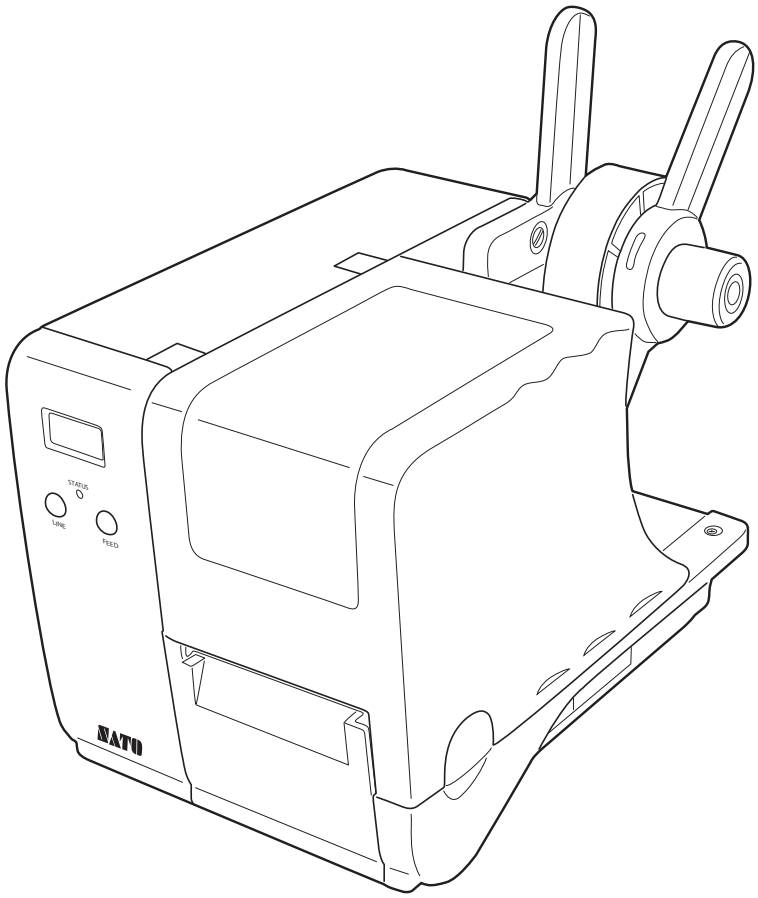
Operator Manual

For printer model:

DR308e



Read this Operator Manual before and during usage of the above product.
Keep this document handy for future reference.

www.satoworldwide.com

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/ TV technician for help.

Be sure to ask your dealer about our maintenance contracts to ensure a peace of mind during your usage of SATO products.

Please refer to the back cover for SATO Group Member Company closest to your location. You may also visit our home page at www.satoworldwide.com for further updated details.

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Safety Precautions

Please read the following information carefully before installing and using the printer.

The ⚠ Warning symbol

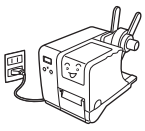
Whenever the triangular Warning symbol appears in this manual, pay special attention to the warning(s) cited below it. Failure to abide by the warnings may create the danger of death or serious personal injury.

The ⚠ Caution symbol

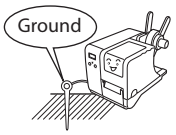
Whenever the triangular Caution symbol appears in this manual, pay special attention to the warning(s) cited below it. Failure to abide by the warnings may result in injury or damage to property.

On Power Supply

- Do not use any other voltage except the specified power voltage for the printer that matches your domestic power supply. Otherwise, it may cause fires or electric shocks.

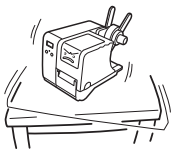


- Do not damage, break, or process the power cable. Avoid placing heavy objects on, heating or pulling the power cable. This may damage the power cable and cause fires or electric shocks.
- When the power cable is damaged (cable conductors are exposed or cut, etc.), contact a sales outlet, dealer, or service center. In this case, continued use of the printer may cause fires or electric shocks.
- Do not process, forcibly bend, twist, or pull the power cable. Continued use of such a cable may cause fires or electric shocks.
- If the printer emits any smoke or peculiar odors at any time, stop using the printer immediately. Turn off the power immediately, disconnect the power cable from the power outlet, and contact a sales outlet, dealer, or service center.
- Do not operate the power switch or handle the power cable with a wet hand. Otherwise, it may cause electric shocks.
- To reduce electrical risks, be sure to connect the printer to ground before use. Also, try not to share the printer's AC outlet with other electrical equipment, especially those that draw high amounts of current or cause electrical interference.

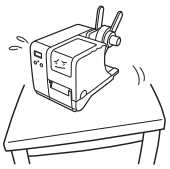


On Installation

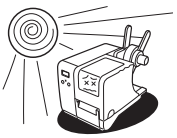
- Place the printer on a solid, stable, horizontal surface that is not subject to strong vibrations from adjacent mechanical devices. This may cause malfunction and shorten the life span of the printer.



- Avoid shaky or slanting tables, or platforms that are liable to collapse under a heavy weight. If the printer is dropped or damaged, immediately turn off the power, pull out the power plug and contact a service center. In this case, continued use of the printer may cause a fire or electric shocks.



- Avoid installing the printer in direct sunlight, or in dusty, very hot or slippery areas. Also avoid placement in damp, unventilated or humid areas. If condensation forms, immediately turn off the power, and do not use the printer until the condensation disappears. Otherwise the moisture may cause electric shocks.



- Avoid placing the printer near large high-current equipment, as such equipment can cause spikes or under-voltages in the power supply.

On Installation (cont'd)

- Do not leave containers of liquid or chemicals around the printer. If any liquid is spilled onto the printer, immediately turn off the power, pull out the power cable from the AC outlet, and contact a sales outlet, dealer, or service center. In this case, continued use of the printer may cause fires or electric shocks.
- Do not insert or drop anything metallic or flammable into the openings of the printer (the cable outlet). Otherwise, immediately turn off the power, disconnect the power cable from the power outlet, and contact a sales outlet, dealer, or service center. In this case, continued use of the printer may cause fires or electric shocks.
- When moving the printer, be sure to pull out the power cable from the AC outlet, and check that any other external interface cables have been disconnected. Otherwise, the connected cables may be damaged, or may cause trips and falls, in addition to or a fire or electric shocks.
- This printer has a built-in optical sensor. Expose to strong lighting will make the sensor less responsive and may cause the label to be sensed incorrectly. Close the cover when printing.

On General Handling

- The optional head cleaning liquid is flammable. Never heat it or throw it into a fire. Keep it out of children's reach to avoid accidental consumption. Should this occur, consult a doctor immediately.
- When opening or closing the cover, beware of getting your fingers caught. Also, hold the opening/closing cover well so that it will not slip and fall on your hand.
- After printing, the print head remains hot. When replacing paper or cleaning the printer immediately after printing, be careful not to burn yourself.
- Touching even the edge of the printer head may cause injuries. When replacing paper or cleaning the printer, be careful not to hurt yourself.
- If the printer will not be used for extended periods of time, disconnect the power cable for safety.
- When releasing and locking down the printer head, be careful not to catch any other foreign matter in it except loaded media.
- Do not disassemble or perform modifications to the printer, as this renders the product unsafe. For maintenance, troubleshooting and repairs, consult a sales outlet, dealer, or service center for help, instead of attempting to perform this yourself. Renewable annual service contracts are available.
- When maintaining or cleaning the printer, always disconnect the power cable for safety.
- Do not insert your hand or other objects into the cutter when the option cutter is installed.
- When loading roll media, be careful not to catch your fingers between the media and the feeder.

TABLE OF CONTENTS

1 Introduction

1.1 Unpacking 1-2
1.2 Parts Identification 1-3

2 Installation

2.1 Site Location 2-2
2.2 Media Selection 2-2
2.3 Loading Labels or Tags 2-3
2.4 Loading the Carbon Ribbon 3-7
2.5 Remove the Carbon Ribbon 3-9
2.6 Adjusting the Pitch Sensor 2-9
2.7 Connections 2-10

3 Operation and Configuration

3.1 Operation Panel 3-2
3.2 Operating Modes 3-3
3.3 ONLINE And OFFLINE Modes 3-5
3.4 Printer Setting Modes 3-6
3.5 Paper (media) Mode 3-6
3.6 User Mode 3-7
3.7 Interface Mode 3-11
3.8 Advance Mode 3-15
3.9 HEX Dump Mode 3-22
3.10 Test Print Mode 3-24
3.11 Default Setting Mode 3-26

4 Cleaning and Maintenance

4.1 Cleaning The Print Head, Platen and Rollers 4-2
4.2 How To Clean The Printer (Cleaning Kit) 4-2
4.3 How To Clean The Printer (Cleaning Sheet) 4-3
4.4 Adjusting Print Quality 4-4

5 Troubleshooting

5.1 Error signal troubleshooting 5-2
5.2 Troubleshooting table 5-4
5.3 Interface troubleshooting 5-5
5.4 Test print troubleshooting 5-6

6 General Specifications

6.1 Printer Basic Specifications 6-1
6.2 Optional Accessories Specifications 6-5

7 Interface Specifications

7.1 Interface types 7-1
7.2 RS232C High Speed Serial Interface 7-2
7.3 IEEE 1284 Parallel Interface 7-6
7.4 Local Area Network (LAN) Ethernet 7-8
7.5 Universal Serial Bus (USB) Interface 7-9
7.6 External Signal Interface (EXT) 7-9

8 Optional Accessories

8.1 Cutter 8-1
8.2 Stacker 8-2
8.3 Dispenser 8-4
8.4 External Rewinding Unit 8-5
8.5 Keypad 8-6
8.6 Calendar IC 8-6

9 Sato Group of Companies ..... Back cover

1

INTRODUCTION

Thank you for your investment in this SATO printer product.

This Operator's Manual contains basic information about the installation, setup, configuration, operation and maintenance of the printer.

A total of eight topics are covered herein, and they are organized as follows:

Section 1: Introduction
Section 2: Installation
Section 3: Operation and Configuration
Section 4: Cleaning and Maintenance
Section 5: Troubleshooting
Section 6: General Specifications
Section 7: Interface Specifications
Section 8: Optional Accessories

It is recommended that you become familiar with each section before installing and maintaining the printer. Refer to the **Table Of Contents** at the front of this manual to search for the relevant information needed. All page numbers in this manual consist of a section number followed by the page number within the stated section.

For specialized programming, refer to the separate Programming Manual.

This section assists you in unpacking the printer from the shipping container. You will also be guided through a familiarization tour of the main parts and controls.
The following information is provided herein:

- Unpacking
- Parts Identification

1.1 UNPACKING

When unpacking the printer, take note of the following:

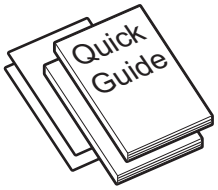
1. The box should stay right-side up.
   Lift the printer out of the box carefully.
2. Remove all the packaging covering from the printer.
3. Remove the accessory items from their protective containers.
4. Set the printer on a solid, flat surface. Inspect the shipping container and printer for any sign of damage that may have occurred during shipping.

Notes

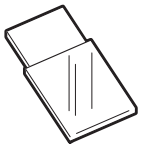
- If the printer was been stored in the cold, allow it to reach room temperature before turning it on.
- Please do not discard the original packaging box and cushioning material after installing the printer. They may be needed in future, if the printer needs to be shipped for repairs.

1.1.1 Included Accessories

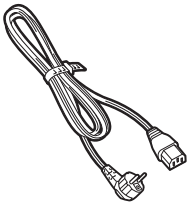
After unpacking the printer, verify that the following materials are in the accessories or packaging:



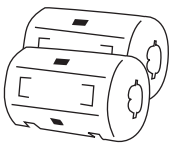
User Documentations
(Quick Guide, Warranty, etc.)



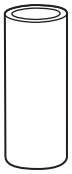
Head cleaning sheet



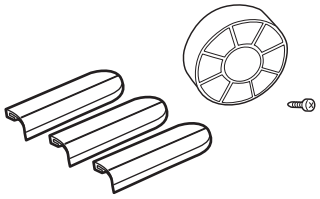
Power cable*



Ferrite core (for attaching
to power cable)



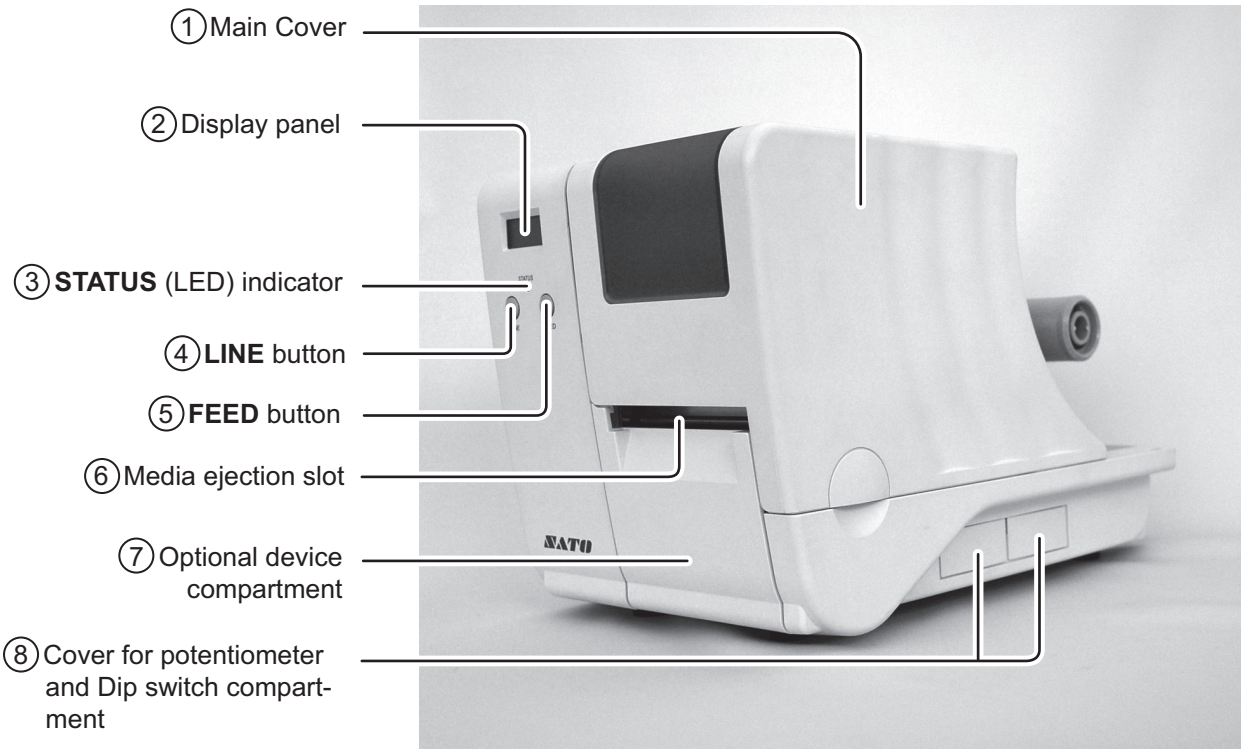
Ribbon core (for winding)



Extension guide plates,
core adaptor, screw to
secure the core adaptor

* The shape of the power plug may varied depending on the location of purchased.

1.2 PARTS IDENTIFICATION



Front View of DR308e

① **Main cover**

Open and close this cover to load the media and ribbon.

② **Display panel**

Displays an error and operation messages.

③ **STATUS (LED)**

Lights or flashes to indicate the printer status. It turns red when error occurred, turns green when printing and data communication are enabled (ONLINE) and turns off when the printer is in OFFLINE mode.

④ **LINE button**

Used to start or stop printing, and also to toggle between the on/off settings for data transmission and reception.

When the printer is in configuration setting mode, it is pressed to select options or adjust the settings.

⑤ **FEED button**

Press once to feed one blank label.

When the printer is in configuration setting mode, it is pressed to enters to the selected mode.

⑥ **Media ejection slot**

Opening for media output.

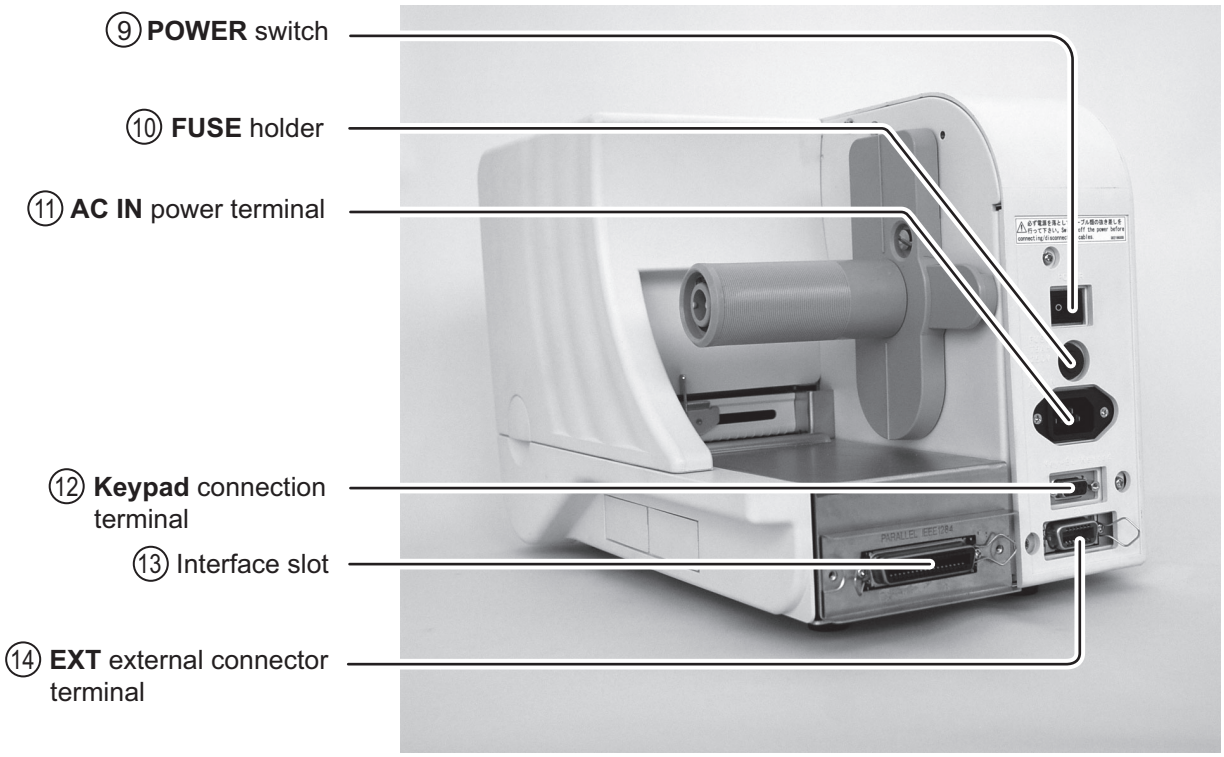
⑦ **Optional device compartment**

This printer comes with a tear-off cover. An optional device can be installed on this compartment, e.g. dispenser, cutter, stacker or external rewinding unit.

⑧ **Cover for potentiometers and Dip switch compartment**

Open the cover to access the potentiometers and Dip switch for adjustment.

1.2 PARTS IDENTIFICATION (cont'd)



Back View of DR308e

⑨ **POWER switch**

Turns power On(-) or Off(O).

⑩ **FUSE holder**

Used to hold a fuse which protect the printer from unstable power supply surge.

⑪ **AC IN power terminal**

Supplies power to the printer by inserting the power cable.

⑫ **Keypad connection terminal**

Used to connect to the optional keypad.

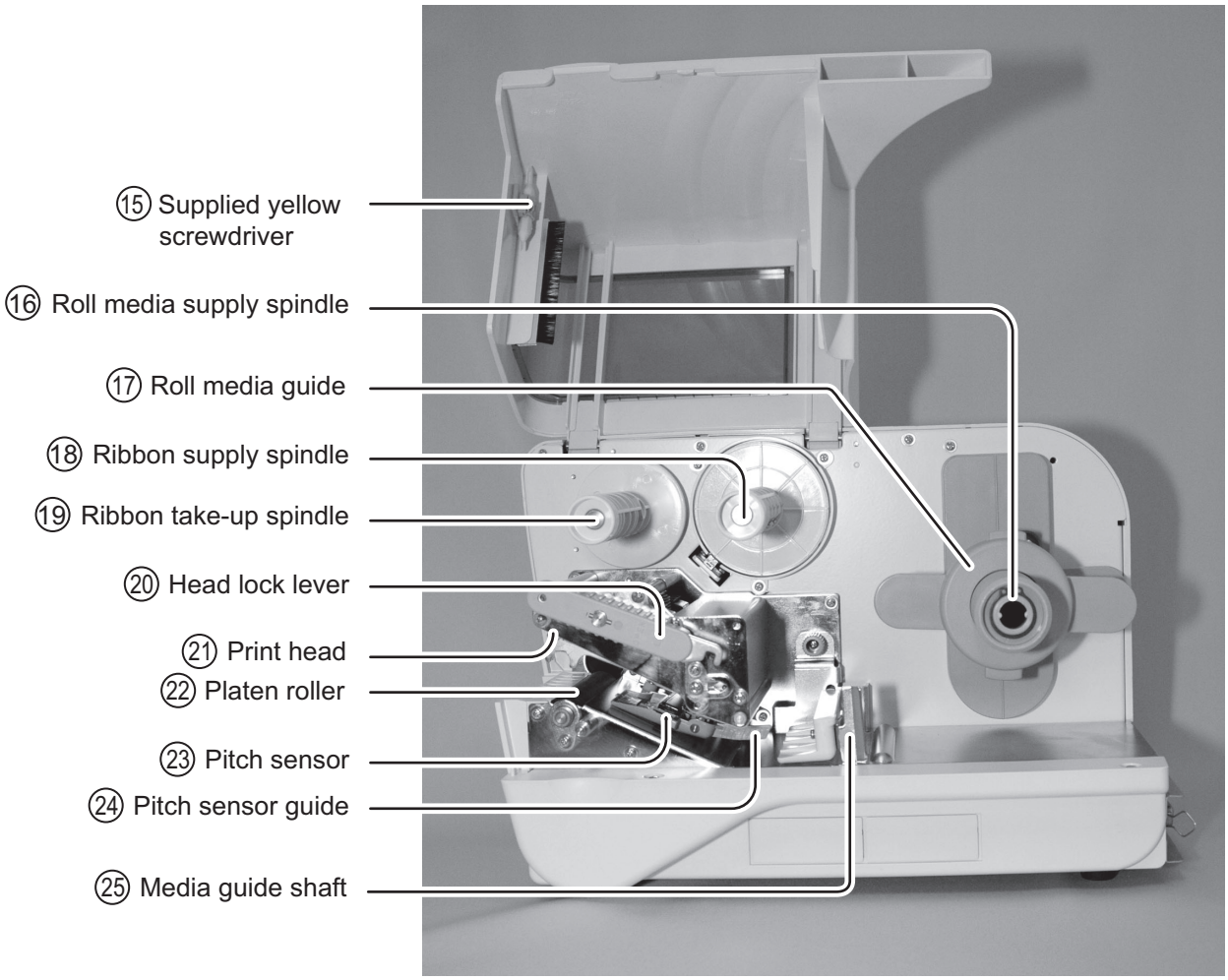
⑬ **Interface slot (option)**

Optional interface slot for connection to a host PC. An option of RS-232C (High-speed) interface board, IEEE1284 interface board, LAN interface board and USB interface board are available for connection.

⑭ **External connector terminal**

Interface connector for external signals.

1.2 PARTS IDENTIFICATION (cont'd)



Side View of DR308e with main cover open

⑮ **Supplied yellow screwdriver**
Used to adjust the potentiometers and Dip switches.

⑯ **Roll media supply spindle**
Used to load the roll media, tag or label.

⑰ **Roll media guide**
Set to meet the size of the media used.

⑱ **Ribbon supply spindle**
Used to load the ribbon.

⑲ **Ribbon take-up spindle**
Used to wind up the used ribbon.

⑳ **Head lock lever**
Used to open and close the print head.

㉑ **Print head**
This component is used to print on the paper. Perform maintenance at regular intervals.

㉒ **Platen roller**
This roller feeds the paper. Perform maintenance at regular intervals.

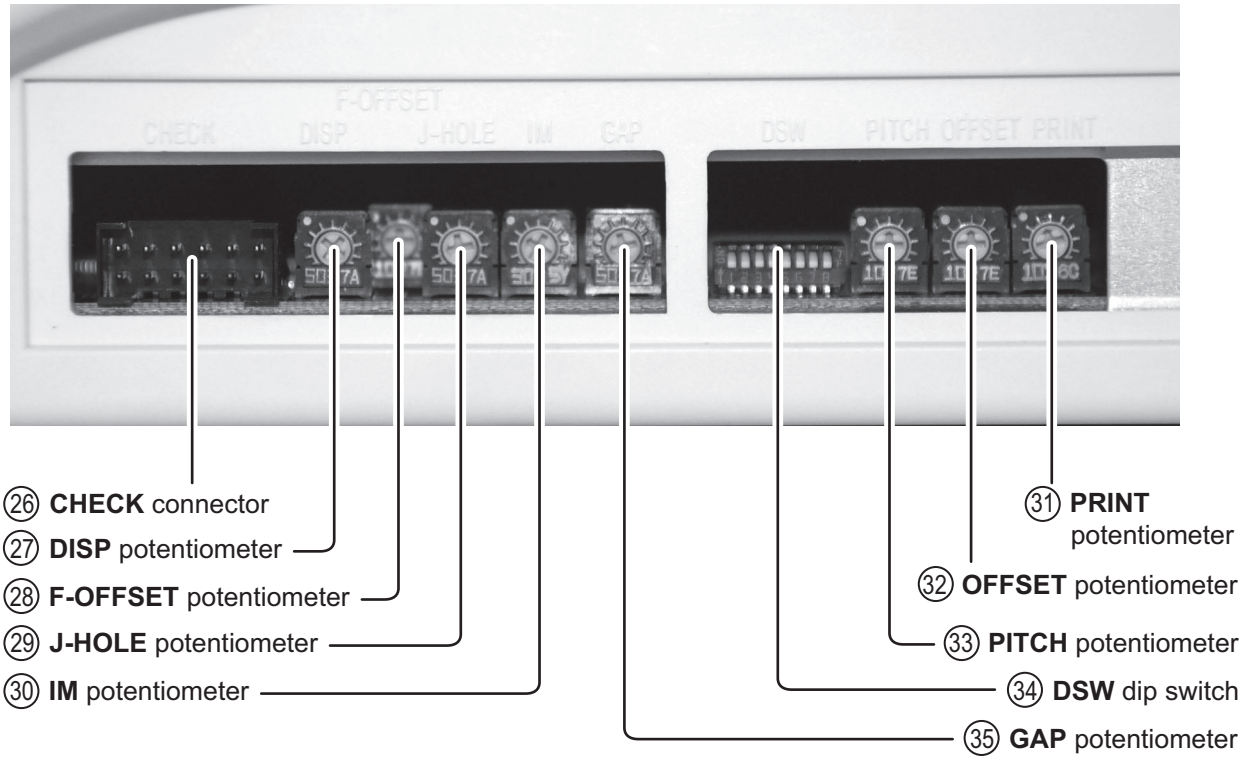
㉓ **Pitch sensor**
Detects the holes in the tag stock so that the media can be cut off by the cutter.

