Rated Output Power

Table 1:

No	Item	CH1	CH2	CH3	Remark
1	Channel Name	+5V	+24V	+24.0VS	
2	Connector Pin	CON2 5V Pin 3,4,24 GND Pin 5,6	CON2 24V Pin 13 GND Pin 7,9,10	CON2 24VS PIN 11, 12 GND Pin 7,9,10	
3	Rated Output	+5V +/-5% (4.75-5.25V)	+24V+/-15% (21.6-27.6)	+24V+/-15% (21.6-27.6)	
4	Max. Current Output	1.0A	0.5A	1.0A	

Table 1:

No	Item	CH1	CH2	CH3	Remark
5	Peak loading voltage	1.5A	1.0A	1.5A	1ms
6	Ripple noise voltage	Under 150m Vp-p	Under 500m Vp-p	Under 500m Vp-p	
7	Maximum output	5.0W	12W	24W	

- Consumption Power

Table 2:

No	Item	CH1(+5V)	CH2(+24V)	CH3(+24VS)	System
1	Stand-by	0.2A	0.07A	0.07	AVG:100Wh
2	Printing	1.0A	0.5A	1.0A	AVG:350Wh
3	Sleep mode	0.2A	0.02A	0.03A	AVG:10Wh

- Length of Power Cord : 1830 +/- 50mm
- Power Switch: Use
- Features
  - Insulating Resistance: 100 or more (at DC 500V)
  - Insulating revisiting pressure: Must be no problem within 1 min. (at 1,000V-LV / 1,500Vac-HV,10mA)
  - Leaking Current: under 3.5mA
  - Running Current: under 40A PEAK (AT 25 , COLD START) under 60A PEAK (In other conditions)
  - Rising Time: within 2Sec
  - Falling Time: over 20ms
  - Surge : Bi-Wave 3kV(2) - Normal, 6KV(12) - Common
- Environment Condition
  - Operating Temperature Range: 0 - 40
  - Maintaining Temperature Range: -25 - +85
  - Preserving Humidity Condition: 30% - 90% RH
  - Operating Atmospheric Pressure Range: 1atm
- EMI Requirement: CISPR, FCC, CE, MIC
- Safety Requirement: IEC950 UL1950, CSA950, C-UL, Semko, CB, CCC(CCIB),GOST, EPA, Power Save

FUSER AC POWER CONTROL

Fuser(HEAT LAMP) gets heat from AC power. The AV power controls the switch with the Triac, a semiconductor switch. The ‘ON/OFF control’ is operated when the gate of the Triac is turned on/off by Phototriac. In other words, the AC control part is passive circuit, so it turns the heater on/off when recieving signals from the engine control. When the ‘HEATER ON’signal is received at the Engine, The LED of PC102 (Photo Triac) takes the voltage and flashes. From the flashing light, the Triac part (light receiving part) takes the voltage, and the voltage is supplied to the gate of Triac and flows into the Triac. As a result, the AC current flows in the heat lamp, and heating occurs. On the other hand, when the signal is off, the PC102 is off, the voltage is cut off at the gate of the Triac. The Triac switches off, and then the heat lamp is switches off.

- Triac (THY1) feature :12A, 600V SWITCHING
- Phototriac Coupler (PC102)

- Turn On If Current : 15mA - 50mA(Design: 16mA)
- High Repetive Peak Off State Voltage : Min 600V

Software Structure and Descriptions

Architecture

The following diagram shows the Engine Control System.

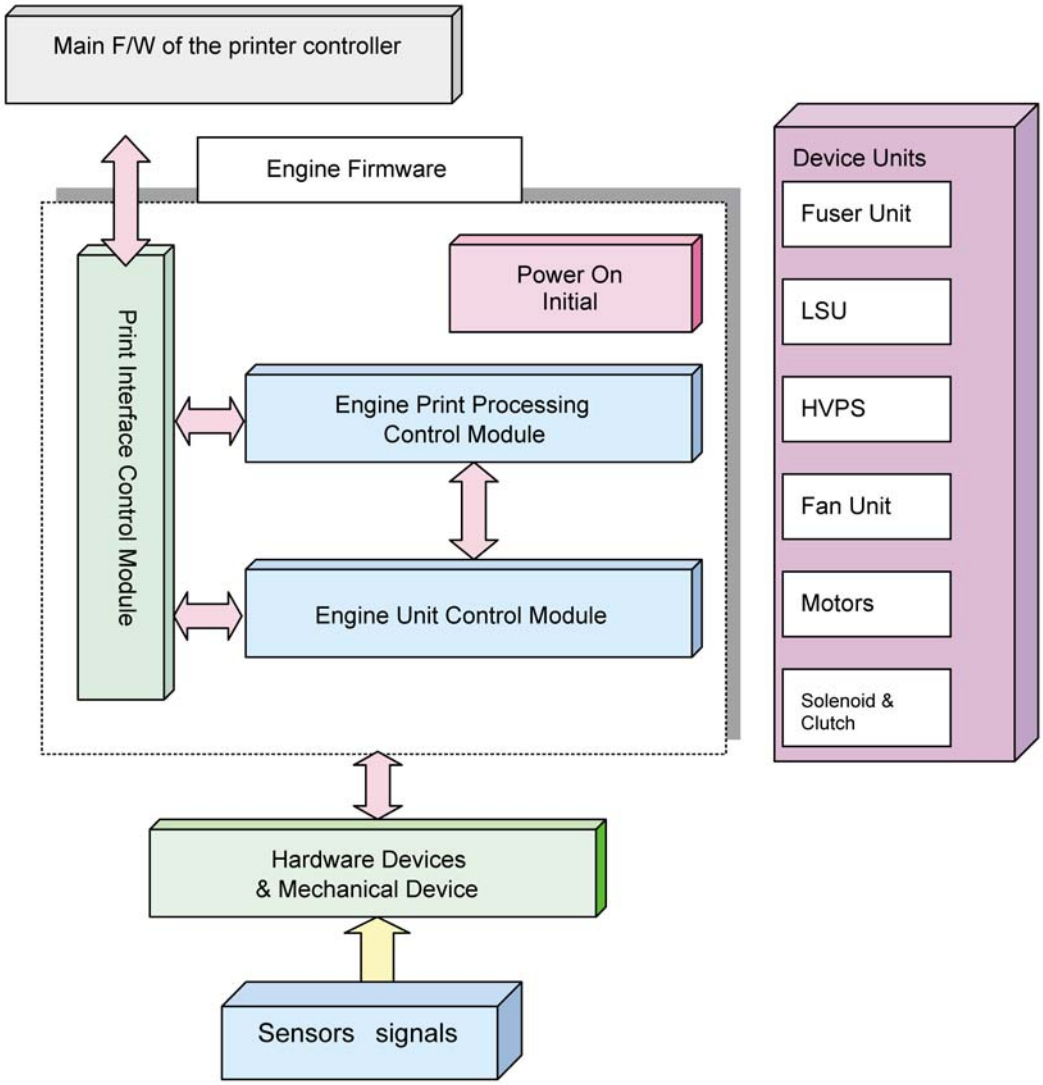


Figure 3

Firmware Overview

The Engine Control firmware is executed every 10msec by the timer interrupt of the main system. And consists of 4 control modules. Power on Initial, Engine Print Processing Control, Print Interface Control and Engine Unit Control Module. Major operations which are controlled by the Printer Engine Control Firmware are:

- Pick-Up, Feeding and Discharging of Paper
- LSU operations
- HVPS for the Developer Process
- Temperature of Fuser unit
- Motor operations

Power on Initial Module

IWhen the mains for the printer is turned on, the main firmware wakes the module of the engine first and executes the necessary initialization. Then, the other modules of the printer engine control firmware are checked and initialized especially the hardware ports or variables related to critical actions.

Engine Print Processing Control Module

The main control module consists of 4 sub functions:

- **Virtual timer function**
  This is about the virtual timer used to control time processes in the engine part. This consists of three separate processes:
  1) Declares the ID and Function.
  2) Runs the timer and the execute functions.
  3) Stops the timer. This controls the process unit as time.
- **Time Processing function**
  This is function that processes a timer for counter, elapsed time after on time.
- **Jam Processing function**
  It checks the jam state under conditional status.
- **State processing function**
  This is about the processing of the engine status. This controls the printer according to the state of the engine. These states consist of many states according to the engine mode.

Print Interface Module

The Print Interface Control Module receives commands from the main system and transmits the present status of the engine as requested. It also calls up other sub-functions for specific operations requested by the printer controller.

Engine Unit Control Module

- Engine Unit Control Module consists of 4 sub-functions.
- Regulating temperature
- Fan control
- Sensor status management
- Unit and Devices Control (Motor, Clutch, etc.)

Paper Size

The WorkCentre 3119 does not have a paper size sensor. If the paper width is narrow, the temperature of the fuser roller does not uniformly conform to the overall surface of the roller. So in this case, the engine controls the interval of pick up of the paper.

But because it does not have a sensor to determine paper width, it judges whether the width is narrow by it's length. If it judges a current paper size is below B5, it regards it as a narrow sheet of paper. Normally, if a paper size is a narrow, the interval of pick up is lengthened according to an elapsed printing time and the number of accumulated Printing Pages.

Paper Type

The information of paper type is sent by the main system. The engine considers following paper types:- Plain paper, Envelope, Label, Bond, Colored paper, OHP, Card stock, Thin, Thick, Preprinted.

It controls a fuser temperature and a pick-up time according to the paper type. Each control depends on its mechanism. Normally, papers with larger thickness are controlled by maintaining a high temperature. But for material like OHP, a lower temperature is used.

Functional Requirements of the Fuser Settings

The fuser settings are managed by the main controller and are determined by several criterias including paper type, paper size, elapsed printed time and the number of accumulated Printing Pages. It may also be influenced by hardware specs and inner temperature.

Fuser temperature according to printer status

This printer has 5 modes which are:- warm-up, stand-by, printing, error and sleep mode. Every mode sets the temperature of the fuser differently.

During warm-up mode, the temperature of the fuser rises up to the warm-up target temperature.

During stand-by mode, it maintains the specified temperature of the fuser in order to reduce the time to print the first page.

During printing, it controls the temperature of the fuser according to paper type, paper size, the number of accumulated printing pages, the elapsed printing time and the environment index.

Accumulated Printing Pages

If more pieces of paper are printed, the temperature of the fuser may saturate. In this case, the engine maintains the temperature of the fuser constantly. The accumulated printing pages are cleared during sleep mode.

Elapsed Printing Time

If the print job is done over a fixed time, the temperature of the fuser may be saturate. In this case, the engine maintains the temperature of the fuser constantly. The elapsed printing time is cleared during sleep mode.

Temperature during Stand-By mode

During stand-by mode, the engine controls the fuser to maintain a specific temperature to reduce 'first page print out time'. This specific temperature is set according to various enviroment condi-

tions. For example, printers at cold and low marshy places are maintained at a higher temperature and vice versa.

Temperature during Warm-Up mode

When the engine executes warm-up mode, the temperature of the fuser is raised to stand-by temperature.

Environmental Index

The engine senses the present environment when it performs a printing job or warm-up procedure and assigns the fuser with a different temperature for each mode according to the present environment conditions. It is very important to control the temperature of the fuser while printing.

Functional Requirements for LSU Control

LSU receives the image data and makes the latent image on the OPC surface using a single beam.

LSU Ready Check

The WorkCentre 3119 feeding mechanism will pick up paper when the LSU is ready. When the paper is sensed by the feed sensor, the engine control module checks whether the LSU and Hsync is ready for an appointed time.

Sequence of LSU module

When the engine control module receives a print command, the LSU performs several steps:

1. Setting up the initial value.
2. With the above result, the LSU controls the polygon motor and laser diode when receiving a print command.
3. It then monitors the registered value related to LReady and Hsync, and if an error occurs, it sets up an error flag.
4. If no error flag is raised, it sets the values to mask the video data for horizontal and vertical regions. However, if there is an error, it will recover according to the recovery sequence.

Functional Requirements of Environment Recognition

This determines the index to indicate the inner environment in a printer. The engine is divided into several levels according to the index. It is used to control high-voltage values, warm-up timesand the fuser temperature.

Transfer Roller

There are two cases to recognize the environment for taking the environmental index.

- Recognizing Environment without paper: Operates when the OPC revolves without the paper.
- Recognizing Environment with paper: Operated when the front edge of the paper is between the transfer roller and OPC.

Air Temperature Sensor

N/A

Environment Recognition

Several reference voltages are supplied to the transfer roller to determine the environment. First, it supplies a low voltage to the transfer roller and then when a fixed time has elapsed, it reads the resistance value of the transfer roller by means of the ADC unit. It operates until the value is lower than a specific value. If the resistance value of the transfer roller is lower than the specified value, it then decides an array index for the voltage and then searches an appropriate index in the table presented by the developer team.

Functional Requirements of HVPS Control

The engine supplies the developer unit with high voltage through the HVPS unit in order to form an image on the paper fed through the paper path. So the engine-control firmware supplies the high voltage to the developer unit at the specified time and position of the paper during the printing process.

The HVPS unit is controlled by the PWM. The output voltage is determined by the PWM duty. For reference, the PWM cycle is about 14 KHz presented by the power team.

There are 3 kinds of high-voltages as follows:

MHV

This high-voltage is supplied to the OPC drum through the charging roller while charging the skin of the OPC drum

with a minus voltage.

THV

- THV +

The (+) transfer high voltage is supplied to the transfer roller for transfering toner onto the OPC drum to the paper. This is determined by the environmental index.

- THV -

The (-) transfer high voltage is supplied to the transfer roller to remove the remaining toner from the OPC drum. The value is fixed to about -1000V.

DEV

This high-voltage is supplied to the developer roller to transfer the toner to the charge on the OPC drum scanned by the laser beam while printing the image. The engine controls whether the high voltage is supplied and its quantity. The developer team presents the timing chart to control the high voltage.

Functional Requirements of Power Save Mode

The power save mode is controlled by the main system firmware. In order to switch the ready state to the power save mode after a specified time, the main system sends a sleep command to the engine. When the engine receives a sleep command, it stops the operation of the fuser and the fan unit in the engine. The main system then sets the engine to a sleep state. A user can select

one of pre-defined times as power save time from the Driver UI. The setting value for power save time is OFF, 5min, 10min, 15min, 30min, 45min, and 60min. The default time is 5min. If OFF is selected, power save time is operated after 2 hours to protect the fuser.

Functional Requirements of Toner Cartridge

Installation Toner Cartridge

The WorkCentre 3119 main firmware checks the validity and status of the CRUM on the toner cartridge. The crum stores the ID, the opc cycle, the toner consumption and so on.

Toner Save

This function is to reduce toner consumption. There are 3 different methods used on this printer to do so:

- Modulating the video data
- Modulating the DEV voltage in the engine firmware.
- Controlling the power of the laser diode.

Functional Requirements of OPC Drum

Clean OPC Drum

To clean the contamination of the OPC drum, all remaining toner should be removed.

Manual: This function can be used by the user at anytime. When the user selects this function, the engine receives the OPC cleaning command from the main system and performs the cleaning operation. There are two methods to clean the OPC. One is the minus clean mode, and the other is the plus clean mode.

Minus clean mode: Supplying negative voltage to the transfer roller to remove toner with a negative charge.

Plus clean mode: Supplying positive voltage to the transfer roller to remove toner with a positive charge. The developer team presents the cleaning process.

Functional Requirements of Fan Operation

The fan is always in operation except during sleep mode. When the engine encounters an error, the engine stops the fan. However, when the engine enters sleep mode, the engine stops the fan after 5 minutes due to toner fusing. The Fan operates during warm up and print.

Door Open

When the cover is open, the engine stops all functions. It sends an error message to the main system and an error message is displayed on the LCD. If the cover is closed, the engine operates the warm-up process.

No paper

When the paper cassette is empty, the engine notifes the printer system. Then, an error message is displayed on the LCD. When the user loads paper in the cassette, the error is removed.

Temperature

Open Heat Error

If the fuser temperature is lower than a specified temperature during warm-up, the engine flags an Open Heat Error. When this error occurs, the engine stops all functions and keeps the error state. The engine then reports the error status to the main system. The error message is then displayed on the LCD notifying the user.

Recovery: This error will recover automatically when the specified temperature is reached.

Low Heat Error

If the fuser temperature is lower than a specified temperature during warm-up, stand-by or printing for a certain duration, the engine flags a Low Heat Error. When this error occurs, the engine stops all functions and keeps the error state. The engine then reports the error status to the main system. The error message is then displayed on the LCD notifying the user.

Recovery: The engine records the temperature when the error occurred and then supplies maximum heat to the fuser. After a certain period, the engine compares the present temperature to the recorded temperature. If the present termperature is higher than the recorded value, the printer resumes operation.

Over Heat Error

If the fuser temperature is higher than the specified temperature and is maintained for a certain duration, the engine flags an Over Heat Error. When this error occurs, the engine stops all functions and keeps the error state. The engine then reports the error status to the main system. The error message is then displayed on the LCD notifying the user.

Recovery: The engine records the temperature when the error occurred and then stops supplying heat to the fuser. After a certain period, the engine compares the present temperature to the recorded temperature. If the present termperature is lower than the recorded value, the printer resumes operation.

