SHARP

OPERATION MANUAL
(for printer and scanner)

DIGITAL MULTIFUNCTIONAL SYSTEM

INTRODUCTION

This manual describes the printer and scanner functions of the digital multifunctional system.

Note

- For information on loading paper, replacing toner cartridges, clearing paper misfeeds, handling peripheral devices, and other copier-related information, please refer to "Operation manual (for general information and copier)" that accompanies the machine.
- For information on installing the drivers and software cited in this manual, please refer to the separate "Software setup guide".
- For information on the operating system, please refer to your operating system manual or the online Help function.
- The screen images and procedures that appear in this manual are mainly for Windows XP. With other versions of Windows, some screen images may be different from those in this manual.
- The explanations in this manual are based on American English and the North American version of the software. Software for other countries and regions may vary slightly from the North American version.
- This manual refers to the Reversing single pass feeder as the "RSPF" and the Single pass feeder as the "SPF". Unless specific mention is made, both the RSPF and the SPF are referred to simply as "SPF".
- Where "AR-XXXX" appears in this manual, please substitute the name of your model for "XXXX".

- In some regions the "Key operator's guide" cited in this manual is a separate manual, and in other regions the "Key operator's guide" is included in the "Operation manual (for general information and copier)".
- The "Dual function board" cited in this manual can be installed as an option in some models and is pre-installed standard in other models. For detailed information, please refer to "3. PERIPHERAL DEVICES AND SUPPLIES" in the "Operation manual (for general information and copier)".

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The display screens, messages, and key names shown in the manual may differ from those on the actual machine due to product improvements and modifications.

CONTENTS

1 PRINT

This chapter explains the basic procedure for printing and how to select printer driver settings for various purposes.

> **✎Note**
> - Paper that can be used and the procedures for loading paper are the same as for copying. See the "Operation manual (for general information and copier)".
>
>   **When the dual function board is installed**
> - Before using the machine in USB 2.0 High-speed mode, be sure to read "USB2.0 MODE" and "System requirements for USB 2.0 (Hi-Speed mode)" in the "Key operator's guide".

BASIC PRINTING

The following example explains how to print a document from WordPad.
Before printing, make sure that the correct size of paper for your document has been loaded in the machine.

1 Make sure that the ONLINE indicator on the operation panel is lit.

If the ONLINE indicator is not on, press the [PRINT] key to switch to printer mode and then use the [▲] key to select "ONLINE".

Ready to print.
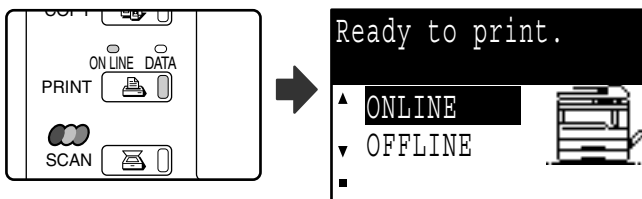
▲ ONLINE
▼ OFFLINE

The status of the printer function is indicated by the ONLINE and DATA indicators above the [PRINT] key.

	ONLINE indicator	DATA indicator
Lit	The machine is online. Printing is possible.	There is print data in memory that has not been printed yet.
Blinking	A print job is being canceled.	Printing is in progress or data is being received.
Off	The machine is offline. Printing is not possible.	There is no print data in memory and print data is not being received.

2 Start WordPad and open the document that you wish to print.

3 Select [Print] from the application's [File] menu.

The "Print" dialog box will appear.
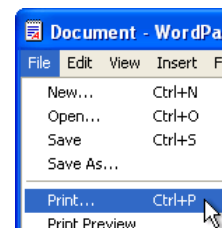
4 Make sure that "SHARP AR-XXXX" is selected as the printer. If you need to change any print settings, click the [Preferences] button ([Properties] button in Windows 95/98/Me/NT 4.0).

The printer driver setup screen will appear.
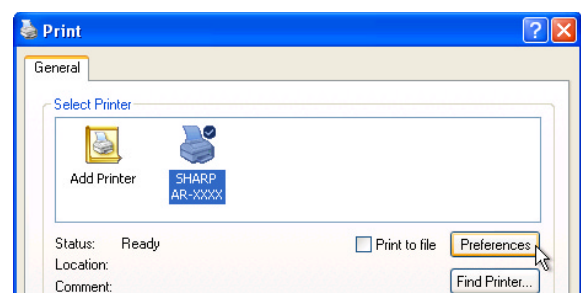
Windows 2000 does not have the [Preferences] button in this dialog box. Select settings as needed on each of the tabs in the setup screen.

☞PRINTER DRIVER SETTINGS (page 6),
TWO-SIDED PRINTING (ONLY FOR MODELS THAT SUPPORT TWO-SIDED PRINTING) (page 7),
PRINTING MULTIPLE PAGES ON ONE PAGE (page 7),
FITTING THE PRINT IMAGE TO THE PAPER (page 8),
ROTATING THE PRINT IMAGE 180 DEGREES (page 9),
PRINTING A WATERMARK (page 9)

5 **Click the [Print] button ([OK] button in Windows 95/98/Me/NT 4.0).**

Printing begins. When printing begins, the Print Status Window automatically opens.
☞OUTLINE OF THE PRINT STATUS WINDOW (page 10)

The print job is delivered to the output tray, with the position of the paper offset slightly from the previous job (offset function).

Note
When the job separator tray is installed
The output tray can be selected when selecting print settings at the time of printing. To change the tray selection, select the desired tray in "Output" in the [Paper] tab of the printer driver setup screen.

IF THE TRAY RUNS OUT OF PAPER DURING PRINTING

Add paper to the tray that ran out or to the bypass tray. If you add paper to the bypass tray, press the [PRINT] key on the machine to switch to printer mode and select "BYPASS-TRAY". Printing will resume. Note that if the "AUTO TRAY SWITCHING" setting is selected in the "PAPER SIZE SET" (accessed by pressing the [SPECIAL FUNCTION] key) and there is the same size of paper in another tray, the machine will automatically switch to the other tray and continue printing.

PAUSING A PRINT JOB

To pause a print job, press the [PRINT] key on the machine to switch to printer mode and then select "OFFLINE" with the [▼] key. The machine pauses the print job and then goes offline.
• To cancel a print job, press the [C] key (ⓒ).
• To resume printing, select "ONLINE" with the [▲] key.

WHEN "PAPER SOURCE" IS SET TO [AUTO SELECT]

If "Paper Source" is set to [Auto Select] in the [Paper] tab of the printer driver setup screen and the correct size of paper for a print job is not loaded in the machine, the printing procedure will vary depending on the "FORCED OUTPUT OF PRINT" setting (page 26) in the key operator programs.

When "FORCED OUTPUT OF PRINT" is disabled

Add paper to the bypass tray, press the [PRINT] key on the machine to switch to printer mode, and select "BYPASS-TRAY". Printing will resume.

When "FORCED OUTPUT OF PRINT" is enabled

The closest size of paper in a tray other than the bypass tray will be used for printing.

Note
When the dual function board is installed
• If the print image is in a different orientation than the paper, the print image will be automatically rotated 90 degrees to enable correct printing on the paper. (Other than the bypass tray)
When the dual function board is not installed
• Be sure to set each tray's paper size in "Set Tray Status" in the "Configuration" tab of the printer driver setup screen. See "CONFIGURING THE PRINTER DRIVER" in "3. TROUBLESHOOTING AND USEFUL INFORMATION" in the "Software setup guide".
When printing, be sure to specify a tray other than "Auto Select" in "Paper Source" in the "Paper" tab of the printer driver setup screen.

HOW [BYPASS TRAY] AND [BYPASS MANUAL] DIFFER IN THE "PAPER SOURCE" SETTINGS

There are two bypass tray settings in "Paper Source" in the [Paper] tab of the printer driver setup screen:
• When [Bypass Tray] is selected, the print job is automatically printed on the paper in the bypass tray.
• When [Bypass Manual] is selected, the print job is not printed until paper is inserted into the bypass tray. If paper is already in the bypass tray, remove the paper and then re-insert it to begin printing.

OPENING THE PRINTER DRIVER FROM THE [START] BUTTON

To change the printer driver settings, follow the steps below. Settings adjusted in this way will be the initial settings when you print from an application. (If you change the settings in the printer driver setup screen at the time of printing, the settings will revert to the initial settings when you quit the application.)

Windows 2000/XP

1 **Click the [start] button, and then click [Control Panel].**

In Windows 2000, click the [Start] button and select [Settings].

2 **Click [Printers and Other Hardware], and click [Printers and Faxes].**

In Windows 2000, click [Printers].

3 **Click the [SHARP AR-XXXX] printer driver icon and select [Properties] from the [File] menu.**

```
Set Up Faxing

Create Shortcut
Delete
Rename
Properties
Close
```
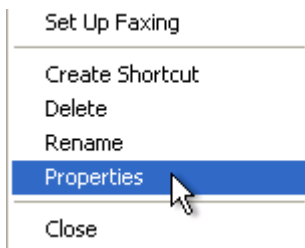
4 **Click the [Printing Preferences] button in the [General] tab.**

The printer driver setup screen will appear.
☞

Windows 95/98/Me/NT 4.0

1 **Click the [Start] button, select [Settings] and then click [Printers].**

2 **Click the [SHARP AR-XXXX] printer driver icon and select [Properties] from the [File] menu.**

```
Create Shortcut
Delete
Rename
Properties
Close
```
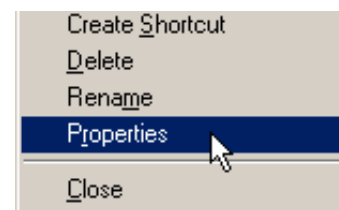
Note In Windows NT 4.0, select [Document Defaults] to open the printer driver setup screen.

