PREFACE

This Service Manual is intended for use by service personnel and details the specifications, construction, theory of operation, and maintenance for the Brother machines noted on the front cover. It includes information required for troubleshooting and service--disassembly, reassembly, and lubrication--so that service personnel will be able to understand equipment function, repair the equipment in a timely manner and order spare parts as necessary.

To perform appropriate maintenance so that the machine is always in the best possible condition for the customer, service personnel must adequately understand and apply this manual.

HOW THIS MANUAL IS ORGANIZED

This manual is made up of nine chapters and appendices.

CHAPTER 1  PARTS NAMES AND FUNCTIONS
Contains external views and names of components and describes their functions. Information about the keys on the control panel is included to help you check operation or make adjustments.

CHAPTER 2  SPECIFICATIONS
Lists the specifications of each model, which enables you to make a comparison of different models.

CHAPTER 3  THEORY OF OPERATION
Gives an overview of the scanning and printing mechanisms as well as the sensors, actuators, and control electronics. It aids in understanding the basic principles of operation as well as locating defects for troubleshooting.

CHAPTER 4  TRANSFER OF DATA LEFT IN THE MACHINE TO BE SENT FOR REPAIR
Describes how to transfer data left in the machine to be sent for repair. The service personnel should instruct end users to follow the transfer procedure given in this chapter if the machine at the user site cannot print received data due to the printing mechanism defective. End users can transfer received data to another machine to prevent data loss.

CHAPTER 5  DISASSEMBLY/REASSEMBLY AND LUBRICATION
Details procedures for disassembling and reassembling the machine together with related notes. The disassembly order flow provided enables you to see at a glance the quickest way to get to component(s) involved.
At the start of a disassembly job, you check a disassembly order flow that guides you through a shortcut to the object components.
This chapter also covers screw tightening torques and lubrication points to which the specified lubricants should be applied during reassembly jobs.

CHAPTER 6  ADJUSTMENTS AND UPDATING OF SETTINGS REQUIRED AFTER PARTS REPLACEMENT
Details adjustments and updating of settings, which are required if the head/carriage unit, main PCB and some other parts have been replaced.

CHAPTER 7  CLEANING
Provides cleaning procedures not covered by the User’s Manual. Before starting any repair work, clean the machine as it may solve the problem concerned.
CHAPTER 8 MAINTENANCE MODE

Describes the maintenance mode which is exclusively designed for the purpose of checks, settings and adjustments using the keys on the control panel.

In the maintenance mode, you can update memory (EEPROM: electrically erasable programmable read-only memory) contents for optimizing the drive conditions of the head/carriage unit, paper feed roller or paper ejection roller (if they have been replaced) or for setting the CCD scanner area, for example. You can also customize the EEPROM according to the shipment destination of the machine concerned. In addition, you can perform operational checks of the LCD, control panel PCB or sensors, perform a print test, display the log information or error codes, and modify firmware switches (WSW).

CHAPTER 9 ERROR INDICATION AND TROUBLESHOOTING

Details error messages and codes that the incorporated self-diagnostic functions display if any error or malfunction occurs. If any error message appears, refer to this chapter to find which components should be checked or replaced.

The latter half of this chapter provides sample problems that could occur in the main sections of the machine and related troubleshooting procedures. This will help service personnel pinpoint and repair defective components.

APPENDIX 1 SERIAL NUMBERING SYSTEM

Shows the location of serial number labels put on some parts and lists the coding information pertaining to the serial numbers.

APPENDIX 2 FIRMWARE INSTALLATION

Provides instructions on how to update firmware stored in the flash ROM on the main PCB or load firmware to a new main PCB from the host PC. No hardware replacement is required for updating.

APPENDIX 3 CUSTOMIZING CODES ACCORDING TO SHIPPING DESTINATION

Lists the customizing codes for the various preferences exclusively designed for each destination (e.g. language). Those codes are stored in the memory (EEPROM) mounted on the main PCB. If the main PCB is replaced with a new one, therefore, you will need to set the proper customizing codes with the machine in the maintenance mode.

APPENDIX 4 FIRMWARE SWITCHES (WSW)

Describes the functions of the firmware switches, which can be divided into two groups: one is for customizing preferences designed for the shipping destination (as described in Appendix 3) and the other is for modifying preferences that match the machine to the environmental conditions. Use the latter group if the machine malfunctions due to mismatching.