LSU Error

The errors related to LSU are as follows:

- By LReady: When the printing starts, the engine drives the polygon motor of the LSU. If the motor is not in a ready status after a specified time has elapsed, the engine flags the error. After the error is flagged, the engine stops all functions and keeps the error state. The engine then reports the error status to the main system. The error message is then displayed on the LCD notifying the user.
- By Hsync: When the polygon motor is ready, the LSU sends out a signal called Hsync which is used to synchronize each image line. If the engine does not detect consecutive signals for a fixed time, the engine flags a Hsync error. If this happens, the engine stops all functions and keeps the error state. The engine then reports the error status to the main system. The error message is then displayed on the LCD notifying the user.

GP 3 User Menu

Table 1 shows the map of User settings available in the User mode. Full descriptions of these settings can be found in the user guide.

Table 1:

1st Level	2nd Level	3rd Level	4th Level	Default value
1. Reduce / Enlarge ◀ ▶	Original (100%)			100%
	A4>LTR (94%)			
	EXE>LTR (104%)			
	50%			
	150%			
	200%			
	Custom:50-200%			
2. Darkness ◀ ▶	Normal			
	Dark			
	Light			
3. Original Type ◀ ▶	Text			
	Text/Photo			
	Photo			
4. Special Copy ◀ ▶	Off			*Default
	Clone			
	Auto Fit			
	ID Card Copy			
	2 UP			
	Poster			
5. Toner Save ◀ ▶	On			
	Off			
6. Paper Setting ◀ ▶	Paper Size	Tray Paper	A4, EXE, Folio, A5, B5, A6, LTR, LGL	LTR (US) A4 (EU/AP)
		Bypass Feed	A4, EXE, Folio, A5, B5, A6, LTR, LGL	LTR (US) A4 (EU/AP)
	Paper Type	Plain paper, Transparency, Card stock, Labels, Envelope,		
7. Copy Setup ◀ ▶	Default Change	Darkness	Light/Normal/Dark	Normal
		Original Type	Text, Text/Photo, Photo	
		Reduce/Enlarge	Original (100%)	100%
			A4>LTR (94%)	
			EXE>LTR (104%)	
			50%	
			150%	
			200%	
			Custom: 50-200%	
		No. of Copies	[1-99]	1
	Timeout	15,30,60,180 sec, Off		30 sec
8. Report	System Data			

Table 1:

1st Level	2nd Level	3rd Level	4th Level	Default value
9. Machine Setup ◀ ▶	Language	[English/French/Spanish/Portuguese/German/Italian/ Dutch/Russian/Polish/Hungarian/Czech/Turkish/Swedish]-9 countries		English
	Power Save	On	5, 10, 15, 30, 45, 60 min	5 min
		Off		
	USB Mode	Fast, Slow		Fast
10. Maintenance ◀ ▶	Clean drum			
	Clear settings	Paper setting		
		Copy setup		
		All settings		
		Machine setup		

Settings

Reduce/Enlarge

This option allows the reduction or enlargement of a print. To access this option, press the menu button until 'Reduce/Enlarge' appears on the display. Use the ◀ and ▶buttons to scroll between the options available. Press the enter button to confirm selection. Or, to return to standby mode, press Stop/Clear.

Darkness

This option adjusts the darkness of the print. To access this option, press the menu button until 'Darkness' appears on the display. Use the ◀ and ▶buttons to scroll between the options available. Press the enter button to confirm selection. Or, to return to standby mode, press Stop/Clear.

Original Type

This option allows the user to select the type of copy being made. To access this option, press the menu button until 'Original Type' appears on the display. Use the ◀ and ▶buttons to scroll between the options available. Press the enter button to confirm selection. Or, to return to standby mode, press Stop/Clear.

Special Copy

This option allows the user to select different types of copying layouts. To access this option, press the menu button until 'Special Copy' appears on the display. Use the ◀ and ▶buttons to scroll between the options available. Press the enter button to confirm selection. Or, to return to standby mode, press Stop/Clear.

Toner Save

This option allows the machine to reduce the amount of toner used on each page. To access this option, press the menu button until 'Special Copy' appears on the display. Use the ◀ and ▶but-

tons to scroll between the options available. Press the enter button to confirm selection. Or, to return to standby mode, press Stop/Clear.

Paper Setting

This option allows the user to set the paper size and type used in the cassette tray or bypass. To access this option, press the menu button until 'Special Copy' appears on the display. Use the ◀ and ▶buttons to scroll between the options available. Press the enter button to confirm selection or to scroll down another level. Or, to return to standby mode, press Stop/Clear.

Copy Setup

This option allows the change of default settings for 'Darkness', 'Original Type','Reduce/Enlarge','No. of Copies' and 'Timeout'. To access this option, press the menu button until 'Special Copy' appears on the display. Use the ◀ and ▶buttons to scroll between the options available. Press the enter button to confirm selection or to scroll down another level. Or, to return to standby mode, press Stop/Clear.

Report

This option prints out a system data report. To print out a report, press menu button until 'System Data' appears on the display. Use the ◀ and ▶buttons to scroll between 'On' and Off'. Press the enter button to confirm selection. Or, to return to standby mode, press Stop/Clear.

Machine Setup

This option allows the change of language the machine will display. It also allows the configuration of the power save and USB. To access this option, press the menu button until 'Machine Setup' appears on the display. Use the ◀ and ▶buttons to scroll between the options available. Press the enter button to confirm selection or to scroll down another level. Or, to return to standby mode, press Stop/Clear.

Maintenance

This option allows the user to clean the OPC drum, clear the printer settings and restores its factory default settings. To access this option, press the menu button until 'Maintenance' appears on the display. Use the ◀ and ▶buttons to scroll between the options available. Press the enter button to confirm selection or to scroll down another level. Or, to return to standby mode, press Stop/Clear.

GP 4 Engine Test Mode

The Engine Test Mode supplies useful functions to check the condition of the engine. It tests the condition of each device and displays the result of the test on the LCD.

To enter the Engine Test Mode

To enter the Engine Test mode

Press “Menu > Copies >◀ > ▶> Menu > ◀ in sequence, and the LCD briefly displays **'Engine Test [Diagnostic]',** the machine has entered Engine Test Mode.

- To enter a lower menu (Sub menu) Press the Menu key.
- To exit into an upper menu Press the Menu/Exit key.
- To return to the user menu Press the Menu/Exit key.

Diagnostics

Table 1:

Main menu	Engine Test	Remarks
ENGINE TEST MET FAN SOL ETC	Motor Test (Stepper motor drive, PL 6)	1:On, 2:Off
	Pickup Test (Solenoid HB pickup, PL 3)	1:On, 2:Off
	Fan Test (Toner Fan, PL 1)	1:On, 2:Off
	Manual Clt Test (Solenoid HB bypass, PL 3)	1:On, 2:Off
	PTL Test (PTL lens, PL 4)	1:On, 2:Off
ENGINE TEST LSU TEST	LSU Motor Test (LSU, PL 1)	1:On, 2:Off
	LSU Hsync Test (LSU, PL 1)	1:On, 2:Off
	LD Test	1:On, 2:Off
ENGINE TEST SENSOR TEST	Feed Sen Test (Main PBA, PL 1)	Check: Start check
		Next: Check next sensor
	Exit Sen Test (Main PBA, PL 1)	Check: Start check
		Next: Check next sensor
	Cover Sen Test (Main PBA, PL 1)	Check: Start check
		Next: Check next sensor
	Empty Sen Test (Main PBA, PL 1)	Check: Start check
		Next: Check next sensor
	Manual Sen Test (Main PBA, PL 1)	Check: Start check
		Next: Check next sensor
ENGINE TEST HEAT TEST	Therm ADC 220-85 (Fuser, PL 5)	1:On, 2:Off (maintain the fusing temp. 65C-230C)
ENGINE TEST HVPS TEST	MHV Test (SMPS/HVPS, PL 1)	1:On, 2:Off (-1550V+/- 50V)
	Deve Bias Test (SMPS/HVPS, PL 1)	1:On, 2:Off (-430V +/- 20V)
	THV EN/NEG Test (SMPS/HVPS, PL 1)	1:On, 2:Off (-1000V+/- 300V/-150V)
	THV ON (1300V) (SMPS/HVPS, PL 1)	1:On, 2:Off (+1300V+/- 20V)
	THV ADC 1300V (SMPS/HVPS, PL 1)	1:On, 2:Off
	THV ADC 600V-3550V (SMPS/HVPS, PL 1)	1:On, 2:Off (Compare each ADC value)

GP 5 Tech Mode

The Engine Tests Mode supplies useful functions to check the condition of the engine. It tests the condition of each device and displays the result of the test on the LCD.

To enter the Tech Mode

To enter the Engine Test mode

Press “Menu > Copies >◀ > ▶> Menu > ▶ in sequence, and the LCD briefly displays **'Tech Mode',** the machine has entered Engine Test Mode.

- To enter a lower menu (Sub menu) press the Start/Enter key.
- To confirm selection press the Print key.
- To exit into an upper menu press the Menu/Exit key.
- To return to the user menu press the Menu/Exit key.

Tech Mode Settings Map

Table 1:

1st Level	2nd Level	3rd Level	4th Level	Default value
Tech Mode	Data Setup	Clear All Mem.	Select country	
		Clear Count	Total page CNT	
			FLT Scan CNT	
			Used Toner CNT	
		Flash Upgrade	Local	
	Machine Test	Switch Test		
		Dram Test		
		Rom Test		
		Pattern Test		
		Shading Test		
	Report	System Data		
		Error Info		

Tech mode descriptions

Data Setup

This option enables you to selectively clear information stored in your machine’s memory. To access this option, enter Tech mode and press the menu button until ’Data Setup’ appears on the display. Press the enter button and use the ◀ and ▶buttons to scroll between the options available. Press the enter button to confirm selection. Or, to return to standby mode, press Stop/Clear.

-Clear all Mem. : Clears all settings and information stored in the machine’s memory according to country.

-Total page CNT : Clears the total page printed counter.

-FLT Scan CNT : Clears the total page scanned counter.

-Used Toner CNT : Clears the total of pages printed counter:

Machine Test

This option allows the you to perform several tests on the machine. To access this option, enter Tech mode and press the menu button until 'Machine Test' appears on the display. Press the enter button and use the ◀ and ▶buttons to scroll between the options available. Press the enter button to confirm selection. Or, to return to standby mode, press Stop/Clear.

- Switch Test: Use this feature to test all keys on the operation panel. The result is displayed on the window each time a key is pressed.
- Dram Test

  This feature allows the machine's DRAM to be tested. If all memory is working normally, the LCD shows <<OK>>
- Pattern Test

  This feature allows you to make pattern printouts in order to check the printer's mechanism.
- Shading Test

  This function is used to set the optimum scan quality determined by the characteristics of the CIS (Contact Image Sensor). Perform this function if copy quality image is poor.

Report

This option allows the you to print the printer's specifications and settings. To access this option, enter Tech mode and press the menu button until 'Report' appears on the display.Press the enter button and use the ◀ and ▶buttons to scroll between the options available.Press the enter button to confirm selection. Or, to return to standby mode, press Stop/Clear.

-System Data: Prints the printer's specifications and settings.

-Error Info: Prints a list of all errors

GP 6 Paper Path and Clearing Paper Jams

Paper path

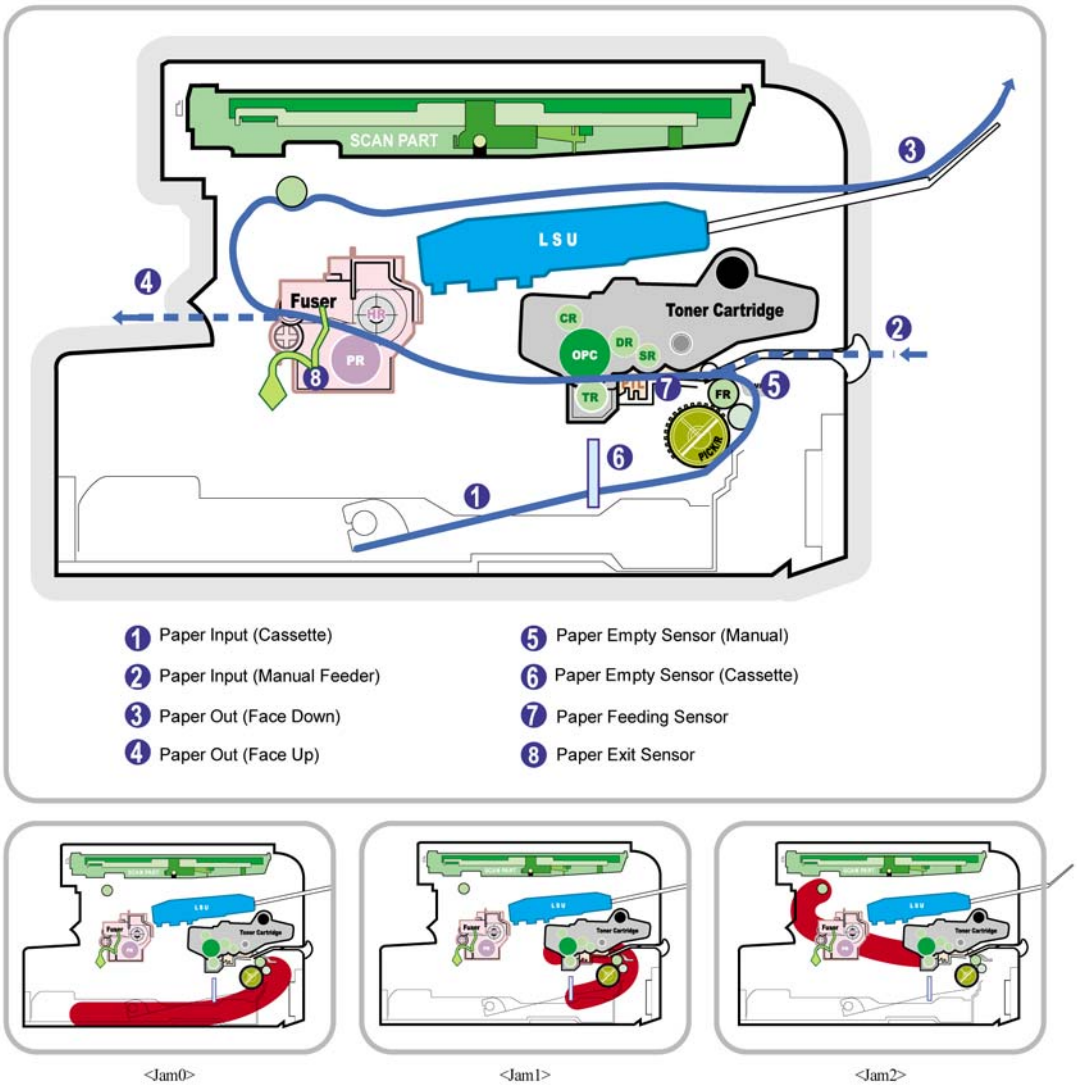


Figure 1

1) After receiving a print command, the printer feeds paper from the main cassette or bypass feeder as required.

2) The paper being fed passes the paper feed sensor (Jam 0 occurs if the sensor is not operated within a certain time).

3) Having passed the paper feed sensor the paper moves to the paper exit sensor via printing process (Jam 1 occurs if the sensor is not operated within a certain time).

4) The paper then passes through the paper exit sensor and out of the set (Jam 2 occurs if the trailing edge of the paper does not pass the exit sensor within a certain time of the paper leading edge activating the exit sensor).

Clearing Paper Jams

When a paper jam occurs, "Paper Jam" appears on the display. Refer to the table below to locate and clear the paper jam.

Table 1:

Paper jam 0 open/close door	In the paper tray. The feed sensor does not detect any paper.
Paper jam 1 open / close door	In the paper area. Paper is lodged between the feed sensor and the exit sensor.
Paper jam 2 check inside	In the fuser area or around the toner cartridge. Paper is jammed after passing the exit sensor.
Bypass jam	In the bypass feeder. Paper is lodged in the bypass area.

To avoid tearing the paper, pull the jammed paper out gently and slowly. Follow the steps on the next pages to clear the jam.

In the Paper Tray

1. Open and close the front cover. The jammed paper is automatically ejected from the machine. If the paper is not ejected continue to step 2.
2. Pull the paper tray open.

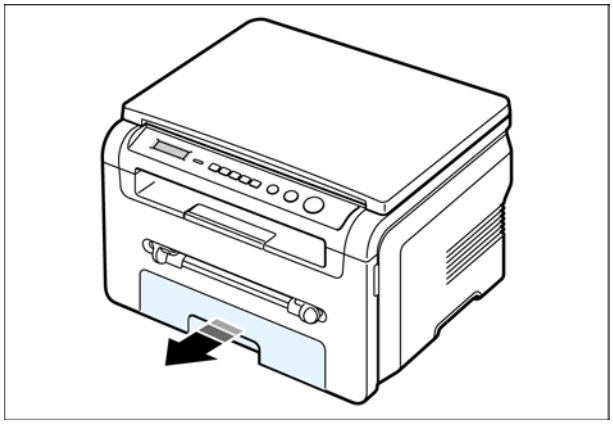


Figure 2

3. Remove the jammed paper by gently pulling it straight out. If there is any resistance and the paper does not move when you pull or if you cannot see the paper in this area, go to the section “In the Fuser Area or Around the Toner Cartridge”.

