M4099D Image Scanner

Operator's Guide

FUJITSU

M4099D
Image Scanner

Operator's Guide

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scanner/eng/

IMPORTANT NOTE TO USERS

READ CAREFULLY ALL OF THIS MANUAL BEFORE USING THIS PRODUCT. IF NOT USED CORRECTLY, UNEXPECTED DAMAGES MAY BE CAUSED TO THE USERS OR THE BYSTANDERS.

While all efforts have been made to ensure the accuracy of all information in this manual, FUJITSU assumes no liability to any party for any damage caused by errors or omissions or by statements of any kind in this manual, its updates or supplements, whether such errors are omissions or statements resulting from negligence, accidents, or any other cause. FUJITSU further assumes no liability arising from the application or use of any product or system described herein; nor any liability for incidental or consequential damages arising from the use of this manual. FUJITSU disclaims all warranties regarding the information contained herein, whether expressed, implied, or statutory.

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i

Preface

This manual explains how to use the M4099D image scanner. This scanner can be equipped with an optional endorser; however, Illustrations in this manual do not include the endorser except those in Chapter 5. For details of the endorser, refer to its Operator Guide.

This manual contains COMPONENTS, INSTALLATION AND CONNEC-TIONS, OPERATING INSTRUCTION, DOCUMENT SPECIFICATION, SPECIFICATIONS, and SETUP, BROWSE, AND TEST MODES.

Refer to the CD-ROM for the information about the routine operation of the M4099D.

The CD-ROM contains OPERATING INSTRUCTION, CLEANING, RE-PLACEMENT OF PARTS, ADJUSTMENT and TROUBLESHOOTING.

The M4099D is very fast and highly functional image scanner developed for volume filing, using charge-coupled device (CCD) image sensors. This scanner features duplex scanning and high quality image processing with an automatic document feeder (ADF).

Conventions

Special information, such as warnings, cautions, and notes are indicated as follows:

WARNING
WARNING indicates that serious personal injury may result if you do not follow a procedure correctly.

CAUTION
CAUTION indicates that minor personal injury, loss of data, or damage to the scanner may result if you do not follow a procedure correctly.

NOTE
NOTE indicates remarks, tips, and other useful supplementary information.

The following symbols are used in this manual.

Used for general WARNING and CAUTION.

Used for NOTE.

CONTENTS

COMPONENTS

After unpacking the scanner, confirm that all the components have been received. This chapter describes the components of the scanner, part names, and operator panel arrangement and their function.

Checking the Components

Units and Assemblies

Operator Panel

Buzzer

Checking the Components

These high precision components must be handled with care.
Confirm that all the components shown in the following figure have been received. Mount the stop lever on the stacker of the scanner.
If any component is missing, please contact your sales agent.

* Stop lever   Scanner   Power cable
for North America   Power cable
for Europe

*

or

Operator's Guide
(this manual) and
two CD-ROMs
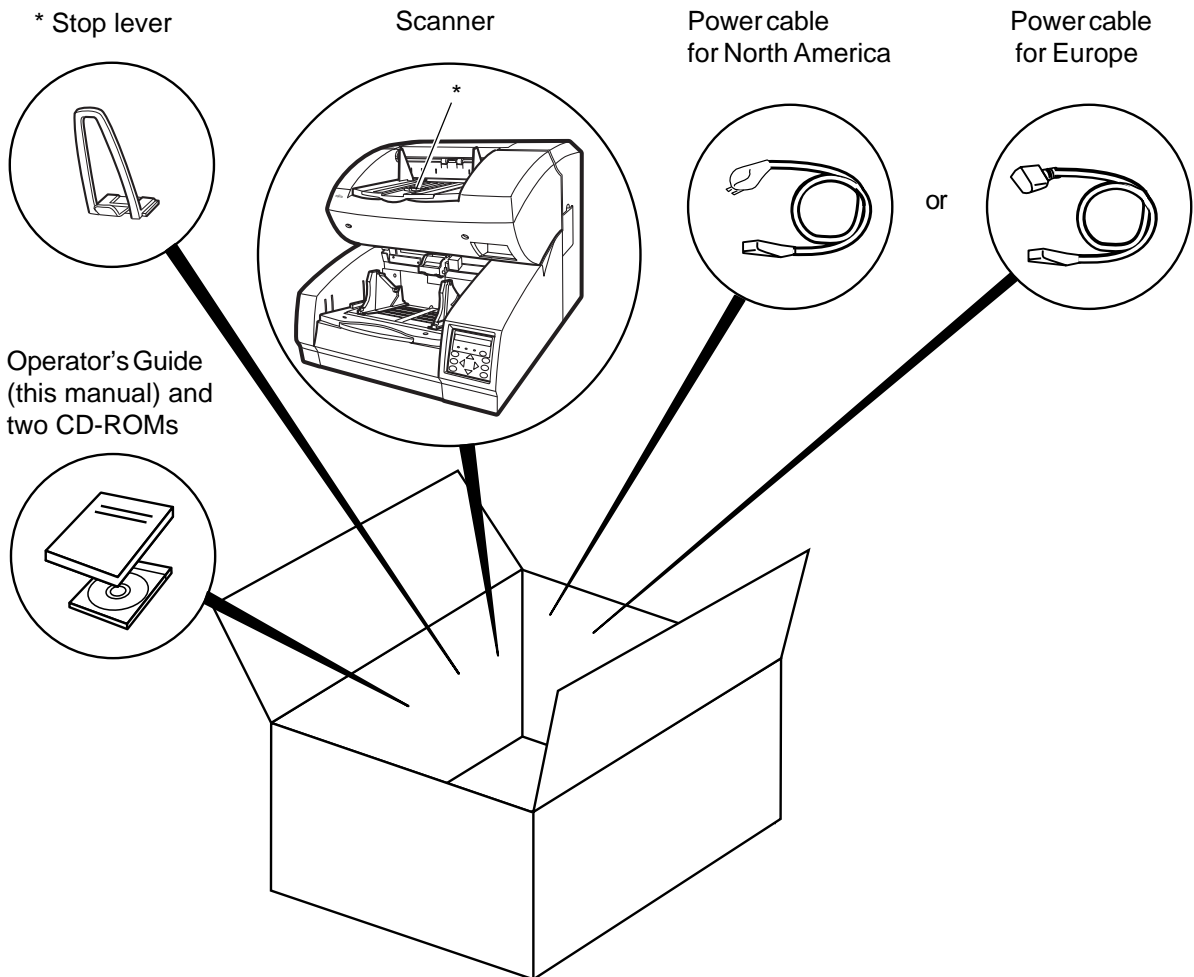
Units and Assemblies

This section shows the exterior view and assemblies of the scanner. This section also provides names of each part and describes their functions.

■ Units
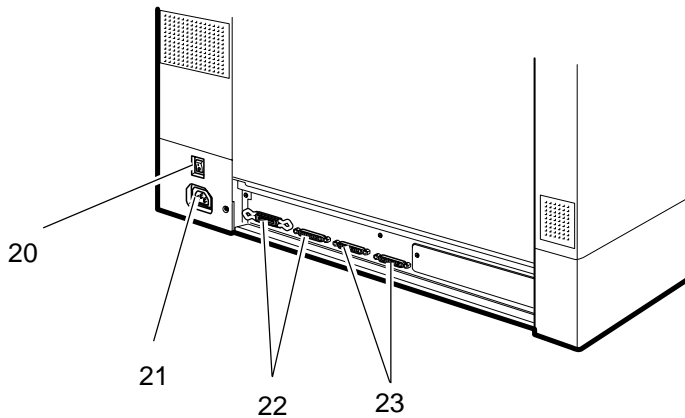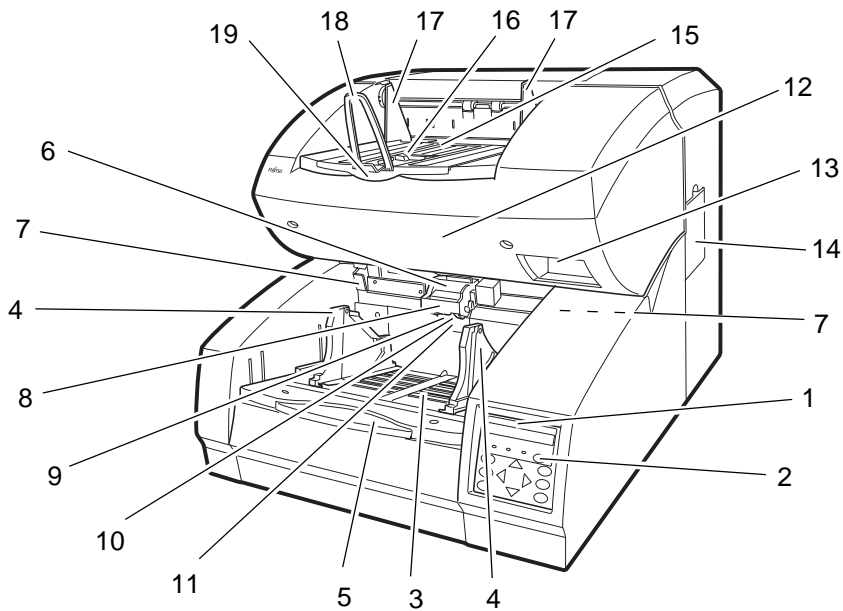
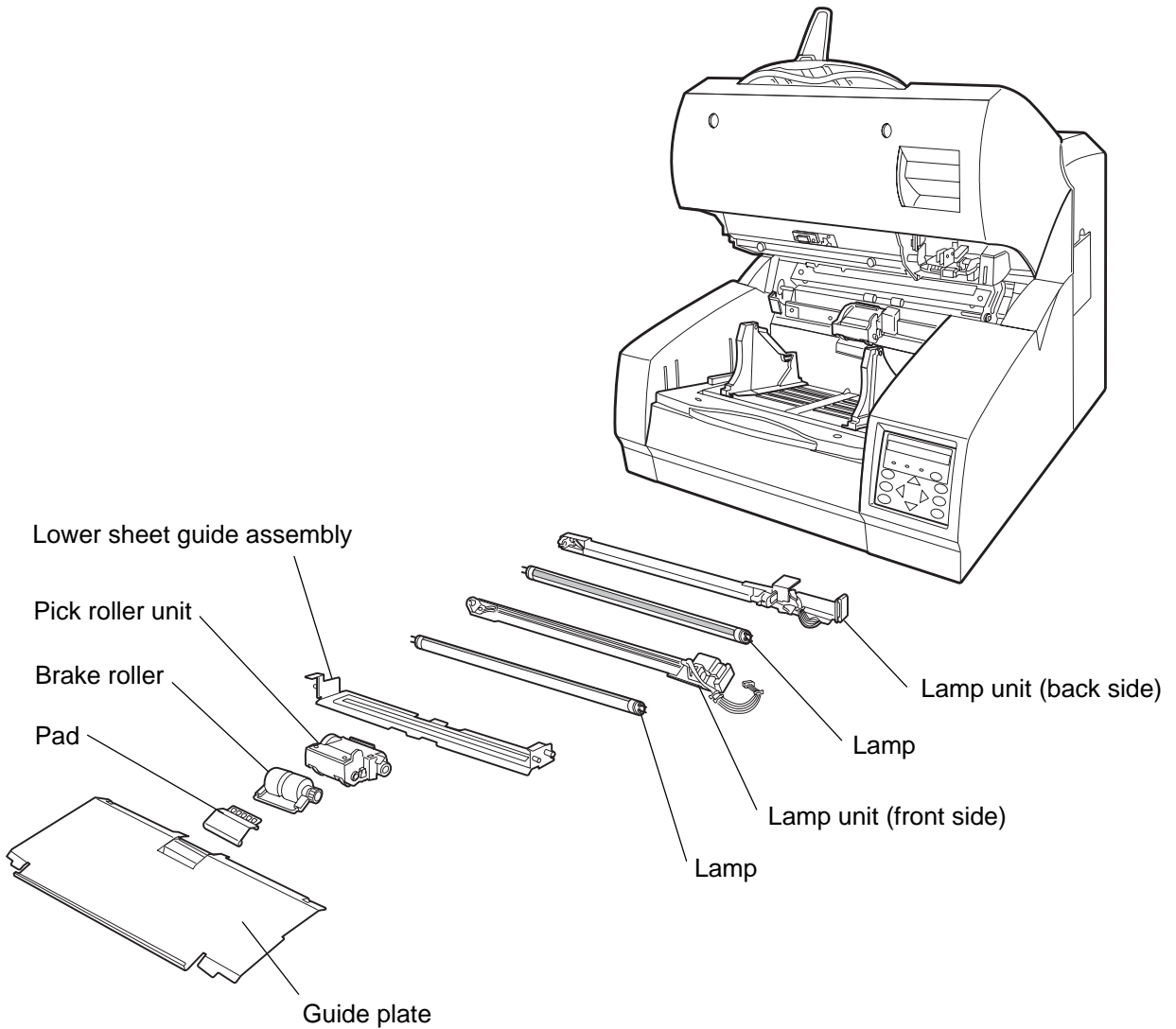| No.	Name	Function
1	Operator panel	Used to operate the scanner.
2	Power switch	Used to power on or off.
3	Hopper	Document input tray.
4	Hopper guides	Used to adjust the document width.
5	Hopper extension	For use with long documents.
6	Automatic document feeder (ADF)	Feeds documents automatically.
7	ADF release lever	Used to open the ADF.
8	Pick roller unit	Picks top page in document stack.
9	Guide plate	The pad is mounted on.
10	Pad	Separates top page from document stack.
11	Brake roller	Separates top page from document stack.
12	Upper transport unit	Opens for easy access.
13	Lever	Used to open the upper transport unit.
14	Side cover	Opens to access back-side lamp.
15	Stacker	Document exit tray.
16	Check stopper	Adjustable stopper for shorter length documents.
17	Stacker guides	Helps guide documents into stacker.
18	Stop lever	Used to keep documents in the stacker.
19	Stacker extension	For use with long documents.
20	Main line switch	Controls supply of line power to the scanner.
21	Power inlet	Power cable connection.
22	Interface connectors	Video and RS-232C
23	Interface connectors	Two SCSIs.

■ Assemblies

Lower sheet guide assembly

Pick roller unit

Brake roller

Pad

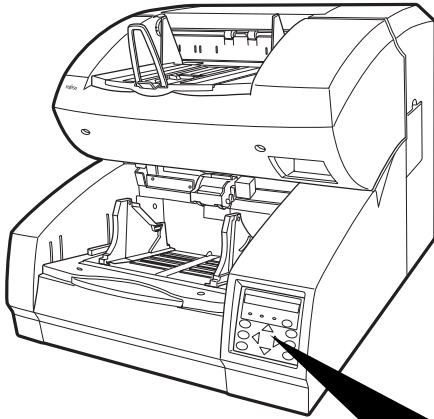Lamp unit (back side)
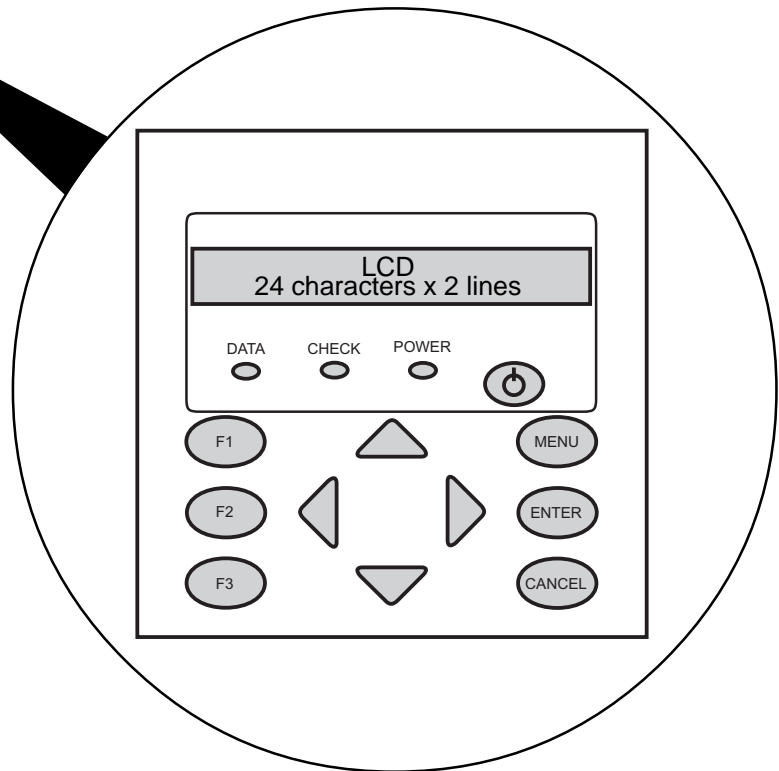
Lamp

Lamp unit (front side)

Lamp

Guide plate

Operator Panel

The operator panel is located at the lower right hand side of the scanner. The panel consists of an LCD (24 character x 2 line), LEDs, and buttons.
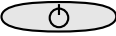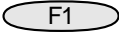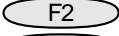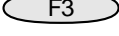
■ Arrangement

Operator panel

LCD
24 characters x 2 lines

DATA   CHECK   POWER

F1   △   MENU

F2   ◁   ▷   ENTER

F3   ▽   CANCEL

■ **Button/LED Function**

Button name	Function
⟨ ⏻ ⟩	Turns on or off the power when the main line switch is set to "I".
⟨MENU⟩	Sets the scanner in setup or browse mode. It is also used to set test mode. (See Chapter 6) Setup mode is used for customizing the scanner. Browse mode is used for glancing conditions of the scanner. Test mode is used for testing the scanner offline.
⟨ENTER⟩	Used in setup, browse, or test mode.
⟨CANCEL⟩	• Clears an error if any. • Stops current scanning when the video interface is used. • Used in setup, browse, or test mode.
▲	• Lifts the hopper in normal mode without errors. • Used in setup, browse, or test mode.
▼	• Lowers the hopper in normal mode without errors. • Used in setup, browse, or test mode.
▶	Used in setup, browse, or test mode.
◀	Used in setup, browse, or test mode.
⟨F1⟩ ⟨F2⟩ ⟨F3⟩	Available as shortcut keys when functions are defined in setup mode.