APPENDIX 5 WIRING DIAGRAM

Provides the wiring diagram that helps you understand the connections between PCBs.

APPENDIX 6 CIRCUIT DIAGRAMS

Provides the circuit diagrams of the NCU PCB and power supply PCB.

APPENDIX 7 VIEWING THE EVENT LOG FILE

When installing the printer driver, the installer logs events that occur during the installation process in the event log file. This appendix views a sample of the event log file. Selecting Start | Program | Brother | MFL-Pro Suite model name | Installation Diagnostics reads out the event log file.

This manual describes the models and their versions destined for major countries. The specifications and functions are subject to change depending upon each destination.
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LASER SAFETY (100 - 120V MODEL ONLY)

This printer is certified as a Class 1 laser product under the U.S. Department of Health and Human Services (DHHS) Radiation Performance Standard according to the Radiation Control for Health and Safety Act of 1968. This means that the printer does not produce hazardous laser radiation.

Since radiation emitted inside the printer is completely confined within protective housings and external covers, the laser beam cannot escape from the machine during any phase of user operation.

FDA REGULATIONS (100 - 120V MODEL ONLY)

U.S. Food and Drug Administration (FDA) has implemented regulations for laser products manufactured on and after August 2, 1976. Compliance is mandatory for products marketed in the United States. One of the following labels on the back of the printer indicates compliance with the FDA regulations and must be attached to laser products marketed in the United States.

The label for Japanese manufactured products

MANUFACTURED:
Brother Industries, Ltd.,
15-1 Naeshiro-cho Mizuho-ku Nagoya, 467-8561 Japan
This product complies with FDA performance standards for laser products except for deviations pursuant to Laser Notice No.50, dated July 26, 2001.

The label for Chinese manufactured products

MANUFACTURED:
BROTHER TECHNOLOGY (SHENZHEN) Ltd
NO6 Gold Garden Ind. Nanling Buji, Longgang, Shenzhen, China.
This product complies with FDA performance standards for laser products except for deviations pursuant to Laser Notice No.50, dated July 26, 2001.

The label for Vietnamese manufactured products

MANUFACTURED:
Brother Industries (Vietnam) Ltd.
Phuc Dien Industrial Zone Cam Phuc Commune, Cam giang Dist Hai Duong Province, Vietnam
This product complies with FDA performance standards for laser products except for deviations pursuant to Laser Notice No. 50, dated July 26, 2001.

Caution
Use of controls, adjustments or performance of procedures other than those specified in this User’s Guide may result in hazardous radiation exposure.
IEC 60825 (220-240V MODEL ONLY)
This printer is a Class 1 laser product as defined in IEC 60825 specifications. The label shown below is attached in countries where it is required.

This printer has a laser diode which emits invisible laser radiation in the Laser Unit. The Laser Unit should not be opened without disconnecting the two connectors connected with the AC power supply and laser unit. Since the variable resistor in the laser unit is adjusted in accordance with the standards, never touch it.

Caution
Use of controls, adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.

For Finland and Sweden
LUOKAN 1 LASERLAITE
KLASS 1 LASER APPARAT
Varoitus! Laitteen käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittäville näkymättömälle lasersäteilylle.

Warning – Om apparaten används på annat sätt än i denna Bruksanvisning specificerats, kan användaren utsättas för osynlig laserstrålning, som överskrider gränsen för laserklass 1.

Internal laser radiation
Maximum radiation power: 5 mW
Wave length: 770 – 810 nm
Laser class: Class 3B
**SAFETY PRECAUTIONS**

**To use the machine safely**

Please keep these instructions for later reference and read them before attempting any maintenance.

**NOTE:** If there are faxes in the machine's memory, you need to print them or save them before you turn off the power and unplug the machine.

