

1. Precautions

Follow these safety, ESD, and servicing precautions to prevent personal injury and equipment damage.

1-1 Safety Precautions

1. Be sure that all built-in protective devices are in place. Replace any missing protective shields.
2. Make sure there are no cabinet openings through which people-particularly children- might insert fingers or objects and contact dangerous voltages.
3. When re-installing chassis and assemblies be sure to replace all protective devices including control knobs and compartment covers.
4. Design Alteration Warning:Never alter or add to the mechanical or electrical design of this equipment, such as auxiliary connectors, etc. Such alterations and modifications will void the manufacturer's warranty.
5. Components, parts, and wiring that appear to have overheated or are otherwise damaged should be replaced with parts which meet the original specifications. Always determine the cause of damage or overheating, and correct any potential hazards.
6. Observe the original lead routing, especially near sharp edges, AC, and high voltage power supplies. Always inspect for pinched, out-of-place, or frayed wiring. Do not change the spacing between components and the printed circuit board.
7. Product Safety Notice:Some electrical and mechanical parts have special safety-related characteristics which might not be obvious from visual inspection. These safety features and the protection they provide could be lost if a replacement component differs from the original. This holds true, even though the replacement may be rated for higher voltage, wattage, etc.
8. Components critical for safety are indicated in the parts list with symbols .  Use only replacement components that have the same ratings, especially for flame resistance and dielectric specifications. A replacement part that does not have the same safety characteristics as the original may create shock, fire, or other safety hazards.

1-2 Precautions on Disassembly and Reassembly

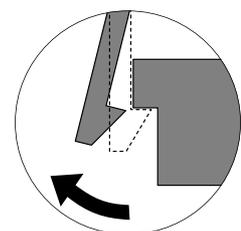
Take great care when replacing parts. Before removing a part take careful note of its orientation and any wiring routing. Ensure that all parts removed are correctly replaced in their original positions and all wiring is routed as it was originally manufactured. Changing wiring routes can cause electrical interference or degradation in set performance. Please do the following before disassembling for a repair or replacement of parts.

1. Remove the paper cassette and toner cartridge. Take great care to ensure that the developer drum surface is not scratched or damaged by exposure to light.
2. Turn the power switch off.
3. Take out the power plug and disconnect the printer cable from the printer.
4. Use only the same type of part as originally fitted when replacing parts.
5. Take care when dismantling plastic components and covers. Ensure covers are not damaged. Do not force plastic components apart they may break.

6. Be careful that small parts such as screws do not get lost inside the printer.
7. When disassembling take note of the placement of small parts. Ensure all small parts are properly reassembled.
8. If is is necessary to turn the printer upside down protect the LSU window with clean paper so that no loose toner particles contaminate the glass.

Releasing Plastic Latches

Many of 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.



1-3 ESD Precautions

1. 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.

2. 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.
3. After removing an electrical assembly equipped with ESDs, place the assembly on a conductive surface, such as aluminum or copper foil, or conductive foam, to prevent electrostatic charge buildup in the vicinity of the assembly.
4. Use only a grounded tip soldering iron to solder or desolder ESDs. 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, aluminum 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.

1-4 Super Capacitor or Lithium Battery Precautions

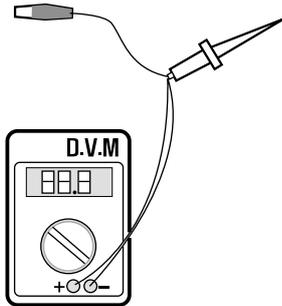
1. Exercise caution when replacing a super capacitor or Lithium battery. There could be a danger of explosion and subsequent operator injury and/or equipment damage if incorrectly installed.
2. Be sure to replace the battery with the same or equivalent type recommended by the manufacturer.
3. Super capacitor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

1-5 Tools for Troubleshooting

The following tools are recommended for safe and smooth troubleshooting described in this service manual.

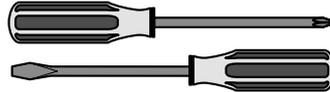
1 DVM(Digital Volt Meter)

Standard : Indicates more than 3 digits.



3 Driver

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



4 Tweezers

Standard : For general home use, small type.



2 Electronic Scales

Standard : Equipment to check the weight of consumables(toner cartridge) supplied by Samsung Electronics. (The scales should measure in grams.)



5 Cotton Swab

Standard : For general home use, for medical service.



6 Cleaning Equipments

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

7 Software (Driver) installation CD ROM