㉔ **Pitch sensor guide**
Adjustment slide used to align the position of the pitch sensor with the holes.

㉕ **Media guide shaft**
Set to meet the size of the media used.

1.2 PARTS IDENTIFICATION (cont'd)

Adjustment compartment at the right bottom side of DR308e



㉖ **CHECK connector**

This is a connection terminal for sensor level adjustment jig.This is only used by Sato certified servicing personnel.

㉗ **DISP potentiometer**

To adjust the sensing level of the optional dispenser.

㉘ **F-OFFSET potentiometer**

Factory offset adjustment. Adjust only when instructed by Sato certified servicing personnel.

㉙ **J-HOLE potentiometer**

Jump hole sensor adjustment.

㉚ **IM potentiometer**

I-mark sensor adjustment.

㉛ **PRINT potentiometer**

To adjust the darkness of the printing.

㉜ **OFFSET potentiometer**

To adjust the option stop positions (cutter position, dispensing position and tear-off position).

㉝ **PITCH potentiometer**

To adjust the beginning print position.

㉞ **DSW dip switch**

To set the printer to different modes when servicing. This is only used by Sato certified servicing personnel.

㉟ **GAP potentiometer**

Gap sensor adjustment.

2

INSTALLATION

This section assists you in installing consumable media to the printer, as well as adjustment instructions and installing other optional attachment units.

The following information is provided:

- 2.1 Site Location
- 2.2 Media Selection
- 2.3 Loading Labels or Tags
- 2.4 Loading the Carbon Ribbon
- 2.5 Remove the Carbon Ribbon
- 2.6 Adjusting the Pitch Sensor
- 2.7 Connections

2.1 SITE LOCATION

Consider the following when setting up the printer:

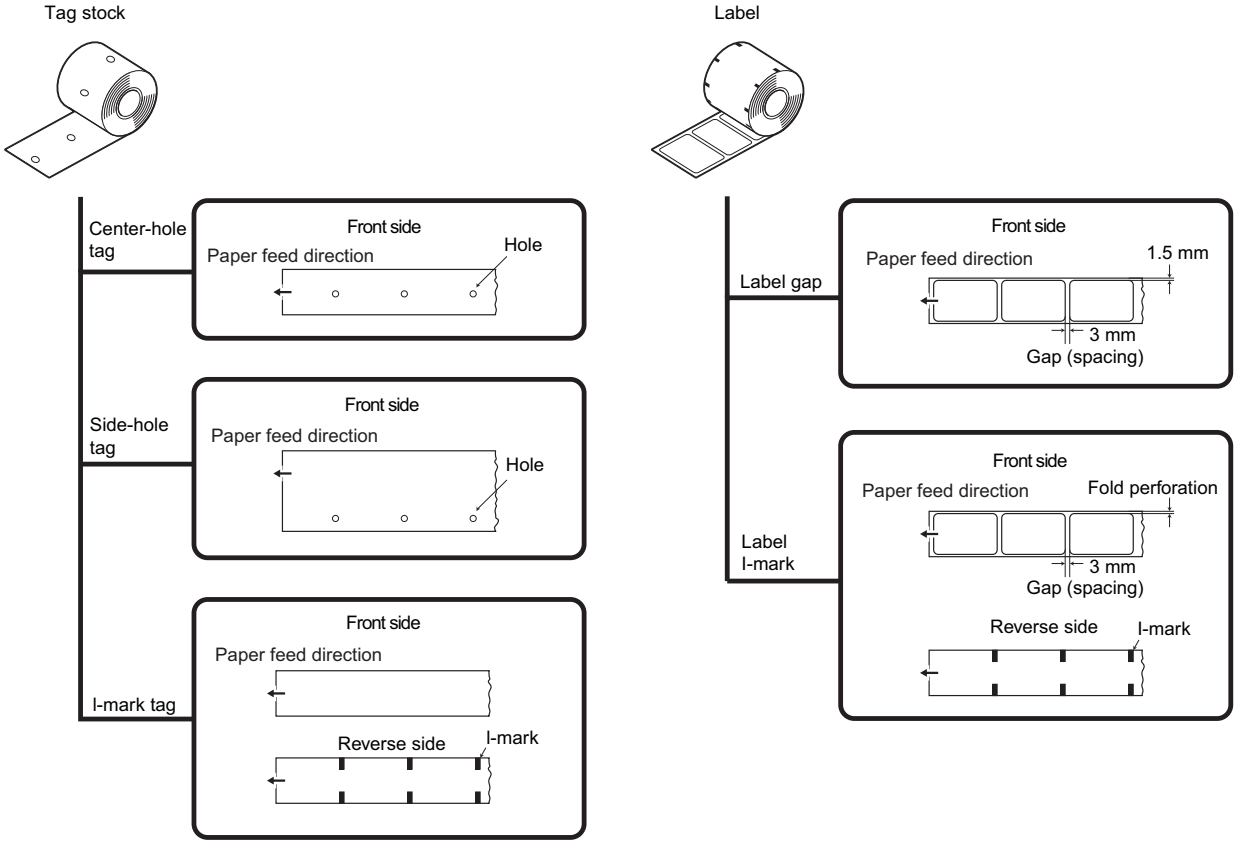
- Place the printer on a solid flat surface with adequate room. Make sure there is enough room at the top and right-hand (facing the printer) side to provide clearance for the label access door to swing open.
- Place it away from hazardous materials or dusty environments.
- Place it within operational distance of the host computer, within interface cable specifications

2.2 MEDIA SELECTION

The size and type of the labels or tags to be printed should have been taken into consideration before printer purchase. Ideally, the media width will be equal to, or just narrower than, the print head. Using media that does not cover the print head will allow the platen roller to tread on it and wear it out. The media edge will also wear a groove in the platen roller affecting print quality.

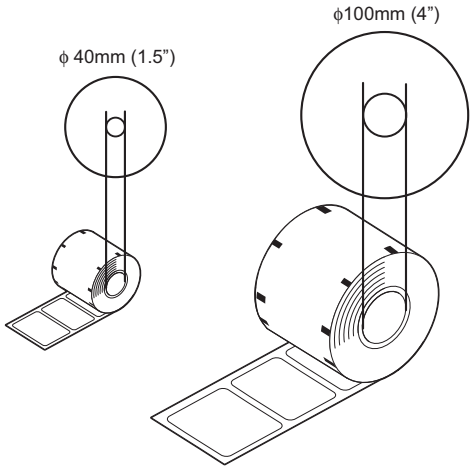
> **Note:**
> For optimal print performance and durability, **please use SATO-certified label and ribbon supplies on this printer.** Using supplies not tested and approved for use by SATO can result in unnecessary wear and damage to vital parts of the printer, and may void the warranty.

This printer can use five different types of media: three types of tag stock and two types of label media. The methods used for loading tag stock and label media differ.



2.2 MEDIA SELECTION (cont'd)

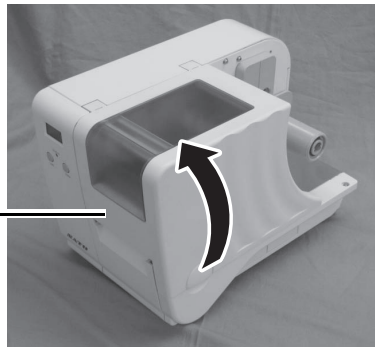
This printer accepts two types of media core sizes, ϕ 40mm (1.5in.) and ϕ100mm (4in.). When using ϕ100mm (4in.) core size media, the supplied core adaptor and guide plates need to be installed to the printer. Please refer to **Section 2.3.2 Loading Roll media with a large media core** on **page 2-5** for further instructions.



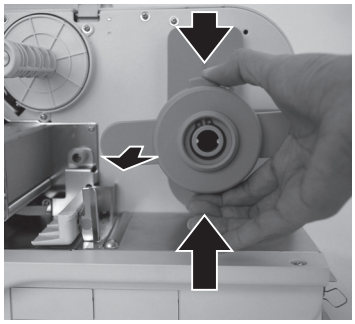
2.3 LOADING LABELS OR TAGS

2.3.1 Loading Roll media with small media core

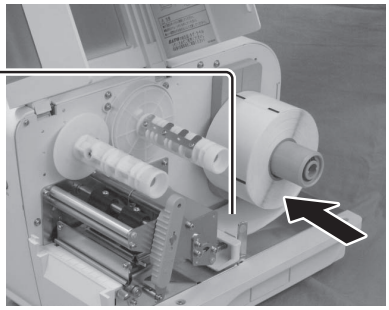
1. With the power supply is off, lift up the **main cover**. Make sure that the cover rests firmly so that it will not fall forward and injure your hands.



2. Remove the **roll media guide** by pressing the release tab with your thumb and index finger and pulling it out.

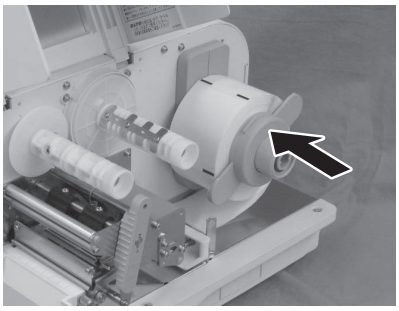


3. Load the media to the **roll media supply spindle**. Make sure the media leader is pull out from the bottom and the printed side is facing upwards. Push the roll firmly towards the end of the spindle.

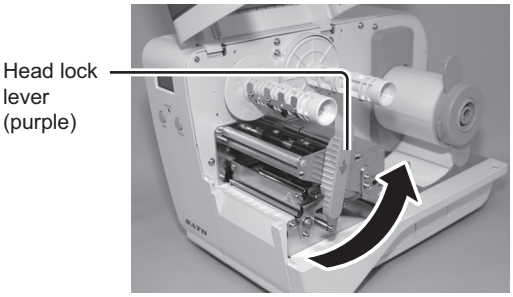


2.3 LOADING LABELS OR TAGS (cont'd)

4. Attach the **roll media guide** back and make sure that the **roll media guide** pushes snugly against the media roll to prevent media drift during printing.

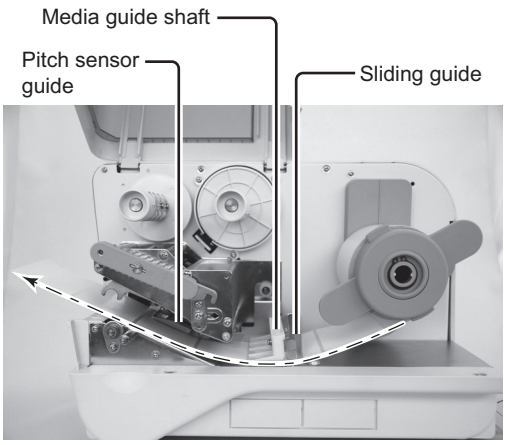


5. Release the purple **head lock lever** by turning counter clockwise.
The print head assembly will be lifted up to allow media loading.



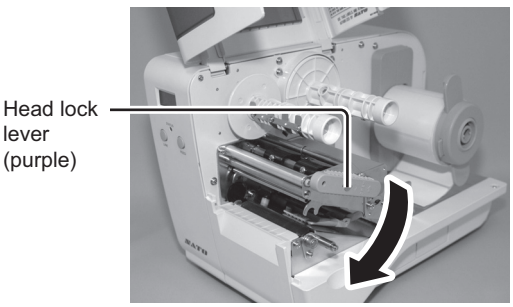
6. Insert the media into the **media guide** from a sideways angle, so that the media passes underneath the **media guide shaft** and **pitch sensor guide**.
Inspect the media routing and verify that the path matches that illustrated on the inner side of the main cover.

7. Lightly push the entire media against the **media guide** designated position. Adjust the **sliding guide** until it lightly touches the edge of the label.



8. Now remount the print head by turning the **head lock lever** clockwise until it latch on. The print head should lock into place firmly.

9. After loading the media and the carbon ribbon, close the main cover and do a test print to check that the media roll has been loaded properly. See **Section 3.10 Test Print Mode on page3-24** for instructions on how to run test print.



Notes:

- Be careful not to get your fingers caught at the bottom ledge when you are closing the main cover.
- If the optional cutter or dispenser has been purchased, see **Section 8 Optional Accessories** on **page 8-1** on how to route the media.

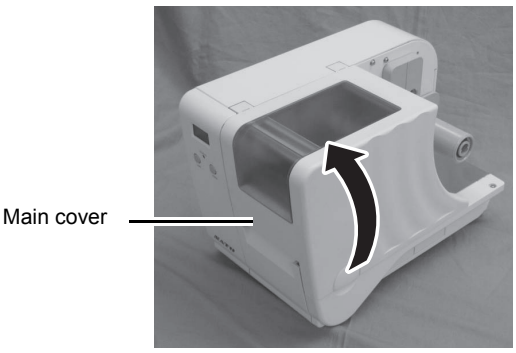
⚠ Caution

- When replacing media, bear in mind that the print head and its surrounding area remain hot. Keep your fingers away from these areas to prevent injury.
- Avoid touching even the edge of the print head with your bare hands.

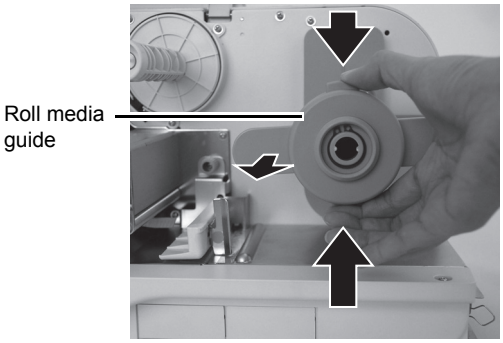
2.3 LOADING LABELS OR TAGS (cont'd)

2.3.2 Loading Roll media with a large media core

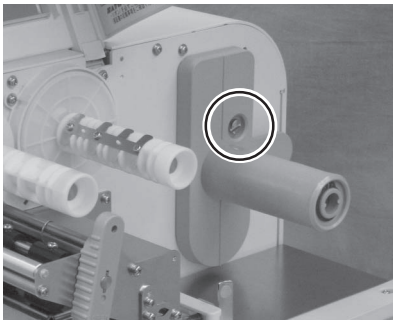
1. With the power supply is off, lift up the **main cover**. Make sure that the cover rests firmly so that it will not fall forward and injure your hands.



2. Remove the **roll media guide** by pressing the release tab with your thumb and index finger and pulling it out.

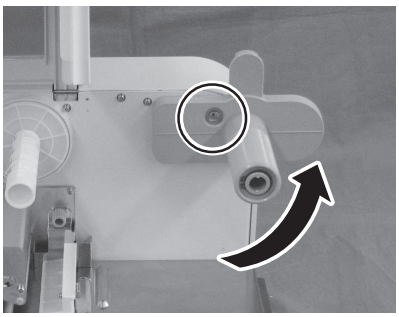


3. Unfasten the screw holding the **roll media supply spindle**. Use a flat-blade screwdriver to unfasten the screw.



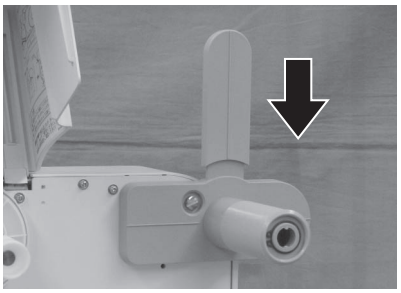
4. Rotate the **spindle** to 90 degree in the upper right (counter clockwise) direction.

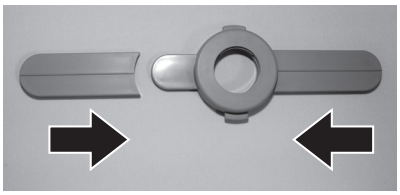
5. Fasten the screw that you unfastened in step **3**.



2.3 LOADING LABELS OR TAGS (cont'd)

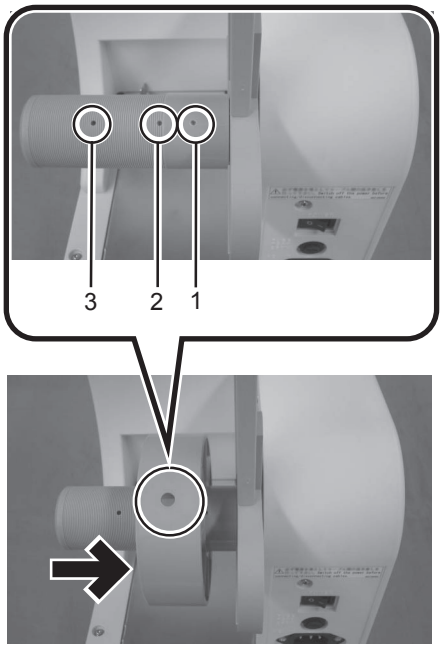
6. Attached a supplied **extension guide plate** to the side of the **roll media supply spindle**. Attached the other two **extension guide plate** to the **roll media guide**.





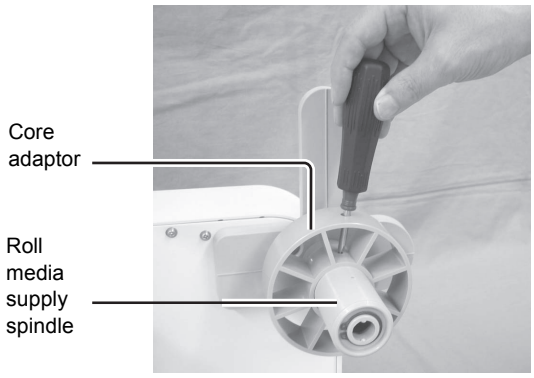
7. Insert the supplied **core adaptor** to the **roll media supply spindle**. Align the screw hole of the **core adaptor** with the specific screw hole on the **supply spindle** according to the width of media used as stated in the table below.

Core adaptor attachment position	Media width
Attachment hole 1	Up to 50 mm (2in.)
Attachment hole 2	50 mm (2in.)to 80 mm (3in.)
Attachment hole 3	Not used



8. Fasten the **core adaptor** in place with the supplied screw.

9. Load the media.
Follow the instructions of **Section 2.3.1 Loading Roll media with small media core** from step 3 onwards.



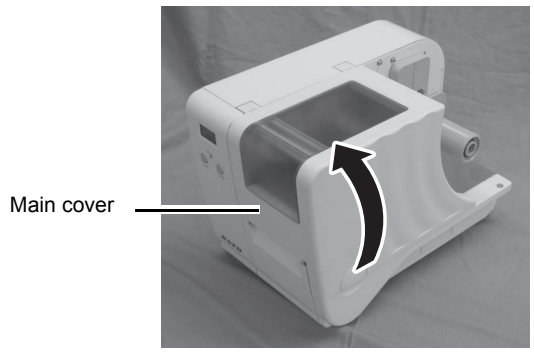
⚠ Caution

- When replacing media, bear in mind that the print head and its surrounding area remain hot. Keep your fingers away from these areas to prevent injury.
- Avoid touching even the edge of the print head with your bare hands.

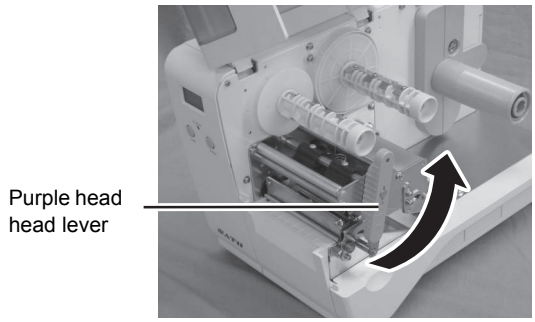
2.4 LOADING THE CARBON RIBBON

This printer enable two types of printing application, **Thermal transfer** and **Direct thermal**. **Thermal transfer** paper media requires the use of carbon ribbon for print application. In such a scenario, it is the carbon ribbon that contains the ink that will be transferred to the media. **Direct thermal** paper media has a coating on the surface that is made visible through the application of heat from the print head. In this case, there is no need of loading the carbon ribbon.

1. With the power supply is off, lift up the **main cover**.
Make sure that the cover rests firmly so that it will not fall forward and injure your hands.

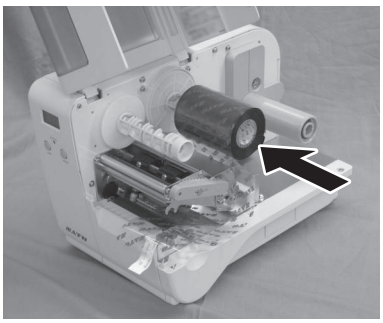


2. Release the purple **head lock lever** by turning counter clockwise.
The print head assembly will be lifted up.

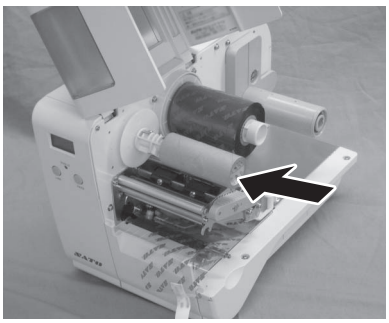


3. Open the carbon ribbon package, and then load the ribbon on the **ribbon supply spindle**.
Push it inwards all the way, with the ribbon winding in a counter-clockwise direction. The dull side of the ribbon should be facing down as it travels through the print head assembly.

Note:
Use only genuine SATO carbon ribbons for maximum print quality and printer durability.

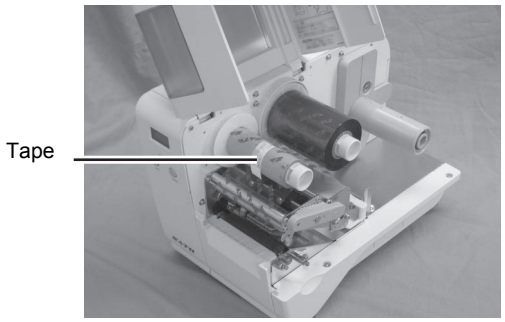


4. Mount the empty ribbon core on the **ribbon take-up spindle**.
When loading the carbon ribbon for the first time, an empty ribbon core is supplied with the printer. However, the subsequent ribbon core can be obtained from the last used up ribbon roll.



2.4 LOADING THE CARBON RIBBON (cont'd)

5. From the **ribbon supply spindle**, pass the carbon ribbon underneath the print head assembly to the **ribbon take-up spindle**. Route the ribbon behind and over the top of the **ribbon take-up spindle** and tape the leader portion of the carbon ribbon to the ribbon core. Then turn the **take-up spindle** several times in the direction of counter-clockwise to wind the ribbon around the core. Confirm that the ribbon has been loaded as shown in the figure on the right or as illustrated on the inner side of the main cover.



Note:
Do not pass the carbon ribbon underneath the pitch sensor unit.

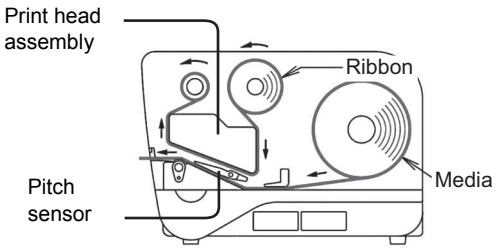
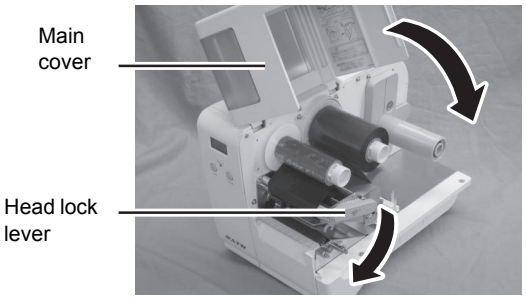


Figure showing carbon ribbon and media path

6. Now remount the **print head** by turning the **head lock lever** clockwise until it latch on. The print head should lock into place firmly.

7. After loading the media and the carbon ribbon, close the **main cover** and do a test print to check that the media roll has been loaded properly. See **Section 3.10 Test Print Mode on page3-24** for instructions on how to run test print.



⚠ Caution

- When replacing carbon ribbon, bear in mind that the print head and its surrounding area remain hot. Keep your fingers away from these areas to prevent injury.
- Avoid touching even the edge of the print head with your bare hands.

2.5 REMOVE THE CARBON RIBBON

After the carbon ribbon has used up to the end of the roll, remove the wound-up carbon ribbon from the printer.

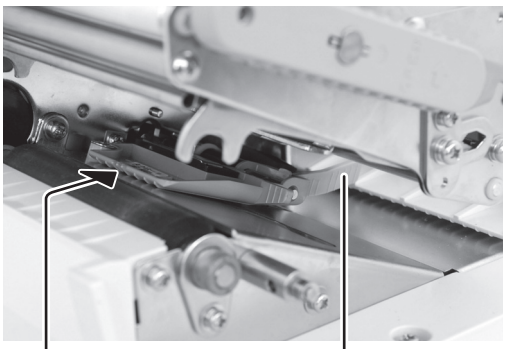
1. With the power supply is off, lift up the **main cover** and release the purple **head lock lever** by turning counter clockwise.
2. Remove the wound-up carbon ribbon from the **take-up spindle** in the direction of the arrow.
   Be careful when removing the carbon ribbon, your hands may get dirty while handling it.

Note:
Don't dispose of the empty ribbon core after removing it from the **ribbon supply spindle**. Instead, transfer it to the **ribbon take-up spindle** so that used ribbon can be wound around it after a new ribbon roll has been loaded.