3 **In Windows 95/98/Me, click the [Setup] tab.**
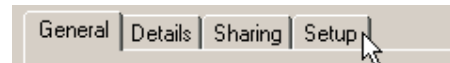
```
General | Details | Sharing | Setup
```

The printer driver setup screen will appear.
☞

1

PRINTER DRIVER SETTINGS

To view Help for a setting, click the [?] button in the upper right-hand corner of the window and then click the setting.
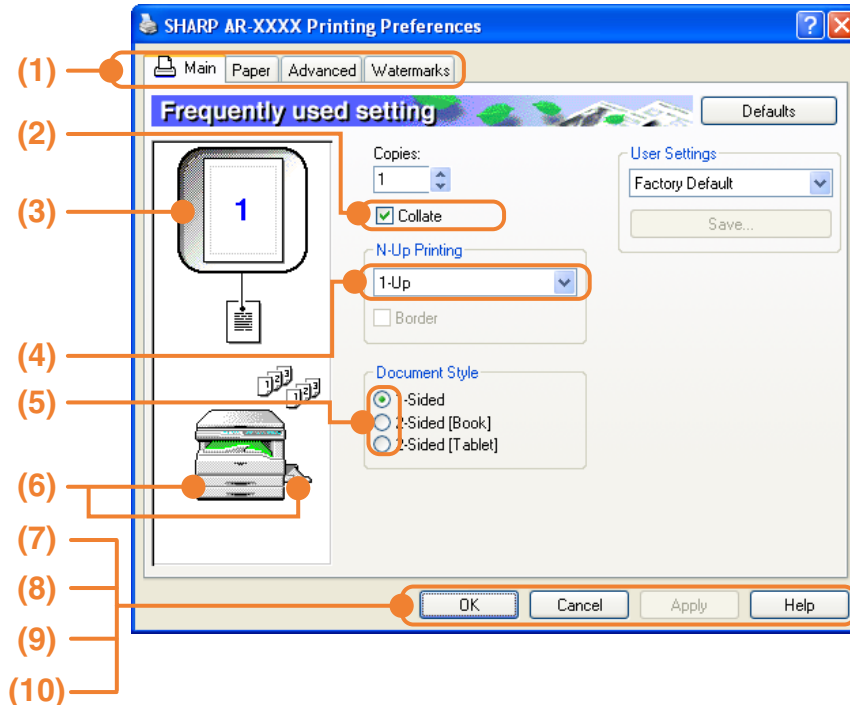Some restrictions exist on the combinations of settings that can be selected in the printer driver setup screen. When a restriction is in effect, an information icon ([i]) will appear next to the setting. Click the icon to view an explanation of the restriction.

(1) Tab
The settings are grouped on tabs. Click on a tab to bring it to the front.

(2) Checkbox
Click on a checkbox to activate or deactivate a function.

(3) Print image
This shows the effect of the selected print settings.

(4) Drop-down list
Allows you to make a selection from a list of choices.

(5) Check button
Allows you to select one item from a list of options.

(6) Image of paper trays
The tray selected in "Paper Source" in the [Paper] tab appears in blue. You can also click on a tray to select it.

(7) [OK] button
Click this button to save your settings and exit the dialog box.

(8) [Cancel] button
Click this button to exit the dialog box without making any changes to the settings.

(9) [Apply] button
Click to save your settings without closing the dialog box.

> 📝**Note**
> • Windows NT 4.0 does not have the [Apply] button.
> • The [Apply] button does not appear when you open this window from an application.

(10) [Help] button
Click this button to display the help file for the printer driver.

> 📝**Note** The settings and the image of the machine will vary depending on the model. If a tray or job separator tray option is installed, see "CONFIGURING THE PRINTER DRIVER" in "3. TROUBLESHOOTING AND USEFUL INFORMATION" in the "Software setup guide" to configure the settings for the option.

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TWO-SIDED PRINTING (ONLY FOR MODELS THAT SUPPORT TWO-SIDED PRINTING)

On models that have the two-sided printing function, both sides of the paper can be printed on.
To use this function, open the printer driver setup screen and select [2-Sided (Book)] or [2-Sided (Tablet)] from "Document Style" in the [Main] tab.
To open the printer driver, see "BASIC PRINTING" (page 3).

1

| **Note** | • Paper sizes that can be used for two-sided printing are Ledger, Letter, Legal, Foolscap, A3, A4, A5, B4 and B5.
• The bypass tray cannot be used for two-sided printing. |

The following example shows the result when portrait data is printed on both sides of the paper.

Print data	Printing result	
	2-Sided (Book)	**2-Sided (Tablet)**
	 The pages are printed so that they can be bound at the side.	 The pages are printed so that they can be bound at the top.

PRINTING MULTIPLE PAGES ON ONE PAGE

This feature allows you to reduce and print two or four document pages on a single sheet of paper.
To use this function, open the printer driver setup screen and select [2-Up] or [4-Up] for "N-Up Printing" on the [Main] tab.
To open the printer driver, see "BASIC PRINTING" (page 3).

| **Note** | The "N-Up Printing" setting is not available when [Fit to Page] is selected.
☞FITTING THE PRINT IMAGE TO THE PAPER (page 8) |
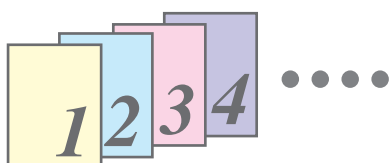
N-Up	☐ Border	☑ Border
[2-Up]		
[4-Up]		

If you select the [Border] checkbox, borderlines will be printed around each page.

FITTING THE PRINT IMAGE TO THE PAPER

The printer driver can adjust the size of the print image to match the size of the paper loaded in the machine.
Follow the steps shown below to use this function. The explanation below assumes that you intend to print a ledger or A3 size document on letter or A4 size paper.
To open the printer driver, see "BASIC PRINTING" (page 3).

> **Note** The "Fit To Paper Size" setting is not available when "N-Up Printing" is selected.
> ☞ PRINTING MULTIPLE PAGES ON ONE PAGE (page 7)

1 **Click the [Paper] tab in the printer driver setup screen.**

2 **Select the original size (Ledger or A3) of the print image in "Paper Size".**

Paper Size
11.0 x 17.0 in
Ledger
Custom...

or

Paper Size
297 x 420 mm
A3
Custom...
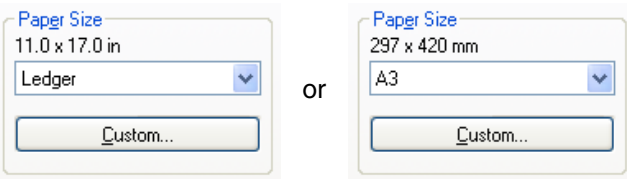
3 **Click on the [Fit to Page] checkbox.**

Fit To Paper Size
☑ Fit to Page
Print Ledger on
Letter

or

Fit To Paper Size
☑ Fit to Page
Print A3 on
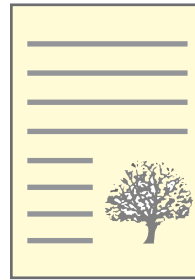A4

4 **Select the size of the paper (Letter or A4) that is loaded in the machine from "Fit to Paper Size".**

The size of the print image will be automatically adjusted to match the paper loaded in the machine.

Paper Size: Ledger or A3
Fit To Paper Size: Letter or A4

Ledger or A3 size document
(Paper Size)

Letter or A4 size paper
(Fit To Paper Size)

ROTATING THE PRINT IMAGE 180 DEGREES

The print image can be rotated 180 degrees.
This feature rotates the print image 180 degrees to enable correct printing on paper that can only be loaded in one orientation.
To use this function, select the image orientation in "Image Orientation" on the [Paper] tab, and then click on the [Rotate 180 degrees] checkbox.
To open the printer driver, see "BASIC PRINTING" (page 3).

Printing result	
◉ **Landscape** ☑ **Rotate 180 degrees**	◉ **Landscape** ☐ **Rotate 180 degrees**
∀BCD	ABCD

1

📝**Note** The procedure for loading paper is explained in the "Operation manual (for general information and copier)".

PRINTING A WATERMARK

You can print a watermark such as "CONFIDENTIAL" on your document. To print a watermark, open the printer driver setup screen, click the [Watermarks] tab, and follow the steps below.
To open the printer driver, see "BASIC PRINTING" (page 3).

How to Print a Watermark

From the "Watermark" drop-down list, select the watermark that you wish to print (for example "CONFIDENTIAL"), and start printing.

Watermark:
(None)
(None)
TOP SECRET
CONFIDENTIAL
DRAFT
ORIGINAL
COPY

Watermark:
CONFIDENTIAL
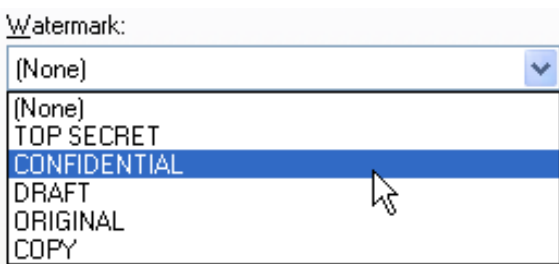
Print sample
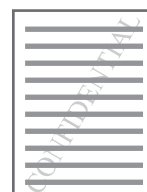
You can enter text to create your own custom watermark. For details on watermark settings, view printer driver Help.
☞ PRINTER DRIVER SETTINGS (page 6)

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OUTLINE OF THE PRINT STATUS WINDOW

When printing begins, the Print Status Window automatically opens.
The Print Status Window is a utility that monitors the machine and informs you of the name of the document being printed and any errors that occur.

(1) Status window
Provides information on the current status of the printer.
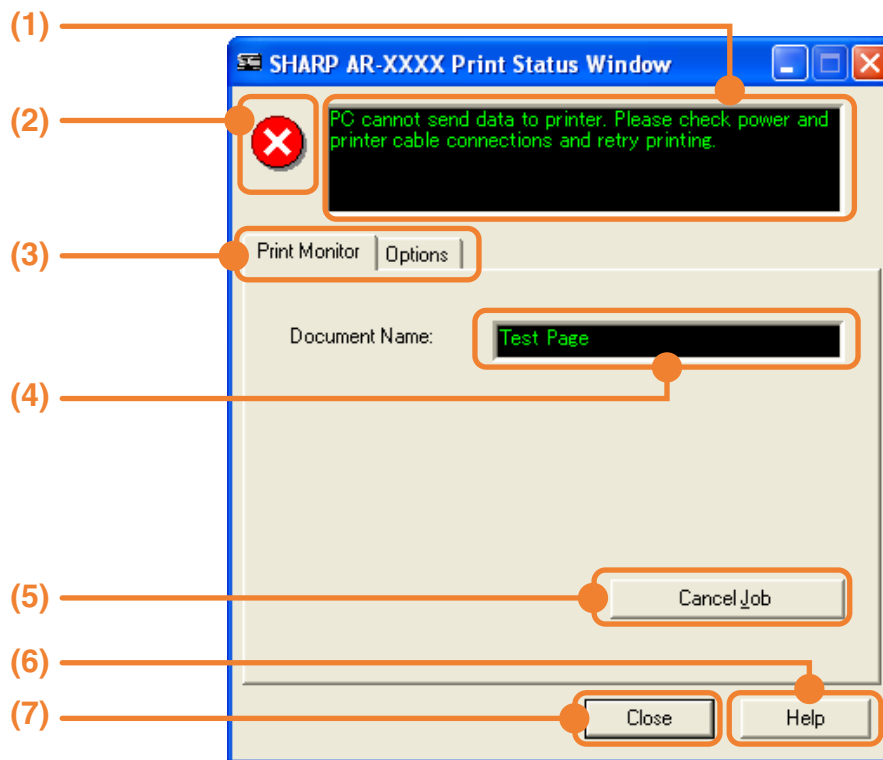
(2) Status icons
The status icons appear to alert you to printer errors. Nothing appears when printing is taking place normally.
The icons are explained below. Follow the instructions in the status window to solve the problem.