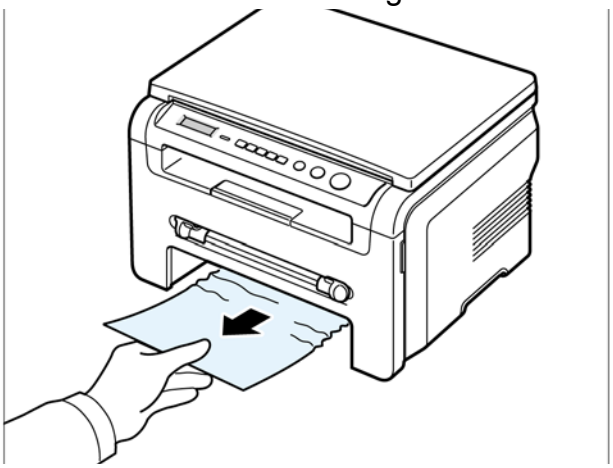


Figure 3

4. Insert the paper tray into the machine until it snaps into place.
5. Open and close the front cover to resume printing.

In the Paper Exit Area

1. Open and close the front cover. The jammed paper is automatically ejected from the machine. If the paper is not ejected continue to step 2.
2. Gently pull the paper out of the front output tray. Go to step 9. If you cannot see the jammed paper in the front output tray, continue to step 3.
3. Open the jam cover by lifting the front edge of the scan assembly. The support lever will automatically pop up.

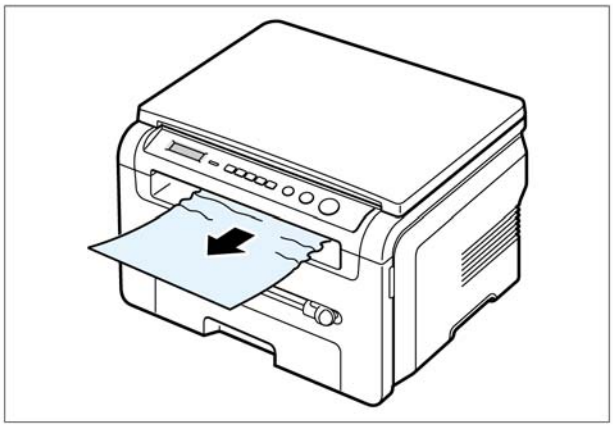


Figure 4

4. Pull the paper out gently.

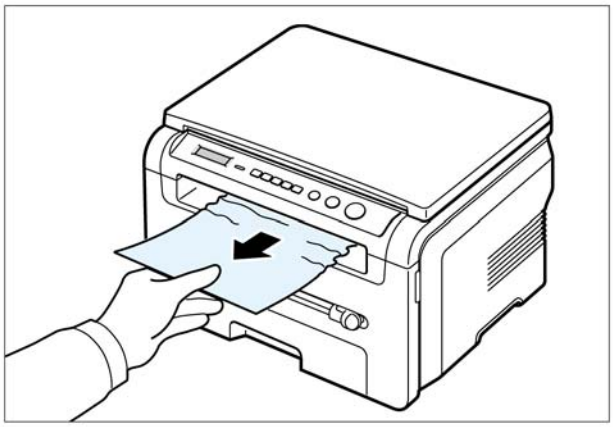


Figure 5

5. Close the jam cover by pushing the support tab to the left and hold it down whilst lowering the cover carefully until the cover fully down, this will hold down the tab. If there is any resistance and the paper does not move when you pull or if you cannot see the paper in the jam cover, continue to step 6.
6. Open the rear cover.
7. Remove the jammed paper by gently pulling it straight out.

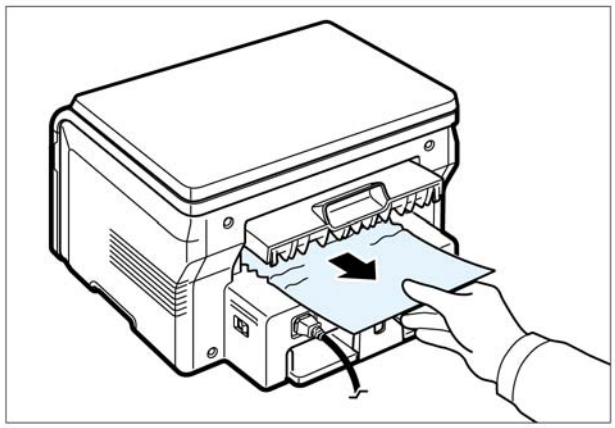


Figure 6

8. Close the rear cover.
9. Open and close the front cover to resume printing.

In the Fuser Area or Around the Toner Cartridge

Note: *The fuser area is hot. Take care when removing paper from the machine.*

1. Open the front cover and lightly push down on the cartridge then pull to take it out.

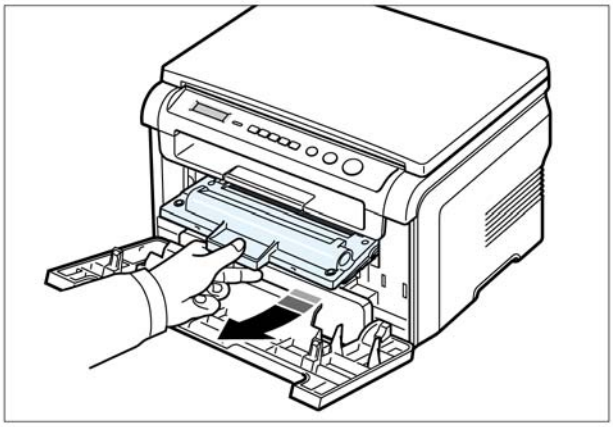


Figure 7

2. Remove the jammed paper by gently pulling it straight out.

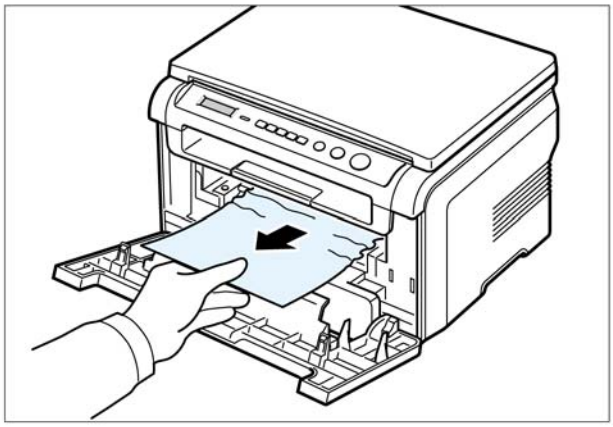


Figure 8

3. Replace the toner cartridge and close the front cover. Printing automatically resumes.

In the Bypass Feeder

Bypass Jam appears on the display when you try to print using the bypass feeder and the machine does not detect paper, due to no paper or improper paper loading. The error message may also

occur when the paper is not properly fed into the machine through the bypass feeder. In that case, pull the paper out of the machine.

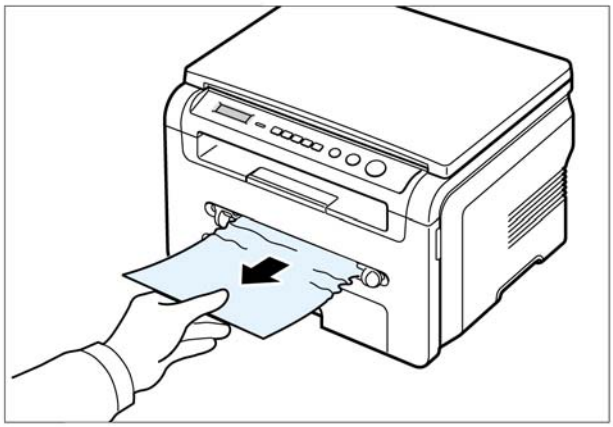


Figure 9

In the Toner Cartridge

Remove the paper while turning the toner cartridge drum against the feed direction.

GP 7 Consumables and Replacement Parts

The cycle period outlined below is a general guideline for maintenance. The example list is for an average usage of 50 transmitted and received documents per day. Environmental conditions and actual use will vary these factors. The cycle period given below is for reference only.

Table 1:

	Replacement Cycle	
Pickup Roller	50,000 pages	
Paper Feeding Roller (Friction pad)	50,000 pages	
Transfer Roller	50,000 pages	
Fuser	50,000 pages	
Toner Cartridge	Original 1,000 pages	Replacement 3,000 pages

GP 8 Periodic Defective Image

If a mark or other printing defect occurs at regular intervals down the page it may be caused by a damaged or contaminated roller. Measure the repetition interval and refer to the table below to identify the roller concerned

Table 1:

No	Roller	Defective Image	Typical Defect
1	OPC Drum	75.5mm	White spots on a black image or vice versa
2	Charge Roller	37.8mm	Black spots
3	Supply Roller	44.9mm	Light or dark horizontal image bands
4	Developing Roller	35.2mm	Horizontal band image
5	Transfer Roller	45.3mm	Image Ghost
6	Heat Roller	64.0	Black image and image ghost
7	Pressure Roller	75.3mm	Black spot on the backside

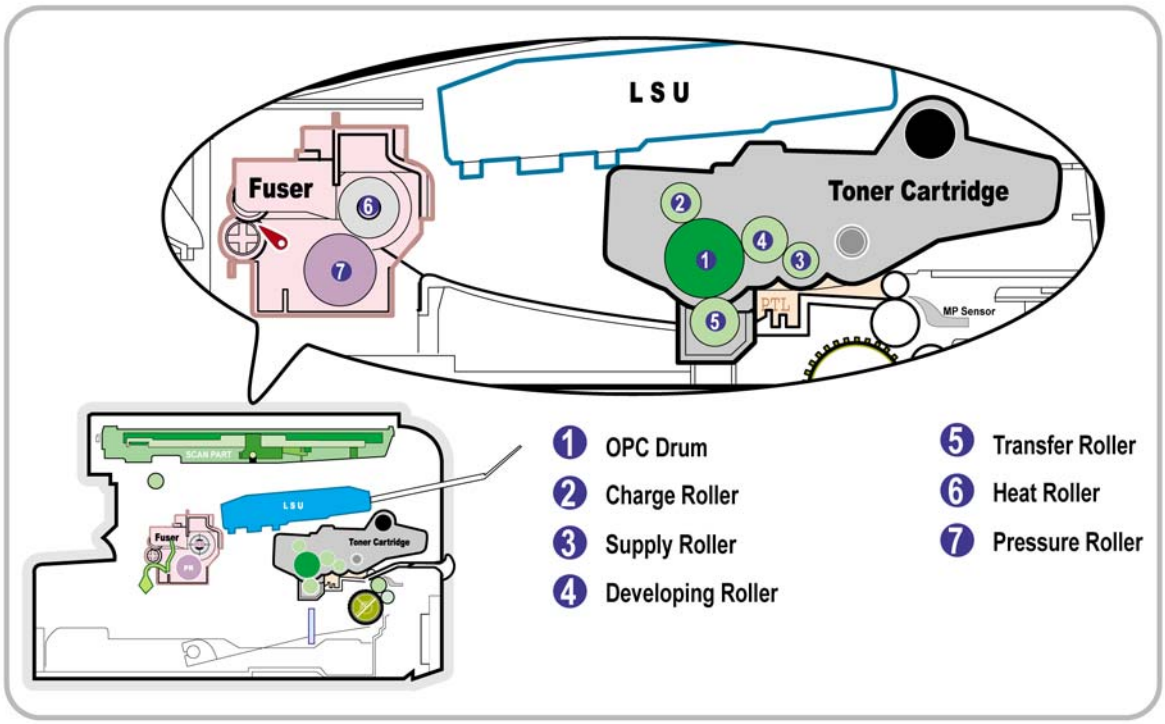


Figure 1

GP 9 Error Messages

Table 1:

Display	Meaning	Suggested solutions
Door Open	The front cover is not securely latched	Close the front cover, PL 1 until it locks into place.
Hsync Error	A problem has occured in the LSU (Laser Scanning Unit)	Unplug the power cord, PL 1 and plug it back in.
[Invalid Cartridge]	There is an invalid toner installed	Install authorised toner cartridge, PL 1
Low Heat Error	There is a problem in the fuser unit	Unplug the power cord, PL 1 and plug it back in. If the problem persists, please call for service.
[LSU Error]	A problem has occured in the LSU (Laser Scanning Unit	Unplug the power cord, PL 1 and plug it back in. If the problem persists, please call for service.
[No Paper] Add Paper	The paper in the input tray has run out.	Load paper in the cassette assembly, PL 9.
Open Heat Error	There is a problem in the fuser unit.	Unplug the power cord, PL 1 and plug it back in. If the problem persists, please call for service.
[Over Heat]	There is a problem with the fuser unit.	Unplug the power cord, PL 1 and plug it back in.
[Paper Jam 0] Open/Close Door	Paper has jammed in the feeding area of the paper input tray.	Clear the jam, GP 6.
[Paper Jam 1] Open/Close Door	Paper has jammed in the fuser area or in the bypass feeder	Clear the jam, GP 6.
[Paper Jam 2] Check inside	Paper has jammed in the paper exit area.	Clear the jam, GP 6.
Power failure	Power has turned off then on and the machine's memory has not been backed up.	The job which you were trying to do before the power failure must be completely re-done.
Scanner Error	There is a problem in the scanner unit.	Unplug the power cord, PL 1 and plug it back in. If the problem persists, please call for service.

GP 10 LED Status Indicator

Table 1:

LED colour	LED Status	Description
Off	Off	Power Off / Sleep mode
Green	On	Ready
	Blink	When the job is in progress
		Blinking slowly : Priner Data Comm. Blinking fast : Printing Blinking normally : Copy, Scan, etc.
Red	On	Error: Toner empty, Paper jam, Paper Empty, Cover Open
	Blink	Case of recoverable error: Paper mismatching Case of warming up state: Replace toner

GP 11 System Block Diagram

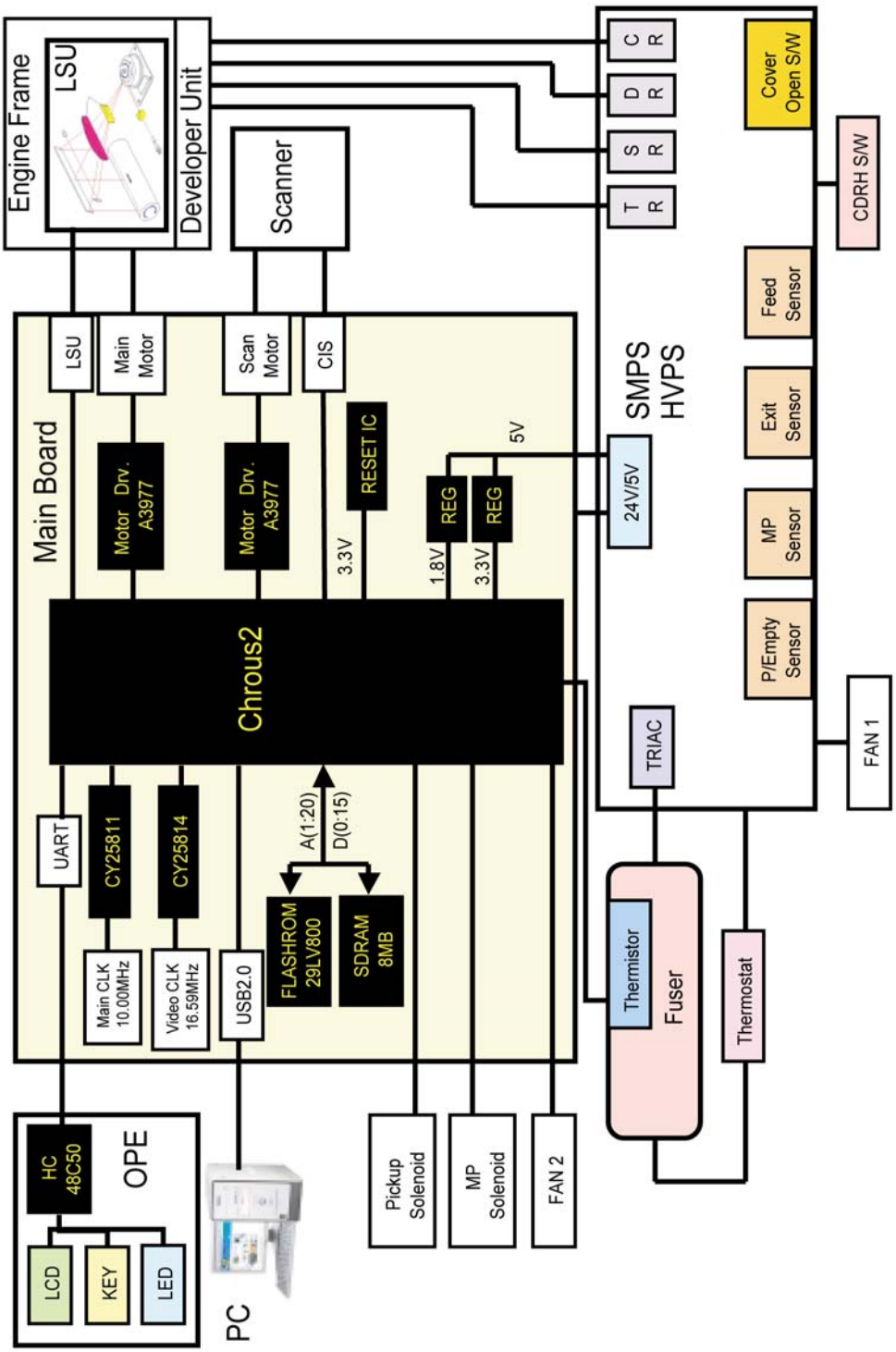
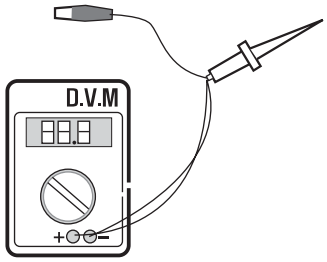


Figure 1

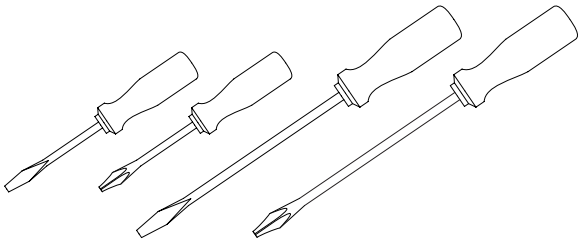
GP 12 Tools

The following tools are recommended.