2.6 ADJUSTING THE PITCH SENSOR

The **pitch sensor unit** has both I-Mark (reflective) and Gap/ Tag-hole (transmissive) sensors and the Gap/ Tag-hole sensor can be adjusted over a limited range. Adjustment of the pitch sensor is usually not necessary, unless a media with tag-hole (center/ side) is loaded.

1. With the power supply is off, lift up the **main cover**.
   Make sure that the cover rests firmly so that it will not fall forward and injure your hands.
2. Release the purple **head lock lever** by turning counter clockwise.
   The print head assembly will be lifted up to reveal the **pitch sensor unit**. The purple **pitch sensor unit** is just locate under the print head assembly.
3. Slide the **pitch sensor guide** to align the position of the Gap/ Tag-hole sensor (marked with a triangle) to the tag-hole (center/ side) of the loaded media.
   The Gap/ Tag-hole sensor can be adjusted from a minimum of 16 mm (0.63in.) to a maximum of 74 mm (2.91in.).
4. After adjustment, do a test print to see if the sensor is working properly.
   See **Section 3.10 Test Print Mode on page3-24** for instructions on how to run test print.



Align the position of the Gap/ Tag-hole sensor (marked with a triangle) to the tag-hole (center/ side) of the loaded media.

Pitch sensor guide

2.7 CONNECTIONS

This section explains the power cable and interface cable connection procedures.

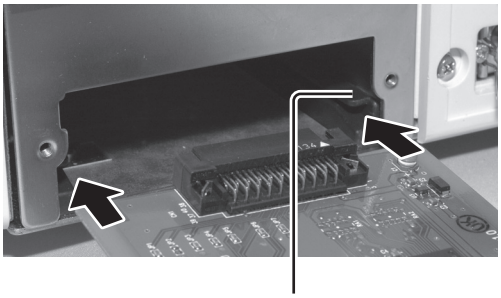
2.7.1 Install and connecting the interface board

This printer has a flexibility to select a suitable interface options for communication to the host computer. The following Plug-in interface boards are available.

- RS-232C (High-speed) interface board
- IEEE1284 interface board
- LAN interface board
- USB interface board

*Installation of the interface board should be done by Sato certified servicing personnel.

1. Make sure that power cable is not connected to the printer.
2. Align the interface board with the guide of the interface slot opening at the back of the printer as shown.
3. Lightly push the interface board into the printer until you feel the connection of the interface board.
4. Secure the interface board with two screws.
5. Connect the interface cable from the host computer to the printer.
   Use a cable that is compatible with the standard of the installed interface board. Make sure the cable is correctly oriented. Secure the printer with one hand, and insert the cable firmly.



Align the interface board with the guide of the interface slot opening.

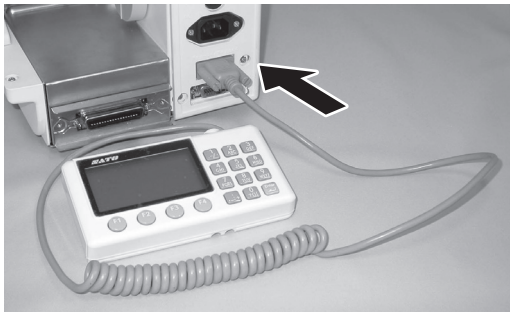
⚠ Caution

- Always turn the printer OFF before attaching or detaching an interface card. Otherwise, severe electrical damage may be incurred, or bodily injury may be sustained.
- Never connect or disconnect interface cables (or use a switch box) with power applied to either the host or printer. This may caused damage to the interface circuitry in the printer/ host and is not covered by warranty.

2.7.2 Connecting the optional keypad

This printer has a feature to connect to an optional keypad. This enable users to enter simple command to the printer, by the connected keypad, without connecting to a host computer.

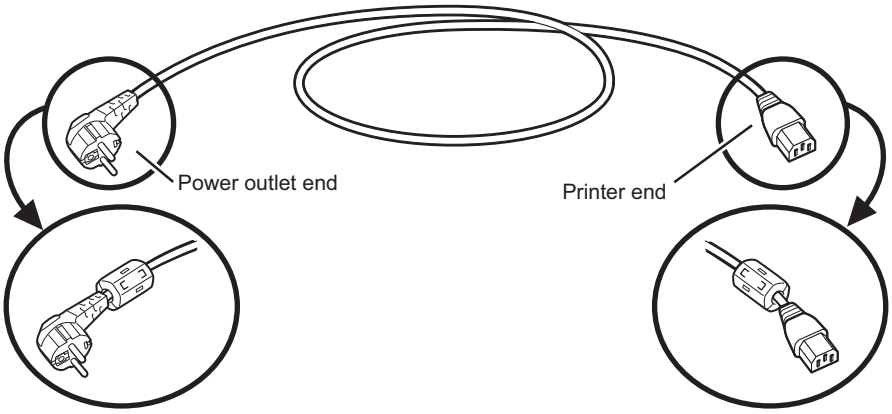
1. Make sure that power cable is not connected to the printer.
2. Connect the cable from the optional keypad to the **keypad** terminal at the back of the printer. Make sure the cable is correctly oriented. Secure the printer with one hand, and insert the cable firmly.
3. Set the printer to be ready for using with the keypad. Refer to **Section 8.5 Keypad** on **page 8-6** for details.



2.7 CONNECTIONS (cont'd)

2.7.3 Instruction to attach the ferrite cores to the power cable

Open the two supplied ferrite cores, wrap them to the both end of the power cable and attach them as shown below. Make sure to squeeze the ferrite core until it clicks.



* The shape of the power plug may varied depending on the location of purchased.

2.7.4 Connecting the Power Cable

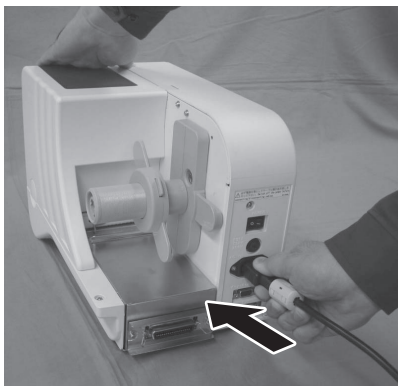
⚠ Warning

- Be sure to connect the ground wire. Failure to do so may cause an electric shock.
- Do not operate the power switch or insert/remove the power cable while your hands are wet. Doing so may cause an electric shock.

⚠ Caution

The power cable provided with this printer is for use with this printer only. It cannot be used with other electrical devices.

1. Connect the power cable to the AC IN power terminal on the rear panel of the printer.
   Make sure that the connector is correctly oriented.
   Secure the printer with one hand, and insert the connector firmly.
2. Insert the power plug into a AC power outlet.
   A 3-pin plug is attached to the power cord provided with your printer. One of these pins is the ground wire.
   If the power outlet that you plan to use is a 3-pin type, simply insert the power plug as is.

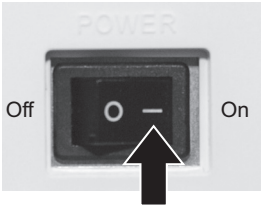


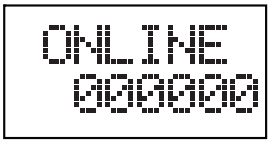
2.7 CONNECTIONS (cont'd)

2.7.5 Turning On the Power

> **Warning**
> Do not operate the power switch or insert/remove the power cable while your hands are wet. Doing so may cause an electric shock.

Turn on the POWER switch on the printer's rear panel.
Press the side of the switch marked "-".
When you turn on the power, "ONLINE" appears on the display.

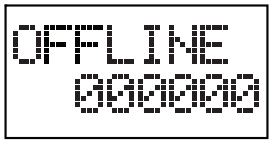


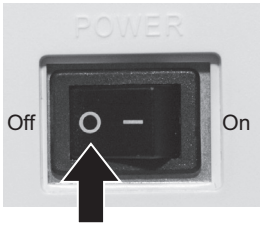


2.7.6 Turning Off the Power

When you have completed the printing job, turn the printer off.

1. Press the **LINE** button to put the printer offline.
   Be sure to confirm that the printer is in the offline status before turning it off.
   If there is any printed paper remaining in the printer, cut it off.
2. Turn off the power switch on the printer's rear panel.
   Press the side of the switch marked "O".





3

OPERATION AND CONFIGURATION

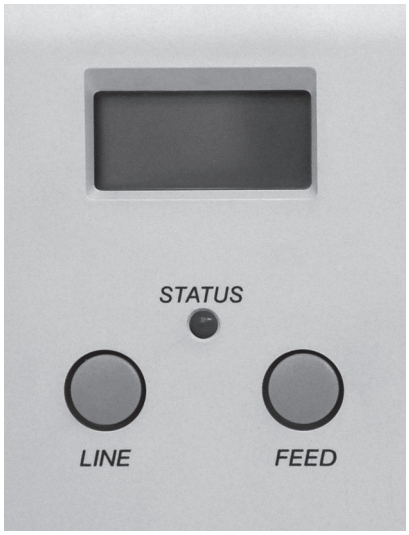
Before using the printer, it is best to read this manual thoroughly first. Otherwise, you may disturb default settings around which the instructional procedures in this manual are based upon.

The printer may be manually configured via the **LINE** and **FEED** buttons with the LCD panel on the front of printer and/or potentiometers and **DSW** Dip switch located on the printer's side. All of the printer's buttons, switches, and potentiometers are used either singularly, or in conjunction, to perform configuration activities.

Many of these settings can also be controlled via software commands and in case of conflict between software and control panel settings, the printer will always use the last valid setting. If you load a label job that includes software settings and then enter a new setting via the LCD panel, the manually set values will be used by the printer. If you set the values manually and then download a job with software settings, the software settings will be used.

3.1 OPERATION PANEL

The operation panel locate on the front consist of one two-color (red and green) LED indicator, two momentary contact buttons and one LCD display. There are eight adjustment potentiometers and a DIP switch located on the right bottom side when you are facing the printer. Remove the covers in order to access for adjustment.



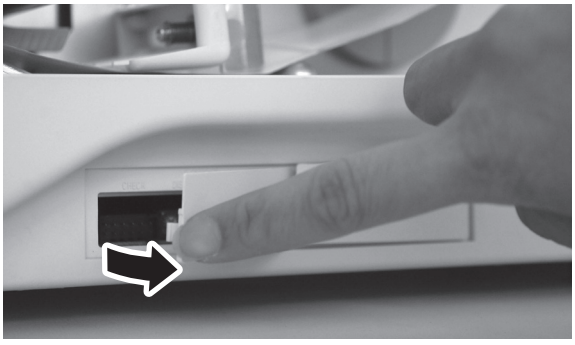
- **STATUS** LED
  Two-color (Red, Green) LED that indicates the following status conditions:
  Green - Illuminated when printer is ready to receive data. It is turned on and off by toggling the LINE button.
  Red - Illuminated or blinked when there is a system fault such as an open print head.
  Off - When it is in Offline mode.

- **LINE** button
  Pressing this button toggles the printer between the online and offline mode. When the printer is online. it is ready to receive data from host.This button acts as a pause during a print job by taking the printer offline. This button also function to adjust the value of the selected item or switching to different mode during printer setting with the LCD display.

- **FEED** button
  Pressing this button feeds one blank label through the printer when it is offline. When the printer in online, another copy of the last label will be printed.
  This button also function as item selection during printer setting with the LCD display.

To open and close the cover of the potentiometers and DIP switch

Lift open both the cover from the left side of the lid as shown.



To close the cover, align the catch of the right side of the lid to the opening.

- **DISP** potentiometer
  This potentiometer is used to adjust the sensing level of the dispenser. Active only when the label dispenser option is installed.

- **F-OFFSET** potentiometer
  This potentiometer is to set the factory zeroing for the OFFSET potentiometer. Usually changes of this setting is not require. Adjust only when instructed by SATO certified servicing personnel.

3.1 OPERATION PANEL (cont'd)

- **J-HOLE** potentiometer
  This potentiometer is used to adjust the sensing level for the jump hole sensor.

- **IM** potentiometer
  This potentiometer is used to adjust the sensing level of the I-mark sensor.

- **GAP** potentiometer
  This potentiometer is used to adjust the sensing level for the gap sensor.

- **DSW** Dip switch
  These switches are to set the printer to different modes when servicing. This is only used by Sato certified servicing personnel.

- **PITCH** potentiometer
  This potentiometer adjusts the beginning print position in correspond to the adjustment value displayed in the OFFSET VOLUME menu (User Mode).

- **OFFSET** potentiometer
  This potentiometer adjusts the option (Cutter, Dispenser, Tear-off) stop position in correspond to the adjustment value displayed in the OFFSET VOLUME menu (User Mode).

- **PRINT** potentiometer
  This potentiometer adjusts the print darkness in correspond to the adjustment value displayed in the OFFSET VOLUME menu (User Mode).

3.2 OPERATING MODES

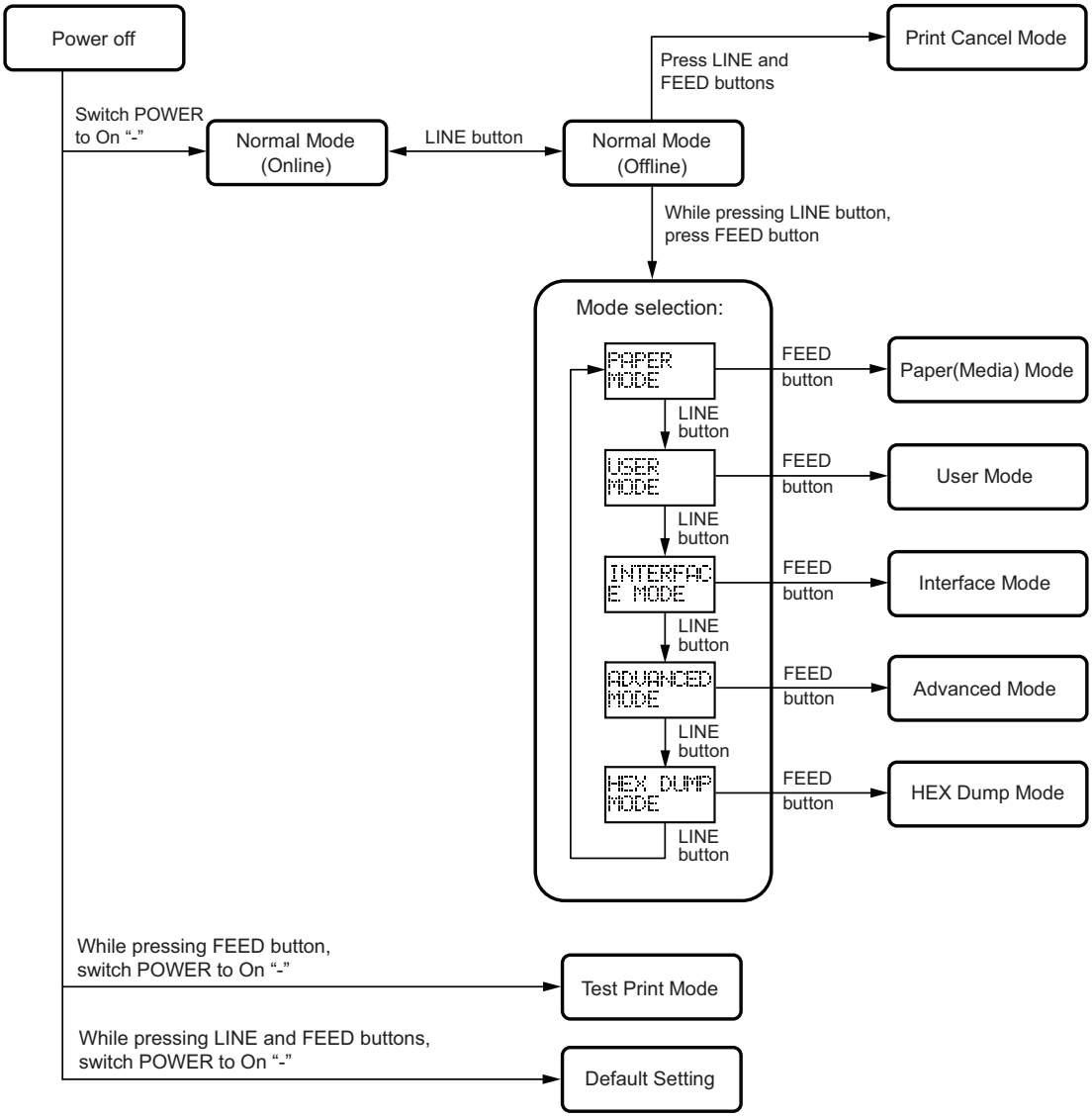
The operating status of this printer can be set within one of the following modes:

1. Normal mode (including Online/Offline modes)
2. Printer Setting mode:
   - Paper mode
   - User mode
   - Interface mode
   - Advanced Mode
   - Hex Dump mode
3. Test Print mode
4. Default Setting mode

The various modes are accessed by pressing the **LINE** button, **FEED** button and LCD screen while the printer is Off, On or with certain printer settings in force.

3.2 OPERATING MODES (cont'd)

The following flow chart provides a clear summary of all the modes and their access method.

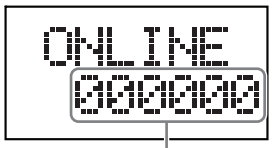


3.3 ONLINE AND OFFLINE MODES

The general and basic operation of the DR308e is via the Normal mode, which consists of the ONLINE and OFFLINE modes.

3.3.1 Online Mode

Pressing the **LINE** button causes the printer to go ONLINE or OFFLINE alternately.

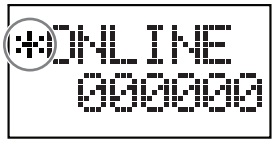


Media quantity status

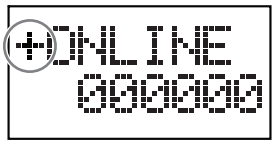
When the printer is ONLINE, the following activities will be possible:

- The printer is ready to receive print data from the computer or other connected devices
- The printer is ready to start printing

The number displayed on the bottom line of LCD panel shows the media quantity status. As soon as a print job is received, the display will indicate the number of labels to be printed. When the label job begins to print, the display will indicate the remaining number of labels to be printed.

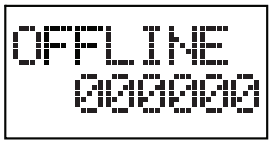


When an asterik mark appears beside ONLINE, it indicates that the KEYPAD PORT is set to ON. See **Section 3.7.2 Enabling optional connected Keypad** on **page 3-14** for details.
When a Plus sign appears beside ONLINE, it indicates that the printer is HEX DUMP printing the data from Host computer. See **Section 3.9 Hex Dump Mode** on **page 3-22** for details.



3.3.2 Offline Mode

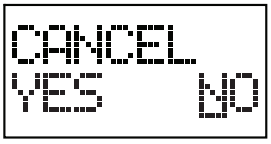
When the printer is ONLINE, pressing the **LINE** button once will cause the printer to go OFFLINE.
When the printer is OFFLINE, the activities for ONLINE mode are no longer possible, but the following activities will be possible:



- The printer can feed an empty label when you press the **FEED** button.
- The printer can be switched to other modes when you press the **FEED** button while pressing the **LINE** button.
- Any printing job can be PAUSED once the printer is brought OFFLINE

3.3.3 Print Cancel Mode

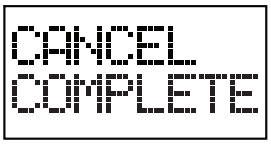
1. When the printer is OFFLINE, pressing both the **LINE** and **FEED** buttons at the same time will switch the printer to Print Cancel mode. The menu for canceling the print job then appears.



2. Press **LINE** button to switch between the selection, YES or NO. The underline on display indicates the selected option. The default setting is NO.
   If the printer has a print job in memory, selecting YES will cause the job to be cleared.

   NOTE:
   Be sure you want to cancel the print job before selecting yes as the job cannot be recovered and will have to re-transmit to the printer.

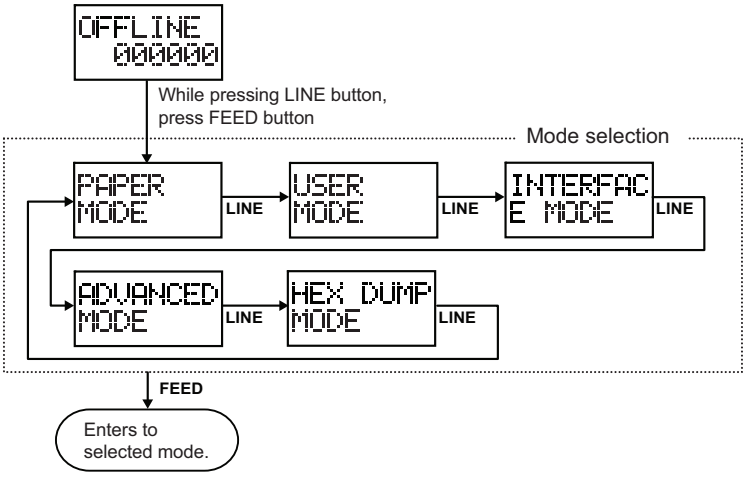
3. Press **FEED** button to activate the selection.
   If YES is selected, the message “CANCEL COMPLETE” will display with 3 beep sound and then return to OFFLINE mode. All the print jobs were cleared from memory.



3.4 PRINTER SETTING MODES

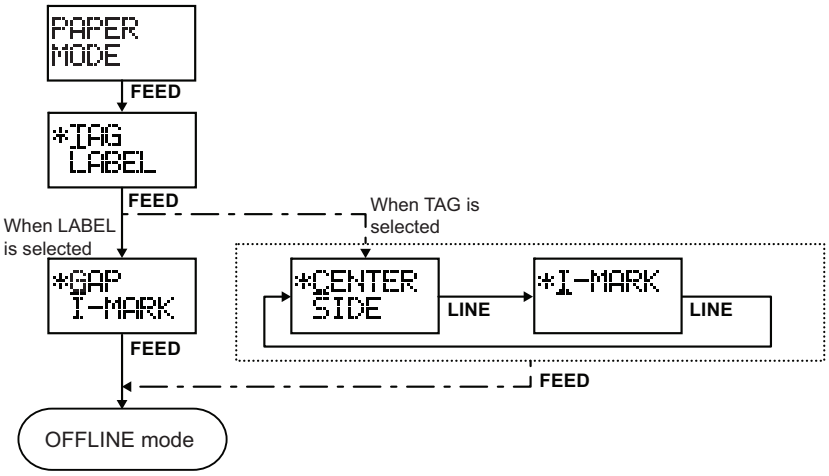
There are five selection for the printer setting mode.

1. When the printer is OFFLINE, press the **FEED** button while pressing the **LINE** button. PAPER MODE is first displayed.
2. Press the **LINE** button repeatedly will switch to different mode cyclically as shown.
3. When the desired mode is displayed, press **FEED** button to enter to the mode.



3.5 PAPER (MEDIA) MODE

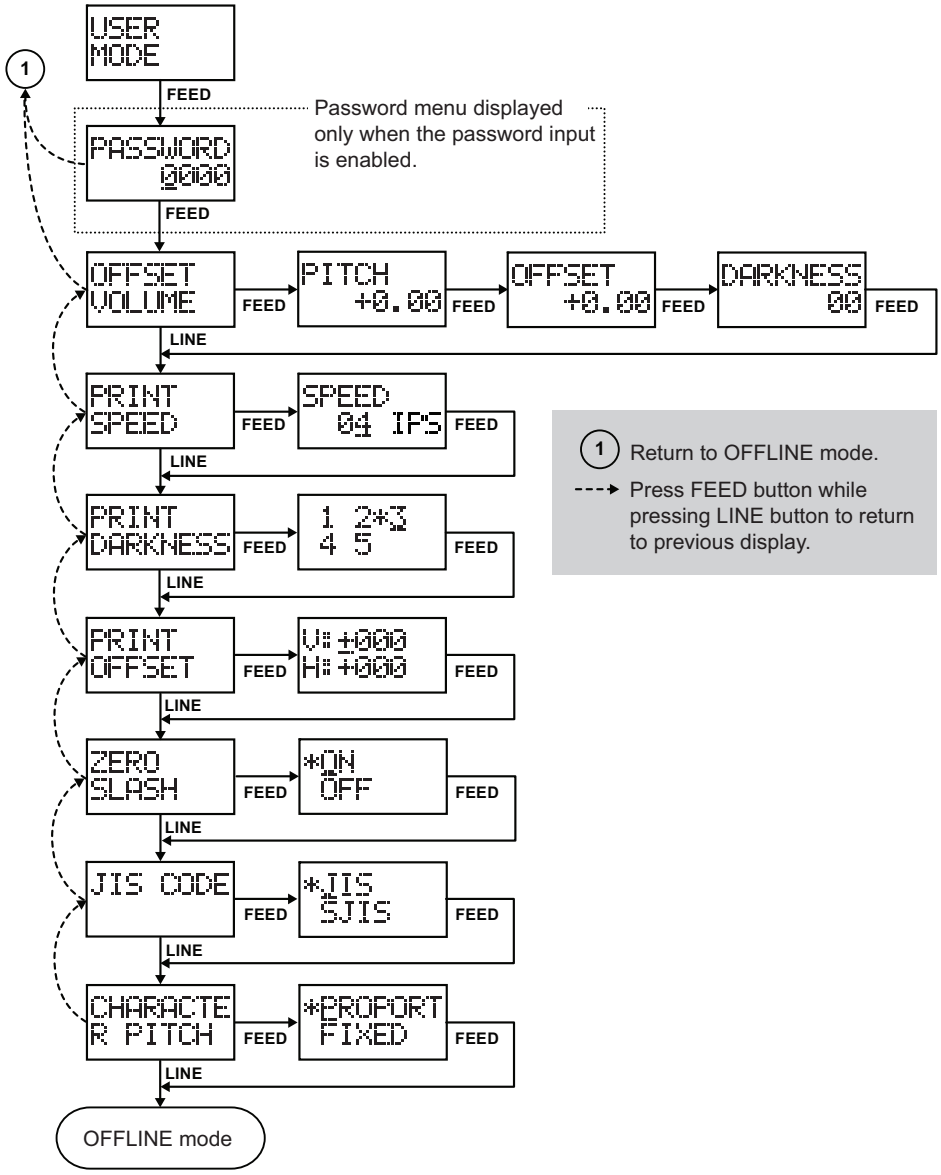
Paper mode is to select the media used and enable the appropriate sensor.