Icon	Print Status
	An error has occurred that requires immediate attention.
	An error has occurred that requires attention soon.

(3) Tab
Click a tab to bring it to the front. The [Options] tab allows you to select display options for the Print Status Window.

(4) Document Name
Shows the name of the document currently being printed.

(5) [Cancel Job] button
Printing can be canceled by clicking this button before the machine receives the job.

(6) [Help] button
Click this button to display the help file for the Print Status Window.

(7) [Close] button
Click this button to close the Print Status Window.

2 PRINTER SHARING

This chapter explains how to configure the machine as a shared printer in a Windows network environment. Configuring the machine as a shared printer enables computers that are not directly connected to the machine to print to the machine.

SHARING THE PRINTER USING WINDOWS NETWORKING

The machine can be used as a shared printer in a Windows 95/98/Me/NT 4.0/2000/XP network environment. Note that the Windows network environment must already be established.
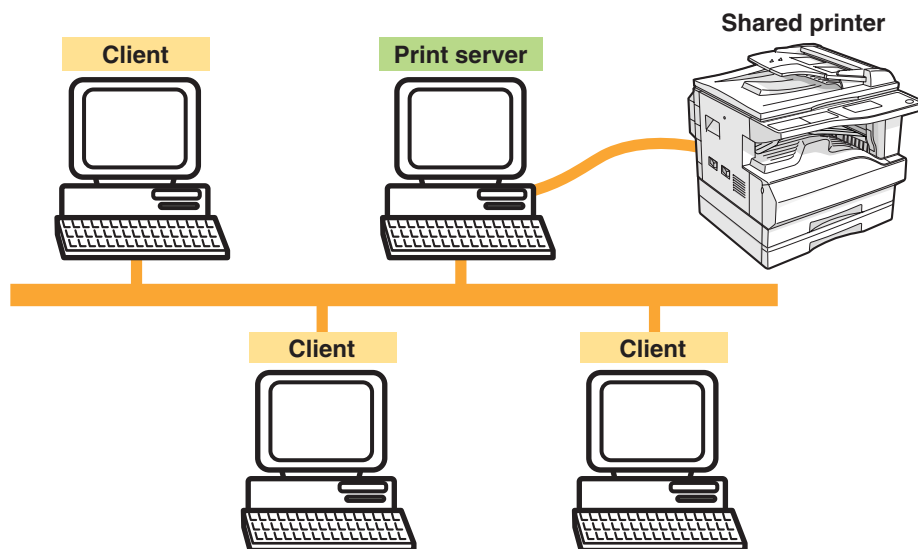
"Print server" as explained here is a computer that is directly connected to the machine, and a "Client" is any other computer that is connected to the same network.

☞ SHARED PRINTER SETTINGS (page 12)   ☞ CLIENT SETTINGS (page 13)
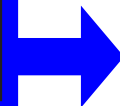
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SHARED PRINTER SETTINGS

Settings on the computer to which the machine is directly connected

Follow the steps below to use the computer directly connected to the machine as a print server. If your operating system is Windows 95/98/Me, start from step 1. If your operating system is Windows NT 4.0, 2000 or XP, open the control panel and then start from step 6.

Note For information on the settings, refer to your operating manual or to the help files for your operating system.

1 **Click the [Start] button, point to [Settings] and then click [Control Panel].**

2 **Double-click the [Network] icon ( ).**

Note If the [Network] icon does not appear in Windows Me, click [view all Control Panel options].

3 **Click the [File and Print Sharing] button.**

4 **Enable [I want to be able to allow others to print to my printer(s).] by clicking the checkbox, and then click the [OK] button.**

5 **Click the [OK] button in the [Network] dialog box.**

Note If a message appears asking you to restart the computer, click the [Yes] button and restart the computer. After restarting the computer, open the printer folder and continue the setup procedure from Step 6.

6 **Click [Printers and Other Hardware] in the [Control Panel], and click [Printers and Faxes].**

In operating systems other than Windows XP, double-click the [Printers] icon.

7 **Click the [SHARP AR-XXXX] printer driver icon and select [Sharing] from the [File] menu.**

8 **Configure the settings for sharing and then click the [OK] button.**

Note For information on a setting, click the [?] button at the top-right of the dialog box and then click the setting to display Help.

☞

CLIENT SETTINGS

Follow the procedure below to install the printer driver on the client.

1 **Click the [start] button and then click [Control Panel].**
In Windows 95/98/Me/2000, click the [Start] button and select [Settings].

2 **Click [Printers and Other Hardware] and then [Printers and Faxes].**
In Windows 95/98/Me/2000, click [Printers].

3 **Click [Add a printer] in [Printer Tasks].**

- In Windows 95/98/Me/2000, double-click the [Add Printer] icon.
- The "Add Printer Wizard" will appear.
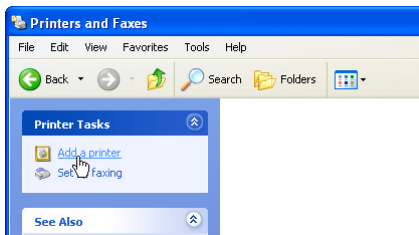
4 **Click the [Next] button.**

5 **Select [A network printer, or a printer attached to another computer] and then click the [Next] button.**
In Windows 95/98/Me/2000, select [Network printer] and then click the [Next] button.
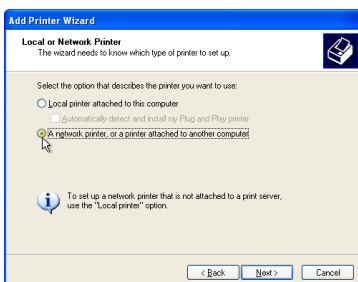
6 **Select [Browse for a printer] and click the [Next] button.**

- In Windows 95/98/Me, click the [Browse] button.
- If you are using Windows 2000, select [Type the printer name, or click Next to browse for a printer] and then click the [Next] button.
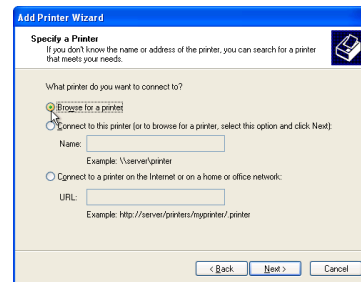
7 **Select the printer to be shared in the network and then click the [Next] button.**
If you are using Windows 95/98/Me, select the printer to be shared, click the [OK] button, and then click the [Next] button.
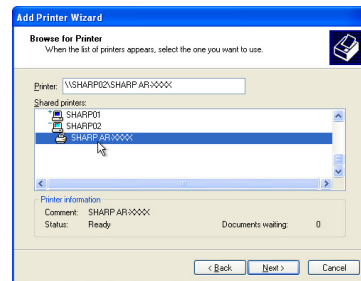
The contents of this window will vary depending on your network environment.

8 **Select settings in the [Default Printer] screen and then click the [Next] button.**

9 **Click the [Finish] button.**

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Settings in Windows NT 4.0

If your operating system is Windows NT 4.0, configure settings as follows in the printer properties after installing the printer driver. For the procedure for installing the printer driver, see "1. INSTALLING THE SOFTWARE (THAT ACCOMPANIES THE MACHINE)" in the "Software setup guide".

1 **Click the [Start] button, select [Settings] and then click [Printers].**

2 **Click the [SHARP AR-XXXX] printer driver icon and select [Properties] from the [File] menu.**
The printer properties will appear.

3 **Click the [Ports] tab and then click the [Add Port] button.**
The [Printer Ports] dialog box will appear.
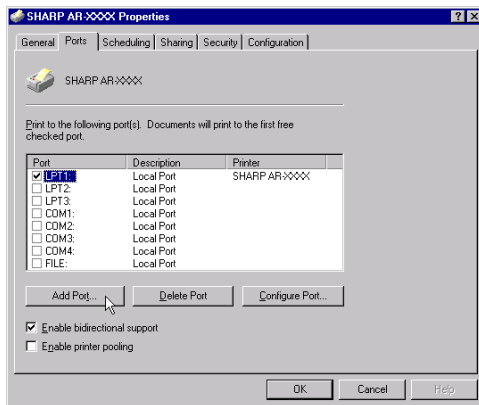
4 **Select [Local Port] in the "Available Printer Ports" list, and click the [New Port] button.**
The "Port Name" dialog box will appear.
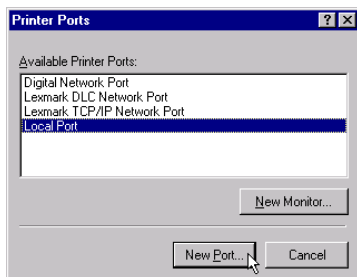
5 **Enter "\\(name of server connected to machine)\(name of shared printer)", and click the [OK] button.**
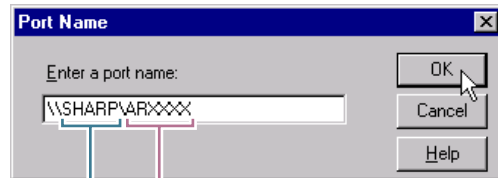
name of shared printer

name of server connected to machine

6 **Click the [Close] button in the [Printer Ports] dialog box.**

7 **Click the [OK] button in the printer properties window.**

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3 SCAN

This chapter explains how to scan from a computer connected to the machine by a USB cable, and how to scan using the machine's operation panel.

> **Note** **When the dual function board is installed**
> Before using the machine in USB 2.0 High-speed mode, be sure to read "USB2.0 MODE" and "System requirements for USB 2.0 (Hi-Speed mode)" in the "Key operator's guide".

SCANNING OVERVIEW

The flow chart shown below provides an overview of scanning.