DVM (Digital Volt Meter)
Standard: Indicates more than 3 digits.



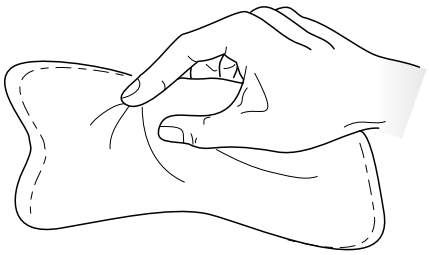
Driver
Standard: "-" type, "+" type (M3 long, M3 short, M2 long, M2 short).



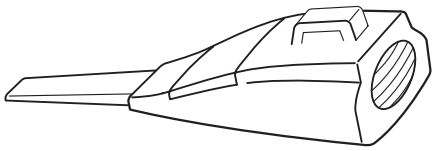
Tweezers
Standard: For general home use, small type.

Cotton Swab
Standard: For general home use, for medical service.

Cleaning Equipment
Standard: An IPA (Isopropyl Alcohol) dry wipe tissue or a gentle neutral detergent and lint-free cloth.

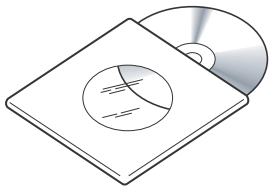


Vacuum Cleaner



Spring Hook
Standard: For general use

Software (Driver) installation CD ROM



GP 13 Acronyms and Abbreviations

The table below explains the abbreviations and acronyms used in this service manual. Where abbreviations or acronyms are used in the text please refer to this table.

Table 1: Acronyms and Abbreviations

Abbreviations	Explanation
AP	Access Point
AC	Alternating Current
APC	Auto Power Control
ASIC	Application Specific Integrated Circuit
BIOS	Basic Input Output System
BLDC	Brush-less Direct Current
CN	connector
CON	connector
CPU	Central Processing Unit
dB	decibel
dbA	decibel A
dBM	decibel milliwatt
DC	direct current
DCU	Diagnostic Control Unit
DPI	Dot Per Inch
DRAM	Dynamic Random Access Memory
DVM	Digital Voltmeter
ECP	Enhanced Capability Port
EDC	Embedded Diagnostic control
EEPROM	Electronically Erasable Programmable Read Only Memory
EMI	Electro Magnetic Interference
EP	electrophotographic
EPP	Enhanced Parallel Port
FPOT	First Printout Time
F/W	firmware
GDI	graphics device interface
GND	ground
HBP	Host Based Printing
HDD	Hard Disk Drive
H/H	High temperature and high humidity
HV	high voltage
HVPS	High Voltage Power Supply
I/F	interface
I/O	Input and Output
IC	integrated circuit
IDE	Intelligent Drive electronics or Embedded Drive Electronics
IEEE	Institute of Electrical and Electronics Engineers. Inc.
IPA	Isopropy Alcohol
IPM	Images Per Minute

Table 1: Acronyms and Abbreviations

Abbreviations	Explanation
LAN	local area network
lb	pound(s)
LBP	Laser Beam Printer
LCD	Liquid Crystal Display
LED	Light Emitting Diode
LIU	Line Interface Unit
L/L	Low temperature and low humidity
LSU	Laser Scanning Unit
MB	megabyte
MHz	megahertz
MPF	Multi Purpose Feeder
NIC	Network Interface Card
N/N	Normal temperature and normal humidity
NVRAM	nonvolatile random access memory
OPC	Organic Photo Conductor
OPE	Operate Panel Equipment
PBA	Printed Board Assembly
PCL	Printer Command Language, Printer Control Language
PDL	Page Discription Language
PPM	Page Per Minute
PPS	Pulse Per Second
PS	Post Script
PTL	Pre-Transfer Lamp
PWM	Pulse Width Modulation
Q-PID	Quick Printer Initiating Device
Qt'y	quantity
RAM	Random Access Memory
ROM	Read Only Memory
SCF	Second Cassette Feeder
SMPS	Switching Mode Power Supply
Spool	Simultaneous Peripheral Operation Online
SW	switch
sync	synchronous or synchronization
USB	Universal Serial Bus
WECA	Wireless Ethernet Compatibility Alliance

GP 14 Selecting printer locations

Leave enough room to open the printer trays, covers, and allow for proper ventilation. (see diagram below)

Provide the proper environment:

- A firm, level surface
- Away from the direct airflow of air conditioners, heaters, or ventilators
- Free of extreme fluctuations of temperature, sunlight, or humidity
- Clean, dry, and free of dust

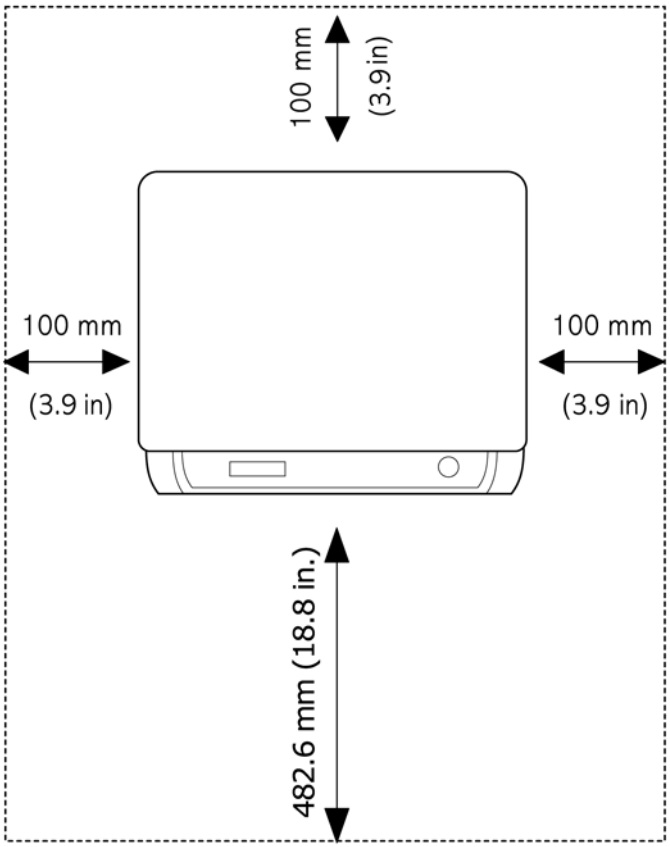


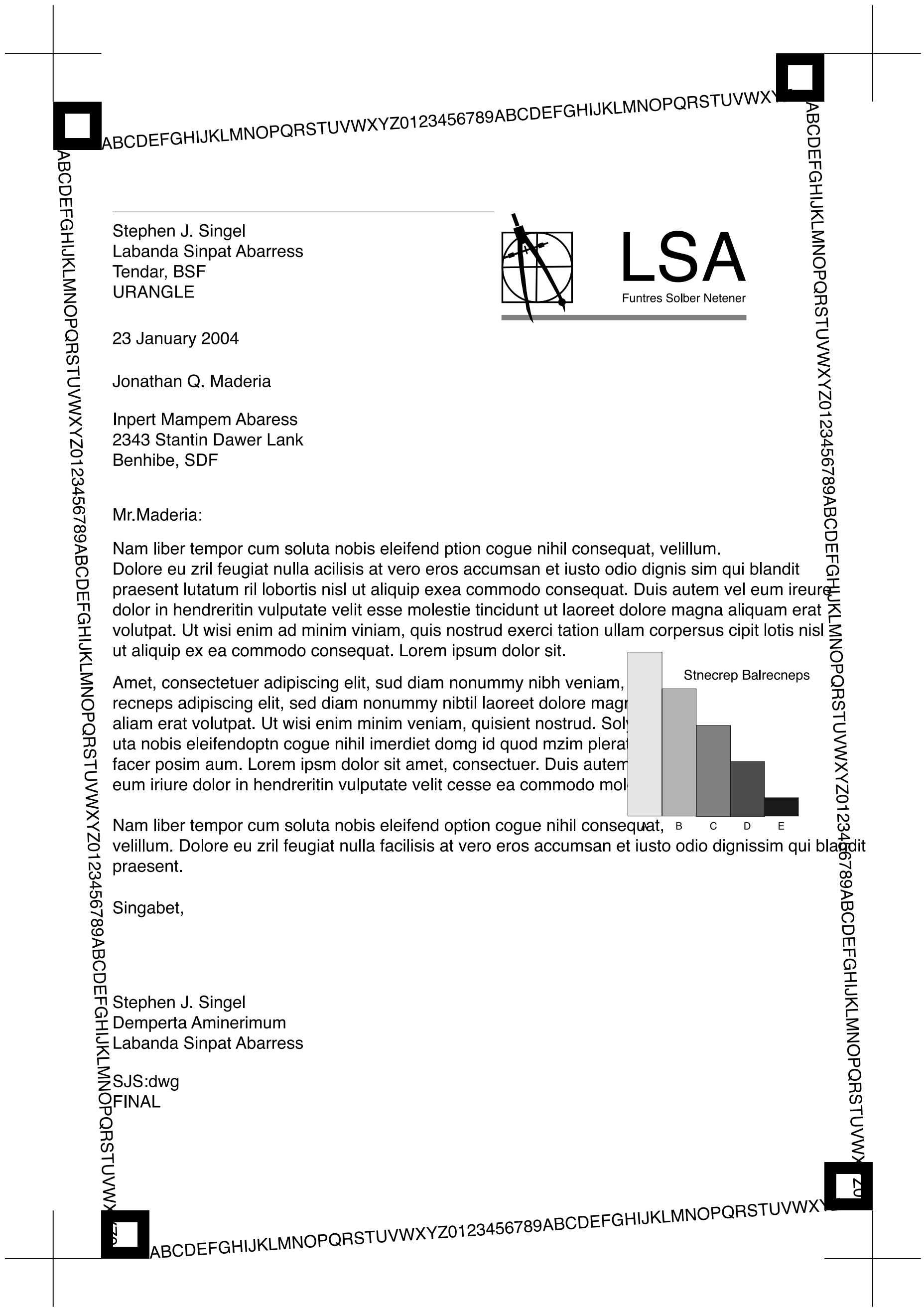
Figure 1

GP 15 Sample Test Pattern

The sample pattern shown below is the standard test pattern used in the factory.

The life of the print cartridge, developer cartridge and printing speed are measured with the pattern shown below of 5% area coverage. The pattern is shown at approximately 70% of actual size.

A4 ISO 19752 Standard Pattern


ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXY

Stephen J. Singel
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23 January 2004

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Mr.Maderia:

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ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMNOPQRSTUVWXY

Figure 1

GP 16 Restriction of Hazardous Substances (RoHS)

Purpose

To give information on the RoHS Directive.
The RoHS Directive restricts the use of certain hazardous substances in electrical and electronic equipment. It applies to equipment placed in the European Union (EU) market. The directive takes effect from 1st July 2006.

Note: *Currently these restrictions are only for the European Union (EU) market and some associated countries. For more information go to www.Xerox.com.*

The hazardous substances are:
- Lead (Pb)
- Mercury (Hg)
- Cadmium (Cd)
- Hexavalent Chromium (Cr 6+, Cr [VI])
- Polybrominated Diphenyl Ethers (PBDE's)
- Polybrominated Biphenyls (PBB's)

Identification of a RoHS Compliant Machine

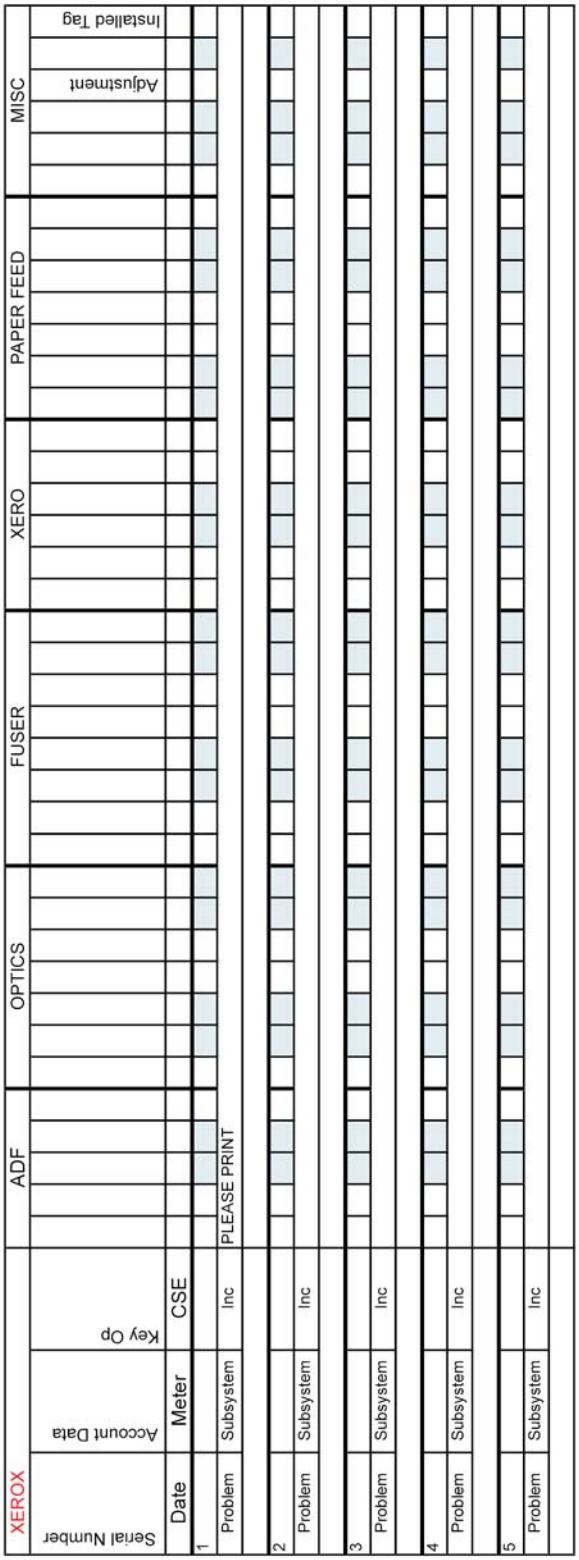
Xerox will maintain a central list of RoHS compliant machines.

This general procedure is for information only. All WorkCentre 3119 machines are RoHS compliant.

GP 17 Service Log

Service Log

Use the service log to record all service procedures.