LED	Function
POWER ◌	Lights when the power is on.
DATA ◌	Lights when the image buffer contains data.
CHECK ◌	Blinks when an equipment error occurs.

■ **LCD Display**

LCD	Function
▭	Displays equipment status or error contents.

Operation status display

After power is turned on, the LCD indicates the following messages in normal mode.

| Please wait | Wait for a moment. This is indicated when processing takes a long time. |

When this is displayed after turning power on, the second line indicates initializing messages.

| Ready | The scanner can receive a command from the host computer or can be set in setup, browse, or test mode. |

| Manual Feeding | Load documents on the hopper table manually. |

| Feeding | The scanner is feeding documents. The second line indicates the number of documents fed per batch. |

| Transferring Data | The scanner is sending data to the host computer. |

Error status display

When the scanner detects errors, the LCD indicates the following messages. There are two types of errors: temporary errors and equipment errors.

Temporary errors: The message is cleared just by following the next message.

| Hopper empty | | Mis-pick | | Cover open |

Equipment errors: To clear the message, you must clean or replace the specified part.

| Optical error: Front | | Fuse alarm: Front lamp |

Buzzer

The scanner has a buzzer to indicate that an error has occurred or an operator panel button is pressed. The buzzer function can be set on or off by following the procedure "Buzzer" in Chapter 6 SETUP, BROWSE, AND TEST MODES.

Sound condition	Function
Error occurred	Sounds continuously. The buzzer turns off when any button is pressed or the power is turned off. Even when a button is pressed, the scanner continues to display the error.
Button pressed	Sounds briefly. This sound cannot be disabled by the buzzer setup.

2

INSTALLATION AND CONNECTIONS

The chapter describes how to install and connect the scanner.

Precautions

Inspection

Cable Connection

Precautions

This section describes precautions when installing the scanner.

Do not install the scanner in the following places and environments.

- Place the scanner away from electrical noise sources, strong magnetic fields and air flow. If the scanner is used near an air conditioner, copying machine, or TV set, the scanner may operate incorrectly.

- Keep the scanner out of the sun and away from heaters. These environments may shorten the scanner life or cause hardware failures.

- Do not install the scanner in a place where vibrations may occur. This environment may cause hardware failures or may cause the scanner to operate incorrectly.

- Do not install the scanner in a humid, dusty, or damp places. These environments may shorten the scanner life or cause hardware failures. Do not place the scanner where liquid spills may occur.

- Be aware of the static electricity. Be sure that the flooring and the desk are made of materials that do not generate the static electricity.

See Chapter 5 SPECIFICATIONS for the information such as the size of the installation space.

Inspection

This section describes how to check the labels.

Three labels

Label A (An example)

Label B (An example)

```
MODEL M4099D    IMAGE  SCANNER

PART NO. CA04315-B002      AC100-240V

SER. NO.                   1 phase    50/60Hz

DATE     1999-10           2.9/1.5A      65  kgf
```

FUJITSU LIMITED   MADE   IN JAPAN

Label C (An example)

```
MODEL NAME M4099D
PART NO.  CA04315-B002
MODEL    - 0 1 2 3 4 5 6 7 8 9
 REV.    - 0 1 2 3 4 5 6 7 8 9
         - 0 1 2 3 4 5 6 7 8 9
```

Cable Connection

This section describes how to connect the cables.

Connect the cables as follows:

■ Turning the main line switch off

Press "O" side of the main line switch to turn the power off.
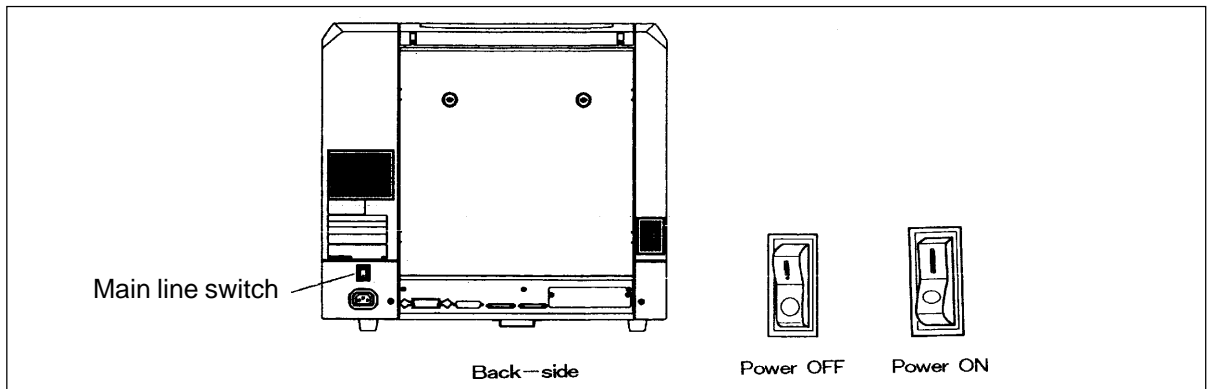
■ Connecting the power cable

Connect the power cable to the power inlet of the device and a power outlet.
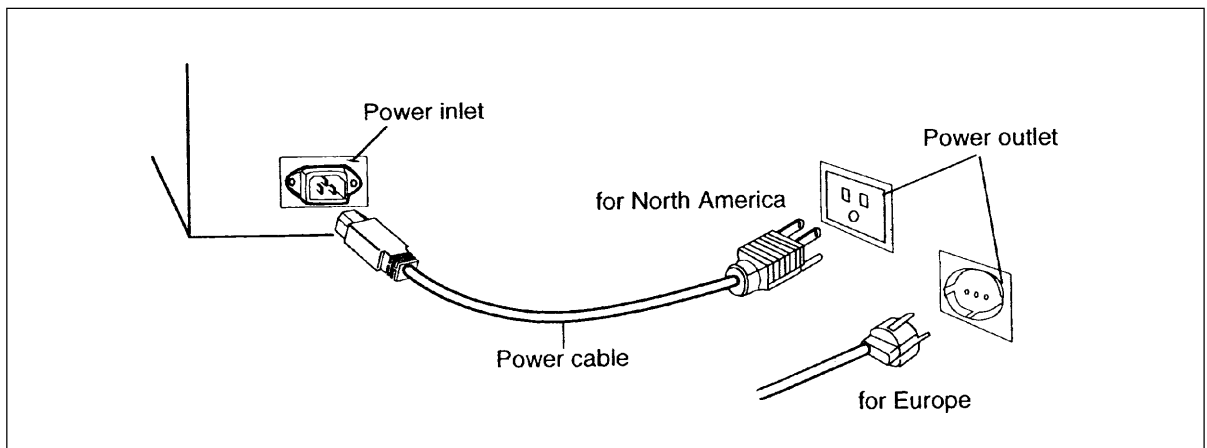
■ Connecting the interface cable

Connect the video interface, RS-232C interface, or SCSI interface cables and secure them with hooks or screws. Connect the other ends to the host computer.
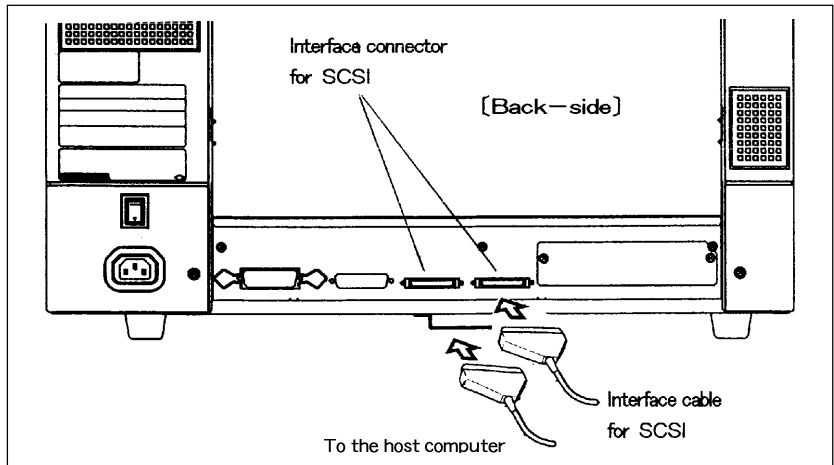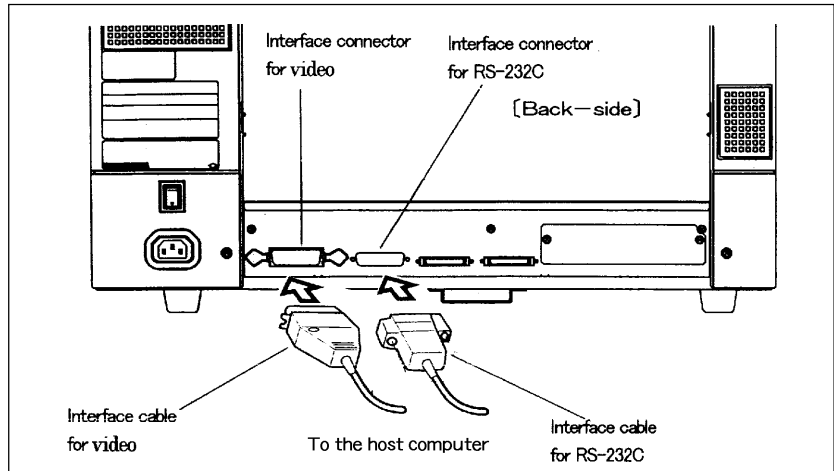
✐ **NOTE**
- SCSI-ID is set to No. 5 at shipment. Refer to Chapter 6 when changing the setting.
- No SCSI terminator is required for an open connector thanks to the automatic switch function.

3

OPERATING INSTRUCTION

This chapter describes how to turn the power on, and also describes how to operate the operator panel (basic operation). Refer to Reference Guide about information on loading document and opening/closing the upper transport unit.

Turning the Power On

Basic Operation of the Operator Panel

Turning the Power On

This section describes how to turn the power on.

Press "I" side of the main line switch located at the back of the scanner. Press the power switch of the operator panel. The power goes on and the green POWER lamp at the operator panel lights.

Main line switch

Back-side

Power OFF   Power ON

Operator panel

Power switch
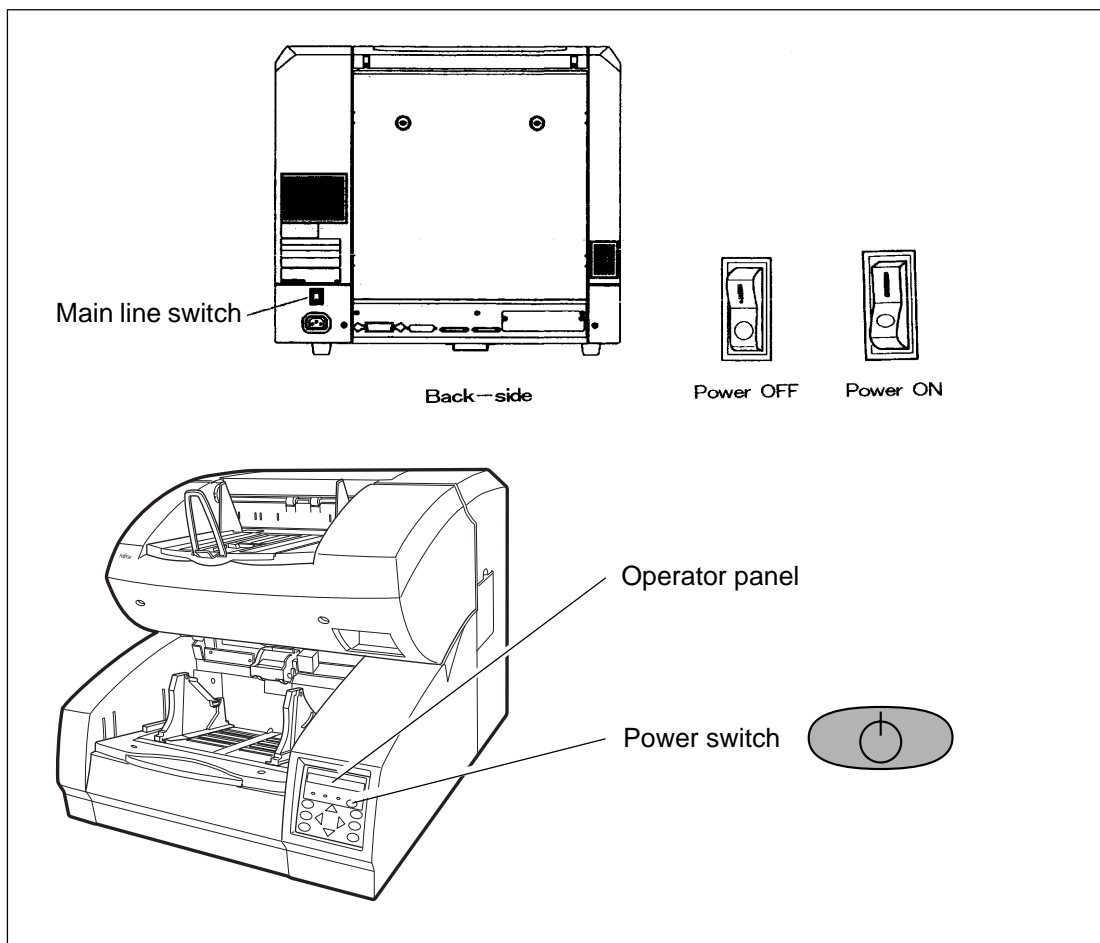
Basic Operation of the Operator Panel

This section describes basic operation of the operator panel including how to enter the mode selection mode in which you can use setup mode, browse mode, and test mode.

■ Displaying detailed information if an error occurred

If an error occurs, the CHECK LED blinks and the error message is displayed on the LCD. For example, the LCD indicates as follows:

> Cover open
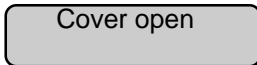
Press CANCEL to clear the error (depending on an error, it cannot be cleared).

■ **Lifting or lowering the hopper**

When the scanner has no error (the CHECK LED does not light), pressing ⬆ lifts the hopper and pressing ⬇ lowers the hopper.

> ⚠ CAUTION
>
> *During hopper height adjustment, do not touch the hopper table or do not put anything on the hopper table to prevent your fingers from being caught. If something is caught in the mechanism, the scanner may be damaged.*

This function is valid when:

| Ready | is displayed.

In details:
• The DATA LED does not light (the scanner contains no data),
• The scanning operation is not in progress,
• The scanner is not in test mode (except the offline feed test), and
• The scanner is not in setup or browse mode.

The hopper stops at the pick position or at the 250-, 500-, or 1000-sheet position depending on the hopper height adjustment in setup mode. At the pick position, the top paper of stack (the hopper table when no paper is loaded on the hopper) is aligned to the pick roller. At the 250-sheet position, for example, the hopper table can load about 250 sheets of paper.

Each time you press ⬆ or ⬇, the hopper lifts or lowers by one position. Pressing ⬆ when paper is loaded, the hopper lifts up to the pick position.

■ Clearing a consumable life alarm

This scanner has the consumable counter to estimate consumable life of the scanner. When the consumable counter reaches the prescribed value, the LCD indicates an alarm that the consumable may be expired. For example, the following message appears:

> Consumable life alarm

In this case, press CANCEL. The LCD indicates the following message:

> Reset Consumable Counter?
>   Yes:Enter No:Cancel

Yes (press ENTER): The scanner resets the consumable counter to zero.
No (press CANCEL): The scanner does not reset the consumable counter. In this case, the consumable life alarm recurs when the next sheet is fed.

■ Confirming the number of sheets processed by the scanner

The LCD indicates the numbers of sheets scanned during online or in test mode (offline feed test).
The LCD indicates the numbers as follows:

```
        Scanning
AAAAAAAA        MMMM
```

Value	Meaning	Description
AAAAAAAA	Abrasion counter	Eight columns of numbers indicate the accumulative number of sheets fed by this scanner.
MMMM	Batch counter	Four columns of numbers indicate the number of sheets fed per hopper.