> **Caution** The environment in which the machine's scanning function can be used is subject to certain limitations. For more information, see "1. INSTALLING THE SOFTWARE (THAT ACCOMPANIES THE MACHINE)" in the "Software setup guide".

| Scanning from a TWAIN*1-compliant or WIA*2-compliant application | Scanning from the "Scanner and Camera Wizard" (Windows XP) | Using the machine to begin scanning*3 |

Place the original in the scanning position
☞For more information, see "4. COPY FUNCTIONS" in the "Operation manual (for general information and copier)".

| Start up a Twain-compliant or WIA-compliant application, and select the machine's scanner driver. | Start up the "Scanner and Camera Wizard" from "Control Panel" in your computer. | Press the [SCAN] key on the machine to switch to scanner mode and select the destination (SC1: to SC6:) |

Set the scan preferences

Scanning
☞SCANNING FROM A TWAIN-COMPLIANT APPLICATION (page 16), SCANNING FROM A WIA-COMPLIANT APPLICATION (WINDOWS XP) (page 20)
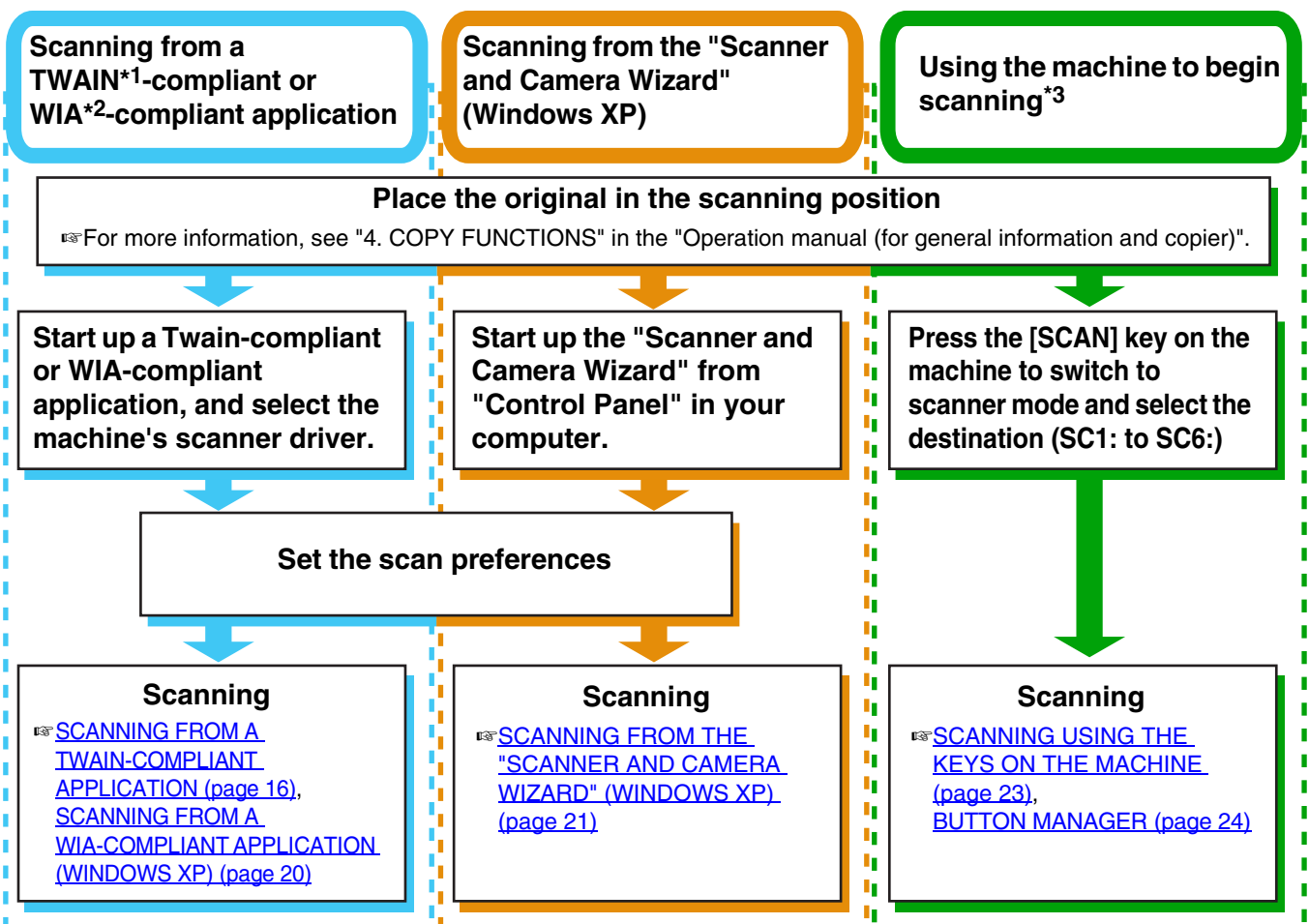
Scanning
☞SCANNING FROM THE "SCANNER AND CAMERA WIZARD" (WINDOWS XP) (page 21)

Scanning
☞SCANNING USING THE KEYS ON THE MACHINE (page 23), BUTTON MANAGER (page 24)

*1 TWAIN is an international interface standard for scanners and other image acquisition devices. By installing a TWAIN driver on your computer, you can scan and work with images using a variety of TWAIN-compliant applications.

*2 WIA (Windows Imaging Acquisition) is a Windows function that allows a scanner, digital camera or other imaging device to communicate with an image processing application. The WIA driver for this machine can only be used in Windows XP.

*3 To begin scanning using the machine's operation panel, settings must be configured in the Control Panel after Button Manager is installed. For more information, see "SETTING UP BUTTON MANAGER" in "1. INSTALLING THE SOFTWARE (THAT ACCOMPANIES THE MACHINE)" in the "Software setup guide".
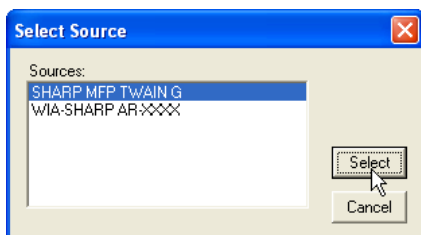
SCANNING FROM A TWAIN-COMPLIANT APPLICATION

The SHARP scanner driver is compatible with the TWAIN standard, allowing it to be used with a variety of TWAIN-compliant applications. The procedure for scanning from some applications may differ in places from the procedure below. For more information, refer to the manual or the help file of your application.

1 **Place the original(s) that you wish to scan on the document glass or in the SPF.**

For information on placing an original for scanning, see "4. COPY FUNCTIONS" in the "Operation manual (for general information and copier)".

2 **Start up a Twain-compliant application and select [Select Scanner] from the [File] menu.**

3 **Select [SHARP MFP TWAIN G] and then click the [Select] button.**

Note
• If you are using Windows XP, you can also select [WIA-SHARP AR-XXXX] to scan using the WIA driver.
☞SCANNING FROM A WIA-COMPLIANT APPLICATION (WINDOWS XP) (page 20)
• Depending on your system, [SHARP MFP TWAIN G 1.0 (32-32)] or [WIA-SHARP AR-XXXX 1.0 (32-32)] may appear in the above select source screen.

4 **Select [Acquire Image] from the [File] menu.**

The scanner driver setup screen will appear.
☞SCANNER DRIVER SETTINGS (page 18)

5 **In the "Scanning Position" menu, select the location where you placed the original in Step 1.**

• If you placed a one-sided original in the SPF, select [SPF (Simplex)].
• If you placed a two-sided original in the RSPF, select [SPF (Duplex-Book)] or [SPF (Duplex-Tablet)].

Note
• If you selected [SPF (Duplex-Book)] or [SPF (Duplex-Tablet)] from the "Scan Position" menu, select [Right Edge Fed First] or [Leading Edge Fed First] for the orientation of the original.
• For original sizes for which two-sided scanning is possible, see "REVERSING SINGLE PASS FEEDER / SINGLE PASS FEEDER" in "3. PERIPHERAL DEVICES AND SUPPLIES" in the "Operation manual (for general information and copier)".
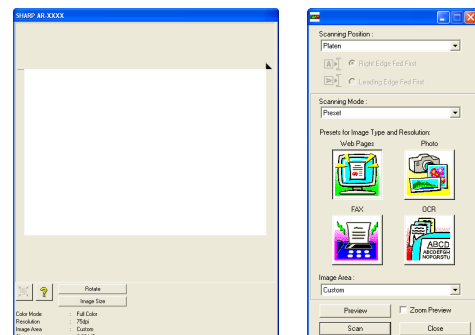
6 **Click the [Preview] button.**

The preview image will appear.

Note
• If the angle of the image is not correct, reset the original and click the [Preview] button again.
• If the preview image is not oriented correctly, click the [Rotate] button in the preview screen. This rotates the preview image 90 degrees clockwise, allowing you to correct the orientation without resetting the original.
☞Preview screen (page 19)
• If you inserted multiple pages in the SPF, the machine previews only the top page of the originals and then sends it to the original exit area. Return the previewed original to the SPF before starting the scanning job.

7 **Specify the scanning area and select the scan preferences.**

For information on specifying the scan area and selecting the scan preferences, see scanner driver Help.
☞SCANNER DRIVER SETTINGS (page 18)

⚠**Caution**

- Scanning a large area at high resolution results in a large quantity of data and a prolonged scanning time. When selecting the scan preferences, lower the resolution or specify a suitable scanning area.
- The scan resolution will vary depending on the scanning area and how much memory in the machine is free. For example, if a letter or A4 original is scanned in full color at 300 dpi with only the standard memory installed, the machine will scan the original in full color at 150 dpi and the scanner driver will enhance the resolution to 300 dpi.
  To scan a ledger or A3 original in full color at 600 dpi without using enhancement, the dual function board and the 256 MB memory option are required.

8 **When you are ready to begin scanning, click the [Scan] button.**

Scanning begins and the image is acquired into the application that you are using.
In the application, assign a file name and save the file.

✏**Note**

To cancel a scanning job after the [Scan] button has been clicked, press the [Esc] key on your keyboard or the [C] key (⦿) or [CA] key (⦿) on the operation panel.

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SCANNER DRIVER SETTINGS

The scanner driver setup screen consists of the "Set-up screen", which lets you select scan settings, and the "Preview screen", which shows the scanned image. For details on the scan settings, click the [Help] button in the preview screen to display Help.