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7. Wiring Data

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WD 1 PJ Locations

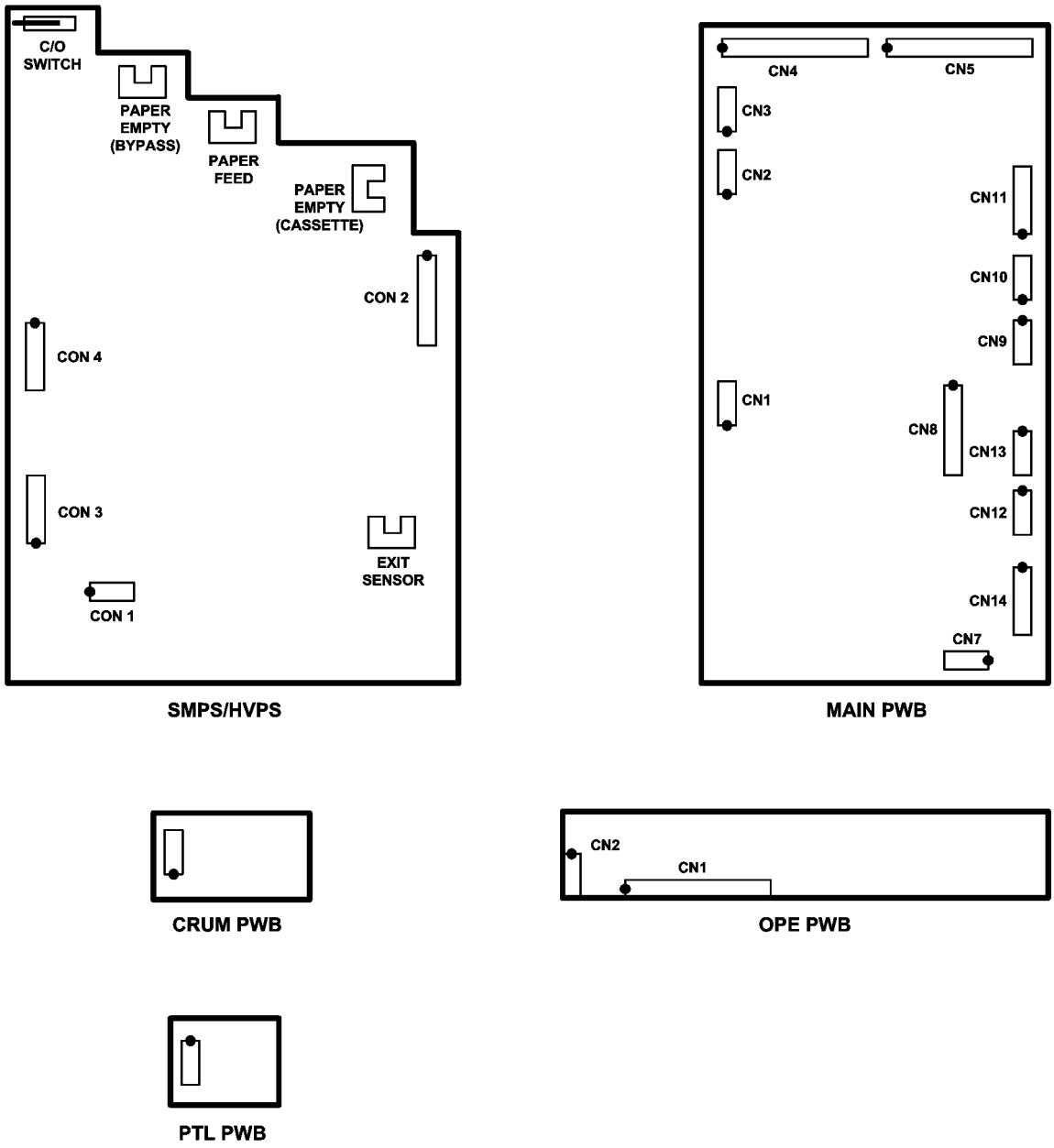

Figure 1

WD 2 Connection Diagram (1/2)

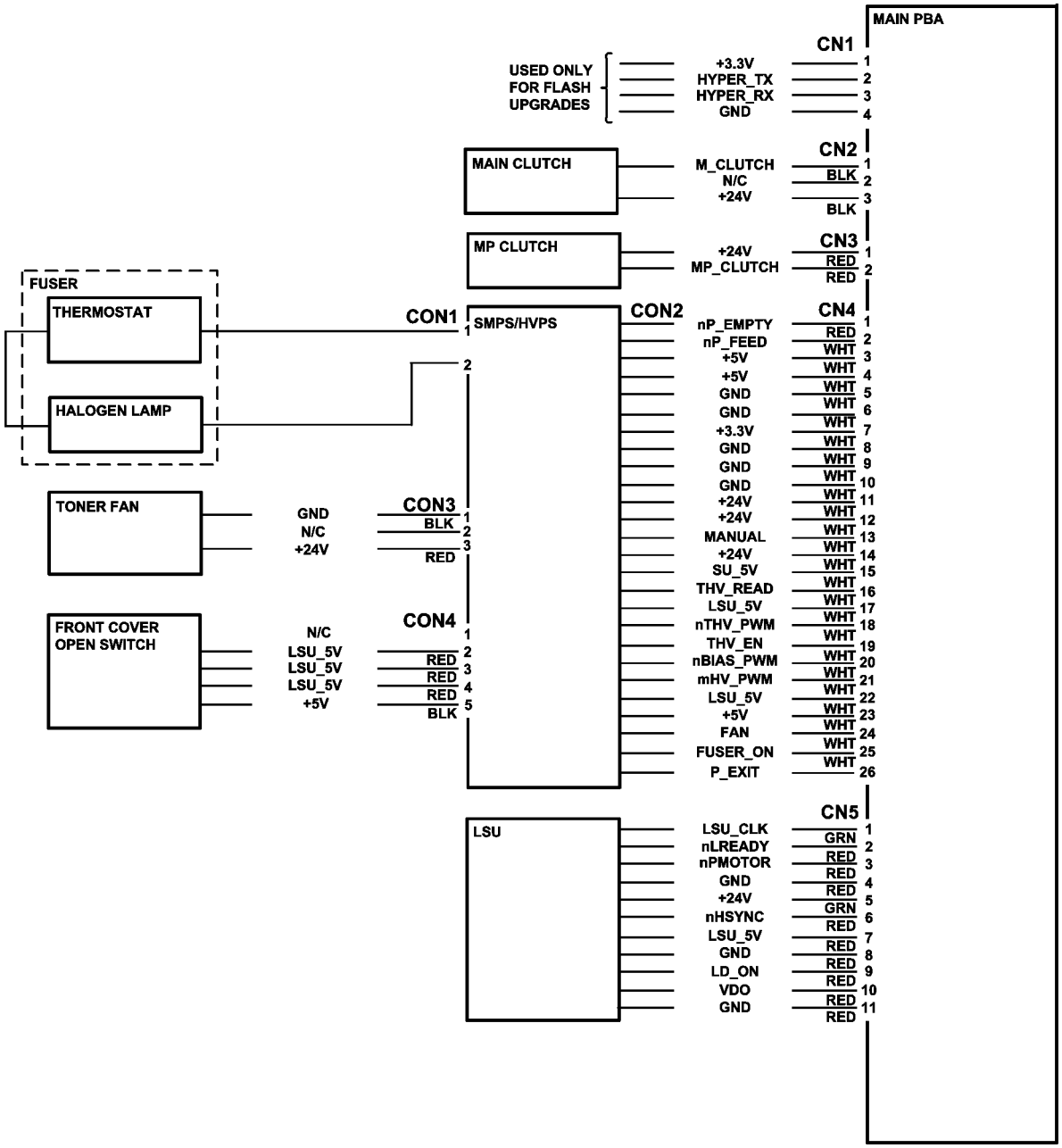

Figure 2

WD 3 Connection Diagram (2/2)

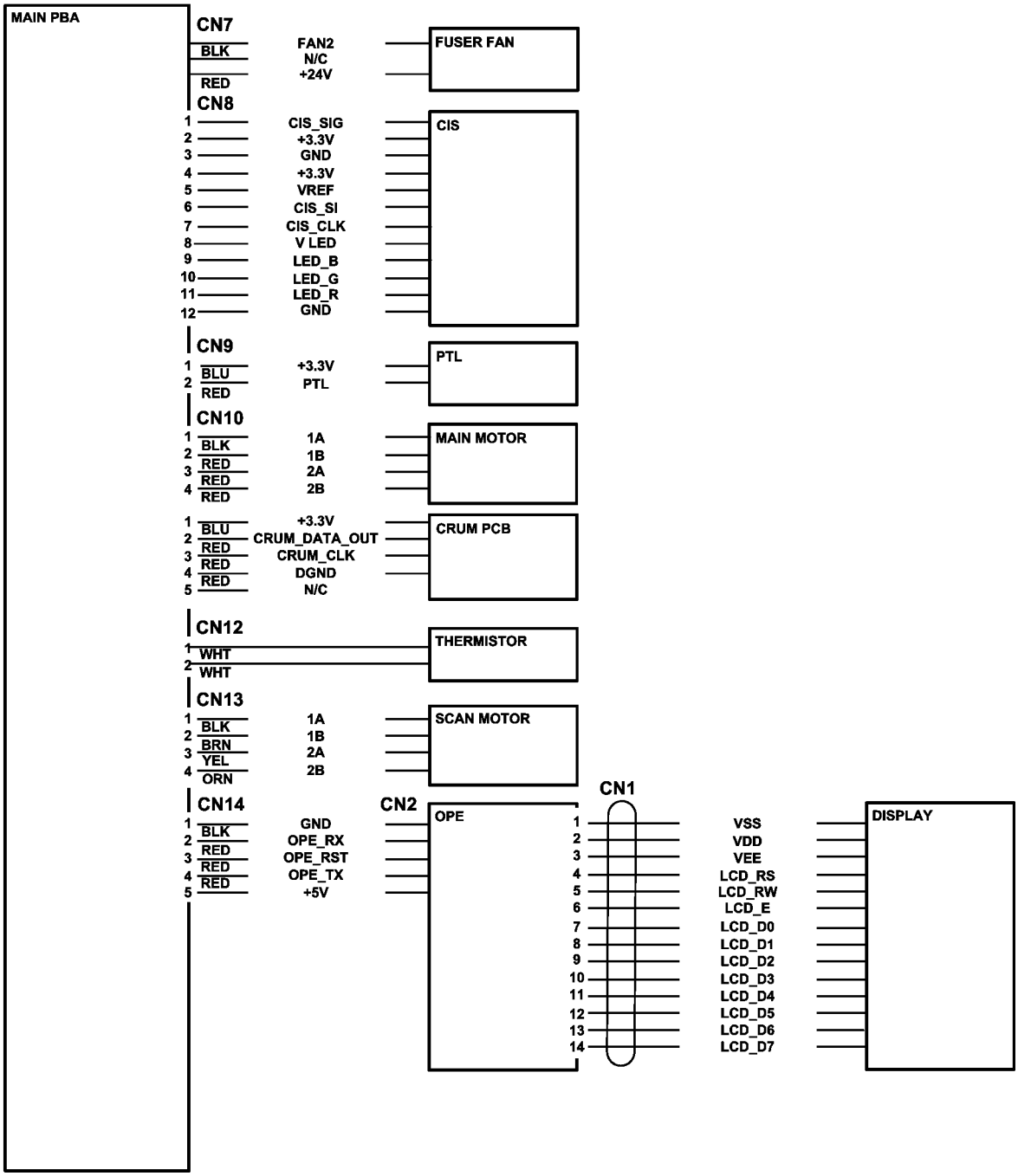

Figure 3

WD 4 Main PBA (1/6)

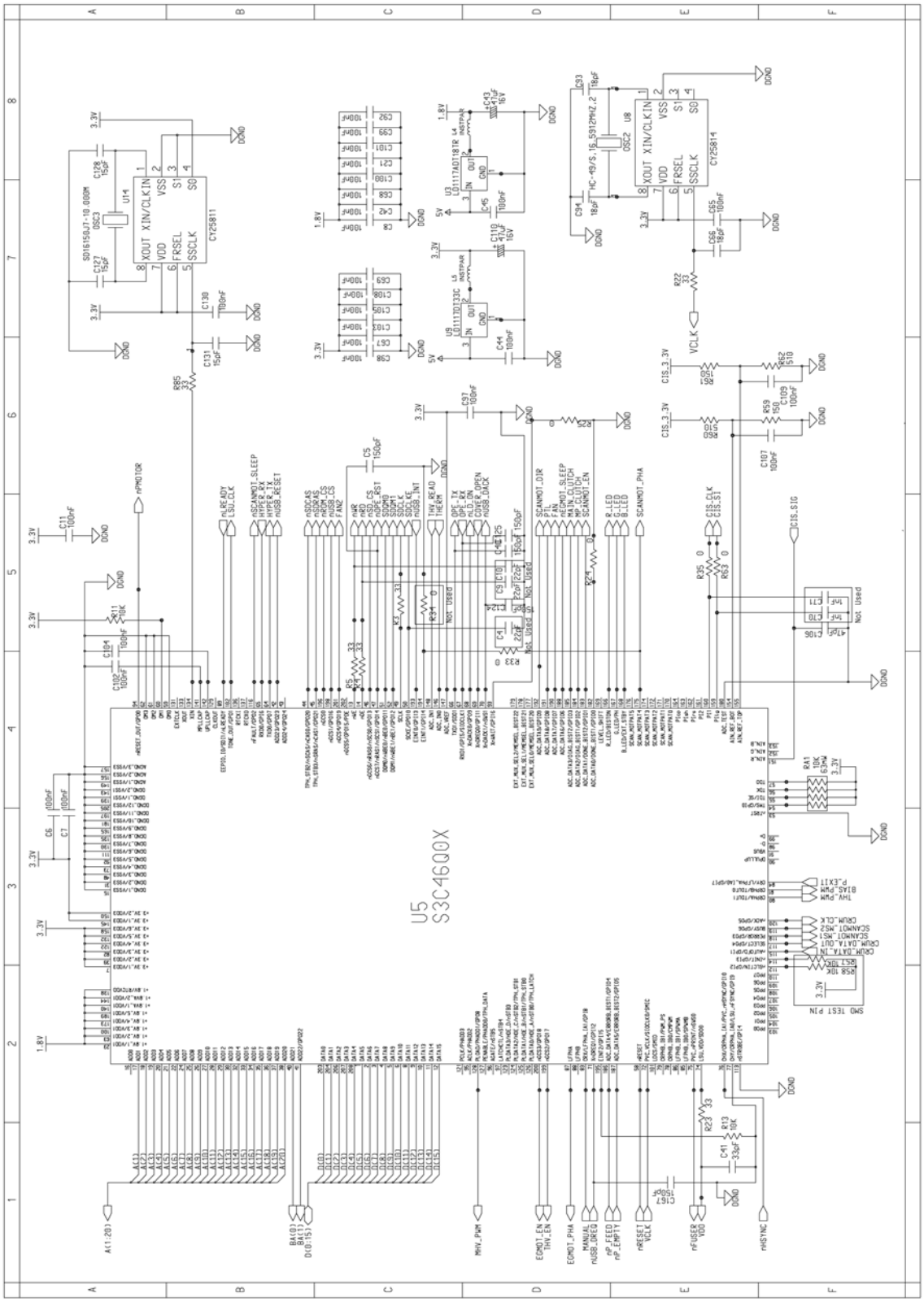

Figure 4

WD 5 Main PBA (2/6)

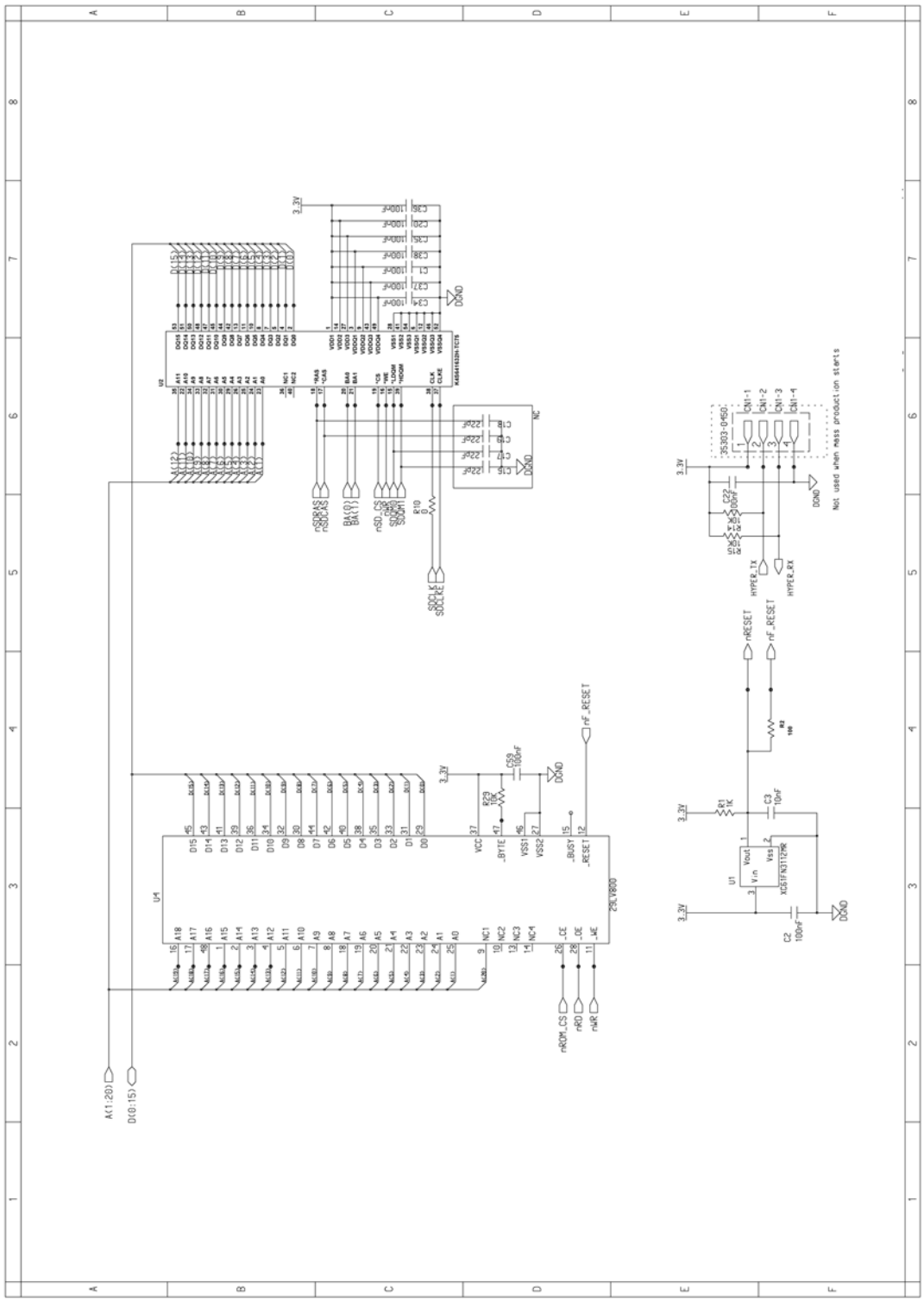

Figure 5

WD 6 Main PBA (3/6)

