You must set up the hardware and install the driver before you can use the machine.

Please use the Quick Setup Guide to set up the machine. You can find a printed copy in the box.

Please read this User’s Guide thoroughly before you use the machine.

Please visit us at http://solutions.brother.com/ where you can get product support, the latest driver updates and utilities, and answers to frequently asked questions (FAQs) and technical questions.

Note: Not all models are available in all countries.
User's Guides and where to find them?

<table>
<thead>
<tr>
<th>Which manual?</th>
<th>What's in it?</th>
<th>Where is it?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Safety Guide</td>
<td>Read this Guide first. Please read the Safety Instructions before you set up your machine. See this Guide for trademarks and legal limitations.</td>
<td>Printed / In the Box</td>
</tr>
<tr>
<td>Quick Setup Guide</td>
<td>Follow the instructions for setting up your machine and installing the drivers and software for the operating system and connection type you are using.</td>
<td>Printed / In the Box</td>
</tr>
<tr>
<td>User's Guide</td>
<td>Learn the print operations, how to replace consumables, and performing routine maintenance. See troubleshooting tips.</td>
<td>PDF file / CD-ROM / In the Box</td>
</tr>
<tr>
<td>Network User's Guide (HL-5450DN only)</td>
<td>This Guide provides useful information about wired network settings and security settings using the Brother machine. You can also find supported protocol information for your machine and detailed troubleshooting tips.</td>
<td>PDF file / CD-ROM / In the Box</td>
</tr>
<tr>
<td>Google Cloud Print Guide (HL-5450DN only)</td>
<td>This Guide provides details on how to configure your Brother machine to a Google account and use Google Cloud Print services for printing over the Internet from devices using Gmail™ for mobile, GOOGLE DOCS™ for mobile and applications for the Chrome OS.</td>
<td>PDF file / Brother Solutions Center at <a href="http://solutions.brother.com/">http://solutions.brother.com/</a></td>
</tr>
<tr>
<td>Mobile Print/Scan Guide for Brother iPrint&amp;Scan (HL-5450DN only)</td>
<td>This Guide provides useful information about printing JPEG and PDF 1 files from your mobile device and scanning 2 from your Brother machine to your mobile device when connected on a Wi-Fi network.</td>
<td>PDF file / Brother Solutions Center at <a href="http://solutions.brother.com/">http://solutions.brother.com/</a></td>
</tr>
</tbody>
</table>

1 PDF printing is not supported on Windows® Phone.
2 HL-5450DN does not support the scanning feature.
Using the documentation

Thank you for buying a Brother machine! Reading the documentation will help you make the most of your machine.

Symbols and conventions used in the documentation

The following symbols and conventions are used throughout the documentation.

⚠️ WARNING: WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injuries.

⚠️ Important: Important indicates a potentially hazardous situation which, if not avoided, may result in damage to property or loss of product functionality.

🚫 Prohibition icons indicate actions that must not be performed.

⚠️ Electrical Hazard icons alert you to possible electrical shock.

⚠️ Fire Hazard icons alert you to the possibility of fire.

⚠️ Hot Surface icons warn you not to touch machine parts that are hot.

📝 Note: Notes tell you how you should respond to a situation that may arise or give tips about how the operation works with other features.

**Bold**

Bold style identifies keys on the machine control panel or computer screen.

**Italicics**

Italicized style emphasizes an important point or refers you to a related topic.
# Table of Contents

## 1 Printing Methods  
1. About this Machine ............................................................................................................. 1
2. Front view and Back view ....................................................................................................... 1
3. Acceptable paper and other print media .................................................................................. 2
4. Recommended paper and print media ..................................................................................... 2
5. Type and size of paper ........................................................................................................... 2
6. Handling and using special paper ............................................................................................ 4
7. Unprintable area when printing from a computer .................................................................... 7
8. Loading paper .................................................................................................................. 8
9. Loading paper and print media ............................................................................................... 8
10. Loading paper in the standard paper tray and the optional lower tray ................................. 8
11. Loading paper in the multi-purpose tray (MP tray) ................................................................. 12
12. Duplex (2-sided) printing ..................................................................................................... 18
13. Guidelines for printing on both sides of the paper ............................................................... 18
14. Automatic duplex printing .................................................................................................. 19
15. Manual duplex printing ....................................................................................................... 21

## 2 Driver and Software  
22. Printer driver ...................................................................................................................... 22
23. Printing a document ............................................................................................................. 23
24. Printer driver settings .......................................................................................................... 24
25. Windows® .................................................................................................................................. 25
26. Accessing the printer driver settings .................................................................................... 25
27. Features in the Windows® printer driver ............................................................................. 26
28. Basic tab .................................................................................................................................. 26
29. Advanced tab ....................................................................................................................... 31
30. Print Profiles tab .................................................................................................................. 39
31. Accessories tab .................................................................................................................... 41
32. Support ...................................................................................................................................... 43
33. Features in the BR-Script3 printer driver (PostScript® 3™ language emulation) .................... 45
34. Uninstalling the printer driver ............................................................................................. 51
35. Status Monitor .................................................................................................................... 52
36. Macintosh .................................................................................................................................. 54
37. Features in the printer driver (Macintosh) .......................................................................... 54
38. Choosing page setup options ............................................................................................ 54
39. Features in the BR-Script3 printer driver (PostScript® 3™ language emulation) .................... 63
40. Removing the printer driver .................................................................................................. 67
41. Status Monitor .................................................................................................................... 68
42. Software ..................................................................................................................................... 70
43. Software for networks ........................................................................................................... 70
44. Remote Printer Console (Windows® only) ............................................................................ 70
3  General Information ................................................................. 71
   Control panel ........................................................................... 71
   LEDs (Light Emitting Diodes) .................................................. 71
   Service call indications ......................................................... 79
   Control panel keys .................................................................. 81
   Print a test page ...................................................................... 82
     Using the Go key ................................................................. 82
     Using the printer driver ...................................................... 82
   Print a Printer Settings page .................................................. 83
     Using the Go key ................................................................. 83
     Using the printer driver ...................................................... 83
   Print Fonts ............................................................................... 84
     Using the Go key ................................................................. 84
     Using the printer driver ...................................................... 84
   Security features ..................................................................... 85
     Secure Function Lock 2.0 (HL-5450DN only) ....................... 85
   Ecology features ..................................................................... 86
     Toner Save ........................................................................... 86
     Sleep Time ........................................................................... 86
     Deep Sleep mode .................................................................. 86
   Quiet mode feature .................................................................. 87
     Turning Quiet mode on/off ................................................... 87

4  Options .................................................................................... 88
   Lower tray (LT-5400) ............................................................. 89
   SO-DIMM (HL-5450DN only) .................................................. 90
   SO-DIMM types ..................................................................... 90
   Installing extra memory ......................................................... 91

5  Routine Maintenance ............................................................... 93
   Replacing consumable items .................................................. 93
     Replacing the toner cartridge ............................................. 94
     Replacing the drum unit ...................................................... 102
   Cleaning and Checking the machine ..................................... 109
     Cleaning the outside of the machine .................................. 109
     Cleaning the corona wire ................................................... 111
     Cleaning the drum unit ...................................................... 113
     Cleaning the paper pick-up roller ...................................... 118
   Packing and shipping the machine ....................................... 119

6  Troubleshooting ...................................................................... 122
   Identifying your problem ....................................................... 122
   Error messages in the Status Monitor .................................... 123
     Paper jams .......................................................................... 126
   If you are having difficulty with your machine ..................... 137
   Improving the print quality ................................................... 141
   Machine Information ............................................................ 148
     Default settings .................................................................... 148
1 Front cover release button
2 Control panel
3 Face-down output tray support flap (support flap)
4 Front cover
5 Paper tray
6 Power switch
7 Face-down output tray
8 Multi-purpose tray (MP tray)
9 Back cover (Face-up output tray when open)
10 AC power connector
11 USB port
12 10BASE-T / 100BASE-TX port (HL-5450DN only)
13 Network Activity Light Emitting Diodes (LEDs) (HL-5450DN only)
14 Parallel port (HL-5440D only)

Note
Most of the illustrations in this User's Guide show the HL-5450DN.
Acceptable paper and other print media

Print quality may vary according to the type of paper you are using. You can use the following types of print media: plain paper, thin paper, thick paper, thicker paper, bond paper, recycled paper, labels or envelopes.

For best results, follow the instructions below:

- DO NOT put different types of paper in the paper tray at the same time because it may cause paper jams or misfeeds.
- For proper printing, you must choose the same paper size from your software application as the paper in the tray.
- Avoid touching the printed surface of the paper immediately after printing.
- Before you buy a lot of paper, test a small quantity to make sure that the paper is suitable.

Recommended paper and print media

<table>
<thead>
<tr>
<th>Paper Type</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plain paper</td>
<td>Xerox 4200 20 lb</td>
</tr>
<tr>
<td></td>
<td>Hammermill Laser Print 24 lb (90 g/m²)</td>
</tr>
<tr>
<td>Recycled paper</td>
<td>(No specific brand recommended)</td>
</tr>
<tr>
<td>Labels</td>
<td>Avery laser labels white #5160</td>
</tr>
<tr>
<td>Envelopes</td>
<td>(No specific brand recommended)</td>
</tr>
</tbody>
</table>

Type and size of paper

The machine feeds paper from the installed standard paper tray, multi-purpose tray or optional lower tray. The names for the paper trays in the printer driver and this Guide are as follows:

<table>
<thead>
<tr>
<th>Tray and optional unit</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper tray</td>
<td>Tray 1</td>
</tr>
<tr>
<td>Optional lower tray unit</td>
<td>Tray 2</td>
</tr>
<tr>
<td>Multi-purpose tray</td>
<td>MP Tray</td>
</tr>
</tbody>
</table>
Printing Methods

Paper capacity of the paper trays

<table>
<thead>
<tr>
<th>Paper Tray (Tray 1)</th>
<th>Paper size</th>
<th>Paper types</th>
<th>No. of sheets</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Letter, A4, Legal, B5 (ISO/JIS), Executive, A5, A5 (Long Edge), A6, B6 (ISO), Folio ¹</td>
<td>Plain paper, Thin paper and Recycled paper</td>
<td>up to 250 sheets 20 lb (80 g/m²)</td>
</tr>
<tr>
<td>Multi-purpose Tray (MP Tray)</td>
<td>Width: 3 to 8.5 in. (76.2 to 215.9 mm) Length: 5 to 14 in. (127 to 355.6 mm)</td>
<td>Plain paper, Thin paper, Thick paper, Thicker paper, Bond paper, Recycled paper, Envelopes and Labels</td>
<td>50 sheets 20 lb (80 g/m²) 3 Envelopes</td>
</tr>
<tr>
<td>Optional Lower Tray (Tray 2)</td>
<td>Letter, A4, Legal, B5 (ISO/JIS), Executive, A5, B6 (ISO), Folio ¹</td>
<td>Plain paper, Thin paper and Recycled paper</td>
<td>up to 500 sheets 20 lb (80 g/m²)</td>
</tr>
</tbody>
</table>

¹ Folio size is 8.5 in. x 13 in. (215.9 mm x 330.2 mm).

Recommended paper specifications

The following paper specifications are suitable for this machine.

| Basis weight | 20-24 lb (75-90 g/m²) |
| Thickness | 80-110 μm |
| Roughness | Higher than 20 sec. |
| Stiffness | 90-150 cm³/100 |
| Grain direction | Long grain |
| Volume resistivity | 10e⁹-10e¹¹ ohm |
| Surface resistivity | 10e⁹-10e¹² ohm-cm |
| Filler | CaCO₃ (Neutral) |
| Ash content | Below 23 wt% |
| Brightness | Higher than 80% |
| Opacity | Higher than 85% |

- Use paper that is made for plain-paper copying.
- Use paper that is 20 to 24 lb (75 to 90 g/m²).
- Use long grain paper with a neutral Ph value, and a moisture content of approx. 5%.
- This machine can use recycled paper that meets DIN 19309 specifications.

(To help you choose which paper to use with this machine, see Important information for choosing your paper page 155.)
Handling and using special paper

The machine is designed to work well with most types of xerographic and bond paper. However, some paper variables may have an effect on print quality or handling reliability. Always test samples of paper before purchasing to ensure desirable performance. Store paper in its original packaging and keep it sealed. Keep the paper flat and away from moisture, direct sunlight and heat.

Some important guidelines when selecting paper are:

- DO NOT use inkjet paper because it may cause a paper jam or damage your machine.
- Preprinted paper must use ink that can withstand the temperature of the machine’s fusing process 392 °F (200 °C).
- If you use bond paper, paper having a rough surface or paper that is wrinkled or creased, the paper may exhibit degraded performance.

Types of paper to avoid

Important

Some types of paper may not perform well or may cause damage to your machine.

DO NOT use paper:

- that is highly textured
- that is extremely smooth or shiny
- that is curled or warped

1 A curl of 0.08 in. (2 mm) or greater may cause jams to occur.

- that is coated or has a chemical finish
- that is damaged, creased or folded
- that exceeds the recommended weight specification in this guide
- with tabs and staples
- with letterheads using low temperature dyes or thermography
- that is multipart or carbonless
- that is designed for inkjet printing

If you use any of the types of paper listed above, they may damage your machine. This damage is not covered under any Brother warranty or service agreement.
Printing Methods

Envelopes
Most envelopes designed for laser printers will be suitable for your machine. However, some envelopes may have feed and print-quality problems because of the way they have been made. A suitable envelope should have edges with straight, well-creased folds. The envelope should lie flat and not be of baggy or flimsy construction. You should buy quality envelopes from a supplier who understands that you will be using the envelopes in a laser machine.

We recommend that you print a test envelope to make sure the print results are what you want.

Types of envelopes to avoid

Important
DO NOT use envelopes:
• that are damaged, curled, wrinkled or an unusual shape
• that are extremely shiny or textured
• with clasps, staples, snaps or tie strings
• with self-adhesive closures
• that are of a baggy construction
• that are not sharply creased
• that are embossed (have raised writing on them)
• that were previously printed by a laser machine
• that are pre-printed on the inside
• that cannot be arranged neatly when stacked
• that are made of paper that weighs more than the paper weight specifications for the machine
• with edges that are not straight or consistently square
• with windows, holes, cut-outs or perforations
• with glue on surface as shown in figure below

• with double flaps as shown in figure below

• with sealing flaps that are not folded down when purchased
• with each side folded as shown in figure below

If you use any of the types of envelopes listed above, they may damage your machine. This damage may not be covered under any Brother warranty or service agreement.

Labels
The machine will print on most types of labels designed for use with a laser machine. Labels should have an adhesive that is acrylic-based since this material is more stable at the high temperatures in the fuser unit. Adhesives should not come in contact with any part of the machine, because the label stock may stick to the drum unit or rollers and cause jams and print quality problems. No adhesive should be exposed between the labels. Labels should be arranged so that they cover the entire length and width of the sheet. Using labels with spaces may result in labels peeling off and causing serious jams or print problems.

All labels used in this machine must be able to withstand a temperature of 392 °F (200 °C) for a period of 0.1 seconds.

Types of labels to avoid
Do not use labels that are damaged, curled, wrinkled or an unusual shape.

⚠️ Important
• Avoid feeding labels with the carrier sheet exposed because your machine will be damaged. DO NOT feed partially used carrier sheets.
• Label sheets should not exceed the paper weight specifications described in this User’s Guide. Labels exceeding this specification may not feed or print properly and may cause damage to your machine.
• DO NOT reuse or insert labels that have previously been used or are missing a few labels on the sheet.
Unprintable area when printing from a computer

The figures below show maximum unprintable areas. The unprintable areas may vary depending on the paper size or settings in the application you are using.

<table>
<thead>
<tr>
<th>Usage</th>
<th>Document Size</th>
<th>Top (1)</th>
<th>Bottom (3)</th>
<th>Left (2)</th>
<th>Right (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Print</td>
<td>Letter</td>
<td>0.16 in. (4.23 mm)</td>
<td>0.25 in. (6.35 mm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>A4</td>
<td>0.16 in. (4.23 mm)</td>
<td>0.24 in. (6.01 mm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Legal</td>
<td>0.16 in. (4.23 mm)</td>
<td>0.25 in. (6.35 mm)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note

When using BR-Script3 emulation, the unprintable area around the edges of the paper is 0.16 in. (4.23 mm).
Loading paper

Loading paper and print media

The machine can feed paper from the standard paper tray, optional lower tray or multi-purpose tray.

When you put paper into the paper tray, note the following:

- If your application software supports paper size selection on the print menu, you can select it through the software. If your application software does not support it, you can set the paper size in the printer driver or by using the control panel keys.

Loading paper in the standard paper tray and the optional lower tray

You can load up to 250 sheets of paper in the standard paper tray (Tray 1). You can also load up to 500 sheets in the optional lower tray (Tray 2). Paper can be loaded up to the maximum paper mark (▼▼▼) on the right-hand side of the paper tray. (For the recommended paper to use, see Acceptable paper and other print media page 2.)

Printing on plain paper, thin paper or recycled paper from Tray 1 and Tray 2

1. Pull the paper tray completely out of the machine.
While pressing the green paper-guide release lever (1), slide the paper guides to fit the paper you are loading in the tray. Make sure that the guides are firmly in the slots.

**Note**

For Legal or Folio size paper, press the release button (1) in the bottom of the paper tray and then pull out the back of the paper tray. (Legal and Folio size paper are not available in some regions.)

Fan the stack of paper well to avoid paper jams and misfeeds.
4. Put paper in the tray and make sure:
   - The paper is below the maximum paper mark (第二大) (1).
     Over filling the paper tray will cause paper jams.
   - The side to be printed on must be face down.
   - The paper guides touch the sides of the paper so it will feed properly.

5. Put the paper tray firmly back in the machine. Make sure that it is completely inserted into the machine.

6. Lift up the support flap (1) to prevent paper from sliding off the face-down output tray, or remove each page as soon as it comes out of the machine.
Choose the following settings from each drop-down list of the printer driver.

### Paper Size

<table>
<thead>
<tr>
<th>A4</th>
<th>Letter</th>
<th>Legal</th>
<th>Executive</th>
<th>A5</th>
</tr>
</thead>
<tbody>
<tr>
<td>B5</td>
<td>B6</td>
<td>Folio</td>
<td>A5 Long Edge (Tray 1 only)</td>
<td>A6 (Tray 1 only)</td>
</tr>
</tbody>
</table>

For the acceptable paper sizes, see *Type and size of paper* page 2.

### Media Type

- Plain Paper
- Thin Paper
- Recycled Paper

### Paper Source

- Tray1
- Tray2 (if available)

For any other settings, see *Driver and Software* in Chapter 2.

**Note**

The name of options in the drop-down lists may vary depending on your operating system and its version.

Send the print data to the machine.
Loading paper in the multi-purpose tray (MP tray)

You can load up to 3 envelopes or special print media in the MP tray or up to 50 sheets of plain paper. Use this tray to print on thick paper, bond paper, labels or envelopes. (For the recommended paper to use, see Acceptable paper and other print media page 2.)

Printing on plain paper, thin paper, recycled paper and bond paper from the MP tray

1. Open the MP tray and lower it gently.

2. Pull out the MP tray support (1) and unfold the flap (2).
3. Put paper in the MP tray and make sure:
   - The paper stays under the maximum paper mark (1).
   - The side to be printed on must be face up with the leading edge (top of the paper) in first.
   - The paper guides touch the sides of the paper so it will feed properly.

4. Lift up the support flap to prevent paper from sliding off the face-down output tray, or remove each page as soon as it comes out of the machine.
Printing Methods

Choose the following settings from each drop-down list of the printer driver.

**Paper Size**

<table>
<thead>
<tr>
<th>A4</th>
<th>Letter</th>
<th>Legal</th>
<th>Executive</th>
<th>A5</th>
</tr>
</thead>
<tbody>
<tr>
<td>A5 Long Edge</td>
<td>A6</td>
<td>B5</td>
<td>B6</td>
<td>3 x 5</td>
</tr>
<tr>
<td>Folio</td>
<td></td>
<td></td>
<td></td>
<td>Customized paper size ¹</td>
</tr>
</tbody>
</table>

¹ You can define your original paper size by choosing User Defined... in Windows® printer driver, PostScript Custom Page Size in BR-Script printer driver for Windows®, or Custom Page Sizes in Macintosh printer drivers.

For the acceptable paper sizes, see Type and size of paper page 2.

**Media Type**

- Plain Paper
- Thin Paper
- Recycled Paper
- Bond Paper

**Paper Source**

- MP Tray

For any other settings, see Driver and Software in Chapter 2.

