TOSHIBA

TOSHIBA Barcode Printer

B-450-TS22-QP-R

Owner's Manual

Changes or modifications not expressly approved by manufacturer for compliance could void the user's authority to operate the equipment.

사용 시 주의 사항
이 제품은 무선으로 다른 장치와 통신합니다. 설치 위치, 방향, 환경 등에 따라 통신 성능이 저하되거나 근처에 설치된 장치들이 영향을 받을 수 있습니다.

Safety Summary

Personal safety in handling or maintaining the equipment is extremely important. Warnings and Cautions necessary for safe handling are included in this manual. All warnings and cautions contained in this manual should be read and understood before handling or maintaining the equipment.
Do not attempt to effect repairs or modifications to this equipment. If a fault occurs that cannot be rectified using the procedures described in this manual, turn off the power, unplug the machine, and then contact your authorised Toshiba Tec representative for assistance.

Meanings of Each Symbol

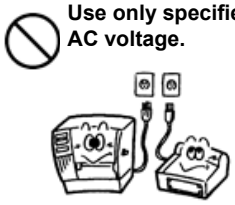
This symbol indicates warning items (including cautions). Specific warning contents are drawn inside the △ symbol. (The symbol on the left indicates a general caution.)

This symbol indicates prohibited actions (prohibited items).
Specific prohibited contents are drawn inside or near the ⃠ symbol. (The symbol on the left indicates “no disassembling”.)

This symbol indicates actions which must be performed. Specific instructions are drawn inside or near the ● symbol.
(The symbol on the left indicates “disconnect the power cord plug from the outlet”.)

WARNING

This indicates that there is the risk of death or serious injury if the machine is improperly handled contrary to this indication.



Do not use voltages other than the AC voltage specified on the rating plate, as this may cause **fire** or **electric shock**.

Do not plug in or unplug the power cord with wet hands as this may cause **electric shock**.

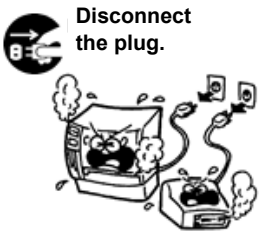
If the machine shares the same electrical outlet, with any other appliance that consumes a large amount of power, the voltage will fluctuate widely each time these appliances operate. Be sure to provide an exclusive outlet for the machine as this may cause **fire** or **electric shock**.

Do not place metal objects or water-filled containers (flower vases, flower pots or mugs etc) on top of the machine. If metal objects or spilled liquids enter the machine, this may cause **fire** or **electric shock**.

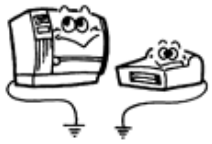
Do not insert or drop metal, flammable or other foreign objects into the machine through ventilation slits, as this may cause **fire** or **electric shock**.

Do not scratch, damage or modify the power cords. Do not place heavy objects on, pull on, or excessively bend the power cords, as this may cause **fire** or **electrical shock**.

If the machine is dropped or the cabinet is damaged, turn off the power switch and disconnect the power cord plug from the outlet, and then contact your authorized Toshiba Tec representative for assistance. Continued use of a damaged machine may cause **fire** or **electric shock**.



Continued use of the machine in an abnormal condition (the machine is producing smoke or a strange smell) may cause **fire** or **electric shock**. In these cases, immediately turn off the power switch and disconnect the power cord plug from the outlet. Then, contact your authorised Toshiba Tec representative for assistance.

Disconnect the plug. 	If foreign objects (metal fragments, water, liquids) enter the machine, turn off the power switch and disconnect the power cord plug from the outlet, and then contact your authorized Toshiba Tec representative for assistance. Continued use of the machine in that condition may cause **fire** or **electric shock**.
Disconnect the plug. 	When unplugging the power cords, be sure to hold and pull on the plug. Pulling on the cord may cut or expose the internal wires and cause **fire** or **electric shock**.
Connect a grounding wire. 	Ensure that the equipment is properly grounded. Extension cables should also be grounded. **Fire** or **electric shock** could occur on improperly grounded equipment.
No disassembling. 	Do not remove covers, repair or modify the machine yourself. Contact your Toshiba Tec representative for assistance. You may be **injured** by high voltage, very hot parts or sharp edges inside the machine.
Prohibited 	Do not use a spray cleaner containing flammable gas for cleaning this product, as this may cause a **fire**.
Prohibited 	Care must be taken not to injure yourself with the printer paper cutter.

CAUTION This indicates that there is the risk of personal Injury or damage to objects if the machine is improperly handled contrary to this indication.

Precautions

The following precautions will help to ensure that this machine will continue to function correctly.

- Try to avoid locations that have the following adverse conditions:
  * Temperatures out of the specification * Direct sunlight * High humidity
  * Shared power source * Excessive vibration * Dust/Gas
- The cover should be cleaned by wiping with a dry cloth or a cloth slightly dampened with a mild detergent solution. NEVER USE THINNER OR ANY OTHER VOLATILE SOLVENT on the plastic covers.
- USE ONLY TOSHIBA TEC SPECIFIED paper and ribbons.
- DO NOT STORE the paper or ribbons where they might be exposed to direct sunlight, high temperatures, high humidity, dust, or gas.
- Ensure the printer is operated on a level surface.
- Any data stored in the memory of the printer could be lost during a printer fault.
- Try to avoid using this equipment on the same power supply as high voltage equipment or equipment likely to cause mains interference.
- Unplug the machine whenever you are working inside it or cleaning it.
- Keep your work environment static free.
- Do not place heavy objects on top of the machine, as these items may become unbalanced and fall causing injury.
- Do not block the ventilation slits of the machine, as this will cause heat to build up inside the machine and may cause fire.
- Do not lean against the machine. It may fall on you and could cause **injury**.
- Unplug the machine when it is not used for a long period of time.
- Place the machine on a stable and level surface.
- RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

Request Regarding Maintenance

- Utilise our maintenance services.
  After purchasing the machine, contact your authorised Toshiba Tec representative for assistance once a year to have the inside of the machine cleaned. Dust will build up inside the machines and may cause a **fire** or a **malfunction**. Cleaning is particularly effective before humid rainy seasons.
- Our preventive maintenance service performs periodic checks and other work required to maintain the quality and performance of the machine.
  For details, please consult your authorised Toshiba Tec representative.
- Do not expose the machine to insecticides or other volatile solvents. This may cause the cabinet, or other parts, to deteriorate and may cause the paint to peel.

TABLE OF CONTENTS

This product is designed for commercial usage and is not consumer product.

1. INTRODUCTION

Thank you for choosing the TOSHIBA B-450-R Series thermal direct/thermal transfer printer. This new generation high performance high quality printer is equipped with the latest hardware including the newly developed high density (11.8 dot/mm, 300 dot/inch) print head. This allows very clear print at a maximum speed of 101.6 mm/sec. (4 inch/sec.). Other standard features include an external paper supply. Optional features include a strip mechanism and cutter mechanism.
This manual contains general set-up and maintenance information and should be read carefully to help gain maximum performance and life from your printer. For most queries, refer to this manual and keep it safe for future reference.

1.1 APPLICABLE MODEL

- B-452-TS22-QP-R

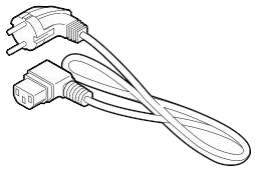
Model name description

B - 4 5 2 - T S 2 2 - Q P - R

- R: RoHS compliant
- QP: Destination Code — QP: Asia/Europe Block
- 22: Machine Version
- S: Issue mode — S: Batch
- T: Resolution — T: 11.8 dots/mm (300 dpi)
- 452: Direct thermal / Thermal transfer
- B: B-450 Series

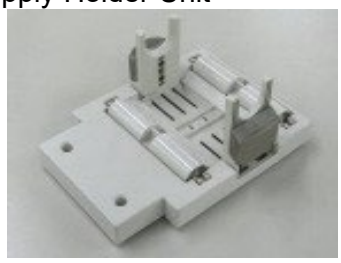
1.2 ACCESSORIES

Power Cord

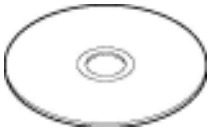


Supply Holder

Supply Holder Unit



CD-ROM



Spacer

2. SPECIFICATIONS

2.1 GENERAL SPECIFICATIONS

Item \ Model	B-452-TS22-QP-R
Supply voltage	220 - 240V, 50Hz
Power consumption	0.41 A, 74 W maximum (standby: 0.15 A, 23.5 W maximum)
Operating temperature	5°C to 40°C
Relative humidity	25% ~ 85%RH (no condensation)
Dimensions	270 mm (width) x 245 mm (height) x 200 mm (depth), with Supply holder unit 410 mm (depth)
Weight	5.2 kg (without paper and ribbon)