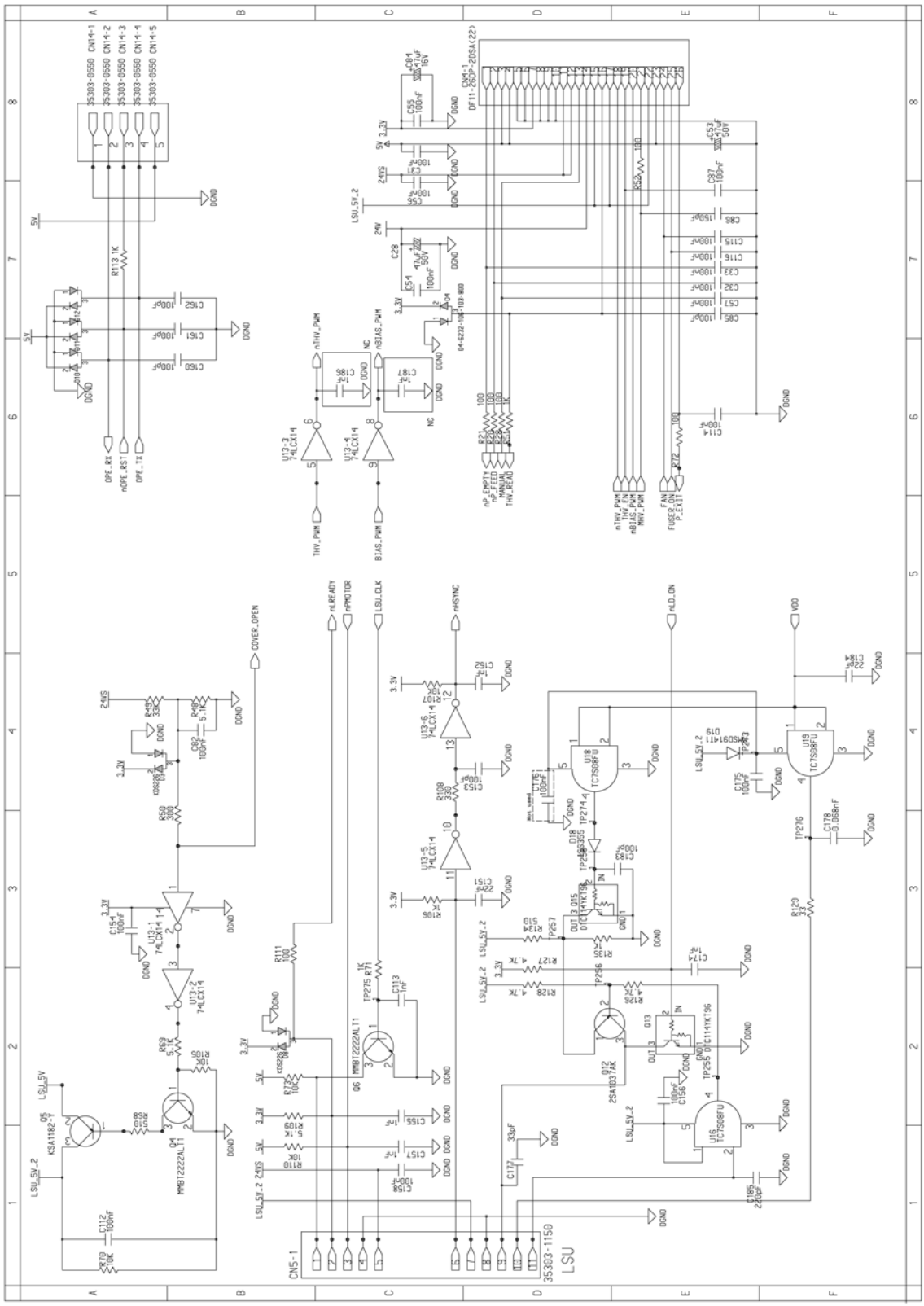

Figure 6

WD 7 Main PBA (4/6)

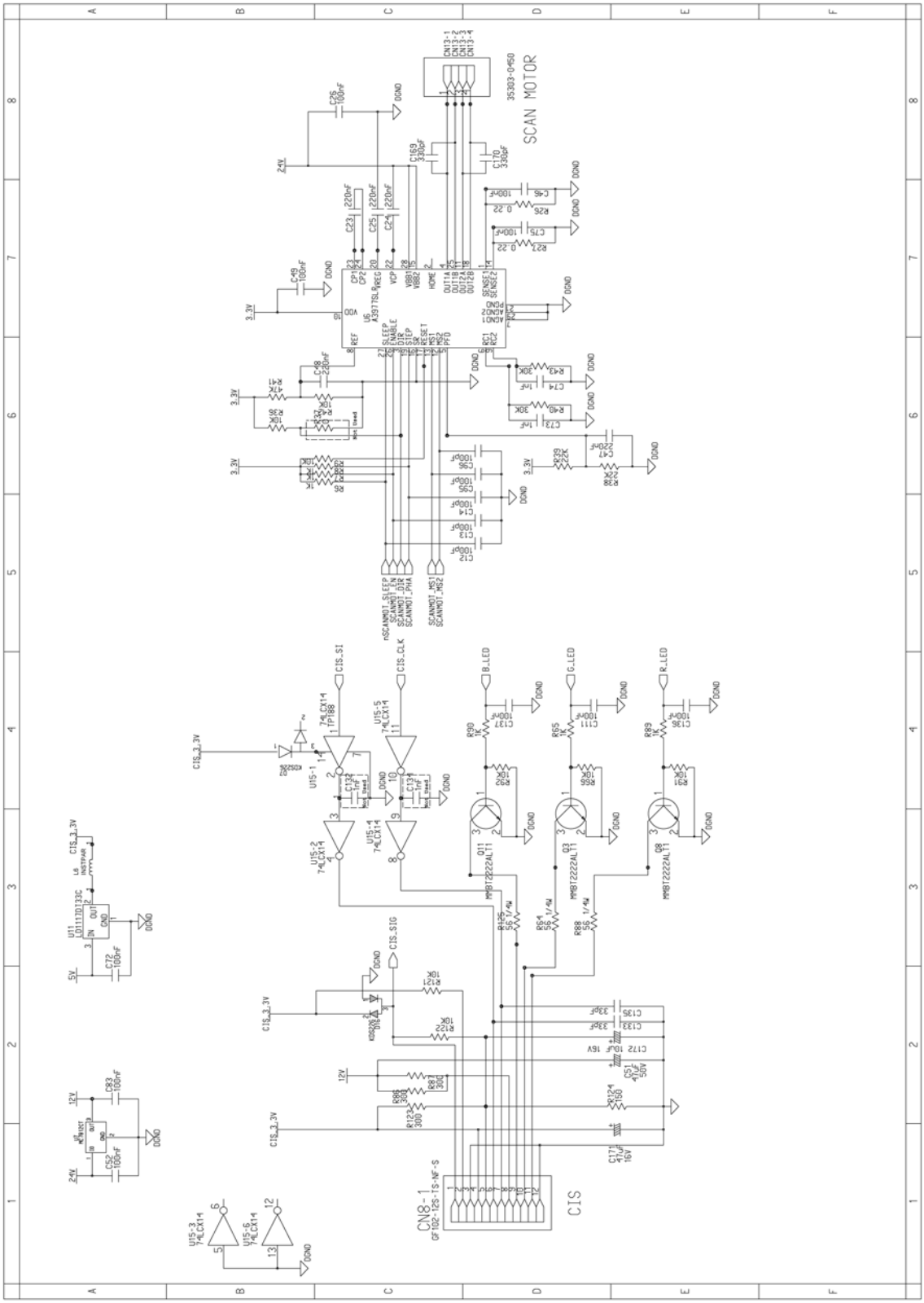

Figure 7

WD 8 Main PBA (5/6)

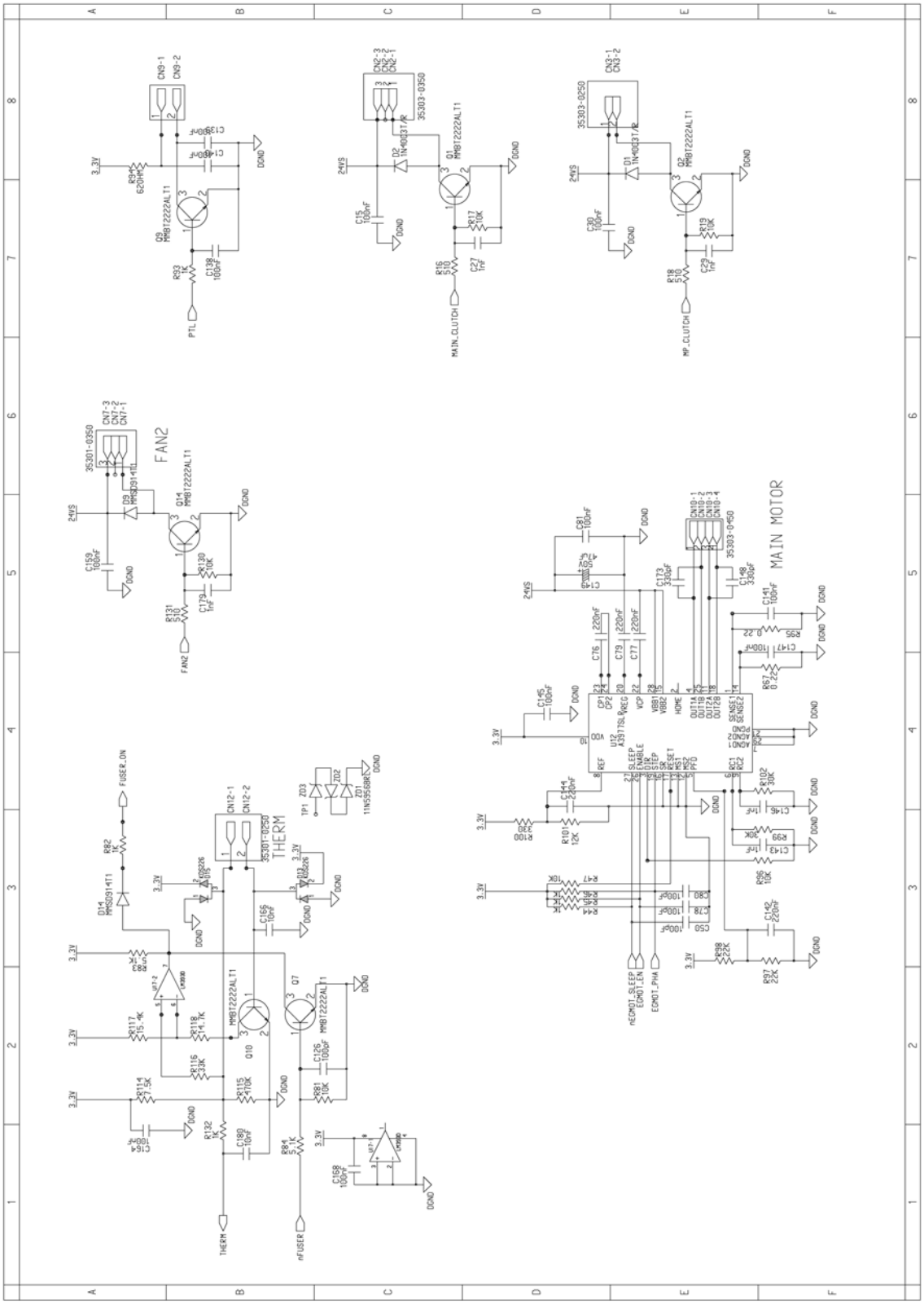

Figure 8

WD 9 Main PBA (6/6)

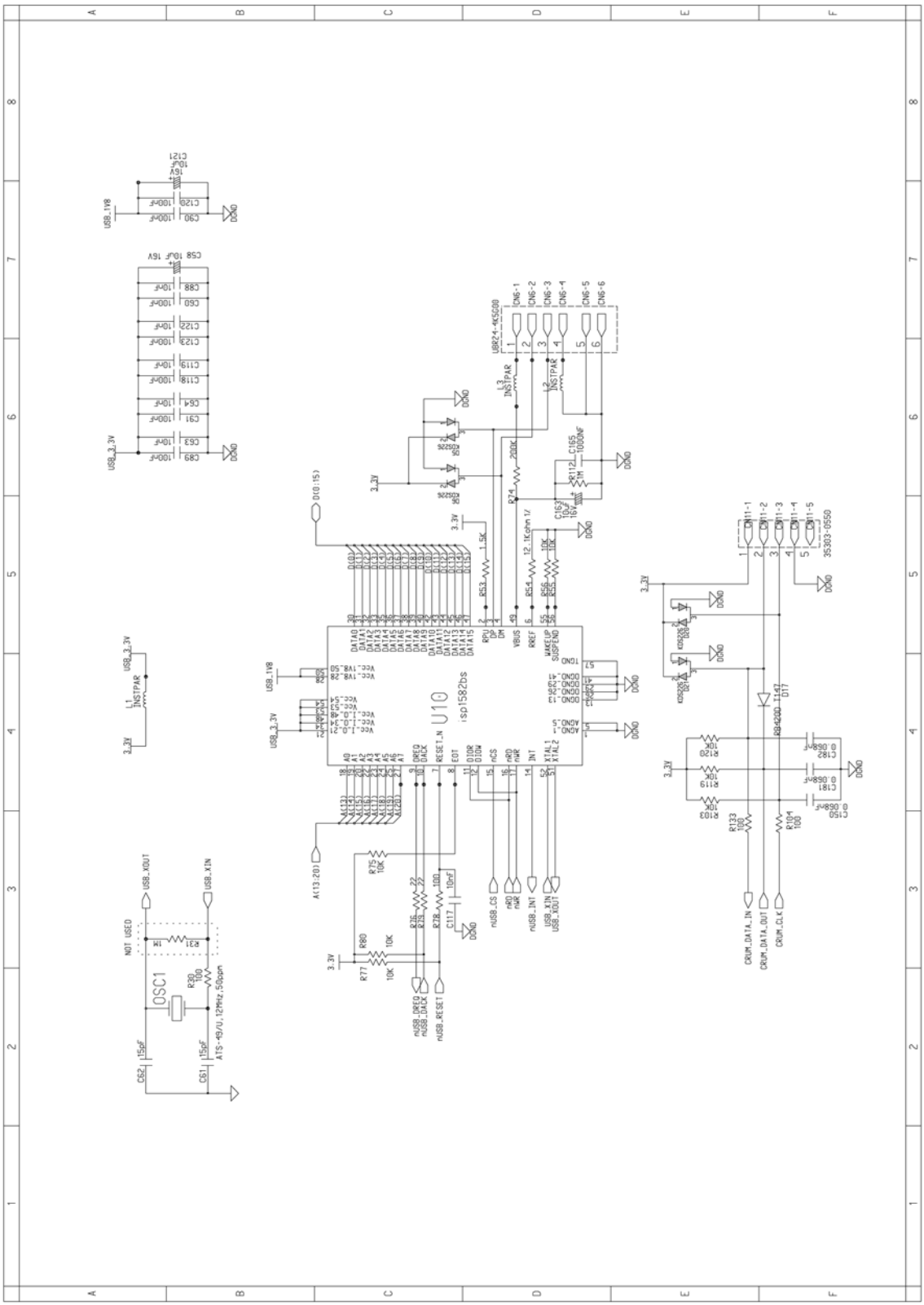

Figure 9

WD 10 OPE PBA

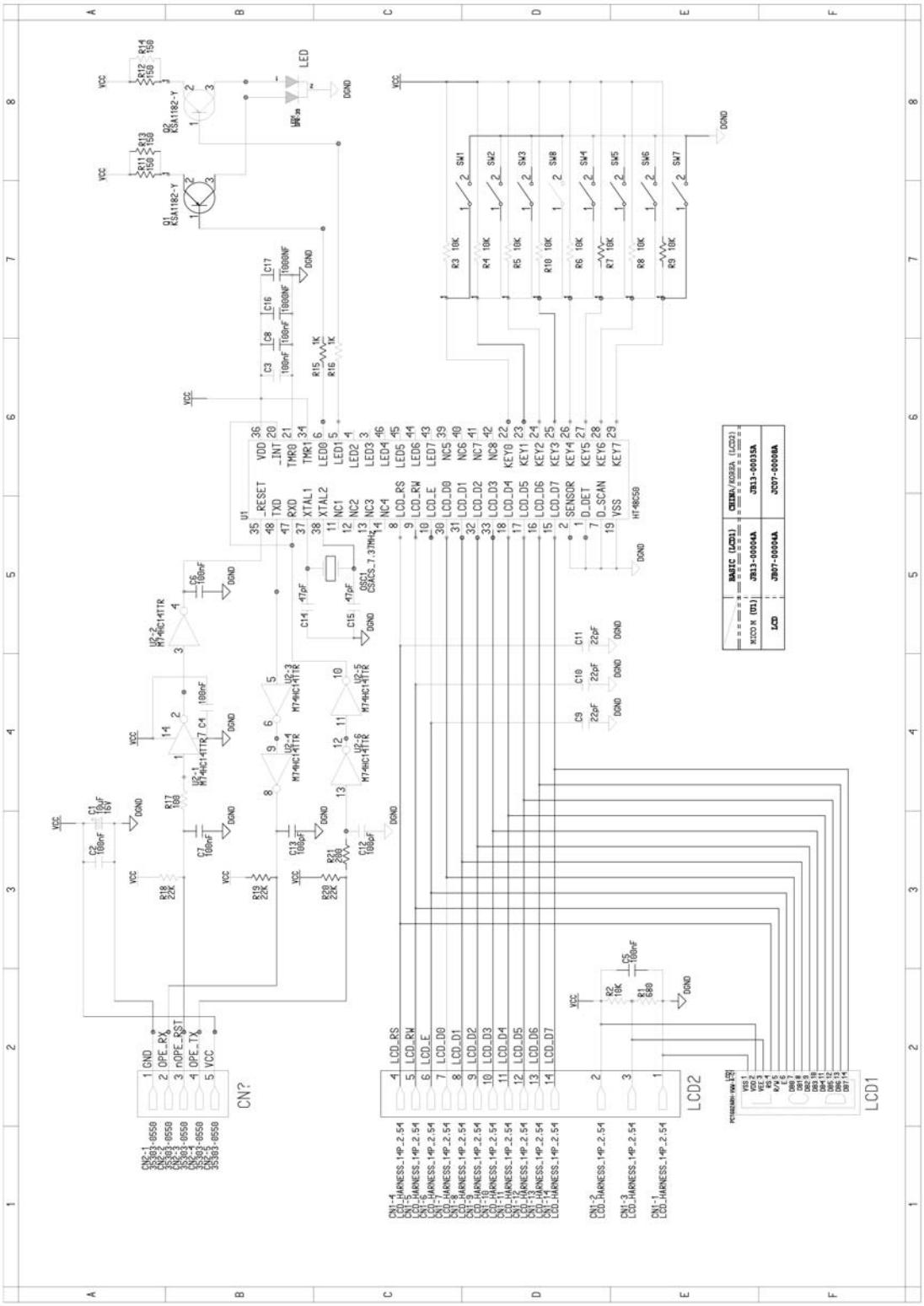

Figure 10

WD 11 SMPS-110V (1/4)