1. When PAPER MODE is displayed, press the **FEED** button to set the media used.
2. Press the **LINE** button to select either TAG or LABEL is used. Then, press **FEED** button to enter the selection.
3. When LABEL is used, press **LINE** button to specified the types of label used. Select either GAP or I-MARK label. Press **FEED** to activate the selection.
   When TAG is used, press **LINE** to specific the types of tag used. Select CENTER (Gap) hole, SIDE (Gap) hole or I-MARK tag, and press **FEED** button to activate the selection.
   Printer returned to OFFLINE mode after setting.

3.6 USER MODE

The following settings are available in the User Mode.



1. When USER MODE is displayed, press the **FEED** button to enter to User mode for adjustment.

Note:
PASSWORD may prompt on the display if password input is enabled. Please refer to Sato certified servicing personnel for details in password inputting.

2. OFFSET VOLUME is first displayed. Press the **LINE** button repeatedly will switch to the next setting options as shown above. To return to the previous setting option, press **FEED** button while pressing **LINE** button.

3. When the desired setting option is displayed, press **FEED** button to enter to the mode for adjustment.

3.6 USER MODE (cont'd)

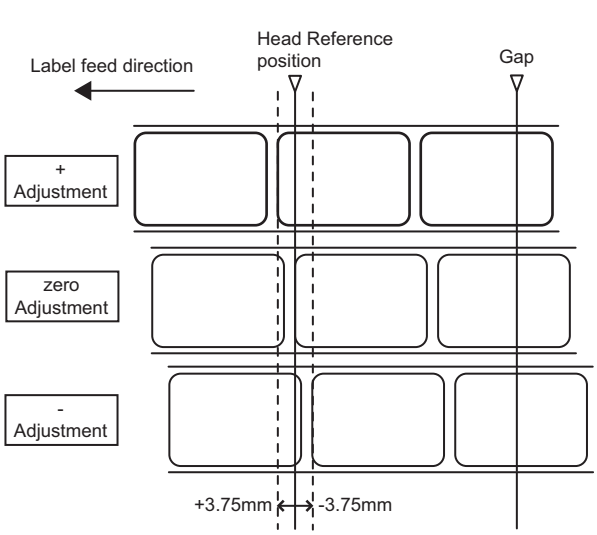
3.6.1 Offset Volume mode

The Offset Volume mode display the adjustment value of PITCH, OFFSET and DARKNESS in conjunction with the respective potentiometers on the side of the printer. Use the supplied yellow screwdriver to adjust the potentiometer. It can be found attached on the inner side of the main cover. The value on the display changes as you turn the screwdriver clockwise or counter-clockwise.

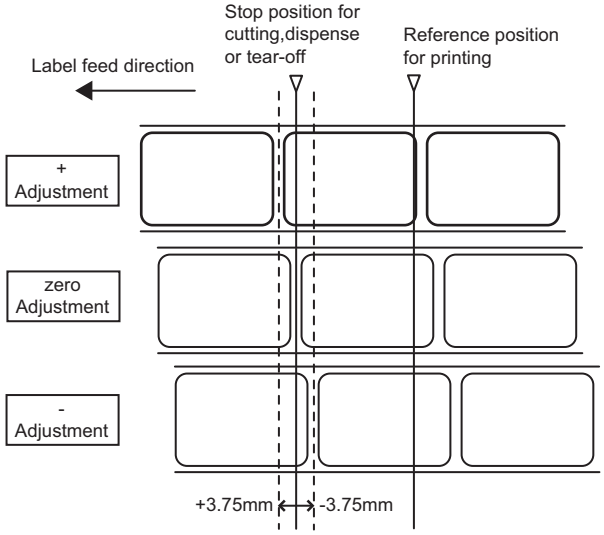
PITCH - The label Pitch is the distance from the leading edge (the edge that comes out of the printer first) of a label and the leading edge of the next label.
The leading edge position of the label can be adjusted relative to the print head. Therefore, the position to start printing will base on this setting. The adjustment range allowed is +/- 3.75 mm. A positive value moves the leading edge of the label forward (away from the print head) while negative value moves the leading edge of the label back to the mechanism.

OFFSET - This setting adjusts the option (Cutter, Dispense, Tear off) stop position after a print out. The adjustment range allowed is +/- 3.75 mm. A positive value moves the leading edge of the label forward (away from the print head) while negative value moves the leading edge of the label back to the mechanism.

Adjustment of Pitch setting



Adjustment of Offset setting



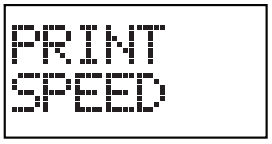
DARKNESS - This setting adjusts the print darkness of the print-out. The adjustment range is from 0 to 90.
Note:
It is not advisable to set the print darkness to the higher position as a darker print-out requires the print head to operate in a higher temperature. Operating in high temperature may damage the print head in a long run.

You may wish to print a test print after completing the adjustments to ensure they are correct. Refer to **Section 3.10 Test Print Mode** on **page 3-24** for details.

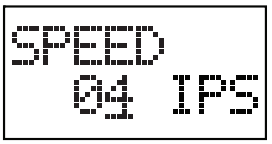
3.6 USER MODE (cont'd)

3.6.2 Setting Print Speed

This setting can be used to achieve a high print speed that does not compromise print quality.



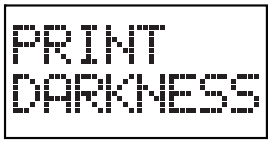
1. When PRINT SPEED is displayed, press **FEED** button to enter to Print Speed setting mode.
2. Press **LINE** button to change the setting. Print speed can be set from 02 to 05 ips (inches/sec) with a increment of 01 ips cyclically.



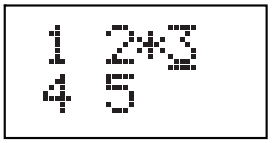
3. Press **FEED** button to enter the setting.
   If quality printing cannot be obtained due to the quality of the paper or the printing contents, lower the speed accordingly.

3.6.3 Setting Print Darkness

This setting adjusts the print darkness of the print-out with reference to the setting of the DARKNESS potentiometer.



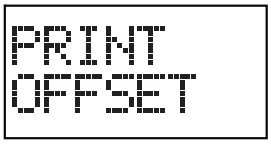
1. When PRINT DARKNESS is displayed, press **FEED** button to enter to Print Darkness setting mode.
2. Press **LINE** button to change the setting.
   The current setting value is shown with *. This setting can be set from 1 (lightest) to 5 (darkest). The default setting is 3.

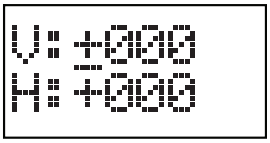


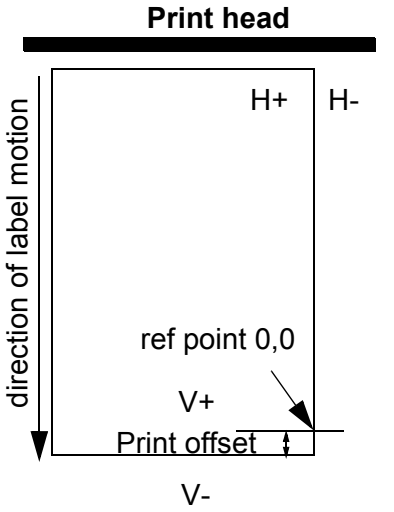
3. Press **FEED** button to enter the setting.
   You may wish to print a test print after completing the adjustments to ensure they are correct.

3.6.4 Setting Print Offset

Print Position Offset—which refers to the vertical and horizontal shifting of the entire print area, relative to the start position of printing (V=0, H=0), defined by default to be the bottom right hand corner of the label.
The V setting is for the Vertical print offset. A positive (+) offset means the printing is shifted towards the print head; a negative (-) offset means shifting away from the print head. If the PITCH setting has been used to offset the vertical start position, then all Vertical offset adjustments are made relative to that start position.
The H setting is for the Horizontal print offset. The + or - prefix determines whether the offset is to the left or to the right of the reference point.
The default value of both positions is +000 dot. The maximum values that can be set for each is +/-400.







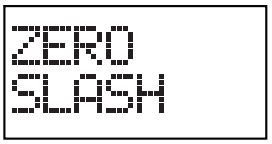
1. When PRINT OFFSET is displayed, press **FEED** button to enter to Print Offset setting mode.
2. The underline indicates the digit is active for adjustment. Press **LINE** button to change the setting and then press **FEED** button to shift to the next digit or item for setting. When the **FEED** button is pressed after setting the last digit, the setting will be save and next setting option is displayed.

You may wish to print a test print after completing the adjustments to ensure they are correct. Refer to **Section 3.10 Test Print Mode** on **page 3-24** for details.

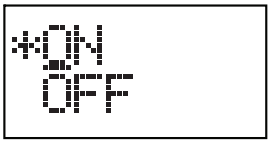
3.6 USER MODE (cont'd)

3.6.5 Setting Zero Slash Changeover

You can use this setting to determine whether zeroes are printed with a slash across them or not. The zero slash (excluding Kanji) can be set to either "0" or "Ø".



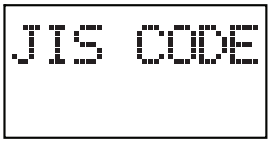
1. When ZERO SLASH is displayed, press **FEED** button to enter to Zero Slash setting mode.
2. Press **LINE** button to toggle between ON and OFF.
   When ON is selected, the printer internal fonts will have a slash across the center of the zero character. OFF means otherwise. The default value is ON.



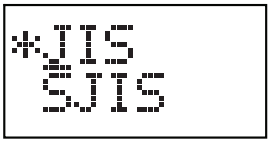
3. Press **FEED** button to enter your setting and proceed to the next setting option.

3.6.6 Setting JIS Kanji Code Changeover

The printer can be set to use either JIS code or Shift JIS code.



1. When JIS CODE is displayed, press **FEED** button to enter to JIS code setting mode.
2. Press **LINE** button to toggle between JIS and SJIS. The default value is JIS code.

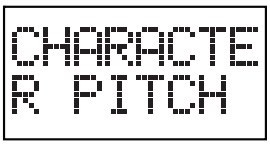


3. Press **FEED** button to enter your setting and proceed to the next setting option.

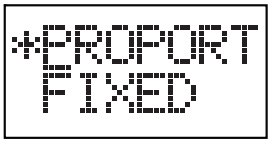
Note:
This option is only valid for printing in Japanese.

3.6.7 Setting Character Pitch

This setting determines whether the space surrounding each text character is of a fixed width, or whether that space is to be varied to be visually more pleasant and proportional.



1. When CHARACTER PITCH is displayed, press **FEED** button to enter to Character Pitch setting mode.
2. Press **LINE** button to toggle between PROPORT and FIXED. The default value is PROPORT which is proportional.

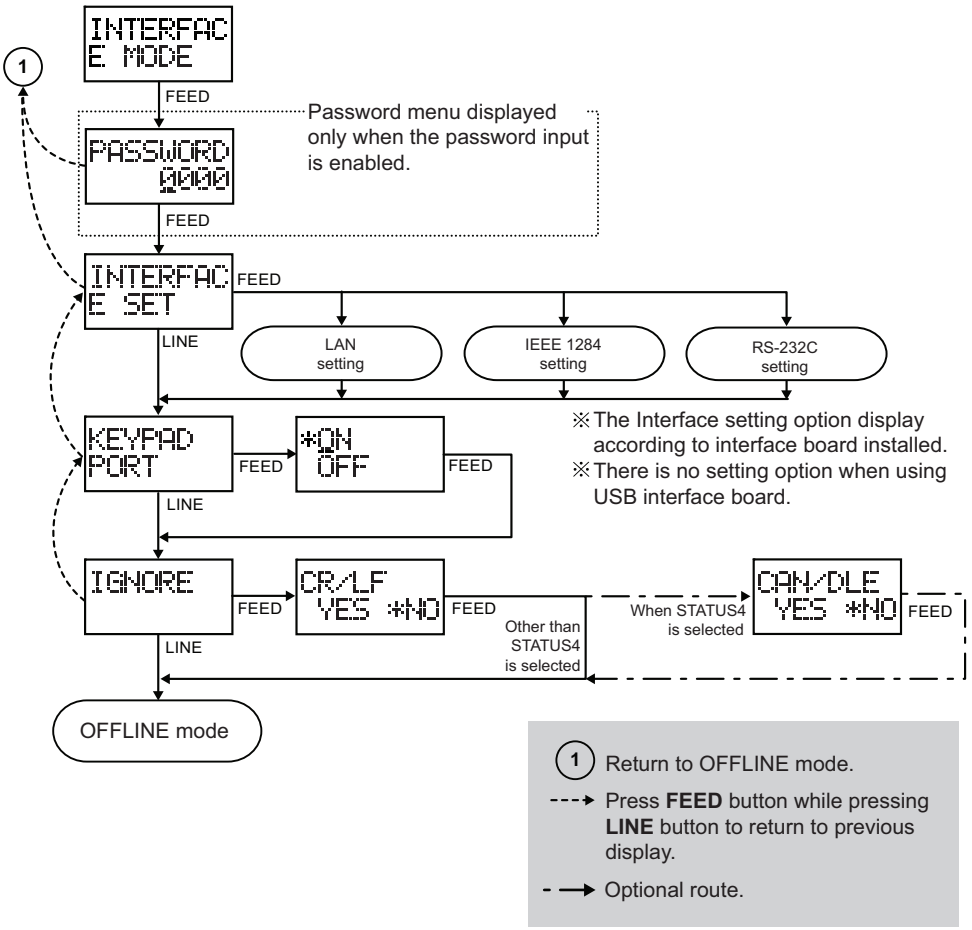


3. Press **FEED** button to enter your setting and return to the OFFLINE Mode.

3.7 INTERFACE MODE

In this mode, you can set various parameters governing the use of interface cards. Due to the wide range of interface cards available, only the default interface configuration settings are covered in this section. The menus in the INTERFACE SET mode will be specific to type of interface card used. A flowchart overview of advanced settings for all the optional interface cards is as shown in the following. Please refer to an authorised service personnel for a detailed discussion on this advanced settings.

Overview of Interface Mode configurations



When INTERFACE MODE is displayed, press the **FEED** button to enter to Interface mode for adjustment.

Note:
PASSWORD may prompt on the display if password input is enabled. Please refer to Sato certified servicing personnel for details in password inputting.

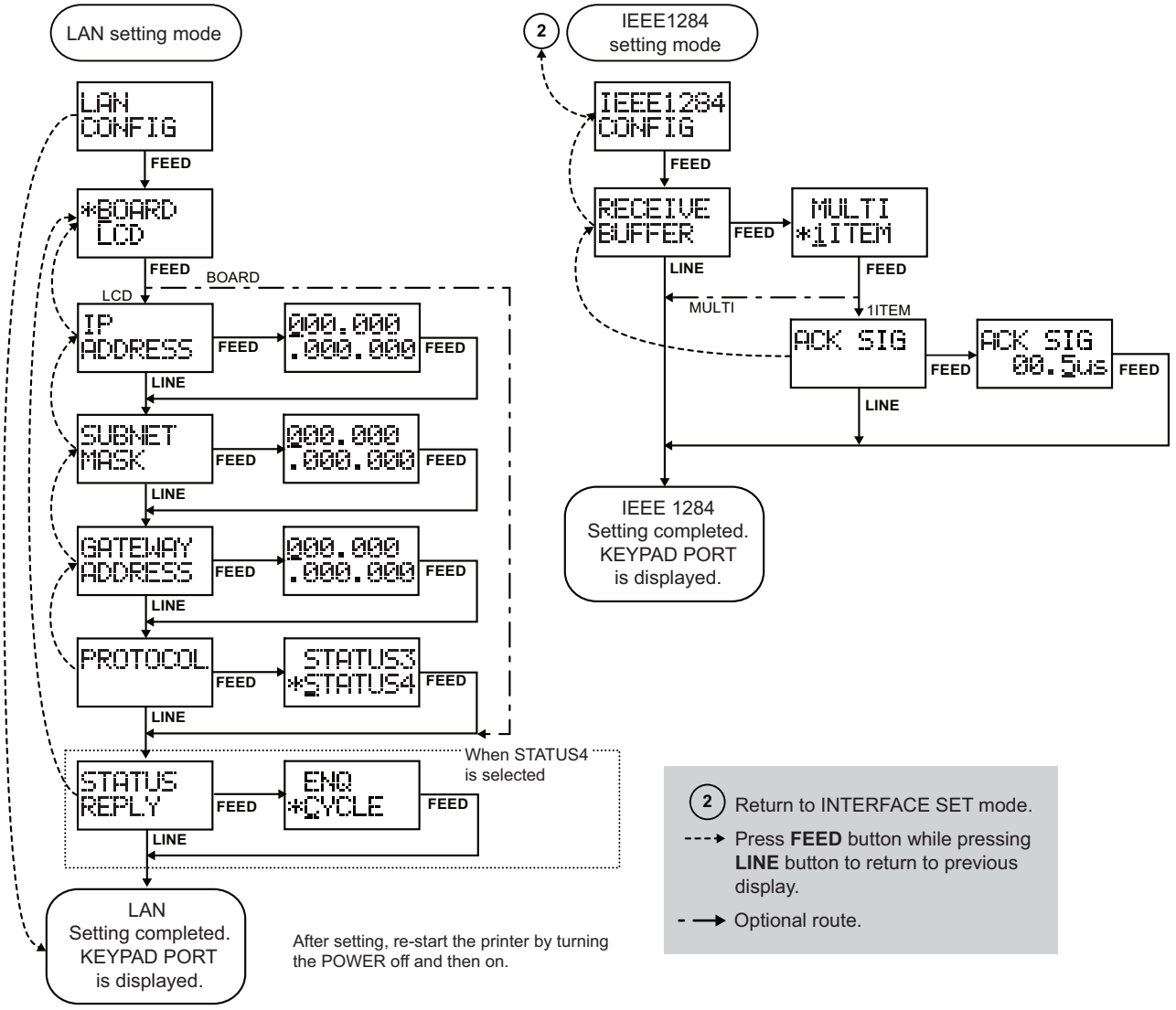
3.7 INTERFACE MODE (cont'd)

3.7.1 Enabling Interface Card Configuration

INTERFACE SET is first displayed after entering to interface mode. Press **FEED** button if you wish to configure the connected interface card.
The next display shows the connected interface card to be configured. Refer to the following flowcharts of the all setting and LCD display menus available for LAN, IEEE1284 and RS-232C.
If USB interface card is connected, no selection is available.

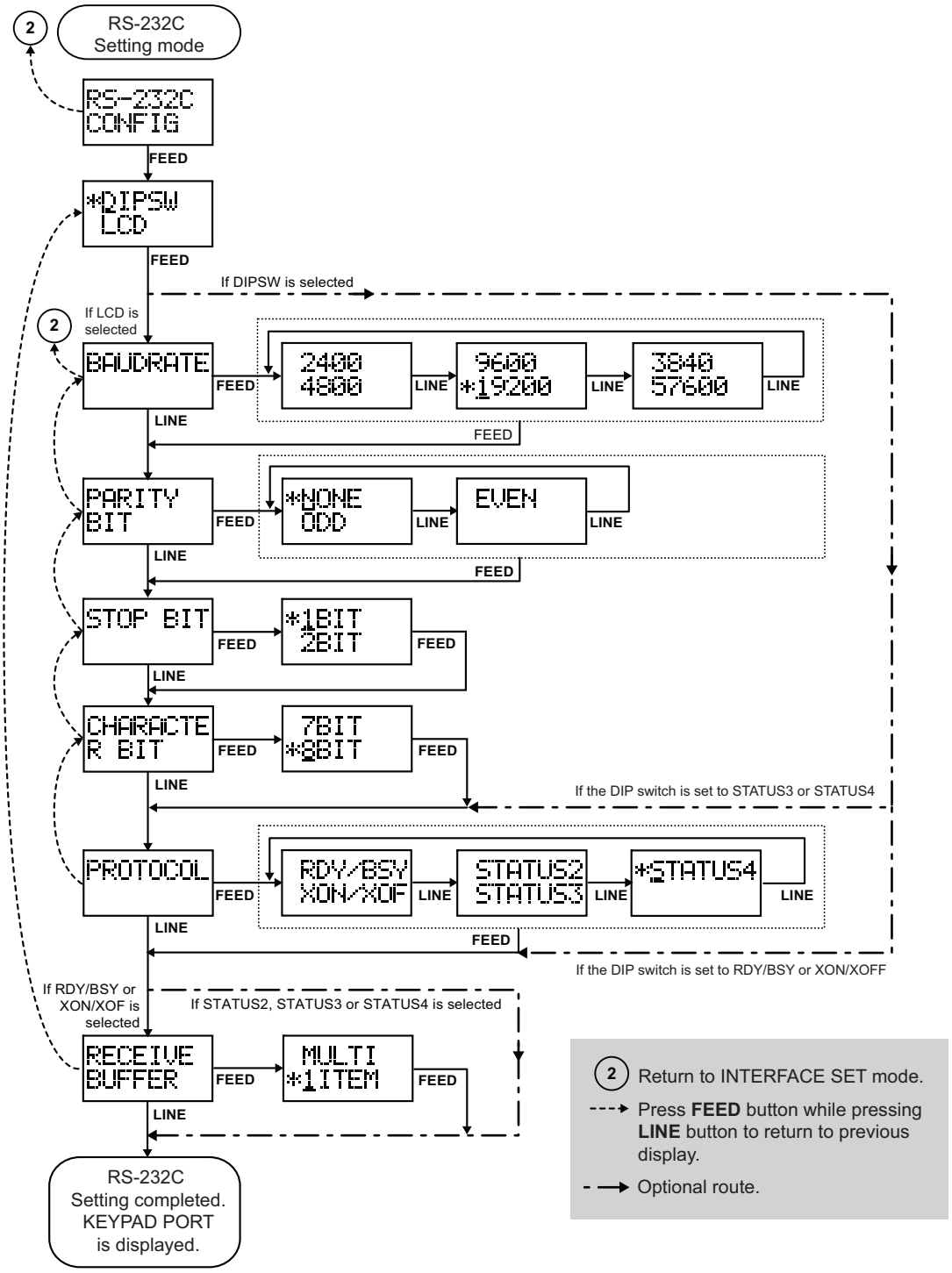
If not, press **LINE** button, the next display lets you enable the optional keypad if connected.

Setting of LAN and IEEE1284



3.7 INTERFACE MODE (cont'd)

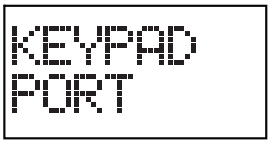
Setting of RS-232C



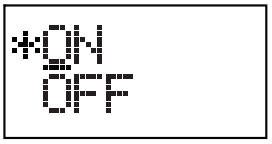
3.7 INTERFACE MODE (cont'd)

3.7.2 Enabling optional connected Keypad

1. When KEYPAD PORT is displayed, press **FEED** button to enter to the setting mode for enabling the keypad port.
2. Press **LINE** button to selected ON, if the optional keypad is connected, or OFF, if the keypad is not connected.

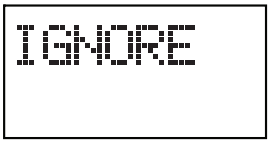


Refer to **Section 2.7.2 Connecting the optional keypad** on **page 2-10** for the connection of the optional keypad. Refer to the operator manual of the keypad for details on operation.



3.7.3 Setting of printing codes to be ignore

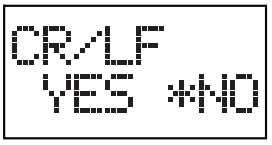
When IGNORE is displayed, press **FEED** button to enter to the setting mode.



Handling CR/LF codes

This setting determines whether Carriage Return and Line Feed codes are processed or ignored.
Select YES to ignore the codes, and NO to process them. However, some specific graphic data that is in Hex is not deleted.

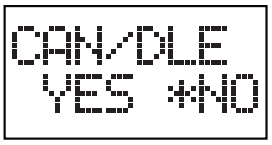
1. Press **LINE** button to toggle the selection, YES or NO.
2. Press **FEED** to enter the setting.
   If the communication protocol option is set to STATUS4, CAN/DLE setting option is displayed, otherwise, it is return to OFFLINE mode.



Handling CAN/DLE

This setting determines whether the CANCEL and DATA LINK ESCAPE codes are processed or ignored. It only appears when the communication protocol option is set to STATUS4.
Select YES to ignore the codes, and NO to process them.

1. Press **LINE** button to toggle the selection, YES or NO.
2. Press **FEED** to enter the setting. The printer returns to OFFLINE mode.



3.8 ADVANCE MODE

Advance Mode lets you configure the more advanced features of the printer hardware.