**Note**

The name of options in the drop-down lists may vary depending on your operating system and its version.

Send the print data to the machine.
**Printing on thick paper, labels and envelopes from the MP tray**

Before loading, press the corners and sides of the envelopes to make them as flat as possible.

1. Open the back cover (face-up output tray).

2. Open the MP tray and lower it gently.

3. Pull out the MP tray support (1) and unfold the flap (2).
Put paper, labels or envelopes in the MP tray. Make sure:

- The number of envelopes in the MP tray does not exceed 3.
- The paper, labels or envelopes stay under the maximum paper mark (1).
- The side to be printed on must be face up.

Choose the following settings from each drop-down list of the printer driver.

**Paper Size**

*<For printing thick paper or labels>*

<table>
<thead>
<tr>
<th>A4</th>
<th>Letter</th>
<th>Legal</th>
<th>Executive</th>
<th>A5</th>
</tr>
</thead>
<tbody>
<tr>
<td>A5 Long Edge</td>
<td>A6</td>
<td>B5</td>
<td>B6</td>
<td>3 x 5</td>
</tr>
<tr>
<td>Folio</td>
<td></td>
<td></td>
<td></td>
<td>Customized paper size ¹</td>
</tr>
</tbody>
</table>

*<For Printing envelopes>*

<table>
<thead>
<tr>
<th>Com-10</th>
<th>DL</th>
<th>C5</th>
<th>Monarch</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Customized paper size ¹</td>
</tr>
</tbody>
</table>

¹ You can define your original paper size by choosing User Defined... in Windows® printer driver, PostScript Custom Page Size in BR-Script printer driver for Windows®, or Custom Page Sizes in Macintosh printer drivers.

For the acceptable paper sizes, see Type and size of paper >> page 2.
Printing Methods

Media Type
<For printing thick paper>

Thick Paper Thicker Paper
<For printing labels>

Label
<For Printing envelopes>

Envelopes Env. Thin Env. Thick

Paper Source

MP Tray

For any other settings, see Driver and Software in Chapter 2.

Note

- The name of options in the drop-down lists may vary depending on your operating system and its version.
- When you use Envelope #10, choose Com-10 (for Windows®) or #10 Envelope (for Macintosh) from the Paper Size drop-down list.
- For other envelopes that are not listed in the printer driver, such as Envelope #9 or Envelope C6, choose User Defined... (for Windows® printer driver), PostScript Custom Page Size (for BR-Script printer driver for Windows®) or Custom Page Sizes (for Macintosh printer driver).

6 Send the print data to the machine.

Note

- Remove each envelope as soon as it has been printed. Stacking the envelopes may cause them to jam or curl.
- If envelopes or thick paper get smudged during printing set the Media Type to Env. Thick or Thicker Paper to increase the fixing temperature.
- If the envelopes are creased after they are printed, see Improving the print quality page 141.
- If your thick paper curls during printing, put only one sheet at a time in the MP tray.
- Envelope joints that are sealed by the manufacturer should be secure.
- All sides of the envelope should be properly folded without wrinkles or creases.

7 Close the back cover (face-up output tray).
Duplex (2-sided) printing

The supplied printer drivers all enable duplex printing. For more information about how to choose the settings, see the Help text in the printer driver.

Guidelines for printing on both sides of the paper

- If the paper is thin, it may wrinkle.
- If paper is curled, straighten it and put it back in the paper tray. If the paper continues to curl, replace the paper.
- If the paper is not feeding properly, it may be curled. Remove the paper and straighten it. If the paper continues to curl, replace the paper.
- When you use the manual duplex function, it is possible that there may be paper jams or poor print quality. (If there is a paper jam, see Paper jams page 126. If you have a print quality problem, see Improving the print quality page 141.)

Note

Make sure that the paper tray is completely inserted in the machine.
Automatic duplex printing

If you are using the Macintosh Printer Driver, see Duplex (2-sided) Printing page 62.

Automatic duplex printing with the Windows® printer driver

1. Choose the following settings from each menu of the printer driver.

   - **Paper Size**
     - Letter
     - Legal
     - Folio

   - **Media Type**
     - Plain Paper
     - Recycled Paper
     - Thin Paper

   - **Paper Source**
     - Tray1
     - MP Tray
     - Tray2 (if available)

   - **Duplex / Booklet**

     - **Duplex**
     - **Duplex Type in Duplex Settings**
       - There are four options for each orientation. (See Duplex / Booklet page 29.)
     - **Binding Offset in Duplex Settings**
       - You can specify the offset for binding. (See Duplex / Booklet page 29.)

   **Note**

   - You should use plain paper, recycled paper or thin paper. Do not use bond paper.
   - The name of options in the drop-down lists may vary depending on your operating system and its version.

   For any other settings, see Driver and Software in Chapter 2.

2. Send the print data to the machine. The machine will print on both sides of the paper automatically.
Automatic duplex printing with the BR-Script printer driver for Windows®

1. Choose the following settings from each menu of the printer driver.
   - **Paper Size**
     - Letter, Legal, Folio
   - **Media Type**
     - Plain Paper, Recycled Paper, Thin Paper
   - **Paper Source**
     - Tray1, MP Tray, Tray2 (if available)
   - **Print on Both sides**
     - Flip on Short Edge, Flip on Long Edge
   - **Page Order**
     - Front to Back, Back to Front

**Note**

- You should use plain paper, recycled paper or thin paper. Do not use bond paper.
- The name of options in the drop-down lists may vary depending on your operating system and its version.

For any other settings, see *Driver and Software* in Chapter 2.

2. Send the print data to the machine. The machine will print on both sides of the paper automatically.
Manual duplex printing

The BR-Script printer driver for Windows® does not support manual duplex printing.
If you are using the Macintosh Printer Driver, see Manual Duplex Printing page 62.

Manual duplex printing with the Windows® printer driver

1. Choose the following settings from each drop-down list of the printer driver.
   - **Paper Size**
     You can use all the paper sizes specified for the tray you are using.
   - **Media Type**
     You can use all the media types that are specified for the tray you are using, except envelopes and labels which have only one print side.
   - **Paper Source**
     Tray1 MP Tray Tray2 (if available)
   - **Duplex / Booklet**
     Duplex (Manual)
   - **Duplex Type in Duplex Settings**
     There are four options for each orientation. (See Duplex / Booklet page 29.)
   - **Binding Offset in Duplex Settings**
     You can specify the offset for binding. (See Duplex / Booklet page 29.)

   For any other settings, see Driver and Software in Chapter 2.

2. Send the print data to the machine. The machine will print all the even-numbered pages on one side of the paper first. Then, the Windows® driver instructs you (with a pop-up message) to reinsert the paper to print the odd-numbered pages.

   **Note**
   Before reinserting the paper, straighten it well, or you may get a paper jam. Very thin or thick paper is not recommended.
Printer driver

A printer driver is software that translates data from the format used by a computer to the format that a particular printer needs. Typically, this format is page description language (PDL).

The printer drivers for the supported versions of Windows® and Macintosh are on the CD-ROM we have supplied or on the Brother Solutions Center Web site at http://solutions.brother.com/. Install the drivers by following the steps in the Quick Setup Guide. The latest printer drivers can be downloaded from the Brother Solutions Center Web site at:

http://solutions.brother.com/

For Windows®

- Windows® printer driver (the most suitable printer driver for this product)
- BR-Script printer driver (PostScript® 3™ language emulation) ¹

¹ Install the driver using the Custom Install from the CD-ROM.

For Macintosh

- Macintosh printer driver (the most suitable printer driver for this product)
- BR-Script printer driver (PostScript® 3™ language emulation) ¹

¹ For the installation instruction of the driver, visit us at http://solutions.brother.com/.

For Linux® ¹ ²

- LPR printer driver
- CUPS printer driver

¹ For more information and to download the printer driver for Linux please visit your model page at http://solutions.brother.com/ or use the link on the CD-ROM we have supplied.

² Depending on Linux distributions, the driver may not be available or it may be released after the initial release of your model.
Printing a document

When the machine receives data from your computer, it begins printing by picking up paper from the paper tray. The paper tray can feed many types of paper and envelopes. (See Paper capacity of the paper trays >> page 3.)

1. From your application, choose the Print command.
   If any other printer drivers are installed on your computer, choose Brother HL-XXXX series (Where XXXX is your model name.) as your printer driver from the Print or Print Settings menu in your software application, and then click OK or Print to begin printing.

2. Your computer sends the data to the machine. The Ready LED will blink.

3. When the machine finishes printing all the data, the Ready LED finishes blinking.

Note
- You can choose the paper size and orientation in your application software.
- If your application software does not support your custom paper size, choose the next largest paper size.
- Then adjust the print area by changing the right and left margins in your application software.
Driver and Software

Printer driver settings

You can change the following printer settings when you print from your computer:

- Paper Size
- Orientation
- Copies
- Media Type
- Resolution
- Print Settings
- Multiple Page
- Duplex 4 / Booklet 2 4
- Paper Source
- Scaling
- Reverse Print
- Use Watermark 1 2
- Header-Footer Print 1 2
- Toner Save Mode
- Administrator 1 2
- User Authentication 1 2 (HL-5450DN only)
- Use Reprint 1 2
- Sleep Time
- Macro 1 2
- Density Adjustment
- Error Message Printout 1 2
- Improve Print Output
- Skip Blank Page 1 3
- Print Profile 1 2

1 These settings are not available with the BR-script printer driver for Windows®.
2 These settings are not available with the Macintosh printer driver and the BR-Script printer driver for Macintosh.
3 These settings are not available with the BR-Script printer driver for Macintosh.
4 Manual duplex printing / Manual booklet printing are not available with the BR-script printer driver for Windows®.
Windows®

Accessing the printer driver settings

1. (For Windows® XP and Windows Server® 2003) Click Start, and then Printers and Faxes. (For Windows Vista® and Windows Server® 2008)
   Click the button, Control Panel, Hardware and Sound, and then Printers. (For Windows® 7 and Windows Server® 2008R2)
   Click the button and Devices and Printers.

2. Right-click the Brother HL-XXXX series icon (where XXXX is your model name) and select Properties (Printer properties, and Brother HL-XXXX series if necessary). The printer properties dialog box appears.

3. Choose the General tab and then click Printing Preferences... (Preferences...). To configure the tray settings, choose the Accessories tab.
Features in the Windows® printer driver

For more information, see the Help text in the printer driver.

Note

- The screens in this section are from Windows® XP. The screens on your PC will vary depending on your operating system.
- To access the printer driver settings, see Accessing the printer driver settings page 25.

Basic tab

You can also change the Page Layout settings by clicking the illustration on the left side of the Basic tab.

1. Choose the Paper Size, Orientation, Copies, Media Type, Resolution and Print Settings (1).
2. Choose Multiple Page and Duplex / Booklet (2).
3. Choose the Paper Source (3).
4. Confirm your current settings in the window (4).
5. Click OK to apply your chosen settings.
   To return to the default settings, click Default, then OK.
**Paper Size**
From the drop-down box choose the Paper Size you are using.

**Orientation**
Orientation selects the position of how your document will be printed (*Portrait* or *Landscape*).

<table>
<thead>
<tr>
<th>Portrait (Vertical)</th>
<th>Landscape (Horizontal)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="PortraitDiagram.png" alt="Diagram" /></td>
<td><img src="LandscapeDiagram.png" alt="Diagram" /></td>
</tr>
</tbody>
</table>

**Copies**
The copies selection sets the number of copies that will be printed.

- **Collate**
  With the Collate check box selected, one complete copy of your document will be printed and then repeated for the number of copies you selected. If the Collate check box is not selected, then each page will be printed for all the copies selected before the next page of the document is printed.

<table>
<thead>
<tr>
<th>Collate checked</th>
<th>Collate non-checked</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="CollateCheckedDiagram.png" alt="CollateDiagram" /></td>
<td><img src="CollateNonCheckedDiagram.png" alt="CollateDiagram" /></td>
</tr>
</tbody>
</table>

**Media Type**
You can use the following types of media in your machine. For the best print quality, select the type of media that you wish to use.

- **Plain Paper**
- **Thin Paper**
- **Thick Paper**
- **Thicker Paper**
- **Bond Paper**
- **Bond Paper**
- **Envelopes**
- **Env. Thick**
- **Env. Thin**
- **Recycled Paper**
- **Label**
Driver and Software

Note

• When using ordinary plain paper 16 to 28 lb (60 to 105 g/m²) choose Plain Paper. When using heavier weight paper or rough paper choose Thick Paper or Thicker Paper. For bond paper, choose Bond Paper.

• When you use envelopes, choose Envelopes. If the toner is not fixed to the envelope correctly when Envelopes has been selected, choose Env. Thick. If the envelope is crumpled when Envelopes has been selected, choose Env. Thin. For more information, see Paper capacity of the paper trays page 3.

Resolution
You can choose the resolution as follows.

- 300 dpi
- 600 dpi
- HQ 1200
- 1200 dpi

Note
The print speed will change depending on what print quality setting you choose. Higher print quality takes longer to print, while lower print quality takes less time to print.

Print Settings
You can change the print settings as follows:

- Graphics
  This is the best mode for printing documents that contain graphics.

- Text
  This is the best mode for printing text documents.

- Manual
  You can change the settings manually by choosing Manual and clicking the Manual Settings... button. You can set brightness, contrast and other settings.

Multiple Page
The Multiple Page selection can reduce the image size of a page allowing multiple pages to be printed on one sheet of paper or enlarge the image size for printing one page on multiple sheets of paper.

- Page Order
  When N in 1 option is selected, the page order can be selected from the drop-down list.

- Border Line
  When printing multiple pages onto one sheet, with the Multiple Page feature, you can choose to have a solid border, dash border or no border around each page on the sheet.

- Print cut-out line
  When 1 in NxN pages option is selected, the Print cut-out line option can be selected. This option allows you to print a faint cut-out line around the printable area.
**Duplex / Booklet**

When you want to print a booklet or do duplex printing, use this function.

- **None**
  
  Disable duplex printing.

- **Duplex / Duplex (Manual)**
  
  When you want to do duplex printing, use these options.
  
  - **Duplex**
    
    The machine prints on both sides of the paper automatically.

  - **Duplex (Manual)**
    
    The machine prints all the even numbered pages first. Then the printer driver will stop and show the instructions required to re-install the paper. When you click **OK** the odd numbered pages will be printed.

When you choose **Duplex** or **Duplex (Manual)**, the **Duplex Settings** button becomes available to choose. You can set following settings in the **Duplex Settings** dialog box.

  - **Duplex Type**
    
    There are four types of duplex binding directions available for each orientation.

    **Portrait**
    
    - **Long Edge (Left)**
    - **Long Edge (Right)**
    - **Short Edge (Top)**
    - **Short Edge (Bottom)**

    ![Diagram of Duplex Binding](image)

    **Landscape**
    
    - **Long Edge (Top)**
    - **Long Edge (Bottom)**
    - **Short Edge (Right)**
    - **Short Edge (Left)**

    ![Diagram of Landscape Duplex Binding](image)

  - **Binding Offset**
    
    When you check **Binding Offset**, you can also specify the offset for binding in inches or millimeters.
Booklet / Booklet (Manual)

Use this option to print a document in booklet format using duplex printing; it will arrange the document according to the correct page number and allows you to fold at the center of the print output without having to change the order of the page number.

• **Booklet**
  
The machine prints on both sides of the paper automatically.

• **Booklet (Manual)**
  
The machine prints all the even numbered sides first. Then the printer driver will stop and show the instructions required to re-install the paper. When you click OK the odd numbered sides will be printed.

When you choose Booklet or Booklet (Manual), the Duplex Settings... button becomes available to choose. You can set the following settings in the Duplex Settings dialog box.

• **Duplex Type**
  
There are two types of duplex binding directions available for each orientation.

- **Portrait**
  - Left Binding
  - Right Binding

- **Landscape**
  - Top Binding
  - Bottom Binding

• **Booklet Printing Method**

  When Divide into Sets is selected:

  This option allows you to print the whole booklet into smaller individual booklet sets, it still allows you to fold at the center of the smaller individual booklet sets without having to change the order of the page number. You can specify the number of sheets in each smaller booklet set, from 1 to 15. This option can help when folding the printed booklet that has a large number of pages.

• **Binding Offset**

  When you check Binding Offset, you can also specify the offset for binding in inches or millimeters.

**Paper Source**

You can choose **Auto Select, Tray1, Tray2 ¹**, **MP Tray** or **Manual** and specify separate trays for printing the first page and for printing from the second page onwards.

¹ Available if the optional tray is installed.
Advanced tab

Change the tab settings by clicking one of the following selections:

- Scaling (1)
- Reverse Print (2)
- Use Watermark (3)
- Header-Footer Print (4)
- Toner Save Mode (5)
- Administrator (6)
- User Authentication (7) (HL-5450DN only)
- Other Print Options (8)

**Scaling**
You can change the print image scaling.

**Reverse Print**
Check Reverse Print to reverse the data from up to down.
**Use Watermark**
You can put a logo or text into your document as a watermark. You can choose one of the preset Watermarks, or you can use a bitmap file that you have created. Check **Use Watermark** and then click the **Settings...** button.

**Watermark Settings**

- **Transparent**
  Check **Transparent** to print the watermarked image in the background of your document. If this feature is not checked then the watermark will be printed on top of your document.

- **In Outline Text**
  Check **In Outline Text** if you only want to print an outline of the watermark. It is available when you choose a text watermark.
Custom Settings
You can choose to print which watermark to be printed on the first page or on the other pages. Click the Add button to add the watermark settings and then choose Use Text or Use Bitmap File in Watermark Style.

- Title
  Enter a suitable title into the field.

- Text
  Enter your Watermark Text into the Text box, and then choose the Font, Style, Size and Darkness.

- Bitmap
  Enter the file name and location of your bitmap image in the File box, or click Browse to search for the file. You can also set the scaling size of the image.

- Position
  Use this setting if you want to control the position of the watermark on the page.
Header-Footer Print
When this feature is enabled, it will print the date and time on your document from your computer’s system clock and the PC login user name or the text you entered. By clicking Settings, you can customize the information.

ID Print
If you select Login User Name, your PC login user name will print. If you select Custom and enter the text in the Custom edit box, the text you entered will print.

Toner Save Mode
You can conserve toner use with this feature. When you set Toner Save Mode to On, prints appears lighter. The default setting is Off.

Note
• We do not recommend Toner Save Mode for printing photo or Gray Scale images.
• Toner Save Mode is not available for HQ 1200 and 1200 dpi resolutions.
Administrator

Administrators have the authority to limit access to functions such as scaling and watermark.

- **Password**
  Enter the password into this box.

  **Note**
  Click **Set Password...** to change the password.

- **Copies Lock**
  Lock the copy pages selection to prevent multiple copy printing.

- **Multiple Page & Scaling Lock**
  Lock the scaling setting and multiple page setting.

- **Watermark Lock**
  Lock the current settings of the Watermark option to prevent changes being made.

- **Header-Footer Print Lock**
  Lock the current settings of the Header-Footer Print option to prevent changes being made.

**User Authentication (HL-5450DN only)**

If you are restricted from PC Print by the Secure Function Lock 2.0 feature, you need to set your ID and PIN in the **User Authentication Settings** dialog. Click **Settings** of the **User Authentication** and enter your ID and PIN. If your PC login name is registered to Secure Function Lock 2.0, you can check the **Use PC Login Name** box instead of entering your ID and PIN.

More information about Secure Function Lock 2.0 ➤➤ Network User's Guide

**Note**

- When you use the machine through a network you can see the information of your ID such as the status of restricted features and the number of remaining pages you are allowed to print by clicking the **Check Print Status**. The **Authentication result** dialog will appear.

- When you use the machine through a network, you can make the **Authentication result** dialog appear each time you print by checking the **Show print status before printing**.

- If you want to enter your ID and PIN each time you print, check the **Enter ID Name/PIN for each print job**.
Other Print Options

You can set the following in Printer Function:

- Use Reprint
- Sleep Time
- Macro
- Density Adjustment
- Error Message Printout
- Improve Print Output
- Skip Blank Page

Use Reprint

The machine keeps the print job sent to it in memory. You can reprint the last job without sending the data again from your computer. For more information about the Reprint function, see Control panel keys page 81.

Note

If you want to prevent other people from printing your data using the reprint function, uncheck the Use Reprint check box.
Sleep Time
When the machine does not receive data for a certain period of time, it enters sleep mode. In sleep mode, the machine acts as though it were turned off. When you choose Printer Default, the timeout setting will be reset to the specific time set at the factory; this can be altered in the driver. Intelligent Sleep Mode automatically adjusts to the most suitable timeout setting depending on the frequency of your machine use.
While the machine is in Sleep Mode, the Ready LED is dimmed, but the machine can still receive data. Receiving a print job will automatically wake up the machine to start printing.