2.2 PRINTING SPECIFICATIONS

Item \ Model	B-452-TS22-QP-R
Print head	Thermal print head 11.8 dots per mm (300 dots per inch)
Printing methods	Direct thermal or Thermal transfer
Print speeds	50.8 mm/sec. (2 inch/sec.) for serial barcodes and two-dimensional codes, 101.6 mm/sec. (4 inch/sec.)
Maximum print width	105.7 mm (4.16 inches)
Dispensing modes	Batch (Continuous), Strip (Option) and Cut modes (Option) (Both cut and strip modes are available only when their respective modules are fitted.)
Available bar-code types	JAN8, JAN13, EAN8, EAN8 + 2 digits, EAN8 + 5 digits, EAN13, EAN13 + 2digits, EAN13 + 5 digits, UPC-E, UPC-E + 2 digits, UPC-E + 5 digits, UPC-A, UPC-A + 2 digits, UPC-A + 5 digits, MSI, ITF, NW-7, CODE39 (Standard), CODE39 (Full ASCII), CODE93, CODE128, High priority customer bar code, Industrial 2 to 5, UCC/EAN128, Customer bar code, POSTNET, RM4SCC, KIX code, Matrix 2 of 5 for NEC, GS1 DataBar, GS1 DataBar stacked, GS1 DataBar stacked omni- directional, GS1 DataBar limited, GS1 DataBar expanded, GS1 DataBar expanded stacked
Two-dimensional code	Data Matrix, PDF417, Micro PDF417, QR code, Maxi code, CP code
Graphics	All types of graphic files are available when using the windows driver. However, only BMP and PCX files are available when using the programming commands.
Fonts	Times Roman (6 sizes), Helvetica (6 sizes), Presentation (1 size), Letter Gothic (1 size), Prestige Elite (2 sizes), Courier (2 sizes), OCR (2 types), Writable characters, Outline font (8 type) Optional Ture Type Fonts (21 type), Gothic725 Black (1 type)
Rotations	0°, 90°, 180°, 270°
Standard interfaces	USB interface LAN interface Parallel interface (Centronics)
Option interfaces	Serial interface (RS-232C) (B-7704-RS-QM-R) Expansion I/O interface (B-SA704-IO-QM-R)

* *Data MatrixTM is a trademark of International Data Matrix, Inc.*
PDF417 is a trademark of Symbol Technologies, Inc.
Micro PDF417 is a trademark of Symbol Tochnologies, Inc.
QR code is a trademark of DENSO CORPORATION.
Maxi code is a trademark of United Parcel Service of America, Inc.

2.3 PAPER (LABEL, TAG) SPECIFICATIONS

[Unit: mm]

Item \ Label dispensing model		Batch mode	Strip mode	Cut mode
Span of one label/tag		15.0 to 999.0	25.4 to 999.0	Label: 37.0 to 999.0 Tag: 25.4 to 999.0
Label length		13.0 to 997.0	23.4 to 999.0	31.0 to 993.0
Width including backing paper		25.4 to 114.0		
Label width		22.4 to 111.0		
Gap length		2.0 to 20.0	2.0 to 20.0	6.0 to 20.0
Black mark length (Tag paper)		2.0 to 20.0		
Effective print width		10.0 to 105.7		
Effective print length	Label	15.0 to 500.0		
	Tag	15.0 to 500.0		
Print speed up/slow down area		1.0		
Black mark length (Label)		Min. 2.0		
Outer roll diameter		Max. ø152.4 (Paper Core ø38, 40, 42 or 76.2)		
Thickness		0.1 to 0.17	0.13 to 0.17	0.1 to 0.17

2.4 RIBBON SPECIFICATIONS

Type	Spool type
Width	60 to 110 mm
Length	(300 m)
Outer diameter	Ø65 mm (max.)

Notes: *1. To ensure good print quality and maximum print head life use only Toshiba Tec specified paper and ribbons.*

2. For further information about paper and ribbon, refer to Section 7. CARE/HANDLING OF THE PAPER AND RIBBON.

2.5 OPTION

Option Name	Type	Use
Cutter module	B-7204-QM-R	This cutter module uses a rotary cutter. It cuts backing paper of labels and tag paper automatically in "stop and cut" mode.
Strip module	B-7904-H-QM-R	This strip module strips the label from the backing paper with the take-up block and strip block. When the rewinder guide plate is attached, the tag paper and label with backing paper are wound.
Expansion I/O interface board	B-SA704-IO-QM-R	Installing this board in the printer allows a connection with an external device with the exclusive interface.
Serial Interface	B-7704-RS-QM-R	Installing this PC board provides an RS232C interface port.

Note: *To purchase the OPTIONAL KIT, please contact your authorized Toshiba Tec representative or Toshiba Tec Head Quarter.*

3. APPEARANCE

3.1 FRONT AND REAR VIEW

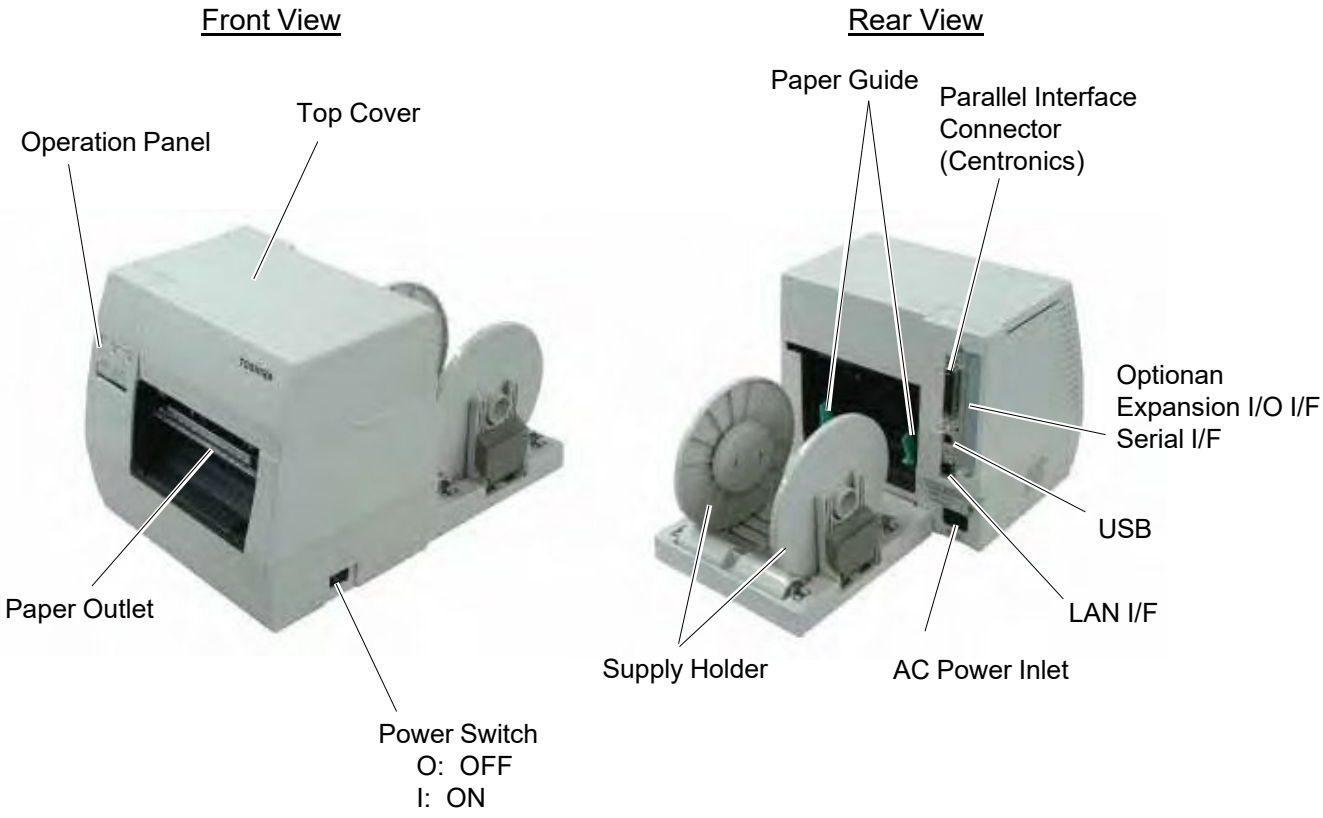


Fig. 3-1

3.2 OPERATION PANEL

Fig. 3-2

POWER LED (Green)
Lights when the power is turned on.

ON-LINE LED (Green)
1) Flashes when communicating with a host computer.
2) On while printing.

ERROR LED (Red)
Lights when a communication error occurs, when the paper/ribbon ends or the printer is not operating correctly.

FEED Key
Feeds paper.

PAUSE Key
Pauses printing.
Resets the printer when paused or when an error occurs.

4. INSTALLATION PROCEDURE

4.1 INSTALLING THE SUPPLY HOLDER UNIT

WARNING!
Turn the power OFF before installing the supply holder unit.

Fit the two studs on the bottom of the printer into the holes in the supply holder unit.

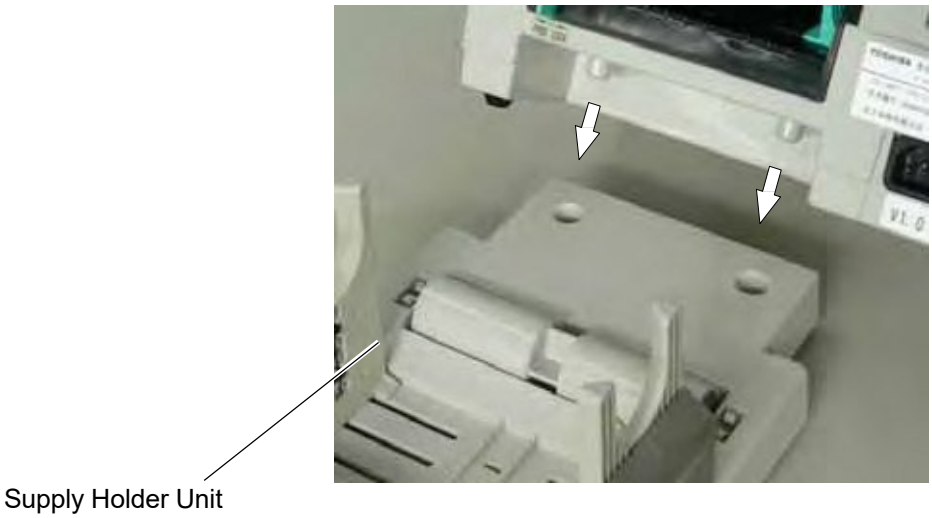


Fig. 4-1

4.2 CONNECTING THE POWER CORD AND CABLES

WARNING!
*Turn the **POWER SWITCH to OFF** before connecting the power cord or cables.*