Overview of Interface Mode configurations

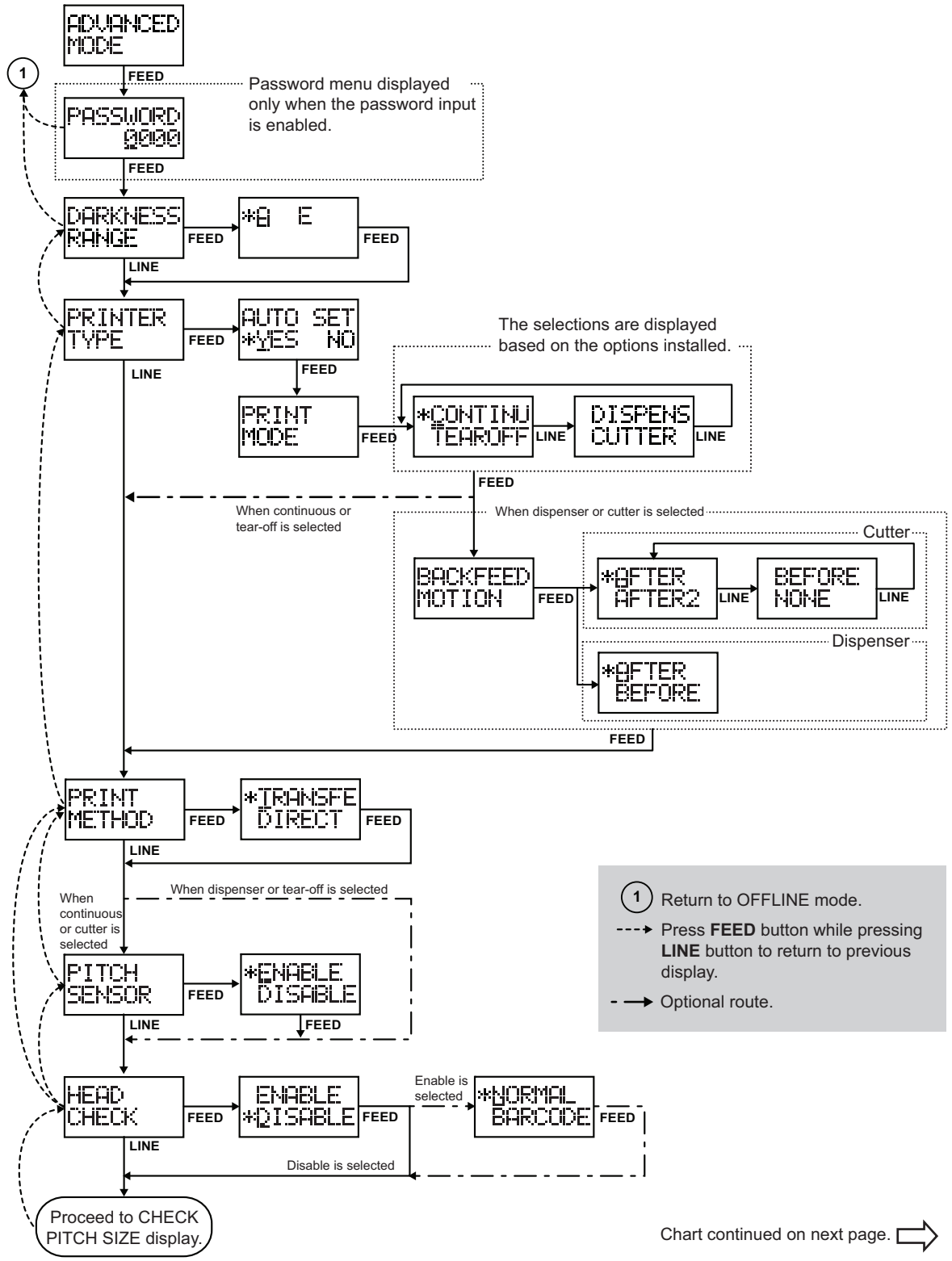
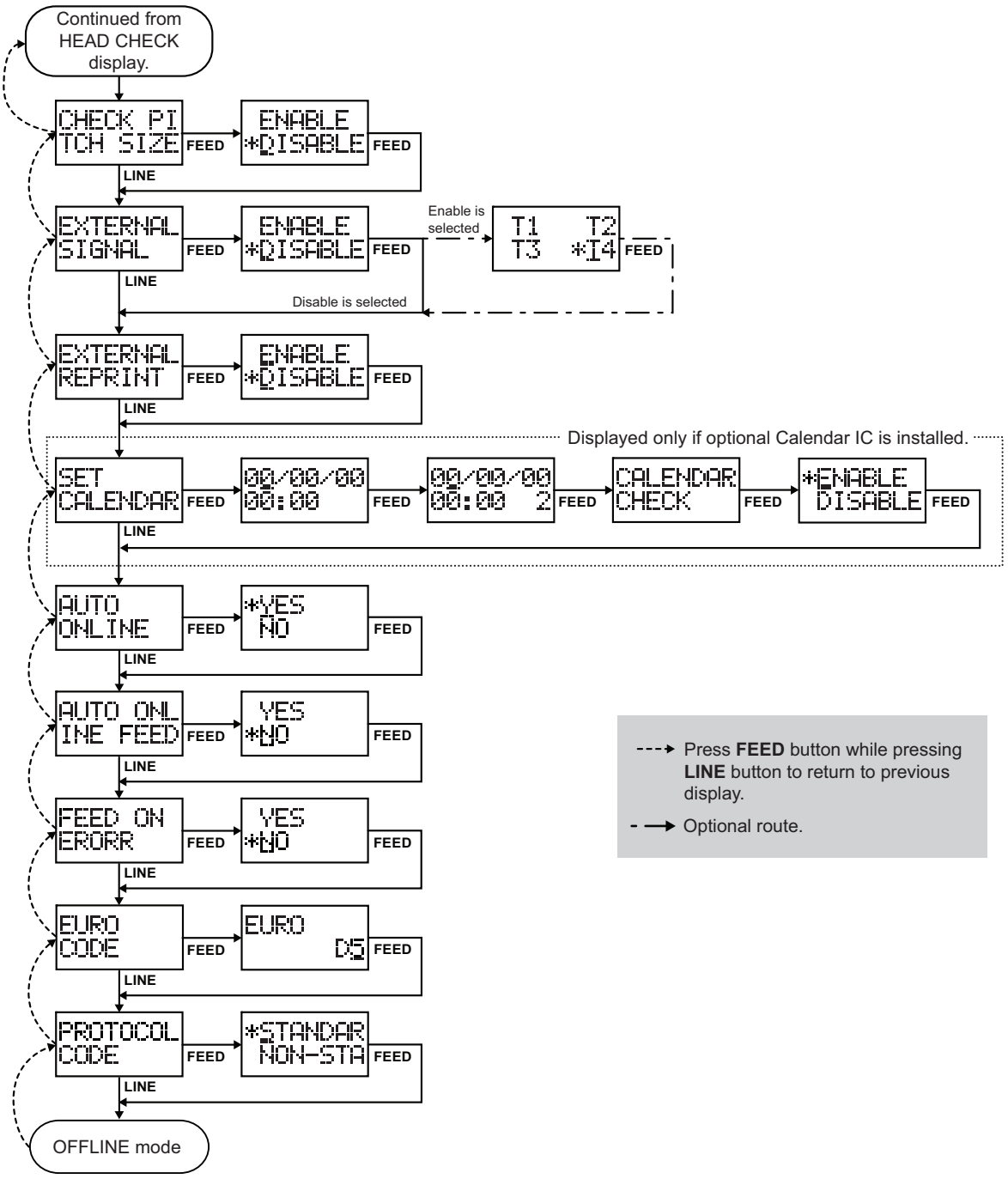


Chart continued on next page.

3.8 ADVANCE MODE (cont'd)



1. When ADVANCE MODE is displayed, press the **FEED** button to enter to Advance mode for adjustment.

   Note:
   PASSWORD may prompt on the display if password input is enabled. Please refer to Sato certified servicing personnel for details in password inputting.

2. DARKNESS RANGE is first displayed. Press the **LINE** button repeatedly will switch to the next setting options as shown above. To return to the previous setting option, press **FEED** button while pressing **LINE** button.

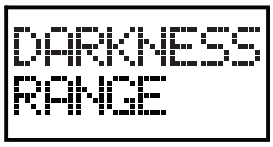
3. When the desired setting option is displayed, press **FEED** button to enter to the mode for adjustment.

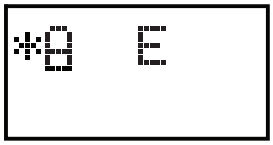
3.8 ADVANCE MODE (cont'd)

3.8.1 Selecting the Print Density

This first setting in ADVANCED MODE lets you set how dark the print quality is.

1. When the DARKNESS RANGE is displayed, press **FEED** button to enter to the setting mode.
2. To adjust the print density, use the **LINE** button to select an option. Available options are from 'A' to 'F', with 'F' being the darkest density. Only supported range is displayed. The default value is 'A'. Adjustment of this setting is usually unnecessary.
3. Press **FEED** button to confirm your selection and proceed to the next setting.

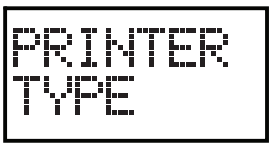


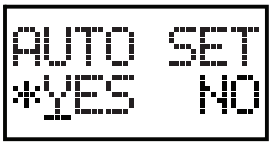


3.8.2 Setting the Automatic Detection of Optional Units

The next setting, PRINTER TYPE, determines whether the printer automatically detects the installation of optional peripherals such as a dispenser or cutter. If detected, an optional peripheral will be used without needing further user configuration.

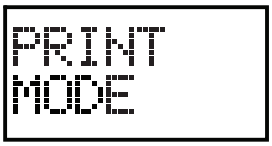
1. Press **FEED** button to enter to the AUTO SET mode.
2. Use the **LINE** button to select either YES or NO. The default option is YES (auto detect). Choose NO if optional devices are installed, but you have wish to override the automatic settings.
3. Press **FEED** button to confirm your selection and proceed to the next setting.

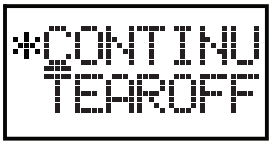




3.8.3 Choosing Print mode Option

1. When the PRINT MODE is displayed, press **FEED** button to enter the print mode setting. With this setting, you can choose between CONTINU (Continuous paper feed) or TEAROFF motion mode. If a dispenser or cutter unit has been installed correctly, you will also see the DISPENS (Dispenser) and CUTTER settings.
2. Press the **LINE** button to select any one of the options. The default setting is CONTINU.
3. Press the **FEED** button to confirm your selection and proceed to the next setting.

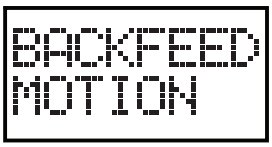




3.8.4 Backfeed Operation Settings

The printer can be set to apply or not apply a backfeed to the media before or after printing each media.

1. When BACKFEED MOTION is displayed, press **FEED** button to enter to the setting mode. BACKFEED MOTION selection only available when Cutter or Dispenser is selected as in PRINT MODE.
2. Press the **LINE** button to choose from AFTER, AFTER2, BEFORE or NONE. The default setting is AFTER. AFTER2 and NONE can only be selected when Cutter unit is installed.
3. Press the **FEED** button to confirm your selection and proceed to the next setting.

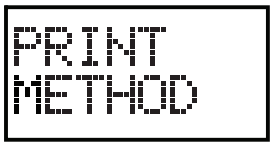


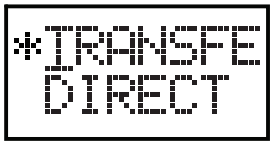
3.8 ADVANCE MODE (cont'd)

3.8.5 Setting the Print Method Mode

The printer can be switched to operate in Thermal Transfer or Direct Thermal mode with this setting.

1. When PRINT METHOD is displayed, press **FEED** button to enter to the setting mode.
2. Press the **LINE** button to select the TRANSFE (Thermal Transfer) or DIRECT (Direct Transfer) option.
   The default value is TRANSFE.
3. Press the **FEED** button to confirm your selection and proceed to the next setting.



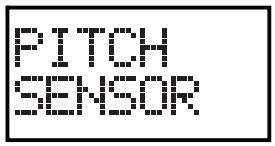


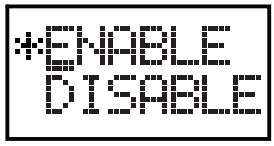
3.8.6 Configuring the Pitch Sensor

The printer can be switched to operate the Pitch Sensor in Enable or Disable mode. This option is not available when using dispenser or tear-off unit.

1. When PITCH SENSOR is displayed, press **FEED** button to enter to the setting mode.
2. Press the **LINE** button to select the ENABLE or DISABLE option.
   The default value is ENABLE.
3. Press the **FEED** button to confirm your selection and proceed to the next setting.

NOTE:
When changing from ENABLE to DISABLE, setting the PRINT MODE to CUTTER and BACKFEED MOTION is AFTER2, change backfeed motion to NONE.

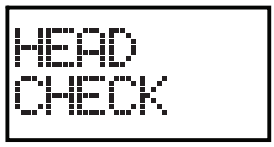


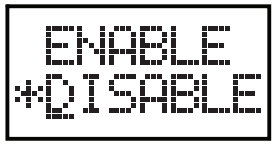


3.8.7 Setting the Head Check Mode

The printer can be set to perform a check of the print head when printing each label.

1. When HEAD CHECK is displayed, press **FEED** button to enter to the setting mode.
2. Press the **LINE** button to select the ENABLE or DISABLE option.
   The default value is DISABLE.
3. Press the **FEED** button to confirm your selection and proceed to the next setting.

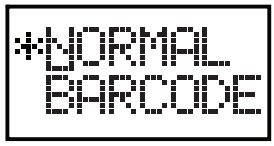




3.8.8 Choosing the Type of Head Check

If Head Check has been ENABLE, you can specify the print head checking to be performed unconditionally, or only when barcodes are being printed.

1. Press the **LINE** button to select the NORMAL or BARCODE option.
   The default option is NORMAL.
2. Press the **FEED** button to confirm your selection and proceed to the next setting.



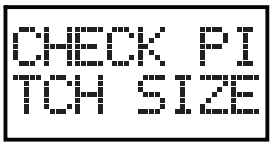
3.8 ADVANCE MODE (cont'd)

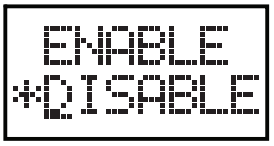
About the Head Check function

- The head check function detects the integrity of the heating elements in the thermal print head. However, malfunctions cannot be detected instantaneously—a few printed labels may start showing printing defects before the printer warns of a print head error.
- After detection of a print head error, use a scanner to check all affected labels.
- When a head check error occurs during normal printing (barcodes, text and graphics), press and hold down the **FEED** button for five seconds. At the next screen, select NORMAL and then press and hold down the **LINE** and **FEED** buttons for five seconds to cause printing to resume. If the head check error occurs again, set the type of head check to BARCODE and see if printing can be resumed normally.
- Although restricting the head check type to BARCODE allows you to continue printing, you should only do so in order to complete an urgent print job. Check the printed labels to make sure the output is usable in spite of the head error. As soon as possible, stop using the print head to prevent further damage. If necessary, get the print head replaced.

3.8.9 Setting the Pitch Size Check Mode

The printer can perform the pitch size check of the load media if the A1 command, which fixed the size of the media, is sent to the printer. If the printer detected the media size has fall out of the range of +/- 2.5mm from the set pitch size, MEDIA ERROR will be displayed.

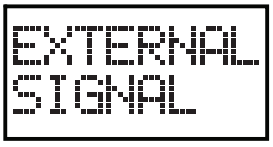


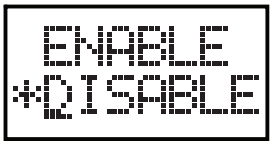


1. When CHECK PITCH SIZE is displayed, press **FEED** button to enter to the setting mode.
2. Press the **LINE** button to select the ENABLE or DISABLE option. The default value is DISABLE.
3. Press the **FEED** button to confirm your selection and proceed to the next setting.

3.8.10 Enabling/Disabling External Signal Output

Set this option to enable or disable the printer's external signal communication port. If the port is enabled, you can send and receive data using an appropriate device plugged into the EXT port.





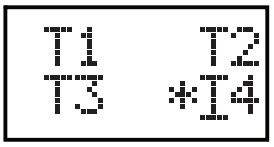
1. When EXTERNAL SIGNAL is displayed, press **FEED** button to enter to the setting mode.
2. Press the **LINE** button to select the ENABLE or DISABLE option. The default value is DISABLE.
3. Press the **FEED** button to confirm your selection and proceed to the next setting.

3.8 ADVANCE MODE (cont'd)

3.8.11 Selecting the Type of External Signal Output

If the External Signal Output option is set to ENABLE, you will be brought to this display to select the type of PREND output signal.

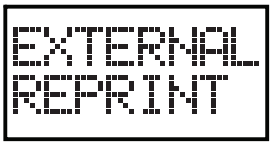
1. Press the **LINE** button to select T1, T2, T3 or T4. The default value is T4. For more details, refer to the Programming Guide from the Sato certified servicing personnel.
2. Press the **FEED** button to confirm your selection and proceed to the next setting.

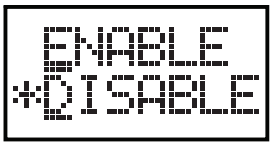


3.8.12 Selecting Reprint via External Signal Output

If the External Signal Output option is enabled, you will be brought to this screen to choose whether the Reprint function can be activated via the external signal port.

1. When EXTERNAL REPRINT is displayed, press **FEED** button to enter to the setting mode.
2. Press the **LINE** button to select ENABLE or DISABLE.
   The default setting is DISABLE.
3. Press the **FEED** button to confirm your selection and proceed to the next setting.

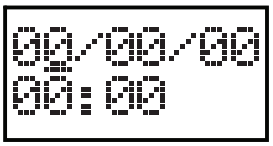


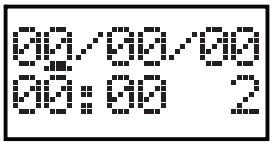


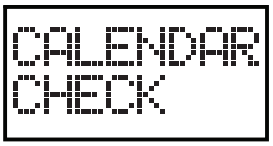
3.8.13 Setting the Calendar

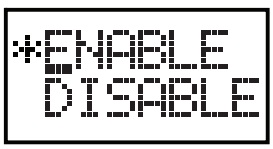
This option is displayed only when the Calendar IC is installed to the printer. This menu lets you set the desired date and time.

1. When SET CALENDAR is displayed, press **FEED** button to enter to the setting mode.
2. Set the Year/Month/Date on the first line of display and then set the time in 24 hour format on the second line of the display. The underline indicates the digit is active for adjustment.
3. Press **LINE** button to change the setting and then press **FEED** button to shift to the next digit for setting.
4. When the **FEED** button is pressed after setting the minute, the input display is shown again with a "2" digit on the bottom right. Input the same setting as the first time for a confirmation. The date and time will be save and CALENDAR CHECK option is displayed.
   Note:
   If different date or time is entered from step 2, the printer will reset and return to step 2 for re-entering.
5. Press the **FEED** button to enter the setting for CALENDAR CHECK. This menu allows you to ENABLE or DISABLE the Calendar Check function.
6. Choose the appropriate option with **LINE** button and press **FEED** button to leave the Calendar settings and proceed to the next setting option.







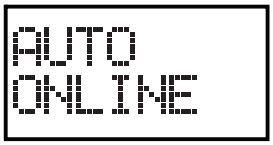


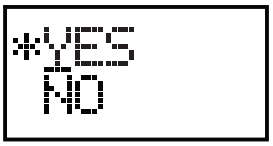
3.8 ADVANCE MODE (cont'd)

3.8.14 Using the Auto Online Feature

The printer can be set to go into ONLINE mode automatically upon being turned on. Otherwise, the printer starts in the OFFLINE state.

1. When AUTO ONLINE is displayed, press **FEED** button to enter to the setting mode.
2. Press the **LINE** button to select YES or NO.
   YES: Online at the time of printer power on
   NO: Offline at the time of printer power on
   The default setting is YES.
3. Press the **FEED** button to confirm your selection and proceed to the next setting.

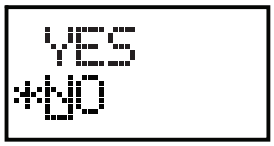




3.8.15 Enabling Auto Feed

The printer can be set to feed one label upon being turned on.

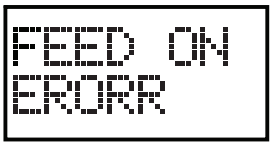
1. When AUTO ONLINE FEED is displayed, press **FEED** button to enter to the setting mode.
2. Press the **LINE** button to select YES or NO.
   YES: Paper feed in online state when turning on the printer
   NO: No paper feed in online state when turning on the printer
   The default setting is NO.
3. Press the **FEED** button to confirm your selection and proceed to the next setting.

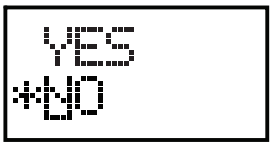


3.8.16 Enabling Auto Feed On Error

The printer can be set to feed one label upon going into ONLINE state after an error has been corrected.

1. When FEED ON ERROR is displayed, press **FEED** button to enter to the setting mode.
2. Press the **LINE** button to select YES or NO.
   YES: Paper feed when changing to online state
   NO: No paper feed when changing to online state
   The default setting is NO.
3. Press the **FEED** button to confirm your selection and proceed to the next setting.





3.8.17 Setting the Symbol for Euro currency

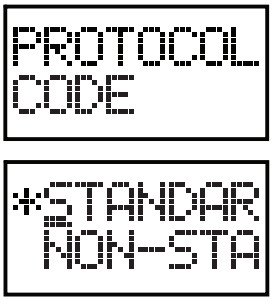
This menu lets you select the symbol for representing the Euro mark.

1. When EURO CODE is displayed, press **FEED** button to enter to the setting mode.
2. Press the **LINE** button to choose another value if desired.
   The default setting is D5.
3. Press the **FEED** button to confirm the setting and proceed to the next setting.

3.8 ADVANCE MODE (cont'd)

3.8.18 Specifying the Protocol Code Format

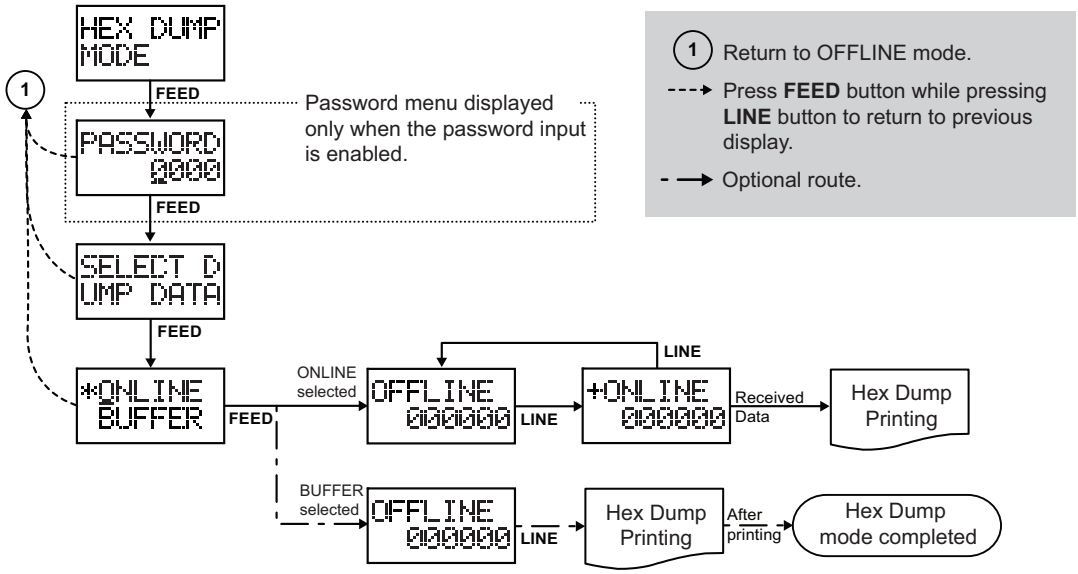
The ESC sequence in SBPL commands can be defined as standard (using non-printable code 1BH) or non-standard (some other user code).



1. When PROTOCOL CODE is displayed, press **FEED** button to enter to the setting mode.
2. Press the **LINE** button to select the STANDAR (Standard) or NON-STA (Non-standard) option.
   The default setting is STANDAR.
3. Press the **FEED** button to confirm your selection and return to OFFLINE mode.

3.9 HEX DUMP MODE

HEX Dump Mode allows you to print the contents of the receive buffer in a hexadecimal format to allow the data stream to be examined for errors and troubleshooting.



When HEX DUMP MODE is displayed, press the **FEED** button to enter to HEX Dump mode.

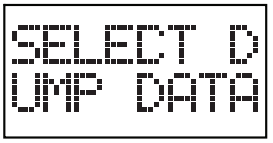
Note:
PASSWORD may prompt on the display if password input is enabled. Please refer to Sato certified servicing personnel for details in password inputting.

3.9 HEX DUMP MODE (cont'd)

3.9.1 Selecting Data To Dump

Here you can choose to dump either incoming data (ONLINE) or print data already stored in the buffer (BUFFER).

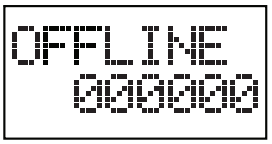
1. When SELECT DUMP DATA is displayed, press **FEED** button to enter to the setting mode.
2. Press the **LINE** button to choose ONLINE or BUFFER. The default setting is ONLINE.
3. Press the **FEED** button to confirm your selection and proceed to OFFLINE mode for getting ready to Dump Print.



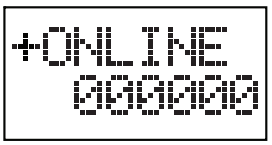
Note:
When BUFFER is selected, the printer will not proceed to the next screen if there is no data received.

3.9.2 Controlling the Hex Dump Mode

The printer will enter OFFLINE mode after Dump Data was set.



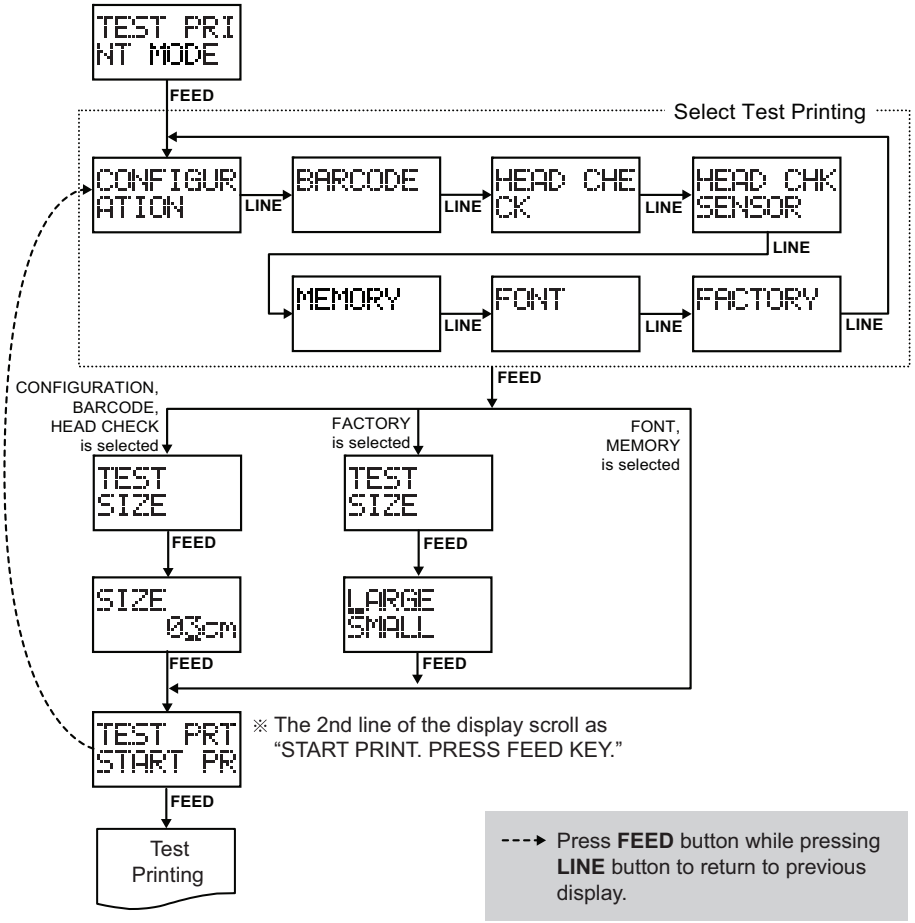
When ONLINE was set for Dump data, press **LINE** button to enter to +ONLINE mode and proceed the Dump print which received data from the host computer. During the Dump print, the number of labels printed will be shown. During printing, press **LINE** button to pause the print. Press again to resume printing. When printing is done, press the **LINE** button to take the printer OFFLINE.