Macro
You can save a page of a document as a macro to the machine’s memory. You can also execute the saved macro (you can use the saved macro as an overlay on any document). This will save time and increase print speed for often used information such as forms, company logos, letterhead formats or invoices.

Density Adjustment
Increase or decrease the print density.

Error Message Printout
You can choose whether the machine reports problems by printing an error page. Selections are Printer Default, On or Off.

Improve Print Output
This feature allows you to improve a print quality problem.

- Reduce Paper Curl
  If you choose this setting, the paper curl may be reduced.
  If you are printing only a few pages, you do not need to choose this setting. We recommend that you change the printer driver setting in Media Type to a thin setting.

  Note
  This operation will decrease the temperature of the machine’s fusing process.

- Improve Toner Fixing
  If you choose this setting, the toner fixing capabilities may be improved. If this selection does not provide enough improvement, change the printer driver setting in Media Type to a thick setting.

  Note
  This operation will increase the temperature of the machine’s fusing process.

- Reduce Ghosting
  If you are using the machine in a high humidity environment this setting may reduce ghosting on the paper. Do not use this setting if the ambient humidity is below 30% or ghosting may increase.

  Note
  This feature may not reduce ghosting for all types of paper. Before you buy a lot of paper, test a small quantity to make sure that the paper is suitable.
Skip Blank Page

If Skip Blank Page is checked, the printer driver automatically detects blank pages and excludes them from printing.

Note

This option does not work when you choose the following options:

- Use Watermark
- Header-Footer Print
- N in 1 and 1 in NxN Pages in Multiple Page
- Duplex (Manual), Booklet, Booklet (Manual) and Duplex with Binding Offset in Duplex / Booklet
Print Profiles tab

Print Profiles are editable presets designed to give you quick access to frequently used printing configurations.

- **Print profile list box** (1)
- **Delete Profile** (2)
- **Always show Print Profiles tab first** (3)
- **Add Profile** (4)
- **Current print profile view** (5)

1. Choose your profile from the print profile list box.
2. If you want to display the Print Profiles tab at the front of the window from the next time you print, check **Always show Print Profiles tab first**.
3. Click **OK** to apply your chosen profile.

Add Profile

The Add Profile dialog appears by clicking Add Profile. You can add 20 new profiles with your preferred settings.

1. Enter the desired title in **Name**.
2. Choose an icon you want to use from the Icon list, then click **OK**.
3. The current settings shown on the left side of the printer driver window will be saved.
Delete Profile

The Delete Profile dialog appears by clicking Delete Profile. You can delete any of the profiles you have added.

1. Choose your profile from the print profile list box.
2. Click Delete.
3. The selected profile will be deleted.
Note

To access the Accessories tab, see Accessing the printer driver settings page 25.

You can define the paper size for each paper tray and auto detect the serial number in the Accessories tab as follows.

- **Available Options / Installed Options (1)**
  You can manually add and remove the options that are installed on the machine. Tray settings will match the installed options.

- **Paper Source Setting (2)**
  This feature identifies the paper size defined for each paper tray.
  - **Paper Size**
    This setting allows you to define which paper size is used for each tray. Highlight the tray you want to define and then choose the paper size from the pull-down menu. Click **Update** to apply the setting to the tray. When using more than one paper size you must define the paper size for each tray so the paper is pulled from the correct tray.
  - **Default Source**
    This setting allows you to choose the default paper source that your document will be printed from. Choose the **Default Source** from the pull-down menu and click **Update** to save your setting. The **Auto Select** setting will automatically pull paper from any tray that has a defined paper size that matches your document.

- **Serial No. (3)**
  By clicking **Auto Detect** (4), the printer driver will probe the machine and display its serial number. If it fails to receive the information, the screen will display “---------------”.
- **Auto Detect (4)**

  The **Auto Detect** function finds the currently installed optional devices and shows the available settings in the printer driver. When you click **Auto Detect**, options that are installed on the machine will be listed in **Available Options** (1). You can manually add or remove the options by choosing an optional device you want to add or remove, and then clicking **Add** or **Remove**.

**Note**

The **Auto Detect** (4) function is not available under the following machine conditions:

- The machine power switch is off.
- The machine is in an error state.
- The machine is connected to the print server using a USB or parallel cable in a shared network environment.
- The cable is not connected to the machine correctly.
Support

Click **Support...** in the **Printing Preferences** dialog box.

- **Brother Solutions Center** (1)

  The Brother Solutions Center (http://solutions.brother.com/) is a Web site offering information about your Brother product including FAQs (Frequently Asked Questions), User's Guides, driver updates and tips for using your machine.
- **Genuine Supplies Website** (2)  
  You can visit our Web site for original/genuine Brother supplies by clicking this button.

- **Brother CreativeCenter** (3)  
  You can visit our Web site for free and easy online solutions for business and home users by clicking this button.

- **Print Settings** (4)  
  This button will print the pages that show how the internal settings of the machine have been configured.

- **Check Setting...** (5)  
  You can check the current driver settings.

- **About...** (6)  
  This button will show the list of the printer driver files and version information.

- **Print Fonts** (7)  
  This button will print the pages that show all the internal fonts of the machine.
Features in the BR-Script3 printer driver (PostScript® 3™ language emulation)

Note
The screens in this section are from Windows® XP. The screens on your PC may vary depending on your operating system.

Printing Preferences

Note
You can access the Printing Preferences dialog box by clicking Printing Preferences... in the General tab of the Brother HL-XXXX BR-Script3 Properties dialog box.

Layout tab
You can change the layout setting by choosing the settings for Orientation, Print on Both Sides (Duplex), Page Order and Pages Per Sheet.

- **Orientation**
  Orientation selects the position of how your document will be printed.
  *(Portrait, Landscape or Rotated Landscape)*

- **Print on Both Sides**
  If you want to do duplex printing, choose Flip on Short Edge or Flip on Long Edge.

- **Page Order**
  Specifies the order in which the pages of your document will be printed. Front to Back prints the document so that page 1 is on top of the stack. Back to Front prints the document so that page 1 is on the bottom of the stack.
• **Pages Per Sheet**

The **Pages Per Sheet** selection can reduce the image size of a page by allowing multiple pages to be printed on one sheet of paper. Also, you can print a document in the booklet style automatically when you choose **Booklet**.

**Paper/Quality tab**

Choose the **Paper Source**.

- **Automatically Select**
  This setting will automatically pull paper from any paper source that has a paper size defined in the printer driver that matches your document.

- **Auto Select**
  This setting will automatically pull paper from any paper source that has a paper size defined in the machine that matches your document.

- **Tray1**
  This setting will pull paper from Tray 1.

- **Tray2**
  This setting will pull paper from Tray 2. (Available if the optional tray is installed.)

- **MP Tray**
  This setting will pull paper from the MP Tray. The paper size needs to match the defined paper size.

1 Available if the optional tray is installed.
Advanced options

You can access the Advanced options by clicking the Advanced... button on the Layout tab or Paper/Quality tab.

Choose the Paper Size and Copy Count (1).

- **Paper Size**
  From the drop-down box choose the Paper Size you are using.

- **Copy Count**
  The copy selection sets the number of copies that will be printed.

Set the Scaling and TrueType Font settings (2).

- **Scaling**
  Specifies whether to reduce or enlarge documents, and by what percentage.

- **TrueType Font**
  Specifies the TrueType font options. Click Substitute with Device Font (the default) to use equivalent printer fonts for printing documents that contain TrueType fonts. This will permit faster printing; however, you might lose special characters not supported by the printer font. Click Download as Softfont to download TrueType fonts for printing instead of using printer fonts.
3 You can change settings by choosing a setting in the **Printer Features** list (3):

### Print Quality

You can choose the following print quality settings.

- 300 dpi
- 600 dpi
- HQ 1200
- 1200 dpi

### Media Type

You can use the following types of media in your machine. For the best print quality, select the type of media that you wish to use.

- Plain Paper
- Thin Paper
- Thick Paper
- Thicker Paper
- Bond Paper
- Envelopes
- Env. Thick
- Env. Thin
- Recycled Paper
- Label
Toner Save
You can conserve toner use with this feature. When you set Toner Save to On, print appears lighter. The default setting is Off.

Note
• We do not recommend Toner Save for printing Photo or Gray Scale images.
• Toner Save is not available for HQ 1200 and 1200 dpi resolutions.

Sleep Time [Min.]
When the machine does not receive data for a certain period of time, it enters sleep mode. In sleep mode, the machine acts as though it were turned off. When you choose Printer Default, the timeout setting will be reset to the specific time set at the factory; this can be altered in the driver. Intelligent Sleep Mode automatically adjusts to the most suitable timeout setting depending on the frequency of your machine use.

While the machine is in Sleep Mode, the Ready LED is dimmed, but the machine can still receive data. Receiving a print job will automatically wake up the machine to start printing.

Halftone Screen Lock
Stops other applications from modifying the Halftone settings. The default setting is On.

High Quality Image Printing
You can get high quality image printing. If you set High Quality Image Printing to On, the print speed will be slower.

Improve Print Output
This feature allows you to improve a print quality problem.
• Reduce Paper Curl
  If you choose this setting, the paper curl may be reduced. If you are printing only a few pages, you do not need to choose this setting. We recommend that you change the printer driver setting in Media Type to a thin setting.

Note
This operation will decrease the temperature of the machine’s fusing process.

• Improve Toner Fixing
  If you choose this setting, the toner fixing capabilities may be improved. If this selection does not provide enough improvement, change the printer driver setting in Media Type to a thick setting.

Note
This operation will increase the temperature of the machine’s fusing process.
**Ghost Reduction Setting**

If you are using the machine in a high humidity environment this setting may reduce ghosting on the paper. Do not use this setting if the ambient humidity is below 30% or ghosting may increase.

**Note**

This feature may not reduce ghosting for all types of paper. Before you buy a lot of paper, test a small quantity to make sure that the paper is suitable.

**Density Adjustment**

Increase or decrease the print density.

**Ports tab**

If you want to change the port where your machine is connected or the path to the network machine you are using, choose or add the port you want to use.
Uninstalling the printer driver

You can uninstall the printer driver that you have installed with the following steps.

Note

- This is not available if you originally installed the printer driver from the Windows Add a printer function.
- After uninstalling, we recommend that you restart your computer to remove files that were in use during the uninstall.

1. Click the Start button, point to All Programs, Brother, and then to your machine name.
2. Click Uninstall.
3. Follow the instructions on the screen.
Status Monitor

The Status Monitor utility is a configurable software tool for monitoring the status of one or more devices, allowing you to get immediate notification of error messages such as paper empty or paper jam.

You can check the device status at anytime by double-clicking the icon in the taskray or by choosing Status Monitor located in Start/All Programs/Brother/HL-XXXX on your PC.

(Windows® 7)

If you have set the Enable Status Monitor on startup during installation, you will find the button or Status Monitor icon on the taskbar.

To show the Status Monitor icon on your taskbar, click the button. The Status Monitor icon will appear in the small window. Then drag the icon to the taskbar.

There is also a link to the Troubleshooting and Brother Genuine Supplies Web site. Click Visit the Genuine Supplies website button for more information on Brother genuine supplies.

Note

• For more information about using the Status Monitor software, right-click the Status Monitor icon and choose Help.

• The automatic software update feature is active when the status monitor feature is active.
Monitoring the machine’s status

The Status Monitor icon will change color depending on the machine status.

- A green icon indicates the normal stand-by condition.

- A yellow icon indicates a warning.

- A red icon indicates a printing error has occurred.

There are two locations where you can display the Status Monitor on your PC - in the tasktray or on the desktop.
Macintosh

Features in the printer driver (Macintosh)

This machine supports Mac OS X 10.5.8 - 10.6.x - 10.7.x.

**Note**
The screens in this section are from Mac OS X 10.5. The screens on your Macintosh will vary depending on your operating system version.

Choosing page setup options

You can set the **Paper Size**, **Orientation** and **Scale**.

1. From an application such as TextEdit, click **File**, then **Page Setup**. Make sure **Brother HL-XXXX** (where XXXX is your model name.) is chosen in the **Format for** pop-up menu. You can change the settings for **Paper Size**, **Orientation** and **Scale**, then click **OK**.

![Page Setup Options](image-url)
2. From an application such as TextEdit, click **File**, then **Print** to start printing.

   (For Mac OS X 10.5.8 and 10.6.x)
   For more page setup options, click the disclosure triangle beside the Printer pop-up menu.

---

**Note**

You can save the current settings as a preset by choosing **Save As** from the **Presets** drop-down list.
(For Mac OS X 10.7.x)
For more page setup options, click the **Show Details** button.

**Note**
You can save the current settings as a preset by choosing **Save Current Settings as Preset**... from the **Presets** drop-down list.
Choosing printing options

To control special printing features, choose **Print Settings** from the Print dialog box. For the details of available options, see the following descriptions of each option.

Cover Page

You can choose the following cover page settings:

- **Print Cover Page**
  If you want to add a cover page to your document, use this function.

- **Cover Page Type**
  Choose a template for the cover page.

- **Billing Info**
  If you want to add the billing information to the cover page, enter text in the **Billing Info** box.
Layout

- **Pages per Sheet**
  The Pages per Sheet selection can reduce the image size of a page by allowing multiple pages to be printed on one sheet of paper.

- **Layout Direction**
  When you specify the pages per sheet, you can also specify the direction of the layout.

- **Border**
  If you want to add a border, use this function.

- **Two-Sided**
  See Duplex (2-sided) Printing page 62.

- **Reverse Page Orientation**
  Check Reverse Page Orientation to reverse the data from up to down.

- **Flip horizontally** (Mac OS X 10.6.x and 10.7.x)
  Check Flip horizontally to print as a reflection flipped left-to-right.
Print Settings

You can change settings by choosing a setting in the Print Settings list:

- **Media Type**
  You can change the media type to one of the following:
  - Plain Paper
  - Thin Paper
  - Thick Paper
  - Thicker Paper
  - Bond Paper
  - Envelopes
  - Env. Thick
  - Env. Thin
  - Recycled Paper
  - Label

- **Resolution**
  You can change the resolution as follows:
  - 300 dpi
  - 600 dpi
  - HQ 1200
  - 1200 dpi

- **Paper Source**
  You can choose Auto Select, Tray1, Tray2, MP Tray or Manual.

1 Available if the optional tray is installed.
**Advanced print settings**

When you click the triangle mark (►) beside **Advanced**, the advanced print settings appear.

- **Toner Save Mode**
  
  You can conserve toner use with this feature. When you set **Toner Save Mode** to On, print appears lighter. The default setting is Off.

  **Note**

  - We do not recommend **Toner Save Mode** for printing Photo or Gray Scale images.
  - **Toner Save Mode** is not available for HQ 1200 and 1200 dpi resolutions.

- **Graphics Quality**
  
  You can change the print quality as follows:
  
  - **Graphics**
    
    This is a graphics mode (contrast priority). Choose this setting for printing text and figures, such as business and presentation documents. You can represent sharp contrasts between shaded areas.
  
  - **Text**
    
    This is the best mode for printing text documents.
**Improve Print Output**
This feature allows you to improve a print quality problem.

- **Reduce Paper Curl**
  If you choose this setting, the paper curl may be reduced.
  If you are printing only a few pages, you do not need to choose this setting. We recommend that you change the printer driver setting in **Media Type** to a thin setting.

  **Note**
  This operation will decrease the temperature of the machine’s fusing process.

- **Improve Toner Fixing**
  If you choose this setting, the toner fixing capabilities may be improved. If this selection does not provide enough improvement, change the printer driver setting in **Media Type** to a thick setting.

  **Note**
  This operation will increase the temperature of the machine’s fusing process.

- **Reduce Ghosting**
  If you are using the machine in a high humidity environment this setting may reduce ghosting on the paper. Do not use this setting if the ambient humidity is below 30% or ghosting may increase.

  **Note**
  This feature may not reduce ghosting for all types of paper. Before you buy a lot of paper, test a small quantity to make sure that the paper is suitable.

**Density Adjustment**
Increase or decrease the print density.

**Sleep Time**
When the machine does not receive data for a certain period of time, it enters sleep mode. In sleep mode, the machine acts as though it were turned off. When you choose **Printer Default**, the timeout setting will be reset to the specific time set at the factory; this can be altered in the driver. If you want to change the Sleep Time, choose **Manual** and then enter the time in the text box on the driver.

While the machine is in Sleep Mode, the Ready LED is dimmed, but the machine can still receive data. Receiving a print job will automatically wake up the machine to start printing.

**Other Print Options**
- **Skip Blank Page**
  If **Skip Blank Page** is checked, the printer driver automatically detects blank pages and excludes them from printing.
Duplex (2-sided) Printing

- **Automatic Duplex Printing**
  Select Layout.
  Choose Long-edge binding or Short-edge binding in Two-Sided.

- **Manual Duplex Printing**
  Select Paper Handling.
  - Choose Even Only and Print. Reload the printed paper into the tray (blank side face down in Tray 1 or Tray 2, or blank side face up in MP tray). Choose Odd Only and Print.
Features in the BR-Script3 printer driver (PostScript® 3™ language emulation)

This section introduces the distinctive operations of the BR-Script3 printer driver. For the basic operations of the BR-Script3 printer driver, see Features in the printer driver (Macintosh) page 54 for Page Setup, Cover Page, Paper Source and Layout.

Note

If you want to setup the PS driver (BR-Script3 printer driver), please go to the Brother Solutions Center at http://solutions.brother.com/ and visit FAQ’s on your model page for instructions.

Choosing printing options

To control special printing features, choose Printer Features from the Print dialog box.
Printer Features
Feature Sets: General 1

- **Print Quality**
  
  You can change the resolution as follows:
  
  - 300 dpi
  - 600 dpi
  - HQ 1200
  - 1200 dpi

- **Media Type**
  
  You can change the media type to one of the following:
  
  - Plain Paper
  - Thin Paper
  - Thick Paper
  - Thicker Paper
  - Bond Paper
  - Envelopes
  - Env. Thick
  - Env. Thin
  - Recycled Paper
  - Label
  - **Hagaki**

1 Postcard with the size specified by Japan Post Service Co., LTD
Toner Save

You can conserve toner using this feature. When you check **Toner Save**, your prints appear lighter. The default setting is Off.

- **Note**
  - We do not recommend **Toner Save** for printing Photo or Gray Scale images.
  - **Toner Save** is not available for HQ 1200 and 1200 dpi resolutions.

Sleep Time [Min.]

When the machine does not receive data for a certain period of time, it enters sleep mode. In sleep mode, the machine acts as though it were turned off. When you choose **Printer Default**, the timeout setting will be reset to the specific time set at the factory; this can be altered in the driver. If you want to change the Sleep Time, choose 2, 10 or 30.

While the machine is in Sleep Mode, the Ready LED is dimmed, but the machine can still receive data. Receiving a print job will automatically wake up the machine to start printing.

Halftone Screen Lock

Stops other applications from modifying the Halftone settings. The Default setting is on.

High Quality Image Printing

You can increase the quality of image printing. If you set **High Quality Image Printing** to On, the print speed will be slower.
Feature Sets: General 2

- **Improve Print Output**
  
  This feature allows you to improve a print quality problem.
  
  - **Reduce Paper Curl**
    
    If you choose this setting, the paper curl may be reduced.
    
    If you are printing only a few pages, you do not need to choose this setting. We recommend that you change the printer driver setting in **Media Type** to a thin setting.
  
  **Note**
  
  This operation will decrease the temperature of the machine’s fusing process.

  - **Improve Toner Fixing**
    
    If you choose this setting, the toner fixing capabilities may be improved. If this selection does not provide enough improvement, change the printer driver setting in **Media Type** to a thick setting.

  **Note**
  
  This operation will increase the temperature of the machine’s fusing process.

- **Ghost Reduction Setting**
  
  If you are using the machine in a high humidity environment this setting may reduce ghosting on the paper. Do not use this setting if the ambient humidity is below 30% or ghosting may increase.

  **Note**
  
  This feature may not reduce ghosting for all types of paper. Before you buy a lot of paper, test a small quantity to make sure that the paper is suitable.

- **Density Adjustment**
  
  Increase or decrease the print density.
Removing the printer driver

1. Log in as an ‘Administrator’.

2. From the Apple menu, choose **System Preferences**. Click **Print & Fax** \(^1\), then choose the printer you want to remove and remove it by clicking the - button.