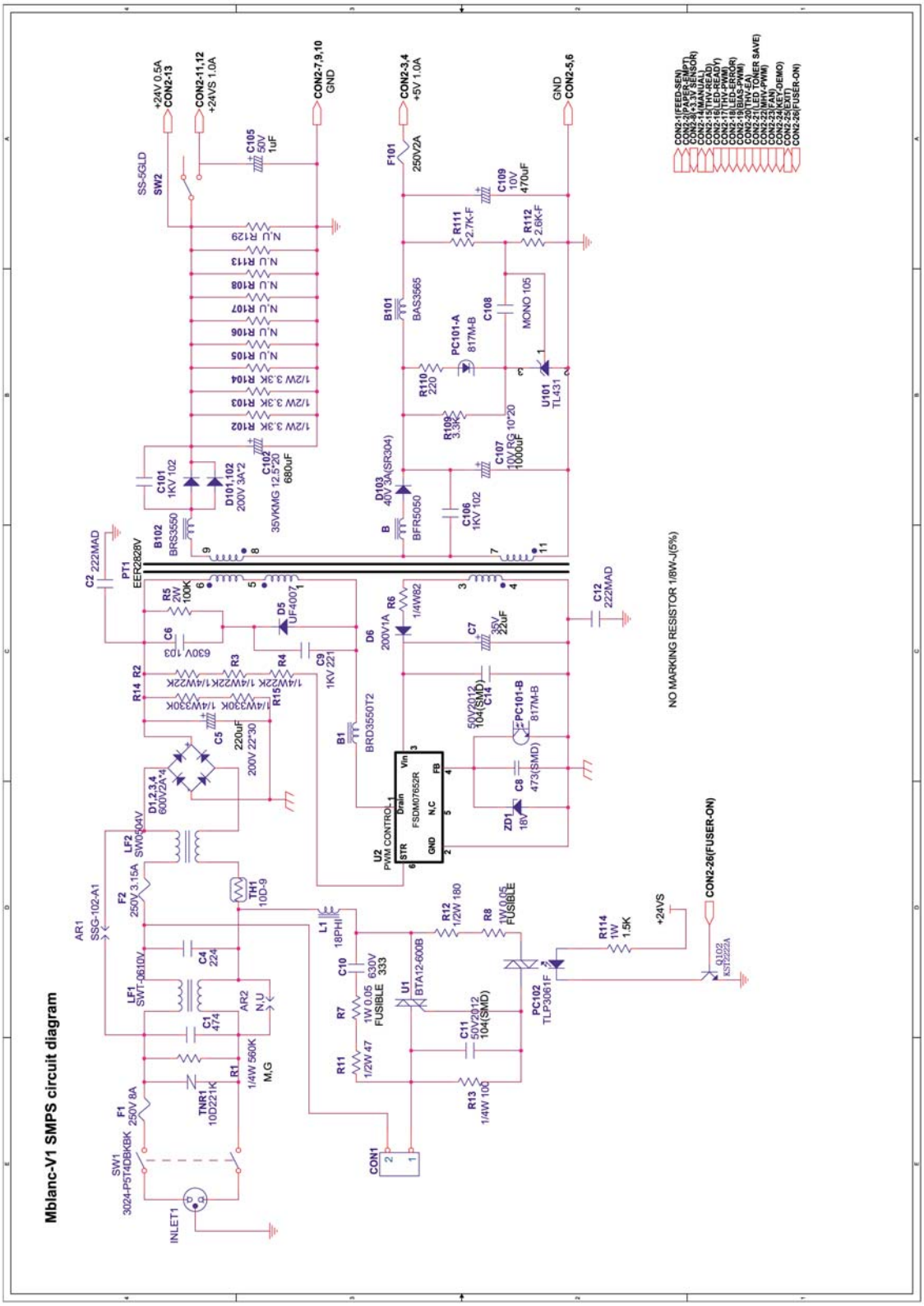

Figure 11

WD 12 SMPS-110V (2/4)

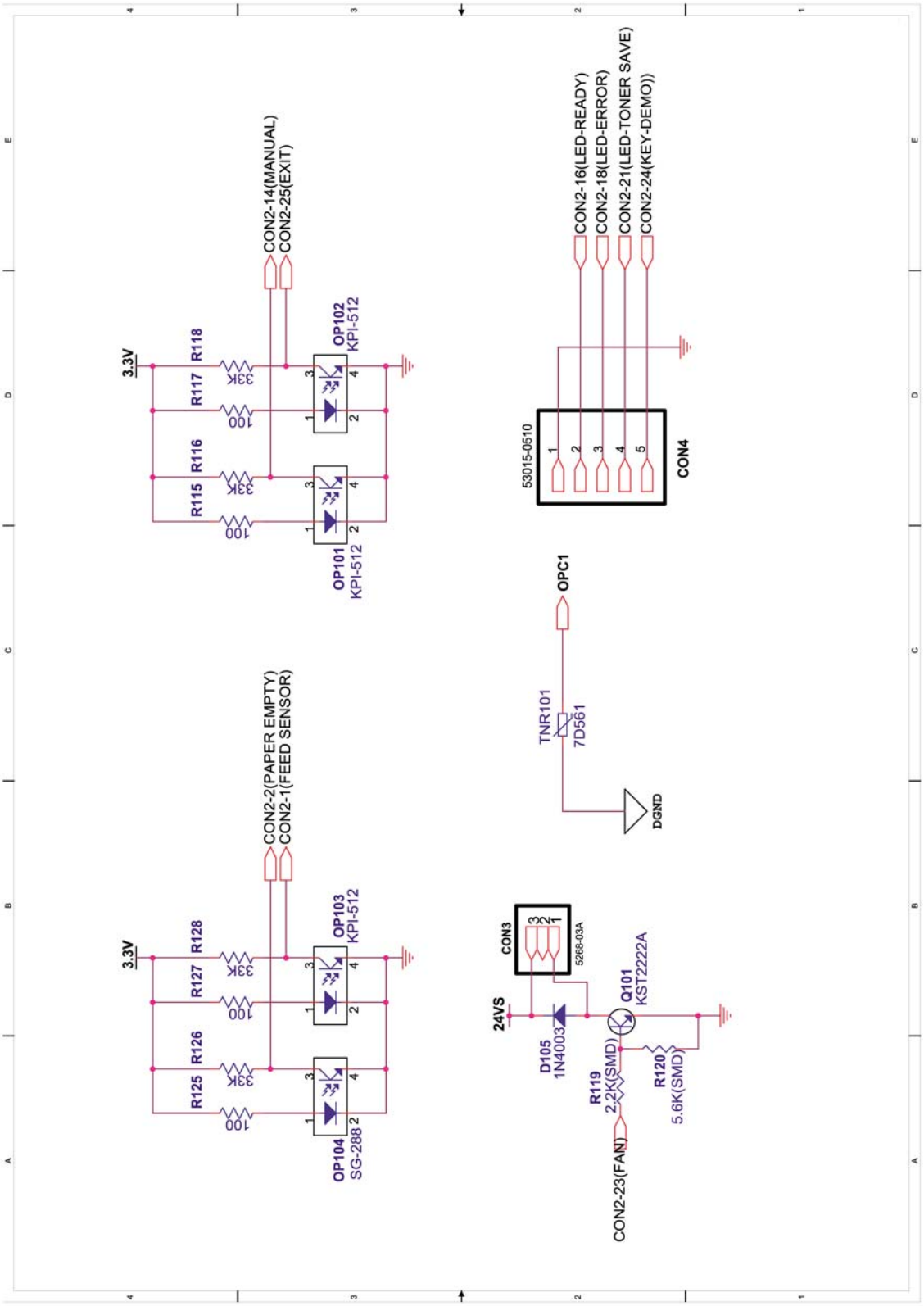

Figure 12

WD 13 SMPS-110V (3/4)

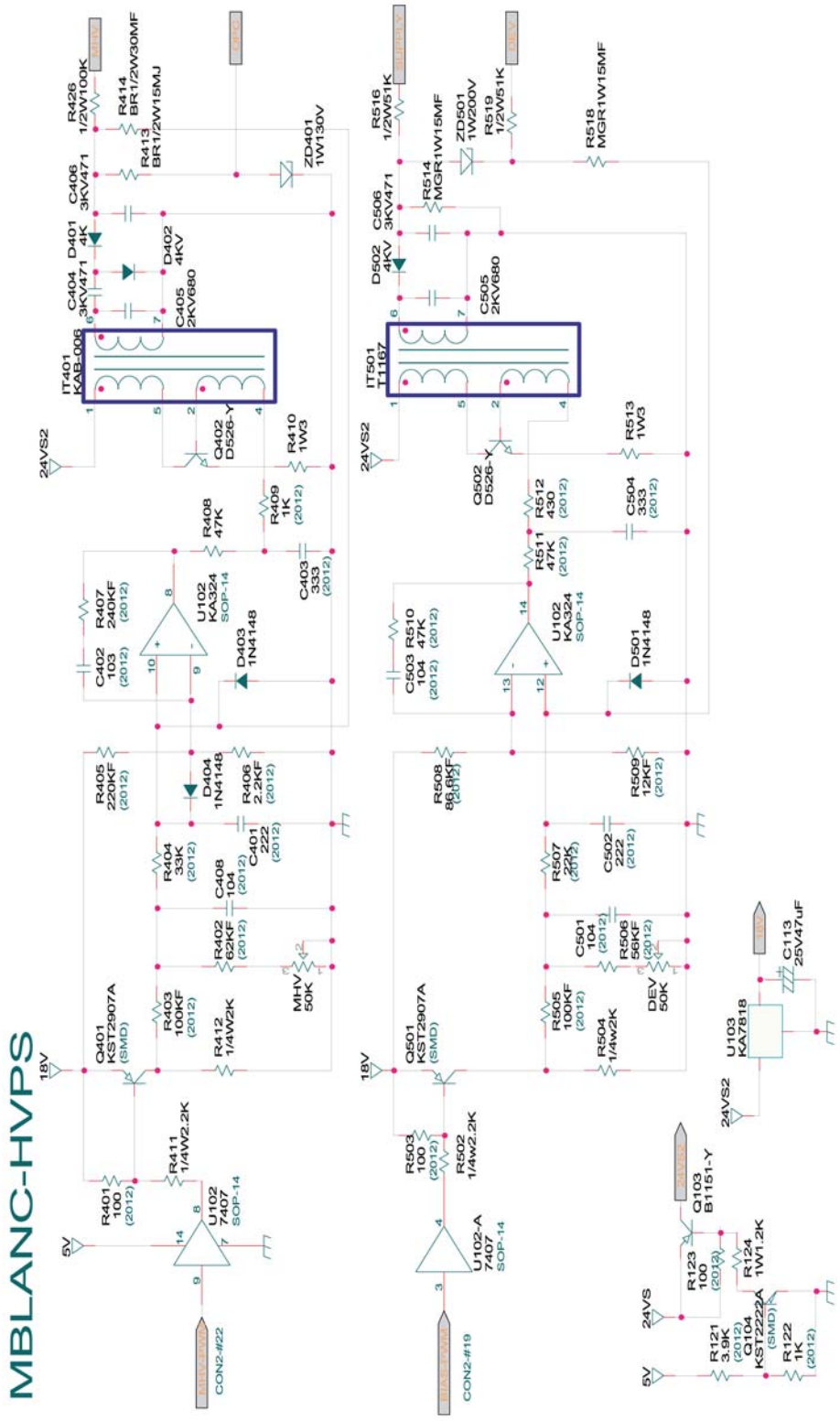

Figure 13

WD 14 SMPS-110V (4/4)

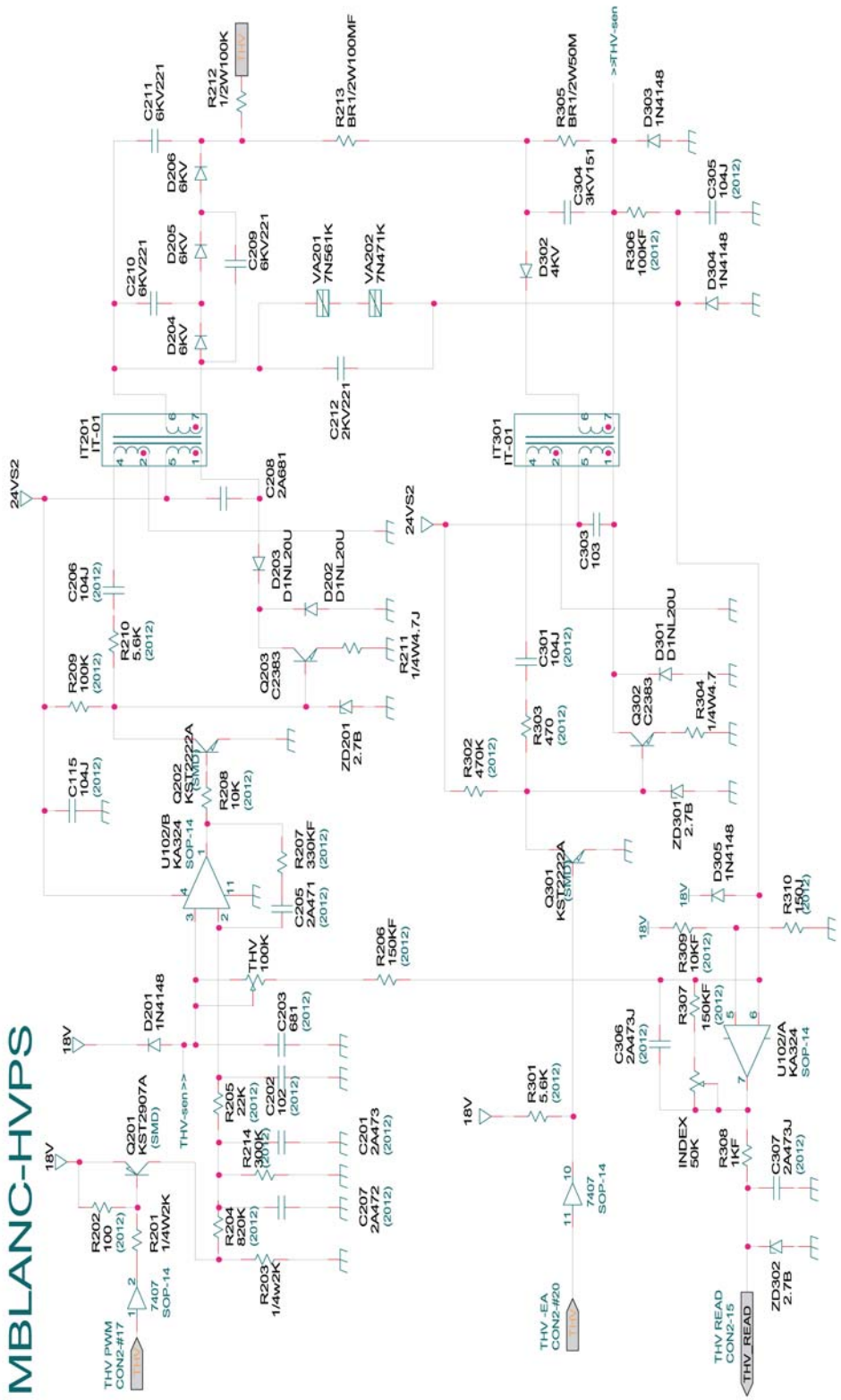

Figure 14

WD 15 SMPS-220V (1/4)