When BUFFER was set for Dump data, press **LINE** button to start the Dump print of the buffered data. The printer goes ONLINE automatically after the printing.

3.10 TEST PRINT MODE

The Test Print Mode offers seven different printer status labels for troubleshooting.



1. Make sure the POWER of the printer is turned off (O).
2. While pressing the **FEED** button, switch the POWER to On (-).
   The display will show TEST PRINT MODE.
3. Press the **FEED** button to enter to the Test Print selection mode.

3.10 TEST PRINT MODE（cont'd)

3.10.1 Choosing the Test Print Contents

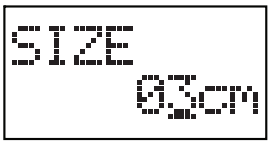
The seven selection in this mode are as follows:

Test Print Selection	Description of print contents
CONFIGURATION	The configuration settings of the printer will be printed.
BARCODE	The barcodes installed in this printer will be printed.
HEAD CHECK	The head check pattern of the selected media size area will be printed.
HEAD CHK SENSOR	The head check pattern and the sensor rating will be printed.
MEMORY	The contents of the memory in this printer will be printed.
FONT	The contents of the fonts installed in this printer will be printed.
FACTORY	The factory test print will be performed.

1. Press the **LINE** button to choose any option to set the test print contents.
2. Press the **FEED** button to confirm your selection and proceed to the next setting.
   If Configuration, Barcode, Head Check, Head Chk Sensor or Factory is selected, the printer will enter to the TEST SIZE setting mode.
   If Font or Memory is selected, the printer will enter to the Test Print Start mode.

3.10.2 Setting Test Print Size for Configuration, Barcode, Head Check and Head Chk Sensor

If you chose test prints of Configuration, Barcode, Head Check or Head Chk Sensor in the previous menu, this screen lets you choose the width of the test print from "03" to "08" cm, in increments of 1 cm.



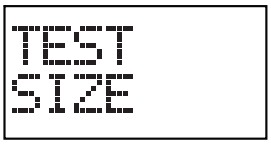
1. When TEST SIZE is displayed, press **FEED** button to enter to the setting mode.
2. Press the **LINE** button to choose the print size.
3. Press the **FEED** button to confirm the setting and proceed to the next screen.

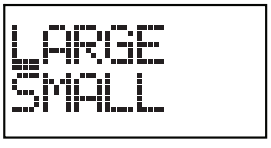
3.10.3 Setting the Size of the Factory Test Print

For Factory test prints, this screen appears instead of the previous screen for setting print size. In this screen, you can choose only to print the test results in LARGE or SMALL print widths. The LARGE setting results in a 10 cm print width. The SMALL setting results in a 4 cm print width.

Caution

If you are using narrow labels, do NOT set this option to LARGE; otherwise, this may damage the print head.



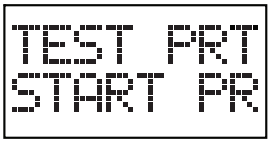


1. When TEST SIZE is displayed, press **FEED** button to enter to the setting mode.
2. Press the **LINE** button to choose LARGE or SMALL.
3. Press the **FEED** button to confirm the setting and proceed to the next screen.

3.10 TEST PRINT MODE (cont'd)

3.11.4 Starting the Test Print

TEST PRT is displayed on the first line. START PRINT. PRESS FEED KEY. will scroll across the display screen. When you are ready to print out the test data, press the **FEED** button. The test print will start, and it will cycle continuously.

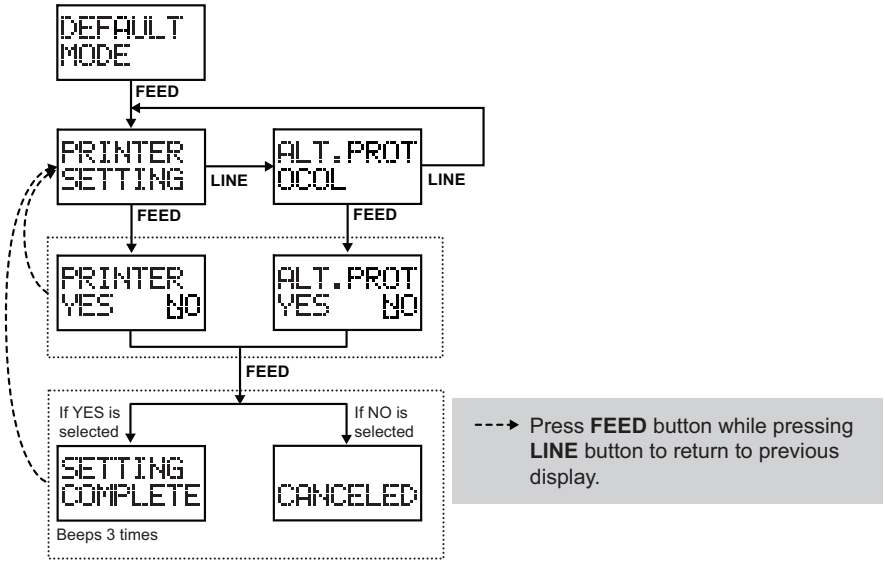


During printing, the **FEED** button can be used to suspend and resume the test printing.

To exit the Test Print mode, turn off the printer.

3.11 DEFAULT SETTING MODE

The printer can be reset to the default setting as in the factory preset.



※ To exit the Default setting mode, switch the POWER to off and then on again.

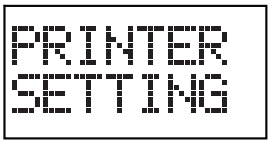
1. Make sure the POWER of the printer is turned off (O).
2. While pressing the **LINE** button and the **FEED** button simultaneously, switch the **POWER** to On (-).
3. The display will show DEFAULT MODE.
4. Press the **FEED** button to enter to the Default selection mode.

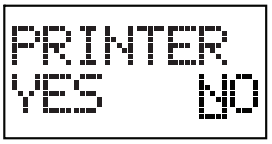
3.11 DEFAULT SETTING MODE (cont'd)

3.11.1 Reset Printer Setting to Default Setting

Occasionally it is desirable to reset all printer configuration settings to their original default conditions. This allows the operator to start reconfiguration of the printer starting from a know set of conditions.

1. After pressing **FEED** button in DEFAULT MODE, press **LINE** button to select PRINTER SETTING.
2. Press **FEED** button to enter selection.
   PRINTER YES NO is displayed.
3. Press **LINE** button to select YES or NO.
4. Press **FEED** button to enter the selection.
5. If YES is selected, the printer will reset to the original default conditions. SETTING COMPLETE is displayed with 3 beep sound.
   If NO is selected, the printer will stop the process and CANCELED is displayed.



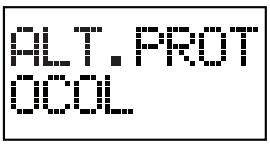


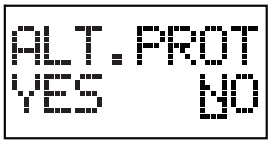
To exit the Default Setting Mode, switch the **POWER** to Off and then On again.

3.11.2 Reset the Alternate Protocol codes to the Default Values

The standard protocol codes used by the printer can be modified to accommodate the requirements of different host systems. However, if the printer is to be used with a system that does not use the custom protocol codes, they can be cleared and the default protocol codes reactivated.

1. After pressing **FEED** button in DEFAULT MODE, press **LINE** button to select ALT.PROTOCOL.
2. Press **FEED** button to enter selection.
   ALT.PROT YES NO is displayed.
3. Press **LINE** button to select YES or NO.
4. Press **FEED** button to enter the selection.
5. If YES is selected, the printer will replace to the Alternate protocol codes with the default values. SETTING COMPLETE is displayed with 3 beep sound.
   If NO is selected, the printer will stop the process and CANCELED is displayed.





To exit the Default Setting Mode, switch the **POWER** to Off and then On again.

3.11 DEFAULT SETTING MODE (cont'd)

3.11.3 Table of Default Settings

Setting Item				Default Value DR308e
Paper Selection Mode				
	Paper Type			Center hall Tag
Use Mode				
	Print Speed			4 inch
	Print Darkness			3
	Print Position Offset			V:+000 H:+000
	Zero Slash			Enable
	Kanji Code			JIS code
	Proportional Pitch			Enable
Interface Mode				
	RS-232C Priority Setting			I/F card
		Baud Rate		19200
		Parity Bit		NONE
		Stop Data		1
		Data length		8
	LAN Priority Setting			I/F card
		IP address		0.0.0.0
		Subnet Mask		0.0.0.0
		Gateway Address		0.0.0.0
	IEEE1284/Centronics ACK Width			0.5µs
	Communication Protocol			STATUS4
	Status Return Timing			Periodical reply
	Receive Buffer			1 item buffer
	Data Port			Auto recognition
	CR/LF Code Deletion			No deletion
	CAN/DLE Code Deletion			No deletion
Advanced Mode				
	Darkness Range			A
	Operation Mode Auto Setting			Enable
	Backfeed Motion			Cut during printing (AFTER2)
	Print Mode			Thermal Transfer
	Sensor			Enable
	External Signal Setting/Out Put Type			Disable/Type 4
	Head Check			Disable
	Paper Size check			Disable
	Calendar check			Enable
	Auto Online			Enable
	Auto Online Feed			Disable
	Feed On Error			Disable
	Euro Code			D5h
	Protocol Code Setting			Standard code
	Non-standard Code Setting	STX=7Bh	ETX=7Dh	ESC=5Eh
		ENQ=40h	CAN=21h	NULL=7Eh
		OFFLINE=5Dh		
Service Mode				
	Pitch Sensor Slice Label			Auto setting
	Pitch Offset			I-Mark Tag: -12 Label Gap:-12 Label I-Mark:-36 Others:+00
	Cut Offset			I-Mark Tag: -12 Label I-Mark:-24 Others:+00
	Backfeed Offset			+00
	Font Switching			ON
	External Signal 9PIN Setting			MODE1
	Password Setting			Disable(0003)
	Reprint			No reprint
	Command Priority			Enable
Factory Mode				
	Life Counter			0
	Head Counter			0
	Cutter Counter			0
	Dispense Counter			0

4

CLEANING AND MAINTENANCE

This section provides information on user maintenance for the DR308e printer.

The following information is covered here:

- 4.1 Cleaning The Print Head, Platen and Rollers
- 4.2 How To Clean The Printer (Cleaning Kit)
- 4.3 How To Clean The Printer (Cleaning Sheet)
- 4.4 Adjusting Print Quality

⚠ Caution

- When cleaning the print head, bear in mind that the print head and its surrounding maybe hot. Wait till the printer cool down before proceed cleaning.
- Be sure to turn off the power before cleaning.
- The suggested cleaning schedule here are just guidelines. If necessary, clean as appropriate depending on the degree of contamination.
- Use a cleaning pen, cotton swab or cotton cloth to clean the printer units.
- Use only soft, lint-free materials for cleaning. Avoid using hard objects for the cleaning process, as they will damage the components.

4.1 CLEANING THE PRINT HEAD, PLATEN AND ROLLERS

The print head not only generates printouts of barcodes, but also graphics and text. To produce optimal printing, it must be kept clean in spite of the dirt and adhesive that constantly accumulates on its print surface. Furthermore, dirt can accumulated along the label path, affecting parts like sensors and guides, and reducing their performance.

Therefore, it is important to clean these important components periodically. The printer cleaning kit and cleaning sheets can be purchase from your authorized SATO dealer.

When to clean with a cleaning kit

♦ For the printer head, platen roller, paper sensor, and label guide: clean after using up every other roll of paper, or each time after printing 150 m.
♦ For other parts: clean after finishing every six rolls of paper, or every time after printing 900 m.

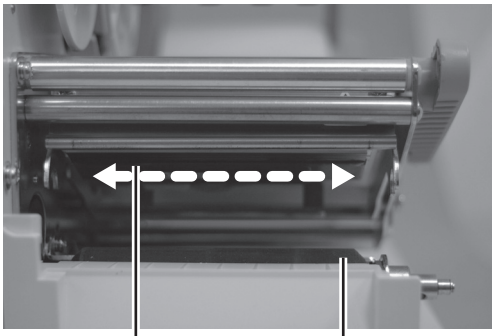
When to clean with the cleaning sheet

♦ For printer head, platen roller: clean after using every six rolls of paper, or every time after printing 900 m.

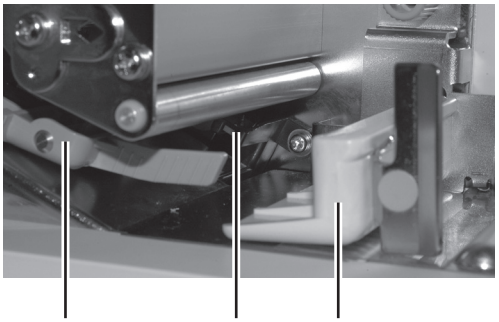
4.2 HOW TO CLEAN THE PRINTER (CLEANING KIT)

If you are using a carbon ribbon, be sure to remove it before cleaning. Follow the instructions supplied with the cleaning kit. Use the items to clean the following parts.

1. Make sure the **POWER** of the printer is switch to Off and remove the power cable.
2. Lift up the main cover.
3. Release the purple head lock lever by turning counter clockwise.
   The print head is now accessible.
4. Wipe off the dirt on the print head, sensor and label guide shaft using a cleaning pen or a cotton swab dabbed with the cleaning liquid. (See figure on the right) Label guide shaft unit can be removed by unfastening the purple thumb screw on the side.



Clean the entire width of Print head and Platen roller

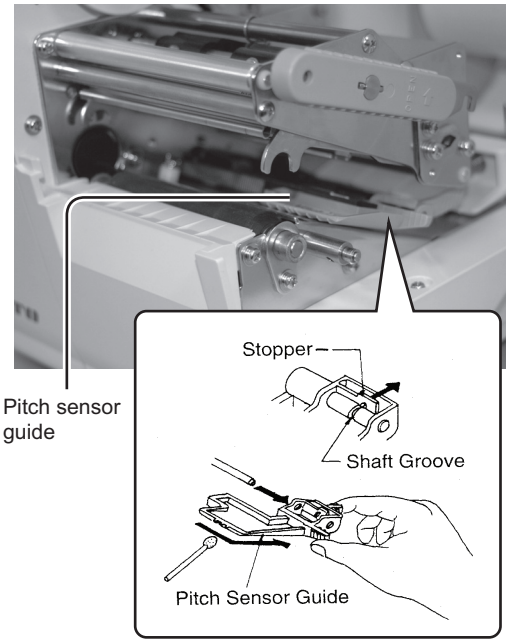


Pitch sensor guide Sensor Label guide shaft

4.2 HOW TO CLEAN THE PRINTER (CLEANING KIT) (cont'd)

5. Pull out the pitch sensor guide unit and clean its bottom portion. If label stuck, remove pitch sensor guide unit from the shaft groove by pulling the stopper in the arrow direction, pull it out and clean its bottom area.

6. Moisten the cotton cloth with cleaning liquid, and use the cloth to wipe any dirt or accumulated adhesive off the platen roller.



4.3 HOW TO CLEAN THE PRINTER (CLEANING SHEET)

The cleaning sheet is used for clearing stubborn debris the print head and platen roller.

1. Make sure the **POWER** of the printer is switch to Off and remove the power cable.

2. Lift up the main cover.

3. Release the purple head lock lever by turning counter clockwise. The print head is now accessible.

4. Remove the media and the ribbon.

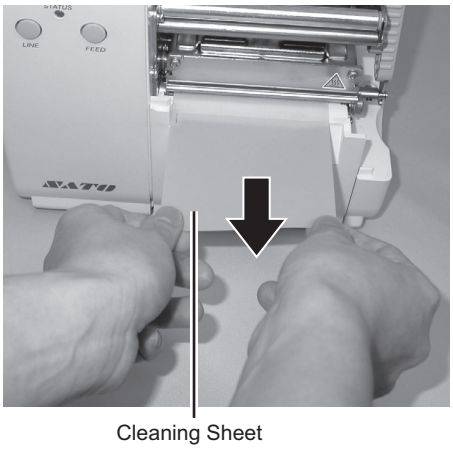
5. Put the head cleaning sheet between the print head and the platen roller. The coarse side of the cleaning sheet should face the surface of the print head elements.

6. Now remount the print head by turning the Head lock lever clockwise until it latch on. The print head should lock into place firmly.

7. Using both hands, pull the cleaning sheet outwards, toward your body. This will remove any dirt stuck to the print head.

8. When the cleaning sheet has been removed, perform steps 2 to 6 to repeat the cleaning procedure one or two more times.

9. When no more additional dirt appears on the cleaning sheet after it has been pulled out, you can stop cleaning with the sheet.



10. Unlatch the print head and use the cleaning pen from the cleaning kit to gently remove any remaining dirt from the print head.

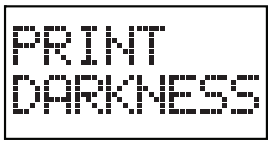
4.4 ADJUSTING PRINT QUALITY

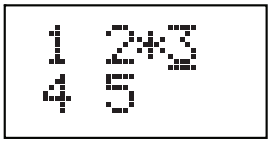
Print quality can be optimized with regular cleaning and maintenance of the print head and components along the label path. Additionally, you can fine-tune print quality by adjusting print darkness and print speed settings.

4.4.1 Adjusting Print Darkness

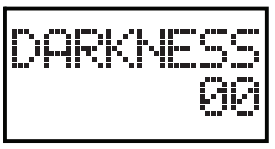
This adjustment allows the user to control (within a specified range) the amount of power applied to the individual print head heat elements. It is important to find a proper print darkness level based on your particular label and ribbon combination. The printed images should not be too light nor should the ink from the ribbon "bleed." The edges of each image should be crisp and well defined.

LCD Panel — The Print Darkness can be set using the front panel LCD panel or by sending the Print Darkness software command from a computer. There are five settings, from 1 (lightest) to 5 (darkest). The default setting is 3.
Once the range has been selected, the Darkness Potentiometer on the side of the printer can be used to make finer adjustments. For instructions on setting Print Darkness, refer to **Section 3.6.3 Setting Print Darkness** on **page 3-9**.

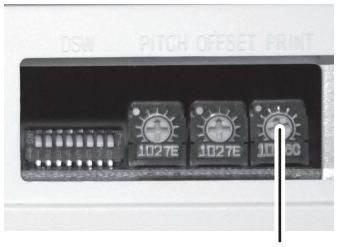




Darkness Potentiometer — The fine adjustment for Print Darkness is the Darkness Potentiometer on the side of the printer. It provides a continuous range of adjustment, allowing you to make precise changes. Use a small cross-point screwdriver, turning clockwise for darker print and counterclockwise for lighter print. See **Section 3.6.1 Offset Volume mode** on **page 3-8** for instructions on performing potentiometer adjustments.



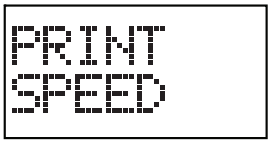
Note
The DARKNESS potentiometer adjustment will affect the darkness in all of the command code speed ranges, i.e., if the DARKNESS potentiometer is adjusted for lighter print, the darkness will be lighter in all speed ranges selected by the command code.



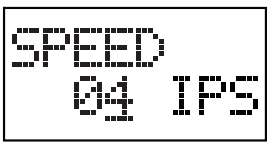
PRINT potentiometer

4.4.2 Adjusting Print Speed

Besides varying the rate at which labels are printed, this adjustment can be used to regulate any changes in print quality.



LCD Panel — Print Speed can be set using the front panel LCD panel or by sending the Print Speed software command from a computer. There are 4 settings, from 02 ips (slowest) to 5 ips (faster). The default setting is 4 ips.



For instructions on setting Print Speed, refer to **Section 3.6.2 Setting Print Speed** on **page 3-9**.

5

TROUBLESHOOTING

If you are unable to produce printouts on the DR308e printer, use this section to make sure the basics have been checked, before deciding you are unable to proceed any further.
The section is divided into four parts:

- 5.1 Error signal troubleshooting
- 5.2 Troubleshooting table
- 5.3 Interface troubleshooting
- 5.4 Test print troubleshooting

5.1 ERROR SIGNAL TROUBLESHOOTING

Error No.	ERROR DISPLAY	BUZZER	ERROR CONDITION	CORRECTIVE ACTION
01	MACHINE ERROR	1 Long Beep	1) PCB error	1) Consult your SATO dealer and replace the PCB
02	FLASHROM ERROR	1 Long Beep	1) EEPROM is not install properly 2) EEPROM write count over	1) Install EERPROM properly 2) Replace EEPROM
03	PARITY ERROR	3 short Beeps	1) Communication condition is not matched 2) The cable connection is not correct	1) Correct the Parity Settings 2) Check the cable connection
04	OVERRUN ERROR	3 short Beeps	1) Communication condition is not matched 2) The cable connection is not correct	1) Check and correct the flow control settings and retry 2) Check the cable connection
05	FRAMING ERROR	3 short Beeps	1) Communication condition is not matched 2) The cable connection is not correct	1) Check and correct the data bit setting and retry 2) Check the cable connection
06	BUFFER OVER	3 short Beeps	1) Receive Buffer Overflow 2) Wrong protocol selected	1) Restart the printer and retry 2) Modify host software 3) Select correct communication protocol settings
07	HEAD OPEN	3 short Beeps	1) Head Not Latched 2) Open/close micro-switch of head defect	1) Latch Print Head securely and make sure the Top Cover is closed properly 2) Adjust the micro-switch
08	PAPER END	3 short Beeps	1) Out of Paper 2) Paper is not properly set	1) Replenish media supply 2) Route paper through sensor correctly
09	RIBBON END	3 short Beeps	1) No ribbon 2) Ribbon torn 3) Slit sensor level is not correct	1) Check ribbon loading and/or load a new ribbon roll 2) Clean or adjust the ribbon feed root 3) Adjust the slit sensor level
10	SENSOR ERROR	3 short Beeps	1) Pitch sensor error 2) Sensor type (Transparent/ Reflection) is not correct 3) Media meander	1) Adjust pitch sensor level 2) Use the correct sensor for the media 3) Clean and adjust the media feed root
11	HEAD ERROR	1 long Beep	1) Head damage	1) Replace Print Head or consult your SATO dealer

Error No.	ERROR DISPLAY	BUZZER	ERROR CONDITION	CORRECTIVE ACTION
12	MEMORY R/W ERROR	1 long Beep	1) Memory writing error	1) Confirm if Flash ROM memory is installed 2) Replace the memory board.
13	MEMORY FULL	1 long Beep	1) Memory over capacity	1) Delete unnecessary data
14	CUTTER ERROR	3 short Beeps	1) Media was jammed at the cutter part 2) Cutter part's slit doesn't work properly	1) Clean up the cutter part 2) Adjust the cutter part's belt
16	DOWNLOAD DATA ERROR	3 short Beeps	1) Communication condition is not correct 2) Cable was not connected properly	1) Adjust communication condition 2) Connect the cable correctly
17	CALENDAR ERROR	3 short Beeps	1) Calendar IC default is not set 2) Calendar IC error	1) Set the calendar 2) Replace the calendar IC
28	MEDIA ERROR	3 short Beeps	1) Specified media size is not correct	1) Set the specified size media

5.2 TROUBLESHOOTING TABLE

TROUBLESHOOTING TABLE	
IMAGE VOIDS	
Dirty print head.	Clean print head.
Damaged print head.	Replace print head.
Damaged electronics.	Replace circuit board.
Damaged or worn roller.	Replace rollers.
Poor label quality.	Use higher quality media.
Ribbon stock and media are mismatched.	Consult with media supplier.
RIBBON WRINKLING	
Poor head alignment.	Adjust head balance and alignment.
Excessive temperature setting	Adjust temperature.
Poor ribbon tension.	Adjust tension as required.
Worn roller.	Replace as necessary.
Foreign material on print head and/or rollers.	Clean as required.
Foreign material on labels.	Use higher quality media.
Damaged print head.	Replace print head as required.
LIGHT PRINT IMAGES	
Low print head energy/darkness.	Adjust darkness level.
Low print head pressure.	Adjust head pressure and/or balance.
Foreign material on print head.	Clean print head and rollers.
Improper head alignment.	Align print head as required.
Excessive print speed.	Reduce print speed setting.
UNEVEN PRINT DARKNESS	
Unbalanced print head.	Adjust head balance.
Worn rollers.	Replace rollers as required.
Dirty print head.	Clean print head.
MEANDERING MEDIA	
Incorrectly loaded media.	Ensure correct loading.
Improperly adjusted media guides.	Adjust as required.
Unbalanced print head.	Adjust as required.
Worn rollers.	Replace as required.
NO LABEL MOVEMENT	
Loose or broken timing belt.	Replace or adjust as required.
Incorrect label sensor selected.	Check printer configuration for proper sensor selection.
No voltage output.	Replace fuse. Test power supply and replace as required.
Drive motor not operating.	Ensure wiring harness connection. Replace as necessary.
LCD FIELD ILLUMINATED BUT WITHOUT WORDS OR NO DISPLAY AT ALL	
Power supply issues.	Ensure cable properly connected. Check/replace power supply.
Incorrectly positioned display potentiometer.	Adjust as required.