3. Click **OK** \(^2\).

\(^1\) **Print & Scan** for Mac OS X 10.7.x users

\(^2\) **Delete Printer** for Mac OS X 10.6.x and 10.7.x users
Status Monitor

The Status Monitor utility is a configurable software tool for monitoring the status of the machine, letting you see error messages such as paper empty or paper jam at pre-set update intervals. You can also access the web based management (HL-5450DN only). You can check the device status; follow these steps to Launch the Brother Status Monitor:

- For Mac OS X 10.5.8
  1. Run the System Preferences, select Print & Fax, then choose the machine.
  2. Click the Open Print Queue..., then click Utility. Status Monitor will start up.

- For Mac OS X 10.6.x
  1. Run the System Preferences, select Print & Fax, then choose the machine.
  2. Click the Open Print Queue..., then click Printer Setup. Select the Utility tab then click Open Printer Utility. Status Monitor will start up.

- For Mac OS X 10.7.x
  1. Run the System Preferences, select Print & Scan, then choose the machine.
  2. Click the Open Print Queue..., then click Printer Setup. Select the Utility tab then click Open Printer Utility. Status Monitor will start up.

Updating the machine’s status

If you want the latest machine status while the Status Monitor window is open, click the Refresh icon. You can set the interval at which the software will update the machine status information. Go to the menu bar, Brother Status Monitor and choose Preferences.
Hiding or showing the window

After starting the Status Monitor, you can hide or show the window. To hide the window, go to the menu bar, Brother Status Monitor and choose Hide Status Monitor. To show the window, click the Brother Status Monitor icon in the dock.

Quitting the window

Click Brother Status Monitor in the menu bar and then choose Quit Status Monitor from the pop-up menu.

Web Based Management (For HL-5450DN in network connection)

You can access the Web Based Management System by clicking the machine icon on the Status Monitor screen. A standard Web Browser can be used to manage your machine using HTTP (Hyper Text Transfer Protocol).

Software

Software for networks

For the information about network utility software ➤➤ Network User's Guide: Network features

Remote Printer Console (Windows® only)

Remote Printer Console is software to change many of the printer settings independently of your application. For example, you can change the settings for printer margin, sleep mode, character set and so on. These settings are then remembered and used by the machine. The application and printer driver settings will take priority over the Remote Printer Console settings.

How to use and install the Remote Printer Console software

To use the Remote Printer Console software, follow the steps below.

1. Put the supplied installation CD-ROM into your CD-ROM drive and close the opening screen when it appears.
2. Open Windows® Explorer and choose the CD-ROM drive.
3. Double-click the tools folder.
4. Double-click the RPC folder.
5. Refer to the RPC_User's_Guide.pdf for how to install and use the Remote Printer Console.
3 General Information

Control panel

LEDs (Light Emitting Diodes)

This section refers to six LEDs and two keys on the control panel.

1. **Back Cover LED**
   - The **Back Cover** LED indicates when the errors occur in the back of the machine or the duplex tray.

2. **Toner LED**
   - The **Toner** LED indicates that the Toner is low.

3. **Drum LED**
   - The **Drum** LED indicates that the Drum will need to be replaced soon.

4. **Paper LED**
   - The **Paper** LED indicates when the machine has errors relating to paper feeding.

5. **Error LED**
   - The **Error** LED indicates that the machine is in error state.
   - Also, the **Error** LED indicates the kind of error in combination with other LEDs.

6. **Ready LED**
   - The **Ready** LED will blink depending on the machine status.

7. **Cancel Key**
   - **1 Job Cancel / All Jobs Cancel**

8. **Go Key**
   - **Error recovery / Form feed / Reprint**

The LED indications shown in the table below are used in the illustrations in this chapter.

<table>
<thead>
<tr>
<th>LED</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="LED off" /></td>
<td>LED is off.</td>
</tr>
<tr>
<td><img src="image" alt="LED on" /></td>
<td>LED is on.</td>
</tr>
<tr>
<td><img src="image" alt="LED dimmed" /></td>
<td>LED is dimmed.</td>
</tr>
<tr>
<td><img src="image" alt="LED blinking" /></td>
<td>LED is blinking.</td>
</tr>
<tr>
<td>LEDs</td>
<td>Machine Status</td>
</tr>
<tr>
<td>------</td>
<td>----------------</td>
</tr>
</tbody>
</table>
| ![Back Cover LED] | **Sleep**  
The machine is in Sleep Mode (Power Save mode). While the machine is in Sleep Mode, the *Ready* LED is dimmed, but the machine can still receive data. Receiving a print job will automatically wake up the machine to start printing.  
*For more information, see Sleep Time >> page 86.* |
| ![Toner LED] | **Deep Sleep**  
The machine is in Deep Sleep Mode, reducing more power consumption than Sleep mode. While the machine is in Deep Sleep Mode, the *Ready* LED is dimmed, but the machine can still receive data. Receiving a print job will automatically wake up the machine to start printing.  
*For more information, see Deep Sleep mode >> page 86.* |
| ![Drum LED] | **Ready**  
The machine is ready to print.  
**Printing**  
The machine is printing. |
| ![Paper LED] | **Please Wait**  
The machine is warming up.  
**Cooling Down**  
The machine is cooling down. Wait for a few seconds until the inside of the machine has cooled down.  
**Receiving Data**  
The machine is either receiving data from the computer or processing data in the memory.  
**Data Remaining**  
There is remaining print data in the machine’s memory. If the *Ready* LED is blinking for a long time and nothing has printed, press Go to print the remaining data in the memory. |
General Information

<table>
<thead>
<tr>
<th>LEDs</th>
<th>Machine Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Toner Low</strong></td>
</tr>
<tr>
<td>Back Cover</td>
<td>The toner cartridge will need to be replaced soon. Buy a new toner cartridge and have it ready for when <strong>Replace Toner</strong> is indicated.</td>
</tr>
<tr>
<td>Toner</td>
<td>The Toner LED will turn on for 2 seconds and off for 3 seconds.</td>
</tr>
<tr>
<td>Drum</td>
<td><strong>Replace Toner</strong></td>
</tr>
<tr>
<td>Paper</td>
<td>Replace the toner cartridge with a new one.</td>
</tr>
<tr>
<td>Error</td>
<td>See <em>Replacing the toner cartridge</em> page 94.</td>
</tr>
<tr>
<td>Ready</td>
<td><strong>No Toner</strong></td>
</tr>
<tr>
<td></td>
<td>Remove the drum unit and toner cartridge assembly, remove the toner cartridge from the drum unit, and re-install the toner cartridge back into the drum unit again. Re-install the drum unit and toner cartridge assembly back in the machine. If the problem continues, replace the toner cartridge.</td>
</tr>
<tr>
<td></td>
<td>See <em>Replacing the toner cartridge</em> page 96.</td>
</tr>
<tr>
<td></td>
<td><strong>Cartridge Error</strong></td>
</tr>
<tr>
<td></td>
<td>The drum unit and toner cartridge assembly is not installed correctly. Take the drum unit and toner cartridge assembly out of the machine and put it back in.</td>
</tr>
<tr>
<td></td>
<td><strong>Drum End Soon</strong></td>
</tr>
<tr>
<td></td>
<td>The drum unit will need to be replaced soon. We recommend that you get a new drum unit to replace the current one.</td>
</tr>
<tr>
<td></td>
<td>See <em>Replacing the drum unit</em> page 104.</td>
</tr>
<tr>
<td></td>
<td>The Drum LED will turn on for 2 seconds and off for 3 seconds.</td>
</tr>
</tbody>
</table>
### General Information

#### Replace Drum
Replace the drum with a new one.
See *Replacing the drum unit* page 104.

#### Drum Error
The corona wire needs to be cleaned. See *Cleaning the corona wire* page 111.
If the toner cartridge is placed in the machine without the drum unit, put the toner cartridge into the drum unit, and then reinstall the drum unit and toner cartridge assembly in the machine.

#### Drum Stop
Replace the drum with a new one.
See *Replacing the drum unit* page 104.

<table>
<thead>
<tr>
<th>LEDs</th>
<th>Machine Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Back Cover" /></td>
<td><strong>Replace Drum</strong></td>
</tr>
<tr>
<td><img src="image" alt="Toner" /></td>
<td><strong>Drum Error</strong></td>
</tr>
<tr>
<td><img src="image" alt="Drum" /></td>
<td><strong>Drum Stop</strong></td>
</tr>
<tr>
<td><img src="image" alt="Paper" /></td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Error" /></td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Ready" /></td>
<td></td>
</tr>
</tbody>
</table>
### General Information

<table>
<thead>
<tr>
<th>LEDs</th>
<th>Machine Status</th>
</tr>
</thead>
</table>
| ![Back Cover LED](image) | **Cover is Open**  
Close the fuser cover located behind the back cover of the machine.  
Make sure paper is not jammed inside the back of the machine, and then close the fuser cover and press **Go**. |
| ![Toner LED](image) | **No Tray**  
The machine cannot detect the standard paper tray. Re-install the standard paper tray, or ensure it is installed correctly.  
**Jam MP Tray / Jam Tray 1 / Jam Tray 2 / Jam Inside**  
Clear the paper jam.  
See **Jam MP Tray / Jam Tray 1 / Jam Tray 2 / Jam Inside** page 126.  
If the machine does not start printing, press **Go**.  
If the toner cartridge is placed in the machine without the drum unit, put the toner cartridge into the drum unit, and then reinstall the drum unit and toner cartridge assembly in the machine. |
| ![Drum LED](image) | **Size Error DX**  
The paper size defined in the printer driver is not available for automatic duplex printing.  
Press **Cancel**. Choose a paper size which is supported by the duplex tray.  
The paper in the tray is not correct size and is not available for automatic duplex printing. Load the correct size of paper in the tray.  
The paper size you can use for automatic duplex printing is Letter, Legal or Folio. |
| ![Paper LED](image) | **Size Mismatch**  
Put the same size paper in the paper tray that is selected in the printer driver, and then press **Go**, or select the size of paper that you loaded in the paper tray. |
| ![Error LED](image) | **No Paper**  
Put paper in the paper tray you are using.  
See **Loading paper** page 8. |
| ![Ready LED](image) | **Manual Feed**  
**Manual** was selected as the paper source when there was no paper in the MP tray. Place paper in the MP tray. If the machine is in Pause mode, press **Go**. |
### General Information

#### LEDs

<table>
<thead>
<tr>
<th>LEDs</th>
<th>Machine Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Back Cover</td>
<td><strong>Cover is Open</strong>&lt;br&gt;Close the front cover of the machine.</td>
</tr>
<tr>
<td>Toner</td>
<td><strong>Log Access Error</strong>&lt;br&gt;The machine could not access the print log file in the server. Contact your administrator to check the Store Print Log to Network settings.</td>
</tr>
<tr>
<td>Drum</td>
<td><strong>Out of Memory</strong>&lt;br&gt;Reduce the complexity of your document or reduce the print resolution.&lt;br&gt;Add more memory (HL-5450DN only). <em>(See Installing extra memory ➤ page 91.)</em></td>
</tr>
<tr>
<td>Paper</td>
<td><strong>Access Denied</strong>&lt;br&gt;Printing is restricted by Secure Function Lock 2.0.&lt;br&gt;Contact your administrator to check your Secure Function Lock Settings.</td>
</tr>
<tr>
<td>Error</td>
<td><strong>Limit Exceeded</strong>&lt;br&gt;The printing limit set by Secure Function Lock 2.0 was reached.&lt;br&gt;Contact your administrator to check your Secure Function Lock Settings.</td>
</tr>
<tr>
<td>Ready</td>
<td><strong>DIMM Error</strong>&lt;br&gt;The DIMM (Dual In-Line Memory Module) is not installed correctly. Or the DIMM is broken or does not meet the required specifications.&lt;br&gt;Turn off the machine and remove the DIMM.&lt;br&gt;(See Installing extra memory ➤ page 91.)&lt;br&gt;Confirm that the DIMM meets the required specifications.&lt;br&gt;(For details, see SO-DIMM types ➤ page 90.)&lt;br&gt;Re-install the DIMM correctly. Wait a few seconds, and then turn the machine on again.&lt;br&gt;If this indication continues, replace the DIMM with a new one.&lt;br&gt;(See Installing extra memory ➤ page 91.)</td>
</tr>
</tbody>
</table>
### General Information

#### LEDs

<table>
<thead>
<tr>
<th>LEDs</th>
<th>Machine Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Back Cover</td>
<td><strong>Main PCB Failure</strong></td>
</tr>
<tr>
<td>Toner</td>
<td>Turn off the power switch, and then turn it back on and try to print again. If the error occurs again, call your dealer or Brother Customer Service.</td>
</tr>
<tr>
<td>Drum</td>
<td></td>
</tr>
<tr>
<td>Paper</td>
<td></td>
</tr>
<tr>
<td>Error</td>
<td></td>
</tr>
<tr>
<td>Ready</td>
<td></td>
</tr>
</tbody>
</table>

| Back Cover | **Cover is Open**                                   |
| Toner      | Close the fuser cover located behind the back cover of the machine. |
| Drum       |                                                     |
| Paper      |                                                     |
| Error      |                                                     |
| Ready      |                                                     |

| Back Cover | **Jam Rear / Jam Duplex**                            |
| Toner      | Clear the paper jam.                                |
| Drum       | See *Jam Rear / Jam Duplex* page 131.               |
| Paper      | If the machine does not start printing, press Go.  |
| Error      |                                                     |
| Ready      |                                                     |
### General Information

<table>
<thead>
<tr>
<th>LEDs</th>
<th>Machine Status</th>
</tr>
</thead>
</table>
| 📡 〇 Back Cover | **Cancel Printing / Cancel All Jobs**  
The machine is canceling the job. |
| 📡 〇 Toner |
| 📡 〇 Drum |
| 📡 〇 Paper |
| ⚠️ 〇 Error |
| ✨ 〇 Ready |
Service call indications

If there is an error that cannot be cleared by the user, the machine will show that a service call is needed by lighting up all the LEDs as shown below.

If you see the service call indication shown above, turn off the power switch, and then turn it back on and try to print again.

If the error is not cleared after turning the power switch off and then back on, press Go and Cancel together, the LEDs will light up as shown in the following table to identify the error.

LED error indication

<table>
<thead>
<tr>
<th>LEDs</th>
<th>Main PCB failure</th>
<th>Fuser unit failure</th>
<th>Laser unit failure</th>
<th>Main motor failure</th>
<th>High voltage failure</th>
<th>FAN failure</th>
<th>Zero Cross error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Back Cover</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Toner</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Drum</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Paper</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Error</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Ready</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

1 If this error occurs, turn off the machine's power switch, wait a few seconds, and then turn it on again. Leave the machine for approx. 15 minutes with the power on. If the error occurs again, call your dealer or Brother Customer Service.
For example, the LED indication below shows a fuser unit failure.

Make a note of the indication, referring to LED error indication page 79, and report the error status to your dealer or Brother Customer Service.

Note
Make sure that the front cover is completely closed before you report a service call.
Control panel keys

The control panel keys have the following functions:

- **Cancel printing**
  
  Cancel the current job being printed: If you press **Cancel** while printing, the machine will immediately stop printing and will then eject the paper. The **Ready** and **Error** LEDs will blink as the job is being canceled.

  Cancel all the received jobs: To delete all jobs, press and hold **Cancel** for about 4 seconds until all the LEDs light up and then release it. The **Ready** and **Error** LEDs will blink as the job(s) is being canceled.

- **Error recovery**

  If there is an error, the machine will recover automatically from some errors. If an error is not automatically cleared, press **Go** to clear the error, and then continue to use the machine.

- **Form feed**

  If the **Ready** LED blinks for a long time, press **Go**. The machine will print any data that is left in the machine’s memory.

- **Reprint**

  To reprint the last document, press **Go** for about 4 seconds until all the LEDs light up and then release it. Within 2 seconds press **Go** the number of times you want to reprint. If you don’t press **Go** within 2 seconds, a single copy will be printed.

  If you print with the Windows® printer driver we have supplied with the machine, the settings for Use Reprint in the printer driver will take priority over the settings made on the control panel. (For more information, see *Use Reprint* ➔ page 36.)
Print a test page

You can use Go or the printer driver to print a test page.

Using the Go key

1. Turn off the machine’s power switch.
2. Make sure that the front cover is closed and the power cord is plugged in.
3. Hold down Go as you turn on the power switch. Keep Go pressed down until all the LEDs light up and then the Ready LED turns off.
4. Release Go. Make sure that all the LEDs turn off.
5. Press Go again. The machine will print a test page.

Using the printer driver

If you are using the Windows® printer driver, click the Print Test Page button in the General tab of the printer driver.
Print a Printer Settings page

You can print the current settings using the control panel button or printer driver.

Using the Go key

1. Make sure that the front cover is closed and the power cord is plugged in.
2. Turn on the machine’s power switch and wait until the machine is in Ready mode.
3. Press Go three times. The machine will print the current printer settings page.

Using the printer driver

If you are using the Windows® printer driver, you can print the current printer settings page by clicking the Print Settings button in the Support dialog.
Print Fonts

You can print a list of the internal fonts using the control panel button or printer driver.

Using the Go key

1. Turn off the machine’s power switch.
2. Make sure that the front cover is closed and the power cord is plugged in.
3. Hold down Go as you turn on the power switch. Keep Go pressed down until all the LEDs light up and then the Ready LED turns off.
4. Release Go. Make sure that all the LEDs turn off.
5. Press Go twice. The machine will print a list of the internal fonts.

Using the printer driver

If you are using the Brother’s Windows® printer driver, you can print a list of the internal fonts by clicking the Print Fonts button in the Support dialog.
Security features

Secure Function Lock 2.0 (HL-5450DN only)

Secure Function Lock lets you restrict Public access to the Print function ¹.

This feature also prevents users from changing the Default settings of the machine by limiting access to the Menu settings. Before using the security features you must first enter an administrator password. Access to restricted operations can be enabled by creating a restricted user. Restricted users must enter a user password to use the machine. Secure Function Lock can be set by using Web Based Management and BRAdmin Professional 3 (Windows® only). (Network User's Guide)

¹ Print function includes print jobs via Google Cloud Print and Brother iPrint&Scan.

Note

• Make a careful note of your password. If you forget it, you will have to reset the password stored in the machine. For information about how to reset the password call Brother Customer Service.

• Only administrators can set limitations and make changes for each user.
Ecology features

**Toner Save**

You can save toner using this feature. When you set Toner Save to on, prints appear lighter. The default setting is off.

You can change the toner save mode setting on the printer driver.

To change the toner save mode setting, see the following:

- *Advanced tab ➤ page 31 (Windows® printer driver)*
- *Advanced options ➤ page 47 (BR-Script3 printer driver for Windows®)*
- *Print Settings ➤ page 59 (Macintosh printer driver)*
- *Printer Features ➤ page 64 (BR-Script3 printer driver for Macintosh)*

**Sleep Time**

The Sleep mode setting can reduce power consumption. When the machine is in Sleep Mode (Power Save mode) it acts as though it were turned off. The machine will wake up and start printing when it receives a print job.

You can choose how long the machine must be idle before it goes into Sleep mode. When the machine receives a print file or document, the timer will be reset. The default setting is 3 minutes. While the machine is in Sleep mode the *Ready* LED glows dimly.

You can change the sleep mode time setting on the printer driver.

To change the sleep mode time setting, see the following:

- *Advanced tab ➤ page 31 (Windows® printer driver)*
- *Advanced options ➤ page 47 (BR-Script3 printer driver for Windows®)*
- *Print Settings ➤ page 59 (Macintosh printer driver)*
- *Printer Features ➤ page 64 (BR-Script3 printer driver for Macintosh)*

**Deep Sleep mode**

If the machine is in Sleep mode and does not receive any jobs for a certain length of time, the machine will go into Deep Sleep mode automatically and the *Ready* LED glows dimly. Deep Sleep mode uses less power than Sleep Mode. The machine will wake up, when the machine receives a print job.
Quiet mode feature

The Quiet mode setting can reduce printing noise. When Quiet Mode is turned on, the print speed becomes slower. The default setting is Off.

Turning Quiet mode on/off

1. Make sure that the front cover is closed and the power cord is plugged in.
2. Turn on the machine and wait until the machine is in the Ready mode.
3. Press Go nine times to change between On and Off.
   All the LEDs blink twice when you turn on the Quiet mode.
   All the LEDs blink once when you turn off the Quiet mode.

Note

You can also change the Quiet mode setting through the Remote Printer Console. For details of the Remote Printer Console, see Remote Printer Console (Windows® only) page 70.
This machine has the following optional accessories. You can increase the capabilities of the machine with these items.