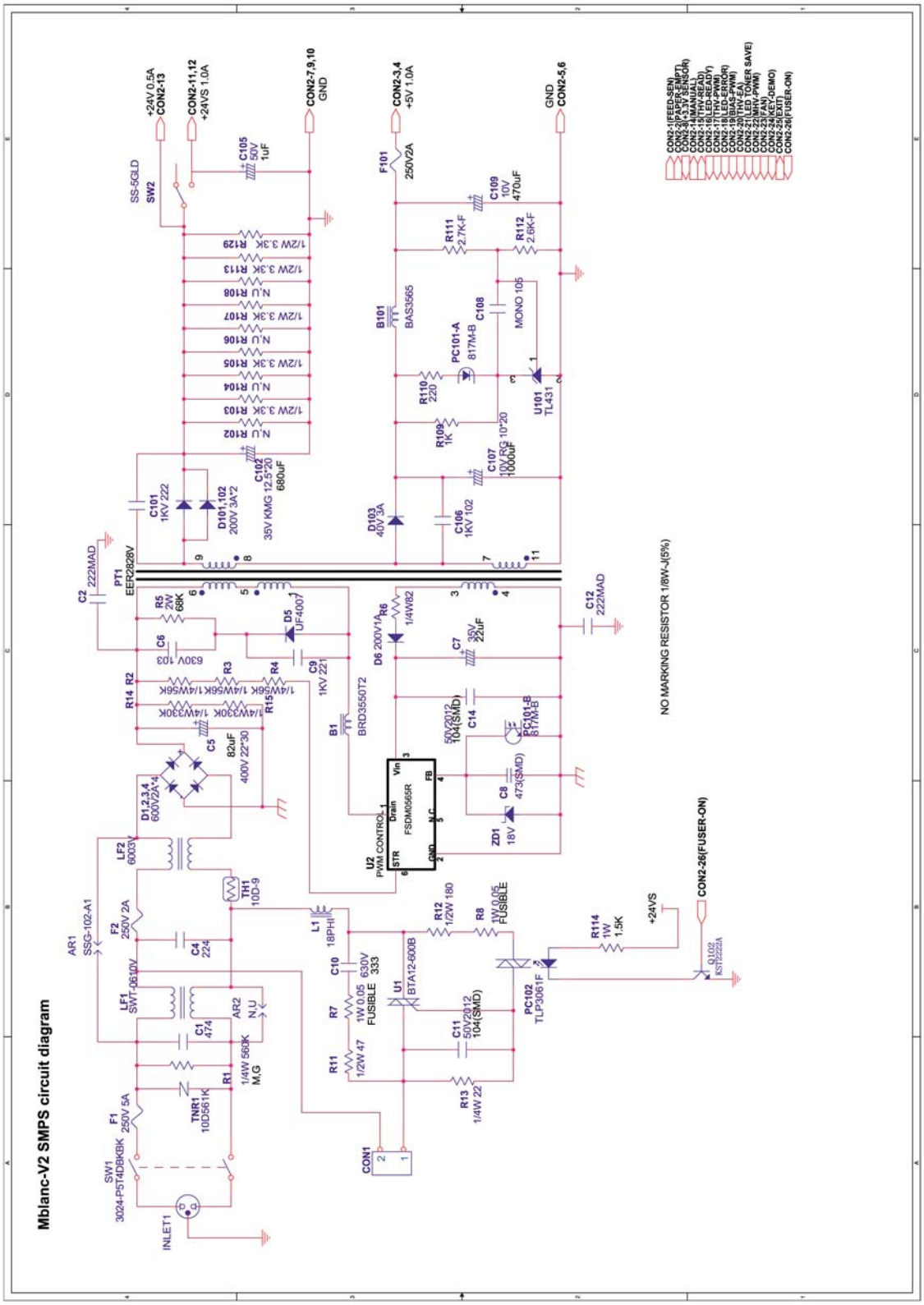

Figure 15

WD 16 SMPS-220V (2/4)

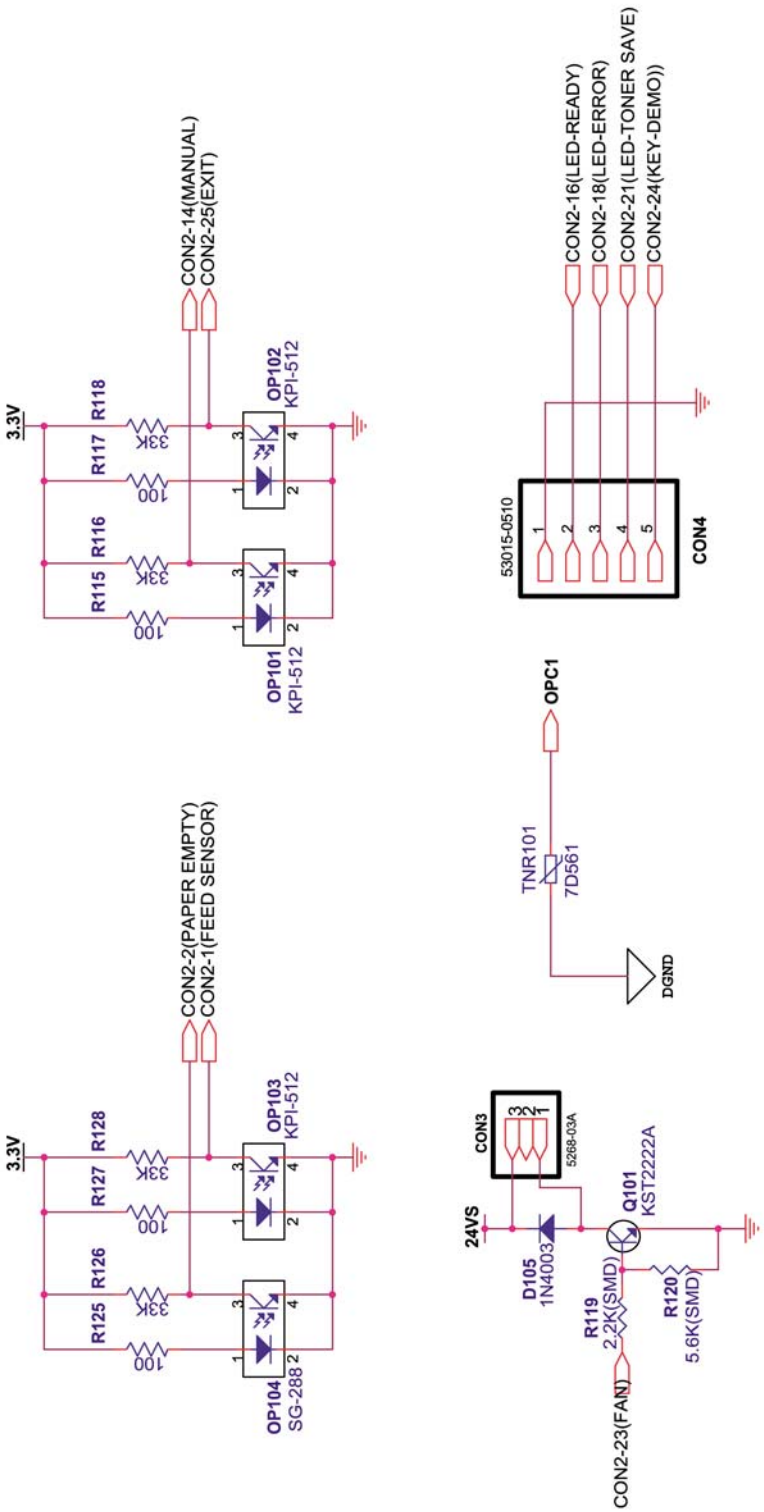

Figure 16

WD 17 SMPS-220V (3/4)

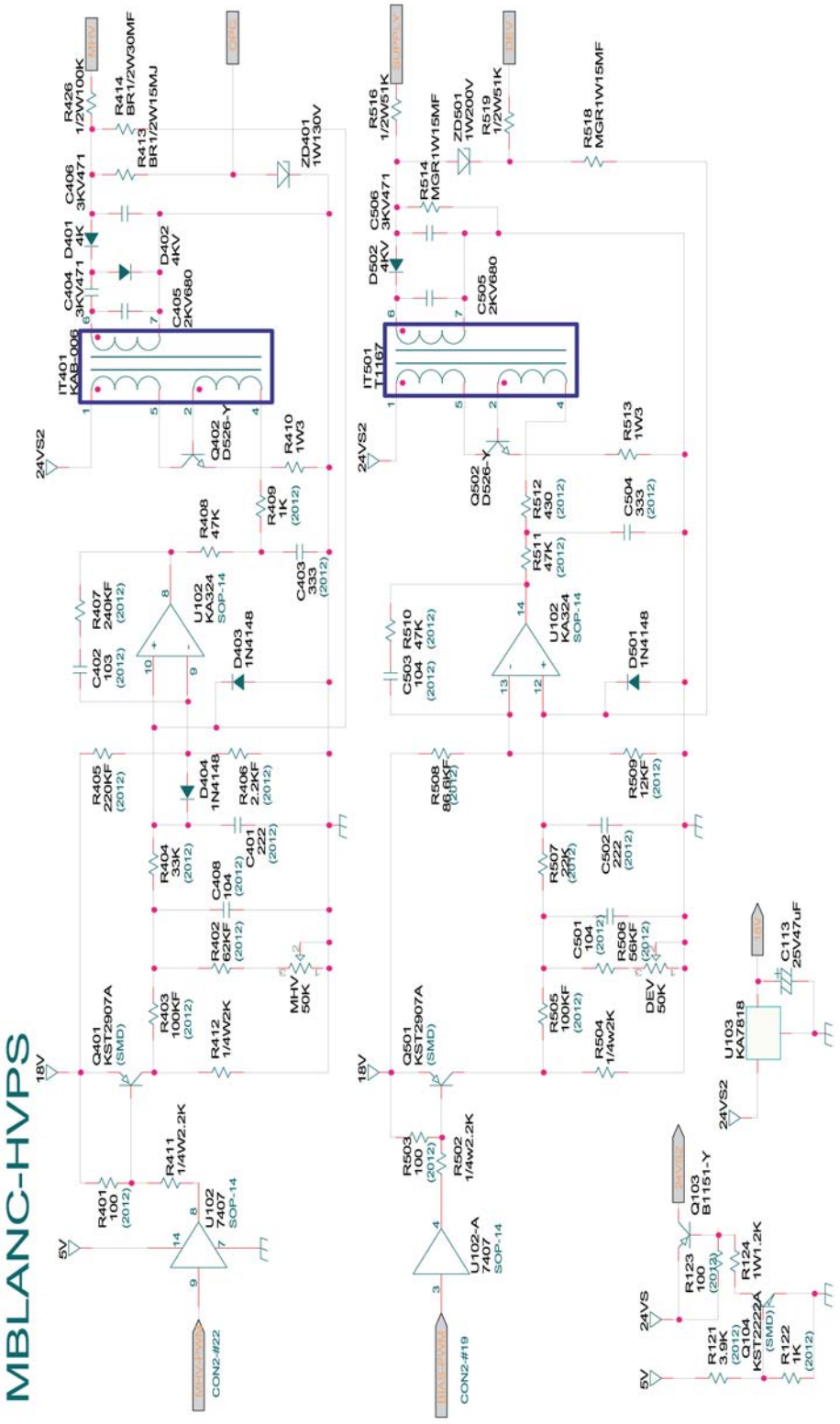

Figure 17

WD 18 SMPS-220V (4/4)

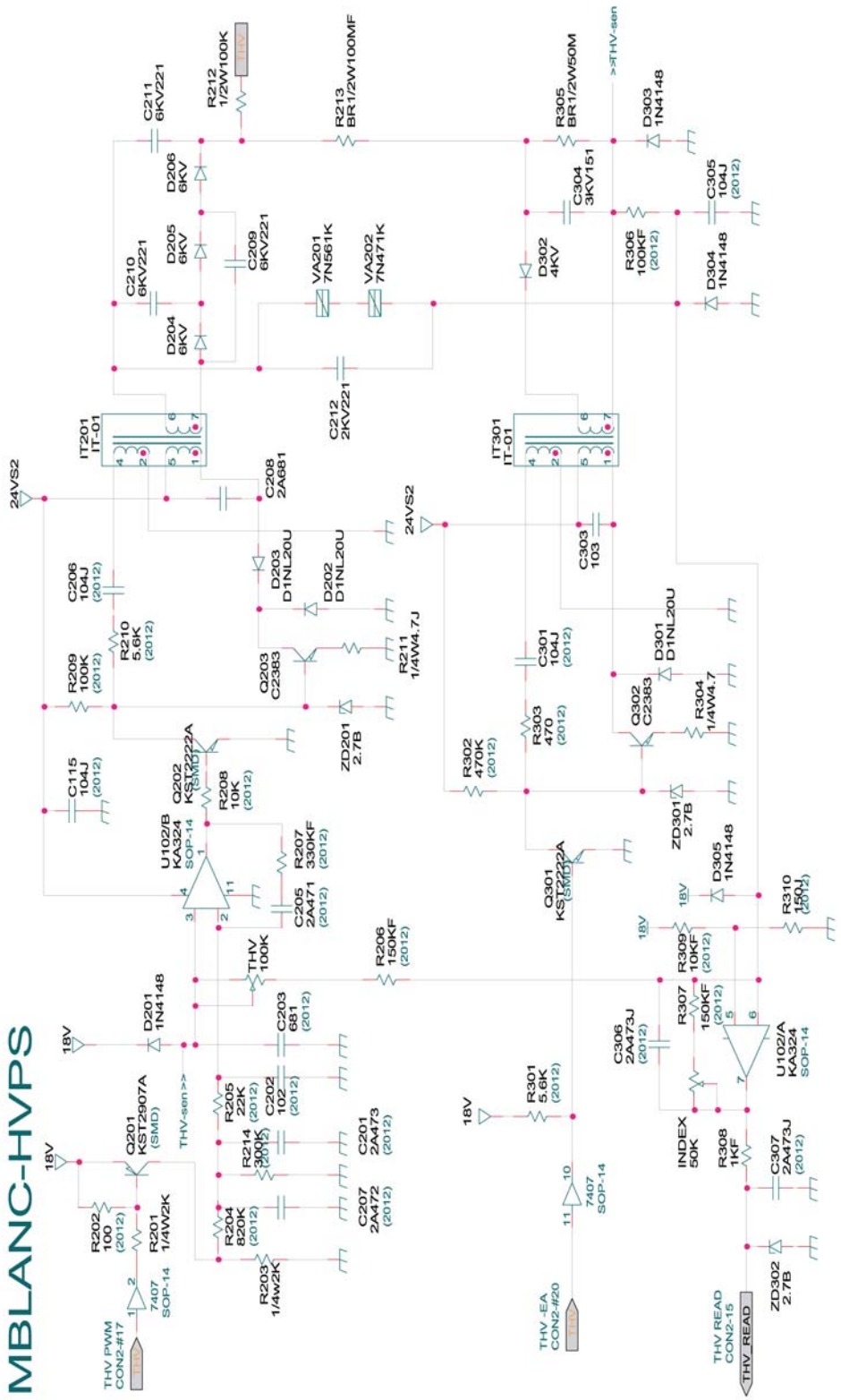

Figure 18

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X

APPENDIX A: Health & Safety Incident Report Involving a Xerox Product

Customer Identification		
Customer Name:	**Name of Customer Contact Person**:	
Address:	**E-mail:**	**Telephone** : **Fax** :
Customer Service Engineer Identification		
Name:	**Employee** :	**Pager** :
Location:	**Phone** :	

Details of Incident

Date Of Incident (mm / dd / yr):

Description Of Incident: (Check all that apply)

☐ Excessive Smoke

Describe quantity and duration of smoke:

☐ Fire with open flames seen

☐ Electric shock to operator or service representative

☐ Physical injury/illness to operator or service representative

Describe:

☐ Other

Describe:

Any damage to customer property? No ☐ Yes ☐ Describe:

Did external emergency response provider(s) such as fire department, ambulance, and etc. respond?

No ☐ Yes ☐ Identify: (ie, source, names of individuals)

Apparent cause of incident (identify part that is suspect to be responsible for the incident)

Preliminary actions taken to mitigate incident:

Product Description	
Model No. or Product name:	
Product Serial :	**Serial Number(s) of Accessory (ies):**
Installation Date:	**Total Copy Meter**:
Date of last service maintenance:	
List damaged and affected part(s) of the machine by description and part number:	
Description	**Part Number**
Location of product and affected part(s):	

Individual Providing Notification		
Name:	**Title**:	**Telephone Number**:
Organization:		**E-Mail:**
Mailing Address:		**Date Report Submitted**:

Instructions: E-mail or fax this completed form to EH&S:

For incidents in **Xerox Europe** and **Developing Markets East**
(Middle East, Africa, India, China, and Hong Kong)
please **e-mail:** Elaine.Grange@gbr.xerox.com or **fax**: +44 (0) 1707 35 3914 [intelnet 8*668 3914]
Note: - If you fax this form, please also send original by internal mail

For incidents in **North America** and **Developing Markets West**
(Brazil, Mexico, Latin American North and Latin American South)
please **e-mail**: Doris.bush@usa.xerox.com or fax 585-422-6449 [Intelnet 8*222-6449]