5.3 INTERFACE TROUBLESHOOTING

This chapter provides a checklist for the various interface types. Locate the checklist relative to the interface used and perform each of the troubleshooting tasks until the problem has been isolated.

PARALLEL INTERFACE

CHK	TROUBLESHOOTING STEP
	Ensure the interface module is correctly installed. Run self-test to verify.
	Ensure the printer cable is connected to the appropriate LPT port on the host computer. If using a Windows printer driver, ensure the correct port is selected.
	Ensure a IEEE1284 printer cable is being used.
	Ensure the host's peripheral settings are set to ECP for faster throughput. Refer to the computer manufacturer's documentation for details.
	Ensure the printer is receiving information from the computer using the Receive Buffer Hex Dump mode. Refer to that procedure within this manual for instructions. The command stream should be continuous and possess 0Dhex and/or 0Ahex (carriage return and line feed) characters throughout. However, there should not be either located between the start (<ESC>A and the stop (<ESC>Z) commands.
	Try another port to isolate the problem.
	Replace the main circuit board if determined to be the problem.

RS232 SERIAL INTERFACE

CHK	TROUBLESHOOTING STEP
	Ensure the correct interface module is correctly installed. Run self-test to verify.
	Ensure the serial cable (Null Modem) meets specifications and is correctly connected at each end.
	Ensure the serial cable is not defective.
	Ensure the communication parameters for the baud rate, parity, data bits and stop bits are consistent with those being sent from the host computer.
	Ensure the printer is receiving information from the computer using the Receive Buffer Hex Dump mode. Refer to that procedure within this manual for instructions. The command stream should be continuous and possess 0Dhex and/or 0Ahex (carriage return and line feed) characters throughout. However, there should not be either located between the start (<ESC>A and the stop (<ESC>Z) commands.
	Try another port to isolate the problem.
	Replace the main circuit board if determined to be the problem.

UNIVERSAL SERIAL BUS (USB) INTERFACE

If nothing prints during a test print, verify the device drivers have been successively installed by performing the following:

CHK	TROUBLESHOOTING STEP
	Click on Start, Settings, and then Control Panel.
	Click on System within the new window.
	Click on the Device Manager tab.
	Ensure that the View Device By Type is checked.
	Scroll to SATO-USB Device and ensure that errors do not exist. Reinstall as required.
	Reboot the PC and the printer.

LAN ETHERNET INTERFACE	
CHK	**TROUBLESHOOTING STEP**
	Ensure the interface has been correctly configured. Wait two minutes and run self-test to verify. If a test label does not print, there may be a hardware problem.
	Ensure the cable and its ports are not defective.
	Ensure that a faulty print server or other protocol related scenarios are not creating a queue setup issue. Systematically perform checks and tests to isolate the cause.
	If using TCP/IP, ensure a valid IP address is specified and that all parameters are correct (subnet mask, gateway, etc.). Attempt to PING the IP address assigned to the network interface.
	If using a repeater or hub, ensure the SQE is turned off. Also ensure the repeater port is not defective by trying the print server on another port.
	Install the IPX/SPX protocol on a workstation to determine if the network device can be discovered via the MAC address. If able, configure the appropriate protocols and retest connectivity.
	Use a crossover cable to isolate the printer from the network by connecting from the interface and workstation. Verify that the parameters match on each. Test connectivity.

CENTRONICS INTERFACE	
CHK	**TROUBLESHOOTING STEP**
	Ensure the interface module is correctly installed. Run self-test to verify.
	Ensure the printer cable is connected to the appropriate LPT port on the host computer. If using a Windows printer driver, ensure the correct port is selected.
	Ensure the host's peripheral settings are set for Centronics output for faster throughput. Refer to the computer manufacturer's documentation for details.
	Ensure the printer is receiving information from the computer using the Receive Buffer Hex Dump mode. Refer to that procedure within this manual for instructions. The command stream should be continuous and possess 0D Hex and/or 0A Hex (carriage return and line feed) characters throughout. However, there should not be either located between the start (<ESC>A and the stop (<ESC>Z) commands.
	Replace the main circuit board with another to isolate the problem.

5.4 TEST PRINT TROUBLESHOOTING

Chapter provides instruction on special printing to identify and resolve specific print problems.

5.4.1 Hex Dump

Allows the operator to determine if there were problems in the downloading of data. The contents of the print buffer can be examined using the Hex Dump Mode. In the left column, each line of data received is numbered. The center column provides the data in hexadecimal format. And in the right column, same data is provided in the ASC ll format. Refer to **Section 3.9 HEX Dump Mode** on **page 3-23** for more details to perform this activity.

5.4.2 Test label printing

Allows the operator to identify specific problems regarding mechanical performance and setup. The test label is designed to assist in the identification of print problems. Refer to **Section 3.10 Test Print Mode** on **page 3-24** for more details to perform this activity.

6

GENERAL SPECIFICATIONS

6.1 PRINTER BASIC SPECIFICATIONS

PHYSICAL CHARACTERISTICS	
Width	211 mm (8.3 in.)
Height	240 mm (9.4 in.)
Depth	350mm (13.8 in.)
Weight	8 Kg (17.6 lbs.)

ENVIRONMENTAL (EXCLUDING MEDIA)	
Operating Temperature	5° to 40°C (41 to 104 F)
Storage Temperature	-5° to 60°C (23 to 140 F)
Operating Humidity	30 to 80% RH, Non-condensing
Storage Humidity	30 to 90% RH, Non-condensing

POWER SUPPLY	
Input Voltage	Input power voltage: 100-240 V AC, +/-10%, 50/60 Hz (Full range) Rated Input voltage: 100-240 V (Full range)
Power Consumption	At peak times: 104 Watts In standby: 24 Watts (average)

PROCESSING	
CPU	32 Bit RISC
Flash ROM	8 Megabytes

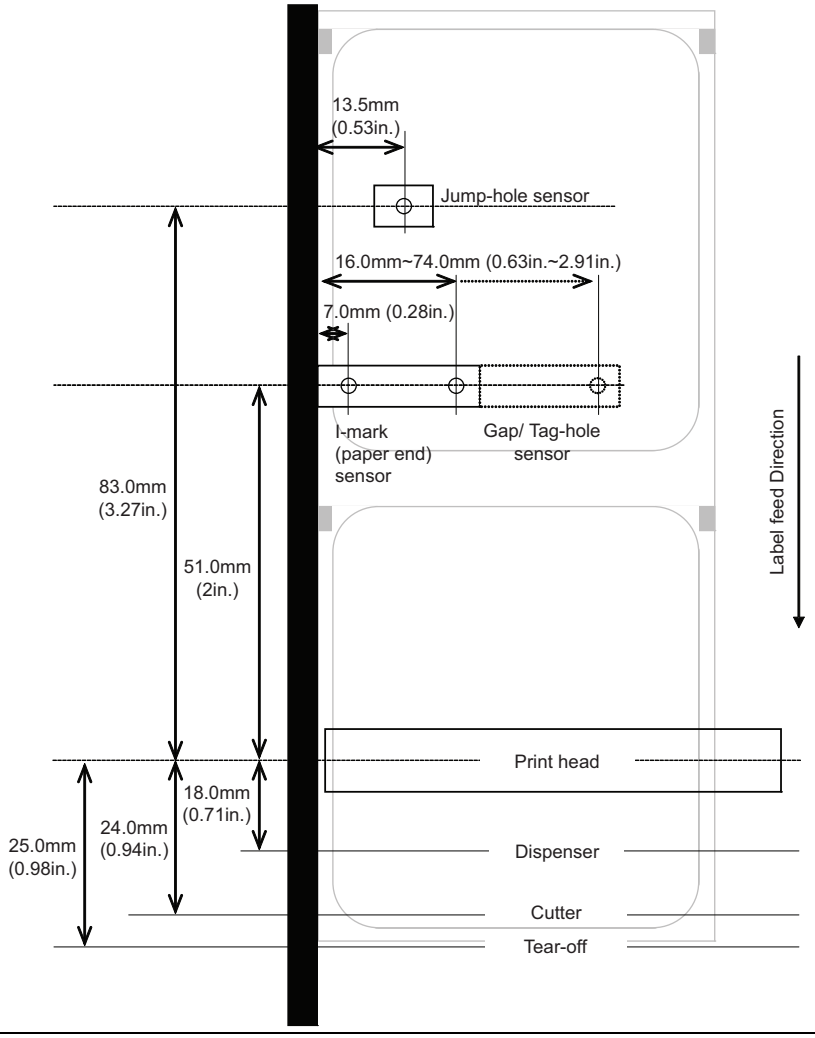
PRINTER LANGUAGE	
Standard	SATO Barcode Printer Language (SBPL)

INTERFACES	
Interface Board	Communication Interface (1 slot) External connector (for optional devices) RS-232C D-sub 9-pin type (for simple input device (keypad) only)
Optional communication interface boards	1) RS-232C (High-Speed) I/F board 2) IEEE1284 (ECP/Compatible) I/F board 3) LAN I/F board or 4) USB I/F board (Full-Speed)

PRINT	
Method	Thermal Transfer and Direct Thermal
Maximum Speed (selectable)	2 to 5 Inches Per Second *Print speed varies depending on the of media used.
Resolution	8 dots/mm (203 Dots Per Inch)
Maximum Print Width	80 mm (3.1 in.)
Maximum Print Length	181 mm (7.1 in.)

SENSING	
Gap/Tag-hole (Transmissive)	Position & Sensitivity Adjustable
I-Mark (Reflective)	Sensitivity Adjustable
Jump-hole	Sensitivity Adjustable
Head Open	Fixed
Ribbon End	Fixed (always enabled)
Dispenser	Only available if installed

SENSORS POSITION



MEDIA (Be sure to use media manufactured or certified by SATO)			
Size	Standard	Tag	Width: 32 to 80 mm (1.3 to 3.1 in.) Pitch: 25 to 181 mm (1 to 7.1 in.)
		Label	Width: 29 to 77 mm (1.1 to 3 in.) Width including liner: 32 to 80 mm (1.3 to 3.1 in.) Pitch: 16 to 178 mm (0.6 to 7 in.) Pitch including liner: 19 to 181 mm (0.7 to 7.1 in.)
	Tear-off/ Dispenser	Label	Width: 29 to 77 mm (1.1 to 3 in.) Width including liner: 32 to 80 mm (1.3 to 3.1 in.) Pitch: 22 to 178 mm (0.9 to 7 in.) Pitch including liner: 25 to 181 mm (1 to 7.1 in.)
	Cutter	Tag	Width: 32 to 80 mm (1.3 to 3.1 in.) Pitch: 25 to 181 mm (1 to 7.1 in.)
		Label	Width: 29 to 77 mm (1.1 to 3 in.) Width including liner: 32 to 80 mm (1.3 to 3.1 in.) Pitch: 22 to 178 mm (0.9 to 7 in.) Pitch including liner: 25 to 181 mm (1 to 7.1 in.) * The size may be limited by use conditions.
Type	Direct Thermal/ Thermal Transfer Roll stock		
Roll Diameter	Maximum outer diameter: 250 mm (9.8 in.)		
Core Diameter	Inner core diameter: 38 mm(1.5 in.) and 100 mm (4 in.), depending on media type		
Thickness	Tag: 0.16 to 0.28 mm (0.006 to 0.011 in.) Label: 0.07 to 0.265 mm (0.003 to 0.01 in.) [Label using with dispenser: 0.135 - 0.265 mm (0.005 to 0.01 in.)]		
Wind Direction	Face In		

RIBBON (Be sure to use ribbon manufactured or certified by SATO)	
Width	Max. 84mm (3.3 in.)
Length	Max. 300 m (984.3 ft.) (Depending on ribbon type)
Wind Direction	Face In
Winding Method	Paper core

CHARACTER FONT CAPABILITIES	
MATRIX FONTS	
XU	5 dots W x 9 dots H (Helvetica)
XS	17 dots W x 17 dots H (Univers Condensed Bold)
XM	24 dots W x 24 dots H (Univers Condensed Bold)
OA Font (OCR-A)	15 dots W x 22 dots H
OB Font (OCR-B)	20 dots W x 24 dots H
X90	24 dots W x 36 dots H (Price)
X91	24 dots W x 48 dots H (POP1)
X92	60 dots W x 90 dots H (POP2)
X93	40 dots W x 64 dots H (POP3)
AUTO SMOOTHING FONTS	
XB	48 dots W x 48 dots H (Univers Condensed Bold)
XL	48 dots W x 48 dots H (Sans Serif)
CHARACTER CONTROL	
	Expansion up to 9 x in either the X or Y coordinates. Character Pitch Control Line Space Control Journal Print Facility 0, 90, 180, and 270-degree rotation

BARCODE CAPABILITIES	
Linear Bar Codes	UPC-A/E JAN/EAN CODABAR CODE39 CODE93 CODE128 GS1-128/UCC/EAN128 Interleaved 2 of 5 Industrial 2 of 5 Matrix 2of5 MSI BOOKLAND POSTNET, GS1 DataBar
Two Dimensional	QR code (Ver 8.1 including Micro QR) PDF417 (Ver 2.4 including Micro PDF417) MAXI code (Ver 3.0) Data Matrix (Ver2.0) *Only ECC200 is supported
Ratios	1:2, 1:3, 2:5, User definable bar widths
Bar Height	4 to 999 dots, User programmable
Rotation	0, 90, 180, and 270 Degrees (Parallel 1, 2 and Serial 1, 2)
Expansion Ratio of Character	1 to 9L

OPTIONS	
	1) Cutter 2) Simple Stacker 3) External Rewinding Unit 4) Dispenser 5) Keypad 6) Calendar IC

REGULATORY	
USA/Canada	UL60950-1(2001), CSA C22.2 No.60950-1-03
China	CCC (GB4943-2001)
EU	IEC, Nemko (EN60950-1)
Radiation Noise	FCC Part 15, Subpart B, Class B (USA/Canada) GB9254-1998, GB17625.1-2003 (China) CE (EN55022, EN55024 CISPR22, CISPR24 (reference standard, Singapore) KN22, KN24 (Korea)
Packing Drop Standard	ISTA-2A
Environmental (RoHS)	Chromium: below 0.1% Lead: below 0.1% Mercury: below 0.1% Cadmium: below 0.01% Polybrominated Bipheny (PBB): below 0.1% Polybrominated Diphenyl Ether (PBDE): below 0.1%

6.2 OPTIONAL ACCESSORIES SPECIFICATIONS

CUTTER SPECIFICATIONS		
Media Type		Tag and Label
Media Size	Tag	Width: 32 to 80 mm (1.3 to 3.1 in.) Pitch: 25 to 181 mm (1 to 7.1 in.)
	Label	Width including liner: 32 to 80 mm (1.3 to 3.1 in.) Pitch including liner: 25 to 181 mm (1 to 7.1 in.)
Thickness		Tag: 0.16 to 0.28 mm (0.006 to 0.011 in.) Label: 0.07 to 0.265 mm (0.003 to 0.01 in.)
Dimensions		W 110 X D 79 X H 110 mm (W 4.3 X D 3.1 X H 4.3 in.)
Weight		0.7 kg (1.5 lbs)

SIMPLE STACKER SPECIFICATIONS		
Stacking Method		Free-fall stacking
Media Capacity		Approximately 20 to 120 sheets (depending on media size and thickness)
Media Type		Tag only
Media Size	Tag	Width: 32 to 80 mm (1.3 to 3.1 in.) Pitch: 25 to 100 mm (1 to 3.9 in.)
Thickness		0.16 to 0.28 mm (0.006 to 0.011 in.)
Dimensions		W 111 X D 137 X H 113 mm (W 4.3 X D 5.4 X H 4.4 in.)
Weight		0.7 kg (1.5 lbs)

DISPENSER SPECIFICATIONS		
Media Type		Label only
Media Size	Label	Width including liner: 32 to 80 mm (1.3 to 3.1 in.) Pitch including liner: 25 to 181 mm (1 to 7.1 in.)
Thickness		0.135 to 0.265 mm (0.005 to 0.01 in.)
Sensor Type		Dispenser sensor (Transmissive)
Dimensions		W 110 X D 41 X H 123 mm (W 4.3 X D 1.6 X H 4.8 in.)
Weight		0.25 kg (0.55 lbs)

EXTERNAL REWINDING UNIT SPECIFICATIONS		
Rewinding Method		Using Paper core size ϕ 40 mm (1.5 in.) or POS cassette
Rewinding Direction		Face-out
Rewind Capacity	Paper core	70 mm (2.76 in.) maximum diameter
	POS cassette	50 mm (1.97 in.) maximum diameter
Media Type		Label only
Media Size	Paper core	Width including liner: 32 to 48 mm (1.3 to 1.9 in.) Pitch including liner: 19 to 181 mm (0.7 to 7.1 in.)
	POS cassette	Width including liner: 33 mm (1.3 in.) Pitch including liner: 25.4 mm (1 in.), 50.8 mm (2 in.)
Thickness		0.07 to 0.265 mm (0.003 to 0.01 in.)
Media Detection		No detection of label or label end
Dimensions		W 135 X D 115 X H 128 mm (W 5.3 X D 4.5 X H 5 in.)
Weight		0.7 kg (1.5 lbs)

7

INTERFACE SPECIFICATIONS

This section presents the interface specifications for the DR308e printers. These specifications include detailed information to assist in the selection of the most appropriate method for the printer to interface with the host.

The following information is presented in this section:

- 7.1 Interface types
- 7.2 RS232C High Speed Serial Interface
- 7.3 IEEE 1284 Parallel Interface
- 7.4 Local Area Network (LAN) Ethernet
- 7.5 Universal Serial Bus (USB) Interface
- 7.6 External Signal Interface (EXT)

7.1 INTERFACE TYPES

DR308e are equipped with an interface board to perform data communication with the host, an external signal interface to connect peripheral devices to the printer, and an interface to connect a simple input device (e.g., keypad) to the printer.
In order to provide flexibility in communicating with a variety of host computer systems, this printers use a Plug-In Interface Module.

The following interface boards are available.
1) RS-232C (High-speed) interface board
2) IEEE1284 interface board
3) LAN interface board
4) USB interface board

⚠ Caution

- Always turn the printer OFF before attaching or detaching an interface card. Otherwise, severe electrical damage may be incurred, or bodily injury may be sustained.
- Never connect or disconnect interface cables (or use a switch box) with power applied to either the host or printer. This may caused damage to the interface circuitry in the printer/ host and is not covered by warranty.

7.2 RS232C HIGH SPEED SERIAL INTERFACE

7.2.1 RS-232C Serial Interface Card DIP SWITCH Settings

The high-speed serial interface card (optional) contains DIP switches for controlling communication conditions. Determine what features are applicable to your setup, or desired setup, and adjust their respective DIP switches as applicable. There are 8 switches in a row and all are default setting at Off position. The DIP switch functions are as follow:

DIP switch No.	Function	Setting Description		
1	Data bit length	ON		7 bits
		OFF		8 bits
2 3	Parity setting	DIP sw 2	DIP sw 3	
		ON	ON	Not used
		ON	OFF	ODD
		OFF	ON	EVEN
		OFF	OFF	NONE
4	Stop bit setting	ON		2 bits
		OFF		1 bit
5 6	Baud rate setting	DIP sw 5	DIP sw 6	
		ON	ON	57600bps
		ON	OFF	38400bps
		OFF	ON	19200bps
		OFF	OFF	9600bps
7 8	Communication Protocol setting	DIP sw 7	DIP sw 8	
		ON	ON	STATUS4
		ON	OFF	STATUS3
		OFF	ON	XON/XOFF
		OFF	OFF	READY/BUSY

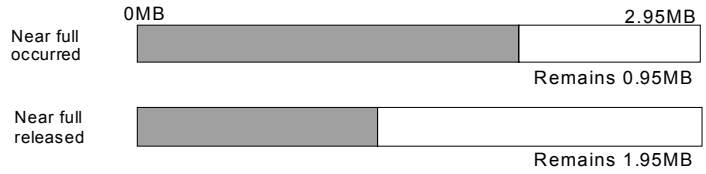
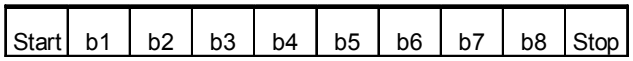
FUNCTION DESCRIPTIONS	
Function	**Description**
Data bit length	Sets the printer to receive either 7 or 8 bits of data for each byte transmitted.
Parity setting	Selects the type of parity used for error detection.
Stop bit setting	Selects the number of stop bits to end each byte transmission.
Baud rate setting	Select the data rate (bps) for the RS232 port.
Communication Protocol setting	Selects the flow control and status reporting protocols

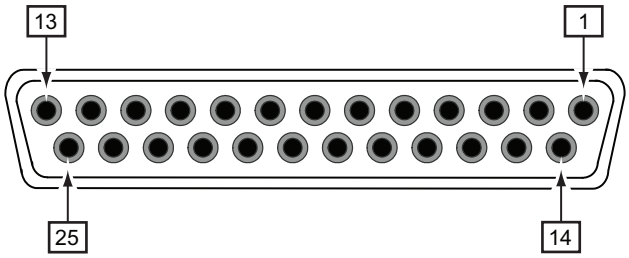
7.2 RS232C HIGH SPEED SERIAL INTERFACE (cont'd)

Notes:

- Check the setting seal of the serial interface card.
  The correct settings may vary depending on the type and revision of the board.
- The setting range of baud rate and protocol can be changed in the printer's Interface Mode. See Section 3.7 [Operation and Configuration] for details.
- Any communication settings (e.g. Multi/1 item buffer) not controlled by the DIP switches can be set in the printer's Interface Mode (See Section 3.7) using the operation panel.

7.2.2 Basic Specifications

Synchro system	Asynchronous method
Maximum receive buffer capacity	2.95MB 
Code	ASCII (7 bits) Graphic (8 bits)
Connector	Printer side DB-25S (female) or equivalent Cable side DB-25P (male) or equivalent Cable length 5m (16ft) or less
Transmission form	 [Note] When using 7bits, b8 will be omitted.
Signal levels	High level : +5 to +12V Low level : -5 to -12V



Serial Connector Pin Asignments

7.2 RS232C HIGH SPEED SERIAL INTERFACE (cont'd)

7.2.3 Ready/Busy

Ready / Busy is the hardware flow control method for the serial interface on the printer. Data received cannot be guaranteed, when print data (ESC+"A"~ESC+"Z") is sent from the host, under the following conditions:
1) When the printer is Offline
2) When an error has occurred in the printer

Pin Assignments

1) DB-25 P

Printer			Host	
FG	1	———	1	FG
SD	2	——→	3	RD
RD	3	←——	2	SD
RS	4	——→	5	CS
CS	5	←——	4	RS
DR	6	←——	20	ER
SG	7	———	7	SG
ER	20	——→	6	DR

2) DB-9P

Printer			Host	
FG	1			
SD	2	——→	2	RD
RD	3	←——	3	SD
RS	4	——→	8	CS
CS	5	←——	7	RS
DR	6	←——	4	ER
SG	7	———	5	SG
ER	20	——→	6	DR

When using Windows Hardware Control:

3) DB-25 P

Printer			Host	
FG	1	———	1	FG
SD	2	——→	3	RD
RD	3	←——	2	SD
CS	5	——→	20	ER
RS	4	←——	6	DR
DR	6	———	4	RS
SG	7	——→	7	SG
ER	20		5	CG

4) DB-9P

Printer			Host	
FG	1			
SD	2	——→	2	RD
RD	3	←——	3	SD
RS	4	——→	4	DR
CS	5	←——	6	ER
DR	6	←——	7	RS
SG	7	———	5	SG
ER	20	——→	8	CS

Interface Signals

Pin no.	Signal Type	Direction	Contents
1	FG	-	Frame Ground
2	SD	Output	Send Data
3	RD	Input	Receive Data
4	RS	Output	Request to Send
5	CS	Input	Clear to Send
6	DR	Input	Data Set Ready
7	SG	-	Signal Ground
20	ER	Output	Error

7.2 RS232C HIGH SPEED SERIAL INTERFACE (cont'd)

7.2.4 X-ON/X-OFF

This transmission protocol informs the host if the printer can receive data or not, by sending the "XON" (Hex 11H) or "XOFF" (Hex 13H) code.
Data received cannot be guaranteed, when print data (ESC+"A"~ESC+"Z") is sent from the host, under the following conditions:

1) When the printer is Offline
2) When an error has occurred in the printer

Pin Assignments

1) DB-25 P

Printer			Host	
FG	1	———	1	FG
SD	2	→	3	RD
RD	3	←	2	SD
RS	4		5	CS
CS	5		4	RS
DR	6		20	ER
SG	7	———	7	SG
ER	20		8	DR

2) DB-9P

Printer			Host
FG	1		
SD	2	→	2
RD	3	←	3
RS	4		8
CS	5		7
DR	6		4
SG	7	———	5
ER	20		6

Note:
In the connections, it may be necessary to loop (usually kept "High") CS and RS on the host side depending on the type of host. Therefore, make sure to re-check the host before use.

Input/Output Signals

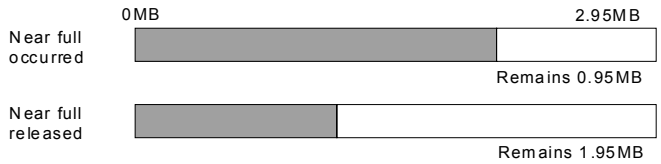
Pin no.	Signal Type	Direction	Contents
1	FG	-	Frame Ground
2	SD	Output	Send Data from the printer to host computer
3	RD	Input	Receive Data from the host computer
7	SG	-	Signal Ground

7.3 IEEE 1284 PARALLEL INTERFACE

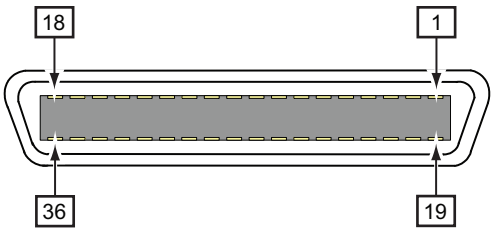
The IEEE 1284 Interface on the printer complies with Centronics/ IEEE1284 standards.It will automatically detect the IEEE1284 signals and operate in the high speed mode. If it does not detect the IEEE1284 signals, it will operate in the standard Centronics mode, which is significantly slower. For this reason, an interface cable and host interface conforming to the IEEE1284 specification must be present to fully utilize the speed capabilities.