<table>
<thead>
<tr>
<th>Lower tray</th>
<th>SO-DIMM memory ¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>LT-5400</td>
<td></td>
</tr>
</tbody>
</table>

See Lower tray (LT-5400) >>> page 89.

See SO-DIMM (HL-5450DN only) >>> page 90.

¹ The optional memory is available for HL-5450DN.
**Lower tray (LT-5400)**

One optional lower tray (Tray 2) can be installed on HL-5440D and HL-5450DN, and the lower tray can hold up to 500 sheets of 20 lb (80 g/m²) paper. When the optional lower tray is installed, the machine can hold up to 800 sheets of plain paper. If you want to buy the optional lower tray unit, call the dealer you bought the machine from or Brother Customer Service.

For setup, see the User’s Guide that we have supplied with the lower tray unit.

**WARNING**

If you use a Lower Tray, DO NOT carry the machine with the Lower Tray as you may be injured or cause damage to the machine because it is not attached to the Lower Tray.
SO-DIMM (HL-5450DN only)

The machine has 64 MB of standard memory and one slot for optional memory expansion. You can increase the memory up to a maximum of 320 MB by installing one SO-DIMM (Small Outline Dual In-line Memory Module).

SO-DIMM types

For information regarding memory for your Brother machine please visit us at: http://www.brother-usa.com/support/memory/

In general, the SO-DIMM must have the following specifications:

- Type: 144-pin and 16-bit output
- CAS latency: 4
- Clock frequency: 267 MHz (533 Mb/S/Pin) or more
- Capacity: 256 MB
- Height: 30.0 mm (1.18 in.)
- DRAM type: DDR2 SDRAM

**Note**

- There might be some SO-DIMMs that will not work with the machine.
- For more information, call the dealer you bought the machine from or Brother Customer Service.
Installing extra memory

1. Turn off the machine’s power switch.

2. Disconnect the interface cables from the machine, and then unplug the power cord from the AC power outlet.

- **Note**
  Always turn off the machine power switch before installing or removing the SO-DIMM.

3. Remove the plastic (1) and then the metal (2) SO-DIMM covers.

4. Unpack the SO-DIMM and hold it by its edges.

- **Important**
  To prevent damage to the machine from static electricity, DO NOT touch the memory chips or the board surface.
5 Hold the SO-DIMM by the edges and align the notches in the SO-DIMM with the protrusions in the slot. Insert the SO-DIMM diagonally (1), then tilt it toward the interface board until it clicks into place (2).

6 Put the metal (2) and then the plastic (1) SO-DIMM covers back on.

7 Plug the machine’s power cord back into the AC power outlet first, and then connect the interface cables.

8 Turn on the machine’s power switch.

Note
To make sure that you have installed the SO-DIMM properly, you can print the printer settings page that shows the current memory size. (See Print a Printer Settings page page 83.)
Replacing consumable items

You will need to replace the consumable items when the machine indicates that the life of the consumable is over. You can replace the following consumable items by yourself:

Note

The drum unit and toner cartridge are two separate parts.

<table>
<thead>
<tr>
<th>Toner cartridge</th>
<th>Drum unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>See Replacing the toner cartridge page 94.</td>
<td>See Replacing the drum unit page 104.</td>
</tr>
<tr>
<td>Order No. TN-720, TN-750</td>
<td>Order No. DR-720</td>
</tr>
</tbody>
</table>

Note

- Go to http://www.brother.com/original/index.html for instructions on how to return the used toner cartridge to the brother collection program. If you choose not to return your used toner cartridge, please discard the used toner cartridge according to local regulations, keeping it separate from domestic waste. If you have questions, call your local waste disposal office.
- We recommend placing used consumable items on a piece of paper to prevent accidentally spilling or scattering the material inside.
Repeating the Toner Cartridge

Order No. TN-720 1, TN-750 2

The Standard toner cartridge can print approximately 3,000 pages 3. The High Yield toner cartridge can print approximately 8,000 pages 3. Actual page count will vary depending on your average type of document. The toner cartridge that comes supplied with the machine will need to be replaced after approximately 3,000 pages 3.

1 Standard toner cartridge
2 High yield toner cartridge
3 Approx. cartridge yield is declared in accordance with ISO/IEC 19752.

Note

- It is a good idea to keep a new toner cartridge ready for use when you see the Toner Low warning.
- To ensure high quality printing, we recommend that you use only Genuine Brother Brand toner cartridges. When you want to buy toner cartridges, please call Brother Customer Service.
- If you print graphics, bold text, charts, Web pages with borders, or other types of printouts that consist of more than simple text, the amount of toner used will increase.
- We recommend that you clean the machine when you replace the toner cartridge. See Cleaning and Checking the machine page 109.
- If you change the print density setting for lighter or darker printing, the amount of toner used will change.
- Wait to unpack the toner cartridge until immediately before you put it into the machine.

Toner Low

The Toner LED will turn on for 2 seconds and off for 3 seconds, and then repeats this pattern.

If the LEDs show this indication, the toner is low. Buy a new toner cartridge and have it ready before you get a Replace Toner indication.
Routine Maintenance

Note

• The **Toner** LED will blink continuously if the toner is low.

• If the printout is faint, hold the drum unit and toner cartridge assembly level with both hands and gently shake it from side to side several times to spread the toner evenly inside the cartridge.

Replace Toner

The machine will stop printing until you replace the toner cartridge.

A new genuine Brother toner cartridge will reset the Replace Toner mode.
Replacing the toner cartridge

1. Make sure that the machine is turned on. Leave the machine for at least 10 minutes to cool down.
2. Press the front cover release button and then open the front cover.
3. Take out the drum unit and toner cartridge assembly.

**WARNING**

After you have just used the machine, some internal parts of the machine will be extremely hot. Wait for the machine to cool down before you touch the internal parts of the machine.
Important

- We recommend that you place the drum unit and toner cartridge assembly on a clean, flat surface with a piece of disposable paper underneath it in case you accidentally spill or scatter toner.
- To prevent damage to the machine from static electricity, DO NOT touch the electrodes shown in the illustration.

4 Push down the green lock lever and take the toner cartridge out of the drum unit.

WARNING

- DO NOT put a toner cartridge or a toner cartridge and drum unit assembly into a fire. It could explode, resulting in injuries.
- DO NOT use flammable substances, any type of spray, or an organic solvent/liquid containing alcohol or ammonia to clean the inside or outside of the machine. Doing so could cause a fire or electrical shock. Instead, use only a dry, lint-free cloth.

(➢➢ Product Safety Guide: To use the product safely)
Important

- Handle the toner cartridge carefully. If toner scatters on your hands or clothes, immediately wipe or wash it off with cold water.
- To avoid print quality problems, DO NOT touch the shaded parts shown in the illustrations.

Note

- We recommend that you place the toner cartridge on a clean, flat, level, stable surface with a sheet of disposable paper or cloth underneath it in case you accidentally spill or scatter toner.

- Be sure to seal up the used toner cartridge tightly in a suitable bag so that toner powder does not spill out of the cartridge.
- Go to http://www.brother.com/original/index.html for instructions on how to return your used consumable items to the Brother collection program. If you choose not to return your used consumable, please discard the used consumable according to local regulations, keeping it separate from domestic waste. If you have questions, call your local waste disposal office.

Unpack the new toner cartridge. Hold the cartridge level with both hands and gently shake it from side to side several times to spread the toner evenly inside the cartridge.
Important

• Wait to unpack the new toner cartridge until immediately before you put it in the machine. If a toner cartridge is left unpacked for a long time, the toner life will be shortened.

• If an unpacked drum unit is put in direct sunlight or room light, the unit may be damaged.

• Brother strongly recommends that you DO NOT refill the toner cartridge provided with your machine. We also strongly recommend that you continue to use only Genuine Brother Brand replacement toner cartridges. Use or attempted use of third party toner and/or cartridges in the Brother machine may cause damage to the machine and/or may result in unsatisfactory print quality. In addition, use of third party toner and/or cartridges may trigger incorrect status messages, cause the printer to stop prematurely or otherwise malfunction. Our limited warranty coverage does not apply to any problem that is caused by the use of third party toner and/or cartridges. To protect your investment and obtain premium performance from the Brother machine, we strongly recommend the use of Genuine Brother Supplies.

Pull off the protective cover.

Important

Put the toner cartridge in the drum unit immediately after you have removed the protective cover. To prevent any degradation to the print quality, DO NOT touch the shaded parts shown in the illustrations.
7. Put the new toner cartridge firmly into the drum unit until you hear it lock into place. If you put it in properly, the green lock lever on the drum unit will lift automatically.

Note
Make sure that you put in the toner cartridge properly or it may separate from the drum unit.

8. Clean the corona wire inside the drum unit by gently sliding the green tab from left to right and right to left several times.

Note
Be sure to return the tab to the home position (▲) (1). If you do not, printed pages may have a vertical stripe.
9. Put the drum unit and toner cartridge assembly back into the machine.

10. Close the front cover of the machine.

**Note**
DO NOT turn off the machine’s power switch or open the front cover until the Ready LED lights up.
Replacing the drum unit

Order No. DR-720

A new drum unit can print approximately 30,000 Letter or A4 size single-sided pages.

Note

- There are many factors that determine the actual drum life, such as the temperature, humidity, type of paper, type of toner used and so on. Under ideal conditions, the average drum life is estimated at approximately 30,000 pages. The actual number of pages that your drum will print may be significantly less than this estimate. Because we have no control over the many factors that determine the actual drum life, we cannot guarantee a minimum number of pages that will be printed by your drum.

- For best performance, use only genuine Brother toner. The machine should be used only in a clean, dust-free environment with adequate ventilation.

- Printing with a non-Brother drum unit may reduce not only the print quality but also the quality and life of the machine itself. Warranty coverage does not apply to problems caused by the use of a non-Brother drum unit.

Drum Error

The corona wire has become dirty. Clean the corona wire in the drum unit. (See Cleaning the corona wire page 111.)

If you cleaned the corona wire and Drum Error was not cleared then the drum unit is at the end of its life. Replace the drum unit with a new one.
Drum End Soon

The drum unit is nearing the end of its rated life and will require replacement. We recommend you keep a genuine Brother drum unit ready for installation.

Clean the corona wire in the drum unit. If you don’t, printed pages may have a vertical stripe or Drum Error may occur. (See Cleaning the corona wire page 111.)

Replace Drum

The drum unit has exceeded its rated life. Please replace the drum unit with a new one. We recommend a genuine Brother drum unit be installed at this time.

After replacement, reset the drum counter by following the instructions included with the new drum unit.
Drum Stop

We cannot guarantee the print quality. Please replace the drum unit with a new one. We recommend a genuine Brother drum unit be installed at this time.

After replacement, reset the drum counter by following the instructions included with the new drum unit.

Replacing the drum unit

Important

• While removing the drum unit, handle it carefully because it may contain toner. If toner scatters on your hands or clothes, immediately wipe or wash it off with cold water.

• Every time you replace the drum unit, clean the inside of the machine. (See Cleaning and Checking the machine page 109.)

When you replace the drum unit with a new one, you need to reset the drum counter by completing the following steps:

1. Make sure that the machine is turned on. Leave the machine for at least 10 minutes to cool down.

2. Press the front cover release button and then open the front cover.
3 Take out the drum unit and toner cartridge assembly.

**WARNING**

After you have just used the machine, some internal parts of the machine will be extremely hot. Wait for the machine to cool down before you touch the internal parts of the machine.

**Important**

- We recommend that you place the drum unit and toner cartridge assembly on a clean, flat surface with a piece of disposable paper underneath it in case you accidentally spill or scatter toner.
- To prevent damage to the machine from static electricity, DO NOT touch the electrodes shown in the illustration.
4. Push down the green lock lever and take the toner cartridge out of the drum unit.

**WARNING**

- **⚠️ ⚠️** DO NOT put a toner cartridge or a toner cartridge and drum unit assembly into a fire. It could explode, resulting in injuries.
- **⚠️ ⚠️** DO NOT use flammable substances, any type of spray, or an organic solvent/liquid containing alcohol or ammonia to clean the inside or outside of the machine. Doing so could cause a fire or electrical shock. Instead, use only a dry, lint-free cloth.

>(PRODUCT SAFETY GUIDE: To use the product safely)

**Important**

- Handle the toner cartridge carefully. If toner scatters on your hands or clothes, immediately wipe or wash it off with cold water.
- To avoid print quality problems, DO NOT touch the shaded parts shown in the illustrations.

*Toner cartridge*  
*Drum unit*

- We recommend that you place the toner cartridge on a clean, flat, level, stable surface with a sheet of disposable paper or cloth underneath it in case you accidentally spill or scatter toner.
Note
• Be sure to seal up the used drum unit tightly in a suitable bag so that toner powder does not spill out of the drum unit.
• Go to http://www.brother.com/original/index.html for instructions on how to return your used consumable items to the Brother collection program. If you choose not to return your used consumable, please discard the used consumable according to local regulations, keeping it separate from domestic waste. If you have questions, call your local waste disposal office.

5 Unpack the new drum unit.

6 Put the toner cartridge firmly into the new drum unit until you hear it lock into place. If you put the cartridge in properly, the green lock lever on the drum unit will lift automatically.

Note
Make sure that you put in the toner cartridge properly or it may separate from the drum unit.

7 Put the drum unit and toner cartridge assembly back into the machine.
When you replace the drum unit with a new one, you need to reset the drum counter. To do this, press and hold down the Go for about 4 seconds until all the LEDs light up. Once all six LEDs are lit, release Go.

Important
Do not reset the drum counter when you only replace the toner cartridge.

Close the front cover of the machine.

Make sure that the Drum LED is now off.
Cleaning and Checking the machine

Clean the outside and inside of the machine regularly with a dry, lint-free cloth. When you replace the toner cartridge or the drum unit, make sure that you clean the inside of the machine. If printed pages are stained with toner, clean the inside of the machine with a dry, lint-free cloth.

**WARNING**

- **DO NOT** put a toner cartridge or a toner cartridge and drum unit assembly into a fire. It could explode, resulting in injuries.
- **DO NOT** use flammable substances, any type of spray, or an organic solvent/liquid containing alcohol or ammonia to clean the inside or outside of the machine. Doing so could cause a fire or electrical shock. Instead, use only a dry, lint-free cloth.

(>>> Product Safety Guide: To use the product safely)

---

**Important**

Use neutral detergents. Cleaning with volatile liquids such as thinner or benzine will damage the surface of the machine.

---

Cleaning the outside of the machine

1. Turn off the machine’s power switch.
2. Disconnect the interface cables from the machine, and then unplug the power cord from the AC power outlet.
3. Wipe the outside of the machine with a dry, lint-free cloth to remove dust.
**Routine Maintenance**

4. Pull the paper tray completely out of the machine.

5. If paper is loaded in the paper tray, remove it.

6. Remove anything that is stuck inside the paper tray.

7. Wipe the inside and the outside of the paper tray with a dry, lint-free cloth to remove dust.

8. Re-load the paper and put the paper tray firmly back in the machine.

9. Plug the machine’s power cord back into the AC power outlet first, and then connect the interface cables.

10. Turn on the machine’s power switch.
Cleaning the corona wire

If you have print quality problems, clean the corona wire as follows:

1. Leave the machine turned on for 10 minutes for the internal fan to cool the extremely hot parts inside the machine.

2. Press the front cover release button and then open the front cover.

3. Take out the drum unit and toner cartridge assembly.

⚠️ WARNING

After you have just used the machine, some internal parts of the machine will be extremely hot. Wait for the machine to cool down before you touch the internal parts of the machine.
Important

- We recommend that you put the drum unit and toner cartridge assembly on a piece of disposable paper or cloth in case you accidentally spill or scatter toner.
- Handle the drum unit and toner cartridge assembly carefully. If toner scatters on your hands or clothes, immediately wipe or wash it off with cold water.
- To prevent damage to the machine from static electricity, DO NOT touch the electrodes shown in the illustration.

1. Clean the corona wire inside the drum unit by gently sliding the green tab from left to right and right to left several times.

Note

Be sure to return the tab to the home position (▲) (1). If you do not, printed pages may have a vertical stripe.

5. Put the drum unit and toner cartridge assembly back into the machine.

6. Close the front cover of the machine.
Cleaning the drum unit

If your printout has white or black dots at 3.7 in. (94 mm) intervals, the drum may have foreign material, such as glue from a label stuck on the drum surface. Follow the steps below to solve the problem.

1. Make sure that the front cover is closed and the power cord is plugged in.
2. Turn on the machine and wait until the machine is in Ready mode.
3. Press Go two times. The machine will print the drum dot check sheet.
4. Leave the machine turned on for 10 minutes for the internal fan to cool the extremely hot parts inside the machine.
5. Turn off the machine’s power switch.
6. Press the front cover release button and then open the front cover.
7. Take out the drum unit and toner cartridge assembly.
WARNING

After you have just used the machine, some internal parts of the machine will be extremely hot. Wait for the machine to cool down before you touch the internal parts of the machine.

Important

- We recommend that you put the drum unit and toner cartridge assembly on a piece of disposable paper or cloth in case you accidentally spill or scatter toner.
- Handle the drum unit and toner cartridge assembly carefully. If toner scatters on your hands or clothes, immediately wipe or wash it off with cold water.
- To prevent damage to the machine from static electricity, DO NOT touch the electrodes shown in the illustration.

Push down the green lock lever and take the toner cartridge out of the drum unit.
9 Turn the drum unit as shown in the illustration. Make sure that the drum unit gear (1) is on the left hand side.

10 Use the numbered markers next to the drum roller to find the mark. For example, a dot in column 2 on the check sheet would mean that there is a mark in the “2” region of the drum.
Routine Maintenance

11 Turn the drum unit gear toward you by hand while looking at surface of the suspected area.

12 When you have found the mark on the drum that matches the drum dot check sheet, wipe the surface of the drum gently with a cotton swab until the mark on the surface comes off.

⚠️ Important

DO NOT clean the surface of the photosensitive drum with a sharp object or any liquids.
13 Put the toner cartridge back into the drum unit until you hear it lock into place. If you put the cartridge in properly, the green lock lever on the drum unit will lift automatically.

**Note**  
Make sure that you put in the toner cartridge properly or it may separate from the drum unit.

14 Put the drum unit and toner cartridge assembly back into the machine.

15 Close the front cover of the machine.

16 Turn on the machine’s power switch.
Routine Maintenance

Cleaning the paper pick-up roller

Cleaning the paper pick-up roller periodically may prevent paper jams by insuring the proper feeding of paper.

1. Turn off the machine’s power switch.
2. Disconnect the interface cables from the machine, and then unplug the power cord from the AC power outlet.
3. Pull the paper tray completely out of the machine.
4. Tightly wring out a lint-free cloth soaked in lukewarm water, and then wipe the separator pad (1) of the paper tray with it to remove dust.

5. Wipe the two pick-up rollers (1) inside of the machine to remove dust.

6. Put the paper tray back in the machine.
7. Plug the machine’s power cord back into the AC power outlet first, and then connect the interface cables.
8. Turn on the machine’s power switch.
Packing and shipping the machine

**WARNING**

If you use a Lower Tray, DO NOT carry the machine with the Lower Tray as you may be injured or cause damage to the machine because it is not attached to the Lower Tray.

**Note**

If for any reason you must ship your machine, carefully repack the machine in the original packaging to avoid any damage during transit. The machine should be adequately insured with the carrier.

1. Turn off the machine’s power switch. Leave the machine turned off for at least 10 minutes to cool down.
2. Disconnect all the cables, and then unplug the power cord from the AC power outlet.
3. Put the packing material (1) into the carton.
4. Wrap the machine in a plastic bag, then put it on the bottom packing material (1).

5. Put the packing material (2) marked “FRONT” on the front of the machine. Put the packing material (3) marked “REAR” on the back of the machine.
6. Put the cardboard tray (1) on the top and put the power cord in it.

7. Close the carton and tape it shut.

8. <If you have a Lower Tray>
   Repack the lower tray as shown in the illustration.
If you think there is a problem with your machine, check each item below first and follow the troubleshooting tips. Most problems can be easily resolved by yourself.

**Identifying your problem**

First, check the following.

- The machine's power cord is connected properly and the machine's power switch is turned on. If the machine does not turn on after connecting the power cord, see *Other difficulties* >> page 140.
- All of the protective parts have been removed.
- Paper is inserted properly in the paper tray.
- The interface cables are securely connected to the machine and the computer, or wireless connection is set up on both the machine and your computer.
- Error messages
  (See *Error messages in the Status Monitor* >> page 123.)

If you did not solve your problem with the above checks, identify your problem and then go to the page suggested below.