Set-up Screen
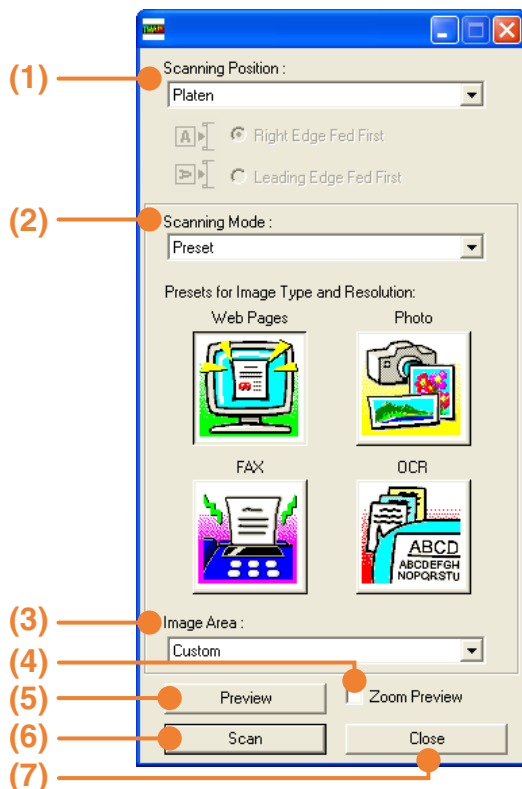
(1) **"Scanning Position" menu**
("Scanning Source" in some regions)
Select the location where the original is placed. Selections are [Platen] (document glass), [SPF (Simplex)], [SPF (Duplex-Book)] or [SPF (Duplex-Tablet)].

> **Note** On machines without an SPF, this setting is fixed at [Platen].

(2) **"Scanning Mode" menu**
Select "Preset" or "Custom Settings" ("Standard" or "Professional" in some regions) for the scanning mode.
The "Preset (or Standard)" screen lets you select the original type as well as monitor, photo, fax, or OCR according to the purpose of scanning.
If you wish to change the default settings for these four buttons, or select custom settings such as the image type and resolution before scanning, switch to the "Custom Settings (or Professional)" screen.
For details on the settings, click the [Help] button in the preview screen to display Help.

(3) **"Image Area" menu**
Set the scanning area. To scan the original size detected by the machine, select [Auto]. The scanning area can also be specified as desired in the preview window.

(4) **[Zoom Preview] checkbox**
When this is selected, the selected part of the preview image will be enlarged when the [Preview] button is clicked.
To return to the regular view, remove the checkmark.

> **Note** [Zoom Preview] cannot be used when [SPF] is selected in the "Scanning Position" menu.

(5) **[Preview] button**
Previews the document.

> **Note** If [Preview] is canceled by immediately pressing the [Esc] key on your keyboard, or the [C] key ([C]) or [CA] key ([CA]) on the machine, nothing will appear in the preview screen.

(6) **[Scan] button**
([Scanning] in some regions)
Click to scan an original using the selected settings. Before clicking the [Scan] button, make sure the settings are correct.

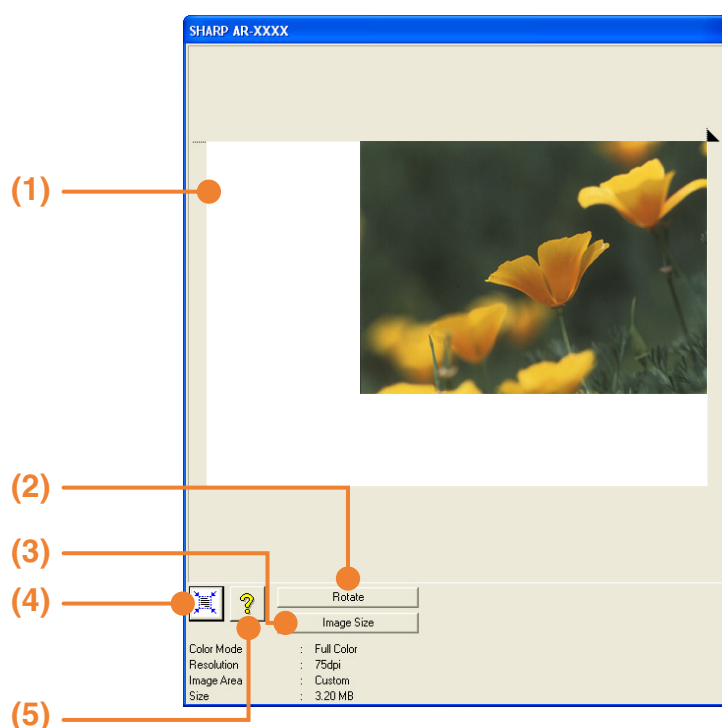> **Note** To cancel a scanning job after the [Scan] button is clicked, press the [Esc] key on your keyboard or the [C] key ([C]) or [CA] key ([CA]) on the machine.

(7) **[Close] button**
Click to close the scanner driver setup screen.

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Preview screen

(1) Preview window
Click the [Preview] button in the Set-up screen to display the scanned image. You can specify the scanning area by dragging the mouse inside the window. The inside of the frame that appears when you drag the mouse will be the scanning area. To cancel a specified scanning area and clear the frame, click anywhere outside the frame.

(2) [Rotate] button
Click to rotate the preview image 90 degrees clockwise. This allows the orientation to be corrected without resetting the original. Upon scanning, the image file is created in the orientation shown in the preview window.

(3) [Image Size] button
Click this button to open a dialog box that allows you to specify the scanning area by entering numbers. Pixels, mm, or inches can be selected for the units of the numbers. By initially specifying a scanning area, numbers can be entered to change that area relative to the top left corner as a fixed origin.

(4) [Auto Scan Area Adjustment] button ([Auto Scan Area Judgement] in some regions)
Click this button when the preview screen is displayed to automatically set the scanning area to the entire preview image.

Click the [Auto Scan Area Adjustment] button to automatically set the scanning area to the entire preview image.

Preview image
Preview window
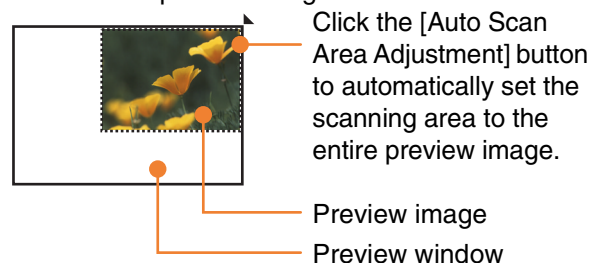
(5) [Help] button
Click to display the help file for the scanner driver.

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# SCANNING FROM A WIA-COMPLIANT APPLICATION (WINDOWS XP)

If you are using Windows XP, you can use the WIA driver to scan from Paint and other WIA-compliant applications. The procedure for scanning using Paint is explained in the following.

**1** **Place the original(s) that you wish to scan on the document glass or in the SPF.**

For information on placing an original for scanning, see "4. COPY FUNCTIONS" in the "Operation manual (for general information and copier)".

2 **Start Paint and then select [From Scanner or Camera] from the [File] menu.**

The scan screen of the WIA driver will appear.
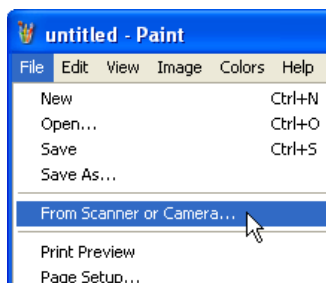
Note If you have WIA drivers for other devices installed on your computer, the "Select Device" screen will open. Select [SHARP AR-XXXX] and click the [OK] button.
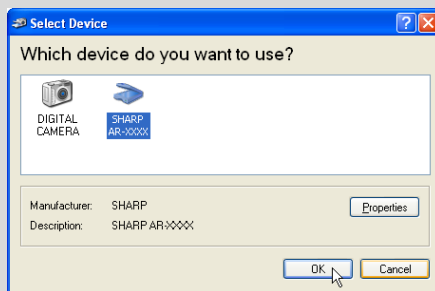

3 **Select the paper source and picture type, and click the [Preview] button.**

• The preview image will appear.
• If you placed the original on the document glass, select [Flatbed] for the "Paper source".
• If you placed the original in the SPF, select [Document Feeder] for the "Paper source" and specify the original size in "Page size".
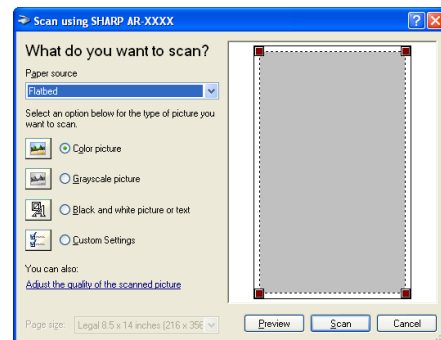
Note
• If an SPF is not installed on your machine, the "Paper source" menu will not appear.
• If you select [Document Feeder] for the "Paper source" and click the [Preview] button, the top original in the SPF is previewed. The previewed original is sent to the original exit area, so you will need to return it to the SPF before starting the scanning job.
• To view Help for a setting, click the [?] button in the upper right-hand corner of the window and then click the setting.

4 **Click the [Scan] button.**

• Scanning begins and the image is acquired into Paint.
• Use [Save] in your application to select a file name and folder for the scanned image, and save the image.
• To cancel scanning after the [Scan] button has been clicked, click the [Cancel] button or press the [C] key ([C]) or [CA] key ([CA]) on the machine operation panel.

SCANNING FROM THE "SCANNER AND CAMERA WIZARD" (WINDOWS XP)

The procedure for scanning with the "Scanner and Camera Wizard" in Windows XP is explained here. The "Scanner and Camera Wizard" lets you scan an image without using a TWAIN-compliant or WIA-compliant application.

1 **Place the original(s) that you wish to scan on the document glass or in the SPF.**

For information on placing an original for scanning, see "4. COPY FUNCTIONS" in the "Operation manual (for general information and copier)".