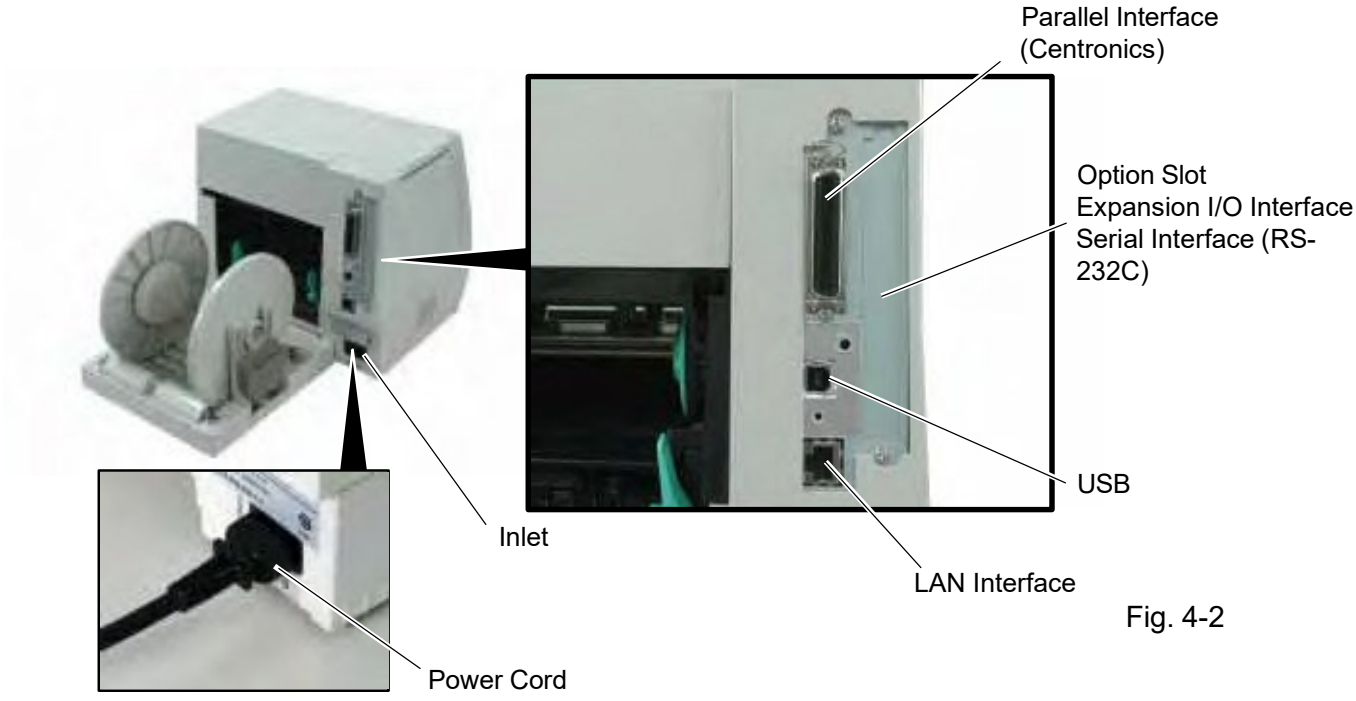


Fig. 4-2

5. LOADING THE RIBBON

5. LOADING THE RIBBON

The printer is capable of printing in both direct thermal and thermal transfer modes.

DO NOT LOAD a ribbon when using a direct thermal paper.

1. Turn the power off and open the top cover.
2. Move the head release lever toward the front of the printer and raise the print head block.

Fig. 5-1

3. Fit the protrusion of the guide wheel into the notch of the ribbon core (take-up side).
4. Pull the knob and set the ribbon core to the spring guide wheel.

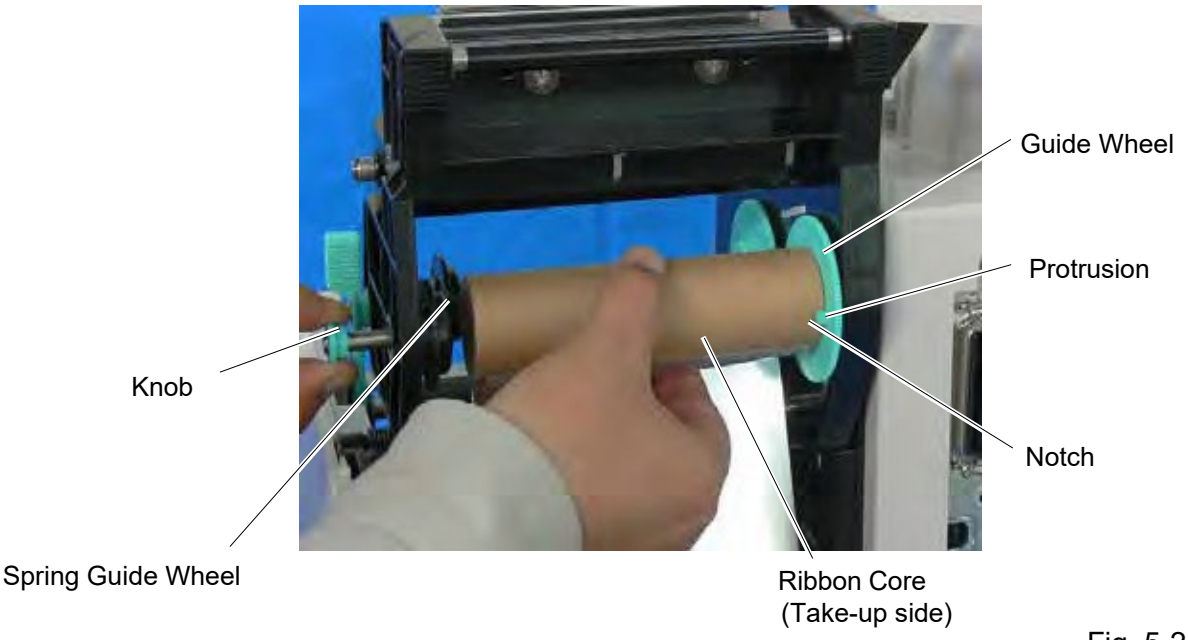


Fig. 5-2

5. LOADING THE RIBBON

5. Set the ribbon core (supply side) by fitting the protrusion into the notch.

Fig. 5-3

6. Turn the guide wheel in the arrow-indicating direction to remove any slack of the ribbon.

Note: *Make sure that the ribbon has no wrinkles and the protrusions are fitted into the notches of the ribbon cores.*

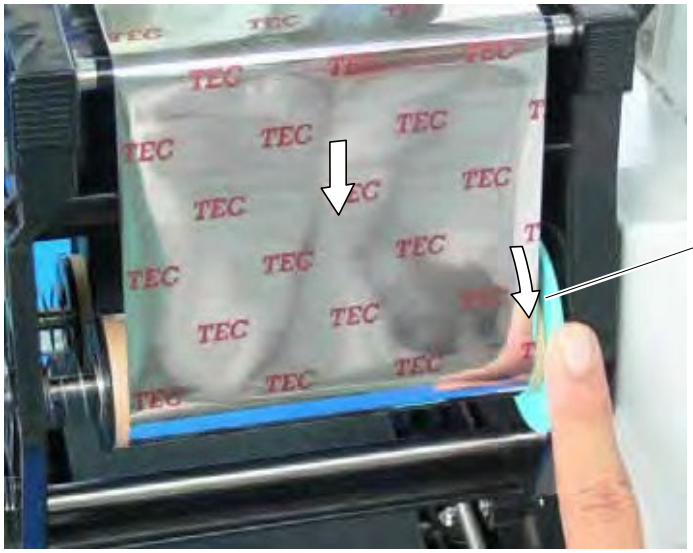


Fig. 5-4

6. LOADING THE PAPER

6. LOADING THE PAPER

This supply holder accepts four sizes of label core: 38 mm, 40 mm, 42 mm and 76.2 mm.
When using a paper roll of 38 mm, 40 mm or 42 mm, remove the spacers from the supply holders using the following procedure.