**Machine does not print.**

- Paper handling
  (See *Paper handling difficulties* >> page 138.)

**Pages are printed, but there are still problems.**

- Print quality
  (See *Improving the print quality* >> page 141.)
- Printout is incorrect
  (See *Printing difficulties* >> page 137.)

**Network and other problems:**

- *Network difficulties (HL-5450DN only)* >> page 139
- *Other difficulties* >> page 140
Troubleshooting

Error messages in the Status Monitor

As with any sophisticated office product, errors may occur and consumable items may need to be replaced. If this happens, your machine identifies the error or required routine maintenance and shows the appropriate message. The most common error and maintenance messages are shown below.

You can correct most errors and perform routine maintenance by yourself. If you need more help, the Brother Solutions Center offers the latest FAQs and troubleshooting tips:

The Status Monitor will report problems with the machine. Take the proper action by referring to the following table. If you want to turn the status monitor on, see Status Monitor page 52 (For Windows® users) or Status Monitor page 68 (For Macintosh users).

<table>
<thead>
<tr>
<th>Error message</th>
<th>Cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cartridge Error</strong></td>
<td>The toner cartridge is not installed correctly.</td>
<td>Pull out the drum unit and toner cartridge assembly, take out the toner cartridge, and put it back into the drum unit again. Put the drum unit and toner cartridge assembly back in the machine. If the problem continues, call Brother Customer Service.</td>
</tr>
<tr>
<td><strong>Cover is Open</strong></td>
<td>The front cover is not closed completely.</td>
<td>Close the front cover of the machine.</td>
</tr>
</tbody>
</table>
|                   | The fuser cover is not closed completely or paper was jammed in the back of the machine when you turned on the power. | □ Close the fuser cover of the machine.  
□ Make sure paper is not jammed inside the back of the machine, and then close the fuser cover and press Go. (See Jam Rear / Jam Duplex page 131.) |
<p>| <strong>Drum End Soon</strong>  | The drum unit is near the end of its life.                           | Order a new drum unit now so a replacement drum unit will be available when the Status Monitor indicates Replace Drum. (See Drum End Soon page 103.) |
| <strong>Drum Error</strong>     | The corona wire on the drum unit needs to be cleaned.                | Clean the corona wire. (See Cleaning the corona wire page 111.)         |
|                   | The toner cartridge is placed in the machine without the drum unit.  | Put the toner cartridge into the drum unit, and then re-install the drum unit and toner cartridge assembly in the machine |
| <strong>Drum Stop</strong>      | It is time to replace the drum unit.                                 | Replace the drum unit. (See Replacing the drum unit page 104.)           |
| <strong>Duplex Disabled</strong>| The back cover of the machine is not closed completely.             | Close the back cover of the machine.                                   |
|                   | The duplex tray is not installed or not installed correctly.         | Re-install the duplex tray.                                            |
| <strong>Fuser Error</strong>    | The temperature of the fuser unit does not rise to a specified temperature within the specified time. | Turn the power switch off, wait a few seconds, and then turn it on again. Leave the machine for 15 minutes with the power on. |
|                   | The fuser unit is too hot.                                           |                                                                        |</p>
<table>
<thead>
<tr>
<th>Error message</th>
<th>Cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jam Duplex</td>
<td>The paper is jammed in the duplex tray or the fuser unit.</td>
<td>See Jam MP Tray / Jam Tray 1 / Jam Tray 2 / Jam Inside page 126.</td>
</tr>
<tr>
<td>Jam Inside</td>
<td>The paper is jammed inside the machine.</td>
<td>See Jam Rear / Jam Duplex page 131.</td>
</tr>
<tr>
<td></td>
<td>The toner cartridge is placed in the machine without the drum unit.</td>
<td>Put the toner cartridge into the drum unit, and then re-install the drum unit and toner cartridge assembly in the machine.</td>
</tr>
<tr>
<td>Jam MP Tray</td>
<td>The paper is jammed in the MP tray of the machine.</td>
<td>See Jam MP Tray / Jam Tray 1 / Jam Tray 2 / Jam Inside page 126.</td>
</tr>
<tr>
<td>Jam Rear</td>
<td>The paper is jammed in the back of the machine.</td>
<td>See Jam Rear / Jam Duplex page 131.</td>
</tr>
<tr>
<td>Jam Tray 1</td>
<td>The paper is jammed in the paper tray of the machine.</td>
<td>See Jam MP Tray / Jam Tray 1 / Jam Tray 2 / Jam Inside page 126.</td>
</tr>
<tr>
<td>Jam Tray 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Log Access Error</td>
<td>The machine could not access the print log file in the server.</td>
<td>Contact your administrator to check the Store Print Log to Network settings.</td>
</tr>
<tr>
<td>(HL-5450DN only)</td>
<td></td>
<td>(For detailed information Network User's Guide: Store Print Log to Network)</td>
</tr>
<tr>
<td>Manual Feed</td>
<td>Manual was selected as the paper source when there was no paper in</td>
<td>Place paper in the MP tray. If the machine is in Pause mode, press Go. (See Loading paper in the multi-purpose tray (MP tray) page 12.)</td>
</tr>
<tr>
<td></td>
<td>the MP tray.</td>
<td></td>
</tr>
<tr>
<td>No Paper</td>
<td>The machine is out of paper or paper is not correctly loaded in the</td>
<td>Put paper in the tray you are using. Make sure the paper guides are set to the correct size.</td>
</tr>
<tr>
<td></td>
<td>specified paper tray.</td>
<td></td>
</tr>
<tr>
<td>No Toner</td>
<td>The toner cartridge or the drum unit and toner cartridge assembly is</td>
<td>Remove the drum unit and toner cartridge assembly, remove the toner cartridge from the drum unit, and re-install the toner cartridge back into the drum unit again. Re-install the drum unit and toner cartridge assembly back in the machine. If the problem continues, replace the toner cartridge. (See Replacing the toner cartridge page 96)</td>
</tr>
<tr>
<td></td>
<td>not installed properly.</td>
<td></td>
</tr>
<tr>
<td>Out of Memory</td>
<td>The machine’s memory is full.</td>
<td>Reduce the complexity of your document or reduce the print resolution.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Add more memory (HL-5450DN only). See Installing extra memory page 91.</td>
</tr>
<tr>
<td>Print Unable</td>
<td>The machine has a mechanical problem.</td>
<td>Turn the power switch off, wait a few minutes, and then turn it on again.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If the problem continues, call Brother Customer Service.</td>
</tr>
<tr>
<td>Replace Drum</td>
<td>It is time to replace the drum unit.</td>
<td>Replace the drum unit. (See Replacing the drum unit page 104.)</td>
</tr>
<tr>
<td></td>
<td>The drum unit counter was not reset when a new drum was installed.</td>
<td>Reset the drum unit counter. (See Replacing the drum unit page 104.)</td>
</tr>
<tr>
<td>Error message</td>
<td>Cause</td>
<td>Action</td>
</tr>
<tr>
<td>-------------------</td>
<td>----------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Replace Fuser</td>
<td>It is time to replace the fuser unit.</td>
<td>Call Brother Customer Service or a Brother Authorized Service Center to replace the fuser unit.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>To replace Fuser Unit call Brother Customer Service at:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1-877-BROTHER (1-877-276-8437) (in USA)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1-877-BROTHER (in Canada)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>or to locate a Brother Authorized Service Center, visit us at:</td>
</tr>
<tr>
<td></td>
<td></td>
<td><a href="http://www.brother-usa.com/service/">http://www.brother-usa.com/service/</a></td>
</tr>
<tr>
<td>Replace Laser</td>
<td>It is time to replace the laser unit.</td>
<td>Call Brother Customer Service or a Brother Authorized Service Center to replace the laser unit.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>To replace Laser Unit call Brother Customer Service at:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1-877-BROTHER (1-877-276-8437) (in USA)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1-877-BROTHER (in Canada)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>or to locate a Brother Authorized Service Center, visit us at:</td>
</tr>
<tr>
<td></td>
<td></td>
<td><a href="http://www.brother-usa.com/service/">http://www.brother-usa.com/service/</a></td>
</tr>
<tr>
<td>Replace PF Kit1</td>
<td>It is time to replace the paper feeding kit.</td>
<td>Call Brother Customer Service or a Brother Authorized Service Center to replace the PF kit.</td>
</tr>
<tr>
<td>Replace PF Kit2</td>
<td></td>
<td>To replace PF Kit call Brother Customer Service at:</td>
</tr>
<tr>
<td>Replace PF KitMP</td>
<td></td>
<td>1-877-BROTHER (1-877-276-8437) (in USA)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1-877-BROTHER (in Canada)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>or to locate a Brother Authorized Service Center, visit us at:</td>
</tr>
<tr>
<td></td>
<td></td>
<td><a href="http://www.brother-usa.com/service/">http://www.brother-usa.com/service/</a></td>
</tr>
<tr>
<td>Replace Toner</td>
<td>The toner cartridge is at the end of its life. The machine will stop all print operations.</td>
<td>Replace the toner cartridge. (See <em>Replacing the toner cartridge</em> page 96.)</td>
</tr>
<tr>
<td>Size Error DX</td>
<td>The paper size defined in the printer driver is not available for automatic duplex printing.</td>
<td>Press Cancel. Choose a paper size which is supported by the duplex tray.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The paper size you can use for automatic duplex printing is Letter, Legal or Folio.</td>
</tr>
<tr>
<td></td>
<td>The paper in the tray is not correct size and is not available for automatic duplex printing.</td>
<td>Load the correct size of paper in the tray.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The paper size you can use for automatic duplex printing is Letter, Legal or Folio.</td>
</tr>
<tr>
<td>Toner Low</td>
<td>If the Status Monitor shows Toner Low you can still print; however, the machine is telling you that the toner cartridge is near the end of its life.</td>
<td>Order a new toner cartridge now so a replacement toner cartridge will be available when the Status Monitor shows Replace Toner.</td>
</tr>
</tbody>
</table>
Troubleshooting

Paper jams

Note
Always remove all paper from the paper tray and straighten the stack when you add new paper. This helps prevent multiple sheets of paper from feeding through the machine at one time and prevents paper jams.

Jam MP Tray / Jam Tray 1 / Jam Tray 2 / Jam Inside
If a paper jam occurs inside the machine, the MP tray or paper tray, the Error LED will turn on and the Paper LED will blink.

If you have printed using the MP Tray, start at step 1.
If you have printed using Tray 1 or Tray 2, start at step 3.

1 Remove the paper from the MP tray.

2 Remove any jammed paper from in and around the MP Tray. Press Go. If you still have the error indication, continue with the following steps.

3 Leave the machine turned on for 10 minutes for the internal fan to cool the extremely hot parts inside the machine.

4 Pull the paper tray completely out of the machine.
5 Use both hands to slowly pull out the jammed paper.

Note
Pulling out the jammed paper downward allows you to remove the paper more easily.

6 Press the front cover release button and then open the front cover.

7 Slowly take out the drum unit and toner cartridge assembly. The jammed paper may be pulled out with the drum unit and toner cartridge assembly, or this may release the paper so you can pull it out from inside of the machine.
**WARNING**

After you have just used the machine, some internal parts of the machine will be extremely hot. Wait for the machine to cool down before you touch the internal parts of the machine.

---

**Important**

- We recommend that you put the drum unit and toner cartridge assembly on a piece of disposable paper or cloth in case you accidentally spill or scatter toner.

- Handle the drum unit and toner cartridge assembly carefully. If toner scatters on your hands or clothes, immediately wipe or wash it off with cold water.

- To prevent damage to the machine from static electricity, DO NOT touch the electrodes shown in the illustration.

---

**Note**

The drum unit and toner cartridge are two separate parts. Make sure both are installed as an assembly. If the toner cartridge is placed in the machine without the drum unit, the messages Drum Error or Jam Inside may be indicated.
8 Push down the green lock lever and take the toner cartridge out of the drum unit. Remove the jammed paper if there is any inside the drum unit.

9 Put the toner cartridge back into the drum unit until you hear it lock into place. If you put the cartridge in properly, the green lock lever on the drum unit will lift automatically.

**Note**
Make sure that you put in the toner cartridge properly or it may separate from the drum unit.

10 Put the drum unit and toner cartridge assembly back into the machine.

11 Close the front cover of the machine.
12 Make sure that the paper is below the maximum paper mark (▼ ▼ ▼) in the paper tray. While pressing the green paper-guide release lever, slide the paper guides to fit the paper size. Make sure that the guides are firmly in the slots.

13 Put the paper tray firmly back in the machine.

Note
If you turn off the machine during paper jam, the machine will print incomplete data from your computer. Before you turn on the machine, delete the print spool job on your computer.

14 Make sure that the Paper and Error LEDs are off and that the Ready LED is green.
**Troubleshooting**

**Jam Rear / Jam Duplex**

If a paper jam occurs behind the back cover (face-up output tray) or inside the duplex tray, the **Error** LED will turn on and the **Back Cover** and **Paper** LEDs will blink.

1. Leave the machine turned on for 10 minutes for the internal fan to cool the extremely hot parts inside the machine.

2. Pull the paper tray completely out of the machine.

3. Press the front cover release button and then open the front cover.
4 Slowly take out the drum unit and toner cartridge assembly. The jammed paper may be pulled out with the drum unit and toner cartridge assembly, or this may release the paper so you can pull it out from inside of the machine.

**WARNING**

After you have just used the machine, some internal parts of the machine will be extremely hot. Wait for the machine to cool down before you touch the internal parts of the machine.

**Important**

- We recommend that you put the drum unit and toner cartridge assembly on a piece of disposable paper or cloth in case you accidentally spill or scatter toner.
- Handle the drum unit and toner cartridge assembly carefully. If toner scatters on your hands or clothes, immediately wipe or wash it off with cold water.
- To prevent damage to the machine from static electricity, DO NOT touch the electrodes shown in the illustration.
Troubleshooting

5 Open the back cover.

![Image of printer with back cover open]

**WARNING**

⚠️ After you have just used the machine, some internal parts of the machine will be extremely hot. Wait for the machine to cool down before you touch the internal parts of the machine.

6 Using both hands, gently pull the jammed paper out of the back of the machine.

![Image of hands pulling out paper]

![Image of open printer showing internal parts]
7 Pull the green tabs at the left and right hand sides toward you and fold down the fuser cover (1).

8 Using both hands, gently pull the jammed paper out of the fuser unit.

9 Close the fuser cover.

10 Close the back cover.
Troubleshooting

11 Pull the duplex tray completely out of the machine.

12 Pull the jammed paper out of the machine or out of the duplex tray.

13 Make sure that the jammed paper does not remain under the machine from static electricity.

14 Put the duplex tray back into the machine.
Put the drum unit and toner cartridge assembly back into the machine.

Close the front cover of the machine.

Put the paper tray firmly back in the machine.

Make sure that the **Back Cover**, **Paper** and **Error** LEDs are off and that the **Ready** LED is green.
If you are having difficulty with your machine

Important
• For technical help, you must call the country where you bought the machine. Calls must be made from within that country.
• If you think there is a problem with your machine, check the chart below and follow the troubleshooting tips. Most problems can be easily resolved by yourself.
• If you need additional help, the Brother Solutions Center offers the latest FAQs and troubleshooting tips. Visit us at http://solutions.brother.com/.
• Using non-Brother supplies may affect the print quality, hardware performance, and machine reliability.

Printing difficulties

<table>
<thead>
<tr>
<th>Difficulties</th>
<th>Suggestions</th>
</tr>
</thead>
<tbody>
<tr>
<td>No printout.</td>
<td>Check that the correct printer driver has been installed and chosen.</td>
</tr>
<tr>
<td></td>
<td>Check to see if the LEDs are indicating any error.</td>
</tr>
<tr>
<td></td>
<td>(See LEDs (Light Emitting Diodes) ➞ page 71 and Error messages in the Status Monitor ➞ page 123.)</td>
</tr>
<tr>
<td></td>
<td>Check that the machine is online:</td>
</tr>
<tr>
<td></td>
<td>(Windows® 7 and Windows Server® 2008 R2)</td>
</tr>
<tr>
<td></td>
<td>Click the Start button and Devices and Printers.</td>
</tr>
<tr>
<td></td>
<td>Right-click Brother HL-XXXX series and click See What’s Printing. Click Printer and make</td>
</tr>
<tr>
<td></td>
<td>sure Use Printer Offline is unchecked.</td>
</tr>
<tr>
<td></td>
<td>(Windows Vista® and Windows Server® 2008)</td>
</tr>
<tr>
<td></td>
<td>Click the Start button, Control Panel, Hardware and Sound, and then Printers.</td>
</tr>
<tr>
<td></td>
<td>Right-click Brother HL-XXXX series. Make sure that Use Printer Offline is unchecked.</td>
</tr>
<tr>
<td></td>
<td>(Windows® XP and Windows Server® 2003)</td>
</tr>
<tr>
<td></td>
<td>Click the Start button and choose Printers and Faxes.</td>
</tr>
<tr>
<td></td>
<td>Right-click Brother HL-XXXX series. Make sure that Use Printer Offline is unchecked.</td>
</tr>
<tr>
<td></td>
<td>Contact your administrator to check your Secure Function Lock settings. (HL-5450DN only)</td>
</tr>
<tr>
<td>The machine is not printing or</td>
<td>Press Cancel.</td>
</tr>
<tr>
<td>has stopped printing.</td>
<td>The machine will cancel the print job and clear it from the memory. The printout may be</td>
</tr>
<tr>
<td></td>
<td>incomplete.</td>
</tr>
<tr>
<td>The headers or footers appear</td>
<td>There is an unprintable area on the top and bottom of the page. Adjust the top and bottom</td>
</tr>
<tr>
<td>when the document displays on the</td>
<td>margins in your document to allow for this.</td>
</tr>
<tr>
<td>screen but they do not show up</td>
<td>(See Unprintable area when printing from a computer ➞ page 7.)</td>
</tr>
<tr>
<td>when it is printed.</td>
<td></td>
</tr>
<tr>
<td>The machine prints unexpectedly</td>
<td>Press Cancel to cancel print jobs.</td>
</tr>
<tr>
<td>or it prints garbage.</td>
<td>Check the settings in your application to make sure it is set up to work with your machine.</td>
</tr>
</tbody>
</table>

(See Printing difficulties uu page 12.)
Printing difficulties (continued)

<table>
<thead>
<tr>
<th>Difficulties</th>
<th>Suggestions</th>
</tr>
</thead>
<tbody>
<tr>
<td>The machine prints the first couple of pages correctly, then some pages have text missing.</td>
<td>Check the settings in your application to make sure that it is set up to work with your machine.</td>
</tr>
<tr>
<td></td>
<td>Your computer is not recognizing the machine’s input buffer’s full signal. Make sure that you connected the interface cable correctly. (Quick Setup Guide)</td>
</tr>
<tr>
<td>Cannot perform ‘Page Layout’ printing.</td>
<td>Check that the paper size setting in the application and in the printer driver are the same.</td>
</tr>
<tr>
<td>Print speed is too slow.</td>
<td>Try changing the printer driver setting. The highest resolution needs longer data processing, sending and printing time.</td>
</tr>
<tr>
<td></td>
<td>Check that the back cover is firmly closed and the duplex tray is firmly installed.</td>
</tr>
<tr>
<td></td>
<td>If the machine is in Quiet mode, print speed is slower. Check the Quiet mode setting. (See Turning Quiet mode on/off page 87.)</td>
</tr>
<tr>
<td>The machine does not print from Adobe® Illustrator®.</td>
<td>Reduce the print quality. (See Basic tab page 26 (for Windows®)) (See Print Settings page 59 (for Macintosh))</td>
</tr>
<tr>
<td>Poor print quality</td>
<td>See Improving the print quality page 141.</td>
</tr>
</tbody>
</table>

Paper handling difficulties

<table>
<thead>
<tr>
<th>Difficulties</th>
<th>Suggestions</th>
</tr>
</thead>
<tbody>
<tr>
<td>The machine does not feed paper.</td>
<td>If there is no paper, load a new stack of paper into the paper tray.</td>
</tr>
<tr>
<td></td>
<td>If there is paper in the paper tray, make sure it is straight. If the paper is curled, you should straighten it. Sometimes it is helpful to remove the paper, turn the stack over and put it back into the paper tray.</td>
</tr>
<tr>
<td></td>
<td>Reduce the amount of paper in the paper tray, and then try again.</td>
</tr>
<tr>
<td></td>
<td>Make sure that manual feed mode is not chosen in the printer driver.</td>
</tr>
<tr>
<td></td>
<td>Clean the paper pick-up roller. (See Cleaning the paper pick-up roller page 118.)</td>
</tr>
<tr>
<td>The machine does not feed paper from the MP tray.</td>
<td>Make sure that MP Tray is chosen in the printer driver.</td>
</tr>
<tr>
<td></td>
<td>Fan the paper well and put it back in the tray firmly.</td>
</tr>
<tr>
<td>How do I print on envelopes?</td>
<td>You can load envelopes in the MP tray. Your application must be set up to print the envelope size you are using. This is usually done in the Page Setup or Document Setup menu of your application. (See your application’s manual for more information.)</td>
</tr>
</tbody>
</table>
## Network difficulties (HL-5450DN only)