2 **Click the [start] button, the [Control Panel], [Printers and Other Hardware], and then [Scanners and Cameras].**

3 **Click the [SHARP AR-XXXX] icon and then click [Get pictures] in [Imaging Tasks].**

The "Scanner and Camera Wizard" will appear.
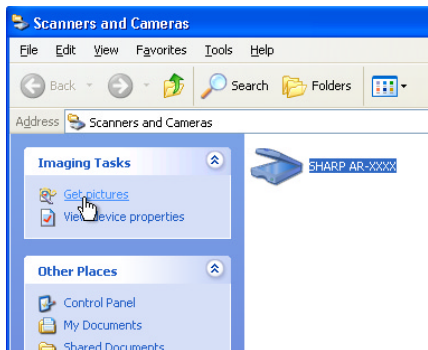
4 **Click the [Next] button.**
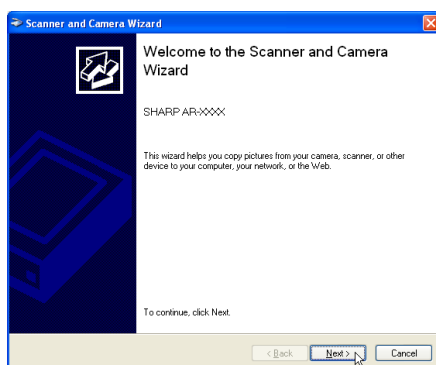
5 **Select the "Picture type" and "Paper source", and click the [Next] button.**

- If you placed the original on the document glass, select [Flatbed] for the "Paper source".
- If you placed the original in the SPF, select [Document Feeder] for the "Paper source" and specify the original size in "Page size".
- You can click the [Preview] button to display the preview image.
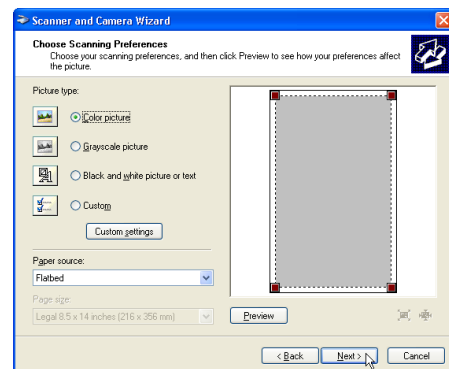
Note
- If an SPF is not installed on your machine, the "Paper source" menu will not appear.
- If you select [Document Feeder] for the "Paper source" and click the [Preview] button, the top original in the SPF is previewed. The previewed original is sent to the original exit area, so you will need to return it to the SPF before starting the scanning job.
- To adjust the resolution, picture type, brightness and contrast settings, click the [Custom settings] button.

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6 **Specify a group name, format and folder for saving the image, and then click the [Next] button.**

JPG, BMP, TIF or PNG can be selected for the format. To begin scanning, click the [Next] button.
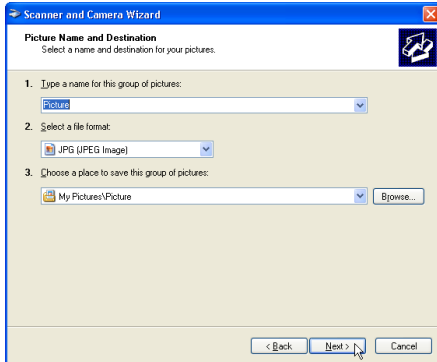
7 **When scanning ends, the following screen will appear. Select the next task you wish to perform and then click the [Next] button.**

If you are ready to end the session, click [Nothing. I'm finished working with these pictures].
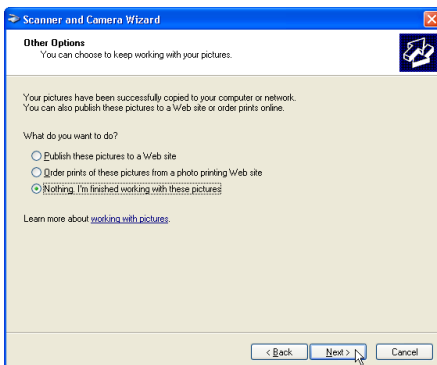
8 **Click the [Finish] button.**

The "Scanner and Camera Wizard" closes and the scanned image is saved in the specified folder.
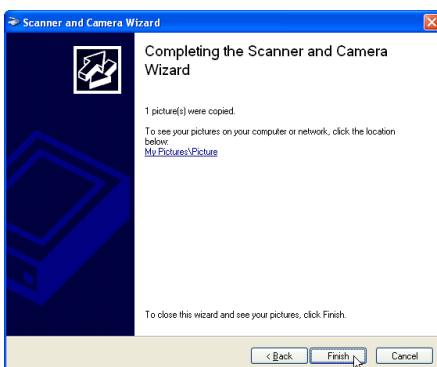
SCANNING USING THE KEYS ON THE MACHINE

The procedure for scanning using the [SCAN] key is explained in the following. When scanning is performed by this method, the previously specified application will automatically start and the scanned image will be acquired into the application.

Note
- Scanner mode cannot be used in the following situations:
  - A problem has occurred in the machine such as a paper misfeed or an open cover.
  - The key operator programs are being used.
  - The tray paper size is being set.
  - During copying or printing
  - During scanning of an original for a fax transmission (when the fax option is installed)
- If the machine is in copy mode, press the [SCAN] key to switch to scanner mode and clear the previously set copy settings.

1 Place the original(s) that you wish to scan on the document glass or in the SPF.

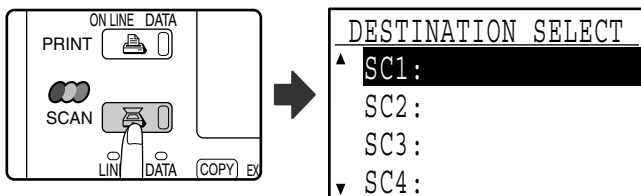For information on how to place the original, see "4. COPY FUNCTIONS" in the "Operation manual (for general information and copier)".

2 Press the [SCAN] key.

The [SCAN] key indicator lights up to indicate that the machine is in scanner mode and the destination selection screen appears in the display. A name can be entered in Button Manager for each of the destinations "SC1:" to "SC6:", which will appear in the format "SC1:XXXXX".

Note

When the dual function board is installed
If computers are connected to both of the USB ports on the machine, the following screen will appear in the display. In this case, use the [▼] or [▲] key to select the USB port that you wish to use and press the [OK] key. For the location of the ports, see "1. BEFORE USING THE PRODUCT" in the "Operation manual (for general information and copier)".
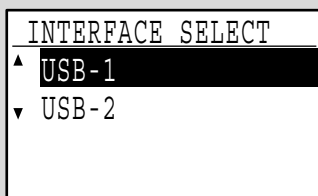
3 Use the [▼] or [▲] key to select the desired scan destination.
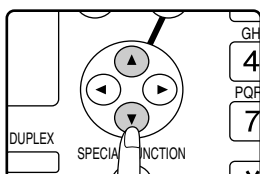
The following applications have been set at the factory for each of the scan destinations 1 to 6.
If you wish to change a setting, see .

Scan Destination	Application that starts
SC1:	Sharpdesk
SC2:	Email
SC3:	FAX
SC4:	OCR
SC5:	Microsoft Word
SC6:	Filing

4 Press the [OK] key.
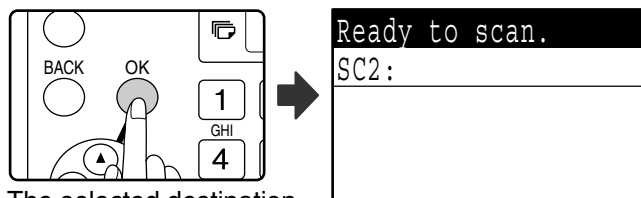
The selected destination appears.

5 Press the [START] key.
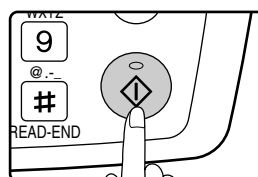
Scanning begins.

Note
- The [COPY] key, [PRINT] key, or [FAX] key can be pressed in scanner mode to switch to the corresponding mode.
- For restrictions on using copy, printer, or fax mode while in scanner mode, or using scanner mode while in copy, printer, or fax mode, see "OPERATION IN COPY, PRINT, SCAN, AND FAX MODES" in "1. BEFORE USING THE PRODUCT" in the "Operation manual (for general information and copier)".

BUTTON MANAGER

Button Manager is a software utility that allows the scanner function to be used by means of the [SCAN] key on the machine. The Button Manager software allows you to assign a destination application and scan settings to each of the six destinations on the machine.

To scan using the machine's operation panel, settings must be configured in the Control Panel after Button Manager is installed. To install Button Manager and configure settings, see "SETTING UP BUTTON MANAGER" in "1. INSTALLING THE SOFTWARE (THAT ACCOMPANIES THE MACHINE)" in the "Software setup guide".

Setup window

To view Help for a setting, click the [?] button in the upper right-hand corner of the Button Manager setup window (Scan Button Destination Settings screen) and then click the setting.
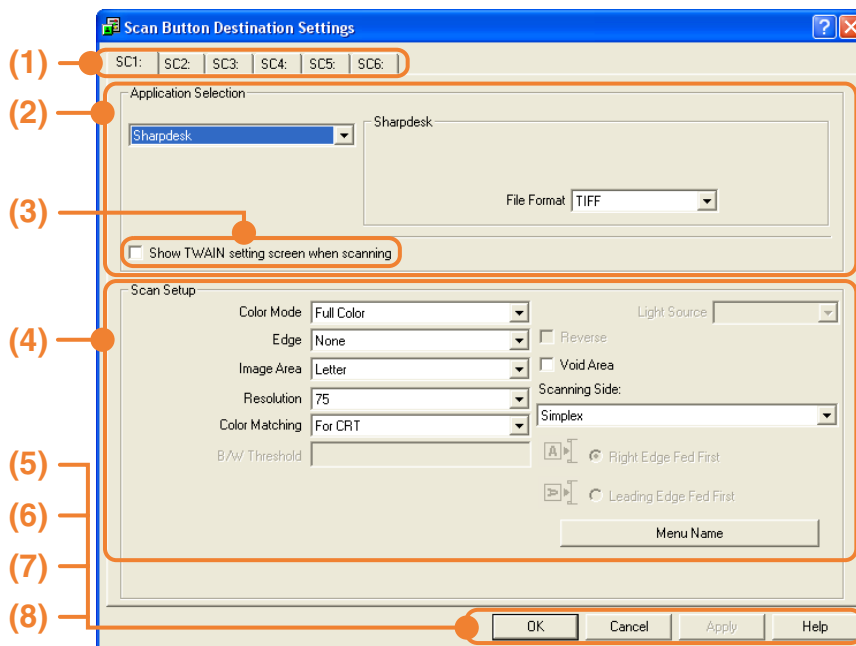
(1) Tab
Select the desired destination. The tabs contain scan settings for each of the scan destinations (SC1 through SC6) on the machine.