1. Push both hooks of the spacer to remove it from the supply holder. Keep the removed spacers safe.

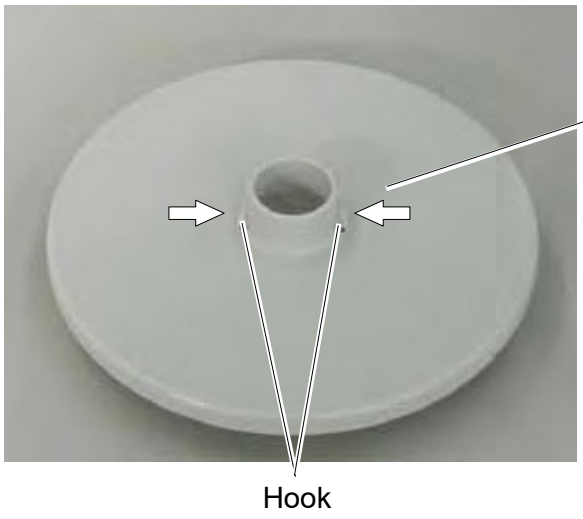


Fig. 6-1

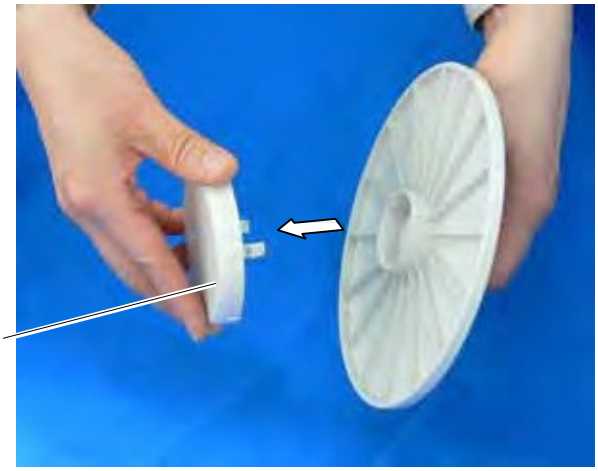


Fig. 6-2

2. Set the supply holders to both sides of the paper roll.

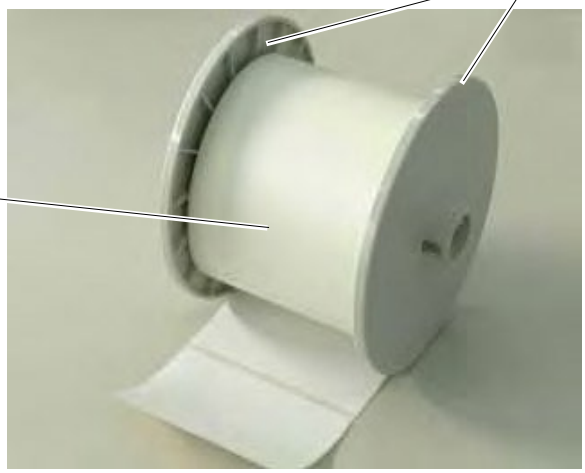


Fig. 6-3

3. Put the paper roll and supply holders on the supply holder unit.

Note: *Paper may be wound outside or inside. Regardless of the paper roll, the paper must be loaded so that the print side faces upward.*

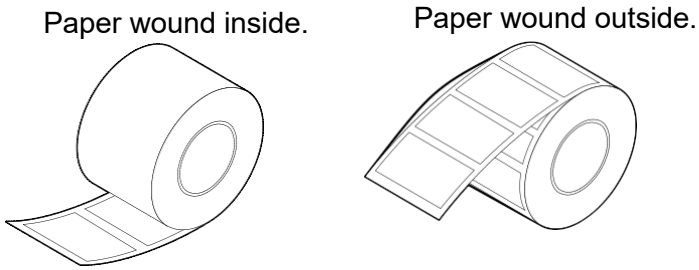


Fig. 6-4

4. Push both sides of the supply holder guides against the paper roll, then lock them with the lock lever.

Note: *Make sure that the supply holders rotate slightly.*

5. Pass the paper through the printer until it is past the paper outlet.
6. Adjust the position of the paper guides to the paper width, then lock them with the lock lever.

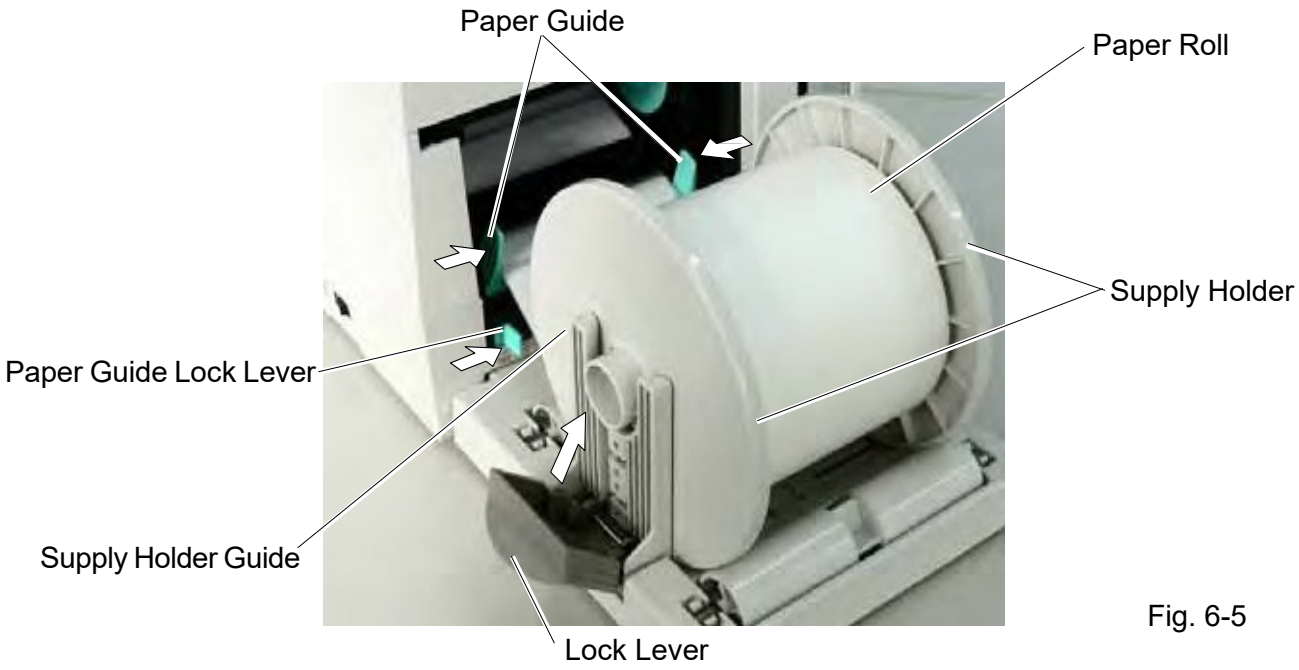


Fig. 6-5

7. Close the print head block by pressing both sides of the print head block's top until it clicks.

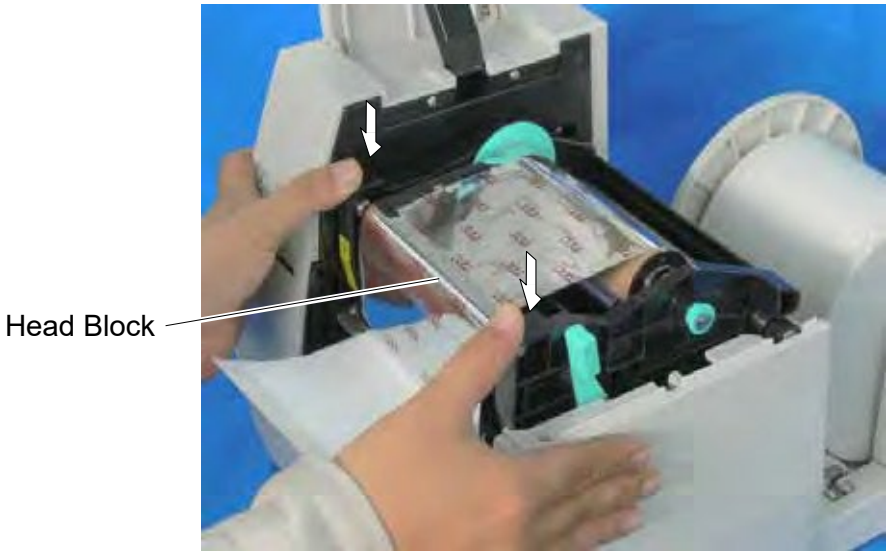


Fig. 6-6

Note: *Pass the paper straight from the supply holder to paper outlet. Failure to do this may cause skew feeding or paper jam.*

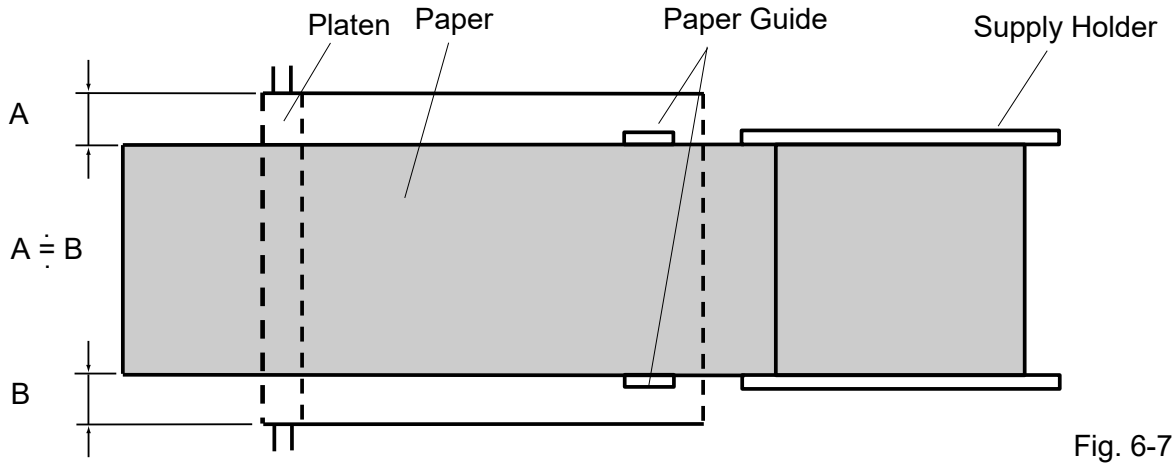


Fig. 6-7

8. Close the top cover. Paper loading is now completed.

Batch type:

Fig. 6-8

Cutter type: Where a cutter is fitted load the paper as standard and feed it through the cutter module.