■ Using the function buttons (F1, F2, and F3)

This scanner has the three function buttons (F1 , F2 , and F3) to save time when using a setup function which is likely to require tedious operation. Use these buttons as shortcut keys when you frequently use certain setup functions for your jobs. See Chapter 6 for details.

You can use function buttons after allocating a setup function to it. This allocation can be done in setup mode. After allocation, the allocated function can be easily accessed just by pressing the function button. For allocatable setup functions, see Chapter 6.

The function buttons are available when:

| Ready | is displayed.

In details:
• The DATA LED does not light (the scanner contains no data),
• The scanning operation is not in progress,
• The scanner is not in test mode, and
• The scanner is not in setup or browse mode.

The function buttons are available even in the setup mode lock state (see Chapter 6).

■ Using the setup, browse, and test modes

This scanner has the setup mode, browse mode, and test mode to ease operation for customizing the scanner, glancing setup conditions of the scanner, and testing the scanner offline respectively.

There are two ways to enter these modes:
• Press MENU when the LCD indicates "Ready" or
• Turn the power on while pressing MENU.

Available functions differ with the two ways. For details, see Chapter 6.

In the following way, you can use the setup mode and browse mode.
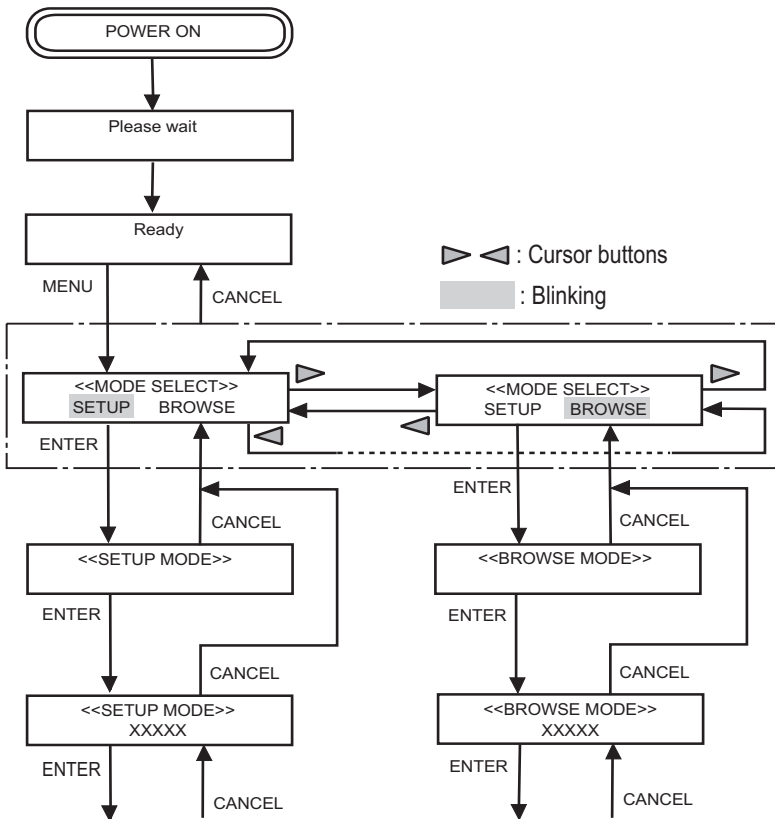
In the following way, you can use the test mode in addition to the setup mode and browse mode.
To quit these modes, turn the power off.

POWER ON with MENU ON

T   Please wait

▷ ◁ : Cursor buttons

⬜ : Blinking

* Turn off to quit <<MODE SELECT>>.

<<MODE SELECT>>
SETUP BROWSE   TEST

ENTER

<<MODE SELECT>>
SETUP BROWSE   TEST

<<MODE SELECT>>
SETUP BROWSE   TEST

ENTER

CANCEL

ENTER

CANCEL

ENTER

CANCEL

<<SETUP MODE>>

<<BROWSE MODE>>

<<TEST MODE>>

ENTER

CANCEL

ENTER

CANCEL

ENTER

CANCEL

<<SETUP MODE>>
XXXXX

<<BROWSE MODE>>
XXXXX

<<TEST MODE>>
Offline Feed Test

ENTER

CANCEL

ENTER

CANCEL

ENTER

CANCEL
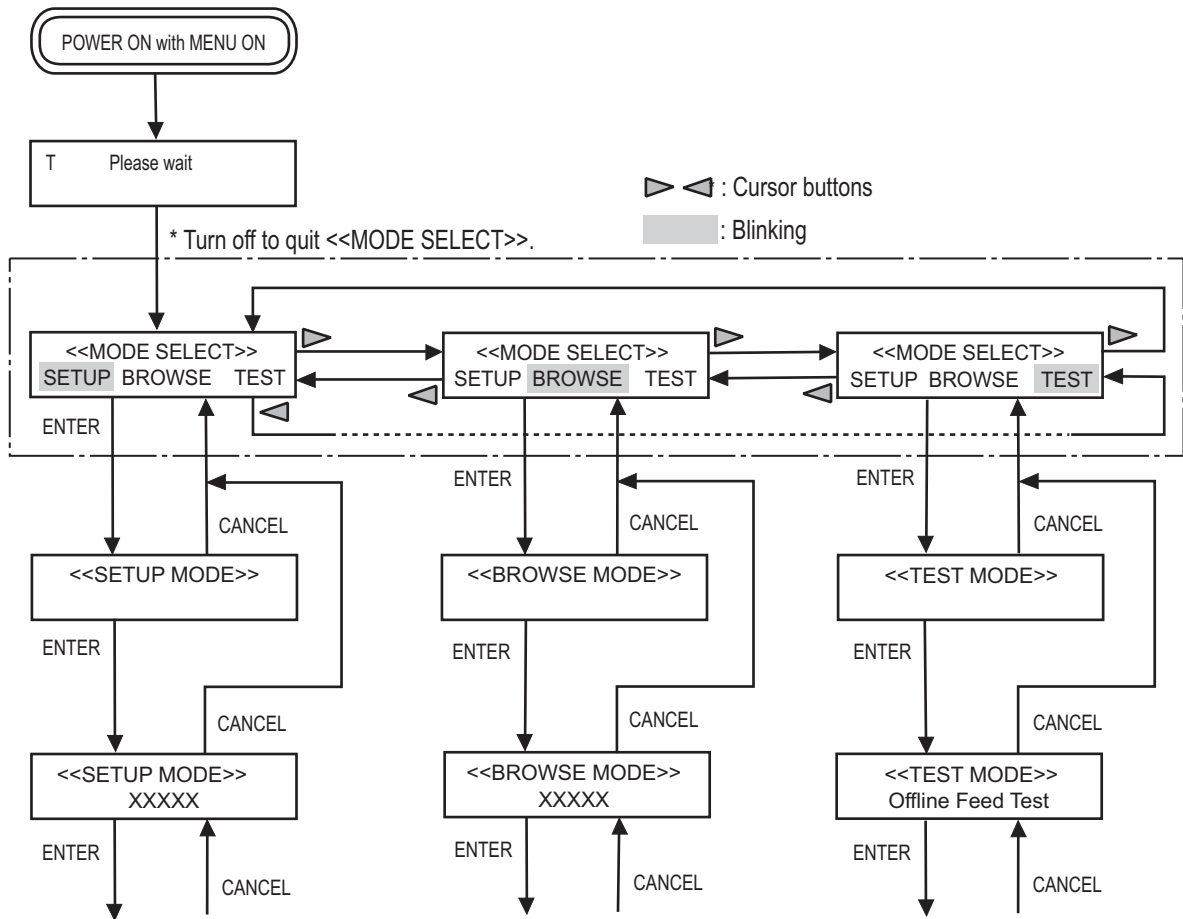
■ Transition of operator panel status and display

The following outlines the transition of status and display of the operator panel.

4
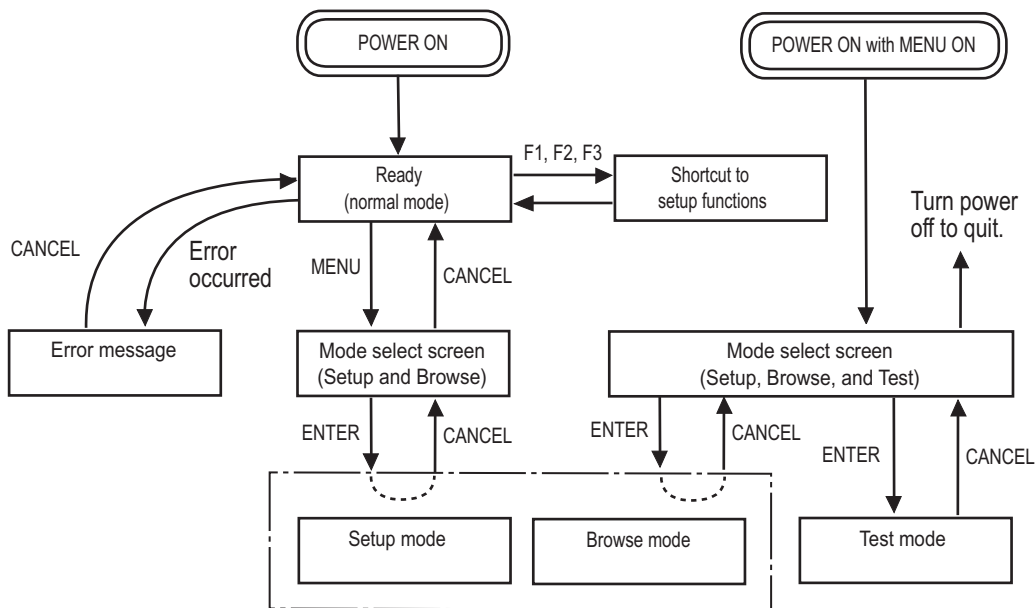
DOCUMENT SPECIFICATION

This chapter describes the document size and document quality of the scanner.

Document Size

Document Quality

Document Size

The following figure shows document sizes that the scanner can read.

A

↑

Feeding Direction

B
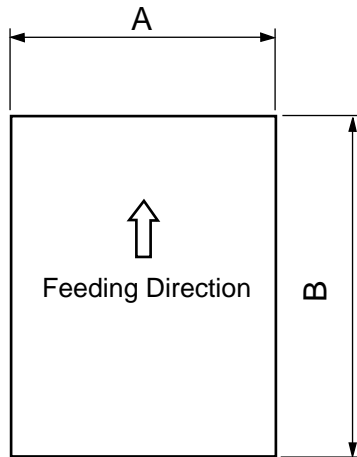
Scanner	Maximum		Minimum
	A	B	
M4099D	297 (11.7 in)	432 (17 in)	A7 size = 74 (2.9 in) x 105 (4.1 in): Available in both portrait and landscape orientations

(Unit : mm)

Document Quality

This section describes paper types of documents and ream weights of paper available for the scanner, and precautions.

■ Paper types of documents

The recommended paper types of documents are as follows:

NOTE
Use the specified paper only. (In rare occasion, double feeding or document damage may occur.)

• Fine paper
• Plain paper (for example, the paper specified for XEROX4024)
• OCR paper

When using any other paper types of documents, carefully read a certain number of documents to check if the ADF successfully feeds documents.

NOTE
Because documents may be damaged when an error occurs, do not feed an important original document.

■ Ream weight of paper

The ream weight of paper is as follows:

• 52 to 127 g/m^2 (13.9 to 34 lb)

NOTE
lb indicates the pound weight of 500 sheets of 17 x 22 inch paper (3.76 g/m^2).

■ **Precautions**

Be careful not to scan the following document. Preliminary document feed test may be necessary to avoid the unexpected errors. If the document slips in ADF (JAM error) or double feed occurs frequently, refer to "Improving Document Separation" in Reference Guide.

- Paper with clips or staples
- Paper with wet ink
- Paper of which thickness is not constantly equal. (like envelope)
- Paper with large rumples or curl. (See NOTE on the next page.)
- Paper with folds or tears
- Tracing paper
- Coating paper
- Carbon paper
- Carbonless paper
- Paper smaller than A7 size, or larger than A3 size
- Other than paper: clothes, metal foils, or OHP films
- Photographic paper
- Paper with notches on its side
- Other than rectangle paper

When scanning a translucent document, set the density to light mode.

To prevent roller smudging, avoid scanning a document filled out in pencil. Clean the roller as often as possible when scanning many document. Once every 1000 sheets is recommended.

The chemical composition of some carbonless papers may react with the roller rubber and damage the rubber. Check the carbonless papers before use.

When using carbonless paper, follow these conditions:
- Ream weight of the paper is 52 g/m^2 (13.9 lb) or more.
- Hopper load is 500 sheets or fewer.

NOTE

• If carbonless papers are used, clean the roller twice as often as usual.
• Documents should be straightened to fit the condition below.

More than
30 mm

Feed direction

Less than
3 mm

Read surface

Top of the paper

More than
30 mm

Feed direction

Less than
5 mm

Read surface
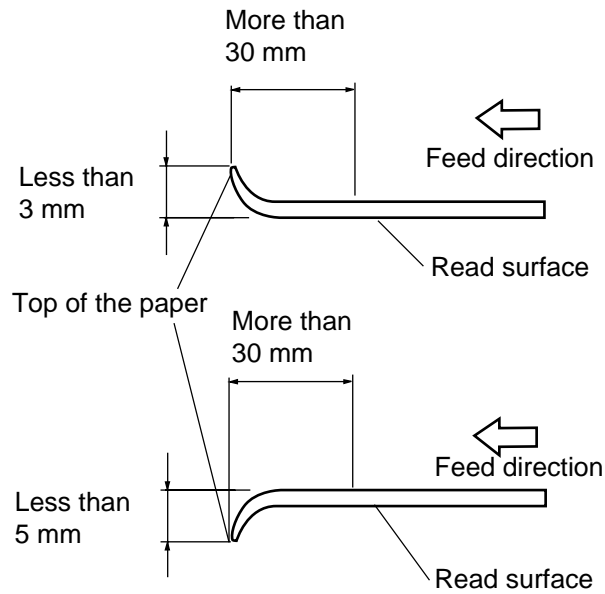
• When you read curled, wrinkled, or creased documents, documents may not be successfully
  arranged in the stacker.

5

SPECIFICATIONS

This chapter describes the installation specifications, external dimensions, consumables, option.

Installation Specifications

External Dimensions

Consumables

Options

Installation Specifications

The following table lists the installation specifications of the scanner.

Item		Specification	
Dimensions (mm)	Width	590 (23.2 in)	
	Depth	690 (27.2 in)	
	Height	540 (21.3 in) without optional endorser 610 (24.0 in) with optional endorser	
Weight (kg)		65 (143 lb.)	
Input power	Voltage	100 to 240 VAC ±10 %	
	Phases	Single-phase	
	Frequency	50/60 Hz + 2% -4%	
Power consumption		250 VA or less	
Ambient condition	Device status	Operating	Not operating
	Temperature	15 to 35°C (60 to 95°F)	-20 to 60°C (-4 to 140°F)
	Humidity	20 to 80 %	8 to 95 %

External Dimensions

590

690

540 (without endorser)

610 (with endorser)
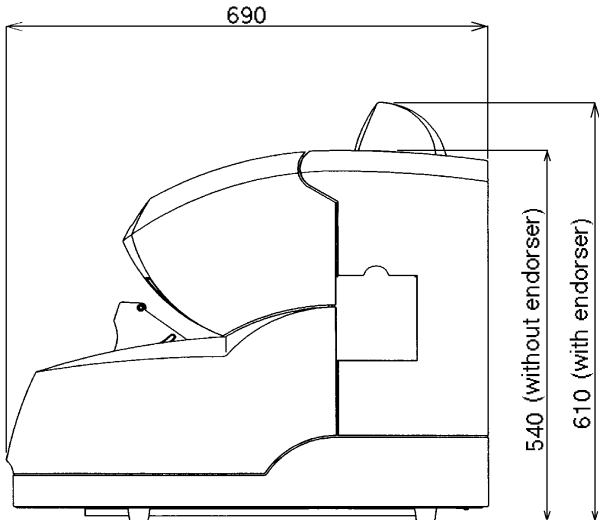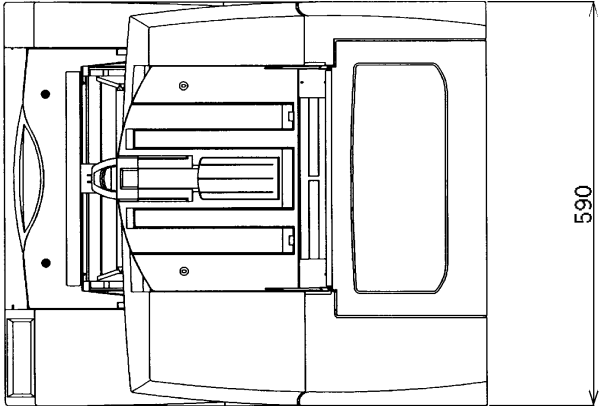
(unit: mm)

Consumables

The following table lists consumables used for the scanner. Be sure to keep some consumables in stock.
Customer is responsible to change these items periodically. The consumable counter can be used to check
the number of scanned documents. (See page 3-4.)