**WARNING**

<table>
<thead>
<tr>
<th><strong>WARNING</strong></th>
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<tr>
<td>![Warning Icon]</td>
<td>There are high voltage electrodes inside the machine. Before you clean the inside of the machine, make sure you have unplugged the telephone line cord first and then the power cord from the AC power outlet.</td>
</tr>
<tr>
<td>![Warning Icon]</td>
<td>Do not handle the plug with wet hands. Doing this might cause an electrical shock.</td>
</tr>
<tr>
<td>![Warning Icon]</td>
<td>After you use the machine, some internal parts are extremely HOT! To prevent injuries, be careful not to put your fingers in the areas shown in the illustration.</td>
</tr>
<tr>
<td>![Warning Icon]</td>
<td>The fuser unit is marked with a caution label. Please do not remove or damage the label.</td>
</tr>
<tr>
<td>![Warning Icon]</td>
<td>To prevent injuries, be careful not to put your hands on the edge of the machine under the scanner cover.</td>
</tr>
<tr>
<td>![Warning Icon]</td>
<td>To prevent injuries, be careful not to put your fingers in the area shown in the illustrations.</td>
</tr>
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Do not use a vacuum cleaner to clean up scattered toner. Doing this might cause the toner dust to ignite inside the vacuum cleaner, potentially starting a fire. Please carefully clean the toner dust with a dry, lint-free cloth and dispose of it according to local regulations.
**WARNING**

- When you move the machine, grasp the side hand holds that are under the scanner. DO NOT carry the machine by holding it at the bottom.
- Use caution when installing or modifying telephone lines. Never touch telephone wires or jack. Never install telephone wiring during a lightning storm. Never install a telephone wall jack in a wet location.
- This product must be installed near an AC power outlet that is easily accessible. In case of an emergency, you must disconnect the power cord from the AC power outlet to shut off the power completely.
- To reduce the risk of shock or fire, use only a No. 26 AWG or larger telecommunication line cord.

**CAUTION**

Lightning and power surges can damage this product! We recommend that you use a quality surge protection device on the AC power line and on the telephone line, or unplug the cords during a lightning storm.

**WARNING**

**IMPORTANT SAFETY INSTRUCTIONS**

When using your telephone equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock and injury to people, including the following:

1. Do not use this product near water, for example, near a bath tub, wash bowl, kitchen sink or washing machine, in a wet basement or near a swimming pool.
2. Avoid using this product during an electrical storm. There may be a remote risk of electric shock from lightning.
3. Do not use this product to report a gas leak in the vicinity of the leak.
4. Use only the power cord provided with the MACHINE.

SAVE THESE INSTRUCTIONS
CHOOSING A LOCATION

Place your machine on a flat, stable surface that is free of vibration and shocks, such as a desk. Put the machine near a telephone wall jack and a standard, grounded AC power outlet. Choose a location where the temperature remains between 50°F and 90.5°F (10°C and 32.5°C).

⚠️ CAUTION

- Avoid placing your machine in a high-traffic area.
- Do not place the machine near heaters, air conditioners, water, chemicals, or refrigerators.
- Do not expose the machine to direct sunlight, excessive heat, moisture, or dust.
- Do not connect your machine to an AC power outlet controlled by wall switches or automatic timers.
- Disruption of power can wipe out information in the machine’s memory.
- Do not connect your machine to an AC power outlet on the same circuit as large appliances or other equipment that might disrupt the power supply.
- Avoid interference sources, such as speakers or the base units of cordless phones.
CHAPTER 1  PARTS NAMES & FUNCTIONS

This chapter contains external views and names of components and describes their functions. Information about the keys on the control panel is included to help you check operation or make adjustments.

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1.2 CONTROL PANEL ........................................................................................................... 1-2
1.3 COMPONENTS ................................................................................................................ 1-7
1.1 EQUIPMENT OUTLINE

**Front view**

- Automatic Document Feeder (ADF)
- Control Panel
- Face-down Output Tray Support Flap with Extension (Support Flap)
- Front Cover
- Paper Tray

![Fig. 1-1](image)

**Rear view**

- Back Cover
- AC Power Connector
- Parallel Interface Connector
- USB Interface Connector
- 10/100 Baser TX Port

![Fig. 1-2](image)
FACSIMILE EQUIPMENT
PARTS REFERENCE LIST

MODEL: MFC8870DW / MFC8860DN
    MFC8460N
    DCP8065DN / DCP8060
(For Germany / United Kingdom / France / Switzerland / Spain / Italy / China / South Africa / Asia / Russia / Oceania / Pan-Nordic / Euro Generic)

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