Notes: *1. When using the cutter, be sure to cut the backing paper between the labels.Cutting on the label will cause the glue to stick to the cutter, which may affect the cutter quality and shorten it's life.*

2. Use of tag paper that exceeds the specified thickness may affect the cutter life.

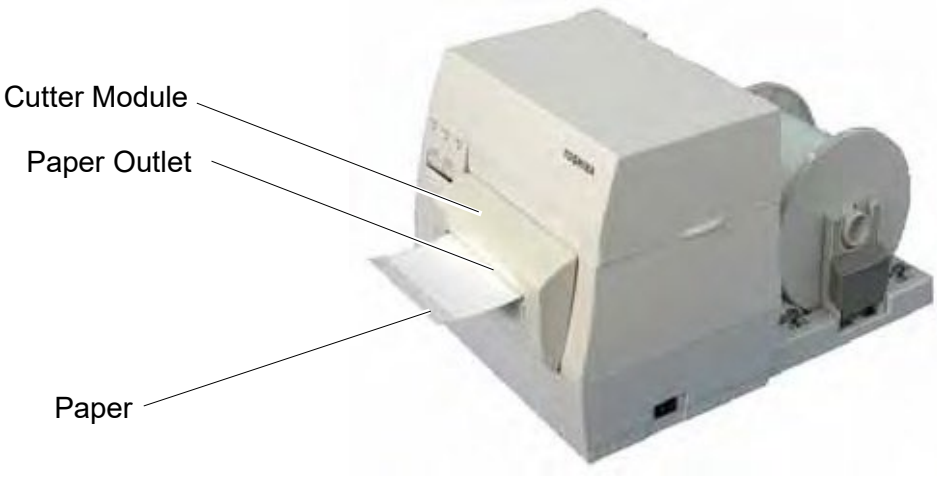


Fig. 6-9

6. LOADING THE PAPER

Strip type:

1. Strip the labels from the backing paper for about 200-mm long from the top edge of the label roll.
2. First push the strip lever toward the printer to release the hook, and then pull the strip lever.
3. Pass the backing paper between the strip roller and the strip guide roller. After taking up any slack of the paper, set the strip lever in position.

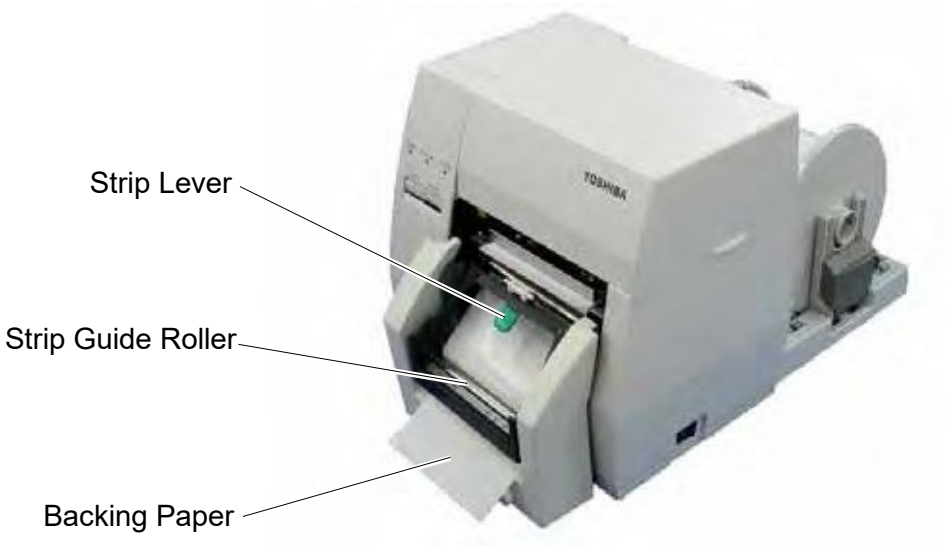


Fig. 6-10

7. CARE/HANDLING OF THE PAPER AND RIBBON

7. CARE/HANDLING OF THE PAPER AND RIBBON

CAUTION:
Be sure to read carefully and understand the Supply Manual. Ask your nearest authorized Toshiba Tec representative for the Supply Manual. Use only paper and ribbon which meet specified requirements. Use of non-specified paper and ribbon may shorten the head life and result in problems with bar code readability or print quality. All paper and ribbon should be handled with care to avoid any damage to the paper, ribbon or printer. Read the following guideline carefully.

1. Do not store the paper and ribbon for longer than the manufactures recommended shelf life.
2. Store paper rolls on the flat end, do not store them on the curved sides as this might flatten that side causing erratic media advance and poor print quality.
3. Store the paper in plastic bags and always reseal after opening. Unprotected paper can get dirty and the extra abrasion from the dust and dirt particles will shorten the print head life.
4. Store the paper and ribbon in a cool, dry place. Avoid areas where they would be exposed to direct sunlight, high temperature, high humidity, dust or gas.
5. The thermal paper used for direct thermal printing must not have the specifications which exceed Na^+ 800 ppm, K^+ 250 ppm and CL^- 500 ppm.
6. Some ink used on pre-printed labels may contain ingredients which shorten the print head's product life. Do not use labels pre-printed with ink which contain hard substances such as carbonic calcium ($CaCO_3$) and kaolin (Al_2O_3, $2SiO_2$, $2H_2O$).

For further information please contact your local distributor or your paper and ribbon manufacturer.

8. CONNECTING THE PRINTER TO YOUR COMPUTER

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The following paragraphs outline how to connect your host computer to the printer, and will also show how to make cable connections to other devices. Depending on the system configuration you use to print labels, there are 5 possibilities for connecting the printer to your host computer.
These are:

1. A parallel cable connection between the printer's standard parallel connector and your host computer's parallel port (LPT).
2. An Ethernet connection using the standard LAN board.
3. A USB cable connection between the printer's standard USB connector and your host computer's USB port. (Conforming to USB 2.0 Full Speed)
4. A serial cable connection between the printer's optional RS-232C serial connector and one of your host computer's COM ports. <Option>

For details of each interface, refer to APPENDIX 2.

The diagram below shows all the possible cable connections to the current version of the printer.

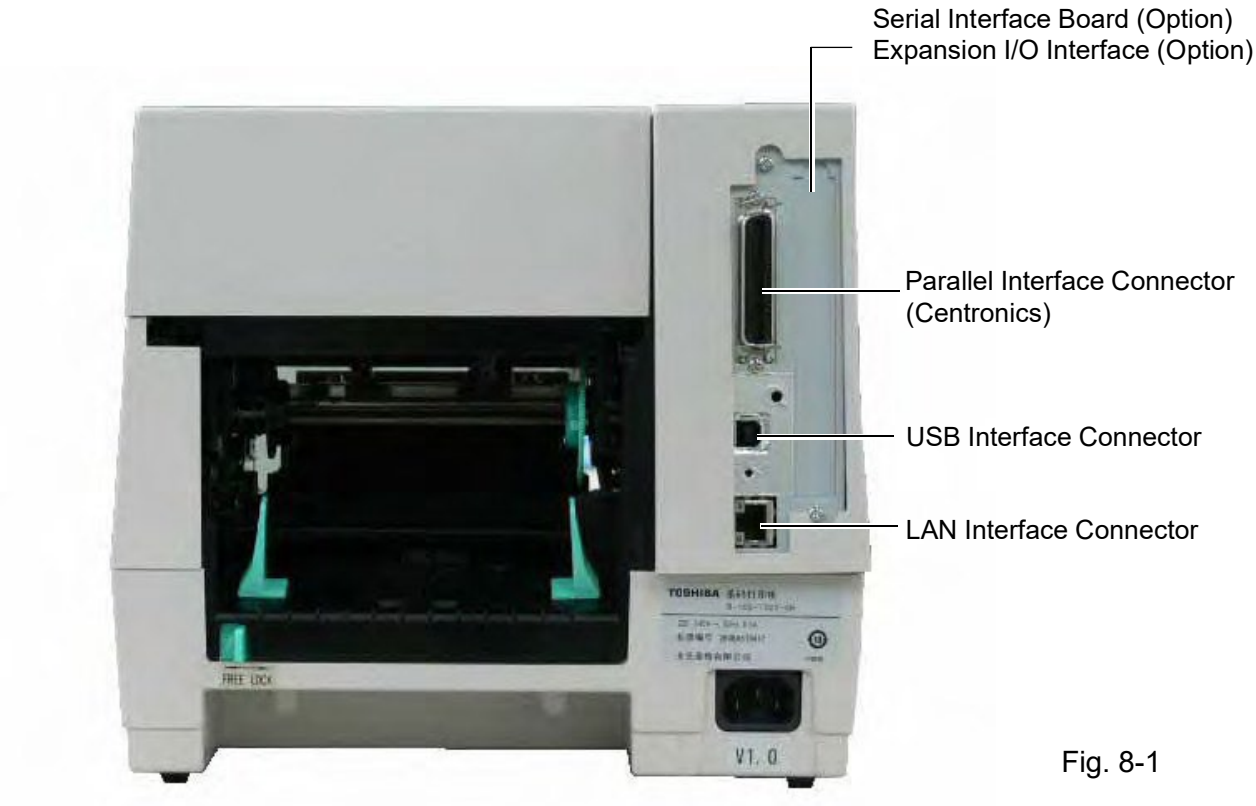


Fig. 8-1

9. TURNING THE POWER ON

9. TURNING THE POWER ON

CAUTION:
Use the power switch to turn the printer On/Off. Plugging or unplugging the Power Cord to turn the printer On/ Off may cause fire, an electric shock, or damage to the printer.

When the printer is connected to your host computer it is good practice to turn the printer ON before turning on your host computer and turn OFF your host computer before turning off the printer.

1. To turn ON the printer power, press the Power Switch as shown in the diagram below. Note that (|) is the power ON side of the switch.
2. Check that the ON LINE message appears in the LCD Message Display and that the ON LINE LED (Green) is illuminated.