(2) "Application Selection" area
Select the application that starts up here.

(3) [Show TWAIN setting screen when scanning] checkbox
Select whether or not the TWAIN screen is shown when scanning. When the checkbox is selected, the TWAIN screen appears when scanning is executed to let you adjust the scanning conditions.

(4) "Scan Setup" area
Set the scan conditions.

(5) [OK] button
Click to save your settings and close the dialog box.

(6) [Cancel] button
Click this button to close the dialog box without making any changes to the settings.

(7) [Apply] button
Click to save your settings without closing the dialog box.

(8) [Help] button
Click this button to display the help file for Button Manager.

The scan settings for each of the six destinations can be changed in Button Manager.
To change the settings, see .

> **Note** **When the dual function board is installed**
> If computers are connected to both of the two USB ports on the machine, separate Button Manager settings can be configured on each computer.

BUTTON MANAGER SETTINGS

If you need to configure Button Manager settings, follow the steps below. For details on Button Manager settings, see Button Manager Help. (page 24)

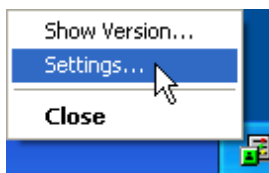**1 Right-click the Button Manager icon (📠) on the task bar and select [Settings] from the pop-up menu.**

The Button Manager settings will open.

> Show Version...
> Settings...
> Close

Note: If the Button Manager icon does not appear on the task bar, click the [start] button, select [All Programs] ([Programs] in other than Windows XP), select [Sharp Button Manager G], and then click [Button Manager] to start Button Manager. The Button Manager icon appears on the task bar.

2 Click the tab that you wish to configure.

SC1: | SC2: | SC3: | SC4: | SC5: | SC6: |

3 Set up the start-up application in the "Application Selection" area.

Note:
- If the [Show TWAIN setting screen when scanning] checkbox is selected, the setting screen will appear when scanning is executed to let you adjust the scanning conditions.
- If an application other than [FAX] is selected, you can select the "File format" of the scanned image. If [PDF] is selected for the file format, the image quality may be slightly degraded.

4 Select scanning conditions such as "Color Mode" and "Scanning Side" in the "Scan Setup" area.

- If you placed a two-sided original in the RSPF, select [Duplex-Book] or [Duplex-Tablet] as appropriate for the position of the binding on the original.
- The name of the tab can be changed. Click the [Menu Name] button and enter a new name. After entering a name, click the [Apply] button or [OK] button. This also changes the scan destination name that appears on the machine. (Example: SC1: XXXXX)

Note:
- If you selected [Duplex-Book] or [Duplex-Tablet] from the "Scanning Side" menu, select "Right Edge Fed First" or "Leading Edge Fed First" for the orientation of the original.
- For original sizes for which two-sided scanning is possible, see "REVERSING SINGLE PASS FEEDER / SINGLE PASS FEEDER" in "3. PERIPHERAL DEVICES AND SUPPLIES" in the "Operation manual (for general information and copier)".
- Some settings cannot be selected in some applications.
- When [Show TWAIN settings when scanning] is selected, only [Menu name] can be selected.

5 Click the [OK] button.

This completes the settings.

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4 KEY OPERATOR PROGRAMS

The key operator programs allow the administrator of the machine (key operator) to enable and disable functions to suit the needs of the workplace. This chapter explains key operator programs for the printer and scanner functions. For key operator programs that are common to all modes, see the "Key operator's guide".

For the initial key operator code set at the factory, see "PROGRAMMING A KEY OPERATOR CODE" in the "Key operator's guide".

KEY OPERATOR PROGRAM LIST

The key operator programs for the printer and scanner functions are shown in the following table. Factory default settings are indicated in bold. When "ENABLE, DISABLE" appears in the "Settings" column of a program, the program is enabled by pressing the [OK] key so that a checkmark appears in the checkbox. A checkmark in the checkbox (☑) indicates that "ENABLE" is selected. No checkmark (☐) indicates that "DISABLE" is selected.

Mode	Program	Settings	Explanation
Printer	NOTICE PAGE	**ENABLE**, DISABLE	Select whether or not a Notice Page (page 30) is printed when printing is not successful due to a memory full (or other) error.
	FORCED OUTPUT OF PRINT	ENABLE, **DISABLE**	When no tray has the specified size of paper, this setting is used to select whether or not the print job will be printed on the closest size of paper.
Scanner	DISABLE USB SCAN	YES, **NO**	Select whether or not scanning from a computer and scanning from the machine are disabled when a USB connection is used. When "YES" is selected, USB scanning is disabled.

USING THE KEY OPERATOR PROGRAMS

Follow the steps below to access the key operator settings for the printer and scanner functions.

1 Press the [SPECIAL FUNCTION] key.
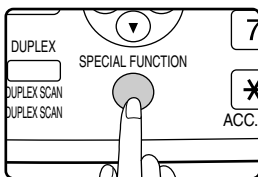
The special function screen appears.

2 Select "KEY OPERATOR PRG." with the [▼] or [▲] key.

```
SPECIAL FUNCTION
▲ PAPER SIZE SET
  DISPLAY CONTRAST
  TOTAL COUNT
▼ KEY OPERATOR PRG.
```

3 Press the [OK] key.

```
Enter key operator
code.

KEY OPERATOR CODE:
            -----
```
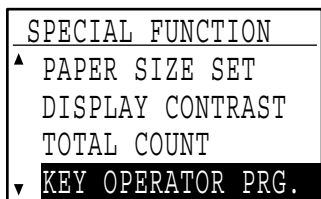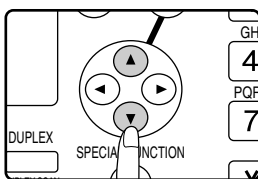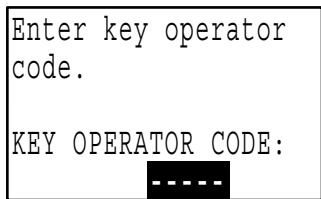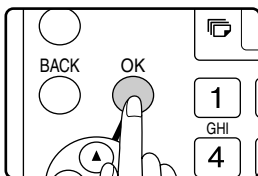
The key operator code entry screen will appear.

4 Use the numeric keys to enter the key operator code.

```
MODE SELECT
▲ KEY OP. # CHANGE
  COPIER
  PRINTER
▼ SCANNER
```
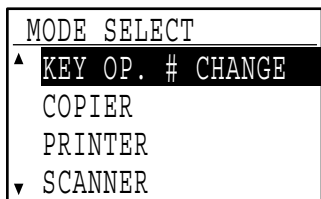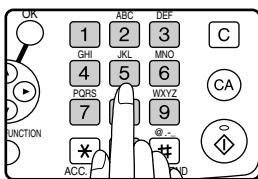
• "＊" will appear for each digit entered.
• The mode selection screen will appear.

5 Select the desired mode with the [▼] or [▲] key.

```
MODE SELECT
▲ KEY OP. # CHANGE
  COPIER
  PRINTER
▼ SCANNER
```

6 Press the [OK] key.

```
PRINTER
▲☑ NOTICE PAGE
  ☐ FORCED OUTPUT OF
▼   PRINT
```
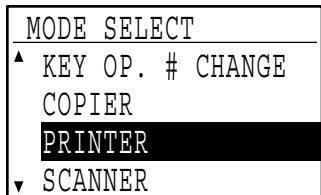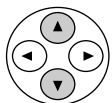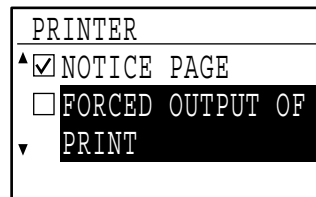
The settings of the selected mode will appear.

Example: The above screen shows the settings when printer mode is selected.

7 Select the desired program with the [▼] or [▲] key.
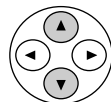
• A checkbox appears to the left of several of the programs. To enable a function (make a checkmark appear), press the [OK] key. To cancel a selection, press the [OK] key once again to remove the checkmark and disable the function. Go to step 9.
• When the [OK] key is pressed for a program that does not have a checkbox, the settings for the program appear.

8 Press the [OK] key and follow the instructions in the program screen.

9 To use another program for the same mode, select the desired program with the [▼] or [▲] key.

To use a program for a different mode, press the [BACK] key and select the desired mode. To exit the key operator programs, press the [CA] key (ⓒ).

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5 TROUBLESHOOTING

TROUBLESHOOTING

This chapter explains what to do if you encounter a problem while printing or scanning. For problems related to the machine such as running out of paper or paper misfeeds, see the "Operation manual (for general information and copier)".

Troubleshooting information can also be found in the README files for each of the software programs. To view a README file, see "1. INSTALLING THE SOFTWARE (THAT ACCOMPANIES THE MACHINE)" in the "Software setup guide".

PRINTING PROBLEMS

Problem	Cause and solution	Page
Print jobs are not received. (DATA indicator does not blink.)	**The machine is set to off-line mode.** → Press the [PRINT] key to select printer mode and then select "ON LINE" with the [▲] key.	3
	The machine is not selected correctly in the application from which you are printing. → In the dialog box that appears after you select [Print] from the [File] menu in the application, make sure you have selected the machine as the printer.	3
	Copying or scanning is in progress, or a fax is being printed (when the fax option is installed). → Wait until copying, scanning, or fax printing is finished.	–
	Has the printer driver been installed correctly? → Follow these steps to check and see if the printer driver is installed. **1 Click the [start] button, the [Control Panel], [Printers and Other Hardware], and then [Printers and Faxes].** If you are using Windows 95/98/Me/2000, click the [Start] button, point to [Settings], and select [Printers].	5
	2 Make sure that the machine's printer icon appears. If the icon is shown but you still cannot print, the printer driver may not have been installed correctly. In this case, delete the software and then reinstall it. In Windows 2000/XP, make sure that the machine's printer icon is selected.	Software setup guide
	The machine is not correctly connected with your computer. → Check both ends of the printer cable and make sure you have a solid connection. For information on cables, see "SPECIFICATIONS" (page 32).	32
	The port setting is not correct. → Printing is not possible if the printer driver port setting is not correct. Set the port correctly.	Software setup guide
	Printing is disabled. → If "CANCEL JOBS OF INVALID ACCOUNTS" is enabled in the key operator programs, printing will not be possible. Consult the key operator.	Key operator's guide