Name	Specification	Service life and remarks
Lamp	CA04315-0430	1000 hours or more. Two lamps used per scanner.
Brake roller	CA04315-F705	300,000 sheets or one year.
Pick roller unit	CA04315-F711	300,000 sheets or one year.
Pad	CA04315-G730	300,000 sheets or one year.
Print head	CA01023-0701	20,000 sheets (10 characters/sheet). Black ink cartridge for endorser.

NOTE
- These service lives (replacement cycles) may be shortened depending on paper types of documents scanned or wrong cleaning of the scanner.
- When carbon-less paper is used, the replacement cycle is shortened. So, these parts must be replaced earlier than above.

Options

The following table lists options of this scanner.

Name	Specification	Remark
Endorser	CA04315-D201	Ink jet printing method • Back-side print • Max. 30 characters

Contact your Fujitsu sales agent for more information.

CHAPTER

6

SETUP, BROWSE, AND TEST MODES

This chapter describes the setup, browse, and test modes of the scanner.

Setup, Browse, and Test Modes

Activating the Setup or Browse Mode

Contents of the Setup or Browse Mode

Activating the Test Mode

Contents of the Test Mode

Setup, Browse, and Test Modes

This scanner has the setup mode, browse mode, and test mode to ease setting up.
• Setup mode for customizing the scanner for user requirements
• Browse mode for glancing setup conditions of the scanner
• Test mode for testing the scanner offline

There are two ways to enter these modes:
• Way 1
  Press ⊂MENU⊃ when the LCD indicates "Ready".
  You can use the setup mode and browse mode. To quit a mode, press ⊂CANCEL⊃.
• Way 2
  Turn the power on while pressing ⊂MENU⊃.
  You can use the test mode in addition to the setup mode and browse mode. To quit a mode, turn off the power.

Available functions differ with modes or with ways. For details, see descriptions of each function.

■ Functions not available in setup mode

Way	Functions not available
⊂MENU⊃ pressed in Ready status	IPC-3 mode, Interface, TP_IF baud rate, RS232C baud rate, SCSI ID, Product ID, Function key, Setup mode lock
Power on with ⊂MENU⊃ pressed	Settings

■ Functions not available in browse mode

Functions not available
Paper thickness setup

Activating the Setup or Browse Mode

To activate the setup mode, follow these steps:

1. While the LCD is indicating "Ready", press (MENU).
   The <<MODE SELECT>> screen appears with
   "SETUP" blinking.

```
         Ready
```

```
    <<MODE SELECT>>
    SETUP    BROWSE
```

2. Press (ENTER).
   The <<SETUP MODE>> initial screen (*) appears.

* <<SETUP MODE>> Initial screen

```
    <<SETUP MODE>>
```

3. Press (ENTER).
   The <<SETUP MODE>> menu screen (**) appears.

** <<SETUP MODE>> menu screen

```
    <<SETUP MODE>>
        XXXXX
```

To activate the browse mode, press ▷ before step 2 to make "BROWSE" blinking, then follows
steps 2 and 3. The <<BROWSE MODE>> screen appears.

To quit the setup mode, press (CANCEL).

■ **Button functions in setup or browse mode**

Button name	Function
(MENU)	Returns to the <<SETUP MODE>> menu screen without saving the change (*).
(ENTER)	Returns to the previous screen while saving the change (*).
(CANCEL)	Returns to the previous screen without saving the change (*).
▷	• Displays the next function at the right in the menu. • Moves to the right item.
◁	• Displays the next test function at the left in the menu. • Moves to the left item.
▽	Changes parameters.
△	Changes parameters.

* In browse mode, "saving the change" does not occur.

■ Mode selection (MENU pressed in Ready status)

There is another mode selection which enables you to execute the user test on the scanner without the host computer. See " Activating the Test Mode" later in this chapter.

```
        ┌──────────────────┐
        │    POWER ON      │
        └──────────────────┘
                 │
                 ▼
        ┌──────────────────┐
        │   Please wait    │
        └──────────────────┘
                 │
                 ▼
        ┌──────────────────┐
        │      Ready       │          ▷ ◁ : Cursor buttons
        └──────────────────┘
     MENU │        ▲ CANCEL          ▨▨▨ : Blinking
          ▼        │
┌─────────────────────┐     ▷     ┌─────────────────────┐
│   <<MODE SELECT>>   │ ────────▶ │   <<MODE SELECT>>   │
│   SETUP    BROWSE   │ ◀──────── │   SETUP    BROWSE   │
└─────────────────────┘     ◁     └─────────────────────┘
   ENTER │                            │ ENTER
         ▼                            ▼
┌─────────────────────┐     ┌─────────────────────┐
│   <<SETUP MODE>>    │     │   <<BROWSE MODE>>   │
└─────────────────────┘     └─────────────────────┘
   ENTER │    ▲ CANCEL         ENTER │    ▲ CANCEL
         ▼    │                      ▼    │
┌─────────────────────┐     ┌─────────────────────┐
│   <<SETUP MODE>>    │     │   <<BROWSE MODE>>   │
│       XXXXX         │     │       XXXXX         │
└─────────────────────┘     └─────────────────────┘
   ENTER │    ▲ CANCEL         ENTER │    ▲ CANCEL
         ▼    │                      ▼    │
```
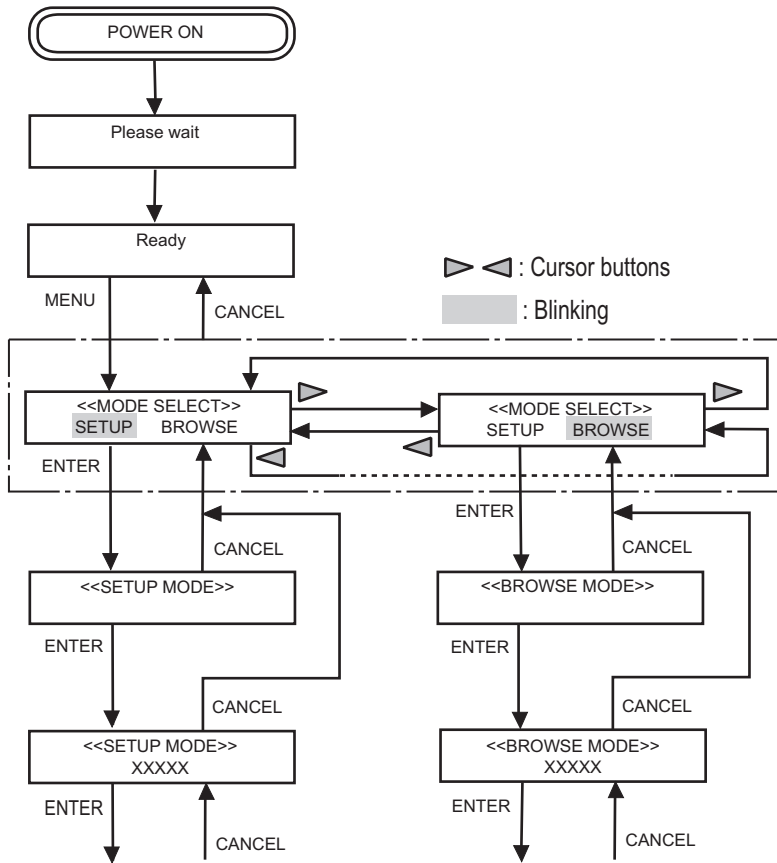
Contents of the Setup or Browse Mode

This section describes the contents of the setup mode.
The setup mode can be classified into 26 types.

Setup item	Description	Remarks
Settings	Sets simplex/duplex scanning, paper size, density, resolution, and halftone.	• Not displayed in setup mode selected by turning power on with MENU pressed. • Displayed when the video or TP interface is used. • Parameters set by the host computer cannot be changed.
Paper length check	Enables or disables the function which detects a paper length error.	The selection set by the host computer cannot be changed.
Paper thickness check	Enables or disables the function which detects the paper thickness.	The selection set by the host computer cannot be changed.
Paper thickness setup	Sets the permissible paper thickness to detect a double feed error.	
Skew check	Enables or disables the function which detects a skew error.	
IPC-3 mode	Selects a pattern to be set in the image processing option.	• Displayed in setup mode selected by turning power on with MENU pressed. • Overrides the selection set by the host computer.
Hopper height	Sets the initial position of the hopper.	
Paper separation level	Sets the power of separating sheets of paper.	
Drop-out color	Selects a drop-out color.	The selection set by the host computer cannot be changed.
Consumable counter	Sets the interval (in ten thousands) in which a consumable alarm occurs.	
Buzzer	Activates or inactivates the buzzer sound when an error occurs.	
Buzzer volume	Sets the volume of buzzer or click sound.	
LCD contrast	Sets the contrast of the LCD.	
Picking speed	Selects the speed of the pick roller.	

Setup item	Description	Remarks
Interface	Selects the host interface.	Displayed in setup mode selected by turning power on with `MENU` pressed.
TP_IF baud rate	Selects the control data transfer rate (2400, 4800, 9600, or 19200) for the TP interface.	Displayed in setup mode selected by turning power on with `MENU` pressed.
RS232C baud rate	Selects the transfer rate (2400, 4800, 9600, or 19200) for the RS-232C interface.	Displayed in setup mode selected by turning power on with `MENU` pressed.
SCSI ID	Sets the SCSI ID of this scanner.	Displayed in setup mode selected by turning power on with `MENU` pressed.
Product ID	Sets the product ID of this scanner.	Displayed in setup mode selected by turning power on with `MENU` pressed.
Pre-pick	Enables or disables pre-picking.	
Pick start time	Sets the period from when paper is loaded manually to when the pick operation starts.	
Manual feed timeout	Sets the waiting period from when the host computer issues a scan command to when paper is loaded manually.	
Paper pick retry	Sets the pick motor operation time and retry count.	
Paper feed retry	Sets the feed motor operation time and retry count.	
Function key	Allocates setup functions to `F1`, `F2`, and `F3` buttons.	Displayed in setup mode selected by turning power on with `MENU` pressed.
Setup mode lock	Inhibits the operator panel from entering setup mode from normal mode.	• Displayed in setup mode selected by turning power on with `MENU` pressed. • Setup functions allocated to `F1`, `F2`, and `F3` buttons are always valid regardless of this setting.

■ Transition of screens in setup mode

This flowchart indicates the transition of screens in setup mode for reference to the setup operation described in the following pages.
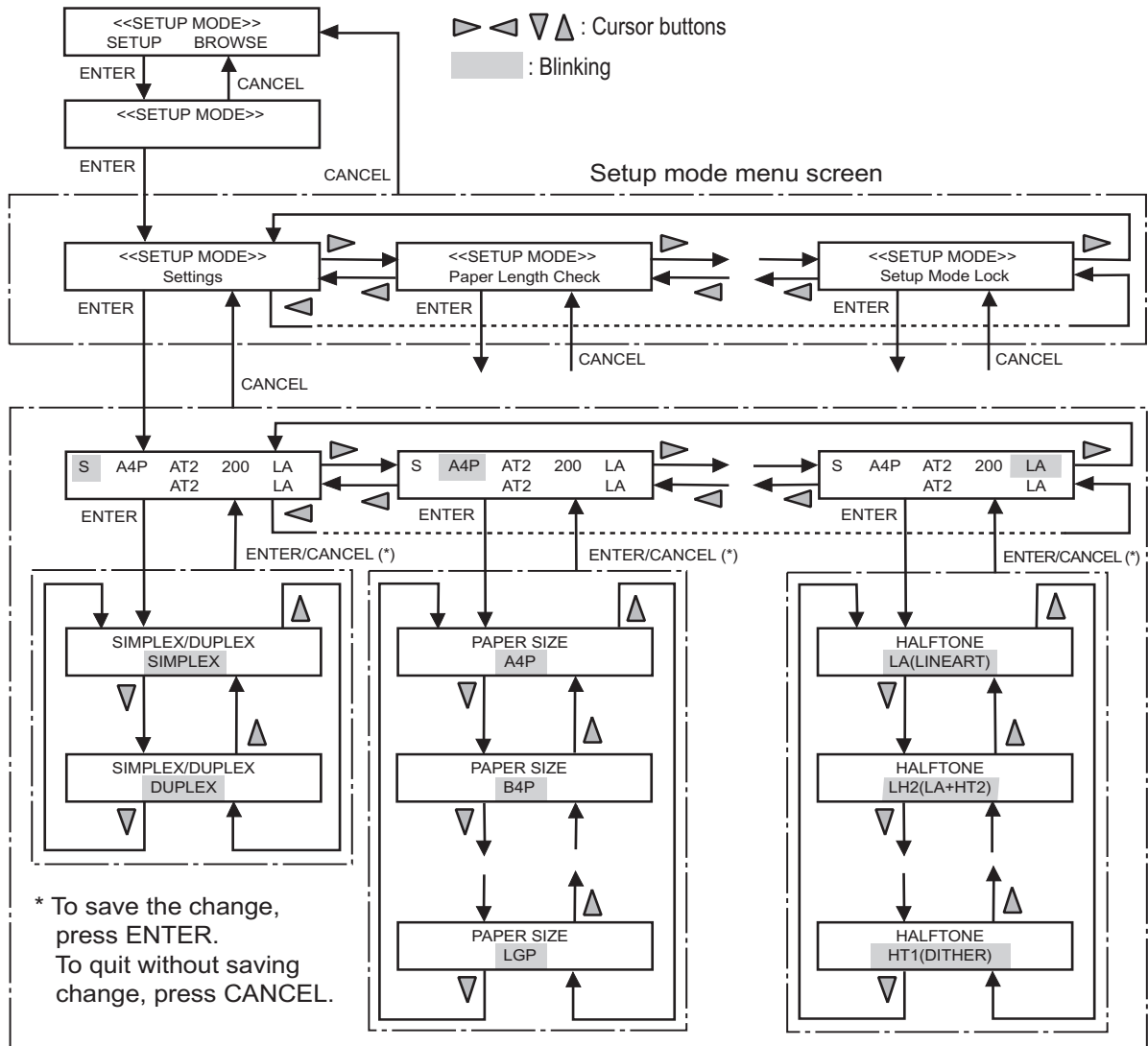
■ **Settings**

This function sets simplex/duplex scanning mode, paper size/orientation, density, resolution, and halftone processing. It is valid when the scanner operates in normal mode through the video or TP (third party) interface. It is also valid in the offline feed test in test mode. You cannot change settings if they are set by the host computer.

LCD display	Options	Remarks

Settings	S/D:
	xxx: A3P, DLP, LGP, B4P, A4P, LTP, B5P,
	       A5P, A4L, LTL, B5L, A5L, NPS
		Scanning mode (simplex or duplex)
		Paper size/orientation
		P: portrait
		L: landscape
		An: standard size A
		Bn: standard size B
		DL: double letter
		LG: legal
		LT: letter
		NPS: nonstandard size, displayed if it is set by
		         the host computer

	■ ❑ • • ❑ (5 combinations), AT1, AT2	**Density** ■ ❑ ❑ ❑ ❑: Light ■ ■ ■ ■ ■: Dark AT1: automatic AT2: simple automatic

	xxx: 200, 240, 300, 400
	xxx: LA, HT1, HT2, LH1, LH2
		Resolution (unit: dpi)
		Halftone processing
		LA: line art (no halftone)
		HT1: dither
		HT2: error diffusion
		LH1: line art for character area and dither for
		         halftone area
		LH2: line art for character area and error
		         diffusion for halftone area

* Symbols of density may differ from the actual symbols used in the LCD.

The following is an example of operation when you change the resolution.

✐ **NOTE**
• The "Settings" screen does not appear when your scanner is not controlled through the video or TP interface.
• You cannot use this function when the setup mode is brought by turning power on with ⊂MENU⊃ pressed.

1. In <<SETUP MODE>> initial screen, press ENTER.
    The <<SETUP MODE>> menu screen (Settings) appears.

```
<<SETUP MODE>>
```
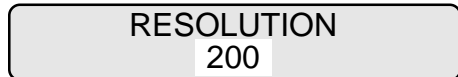
```
<<SETUP MODE>>
     Settings
```
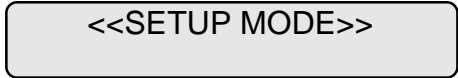
2. Press ENTER again.
    The option list screen indicates the current options with S blinking (blinking indicates "selected").

```
S   A4P   AT2   200   LA
          AT2         LA
```
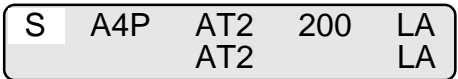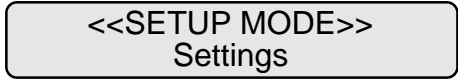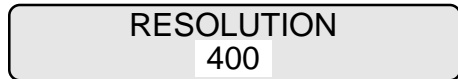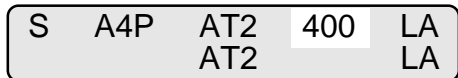
3. Press ▷ three times.
    The current resolution 200 blinks.

```
S   A4P   AT2   200   LA
          AT2         LA
```
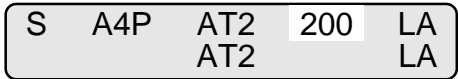
4. Press ENTER.
    RESOLUTION screen appears with 200 blinking (blinking indicates "changeable").

```
    RESOLUTION
       200
```

5. Press ▽ or △.
    The displayed option changes (240, 300, or 400).

```
    RESOLUTION
       400
```

6. When the desired value appears, press ENTER to save the change.
    The option list screen appears with the new value blinking.

```
S   A4P   AT2   400   LA
          AT2         LA
```

7. Press CANCEL three times.
    The LCD returns to the Ready screen.

```
       Ready
```
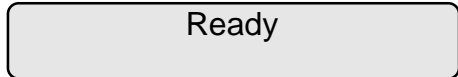
■ **Paper length check**

This function sets and detects a difference in paper length. You cannot change settings if they are set by the host computer.