The ECP mode is recommended for LPT1 port settings.
Make sure to change the LPT1 port settings through the BIOS settings.

7.3.1 Basic Specifications

Connector	Printer side: Amphenol (DDK) 57 ~ 40360 or equivalent Cable side: Amphenol(DDK) 57 ~ 30360 or equivalent
Cable length	1.5m (5 ft.) or less
Signal level	High level: +2.4 ~ +5.0V Low level: +0.0 ~ +0.4V
Receive mode	Go to the Interface Mode of printer unit for selecting single-item buffer or multi-buffer.
Maximum receive buffer capacity	2.95MB 

Note:
Send print data while the printer is on.



Parallel Connector Pin Asignments

7.3 IEEE 1284 PARALLEL INTERFACE (cont'd)

7.3.2 Pin Assignments

Pin assignment of each signal for the Centronics standard (Compatible Mode) is as follows.
Note that the line connection for the IEEE1284 standard is based on the IEEE1284-B standard.

Pin No.	Signal	I / O	Pin No.	Signal	I / O
1	STROBE	Input	19	STROBE-RETURN	
2	DATA 1	Input	20	DATA 1-RETURN	
3	DATA 2	Input	21	DATA 2-RETURN	
4	DATA 3	Input	22	DATA 3-RETURN	
5	DATA 4	Input	23	DATA 4-RETURN	
6	DATA 5	Input	24	DATA 5-RETURN	
7	DATA 6	Input	25	DATA 6-RETURN	
8	DATA 7	Input	26	DATA 7-RETURN	
9	DATA 8	Input	27	DATA 8-RETURN	
10	ACK	Output	28	ACK -RETURN	
11	BUSY	Output	29	BUSY -RETURN	
12	PE	Output	30	PE -RETURN	
13	SELECT	Output	31	INIT	Input
14	AUTOFD	Input	32	FAULT	Output
15	Not Used		33	Not Used	
16	LOGIC GND		34	Not Used	
17	CHASSIS GND		35	Not Used	
18	PERIPHERAL LOGIC HIGH	Output	36	SELECTIN	Input

7.3.3 Input and Output Signals

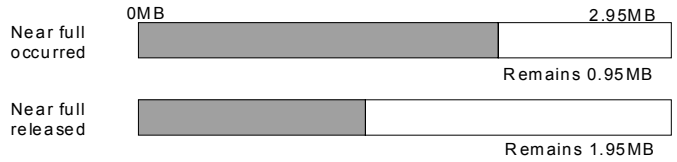
The details of each signal line for the Centronics standard (Compatible Mode) are as follows.
Note that each signal line complies with the IEEE1284 standard.

Pin No.	Signal	I/O	Description
1	STROBE	Input	Synchronization signal that requires low active pulse to read DATA1 ~ DATA8.
2 ~ 9	DATA 1 ~ DATA 8	Input	Data entry of 8bits parallel: DATA1 LSB (lowest bit) DATA8 MSB (highest bit)
10	ACK	Output	Low active pulse signal indicating the completion of receive data import.
11	BUSY	Output	High active signal indicating that the printer is not ready to receive data.
12	PE	Output	High active signal indicating "out of paper" condition.
13	SELECT	Output	High active signal indicating that the printer is ready to receive data.
14	AUTOFD	Input	Signal for the IEEE1284 standard.
17	CHASSIS GND		Connection to frame ground.
18	PERIPHERAL LOGIC HIGH	Output	5V on the printer side.
19 ~ 30	SIGNAL GROUND		Connection to ground for each signal.
31	INIT	Input	Low active pulse signal initializing the printer
32	FAULT	Output	Low active pulse signal indicating an error in the printer
36	SELECETIN	Input	Signal for the IEEE1284 standard.

7.4 LOCAL AREA NETWORK (LAN) ETHERNET

A Local Area Network (LAN) interface is an optional Plug-In Interface Module that can be installed by the user. It requires a driver shipped with each printer that has the interface installed. The driver that must be loaded on the host computer and configured to run one of the supported network protocols using a 10/100BaseT LAN connection. Details for loading the LAN driver are contained in the LAN Interface Manual that is shipped with each printer with a LAN Optional interface installed.

7.4.1 Basic Specifications

<table>
<tr><td>Connector</td><td>Cable type 10BASE-T, 100BASE-TX
Cable length 100m (328 ft) or less</td></tr>
<tr><td>Link/Status LED</td><td>Lighting up when establishing LINK to the Ethernet and/or when receiving packets.
<table>
<tr><th>LED</th><th>Color</th><th>Action / Explanation</th></tr>
<tr><td>STATUS</td><td>Orange</td><td>Lighting for 10ms when receiving packets</td></tr>
<tr><td>LINK10</td><td>Green</td><td>Lighting when recognizing the connection to 10BASE-T</td></tr>
<tr><td>LINK100</td><td>Green</td><td>Lighting when recognizing the connection to 100BASE-TX</td></tr>
</table></td></tr>
<tr><td>Communication setup</td><td>In the Interface Mode of printer unit, various settings, addresses and statuses can be specified.</td></tr>
<tr><td>Maximum receive buffer capacity</td><td>2.95MB
 
</td></tr>
</table>

7.4.2 Interface Card DIP SWITCH Settings (LAN)

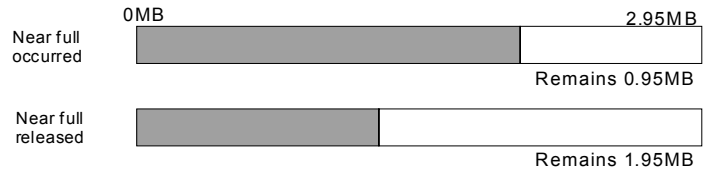
The Local Area Network interface card contains DIP switches (maintenance switch) for initializing LAN configuration, LAN printing configuration, and LAN card self-diagnosis. Make sure to turn all DIP switch to "OFF" when using the printer. The DIP switch functions are:

DIP switch No.	LAN Interface Card function
1	Unused
2	Initializes LAN card configuration information
3	Prints LAN card configuration information (configuration information such as the IP address will be printed)
4	Prints LAN card self-diagnosis (results of LAN card examination will be printed)

7.5 UNIVERSAL SERIAL BUS (USB) INTERFACE

The Universal Serial Bus (USB) interface is a Plug-In Interface Module that can be installed by the user. It requires a driver (shipped with each printer that has the interface installed) that must be loaded on your PC and the PC must be configured to support USB peripherals using Windows 2000 or above. Details for loading the USB driver are contained in the USB Interface Manual that is shipped with each printer with a USB Optional interface installed. Up to 127 devices may be connected to a USB port using powered hubs.

7.5.1 Basic Specifications

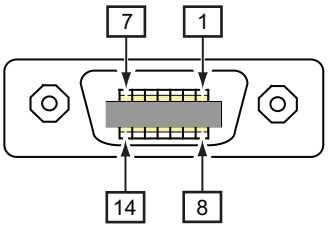
Connector	Series B plug Cable length 5m (16 ft) or less (Twisted Pair Shielded)
Maximum receive buffer capacity	2.95MB 

7.5.2 Pin Assignments

Pin No.	Description
1	VBus
2	-Data(D-)
3	+Data(D+)
4	GND

7.6 EXTERNAL SIGNAL INTERFACE (EXT)

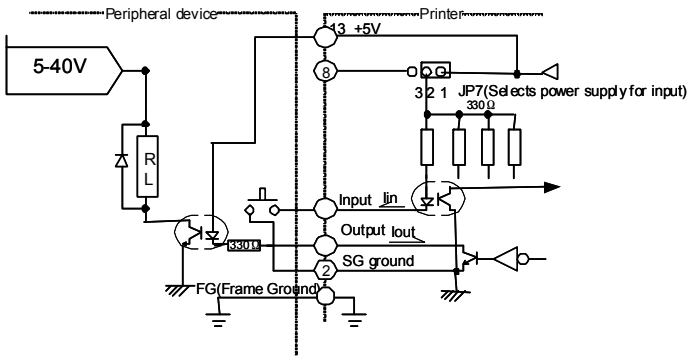
The external signal interface is designed to connect the printer to an external peripheral device. This interface works only in pulse input mode of Continuous Mode or Dispense Mode (Mode of which EXT input executes print operation). It outputting an error signal in all modes when an error has occurred in the printer.
Please refer to Section 3.8.10 in the Advanced Mode of the printer for various settings of external signal.
The EXT card operates in its own slot interface with the use of the main DATA port interface card such as RS-232C or Parallel card.



EXT External Signal Connector Pin Assignments

7.6 EXTERNAL SIGNAL INTERFACE (EXT) (cont'd)

7.6.1 Basic Specifications

<table>
<tr><td>Connector</td><td>14-pin external signal interface</td></tr>
<tr><td>Input/Output
circuit diagram</td><td>14-PIN type
Input/Output connection example
 
</td></tr>
<tr><td>Signal level</td><td>High level : +4.2~5V
Input terminal Iin≒0mA, Output terminal Iout≒0mA
Low level : 0~0.7V or under
Input terminal Iin≒10mA, Output terminal Iout≒10mA</td></tr>
<tr><td>Designation for issuing EXT signal</td><td>Set "ENABLE/DISABLE" in the Advanced Mode</td></tr>
<tr><td>External signal type</td><td>The following signal types are available in the Advanced Mode.
<table>
<tr><th>Type</th><th>Action / Explanation</th></tr>
<tr><td>TYPE I
(T1)</td><td>Print end signal (PREND) is "Low" before printing labels. The signal level is "High" after the completion of print and will be "Low" 20 ms later.</td></tr>
<tr><td>TYPE II
(T2)</td><td>Print end signal (PREND) is "High" before printing labels. The signal level is "Low" after the completion of print and will be "High" 20ms later.</td></tr>
<tr><td>TYPE III
(T3)</td><td>Print end signal (PREND) is "Low" before printing labels. The signal level is "High" from the start to the end of print and will be "Low" after the completion of print.</td></tr>
<tr><td>TYPE IV
(T4)</td><td>Print end signal (PREND) is "High" before printing labels. The signal level is "Low" from the start to the end of print and will be "High" after the completion of print.</td></tr>
</table></td></tr>
<tr><td>Reissuing EXT signal</td><td>The following settings are available in the Advanced Mode.
ENABLE: Reprinting the same data
DISABLE: No reprint</td></tr>
</table>

7.6 EXTERNAL SIGNAL INTERFACE (EXT) (cont'd)

7.6.2 Pin Assignments

Pin No.	Signal name	Description	I / O	Level	Electrical condition (voltage, electric current [MAX])
1	PAPER END	Outputs when detecting PAPER END	Output	Low	5V 400mA
2	GND	SIGNAL GROUND	—	—	—
3	RIBBON END	Outputs when detecting RIBBON END	Output	Low	5V 400mA
4	MACHINE ERROR	Outputs when detecting conditions such as COVER OPEN, HEAD ERROR, and COMMUNICATION ERROR, etc.	Output	Low	5V 400mA
5	PRINT START (PRIN)	Prints a single label by every input of this signal	Input	Low	High: High impedance Low : -15mA or more, 0V
6	PRINT END (PREND) *1	Outputs signal every time the printer issues a single label	Output	Low	5V 400mA
7	REPRINT (PRIN2)	Reprints the same data on a single Label by the input of this signal	Input	Low	High: High impedance Low : -15mA or more, 0V
8	EXT5V_IN	External power supply	Input	—	5V *2
9	ONLINE	Outputs when the printer goes online	Output	Low	5V 400mA
10	RIBBON NEAR END	Outputs when detecting RIBBON NEAR END	Output	High	5V 400mA
11	—	—	—	—	—
12	+24V	—	—	—	2A
13	+5V	—	—	—	500mA
14	—	—	—	—	—

*1. There are four output signal types of [PREND] for the 6th pin. Select one of them based on [External signal type] in [3.8 Advance Mode].
*2. When setting JP8 to [2-3] side, the power will be supplied from EXT5V_IN(Pin No. 8).
When setting JP8 to [1-2] side, the printer will be powered by the internal power supply.
When setting JP7 to [1-2] side, the printer will be used for offline output.
When setting JP7to [2-3] side, the 9th pin will be used for input.

Note:
External signal may become unstable for a second or so after turning the power on. Wait more than one second before starting the operation control.

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8

OPTIONAL ACCESSORIES

This section contains details of the optional accessories available for the DR308e printer:

- 8.1 Cutter
- 8.2 Stacker
- 8.3 Dispenser
- 8.4 External Rewinding Unit
- 8.5 Keypad
- 8.6 Calendar IC

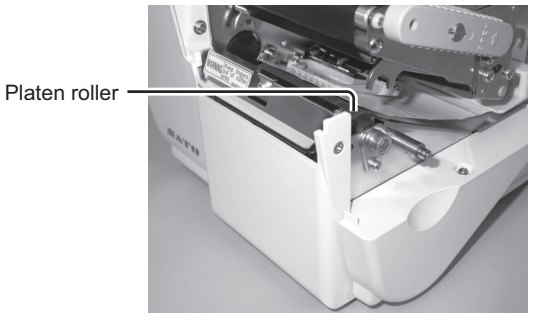
8.1 CUTTER

Cutter should only be installed by Sato qualified servicing personnel.

8.1.1 To route the media when the cutter is installed

1. Load the media accordingly to the instructions as mentioned in **Section 2.3 Loading Labels or Tags** on **page 2-3**.
2. With the **head lock lever** release, set the tip of the media on the **platen roller**.
3. Remount the print head by turning the **head lock lever** clockwise until it latch on. The print head should lock into place firmly. Close the main cover.
4. Power on the printer and press the **LINE** button to set the printer to OFFLINE mode.
5. Press the **FEED** button. An empty media should be fed and cut out. This procedure is to ensure the media is loaded correctly.

   Note:
   If the media is fed without cutting, make sure the PRINT MODE of the ADVANVCE MODE is set to CUTTER. Refer to **Section 3.8.3 Choosing Print mode Option on page 3-17**.



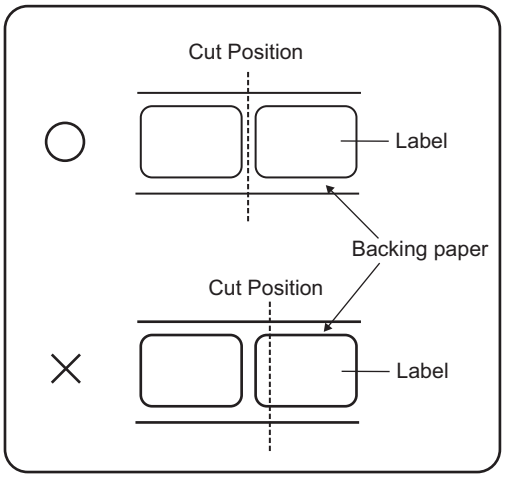
8.1 CUTTER (cont'd)

8.1.2 Cut position Adjustment

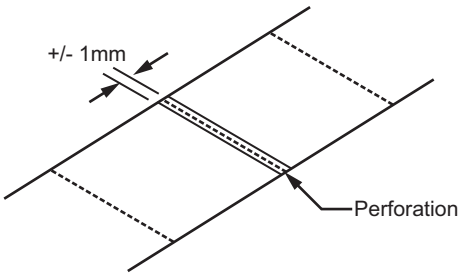
The cutting position can be adjusted with the OFFSET potentiometer. Refer to **Section 3.6.1 Offset Volume mode on page 3-8**.

Notes:

- **Cutting of Labels**
  The correct cutting position is at the label gap. Cutting onto the label must be avoided because the glue that accumulates on the blade will affect cutter sharpness.



- **Cutting Media with Perforation**
  As for media with perforation, +/- 1mm (+/- 0.04 in.) from perforation is the non-cut area. Adjust the OFFSET potentiometer to obtain correct cut position.



8.1.3 Cutter replacement

Replace cutter unit when blade becomes blunt and cut edges are rough. (Please contact the sales outlet where you purchase the DR308e.)

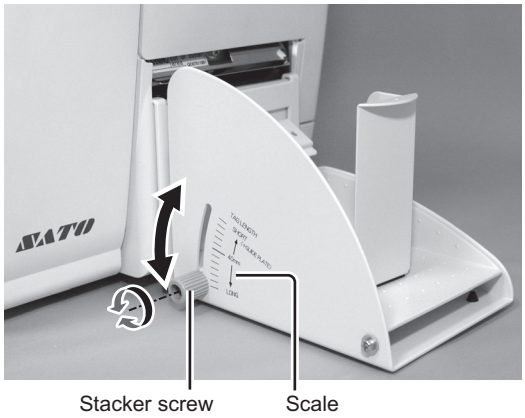
8.2 STACKER

Stacker is to be installed onto the cutter cover. With the stacker unit installed, the cut tags are collected and stack up neatly.

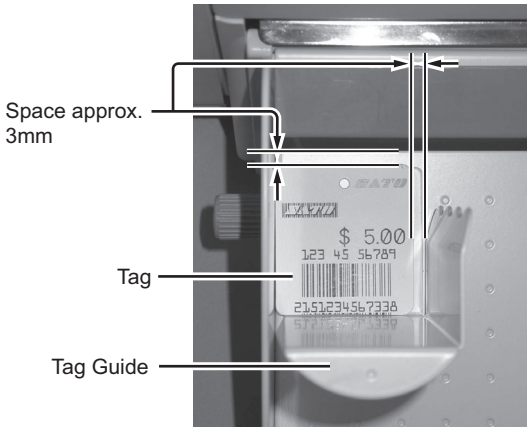
1. Set the **stacker** in front of the printer and hook it onto the cover of the cutter compartment as shown.

8.2 STACKER (cont'd)

2. First adjust the **stacker scale** position (inclination of bottom plate) corresponding to the pitch size of the loaded tag by loosening the **stacker screw**.
The **scale** is indicated on the left side if you are facing the front of printer.
For tag with pitch size longer than 40mm (1.57 in.), set the **stacker scale** to the position in between the 40mm mark and LONG mark.
For tag with pitch size shorter than 40mm (1.57 in.), set the **stacker scale** to the position in between the 40mm mark and SHORT mark.
Fasten the **stacker screw** to fix the position.

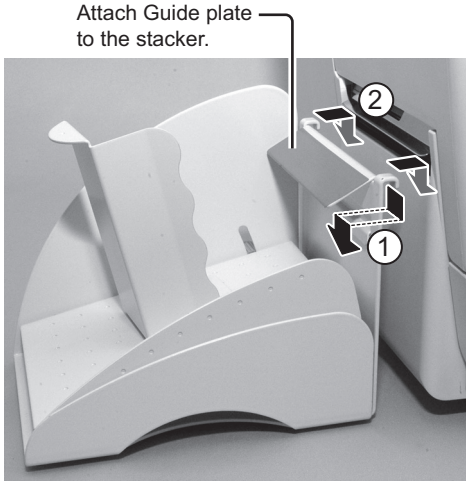


3. Place the **Tag guide** on the **stacker** and adjust the position by matching with the size of the cut tag.
Set it with a space of approximately 3mm (0.12 in.) from the printer and 3mm (0.12 in.) from the side of tag.



Notes:

- When a small tag with pitch size shorter than 35mm (1.38 in.), a **Guide plate** is necessary to attach to the **stacker**. This **Guide plate** prevents overturning when small pitch tag is issued.
- The number of sheets that can be stacked varies with the scale position and paper thickness.

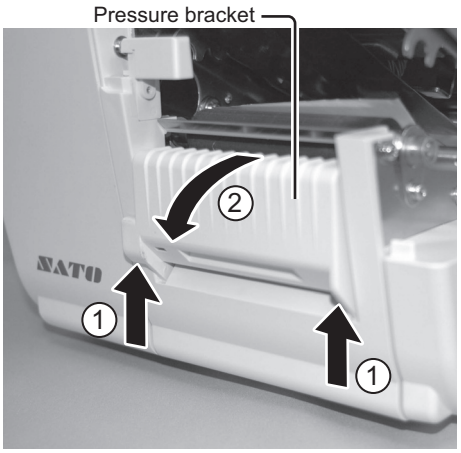


8.3 DISPENSER

Dispenser should only be installed by Sato qualified servicing personnel.

8.3.1 To route the label when the dispenser is installed

1. Load the label accordingly to the instructions as mentioned in **Section 2.3 Loading Labels or Tags**.
2. With the thumbs position on the two corner of the **pressure bracket**, push the **pressure bracket** up and pull forward to open the **pressure bracket**.



3. With the **head lock lever** release, set the label to the dispenser.
   Peel off the first 3 to 4 labels from the backing paper and then pass the backing paper under the **pressure bracket** as shown.
4. Close the **pressure bracket** with the backing paper passing through it.
5. Remount the print head by turning the **head lock lever** clockwise until it latch on. The print head should lock into place firmly. Close the main cover.
6. Power on the printer and press the **LINE** button to set the printer to OFFLINE mode.
7. Press the **FEED** button. An empty label should be fed and stop at the dispenser. This procedure is to ensure the label is loaded correctly.

8.3.2 Stop position Adjustment

The stop position can be adjusted with the OFFSET potentiometer. Refer to **Section 3.6.1 Offset Volume mode on page 3-8**.

Notes:

- There may be cases when the dispenser does not function properly due to the thickness of the labels used. Please use labels with thickness within 135 to 265um (0.005 to 0.01 in.).
- Dispenser unit is effective for label pitch 25 to 181 mm (1 to 7.1 in.). However, label size limitation may vary with application conditions.
- Labels over 100mm (3.9 in.) may curl at dispense due to the nature of the material. There is no remedy for this.

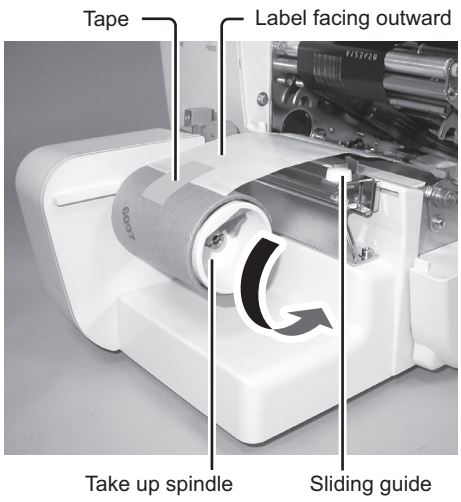
8.4 EXTERNAL REWINDING UNIT

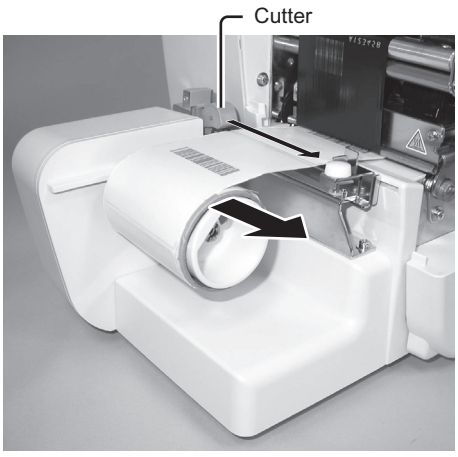
External rewinding unit should only be installed by Sato qualified servicing personnel. The external rewinding unit is to install on the option compartment at the front side of the printer. Use Paper core size of ϕ 40 mm (1.5 in.) or POS cassette for rewinding. The rewound labels can be attached directly to specific Sato Seal Labeller. Below explained the loading of label when using paper core. Please refer to the separated manual for details when using with the POS cassette.

8.4.1 To load the labels to the external rewinding unit

1. Load the label accordingly to the instructions as mentioned in **Section 2.3 Loading Labels or Tags**.
2. Insert an empty paper core, with size ϕ 40mm (1.5in.), to the **label take-up spindle** at the rewinding unit.

3. With the **head lock lever** release, pull the leader of the label to the **label take-up spindle** and place it on top of the empty core. Make sure that the label should be facing outward.
4. Unfasten and adjust the **sliding guide** until it lightly touches the edge of the label. Fix the **sliding guide** in position with the white knob.
5. Tape the leader portion of the label to the empty core. Then turn the **take-up spindle** several times in the direction of counter-clockwise to wind the label around the core.
6. Remount the print head by turning the **head lock lever** clockwise until it latch on. The print head should lock into place firmly. Close the main cover.
7. Power on the printer and press the **LINE** button to set the printer to OFFLINE mode.
8. Press the **FEED** button. An empty label should be fed and the rewinding unit wound up the label simultaneously. This procedure is to ensure the label is loaded correctly.





8.4.2 To remove the wound up label

When the core on the rewinding unit was fully wound up with labels, stop printing and turn off the printer. Slide the cutter of the rewinding unit across the label. Then take out the labels and core from the take-up spindle. Repeat the above procedure to wind up another core of labels.

8.5 KEYPAD

An optional keypad can be connected to the printer DR308e. This enable users to enter simple command to the printer, by the connected keypad, without connecting to a host computer. For details on the operation and configuration of the keypad, please refer to the separate operator manual of the keypad.

8.5.1 To set the printer for using with the optional keypad

1. Connect the optional keypad to the printer.
   See **Section 2.7.2 Connecting the optional keypad on page 2-10**.
2. Turn on the power of the printer. Press **LINE** button to enter OFFLINE mode.
3. Press **FEED** button while pressing the **LINE** button. The printer enters Printer setting mode. See **Section 3.4 Printer Setting Modes on page 3-6** for details.
4. Press **LINE** button to select INTERFACE MODE and press **FEED** button to enter the selection. See **Section 3.7 Interface Mode on page 3-11** for details.
5. Press **LINE** button to select KEYPAD PORT and press **FEED** button to enter the selection. See **Section 3.7.2 Enabling optional connected Keypad on page 3-14** for details.
6. Select ON with the **LINE** button and press **FEED** button to enter the selection.
7. Turn the printer Off and then On again to initialize the printer for use with the keypad. An asterik mark is displayed beside ONLINE.

8.5.2 When the optional keypad is not in used

Repeat step 2 to 5 above and select OFF with **LINE and FEED** button on step 6.
Turn the printer Off and then On again to initialize the printer. The asterisk mark is disappeared from the display.

8.6 CALENDAR IC

The Calendar Option allows the date and time to be maintained in the printer. A Sato qualified servicing personnel should perform the upgrade as it requires modifications to the main PCB assembly. Please call SATO Technical Support if you need to add this option to an existing printer in the field.