Problem	Cause and solution	Page
Printing does not take place (DATA indicator is blinking.)	**There is no paper in the specified tray.** → Load paper in the tray.	Operation manual (for general information and copier)
	"FORCED OUTPUT OF PRINT" is disabled. → Add paper to the bypass tray, press the [PRINT] key on the machine to switch to printer mode, and then select "BYPASS-TRAY". Printing will resume.	4
Printing is slow.	**Simultaneous use of two or more application software programs.** → Start printing after quitting all unused application software programs.	–
The printed image is light and uneven.	**The paper is loaded so that printing takes place on the back side of the paper.** → Some types of paper have a front and a back side. If the paper is loaded so that printing takes place on the back side, toner will not adhere well to the paper and a good image will not be obtained.	–
The printed image is dirty.	**You are using paper that is outside the specified size and weight range.** → Use paper within the specified range.	Operation manual (for general information and copier)
	The paper is curled or damp. → Replace the paper. During periods when the machine is not used for a long time, remove the paper from the tray and store it in a dark place in a bag to prevent moisture absorption.	Operation manual (for general information and copier)
	You did not set sufficient margins in the paper settings of your application. → The top and bottom of the paper may be dirty if the margins are set outside of the specified print quality area. → Set the margins within the specified print quality area.	–
The printed image is skewed or it runs off the paper.	**The paper size set in the printer driver is not the same as the paper size loaded in the tray.** → Make sure that the paper size setting matches the size of the paper loaded in the tray. If the [Fit to Page] setting is selected, make sure that the paper size selected in the "Fit To Paper Size" drop-down list is the same as the size of the paper loaded in the tray.	6
	The image orientation setting in the printer driver is not correct. → Click the [Paper] tab in the printer driver setup screen and make sure the "Image Orientation" setting is correct.	6
	Paper is not loaded properly. → Make sure the paper is properly loaded.	Operation manual (for general information and copier)
	The margins are not set correctly in the application. → Check the paper size and margin settings in the application. Also make sure that the print settings are correct for the paper size.	–

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A notice page is printed

If you find that a notice page has been printed at the end of a print job, the print data received from the computer has not been printed as specified. Fix the problem as explained below and then try printing again.

What to do when a notice page is printed

```
****************************************************
                    Notice Page
****************************************************

        The IMC memory full error had occurred,
        a normal output was not able to be executed.

        Please refer to the operation manual for
        the solution method.
```
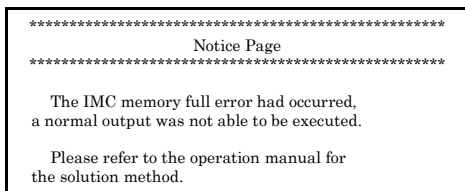
The above notice page is printed when a print job containing more data than can be held in the memory of the dual function board is sent. Deactivate the ROPM function by removing the checkmark from [ROPM] in the [Configuration] tab of the printer driver setup screen. If you need to use the ROPM function, set the "Print quality" in the printer driver to [Draft], or increase the amount of memory in the machine.

Note
- The Notice Page can be set to not print out in "NOTICE PAGE" (page 26) of the key operator programs.

When the dual function board is installed
- The memory of the dual function board is used to temporarily hold print data when the ROPM function is used. This memory is also used to temporarily store the image of the original during copying. The proportion of memory allocated to the printer function can be changed in the key operator programs. See the "Key operator's guide". The memory can also be increased by adding the optional memory modules. For details, contact your SHARP dealer.

When the dual function board is not installed
- A notice page such as "The incorrect driver is chosen, a normal output was not able to be executed....." will be printed if you attempt to print using the print driver for the dual function board. Install the standard print driver as explained in "1. INSTALLING THE SOFTWARE (THAT ACCOMPANIES THE MACHINE)" in the "Software setup guide" and select the standard driver when printing.

SCANNING PROBLEMS

Problem	Cause and solution	Page
Poor scanning quality.	**The document glass or the underside of the document cover/SPF is dirty.** → Clean regularly.	Operation manual (for general information and copier)
	The original is smudged or blotchy. → Use a clean original.	–
	You have not specified a suitable resolution. → Make sure that the resolution setting in the scanner driver is appropriate for the original.	18
	You are scanning a large area (for example an entire 11" x 17" or A3 document) at high resolution. → If you attempt to scan a large area at high resolution and there is insufficient memory in the machine to hold the scanned data, scanning will take place at a lower resolution and the scanner driver will enhance the data to make up for the lower resolution. However, the quality of the enhanced image will not be as high as if scanning took place at the higher resolution. To scan a ledger or A3 original in full color at 600 dpi without using enhancement, the dual function board and 256 MB memory option are required.	17
	You have not specified a suitable value for the "B/W Threshold" setting. → If you are using a TWAIN-compliant application and are using [White], [Red], [Green], or [Blue] for "Light Source" in the TWAIN driver, make sure that the "B/W Threshold" setting is appropriate. A larger threshold value makes your output darker, while a small threshold value makes it lighter. To adjust the threshold automatically, click the [Auto Threshold] button on the [Image] tab of the "Custom Settings (or Professional)" screen.	–

Problem	Cause and solution	Page
Poor scanning quality.	**The brightness and contrast settings are not suitable.** → If you are scanning with a TWAIN-compliant application and the resulting image has unsuitable brightness or contrast (for example it is too bright), click the [Auto Brightness/Contrast Adjustment] button on the [Color] tab of the "Custom Settings (or Professional)" screen. You can also click the [Brightness/Contrast] button to adjust the brightness and the contrast while viewing the scanned output image on the screen. If you are scanning with a WIA-compliant application or the "Scanner and Camera Wizard", click [Adjust the quality of the scanned picture] or the [Custom settings] button and adjust the brightness and contrast.	–
	[Quick Scan] has been selected. (With the dual function board installed) → If scanning is performed when [Quick Scan] has been selected in the [Preference] tab of the "Custom Settings (or Professional)" of the TWAIN driver, image quality may be degraded. This is because the scanned data is transferred using JPEG compression. If image quality is poor, then perform scanning again without selecting the [Quick Scan] option. (By default [Quick Scan] is not selected.)	18
	The original is not placed face up in the SPF or face down on the document glass. → Place the original face up in the SPF or face down on the document glass.	Operation manual (for general information and copier)
	The original was not placed in the correct position. → Place the original correctly.	Operation manual (for general information and copier)
Unable to scan the image.	**If scanning is not possible, shut down your computer, turn off the machine's power switch, and unplug the machine's power cord. Next, start your computer, restore power to the machine, and try scanning again. If scanning is still not possible, check the following items.**	–
	Your application is not TWAIN/WIA compliant. → If your application is not TWAIN/WIA compliant, scanning will not be possible. Make sure your application is TWAIN/WIA compliant.	–
	You have not selected the scanner driver of the machine in your application. → Make sure that the machine's scanner driver is selected in your TWAIN/WIA-compliant application.	16
	You have not specified all scanning preferences appropriately. → Scanning a large area at high resolution results in a large quantity of data and a prolonged scanning time. When selecting the scan preferences, lower the resolution or specify a suitable scanning area.	17
	"DISABLE USB SCAN" has been enabled in the key operator programs. → Consult the key operator.	26
Scanner transfer speed is slow when the dual function board is installed.	**Make sure that your computer meets the system requirements for the USB 2.0 interface (Hi-Speed mode).** → Make sure that your computer meets the system requirements described in "System requirements for USB 2.0 (Hi-Speed mode)" in the "Key operator's guide", and then set "USB2.0 MODE" to "HI-SPEED" in the key operator programs.	Key operator's guide

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6 **SPECIFICATIONS**

Printer specifications

Printing speed*1		**When the dual function board is installed:** AR-M206/AR-M207: 20 pages/min, AR-M161/AR-M162/AR-M165: 16 pages/min **When the dual function board is not installed:** 12 pages/min
Resolution		600 dpi
Memory	Page memory	AR-M165/AR-M206/AR-M207: 32 MB, AR-M161/AR-M162: 16 MB
	IMC Memory*2	16 MB
Emulation		SHARP GDI / SPLC (Sharp Printer Language with Compression)*2
Memory expansion		256 MB expansion memory board (AR-SM5) can be installed in one DIMM expansion slot*2
Interface port		IEEE1284 parallel port USB 1.1 port (USB-1) USB 2.0 port (USB-2)*2
Interface cables		**[Parallel cable]** Shielded bi-directional (IEEE1284) cable (max. length 10 feet (3 m)) Please purchase a commercially available parallel cable. **[USB cable]** Shielded twisted pair cable (max. length 10 feet (3 m)) Please purchase a commercially available USB cable. (For connection to the USB 2.0 port, the cable must support USB 2.0.)

*1 Print speed during printing of the second sheet and following sheets when using 8-1/2" x 11" (A4) plain paper and performing continuous one-sided printing of the same page; excluding use of offset output.
*2 When the dual function board is installed.

Scanner specifications

Type	Flatbed color scanner
Scanning method	Document glass / SPF / RSPF
Light source	Cold cathode fluorescent lamp
Resolution*	Basic: 600 dpi x 600 dpi Setting range: 50 dpi - 9600 dpi
Original types	Sheet media, books
Effective scanning area	11-45/64" (297 mm) (Lengthwise) x 17" (431 mm) (Width)
Scanning speed	Color / Black and White (light source color selected): 2.88 msec/line Grayscale / Black and White: 0.96 msec/line
Scanning colors	Black and white 2 value Grayscale Full Color
Protocol	TWAIN / WIA (Windows XP only) / STI
Interface port	USB 1.1 port (USB-1) USB 2.0 port (USB-2) (When the dual function board is installed.)
Drop out color	Yes
Supported operating systems	Windows 98/Windows Me Windows 2000 Professional/Windows XP Home Edition/Windows XP Professional (For more information, see "1. INSTALLING THE SOFTWARE (THAT ACCOMPANIES THE MACHINE)" in the "Software setup guide".)
Void area	Top and bottom edges 7/64" (2.5 mm), right and left edges 1/8" (3.0 mm) (at the periphery of the machine's maximum scanning area)
Interface cables	**[USB cable]** Shielded twisted pair cable (max. length 10 feet (3 m)) Please purchase a commercially available USB cable. (For connection to the USB 2.0 port, the cable must support USB 2.0.)

* The resolution may be enhanced by the scanner driver depending on the scanned area and resolution.

Note As a part of our policy of continuous improvement, SHARP reserves the right to make design and specification changes for product improvement without prior notice.

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OPERATION MANUAL (for printer and scanner)

SHARP

SHARP CORPORATION