LCD display	Options	Remarks
Paper Length Check	On, Off (Default: Off) 10 mm, 15 mm, 20 mm (Default: 10 mm)	**Checked or not** **Difference:** XX mm means that it is not regarded as an error when the actual difference of paper length is within the limits of ±XX mm.

The following is an example of operation when you use this function.

1. In <<SETUP MODE>> initial screen, press
    ENTER.
    The <<SETUP MODE>> menu screen
    (Settings) appears.

    <<SETUP MODE>>

    <<SETUP MODE>>
    Settings

    ### ⟋ **NOTE**
    The "Settings" screen does not appear and
    the "Paper Length Check" screen first ap-
    pears when your scanner is not controlled
    through the video or TP interface.

2. When the menu screen indicates "Settings",
    press ▷.
    The <<SETUP MODE>> menu screen (Paper
    Length Check) appears.

    <<SETUP MODE>>
    Paper Length Check

3. Press ENTER.
    The option select screen indicates the current
    options with ON blinking (blinking indicates
    "changeable").

    Paper Length Check
    ON   10 mm

4. Press ▷.
   The current difference 10 mm blinks (blinking
   indicates "changeable").

| Paper Length Check |
| ON   10 mm |

5. Press ▽ or △.
   The displayed option changes (15 mm or 20 mm).

| Paper Length Check |
| ON   20 mm |

6. When the desired value appears, press
   ⟨ENTER⟩ to save the change.
   The LCD returns to the <<SETUP MODE>>
   menu screen (Paper Length Check).

| <<SETUP MODE>> |
| Paper Length Check |

7. Press ⟨CANCEL⟩ two times.
   The LCD returns to the Ready screen.

| Ready |

■ Paper thickness check

This function determines whether or not to enable the paper thickness which is set by the "paper
thickness setup" function to detect a double feed error. You cannot change settings if they are set by
the host computer.

LCD display	Options	Remarks
Paper Thickness Check	On, Off (Default: Off)	

The following is an example of operation when you use this function.

1. In <<SETUP MODE>> initial screen, press
   ⟨ENTER⟩.
   The <<SETUP MODE>> menu screen
   (Settings or Paper Length Check) appears.

| <<SETUP MODE>> |

   NOTE
   The "Settings" screen does not appear and
   the "Paper Length Check" screen first ap-
   pears when your scanner is not controlled
   through the video or TP interface.

| <<SETUP MODE>> |
| Settings |

| <<SETUP MODE>> |
| Paper Length Check |

2. Press ▭.
    The <<SETUP MODE>> menu screen (Paper
    Thickness Check) appears.

<div align="right">

<<SETUP MODE>>
Paper Thickness Check

</div>

3. Press ENTER.
    The option select screen appears with the
    current option OFF blinking (blinking indicates
    "changeable").

<div align="right">

Paper Thickness Check
Check: OFF

</div>

4. Press ▽ or △.
    The displayed option changes (ON blinks).

<div align="right">

Paper Thickness Check
Check: ON

</div>

5. Press ENTER to save the change.
    The LCD returns to the <<SETUP MODE>>
    menu screen (Paper Thickness Check).

<div align="right">

<<SETUP MODE>>
Paper Thickness Check

</div>

6. Press CANCEL two times.
    The LCD returns to the Ready screen.

<div align="right">

Ready

</div>

■ Paper thickness setup

This function sets the paper thickness which is used as the reference for detecting a double feed
error. Whether this function is enabled or disabled is determined by the "paper thickness check"
function in setup mode.

✎ **NOTE**

This setting cannot be displayed in browse mode.

The following is an example of operation when you use this function.

1. In <<SETUP MODE>> initial screen, press
   ENTER .
   The <<SETUP MODE>> menu screen (Settings
   or Paper Length Check) appears.

   NOTE
   The "Settings" screen does not appear and the
   "Paper Length Check" screen first appears when
   your scanner is not controlled through the video
   or TP interface.

2. Press ▷ twice.
   The <<SETUP MODE>> menu screen (Paper
   Thickness Setup) appears.

3. Press ENTER .
   The paper load prompting screen appears,
   requesting adjustment paper.

4. Select thickest paper used for your jobs and put
   the paper on the hopper.

5. Press ENTER .
   The "Adjusting!!" message appears. The scanner
   lifts the hopper, feeds the paper, adjusts the
   sensing level of the sensor, and saves its value.
   After adjustment, the sheet is ejected and the
   "Finished!!" message appears for two seconds,
   then the LCD returns to the <<SETUP MODE>>
   menu screen (Paper Thickness Setup).
   *If an error (for example, Mis-pick) occurs during
   adjustment, remove the paper and press*
   CANCEL . *The paper load prompting screen
   appears again. Repeat steps 4 and 5.*

6. Press CANCEL two times.
   The LCD returns to the Ready screen.

<<SETUP MODE>>

<<SETUP MODE>>
Settings

<<SETUP MODE>>
Paper Length Check

<<SETUP MODE>>
Paper Thickness Setup

Paper Thickness Setup
Set the adjustment paper

Paper Thickness Setup
Adjusting!!

Paper Thickness Setup
Finished!!

<<SETUP MODE>>
Paper Thickness Setup

Ready

■ **Skew check**

This function determines if abnormal skew is detected or not. You cannot change the setting if it is set by the host computer.

LCD display	Options	Remarks
Skew Check	On, Off (Default: Off)	

The following is an example of operation when you use this function.

1. In <<SETUP MODE>> initial screen, press ⟨ENTER⟩.
   The <<SETUP MODE>> menu screen
   (Settings or Paper Length Check) appears.

   ### ✍ **NOTE**
   The "Settings" screen does not appear and
   the "Paper Length Check" screen first ap-
   pears when your scanner is not controlled
   through the video or TP interface.

2. Press ▷ three times.
   The <<SETUP MODE>> menu screen (Skew
   Check) appears.

3. Press ⟨ENTER⟩.
   The option select screen appears with the
   current option OFF blinking (blinking indicates
   "changeable").

4. Press ▽ or △.
   The displayed option changes (ON blinks).

5. Press ⟨ENTER⟩ to save the change.
   The LCD returns to the <<SETUP MODE>>
   menu screen (Skew Check).

6. Press ⟨CANCEL⟩ two times.
   The LCD returns to the Ready screen.

<<SETUP MODE>>

<<SETUP MODE>>
Settings

<<SETUP MODE>>
Paper Length Check

<<SETUP MODE>>
Skew Check

Skew Check
Check: OFF

Skew Check
Check: ON

<<SETUP MODE>>
Skew Check

Ready

■ **IPC-3 mode**

This function selects a pattern to be set in the IPC-3 image processing feature.

NOTE
You cannot use this function when the setup mode is brought by pressing ⬭MENU⬭ in the Ready status.

LCD display	Options	Remarks
IPC-3 Mode	0, 1, 2, 3, 4, 5	0: do not select any pattern 1 to 5: select pattern numbers 1 to 5

The following is an example of operation when you use this function.

1.   In <<SETUP MODE>> initial screen, press ⬭ENTER⬭.
     The <<SETUP MODE>> menu screen (Settings or Paper Length Check) appears.

     ```
     <<SETUP MODE>>
     ```

     ```
     <<SETUP MODE>>
            Settings
     ```

     ### **NOTE**
     The "Settings" screen does not appear and the "Paper Length Check" screen first appears when your scanner is not controlled through the video or TP interface.

     ```
     <<SETUP MODE>>
     Paper Length Check
     ```

2.   Press ▭ four times.
     The <<SETUP MODE>> menu screen (IPC-3 Mode) appears.

     ```
     <<SETUP MODE>>
          IPC-3 Mode
     ```

3.   Press ⬭ENTER⬭.
     The option select screen appears with the current setting 0 blinking (blinking indicates "changeable").

     ```
     IPC-3 Mode
          0
     ```

4.   Press ▽ or △.
     The displayed option changes (1, 2, 3, 4, 5).

     ```
     IPC-3 Mode
          5
     ```

5. When the desired pattern number appears, press ⟨ENTER⟩ to save the change. The LCD returns to the <<SETUP MODE>> menu screen (IPC-3 Mode).

```
<<SETUP MODE>>
IPC-3 Mode
```

6. To quit the <<SETUP MODE>>, turn off the power.

Paper types and corresponding pattern numbers

User's paper is classified into five types in line art (no halftone) mode as shown in the following table.
• The horizontal axis shows the density and color of background on paper.
• The vertical axis shows the density of characters or lines.

		Background density		Background color		
		Normal ← → **Dark**		**Red**	**Green**	**Blue**
Character density	**Normal** ↑	**1**: Normal background and normal character	**3**: Dark background and normal character			
	↓ **Light**	**2**: Normal background and light character		**4**: Light character on red or similar background	**5**: Light character on green or similar background	

* 1 to 5 are pattern numbers.

✐ NOTE

When IPC-3 mode is executed in online status, the reading parameter is valid or invalid (host setting is invalid) as follows:

Reading parameter validity

	Reading parameter							
	Reading mode	**Transfer mode**	**Transfer rate**	**Reduction**	**Start of reading**	**Density**	**Line-art/ Photo**	**Halftone**
Valid	X	X	X	X	X			
Invalid						X	X	X

	Reading parameter							
	DTC	**Size**	**Portrait/ Landscape**	**Picking**	**Document selection**	**r patterns**	**Contrast**	**Automatic separation**
Valid		X	X	X	X			
Invalid	X					X	X	X

	Reading parameter					
	Conversion	**Sharpness**	**Outline extraction**	**Overlay**	**Simplified DTC**	**Zooming**
Valid	X					X
Invalid		X	X	X	X	

■ Hopper height

This function sets the initial height of the hopper. Set the height which you frequently use.

LCD display	Options	Remarks
Hopper Height	250 sheets, 500 sheets, 1000 sheets	

The following is an example of operation when you use this function.

1. In <<SETUP MODE>> initial screen, press
   ENTER.
   The <<SETUP MODE>> menu screen (Settings
   or Paper Length Check) appears.

   ### NOTE
   The "Settings" screen does not appear and the
   "Paper Length Check" screen first appears when
   your scanner is not controlled through the video
   or TP interface.

2. Press ▷ repeatedly until "Hopper Height"
   appears in the lower line of the menu screen.

3. Press ENTER.
   The option select screen appears with the current
   height setting 1000 sheets blinking (blinking
   indicates "changeable").

4. Press △.
   The hopper moves to the 500-sheet position and
   the new height setting 500 sheets blinks.

   ### NOTE
   Each time you press ▽ or △, the hopper
   moves to the next position and its position is
   automatically saved. Repeat this operation until
   the hopper is positioned at the desired height.

   *If an error occurs during positioning, press
   CANCEL. The LCD returns to the option select
   screen. Repeat step 4.*

<<SETUP MODE>>

<<SETUP MODE>> Settings

<<SETUP MODE>> Paper Length Check

<<SETUP MODE>> Hopper Height

Hopper Height 1000 sheets

Hopper Height 500 sheets

5. Press $\boxed{\text{CANCEL}}$ three times.
   The LCD returns to the Ready screen.

   > Ready
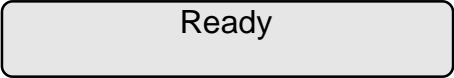
   After this setting, the hopper is set at the new
   height whenever power is turned on.

■ **Paper separation level**

This function sets the power of the brake roller for stabilizing paper separation in picking documents.

LCD display	Options	Remarks
Paper Separation Level	Thick, Medium Thick, Normal, Medium Thin, Thin (Default: Normal)	Thick: strong braking power for thick paper | (changes according to paper thickness) Thin: weak braking power for thin paper

If the following errors frequently occur, set the braking power as explained below.
• Double feed
• Mis-pick
• SF2 did not detect leading edge of paper

Set "braking power" according to the table below.

Setting	Braking power	"Double feed" frequently occurs.	"Mis-pick" or "SF2 ⋯" frequently occurs.
Thick	Strong		
Medium Thick	Less strong		
Normal	Medium (factory default)	Make the braking power stronger.	Make the braking power weaker.
Medium Thin	Less weak		
Thin	Weak		

The following is an example of operation when you use this function.

1. In <<SETUP MODE>> initial screen, press
   ENTER .
   The <<SETUP MODE>> menu screen
   (Settings or Paper Length Check) appears.

   ⟋ **NOTE**
   The "Settings" screen does not appear and
   the "Paper Length Check" screen first ap-
   pears when your scanner is not controlled
   through the video or TP interface.

2. Press ▷ repeatedly until "Paper Separation
   Level" appears in the lower line of the menu
   screen.

3. Press ENTER .
   The option select screen appears with the
   current option Normal blinking (blinking
   indicates "changeable").

4. Press ▽ or △.
   The displayed option changes (Thick to Thin).

5. When the desired option appears, press
   ENTER to save the change.
   The LCD returns to the <<SETUP MODE>>
   menu screen (Paper Separation Level).

6. Press CANCEL two times.
   The LCD returns to the Ready screen.

<<SETUP MODE>>

<<SETUP MODE>> Settings

<<SETUP MODE>> Paper Length Check

<<SETUP MODE>> Paper Separation Level

Paper Separation Level Normal

Paper Separation Level Medium Thin

<<SETUP MODE>> Paper Separation Level

Ready

■ **Drop-out color**

This function sets a drop-out color for front and back sides of paper respectively. You cannot change settings if they are selected by the host computer.

LCD display	Options	Remarks
Drop-out Color	Front: Green, Red, Blue (Default: Green) Back: Green, Red, Blue (Default: Green)	

The following is an example of operation when you use this function.

1.   In <<SETUP MODE>> initial screen, press
      ENTER.
      The <<SETUP MODE>> menu screen
      (Settings or Paper Length Check) appears.

      NOTE
      The "Settings" screen does not appear and
      the "Paper Length Check" screen first ap-
      pears when your scanner is not controlled
      through the video or TP interface.

2.   Press ▷ repeatedly until "Drop-out Color"
      appears in the lower line of the menu screen.

3.   Press ENTER.
      The option select screen appears with the
      current setting Green (for Front) blinking
      (blinking indicates "changeable").

4.   Press ▷.
      Green (current option for Back) blinks (blink-
      ing indicates "changeable").

<<SETUP MODE>>

<<SETUP MODE>>
Settings

<<SETUP MODE>>
Paper Length Check

<<SETUP MODE>>
Drop-out Color

Drop-out Color
Front: Green Back: Green

Drop-out Color
Front: Green Back: Green

5. Press ▽ or △.
   The displayed option changes (Blue or Red).

   | Drop-out Color |
   | Front: Green Back: Red |

6. When the desired option appears, press
   ENTER to save the change.
   The LCD returns to the <<SETUP MODE>>
   menu screen (Drop-out Color).

   | <<SETUP MODE>> |
   | Drop-out Color |

7. Press CANCEL two times.
   The LCD returns to the Ready screen.

   | Ready |

■ Consumable counter

This function displays or sets a value of the counter which informs the user of the life (replacement cycle) of a consumable. When the number of sheets fed reaches the set value, an alarm occurs. Set this value according to types of paper you use. When using fine paper, the standard replacement cycle of pick roller units, brake rollers, and pads is per three hundred thousands of sheets fed. So, we recommend you to set the value to 0300000.

LCD display	Options	Remarks
Consumable Counter	10000 to 2560000 sheets (Default: 2560000 sheets)	This setting can be changed in ten thousands of sheets. The least four digits of zeros are automatically added.

The following is an example of operation when you use this function.

1. In <<SETUP MODE>> initial screen, press
    ENTER.
    The <<SETUP MODE>> menu screen
    (Settings or Paper Length Check) appears.

    ◢ **NOTE**
    The "Settings" screen does not appear and
    the "Paper Length Check" screen first ap-
    pears when your scanner is not controlled
    through the video or TP interface.

2. Press ▷ repeatedly until "Consumable
    Counter" appears in the lower line of the
    menu screen.

<<SETUP MODE>>

<<SETUP MODE>>
Settings

<<SETUP MODE>>
Paper Length Check

<<SETUP MODE>>
Consumable Counter

3. Press ⟨ENTER⟩.
   The option select screen appears with the
   current value blinking (blinking indicates
   "changeable").