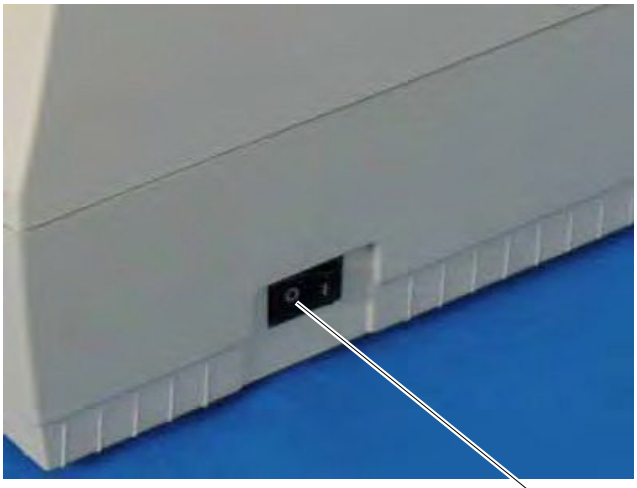


Fig. 9-1

10. ON LINE MODE

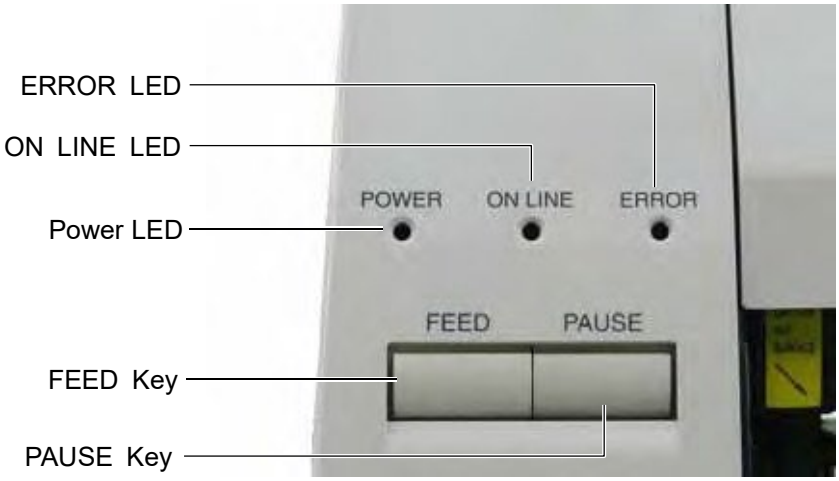
In the ON LINE mode, the following settings can be performed.

- Diagnostic Test Operation
- LAN and BASIC Setting Mode (Enabling/disabling the LAN and BASIC)

This section describes the Diagnostic Test Operation and Enabling/disabling the LAN and BASIC.

10.1 ONLINE OPERATION

■ Operation Panel



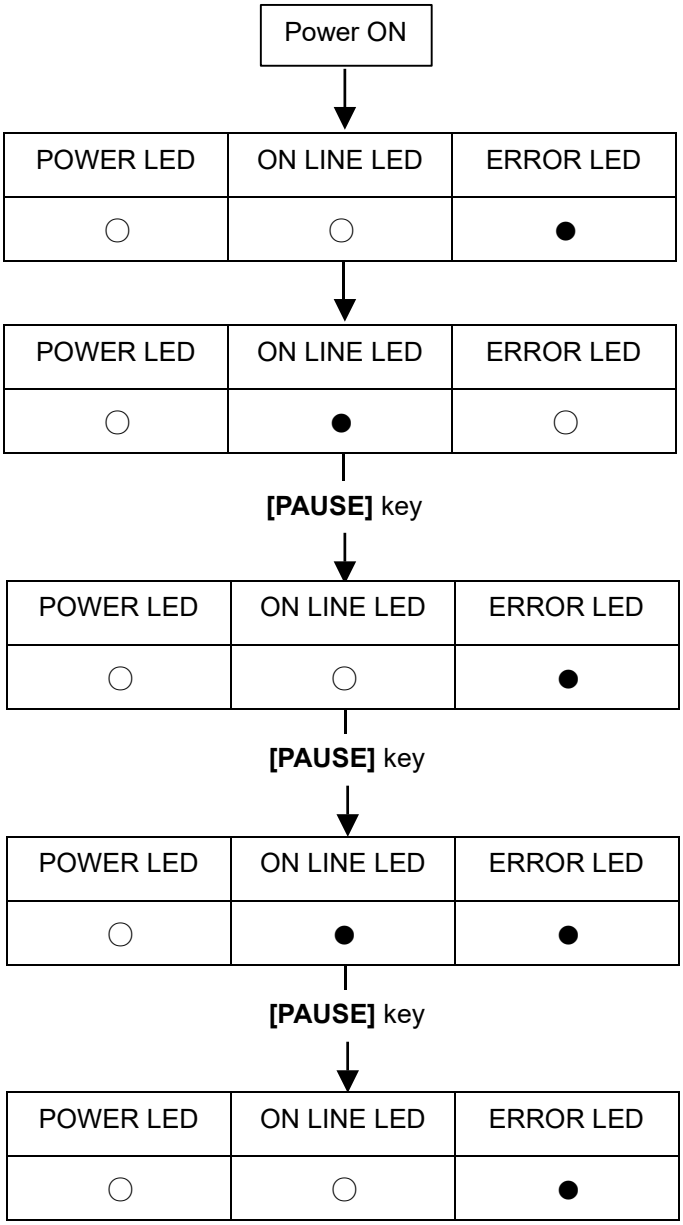
■ Key Function Table

Key Name	Function
[FEED] Key	Feeds a piece of paper. Feeds the paper to the print start position. When printing is performed with the print position misaligned, the printer cannot print data on a proper position, therefore, feed one or two pieces of paper to set the paper to the proper position before printing.
[PAUSE] Key	Pauses the label issue. Restarts printing after a pause or an error.

■ LED Function Table

LED Name	Function
POWER LED	Indicates that the printer is ON.
ON LINE LED	Indicates that the printer is communicable.
ERROR LED	Indicates that the printer is in an error status.

■ Example of ON LINE Mode Operation



Turn the power on.

The printer is in idle state or printing.

Error occurs

Press the **[PAUSE]** key.

Restart

Press the **[PAUSE]** key.

Press the **[PAUSE]** key.
The printer enters the pause mode.

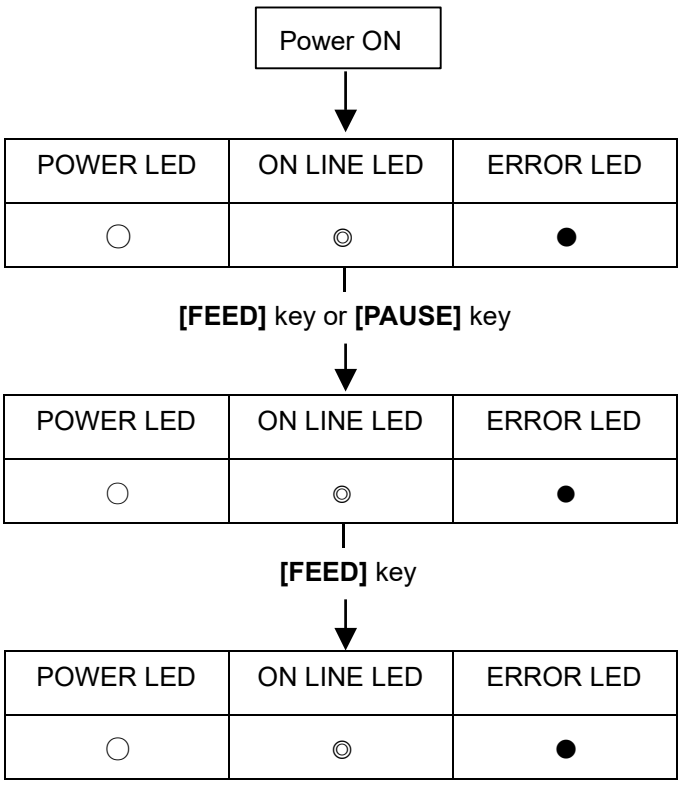
Press the **[PAUSE]** key.

Restart

○ The LED is illuminated.
◎ The LED is flashing.
● The LED is unlit.

10.2 DIAGNOSTIC TEST OPERATION AND TEST PRINT

In self test mode the printer status is printed in two types of sample print.



Turn on the power while holding down the **[PAUSE]** key.
Diagnostic test is started.

Diagnostic test is finished.

Select the print method
[FEED] key: Thermal transfer print
[PAUSE] key: Thermal direct print

The result of the Diagnostic test is printed.

Press the **[FEED]** key.
Test print is started.

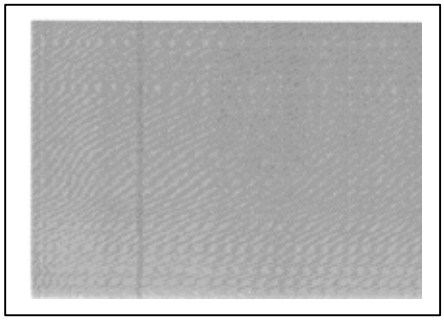
■ Sample Print of Maintenance Counter and Parameter Setting