<table>
<thead>
<tr>
<th>Difficulties</th>
<th>Suggestions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannot print over a wired Network.</td>
<td>If you are having Network problems <a href="#">Network User’s Guide</a>. Make sure your machine is powered on and is on-line and in Ready mode. Print the Printer Settings page to verify your Network settings are correct. (See Print a Printer Settings page page 83.) Reconnect the LAN cable to the hub to verify that the cable and network connections are good. If possible, try connecting the machine to a different port on your hub using a different cable. You can check the current wired network status from the Printer Settings page.</td>
</tr>
<tr>
<td>The Brother software cannot be installed.</td>
<td><em>(Windows®)</em> If the Security Software warning appears on the PC screen during the installation, change the Security Software settings to permit the Brother product setup program or other program to run. <em>(Macintosh)</em> If you are using a firewall function of anti-spyware or antivirus security software, temporarily disable it and then install the Brother software.</td>
</tr>
</tbody>
</table>

For other problems concerning using your machine on a Network [Network User's Guide](#)
Other difficulties

<table>
<thead>
<tr>
<th>Difficulties</th>
<th>Suggestions</th>
</tr>
</thead>
<tbody>
<tr>
<td>The machine will not turn on.</td>
<td>Adverse conditions on the power connection (such as lightning or a power surge) may have triggered the machine’s internal safety mechanisms. Turn the machine off and unplug the power cord. Wait for ten minutes, then plug in the power cord and turn the machine on. If you still cannot turn on the machine, plug the power cord directly into a different known working wall outlet (do not plug it into a surge suppressor or backup battery type of device), and then turn on the machine. If this works, then the wall outlet, battery backup device, or surge suppressor device is the cause of the problem.</td>
</tr>
</tbody>
</table>
| The machine cannot print EPS data that includes binary with the BR-Script3 printer driver. | **(Windows®)** You need the following settings to print EPS data:  
1. For Windows® 7 and Windows Server® 2008 R2:  
   - Click the **Start** button and **Devices and Printers**.  
   For Windows Vista® and Windows Server® 2008:  
   - Click **Start** button, **Control Panel**, **Hardware and Sound**, and then **Printers**.  
   For Windows® XP and Windows Server® 2003:  
   - Click **Start** button, and select **Printers and Faxes**.  
2. Right-click the Brother HL-XXXX BR-Script3 icon and select **Properties**.  
3. From the **Device Settings** tab, choose **TBCP** (Tagged binary communication protocol) in **Output Protocol**.  
**(Macintosh)**  
If your machine is connected to a computer with a USB interface, you cannot print EPS data that includes binary. You can print the EPS data at the machine through a network. For installing BR-Script3 printer driver through the network, visit the Brother Solutions Center at [http://solutions.brother.com/](http://solutions.brother.com/). |

---

1. **Printer properties** for Windows® 7 and Windows Server® 2008 R2 users
Improving the print quality

If you have a print quality problem, print a test page first (see Print a test page page 82). If the printout looks good, the problem is probably not the machine. Check the interface cable or try the machine on another computer. If the printout has a quality problem, check the following steps first. And then, if you still have a print quality problem, check the chart below and follow the recommendations.

Note
Using non-Brother supplies may affect the print quality, hardware performance, and machine reliability.

1. To get the best print quality, we suggest using the recommended paper. Check that you are using paper that meets our specifications. (See Acceptable paper and other print media page 2.)

2. Check that the drum unit and toner cartridge are installed properly.

<table>
<thead>
<tr>
<th>Examples of poor print quality</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faint</td>
<td>Take out the drum unit and toner cartridge assembly. Hold the assembly level with both hands and gently shake it from side to side several times to spread the toner evenly inside the cartridge.</td>
</tr>
<tr>
<td></td>
<td>If the LEDs indicate Replace Toner, put in a new toner cartridge.</td>
</tr>
<tr>
<td></td>
<td>Put in a new toner cartridge.</td>
</tr>
<tr>
<td></td>
<td>Check the machine’s environment. Conditions such as high temperatures, humidity, and so on, may cause this print fault.</td>
</tr>
<tr>
<td></td>
<td>Clean the corona wire of the drum unit.</td>
</tr>
<tr>
<td>Gray background</td>
<td>To get the best print quality, we suggest using the recommended paper. Check that you are using paper that meets our specifications. (See Acceptable paper and other print media page 2.)</td>
</tr>
<tr>
<td></td>
<td>Check the drum unit and toner cartridge are installed properly.</td>
</tr>
<tr>
<td></td>
<td>Make sure that you use paper that meets our specifications.</td>
</tr>
<tr>
<td></td>
<td>Check the machine’s environment. Conditions such as high temperatures and high humidity can increase the amount of background shading.</td>
</tr>
<tr>
<td></td>
<td>Put in a new toner cartridge.</td>
</tr>
<tr>
<td></td>
<td>Put in a new drum unit.</td>
</tr>
</tbody>
</table>

Replacing the toner cartridge page 96

Replacing the drum unit page 104

Cleaning the corona wire page 111

Product Safety Guide: Choosing a location

Product Safety Guide: Choosing a location
### Examples of poor print quality

<table>
<thead>
<tr>
<th>Ghost</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Make sure that you use paper that meets our specifications. Rough-surfaced paper may cause this problem.</td>
<td><strong>Acceptable paper and other print media</strong> (\Rightarrow) page 2</td>
</tr>
<tr>
<td>Make sure that you choose the appropriate media type in the printer driver.</td>
<td><strong>Acceptable paper and other print media</strong> (\Rightarrow) page 2</td>
</tr>
</tbody>
</table>
| Choose **Reduce Ghosting** mode in the printer driver. | **Other Print Options** \(\Rightarrow\) page 36 (For Windows®)  
**Print Settings** \(\Rightarrow\) page 59 (For Macintosh) |
| Put in a new drum unit. | **Replacing the drum unit** \(\Rightarrow\) page 104 |
| Put in a new toner cartridge. | **Replacing the toner cartridge** \(\Rightarrow\) page 96 |
| The fuser unit may be contaminated. Call Brother Customer Service at: | |
| **In USA**: 1-877-BROTHER (1-877-276-8437)  
**In Canada**: 1-877-BROTHER |

<table>
<thead>
<tr>
<th>Toner specks</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Make sure that you use paper that meets our specifications. Rough-surfaced paper may cause the problem.</td>
<td><strong>Acceptable paper and other print media</strong> (\Rightarrow) page 2</td>
</tr>
<tr>
<td>Clean the corona wire of the drum unit.</td>
<td><strong>Cleaning the corona wire</strong> (\Rightarrow) page 111</td>
</tr>
<tr>
<td>The drum unit may be damaged. Put in a new drum unit.</td>
<td><strong>Replacing the drum unit</strong> (\Rightarrow) page 104</td>
</tr>
<tr>
<td>The fuser unit may be contaminated. Call Brother Customer Service at:</td>
<td></td>
</tr>
</tbody>
</table>
| **In USA**: 1-877-BROTHER (1-877-276-8437)  
**In Canada**: 1-877-BROTHER |

<table>
<thead>
<tr>
<th>Hollow print</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Make sure that you use paper that meets our specifications.</td>
<td><strong>Acceptable paper and other print media</strong> (\Rightarrow) page 2</td>
</tr>
<tr>
<td>Choose <strong>Thick Paper</strong> mode in the printer driver or use thinner paper than you are currently using.</td>
<td></td>
</tr>
<tr>
<td>Check the machine’s environment. Conditions such as high humidity can cause hollow print.</td>
<td><strong>Product Safety Guide: Choosing a location</strong></td>
</tr>
<tr>
<td>The drum unit may be damaged. Put in a new drum unit.</td>
<td><strong>Replacing the drum unit</strong> (\Rightarrow) page 104</td>
</tr>
<tr>
<td>Examples of poor print quality</td>
<td>Recommendation</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>----------------</td>
</tr>
</tbody>
</table>
| **All black**                 | ▪ Clean the corona wire inside the drum unit by sliding the green tab. Be sure to return the green tab to the home position (▲).  
  ▪ **Cleaning the corona wire** ▪ page 111  
  ▪ The drum unit may be damaged. Put in a new drum unit.  
  ▪ **Replacing the drum unit** ▪ page 104 |
| **White lines across the page** | ▪ Make sure that you use paper that meets our specifications. A rough surfaced paper or thick print media can cause this problem.  
  ▪ **Acceptable paper and other print media** ▪ page 2.  
  ▪ Make sure that you choose the appropriate media type in the printer driver.  
  ▪ The problem may disappear by itself. Print multiple blank pages to clear this problem, especially if the machine has not been used for a long time.  
  ▪ The drum unit may be damaged. Put in a new drum unit.  
  ▪ **Replacing the drum unit** ▪ page 104 |
| **Line across the page**      | ▪ Clean the corona wire inside the drum unit.  
  ▪ **Cleaning the corona wire** ▪ page 111  
  ▪ The drum unit may be damaged. Put in a new drum unit.  
  ▪ **Replacing the drum unit** ▪ page 104 |
| **White lines, bands or ribbing across the page** | ▪ Check the machine's environment. Conditions such as high humidity and high temperatures may cause this print quality problem.  
  ▪ **Product Safety Guide: Choosing a location**  
  ▪ If the problem is not solved after printing a few pages, put in a new drum unit.  
  ▪ **Replacing the drum unit** ▪ page 104 |
## Troubleshooting

<table>
<thead>
<tr>
<th>Examples of poor print quality</th>
<th>Recommendation</th>
</tr>
</thead>
</table>
| **White Spots on black text and graphics at 3.7 in. (94 mm) intervals** | - If the problem is not solved after printing a few pages, the drum unit may have foreign material, such as glue from a label, stuck on the drum. Clean the drum unit.  
  ➤➤ *Cleaning the drum unit* ➤➤ page 113  
  - The drum unit may be damaged. Put in a new drum unit.  
  ➤➤ *Replacing the drum unit* ➤➤ page 104 |
| **Black Spots at 3.7 in. (94 mm) intervals** | |
| **Black toner marks across the page** | - If you use label sheets for laser printers, the glue from the sheets may sometimes stick to the OPC drum surface. Clean the drum unit.  
  ➤➤ *Cleaning the drum unit* ➤➤ page 113  
  - Make sure that you use paper that meets our specifications.  
  ➤➤ *Acceptable paper and other print media* ➤➤ page 2  
  - Do not use paper that has clips or staples because they will scratch the surface of the drum.  
  - If the unpacked drum unit is in direct sunlight or room light, the unit may be damaged.  
  - The toner cartridge may be damaged. Put in a new toner cartridge.  
  ➤➤ *Replacing the toner cartridge* ➤➤ page 96  
  - The drum unit may be damaged. Put in a new drum unit.  
  ➤➤ *Replacing the drum unit* ➤➤ page 104 |
## Troubleshooting

<table>
<thead>
<tr>
<th>Examples of poor print quality</th>
<th>Recommendation</th>
</tr>
</thead>
</table>
| ![Black lines down the page](image) | - Clean the corona wire inside the drum unit by sliding the green tab.  
  - *Cleaning the corona wire* [page 111]  
  - Make sure the green tab of the corona wire is at the home position (▲).  
  - The toner cartridge may be damaged. Put in a new toner cartridge.  
  - *Replacing the toner cartridge* [page 96]  
  - The drum unit may be damaged. Put in a new drum unit.  
  - *Replacing the drum unit* [page 104]  
  - The fuser unit may be contaminated. Call Brother Customer Service at:  
    - **In USA:** 1-877-BROTHER (1-877-276-8437)  
    - **In Canada:** 1-877-BROTHER |
| ![White lines down the page](image) | - Make sure that foreign material such as a torn piece of paper, sticky notes or dust is not inside the machine and around the drum unit and toner cartridge.  
  - The toner cartridge may be damaged. Put in a new toner cartridge.  
  - *Replacing the toner cartridge* [page 96]  
  - The drum unit may be damaged. Put in a new drum unit.  
  - *Replacing the drum unit* [page 104] |
| ![Image skewed](image) | - Make sure that the paper or other print media is loaded properly in the paper tray and that the guides are not too tight or too loose against the paper stack.  
  - Set the paper guides correctly.  
  - *Printing on plain paper, thin paper or recycled paper from Tray 1 and Tray 2* [page 8]  
  - If you are using the MP tray, see *Printing on plain paper, thin paper, recycled paper and bond paper from the MP tray* [page 12].  
  - The paper tray may be too full.  
  - *Loading paper and print media* [page 8]  
  - Check the paper type and quality.  
  - *Acceptable paper and other print media* [page 2]  
  - Check for loose objects such as torn paper inside the machine.  
  - If the problem only occurs during duplex printing, check for torn paper in the duplex tray, verify that the duplex tray is inserted completely and verify that the back cover is closed completely. |
### Troubleshooting

#### Curled or wavy

- Check the paper type and quality. High temperatures and high humidity will cause paper to curl.
  - **Acceptable paper and other print media** page 2
  - **Product Safety Guide: Choosing a location**

- If you do not use the machine often, the paper may have been in the paper tray too long. Turn over the stack of paper in the paper tray. Also, fan the paper stack and then rotate the paper 180° in the paper tray.

- Open the back cover (face-up output tray) to let the printed paper exit onto the face-up output tray.

- Choose **Reduce Paper Curl** mode in the printer driver when you do not use our recommended paper.
  - **Other Print Options** page 36 (For Windows®)
  - **Print Settings** page 59 (For Macintosh)

#### Wrinkles or creases

- Make sure that paper is loaded properly.
  - **Printing on plain paper, thin paper or recycled paper from Tray 1 and Tray 2** page 8

- Check the paper type and quality.
  - **Acceptable paper and other print media** page 2

- Turn over the stack of paper in the tray or rotate the paper 180° in the input tray.

#### Envelope Creases

- Make sure that envelopes are printed with the back cover (face-up output tray) opened.
  - **Printing on thick paper, labels and envelopes from the MP tray** page 15

- Check the envelope type and quality.
  - **Acceptable paper and other print media** page 2

- Make sure envelopes are fed only from the MP tray.
  - **Loading paper in the multi-purpose tray (MP tray)** page 12

#### Poor fixing

- Choose **Improve Toner Fixing** mode in the printer driver.
  - **Other Print Options** page 36 (For Windows®)
  - **Print Settings** page 59 (For Macintosh)

  If this selection does not provide enough improvement, change the printer driver setting in **Media Type** to a thick setting.
### Troubleshooting

<table>
<thead>
<tr>
<th>Examples of poor print quality</th>
<th>Recommendation</th>
</tr>
</thead>
</table>
| ![Curl](image)               | - Choose **Reduce Paper Curl** mode in the printer driver.  
  - [**Other Print Options**](#) page 36 (For Windows®)  
  - [**Print Settings**](#) page 59 (For Macintosh)  
  - Open the back cover (face-up output tray) to let the printed paper exit onto the face-up output tray. |
Troubleshooting

Machine Information

Default settings

The machine has three levels of default settings; the default settings have been set at the factory before shipment.

- Network (HL-5450DN only)
- Factory Reset
- Settings Reset

>Note

- You cannot modify the preset default settings.
- Page counters can never be changed.

Network default settings (HL-5450DN only)

If you want to reset only the print server back to its default settings (by resetting all network information such as the password and IP address), follow these steps:

1. Turn off the machine’s power switch.
2. Make sure that the front cover is closed and the power cord is plugged in.
3. Hold down Go as you turn on the power switch. Keep Go pressed down until all the LEDs light up and then the Ready LED turns off.
4. Release Go. Make sure that all the LEDs turn off.
5. Press Go six times. Make sure that all the LEDs light up to indicate the print server has been reset to its factory default settings. The machine will restart.

Factory Reset

You can partially reset the machine back to its default printer settings. The network settings will not be reset:

1. Turn off the machine’s power switch.
2. Make sure that the front cover is closed and the power cord is plugged in.
3. Hold down Go as you turn on the power switch. Keep Go pressed down until all the LEDs light up and then the Ready LED turns off.
4. Release Go. Make sure that all the LEDs turn off.
5. Press Go eight times. Make sure that all the LEDs light up to indicate the machine has been reset to its factory default settings (except the network settings). The machine will restart.
Troubleshooting

**Settings Reset**
This operation will reset all the machine settings back to the settings that were set at the factory:

1. Disconnect the network cable from the machine; otherwise the network settings (such as IP address) will not be reset.
2. Turn off the machine’s power switch.
3. Make sure that the front cover is closed and the power cord is plugged in.
4. Hold down Go as you turn on the power switch. Keep Go pressed down until all the LEDs light up and then the Ready LED turns off.
5. Release Go. Make sure that all the LEDs turn off.
6. Press Go ten times. The machine will automatically restart.
## Machine specifications

### General

<table>
<thead>
<tr>
<th>Model</th>
<th>HL-5440D</th>
<th>HL-5450DN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Printer Type</td>
<td>Laser</td>
<td></td>
</tr>
<tr>
<td>Print Method</td>
<td>Electrophotographic Laser Printer</td>
<td></td>
</tr>
<tr>
<td>Memory Capacity</td>
<td>Standard 64 MB</td>
<td>1 slot: DDR2 SO-DIMM (144-pin) up to 256 MB</td>
</tr>
<tr>
<td>Optional</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Power Source</td>
<td>110 - 120 V AC 50/60 Hz</td>
<td></td>
</tr>
<tr>
<td>Power Consumption</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Average)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peak</td>
<td>Approx. 1200 W</td>
<td></td>
</tr>
<tr>
<td>Printing</td>
<td>Approx. 716 W at 77 °F (25 °C)</td>
<td></td>
</tr>
<tr>
<td>Printing (Quiet Mode)</td>
<td>Approx. 348 W at 77 °F (25 °C)</td>
<td></td>
</tr>
<tr>
<td>Ready</td>
<td>Approx. 5.0 W at 77 °F (25 °C)</td>
<td></td>
</tr>
<tr>
<td>Deep Sleep</td>
<td>Approx. 0.7 W</td>
<td>Approx. 0.6 W</td>
</tr>
<tr>
<td>Dimensions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weights (with consumables)</td>
<td>22.9 lb (10.4 kg)</td>
<td>23.1 lb (10.5 kg)</td>
</tr>
</tbody>
</table>

1. USB connections to PC
<table>
<thead>
<tr>
<th></th>
<th>Model</th>
<th>HL-5440D</th>
<th>HL-5450DN</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Noise Level</strong></td>
<td>Sound Pressure</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Printing</td>
<td>LPAm = 59 dB (A)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ready</td>
<td>LPAm = 34 dB (A)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Printing</td>
<td>LPAm = 54 dB (A)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Quiet Mode)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sound Power</strong></td>
<td>Printing</td>
<td>LWAd = 6.79 B (A)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ready</td>
<td>LWAd = 4.70 B (A)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Printing</td>
<td>LWAd = 6.4 B (A)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Quiet Mode)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Temperature</strong></td>
<td>Operating</td>
<td>50 °F to 90.5 °F (10 to 32.5 °C)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Storage</td>
<td>32 °F to 104 °F (0 to 40 °C)</td>
<td></td>
</tr>
<tr>
<td><strong>Humidity</strong></td>
<td>Operating</td>
<td>20 to 80% (without condensation)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Storage</td>
<td>10 to 90% (without condensation)</td>
<td></td>
</tr>
</tbody>
</table>