> Consumable Counter
> 256 0000 sheets

4. Press ▽ or △.
   The displayed value changes (1 to 256).
   (Value can be changed in ten thousands of
   sheets.) Pressing and holding down ▽ or
   △ speeds up the change.

> Consumable Counter
> 030 0000 sheets

5. When the desired value appears, press
   ⟨ENTER⟩ to save the change.
   The LCD returns to the <<SETUP MODE>>
   menu screen (Consumable Counter).

> <<SETUP MODE>>
> Consumable Counter

6. Press ⟨CANCEL⟩ two times.
   The LCD returns to the Ready screen.

> Ready

■ Buzzer

This function enables or disables the buzzer sound when an error occurs.

╱. NOTE

The buzzer sounds regardless of this setting when use this function.

LCD display	Options	Remarks
Buzzer	On, Off (Default: Off)	

The following is an example of operation when you use this function.

1. In <<SETUP MODE>> initial screen, press
   ENTER.
   The <<SETUP MODE>> menu screen
   (Settings or Paper Length Check) appears.

   NOTE
   The "Settings" screen does not appear and
   the "Paper Length Check" screen first ap-
   pears when your scanner is not controlled
   through the video or TP interface.

2. Press ▭ repeatedly until "Buzzer" appears
   in the lower line of the menu screen.

3. Press ENTER.
   The option select screen appears with the
   current setting OFF blinking (blinking indicates
   "changeable").

4. Press ▽ or △.
   The displayed option changes (ON blinks).

5. Press ENTER to save the change.
   The LCD returns to the <<SETUP MODE>>
   menu screen (Buzzer).

6. Press CANCEL two times.
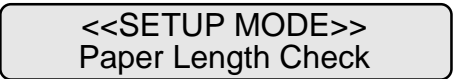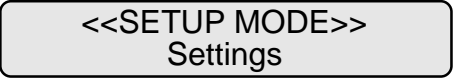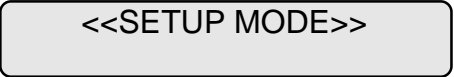   The LCD returns to the Ready screen.

<<SETUP MODE>>

<<SETUP MODE>>
Settings

<<SETUP MODE>>
Paper Length Check

<<SETUP MODE>>
Buzzer

Buzzer
OFF

Buzzer
ON

<<SETUP MODE>>
Buzzer

Ready

■ Buzzer volume

This function sets the sound volume of the buzzer in six steps.

NOTE
This setting is valid both for occurrence of an error and for press of an operator panel button.

LCD display	Options	Remarks
Buzzer Volume	■ ❑ ❑ ❑ ❑ ❑ to (Default: ■ ■ ❑ ❑ ❑ ❑) ■ ■ ■ ■ ■ ■	Minimum to (six steps) Maximum

* Symbols of volume may differ from the actual symbols used in the LCD.

The following is an example of operation when you use this function.

1. In <<SETUP MODE>> initial screen, press
    ENTER.
    The <<SETUP MODE>> menu screen
    (Settings or Paper Length Check) appears.

    ### NOTE
    The "Settings" screen does not appear and
    the "Paper Length Check" screen first ap-
    pears when your scanner is not controlled
    through the video or TP interface.

2. Press ▷ repeatedly until "Buzzer Volume"
    appears in the lower line of the menu screen.

3. Press ENTER.
    The option select screen appears with the
    current setting ■ ■ ❑ ❑ ❑ ❑ (no blinking but
    changeable).

<<SETUP MODE>>

<<SETUP MODE>>
Settings

<<SETUP MODE>>
Paper Length Check

<<SETUP MODE>>
Buzzer Volume

Buzzer Volume
Min ■ ■ ❑ ❑ ❑ ❑ Max

● 6-25

4. Press ▽ or △.
    The displayed option changes (■ ■ ■ ❑ ❑ ❑ to
    ■ ■ ■ ■ ■ ■ or ■ ❑ ❑ ❑ ❑ ❑).

```
Buzzer Volume
Min ■ ■ ■ ❑ ❑ ❑ Max
```

5. When the desired option appears, press
    ⟨ENTER⟩ to save the change.
    The LCD returns to the <<SETUP MODE>>
    menu screen (Buzzer Volume).

```
<<SETUP MODE>>
Buzzer Volume
```

6. Press ⟨CANCEL⟩ two times.
    The LCD returns to the Ready screen.

```
Ready
```
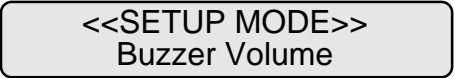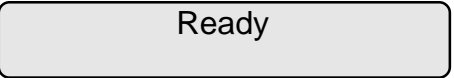
■ **LCD contrast**

This function sets the contrast of the LCD on the operator panel in six steps.

LCD display	Options		Remarks
LCD Contrast	■ ❑ ❑ ❑ ❑ ❑ to ■ ■ ■ ■ ■ ■	(Default: ■ ■ ❑ ❑ ❑ ❑)	Dark (low contrast) to (six steps) Bright (high contrast)

* Symbols of volume may differ from the actual symbols used in the LCD.

The following is an example of operation when you use this function.

1. In <<SETUP MODE>> initial screen, press
    ⟨ENTER⟩.
    The <<SETUP MODE>> menu screen
    (Settings or Paper Length Check) appears.

```
<<SETUP MODE>>
```

```
<<SETUP MODE>>
Settings
```
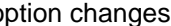
    ✎ **NOTE**
    The "Settings" screen does not appear and
    the "Paper Length Check" screen first ap-
    pears when your scanner is not controlled
    through the video or TP interface.

```
<<SETUP MODE>>
Paper Length Check
```

2. Press ▷ repeatedly until "LCD Contrast" appears in the lower line of the menu screen.

```
<<SETUP MODE>>
  LCD Contrast
```

3. Press ENTER.
   The option select screen appears with the current setting ■ ■ ❏ ❏ ❏ ❏ (no blinking but changeable).

```
      LCD Contrast
Dark ■ ■ ❏ ❏ ❏ ❏ Bright
```

4. Press ▽ or △.
   The displayed option changes (■ ■ ■ ❏ ❏ ❏ to ■ ■ ■ ■ ■ ■ or ■ ❏ ❏ ❏ ❏ ❏).

```
      LCD Contrast
Dark ■ ■ ■ ❏ ❏ ❏ Bright
```

5. When the desired option appears, press ENTER to save the change.
   The LCD returns to the <<SETUP MODE>> menu screen (LCD Contrast).

```
<<SETUP MODE>>
  LCD Contrast
```

6. Press CANCEL two times.
   The LCD returns to the Ready screen.

```
      Ready
```

■ Picking speed

This function sets the rotational speed of the pick roller. Slow speed is recommended when you use thin or flexible paper which is liable to mis-pick.

LCD display	Options	Remarks
Picking Speed	Slow, Fast (Default: Fast)	

✎ NOTE
Processing speed of scanning in 200 dpi is reduced when the picking speed is set "Slow".

Set "picking speed" according to the table below.

Picking speed	"Mis-pick" frequently occurs.
Fast (factory default)	Make the picking speed slow.
Slow	

The following is an example of operation when you use this function.

1. In <<SETUP MODE>> initial screen, press ENTER.
   The <<SETUP MODE>> menu screen (Settings or Paper Length Check) appears.

   NOTE
   The "Settings" screen does not appear and the "Paper Length Check" screen first appears when your scanner is not controlled through the video or TP interface.

2. Press ▷ repeatedly until "Picking Speed" appears in the lower line of the menu screen.

3. Press ENTER.
   The option select screen appears with the current setting Fast blinking (blinking indicates "changeable").

4. Press ▽ or △.
   The displayed option changes (Slow blinks).

5. Press ENTER to save the change.
   The LCD returns to the <<SETUP MODE>> menu screen (Picking Speed).

6. Press CANCEL two times.
   The LCD returns to the Ready screen.

<<SETUP MODE>>

<<SETUP MODE>>
Settings

<<SETUP MODE>>
Paper Length Check

<<SETUP MODE>>
Picking Speed

Picking Speed
Fast

Picking Speed
Slow

<<SETUP MODE>>
Picking Speed

Ready

■ **Interface**

This function sets the host interface.

✎ **NOTE**
You cannot use this function when the setup mode is brought by pressing ⬭MENU⬭ in the Ready status.

LCD display	Options	Remarks
Interface	Auto, SCSI, Video, TP_IF (Default: Auto)	Auto: The scanner automatically detects the interface through which a host computer issues a command. TP_IF: Third party's interface

The following is an example of operation when you use this function.

1. In <<SETUP MODE>> initial screen, press ⬭ENTER⬭.
   The <<SETUP MODE>> menu screen (Settings or Paper Length Check) appears.

   ✎ **NOTE**
   The "Settings" screen does not appear and the "Paper Length Check" screen first appears when your scanner is not controlled through the video or TP interface.

2. Press ▭ repeatedly until "Interface" appears in the lower line of the menu screen.

3. Press ⬭ENTER⬭.
   The option select screen appears with the current setting AUTO blinking (blinking indicates "changeable").
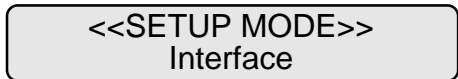
```
<<SETUP MODE>>
```

```
<<SETUP MODE>>
Settings
```

```
<<SETUP MODE>>
Paper Length Check
```

```
<<SETUP MODE>>
Interface
```

```
Interface
AUTO
```

4. Press ▽ or △.
    The displayed option changes (SCSI, VIDEO,
    TP_IF).

> Interface
> VIDEO

5. When the desired interface appears, press
    (ENTER) to save the change.
    The LCD returns to the <<SETUP MODE>>
    menu screen (Interface).

> <<SETUP MODE>>
> Interface

6. To quit the <<SETUP MODE>>, turn off the
    power.

■ TP_IF baud rate

This function sets the baud rate (signaling speed) according to the baud rate of the third party inter-
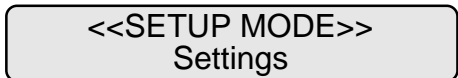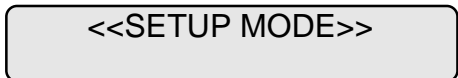face (TP_IF). At least, set the speed slower than that of the host interface.

✎ NOTE

You cannot use this function when the setup mode is brought by pressing (MENU) in the Ready
status.

| LCD display	Options	Remarks
TP_IF Baud Rate	2400, 4800, 9600, 19200 (Default: 9600)	Unit: baud

The following is an example of operation when you use this function.

1. In <<SETUP MODE>> initial screen, press
    (ENTER).
    The <<SETUP MODE>> menu screen
    (Settings or Paper Length Check) appears.

> <<SETUP MODE>>

> <<SETUP MODE>>
> Settings

✎ NOTE

The "Settings" screen does not appear and
the "Paper Length Check" screen first ap-
pears when your scanner is not controlled
through the video or TP interface.

> <<SETUP MODE>>
> Paper Length Check
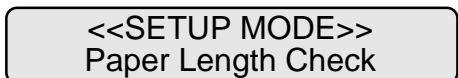
2. Press ▷ repeatedly until "TP_IF Baud Rate" appears in the lower line of the menu screen.

```
<<SETUP MODE>>
  TP_IF Baud Rate
```

3. Press ⸦ENTER⸧.
   The option select screen appears with the current setting 9600 blinking (blinking indicates "changeable").

```
  TP_IF Baud Rate
       9600
```

4. Press ▽ or △.
   The displayed option changes (19200, 2400, 4800).

```
  TP_IF Baud Rate
      19200
```

5. When the desired option appears, press ⸦ENTER⸧ to save the change.
   The LCD returns to the <<SETUP MODE>> menu screen (TP_IF Baud Rate).

```
<<SETUP MODE>>
  TP_IF Baud Rate
```

6. To quit the <<SETUP MODE>>, turn off the power.

■ **RS232C baud rate**

This function sets the baud rate (signaling speed) according to the baud rate of the RS-232C interface. At least, set the speed slower than that of the host interface.

⟋ **NOTE**
You cannot use this function when the setup mode is brought by pressing ⸦MENU⸧ in the Ready status.

LCD display	Options	Remarks
RS232C Baud Rate	2400, 4800, 9600, 19200 (Default: 4800)	Unit: baud

The following is an example of operation when you use this function.

1. In <<SETUP MODE>> initial screen, press ENTER.
   The <<SETUP MODE>> menu screen (Settings or Paper Length Check) appears.

   NOTE
   The "Settings" screen does not appear and the "Paper Length Check" screen first appears when your scanner is not controlled through the video or TP interface.

2. Press ▶ repeatedly until "RS232C Baud Rate" appears in the lower line of the menu screen.

3. Press ENTER.
   The option select screen appears with the current setting 4800 blinking (blinking indicates "changeable").

4. Press ▽ or △.
   The displayed option changes (9600, 19200, 2400).

5. When the desired option appears, press ENTER to save the change.
   The LCD returns to the <<SETUP MODE>> menu screen (RS232C Baud Rate).

6. To quit the <<SETUP MODE>>, turn off the power.

<<SETUP MODE>>

<<SETUP MODE>>
Settings

<<SETUP MODE>>
Paper Length Check

<<SETUP MODE>>
RS232C Baud Rate

RS232C Baud Rate
4800

RS232C Baud Rate
19200

<<SETUP MODE>>
RS232C Baud Rate

■ SCSI ID

This function sets the ID number for the SCSI interface.

> ### NOTE
> You cannot use this function when the setup mode is brought by pressing MENU in the Ready status.

LCD display	Options	Remarks
SCSI ID	0 to 7 (Default: 5)	

The following is an example of operation when you use this function.

1. In <<SETUP MODE>> initial screen, press
   ENTER.
   The <<SETUP MODE>> menu screen (Settings or Paper Length Check) appears.

   > ### NOTE
   > The "Settings" screen does not appear and the "Paper Length Check" screen first appears when your scanner is not controlled through the video or TP interface.

```
<<SETUP MODE>>
```

```
<<SETUP MODE>>
       Settings
```

```
<<SETUP MODE>>
 Paper Length Check
```

2. Press ▷ repeatedly until "SCSI ID" appears in the lower line of the menu screen.

```
<<SETUP MODE>>
     SCSI ID
```

3. Press ENTER.
   The option select screen appears with the current setting 5 blinking (blinking indicates "change-able").
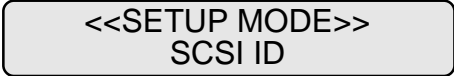
```
    SCSI ID
       5
```

4. Press ▽ or △.
   The displayed option changes (6, 7, 0, 1, 2, 3, 4).

```
    SCSI ID
       3
```

5. When the desired value appears, press
    ENTER to save the change.
    The LCD returns to the <<SETUP MODE>>
    menu screen (SCSI ID).

<<SETUP MODE>>
SCSI ID

6. To quit the <<SETUP MODE>>, turn off the
    power.

■ Product ID

This function sets the product ID of the scanner. Usually, you need not change this setting.
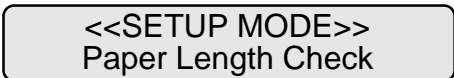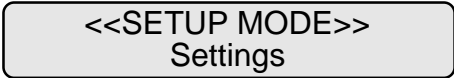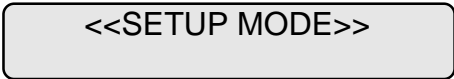
✐ NOTE
You cannot use this function when the setup mode is brought by pressing MENU in the Ready
status.

LCD display	Options	Remarks
Product ID	M4099D, M3099G (Default: M4099D)	Model number of this scanner

* The model number of this scanner is M4099D.

The following is an example of operation when you use this function.

1. In <<SETUP MODE>> initial screen, press
    ENTER.
    The <<SETUP MODE>> menu screen
    (Settings or Paper Length Check) appears.

<<SETUP MODE>>

<<SETUP MODE>>
Settings

✐ NOTE
The "Settings" screen does not appear and
the "Paper Length Check" screen first ap-
pears when your scanner is not controlled
through the video or TP interface.

<<SETUP MODE>>
Paper Length Check

2. Press ▷ repeatedly until "Product ID" appears in the lower line of the menu screen.

```
<<SETUP MODE>>
Product ID
```

3. Press ＥＮＴＥＲ.
The option select screen appears with the current setting M4099D blinking (blinking indicates "changeable").

```
Product ID
M4099D
```

4. Press ▽ or △.
The displayed option changes (M3099G blinks).

```
Product ID
M3099G
```

5. Press ＥＮＴＥＲ to save the change.
The LCD returns to the <<SETUP MODE>> menu screen (Product ID).

```
<<SETUP MODE>>
Product ID
```

6. To quit the <<SETUP MODE>>, turn off the power.

■ Pre-pick

This function enables or disables pre-picking of paper.

LCD display	Options	Remarks
Pre-pick	On, Off (Default: On)	

The following is an example of operation when you use this function.

● 6-35

1. In <<SETUP MODE>> initial screen, press ENTER.
The <<SETUP MODE>> menu screen (Settings or Paper Length Check) appears.

   ✎ **NOTE**
   The "Settings" screen does not appear and the "Paper Length Check" screen first appears when your scanner is not controlled through the video or TP interface.