TOTAL FEED		1.1km	[QQ]
FEED		1.1km	
PRINT		0.5km	
CUT		96	
RIBBON		3h	
232C ERR		255	
SYSTEM ERR		0	
POWER FAIL		0	
[PC]		[KEY]	
FEED	+2.0mm	FEED	+0.0mm
CUT	+0.0mm	CUT	+1.0mm
BACK	+0.0mm	BACK	+0.0mm
TONE(T)	+0 step	TONE(T)	+0 step
TONE (D)	+0 step	TONE(D)	+0 step
RBN(FW)	-10	RBN (FW)	-8
RBN (BK)	+0	RBN (BK)	+0
X ADJ.	+0.0mm		
THRESHOLD (R)		1.0V	
THRESHOLD (T)		1.4V	
FONT		[PC-850]	[0]
SPEED		[9600]	
DATA LENG.		[8]	
STOP BIT		[1]	
PARITY		[EVEN]	
CONTROL		[XON+READY AUTO]	
FORWARD WAIT		[ON]+0.0mm	
CODE		[AUTO]	
PEEL OFF STATUS		[ON]	
FEED KEY		[FEED]	
KANJI		[TYPE1]	
EURO CODE		[B0]	
AUTO HD CHK		[OFF]	
ACK/BUSY		[TYPE1]	
WEB PRINTER		[OFF]	
INPUT PRIME		[ON]	
RIBBON NEAR END		[OFF]	
EX. I/O MODE		[TYPE1]	
PLUG & PLAY		[OFF]	
LBL/RBN END		[TYPE1]	
PRE PEEL OFF		[OFF] +0.0mm	
BACK SPEED		[STD]	
MAXI CODE SPEC.		[TYPE1]	
KB I/F		[OFF]	
LAN		[ON]	
PRTR IP ADDRESS		[192.168.010.020]	
GATE IP ADDRESS		[000.000.000.000]	
SUBNET MASK		[255.255.255.000]	
MAC ADDRESS		[00-80-91-34-00-CC]	
TTF AREA		[1280KB]	
EXT CHR AREA		[256KB]	
BASIC AREA		[128KB]	
PC SAVE AREA		[128KB]	
SOCKET PORT		[OFF][08000]	
BASIC		[OFF]	
DHCP		[OFF]	
DHCP ID		[FFFFFFFFFFFFFFFFFFFF] [FFFFFFFFFFFF]	
DHCP HOST NAME		[ABCDEFGHIJKLMNOP]	
PEEL OFF TRQ		[R0]	

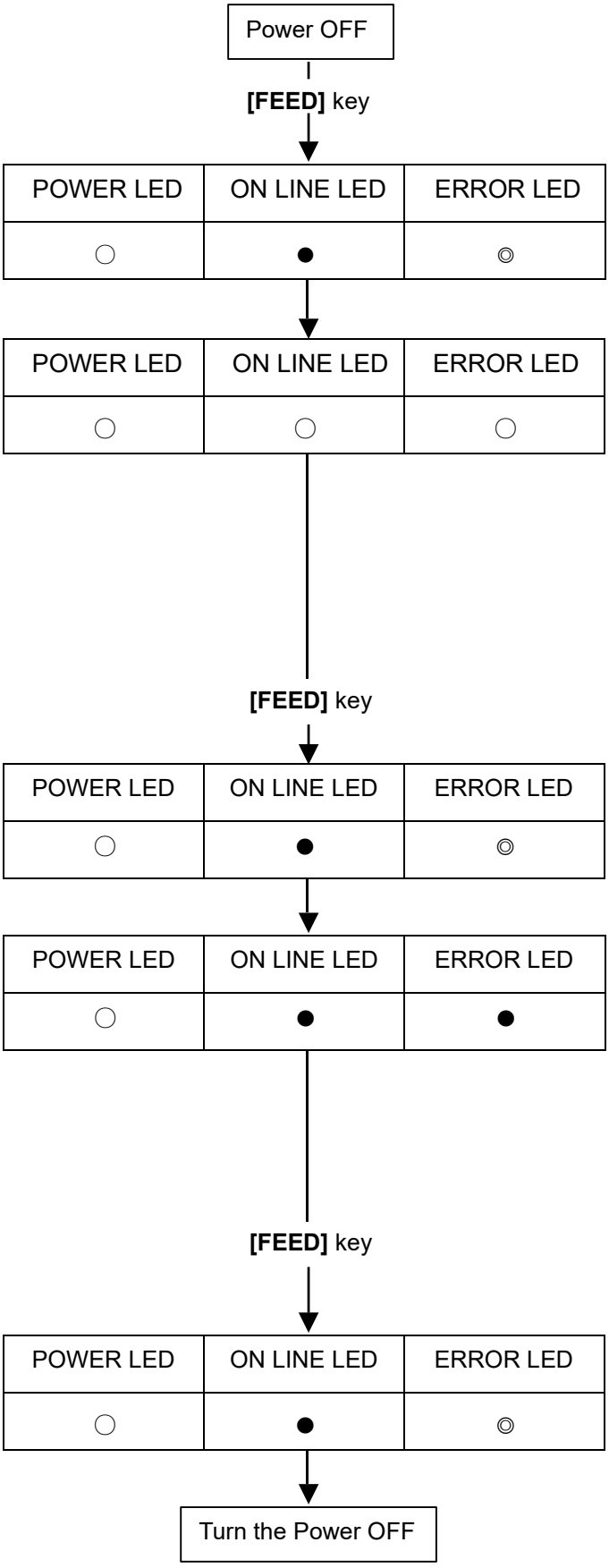
■ Sample Print of Diagnostic Test

PROGRAM	B-450-R	
	MAIN 15OCT2005 V1.0A: 1A00	
	BOOT 20SEP2005 V1.0: 8500	
	HTML 20SEP2005 V1.0: 8500	
FONT	AE00	
KANJI	GOTHIC: 9900	
	MINCHO: 1E00	
EEPROM	OK	
SDRAM	16MB	
SENSOR1	00000000, 00000111	
SENSOR2	[H]23°C	[A]22°C
	[R]4.2V	[T]2.5V
PE LV.	[R]1.2V	[T]4.3V
M THRE.	[R]5.0V	[T]5.0V
	[RANK]1	300DPI
EXP.I/O	NG	
EX.232C	NG	
SIO	NG NG	
STRIP	NG	

■ Print Sample of Slant Line (3 dots)



10.3 LAN AND BASIC SETTING



Turn the power ON while pressing and holding the **[FEED]** key for 3 seconds or more in the Expansion Operation Setting mode.

The printer enters the expansion operation setting mode.

When the **[FEED]** key is released, the current LAN interface setting status is indicated by the LEDs.
Use the **[PAUSE]** key to select a LAN setting.

	ON LINE LED	ERROR LED
LAN OFF	●	●
LAN ON SNMP ON	○	○
LAN ON SNMP OFF	●	○

Hold down the **[FEED]** key for more than 3 seconds to save the setting.

Save of the setting is completed.

When the **[FEED]** key is released, the current BASIC setting status is indicated by the LEDs.
Use the **[PAUSE]** key to select a BASIC setting.

	ON LINE LED	ERROR LED
BASIC ON	●	●
BASIC OFF	●	○

Hold down the **[FEED]** key for more than 3 seconds to save the setting.

Save of the setting is completed.

11. GENERAL MAINTENANCE

WARNING!
Be careful when handling the print head as it becomes very hot.

11.1 CLEANING

WARNING!
1. Be sure to disconnect the power cord prior to performing any maintenance. *2. DO NOT POUR WATER directly onto the printer.*

CAUTION:

1. Do not use any sharp objects to clean the print head and platen. Doing so may damage them, causing poor print quality or missing dots.

2. Never use a organic solvents like thinners or venzene for cleaning. Using such solvents may discolor the covers, cause poor print quality, or printer failure.

3. Do not touch the print head element as static build-up may damage the print head.

To help retain the high quality and performance of your printer it should be regularly cleaned. The greater the usage of the printer, the more frequent the cleaning. (i.e. low usage=weekly : high usage=daily).

1. Turn the power off.
2. Open the top cover.
3. Turn the head lever to raise the print head.
4. Remove the ribbon and paper.
5. Clean the print head element with print head cleaner

Note: *Purchase the print head cleaner from the authorized Toshiba Tec service representative.*

Fig. 11-1

6. Clean the platen with a cloth moistened with alcohol.
7. Remove any dust or glue from the detection area of the sensors and paper path with a soft cloth.

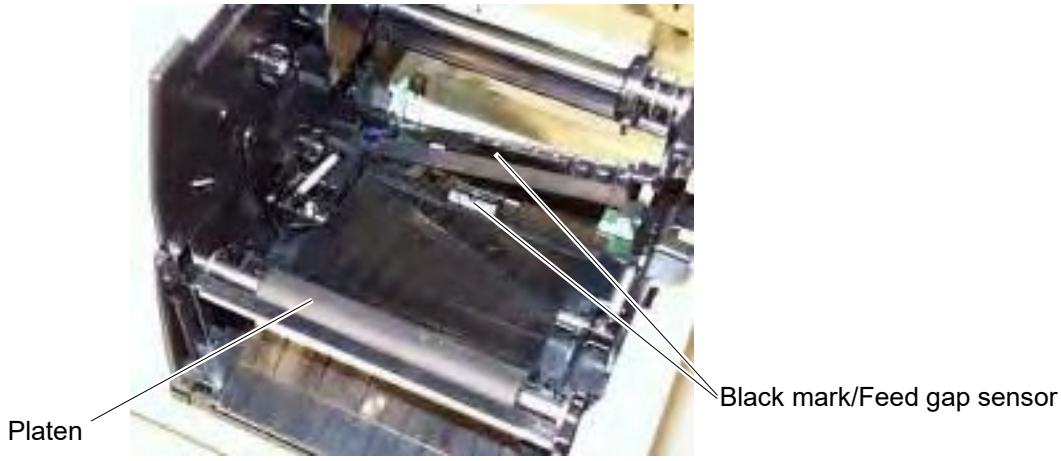


Fig. 11-2

8. Remove the supply holder rollers from the supply holder unit. Remove any dust from the recessed portions of the base and wipe glues from the rollers with a slightly moistened soft cloth.

Fig. 11-3

11.2 COVERS

The covers should be cleaned by wiping with a dry cloth or a cloth slightly dampened with a mild detergent solution.

Note: *Clean printer cover with an electrostatic free cleaner for automated office equipment.*

WARNING!
1. DO NOT POUR WATER directly onto the printer. *2. DO NOT APPLY cleaner or detergent directly onto any cover.* *3. NEVER USE THINNER OR OTHER VOLATILE SOLVENT on the plastic covers.* *4. DO NOT clean the covers with alcohol as it may cause them to discolor, loose their shape or develop structural weakness.*

11.3 REMOVING JAMMED PAPER

1. Turn the power off.
2. Open the top cover.
3. Move the head release lever toward the front of the printer to raise the print head block.
4. Remove the ribbon and paper.
5. Remove the jammed paper. DO NOT USE any sharp implement or tool as these could damage the printer.
6. Clean the print head and platen, then remove any further dust or foreign substances.