1 Measured in accordance with the method described in RAL-UZ122.
## Print media

<table>
<thead>
<tr>
<th>Model</th>
<th>HL-5440D</th>
<th>HL-5450DN</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Paper Type</strong></td>
<td>[Standard]</td>
<td>[Standard]</td>
</tr>
<tr>
<td><strong>Paper Size</strong></td>
<td>Letter, A4, B5 (ISO/JIS), A5, A5 (Long Edge), B6 (ISO), A6, Executive, Legal, Folio</td>
<td>Letter, A4, B5 (ISO/JIS), A5, A6, Executive, Legal, Folio</td>
</tr>
<tr>
<td><strong>Paper Weight</strong></td>
<td>16 to 28 lb (60 to 105 g/m²)</td>
<td>16 to 28 lb (60 to 105 g/m²)</td>
</tr>
<tr>
<td><strong>Maximum Paper Capacity</strong></td>
<td>Up to 250 sheets of 20 lb (80 g/m²) Plain paper</td>
<td>Up to 50 sheets of 20 lb (80 g/m²) Plain paper</td>
</tr>
<tr>
<td><strong>Paper Size</strong></td>
<td>Width: 3 to 8.5 in (76.2 to 215.9 mm)</td>
<td>Width: 3 to 8.5 in (76.2 to 215.9 mm)</td>
</tr>
<tr>
<td><strong>Paper Weight</strong></td>
<td>16 to 43 lb (60 to 163 g/m²)</td>
<td>16 to 43 lb (60 to 163 g/m²)</td>
</tr>
<tr>
<td><strong>Maximum Paper Capacity</strong></td>
<td>Up to 50 sheets of 20 lb (80 g/m²) Plain paper</td>
<td>Up to 50 sheets of 20 lb (80 g/m²) Plain paper</td>
</tr>
<tr>
<td><strong>Paper Type</strong></td>
<td>[Optional]</td>
<td>[Optional]</td>
</tr>
<tr>
<td><strong>Paper Size</strong></td>
<td>Letter, A4, B5 (ISO/JIS), A5, B6 (ISO), Executive, Legal, Folio</td>
<td>Letter, A4, B5 (ISO/JIS), A5, B6 (ISO), Executive, Legal, Folio</td>
</tr>
<tr>
<td><strong>Paper Weight</strong></td>
<td>16 to 28 lb (60 to 105 g/m²)</td>
<td>16 to 28 lb (60 to 105 g/m²)</td>
</tr>
<tr>
<td><strong>Maximum Paper Capacity</strong></td>
<td>Up to 500 sheets of 20 lb (80 g/m²) Plain paper</td>
<td>Up to 500 sheets of 20 lb (80 g/m²) Plain paper</td>
</tr>
<tr>
<td><strong>Paper Output 1</strong></td>
<td>Up to 150 sheets of 20 lb (80 g/m²) Plain paper (face-down delivery to the face-down output paper tray)</td>
<td>Up to 150 sheets of 20 lb (80 g/m²) Plain paper (face-down delivery to the face-down output paper tray)</td>
</tr>
<tr>
<td><strong>Face-Down Output Tray</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Face-Up Output Tray</strong></td>
<td>One sheet (face-up delivery to the face-up output tray)</td>
<td>One sheet (face-up delivery to the face-up output tray)</td>
</tr>
<tr>
<td><strong>Automatic Duplex Printing</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Paper Type</strong></td>
<td>Plain Paper, Thin Paper, Recycled Paper</td>
<td>Plain Paper, Thin Paper, Recycled Paper</td>
</tr>
<tr>
<td><strong>Paper Size</strong></td>
<td>Letter, Legal, Folio</td>
<td>Letter, Legal, Folio</td>
</tr>
<tr>
<td><strong>Paper Weight</strong></td>
<td>16 to 28 lb (60 to 105 g/m²)</td>
<td>16 to 28 lb (60 to 105 g/m²)</td>
</tr>
</tbody>
</table>

1 For labels, we recommend removing the printed sheets from the output paper tray immediately after they exit the machine to avoid the possibility of smudging.
Printer

<table>
<thead>
<tr>
<th>Model</th>
<th>HL-5440D</th>
<th>HL-5450DN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatic 2–sided (Duplex) Print</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Emulation</td>
<td>PCL6, BR-Script3 (PostScript® 3™), IBM ProPrinter XL, EPSON FX-850</td>
<td></td>
</tr>
<tr>
<td>Resolution</td>
<td>1200 × 1200 dpi</td>
<td>600 × 600 dpi</td>
</tr>
<tr>
<td></td>
<td>HQ1200 (2400 × 600 dpi) quality</td>
<td></td>
</tr>
<tr>
<td>Print Speed 1</td>
<td>Single side print</td>
<td>Up to 40 ppm (Letter size)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Up to 38 ppm (A4 size)</td>
</tr>
<tr>
<td></td>
<td>Duplex Print</td>
<td>Up to 18 sides per minute (9 sheets per minute) (Letter or A4 size)</td>
</tr>
<tr>
<td>First Print Time 2</td>
<td></td>
<td>Less than 8.5 seconds at 73.4 °F (23 °C) / 115 V</td>
</tr>
</tbody>
</table>

1 The print speed may change depending on the type of document you print.
2 From Ready mode and standard tray

Interface

<table>
<thead>
<tr>
<th>Model</th>
<th>HL-5440D</th>
<th>HL-5450DN</th>
</tr>
</thead>
<tbody>
<tr>
<td>USB</td>
<td>Hi-Speed USB 2.0 1 2</td>
<td>Hi-Speed USB 2.0</td>
</tr>
<tr>
<td></td>
<td>It is recommended you use a USB 2.0 cable (Type A/B) that is no more than 6 feet (2 meters) long.</td>
<td></td>
</tr>
<tr>
<td>Ethernet 3</td>
<td>-</td>
<td>10BASE-T / 100BASE-TX</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Use a straight-through Category 5 (or greater) twisted-pair cable.</td>
</tr>
<tr>
<td>Parallel</td>
<td>IEEE 1284 Centronics (Type B)</td>
<td>-</td>
</tr>
</tbody>
</table>

1 Your machine has a Hi-Speed USB 2.0 interface. The machine can also be connected to a computer that has a USB 1.1 interface.
2 Third party USB ports are not supported.
3 For detailed network specifications, see Network (LAN) ➤ page 157 and ➤ Network User's Guide
# Computer requirements

<table>
<thead>
<tr>
<th>Computer Platform &amp; Operating System Version</th>
<th>Processor Minimum Speed</th>
<th>Minimum RAM</th>
<th>Recommended RAM</th>
<th>Hard Disk Space to install</th>
<th>Supported PC Interface</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Windows® Operating System</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windows® XP Home Edition</td>
<td>Intel® Pentium® II or equivalent</td>
<td>128 MB</td>
<td>256 MB</td>
<td>80 MB</td>
<td>USB, 10Base-T/100Base-TX/(Ethernet) 2, Parallel 3</td>
</tr>
<tr>
<td>Windows® XP Professional</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windows® XP Professional x64 Edition</td>
<td>64-bit (Intel® 64 or AMD64) supported CPU</td>
<td>256 MB</td>
<td>512 MB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windows Vista®</td>
<td>Intel® Pentium® 4 or equivalent 64-bit (Intel® 64 or AMD64) supported CPU</td>
<td>512 MB</td>
<td>1 GB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windows® 7</td>
<td>Intel® Pentium® 4 or equivalent 64-bit (Intel® 64 or AMD64) supported CPU</td>
<td>1 GB (32-bit)</td>
<td>2 GB (64-bit)</td>
<td>1 GB (32-bit) 2 GB (64-bit)</td>
<td></td>
</tr>
<tr>
<td>Windows Server® 2003</td>
<td>Intel® Pentium® III or equivalent</td>
<td>256 MB</td>
<td>512 MB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windows Server® 2003 x64 Edition</td>
<td>64-bit (Intel® 64 or AMD64) supported CPU</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windows Server® 2008</td>
<td>Intel® Pentium® 4 or equivalent 64-bit (Intel® 64 or AMD64) supported CPU</td>
<td>512 MB</td>
<td>2 GB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windows Server® 2008 R2</td>
<td>64-bit (Intel® 64 or AMD64) supported CPU</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Macintosh Operating System</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OS X 10.5.8</td>
<td>PowerPC® G4/G5 Intel® Processor</td>
<td>512 MB</td>
<td>1 GB</td>
<td>80 MB</td>
<td></td>
</tr>
<tr>
<td>OS X 10.6.x</td>
<td>Intel® Processor</td>
<td>1 GB</td>
<td>2 GB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OS X 10.7.x</td>
<td>Intel® Processor</td>
<td>2 GB</td>
<td>2 GB</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 Third party USB ports are not supported.
2 Ethernet is available for HL-5450DN.
3 Parallel is available for HL-5440D.

For the latest driver updates, visit [http://solutions.brother.com/](http://solutions.brother.com/).
Important information for choosing your paper

The information in this section will help you choose paper to use with this machine.

Note

If you use paper that is not recommended, a paper jam or misfeed may occur in the machine.

Before you buy a large quantity of paper

Make sure that the paper is suitable for the machine.

Paper for plain paper copies

Paper is divided by usage, such as paper for printing and paper for copying. The usage is usually written on the paper's package. Check the package to see whether it is suitable for laser printers. Use paper that is suitable for laser printers.

Basis weight

The basis weight of the paper in general use varies in different countries. We recommend that you use paper that weighs 20 to 24 lb (75 to 90 g/m²), although this machine is able to cope with thinner or thicker paper than these weights.

Long grain and short grain

The pulp fiber of the paper is aligned during paper manufacturing. And paper can be classified into two types, long grain and short grain.

Long grain paper fibers run in the same direction as the long edge of the paper. Short grain paper fibers run perpendicular to the long edge of the paper. Though most plain paper for copying is long grain, some is short grain. We recommend that you use long grain paper for this machine. Short grain paper is too weak for the paper transport of the machine.

Acid paper and neutralized paper

Paper can be classified as either acid paper or neutralized paper.

Though modern paper manufacture methods started with acid paper, neutralized paper is recently taking the place of acid paper because of environmental issues.

However, many forms of acid paper can be found in recycled paper. We recommend that you use neutralized paper for this machine.

You can use an acid paper check pen to distinguish acid paper from neutral paper.

Print surface

The characteristics of the face side and reverse side of a sheet of paper may vary a little.

Usually, the opening side of the paper ream package is the print side. Follow the instructions on the paper package. Typically, the print side is indicated by an arrow.
Symbol and character sets

For the HP LaserJet, IBM Proprinter XL, and EPSON FX-850 emulation modes, you can choose the symbol and character sets using a Web Based Management (Web browser) \(^1\) or the Remote Printer Console.

\(^1\) HL-5450DN only

How to use Web Based Management (Web browser) (HL-5450DN only)

To use Web Based Management (Web browser), follow the steps below.

**Note**

- We recommend Windows® Internet Explorer® 7.0/8.0 or Firefox® 3.6 for Windows® and Safari 4.0/5.0 for Macintosh. Please also make sure that JavaScript and cookies are always enabled in whichever browser you use. To use a Web browser, you will need to know the IP address of the print server.

1. Start your Web browser.
2. Type “http://machine’s IP address/” into your browser. (Where “machine’s IP address” is the machine’s IP address)
   - For example:
     
     http://192.168.1.2/

**Note**

- If you have edited the hosts file on your computer or are using a Domain Name System (DNS), you can also enter the DNS name of the print server.
- For Windows® users, as the print server supports TCP/IP and NetBIOS, you can also enter the NetBIOS name of the print server. The NetBIOS name can be seen on the Printer Settings page. The NetBIOS name assigned is the first 15 characters of the node name and by default it will appear as “BRNxxxxxxxxxxx” for a wired network or “BRWxxxxxxxxxxx” for a wireless network.
- For Macintosh users, you can also have easy access to Web Based Management by clicking the machine icon on **Status Monitor** screen.

3. No password is required by default. Enter a password if you have set one and press ➤.
4. Click **Print**.
5. Choose the **HP LaserJet** tab and click **Font Setup**. Choose a symbol set you want to use from the **Symbol Set** list box.

How to use and install the Remote Printer Console software

To use and install the Remote Printer Console software, see **Remote Printer Console (Windows® only)** ➤ page 70.
Consumable Items

<table>
<thead>
<tr>
<th>Model</th>
<th>HL-5440D</th>
<th>HL-5450DN</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toner Cartridge</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inbox</td>
<td>Approx. 3,000 pages Letter or A4 page 1</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Standard</td>
<td>Approx. 3,000 pages Letter or A4 page 1</td>
<td>TN-720</td>
<td></td>
</tr>
<tr>
<td>High Yield</td>
<td>Approx. 8,000 pages Letter or A4 page 1</td>
<td>TN-750</td>
<td></td>
</tr>
<tr>
<td>Drum Unit</td>
<td>Approx. 30,000 pages Letter or A4 pages (1 page / job) 2</td>
<td>DR-720</td>
<td></td>
</tr>
</tbody>
</table>

1 Approx. cartridge yield is declared in accordance with ISO/IEC 19752.
2 Drum life is approximate and may vary by type of use.

Network (LAN)

<table>
<thead>
<tr>
<th>Model</th>
<th>HL-5440D</th>
<th>HL-5450DN</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>You can connect your machine to a network for Network Printing. Also included is Brother BRAdmin Light 1 2 Network Management software.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protocols</td>
<td>IPv4</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>ARP, RARP, BOOTP, DHCP, APIPA(Auto IP), WINS/NetBIOS name resolution, DNS Resolver, mDNS, LLNMR responder, LPR/LPD, Custom Raw Port/Port9100, IPP/IPPS, FTP Server, TELNET Server, HTTP/HTTPS server, TFTP client and server, SMTP Client, SNMIPv1/v2c/v3, ICMP, Web Services (Print), CIFS client, SNTP client</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IPv6</td>
<td></td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>NDP, RA, DNS resolver, mDNS, LLNMR responder, LPR/LPD, Custom Raw Port/Port9100, IPP/IPPS, FTP Server, TELNET Server, HTTP/HTTPS server, TFTP client and server, SMTP Client, SNMIPv1/v2c/v3, ICMPv6, Web Services (Print), CIFS Client, SNTP Client</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Security Protocols</td>
<td>Wired</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>APOP, POP before SMTP, SMTP-AUTH, SSL/TLS (IPPS, HTTPS, SMTP, POP), SNMPv3, 802.1x (EAP-MD5, EAP-FAST, PEAP, EAP-TLS, EAP-TTLS), Kerberos</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 (For Windows® users) Brother BRAdmin Light is available from the CD-ROM provided with the machine.
2 (For Macintosh users) Brother BRAdmin Light is available as a download from http://solutions.brother.com/.
Brother numbers

**Important**
For technical and operational help, you must call the country where you bought the machine. Calls must be made *from within* that country.

Register your product
By registering your product with Brother International Corporation, you will be recorded as the original owner of the product.

Your registration with Brother:
- may serve as a confirmation of the purchase date of your product should you lose your receipt;
- may support an insurance claim by you in the event of product loss covered by insurance; and,
- will help us notify you of enhancements to your product and special offers.

Please complete the Brother Warranty Registration or, for your convenience and most efficient way to register your new product, register on-line at

```
http://www.brother.com/registration/
```

FAQs (frequently asked questions)
The Brother Solutions Center is our one-stop resource for all your machine needs. You can download the latest software and utilities and read FAQs and troubleshooting tips to learn how to get the most from your Brother product.

```
http://solutions.brother.com/
```

You can check here for Brother driver updates.
Customer Service

In USA: 1-877-BROTHER (1-877-276-8437)

In Canada: 1-877-BROTHER

If you have comments or suggestions, please write us at:

In USA: Printer Customer Support
Brother International Corporation
7905 North Brother Boulevard
Bartlett, TN 38133

In Canada: Brother International Corporation (Canada), Ltd.
- Marketing Dept.
1, rue Hotel de Ville Dollard-des-Ormeaux, PQ, Canada H9B 3H6

Service center locator (USA only)
For the location of a Brother authorized service center, call 1-877-BROTHER (1-877-276-8437),
or visit us on-line at http://www.brother-usa.com/service/.

Service center locations (Canada only)
For the location of a Brother authorized service center, call 1-877-BROTHER

Internet addresses
Brother Global Web Site: http://www.brother.com/
For Frequently Asked Questions (FAQs), Product Support and Technical Questions, and Driver Updates and Utilities:
http://solutions.brother.com/
For Brother Accessories & Supplies:
In USA: http://www.brothermall.com/
In Canada: http://www.brother.ca/
Ordering supplies

For best quality results use only genuine Brother supplies, which are available at most Brother retailers. If you cannot find the supplies you need and you have a Visa, MasterCard, Discover, or American Express credit card, you can order supplies directly from Brother. (You can visit us online for a complete selection of the Brother accessories and supplies that are available for purchase.)

Note

In Canada only Visa and MasterCard are accepted.

In USA: 1-877-552–MALL (1-877-552-6255)
1-800-947-1445 (fax)
http://www.brothermall.com/

In Canada: 1-877-BROTHER
http://www.brother.ca/

<table>
<thead>
<tr>
<th>Description</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toner Cartridge</td>
<td>TN-720 (Standard, Approx. 3,000 pages) 1 2</td>
</tr>
<tr>
<td></td>
<td>TN-750 (High Yield, Approx. 8,000 pages) 1 2</td>
</tr>
<tr>
<td>Drum Unit</td>
<td>DR-720 (Approx. 30,000 pages) 1 3 4</td>
</tr>
</tbody>
</table>

1 A4 or Letter size single-sided pages.
2 Approx. cartridge yield is declared in accordance with ISO/IEC 19752.
3 1 page per job.
4 Drum life is approximate and may vary by type of use.
Index

A
Accessories and supplies ........................................ 150
Accessories tab ......................................................... 41

B
Brother Numbers (USA/Canada) ............... 158, 159, 160
BR-Script3 ........................................................... 45, 63

C
Character sets ......................................................... 156
Cleaning ................................................................ 109
Computer requirements ........................................ 154
Consumable items .............................................. 93, 157
Control panel ....................................................... 71
Corona wire ............................................................. 111

D
Deep sleep mode ................................................ 72, 86
Default settings .................................................... 148
Dimensions ............................................................. 150
Domain ................................................................ 156
Drum unit ............................................................. 102
Duplex (2-sided) printing ...................................... 18

E
Emulation ............................................................... 153
Envelopes ........................................................ 3, 5, 15
Error messages ....................................................... 123

F
FAQs (Frequently Asked Questions) ................. 158
Folio ............................................................................ 3

I
Interface ................................................................. 153

L
Labels .......................................................... 3, 6, 15
LED (Light Emitting Diode) ............................... 71
Linux ....................................................................... 22
Lower tray ............................................................ 89

M
Macintosh ............................................................... 22
Maintenance messages ....................................... 93
Manual duplex printing .................................... 21
Media specifications ........................................... 152
Memory ............................................................... 90, 150

N
Network connectivity .......................................... 153
Network software ............................................... 70

P
Paper .............................................................. 2, 155
loading ............................................................ 8, 12
recommended .................................................... 2, 3
size ................................................................. 2
tray capacity ....................................................... 3
type ............................................................... 2
Paper jams .......................................................... 126
Plain paper ......................................................... 2
Print
difficulties ............................................................ 137
Macintosh
BR-Script3 printer driver .................................. 63
Printer driver ...................................................... 54
Windows®
Booklet printing ............................................... 30
BR-Script3 printer driver .................................. 45
Duplex printing .................................................. 29
Printer driver ...................................................... 26
Print quality ......................................................... 141
Printer driver ....................................................... 22, 51, 67

Q
Quiet mode ........................................................... 87

R
Register your product ....................................... 158
Reprint ............................................................... 81
Index

<table>
<thead>
<tr>
<th>S</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Service centers (USA/Canada)</td>
<td>159</td>
</tr>
<tr>
<td>Sleep mode</td>
<td>72, 86</td>
</tr>
<tr>
<td>SO-DIMM</td>
<td>90</td>
</tr>
<tr>
<td>Specifications</td>
<td>150</td>
</tr>
<tr>
<td>Status Monitor</td>
<td></td>
</tr>
<tr>
<td>Macintosh</td>
<td>68</td>
</tr>
<tr>
<td>Windows®</td>
<td>52</td>
</tr>
<tr>
<td>Supplies (USA/Canada)</td>
<td>160</td>
</tr>
<tr>
<td>Symbol</td>
<td>156</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>T</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Thick paper</td>
<td>15</td>
</tr>
<tr>
<td>Toner cartridge</td>
<td>94, 96</td>
</tr>
<tr>
<td>Troubleshooting</td>
<td>122, 137</td>
</tr>
<tr>
<td>if you are having difficulty</td>
<td></td>
</tr>
<tr>
<td>network</td>
<td>139</td>
</tr>
<tr>
<td>paper handling</td>
<td>138</td>
</tr>
<tr>
<td>printing</td>
<td>137</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>U</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Unprintable area</td>
<td>7</td>
</tr>
<tr>
<td>Utilities</td>
<td>158</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>W</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Watermark</td>
<td>31, 35</td>
</tr>
<tr>
<td>Weights</td>
<td>150</td>
</tr>
</tbody>
</table>