2. Press ▷ repeatedly until "Pre-pick" appears in the lower line of the menu screen.

3. Press ENTER.
The option select screen appears with the current setting ON blinking (blinking indicates "changeable").

4. Press ▽ or △.
The displayed option changes (OFF blinks).

5. Press ENTER to save the change.
The LCD returns to the <<SETUP MODE>> menu screen (Pre-pick).

6. Press CANCEL two times.
The LCD returns to the Ready screen.

<<SETUP MODE>>

<<SETUP MODE>>
Settings

<<SETUP MODE>>
Paper Length Check

<<SETUP MODE>>
Pre-pick

Pre-pick
ON

Pre-pick
OFF

<<SETUP MODE>>
Pre-pick

Ready

■ **Pick start time**

This function sets the period from when paper is manually put on the hopper to when the pick operation starts.

LCD display	Options	Remarks
Pick start time	00.2 S to 29.8 S (Default: 01.0 S)	In units of 0.2 second

The following is an example of operation when you use this function.

1. In <<SETUP MODE>> initial screen, press
   ENTER.
   The <<SETUP MODE>> menu screen
   (Settings or Paper Length Check) appears.

   NOTE
   The "Settings" screen does not appear and
   the "Paper Length Check" screen first ap-
   pears when your scanner is not controlled
   through the video or TP interface.

2. Press ▷ repeatedly until "Pick start time"
   appears in the lower line of the menu screen.

3. Press ENTER.
   The option select screen appears with the
   current setting 01.0S blinking (blinking indi-
   cates "changeable").

4. Press ▽ or △.
   The displayed option changes (00.2S to
   29.8S). The value changes in 0.2 seconds.

5. When the desired value appears, press
   ENTER to save the change.
   The LCD returns to the <<SETUP MODE>>
   menu screen (Pick start time).

```
<<SETUP MODE>>
```
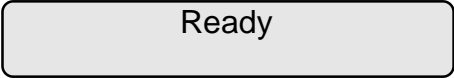
```
<<SETUP MODE>>
Settings
```

```
<<SETUP MODE>>
Paper Length Check
```

```
<<SETUP MODE>>
Pick start time
```

```
Pick start time
01.0 S
```

```
Pick start time
05.0 S
```

```
<<SETUP MODE>>
Pick start time
```

6. Press CANCEL two times.
   The LCD returns to the Ready screen.
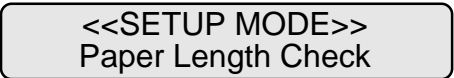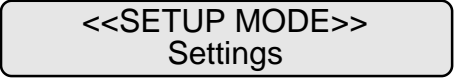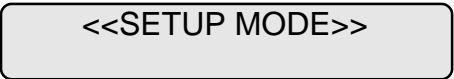
> Ready

■ Manual feed timeout

This function sets the waiting time from when the host computer issues a scan command to when paper is manually put on the hopper. A manual feed timeout error occurs if this time elapses without putting paper on the hopper.

LCD display	Options	Remarks
Manual Feed Timeout	1 S to 255 S (Default: 30 S)	Unit: second

The following is an example of operation when you use this function.

1. In <<SETUP MODE>> initial screen, press
   ENTER.
   The <<SETUP MODE>> menu screen
   (Settings or Paper Length Check) appears.

> <<SETUP MODE>>

> <<SETUP MODE>>
> Settings

   ### ✎ NOTE
   The "Settings" screen does not appear and
   the "Paper Length Check" screen first ap-
   pears when your scanner is not controlled
   through the video or TP interface.

> <<SETUP MODE>>
> Paper Length Check

2. Press ▷ repeatedly until "Manual Feed
   Timeout" appears in the lower line of the
   menu screen.

> <<SETUP MODE>>
> Manual Feed Timeout
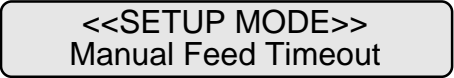
3. Press ENTER.
   The option select screen appears with the
   current setting 30 S blinking (blinking indi-
   cates "changeable").

> Manual Feed Timeout
> 30 S
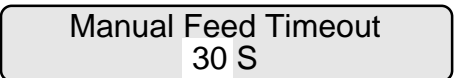
4. Press ▽ or △.
    The displayed option changes (1 S to 255 S).
    The value changes in seconds.

> Manual Feed Timeout
> 10 S

5. When the desired value appears, press
    ⊂ENTER⊃ to save the change.
    The LCD returns to the <<SETUP MODE>>
    menu screen (Manual Feed Timeout).

> <<SETUP MODE>>
> Manual Feed Timeout

6. Press ⊂CANCEL⊃ two times.
    The LCD returns to the Ready screen.

> Ready

■ Paper pick retry

This function sets the pick motor rotation period and the retry count.

LCD display	Options	Remarks
Paper Pick retry	Step: 1 to 7 (Default: 2)	1 to 7: one time to seven times the standard steps
	Times: 1 to 7 (Default: 4)	1 to 7: one retry to seven retries

The following is an example of operation when you use this function.

1. In <<SETUP MODE>> initial screen, press
   ENTER.
   The <<SETUP MODE>> menu screen
   (Settings or Paper Length Check) appears.

   NOTE
   The "Settings" screen does not appear and
   the "Paper Length Check" screen first ap-
   pears when your scanner is not controlled
   through the video or TP interface.

2. Press ▷ repeatedly until "Paper Pick retry"
   appears in the lower line of the menu screen.

3. Press ENTER.
   The option select screen appears with the
   current setting 2 (for Step) blinking (blinking
   indicates "changeable").

4. Press ▷.
   The current count setting 4 blinks.

5. Press ▽ or △.
   The displayed option changes (1, 2, 3, 4, 5, 6,
   7).

6. When the desired value appears, press
   ENTER to save the change.
   The LCD returns to the <<SETUP MODE>>
   menu screen (Paper Pick retry).

7. Press CANCEL two times.
   The LCD returns to the Ready screen.

<<SETUP MODE>>

<<SETUP MODE>> Settings

<<SETUP MODE>> Paper Length Check

<<SETUP MODE>> Paper Pick retry

Paper Pick retry Step: 2   Times: 4

Paper Pick retry Step: 2   Times: 4

Paper Pick retry Step: 2   Times: 7

<<SETUP MODE>> Paper Pick retry

Ready

■ Paper feed retry

This function sets the feed motor rotation period and the retry count.

LCD display	Options	Remarks
Paper Feed Retry	Step: 1 to 7 (Default: 1)	1 to 7: one time to seven times the standard steps
	Times: 1 to 7 (Default: 4)	1 to 7: one retry to seven retries

The following is an example of operation when you use this function.

1. In <<SETUP MODE>> initial screen, press
   ENTER.
   The <<SETUP MODE>> menu screen
   (Settings or Paper Length Check) appears.

   ✎ **NOTE**
   The "Settings" screen does not appear and
   the "Paper Length Check" screen first ap-
   pears when your scanner is not controlled
   through the video or TP interface.

2. Press ▷ repeatedly until "Paper Feed retry"
   appears in the lower line of the menu screen.

3. Press ENTER.
   The option select screen appears with the
   current setting 1 (for Step) blinking (blinking
   indicates "changeable").

<<SETUP MODE>>

<<SETUP MODE>>
Settings

<<SETUP MODE>>
Paper Length Check

<<SETUP MODE>>
Paper Feed retry

Paper Feed retry
Step: 1   Times: 4

4. Press ▷.
    The current count setting 4 blinks.

    | Paper Feed retry |
    | Step: 1   Times: 4 |

5. Press ▽ or △.
    The displayed option changes (1, 2, 3, 4, 5, 6, 7).

    | Paper Feed retry |
    | Step: 1   Times: 7 |

6. When the desired value appears, press
    ENTER to save the change.
    The LCD returns to the <<SETUP MODE>>
    menu screen (Paper Feed retry).

    | <<SETUP MODE>> |
    | Paper Feed retry |

7. Press CANCEL two times.
    The LCD returns to the Ready screen.

    | Ready |

■ **Function key**

This function allocates setup functions to ⬭ F1 , ⬭ F2 , and ⬭ F3 buttons. You can allocate up to three setup functions.

✎. **NOTE**
- You cannot use this function when the setup mode is brought by pressing ⬭ MENU in the Ready status.
- You cannot allocate the following functions: Interface, IPC-3 mode, TP_IF Baud Rate, RS232C Baud Rate, SCSI ID, Product ID, Setup Mode Lock, and Function Key itself.

Allocatable setup functions and other special functions	Remarks
Setup functions noted above START key EJECT key (Default: Undefined)	START: starts the operation stopped by EJECT and sends data to the host computer. EJECT: stops operation and ejects the paper in the transport unit.

The ⬭ F1 , ⬭ F2 ,or ⬭ F3 button can be used as a shortcut key which enables you to access the allocated setup function just by pressing the button whenever the scanner is in the Ready state. This function is valid even in the setup mode lock state (refer to the next function). However, the ⬭ F1 , ⬭ F2 , and ⬭ F3 buttons are invalid in setup, browse, and test modes.

The following is an example of operation when you allocate START and EJECT keys to the ⬭ F1 and ⬭ F2 buttons respectively.

1. In <<SETUP MODE>> initial screen, press ⬭ ENTER .
   The <<SETUP MODE>> menu screen (Settings or Paper Length Check) appears.

   ## ✎. **NOTE**
   The "Settings" screen does not appear and the "Paper Length Check" screen first appears when your scanner is not controlled through the video or TP interface.

> <<SETUP MODE>>

> <<SETUP MODE>>
> Settings

> <<SETUP MODE>>
> Paper Length Check

2. Press ▷ repeatedly until "Function Key" appears in the lower line of the menu screen.

```
<<SETUP MODE>>
   Function Key
```

3. Press ENTER.
The function key select screen appears with F1 blinking (blinking indicates "selectable").

```
      Function Key
  F1        F2        F3
```

4. Press ENTER.
The F1 selection screen appears with the current setting Undefined blinking (blinking indicates "changeable").

```
      F1 selection
        Undefined
```

5. Press ▽ or △.
The setup functions, START key, and EJECT key are displayed in sequence at the lower line.

```
      F1 selection
       START key
```

6. When START key is displayed, press ENTER.
The LCD returns to the function key select screen with F1 blinking.

```
      Function Key
  F1        F2        F3
```

7. Press ▷ twice.
F3 blinks.

```
      Function Key
  F1        F2        F3
```

8. Press ENTER.
The F3 selection screen appears with the current setting Undefined blinking (blinking indicates "changeable").

```
      F3 selection
        Undefined
```

9. Press ▽ or △.
The setup functions, START key, and EJECT key are displayed in sequence at the lower line.

```
      F3 selection
       EJECT key
```

10. When STOP key is displayed, press ENTER to save the change.
The LCD returns to the function key select screen with F3 blinking.

```
      Function Key
  F1        F2        F3
```

11. To quit the <<SETUP MODE>>, turn off the power.

■ Setup mode lock

This function inhibits the operator panel from entering setup mode from normal mode, protecting the operator panel from misoperation. Once the operator panel is locked, you cannot use the setup items except those allocated to the ⬭F1⬭, ⬭F2⬭, and ⬭F3⬭ buttons.

✎ NOTE

You cannot use this function when the setup mode is brought by pressing ⬭MENU⬭ in the Ready status.

LCD display	Options	Remarks
Setup Mode Lock	On, Off (Default: Off)	

To cancel the setup mode lock state, turn off the power and turn on the power while pressing the ⬭MENU⬭ button to enter the setup mode. In the setup mode, select the Setup Mode Lock function and set the option to OFF.

The following is an example of operation when you use this function.

1. In <<SETUP MODE>> initial screen, press ⬭ENTER⬭.
   The <<SETUP MODE>> menu screen (Settings or Paper Length Check) appears.

   ### ✎ NOTE
   The "Settings" screen does not appear and the "Paper Length Check" screen first appears when your scanner is not controlled through the video or TP interface.

2. Press ▭▷ repeatedly until "Setup Mode Lock" appears in the lower line of the menu screen.

```
┌─────────────────────────┐
│    <<SETUP MODE>>       │
└─────────────────────────┘
```

```
┌─────────────────────────┐
│    <<SETUP MODE>>       │
│       Settings          │
└─────────────────────────┘
```

```
┌─────────────────────────┐
│    <<SETUP MODE>>       │
│   Paper Length Check    │
└─────────────────────────┘
```

```
┌─────────────────────────┐
│    <<SETUP MODE>>       │
│     Setup Mode Lock     │
└─────────────────────────┘
```

3. Press ENTER.
   The option select screen appears with the
   current setting OFF blinking (blinking indicates
   "changeable").

4. Press ▽ or △.
   The displayed option changes (ON blinks).

5. Press ENTER to save the change.
   The LCD returns to the <<SETUP MODE>>
   menu screen (Setup Mode Lock).

6. To quit the <<SETUP MODE>>, turn off the
   power.

```
Setup Mode Lock
     OFF
```

```
Setup Mode Lock
      ON
```

```
  <<SETUP MODE>>
  Setup Mode Lock
```

Activating the Test Mode

To activate the test mode:

1. Turning power on with ⬭MENU⬭ pressed.
   The LCD indicates "Please wait" then "<<MODE SELECT>>" with "SETUP" blinking.

2. Press ▭ twice.
   "TEST" blinks (blinking indicates "selectable).

3. Press ⬭ENTER⬭.
   The <<TEST MODE>> initial screen (*) appears.

4. Press ⬭ENTER⬭.
   The <<TEST MODE>> menu screen (**) appears.
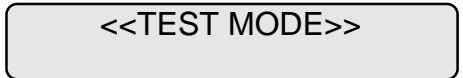
To quit the test mode, turn power off.

```
T        Please wait
```

```
<<MODE SELECT>>
SETUP  BROWSE  TEST
```

```
<<MODE SELECT>>
SETUP  BROWSE  TEST
```

* <<TEST MODE>> Initial screen

```
<<TEST MODE>>
```

** <<TEST MODE>> menu screen

```
<<TEST MODE>>
Offline Feed Test
```

■ Button functions in test mode

Button name	Function
⬭MENU⬭	Returns to the <<TEST MODE>> menu screen.
⬭ENTER⬭	• Executes the test. • Returns to the previous screen. • Displays the next lower level screen.
⬭CANCEL⬭	Returns to the previous screen without saving the change.
▭	• Displays the next function at the right in the menu. • Moves to the right item.
◁	• Displays the next test function at the left in the menu. • Moves to the left item.
▽	Scrolls the option downward.
△	Scrolls the option upward.

■ Mode selection (power on with MENU pressed)

POWER ON with MENU ON

T   Please wait

▷ ◁ : Cursor buttons

▨ : Blinking

* Turn off to quit <<MODE SELECT>>.

<<MODE SELECT>>
SETUP BROWSE TEST

<<MODE SELECT>>
SETUP BROWSE TEST

<<MODE SELECT>>
SETUP BROWSE TEST

ENTER

ENTER

ENTER

CANCEL

CANCEL

CANCEL

<<SETUP MODE>>

<<BROWSE MODE>>

<<TEST MODE>>

ENTER

ENTER

ENTER

CANCEL

CANCEL

CANCEL

<<SETUP MODE>>
XXXXX

<<BROWSE MODE>>
XXXXX

<<TEST MODE>>
Offline Feed Test

ENTER

CANCEL

ENTER

CANCEL

ENTER

CANCEL
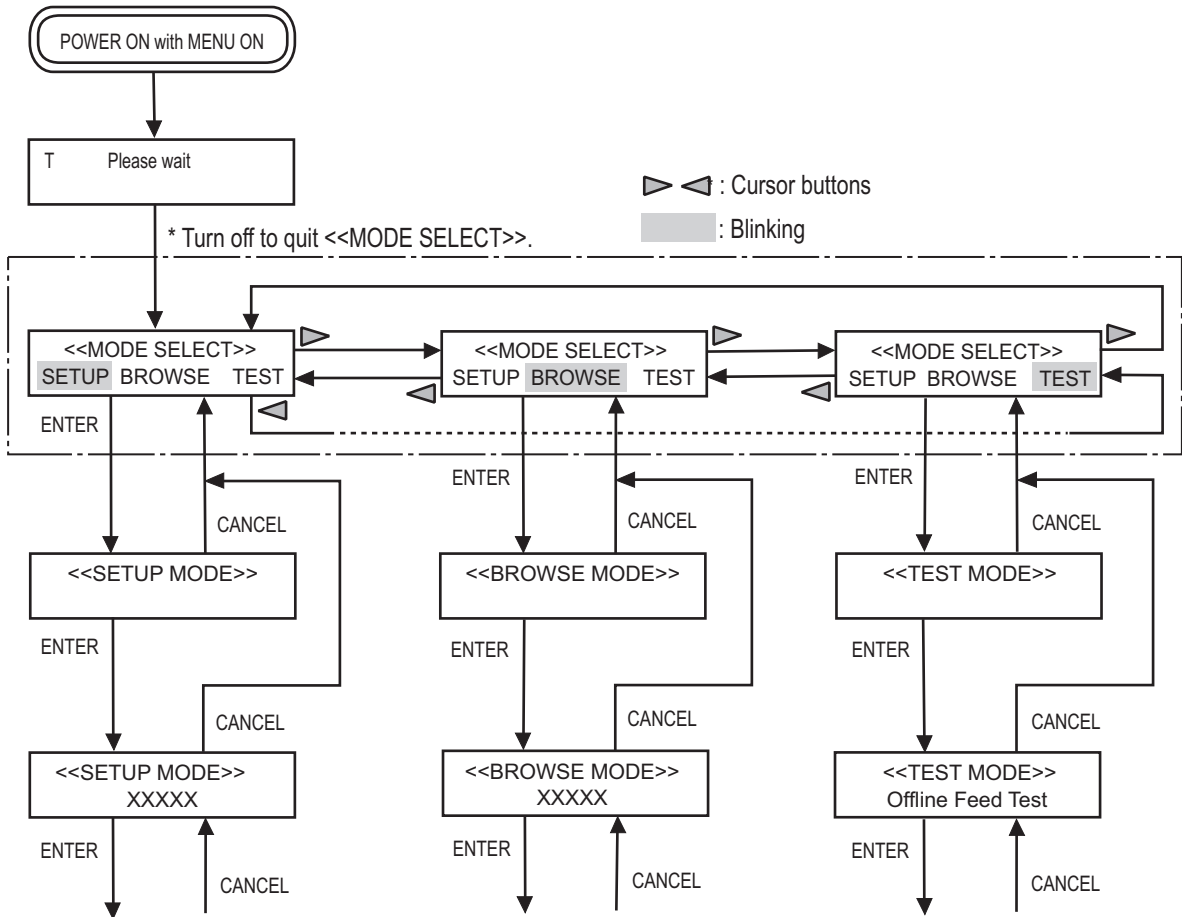
Contents of the Test Mode

The test mode includes the user test functions listed in the following table. This section explains "Offline feed test", "Options", and "Device life" which are necessary for users.

✎ **NOTE**

If you must need to use user test functions other than "Offline feed test", "Options", and "Device life", contact your dealer.

The user test functions are as follows:

Test item	Description
Offline feed test	Scans sheets continuously for checking conditions of paper feeding.
Options	Displays the options installed in the scanner.
Device life	Displays the accumulative number of sheets fed and the accumulative number of hours for lamps lit since the scanner has been installed, to estimate the life of the device.
Sensor auto adjustment	Automatically adjusts sensors.
Offset auto adjustment	Adjusts offset using adjustment sheets.
Operation panel test	Tests functions of the LCD, LEDs, and buttons to check the operator panel.
ROM revision	Displays the revision of the program EPROM.
Sensor status	Displays the status of the sensors.
Sensor adjustment	Changes the current and slice level of sensors to adjust the sensors.
+5V voltage check	Displays the voltage of +5 volts.
EEPROM edit	Writes arbitrary data in EEPROM (address 00 to 127) to confirm or change the set values.
Image memory capacity	Displays the capacity of the image memory.

■ Offline feed test

This function scans sheets of paper continuously for checking entire operation of the mechanism without a host computer. You can use the Settings function in setup mode to modify scanning parameters (scanning mode, paper size/orientation, density, resolution, and halftone processing) for scanning documents.

LCD display	Test items	Remarks
Offline Feed Test	START and SETUP	START: begins the test. SETUP: changes settings of scanning parameters.

* For SETUP operation, see the "Settings" function previously described in this chapter.

The following is an example of operation when you start the offline feed test after setting scanning parameters.

1. Put sheets of paper on the hopper table.

    <<TEST MODE>>

2. In the <<TEST MODE>> initial screen, press
    ENTER.
    The <<TEST MODE>> menu screen (Offline
    Feed Test) appears.

    <<TEST MODE>>
    Offline Feed Test

3. Press ENTER again.
    The scanning parameters screen indicates the
    current parameters with START blinking (blinking
    indicates "selectable").

    S   A4P   AT2   200   LA
        START   SETUP

4. Press ▷.
    SETUP blinks (blinking indicates "selectable").

    S   A4P   AT2   200   LA
        START   SETUP

5. Press ENTER.
    The LCD changes to the parameter set screen
    with S (simplex mode) blinking (blinking indicates
    "selectable").

    S   A4P   AT2   200   LA
                AT2   LA

6. Press ▷.
    A4P (A4 size in portrait orientation) blinks
    (blinking indicates "selectable").

    S   A4P   AT2   200   LA
                AT2   LA
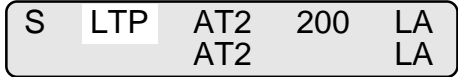
7. Press ENTER.
   The PAPER SIZE screen appears with the
   current setting A4P blinking (blinking indicates
   "changeable").

```
┌────────────────────────────┐
│        PAPER SIZE          │
│           A4P              │
└────────────────────────────┘
```

8. Press ▽ or △.
   The displayed parameter changes (LTP, B5P,
   A5P, A4L, etc.).

```
┌────────────────────────────┐
│        PAPER SIZE          │
│           LTP              │
└────────────────────────────┘
```

9. When the desired parameter appears, press
   ENTER to save the change.
   The parameter set screen appears with the new
   parameter blinking.

```
┌────────────────────────────┐
│ S   LTP   AT2   200    LA  │
│                 AT2    LA  │
└────────────────────────────┘
```
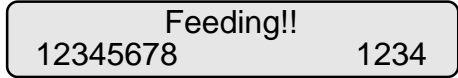
10. Press CANCEL
    The scanning parameters screen appears with
    the new parameter replaced and with SETUP
    blinking (blinking indicates "selectable").

```
┌────────────────────────────┐
│ S   LTP   AT2   200    LA  │
│      START    SETUP        │
└────────────────────────────┘
```
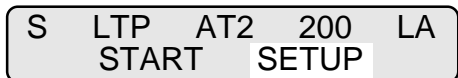
11. Press ◁.
    START blinks (blinking indicates "selectable").

```
┌────────────────────────────┐
│ S   A4P   AT2   200    LA  │
│      START    SETUP        │
└────────────────────────────┘
```
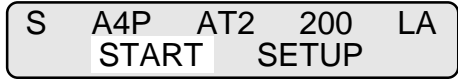
12. Press ENTER.
    The scanner feeds and scans documents
    continuously until it detects an error (usually
    "Hopper empty"). During feeding, the upper line
    indicates "Feeding!!" and the lower line indicates
    the number of sheets fed.

```
┌────────────────────────────┐
│        Feeding!!           │
│  12345678          1234    │
└────────────────────────────┘
```

    • To halt the test, press CANCEL.
    • To restart the test, press ENTER.
    • To restart from a hopper empty status, put
      sheets of paper on the hopper table and press
      CANCEL.
    • To quit the offline feed test, press CANCEL in
      the halted state.

13. To quit the <<TEST MODE>>, turn off the power.

■ **Options**

This function displays the options installed in the scanner.

LCD display	Displayed options	Remarks
Options	Endorser, IPC-3D	Endorser: printer that prints back side of documents. IPC-3D: image processing feature (standard installation).

* When an option is installed, ON is displayed under the option. When an option is not installed, OFF is displayed under the option.

The following is an example when you use this function.

1. In the <<TEST MODE>> initial screen, press ENTER.
   The <<TEST MODE>> menu screen (Offline Feed Test) appears.

<<TEST MODE>>

<<TEST MODE>> Offline Feed Test

2. Press ▷.
   The <<TEST MODE>> menu screen (Options) appears.

<<TEST MODE>> Options

3. Press ENTER.
   The current options list screen appears. You can check options installed.

Endorser   IPC-3D OFF   ON

4. To quit the <<TEST MODE>>, turn off the power.

■ Device life

This function displays the accumulative number of sheets fed and the accumulative number of hours during which the lamp is lit since the scanner has been installed. These values are helpful for estimating the life of devices.

LCD display	Displayed devices	Remarks
Device Life	COUNT, LAMP F, and LAMP B	COUNT: accumulative number of sheets fed. LAMP F: accumulative number of operating hours for the front-side lamp. LAMP B. accumulative number of operating hours for the back-side lamp.

* The unit of each value is not displayed on the LCD.

The following is an example operation when you use this function.

1. In the <<TEST MODE>> initial screen, press ⒺⓃⓉⒺⓇ.
    The <<TEST MODE>> menu screen (Offline Feed Test) appears.

    <<TEST MODE>>

    <<TEST MODE>>
    Offline Feed Test

2. Press ▷ four times.
    The <<TEST MODE>> menu screen (Device Life) appears.

    <<TEST MODE>>
    Device Life

3. Press ⒺⓃⓉⒺⓇ.
    The current value display screen appears.
    You can estimate the device life.

    COUNT   LAMP F: 1234567
    12345678   B: 1234567

4. To quit the <<TEST MODE>>, turn off the power.

GLOSSARY OF TERMS

A4 size

A standard paper size used in Japan and other countries. Paper size is 210 x 297 mm (8.25 x 11.6 inches).

ASCII

The acronym for American Standard Code for Information Interchange.
ASCII is a set of 128 codes (numbered 0 to 127) used to communicate information between a computer and another device such as scanner.

Automatic separation

The image processing method to detect the difference between text and photos and choose the threshold accordingly. Automatic separation allows the scanner to switch between line mode and half tone mode in one pass.

Automatic start mode (<–> manual start mode)

In this mode the reading operation is activated only by START command.

Back-side reading = Back-side scanning

Refers to reading the back-side of the document, specifically in Duplex reading mode.

Bit

The smallest unit of information in computer memory. A bit is a single digit, either a 1 or a 0, in the binary numbering system.
Eight bits equal one byte.

Browse mode

The mode in which users can glance setup conditions of the scanner in offline status.

Consumable counter

Indicates when consumables like a lamp should be replaced. The number of read document accumulates until an operator resets the counter. It should be reset when consumables are replaced.

Density

Degree of darkness of an image. Also percent of screen used in an image.

Dither

Technique for producing halftone images representing the entire grayscale using two pixel levels black and white.

dpi

Dots per inch.

Drop-out color

A color which is used to the document but does not appear in the read image.

Duplex reading mode

Both sides of the document are read in this mode.

Endorser

The unit for printing characters before or after scanning. These character may be used for collation of the documents and the image data.

Equipment Error

An error that is not recoverable by operator. Call an authorized maintenance engineer.

Error diffusion

High-quality halftone (pseudo-grayscale) image production based on black-and-white pixel binarization. A pixel's optical density and that of adjacent pixels are summed, with black pixels relocated in their order of density as they relate to adjacent pixels.

The purpose of this technique is to minimize the average error between read and printed densities. Density data for adjacent pixels is modified by diffusing errors on the objective pixel into several pixels, which are then binarized. This maintains high grayscale levels and resolution during reading, while suppressing more patterns by dotted halftone images such as newspaper photo graphs.

Filtering

The quality of images written in pencil or ball-pointed pen and read depends on the reflective light characteristics of the ink or lead.

Dropped pixel's may produce out lines, gaps or thin, barely connected lines due to even optical density. Filtering detects areas lighter than their surroundings and increases their density to improve image clarity.

Front-side reading = Front-side scanning
Refers to reading the front-side of the document, specifically in Duplex reading mode.

Halftone processing
Used to reproduce photographs which usually contain different shades to display images. These shades are composed of dots resulting in a binary image. Dithering and error diffusion processing are examples of the halftone processing.

Hexadecimal
A base-16 numbering system (also commonly referred to as hex numbers). Since a base-16 system requires 16 digits, numbers 0 through 9 and letters A through F are used. It is convenient to express binary numbers in hexadecimal because fewer digits are required.

Image emphasis
Density is decreased for lighter but not completely white areas adjacent to black areas. Weakening this emphasis eliminates spot noise or produces softened images.

Image processing
An image is read with specified parameters.

Initial screen
A screen displayed when the power is turned on or when reading is activated by the command from the host computer.

Interface
The connection that allows communication from one part of a system to another. For example, electrical signals are transferred between the computer and scanner over an interface cable.

Inversion (Reverse-image reading)
In reverse-image reading, data is changed from black to white and vice versa.

IPC-3 mode
While reading binary images, it is necessary to set the scanner according to the quality of the sheet to be read. In this mode these settings can be performed in advance by corresponding each setting to a pattern number.

IRAS

Initialization of the hardware.

Landscape

A document is transported and read with the long side vertical to the moving direction.

Letter size

A standard paper size used in the U.S.A. and other countries. Paper size is 8-1/2 x 11 inches (215.9 x 279.4 mm).

Linedrawing mode

Selecting linedrawing mode makes threshold and contrast settings effective but prevents brightness from being set. The specified threshold value determines whether black or white pixels are scanned. Line-drawing mode is therefore appropriate for scanning text and line art images.

Manual Feed mode = Manual Mode

Requires the operator to feed each document manually to the hopper table.

Mirror image

The read image is symmetrically flipped to produce a mirror image of the original detected in the main scanning direction.

Noise removal

Isolated noise from an image appearing as black spots in white areas and voids in black areas is removed to improve image quality.

Operator panel

A panel containing the scanner indicators and buttons. The operator panel is used to control scanner operations such as loading document, selecting features, and changing setup options.

Outline extraction

The boundary between black and white areas is traced and the outline extracted for closed areas.

Paper Jam

A warning informing the user that document is jammed in the transport unit, or that transportation is disabled because the transport unit is slippery. This warning also appears when a double fed is detected.

Photograph mode (White level follower OFF)

Selecting photograph mode makes brightness and contrast settings effective but prevents the threshold from being set. With photograph mode, the darkness of image corresponds to the black-pixel density, making it suitable in scanning images such as photographs having gradations.

Photo mode = photograph mode

A photograph is read properly in this mode.

Picking start time

The period from the manual insertion of the document until picking starts after the document passes the hopper empty sensor.

Picking time

The period from the start of picking until the document reaches SF1 sensor. Specify a little longer picking time for the document with a large friction factor.

Pick speed

A speed when a document is picked. Set the pick speed to SLOW to prevent JAM or MISS PICK.

Portrait

A document is transported and read with the long side parallel to the moving direction.

Pre-picking

A setting in which a document to be read next is placed at the front of the reading unit while the previous document is read. Setting the pre-picking makes the process speedier.

Readable status

A status when the power is turned on or when reading is activated by the command from the host computer.

Read operation

Refers to the reading operation including Simplex reading and Duplex reading.

RS-232C interface

A type of serial interface. See Serial interface.

SCSI-ID

Used to specify a particular SCSI device when the initiator selects a target or the target re-connects to the initiator.

Serial interface

A standard computer interface. Information is transferred between devices over a single wire (although other wires are used for control).

With a serial interface, an interface cable greater than 3 meters (10 feet) can be used. This is often necessary in networking environments, where the scanner may be shared.

Setup mode

In this mode, users can set a variety of functions in offline status for customizing the scanner for user requirements.

SF1 sensor

The document detection sensor. It detects the light that transmits the paper. It also detects the double feed error.

Simplex reading mode

Only the front side of the document is read in this mode. Place the documents face-up at the center of the hopper table.

Smoothing

Smoothing eliminates jaggies from slanted lines and curves. Irregular convexities are deleted and irregular concavities filled in. This is useful in OCR applications, for example.

Start command time-out

Occurs if START command does not arrive before the specified time after reading the previous document is complete. In this case the hopper table is lowered.

Temporary Error

An error that is recoverable by operator.

Terminator

Devices with SCSI interface are daisy-chained. A resistor that includes terminal circuits needs to be placed at both ends of a cable when devices are daisy-chained.

Test mode

The mode in which users can test the scanner in offline status.

INDEX

V

W

This product sold in Europe conforms to the standards in accordance with EC Directives. The copy of "Declaration of Cnformity" is attached below:

FUJITSU

DECLARATION OF CONFORMITY
(according to EN45014)

according to Electromagnetic Compatibility Directive 89/336/EEC and Low Voltage Directive 73/23/EEC, Annex ⅢB.

FUJITSU LIMITED, 1-1, Kamikodanaka 4-Chome, Nakahara-Ku, Kawasaki 211-8588, Japan

declares, in sole responsibility, that the following product, including the options or accessories

Product Type : I M A G E   S C A N N E R
Model Number : M 4 0 9 9 D
Approval ID Number : S 1   9 9 5 1 2 2 9

referred to in this declaration, conforms with the following directives and standards :

Electromagnetic Compatibility Directive 89/336/EEC, 92/31/EEC, 93/68/EEC
Low Voltage Directive 73/23/EEC, 93/68/EEC

EN55022 1998 Class B
EN61000-4-2 1995, EN61000-4-3 1996, EN61000-4-4:1995, EN61000-4-5:1995. EN61000-4-6:1996
EN61000-4-8:1993, EN61000-4-11:1994, EN50082-1:1997, ENV50204:1995
EN60950 1992/A1:1993/A2:1993/A3:1995/A4:1997/A11:1997
ISO9001, ISO9002

The product on safety has been evaluated to EN60950 and has been confirmed to comply with all related requirements of EN60950.
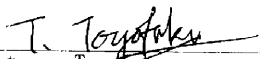
Importer / Distributor in EU :

Fujitsu Europe Ltd.,
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