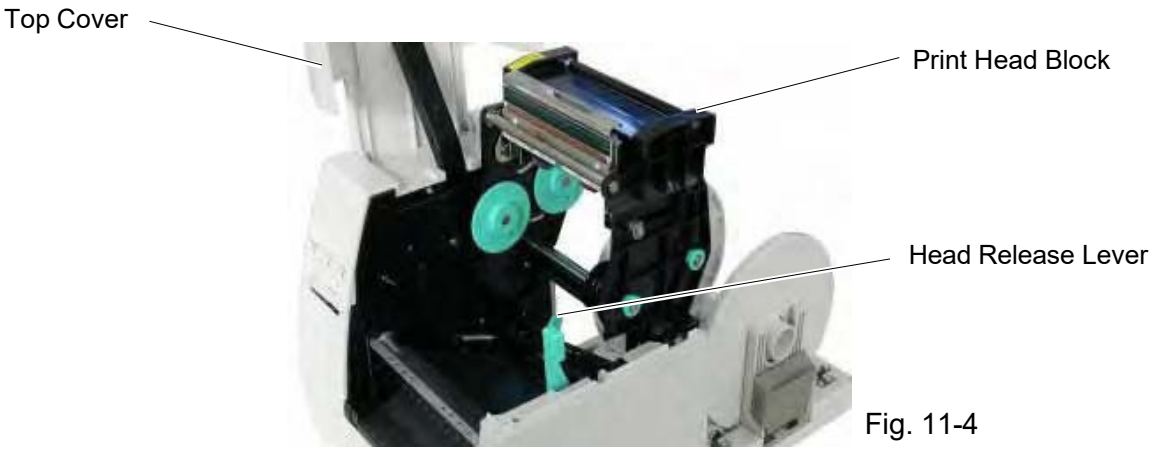


Fig. 11-4

7. Paper jams in the cutter unit can be caused by wear or residual glue from label stock on the cutter. Do not use unspecified paper in the cutter. If frequent jams occur in the cutter contact your Authorized Service representative.

Cleaning the Cutter Unit

WARNING!
1. Be sure to disconnect the power cord before cleaning the cutter unit. *2. The cutters are sharp and care should be taken not to injure yourself when cleaning.*

1. Press the cutter cover release lever to detach the cutter cover.

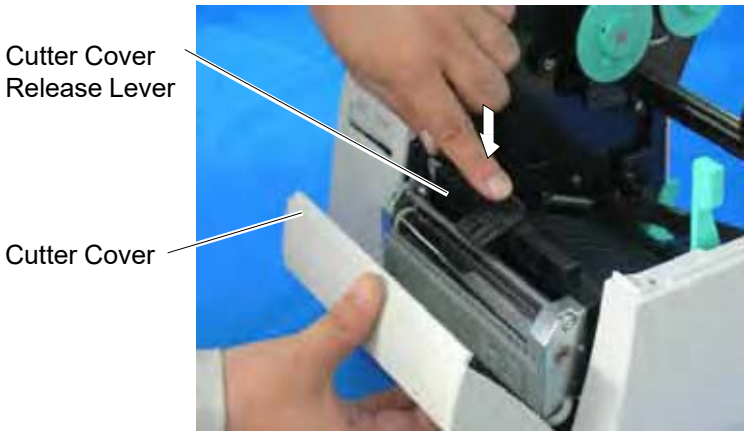


Fig. 11-5

2. Fit the enclosed Allen Key into the right side of the cutter unit to rotate the cutter manually. Remove the jammed paper and any paper particles from the cutter.
3. Clean the cutter with dry cloth.

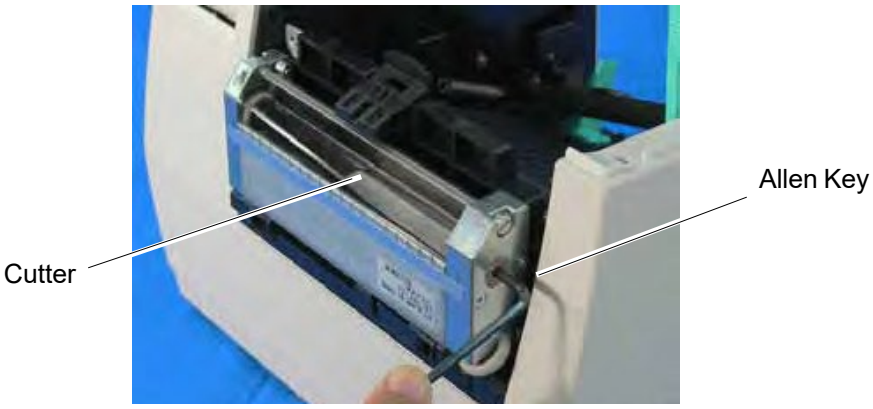


Fig. 11-6

4. Assembling is reverse order of removal.

Cleaning the Strip Unit

WARNING!
1. Be sure to disconnect the power cord before cleaning the strip unit. *2. Do not touch the moving parts. To reduce the risk that fingers, jewelry, clothing, etc., be drawn into the moving parts, push the switch in the "OFF" position to stop movement.*

1. First push the strip lever toward the printer to release the hook, and then pull the strip lever.
2. Remove the jammed paper, if any.
3. Clean the strip guide rollers A and B with a cloth moistened with alcohol.

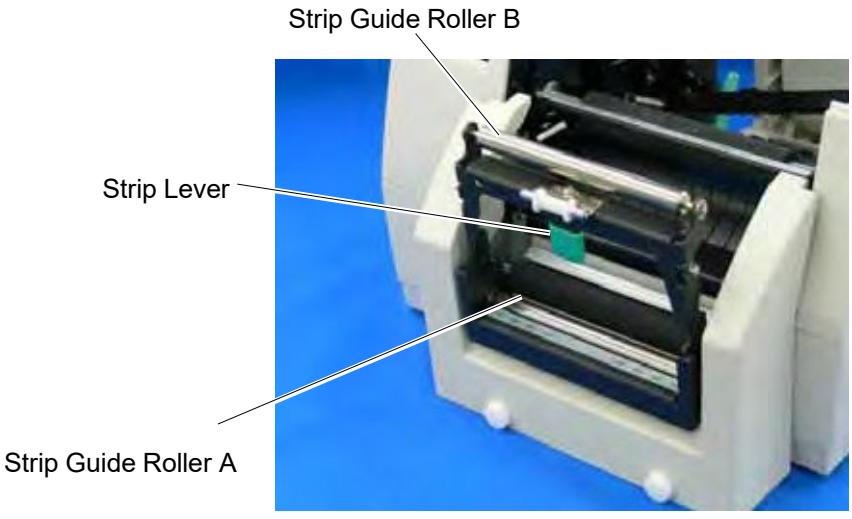


Fig. 11-7

12. TROUBLESHOOTING

12. TROUBLESHOOTING

WARNING!
If you cannot solve a problem with the following solutions, do not attempt to repair it yourself. Turn the power off, unplug the printer, then contact your Toshiba Tec representative for assistance.

If the error lamp lights during printing, refer to the following troubleshooting to solve the problem.

Error type	Problem	Solution
PAPER JAM	1. The paper is not fitted correctly.	1. Reload the paper correctly. −> Press the **[PAUSE]** key.
	2. The paper path is jammed and does not feed smoothly.	2. Remove the cause of the jam and replace the paper correctly. −> Press the **[PAUSE]** key.
	3. The installed paper type does not match the selected sensor.	3. Turn the power off then on again. Select the correct sensor. −> Feed the paper.
	4. The installed paper size is different from the programmed size.	4. Turn the power off then on again. Set the correct paper size. −> Feed the paper.
	5. The feed gap sensor cannot see the difference between the print area and the gap.	5. Set the threshold. Else Turn the power off and you're your Authorized Service representative.
HEAD OPEN	Feeding or printing has been attempted while the print head is raised.	Lower the print head block. −> Press the **[PAUSE]** key.
NO PAPER	The paper has run out.	Load new paper. −> Press the **[PAUSE]** key.
EXCESS HEAD TEMP.	The print head is too hot.	Turn the power off and decrease the print head temperature.
RIBBON ERROR	1. The ribbon has run out.	1. Load a new ribbon. −> Press the [PAUSE] key.
	2. There is a fault with the ribbon sensor.	2. Turn the power off and contact your Authorized Service representative.
CUTTER ERROR	Paper is jammed in the cutter.	Remove the jammed paper and feed the undamaged media through the cutter. −> Press the **[PAUSE]** key. Else Turn the power off and contact your Authorized Service representative.
Other Error	Hardware or software trouble.	Turn the power off then on again. If the problem still exists turn the power off and contact your Authorized Ser- vice representative.

Note: *If an error cannot be cleared by pressing the **[PAUSE]** key, the power must be switched off then on again. Once the power has been switched off and on, all the print data in the printer is cleared.*

12. TROUBLESHOOTING

Problem	Solution
No print.	1. Check that the paper and ribbon are loaded correctly. 2. Check that print head is set correctly. 3. Check the cabling between the printer and the host.
Dots missing in the print.	Dirty print head. −> Clean the print head. Call your Authorized Service representative if necessary.
Unclear (or blurred) printing.	1. Dirty print head. −> Clean the print head. 2. Bad or faulty ribbon. −> Replace ribbon. 3. Poor paper quality. −> Change paper type.
Power does not come on.	1. Plug power cord into an AC socket. 2. Check the circuit breakers or fuses. 3. Plug another appliance into the AC socket to check if there is power supplied. Call your Authorized Service representative if necessary.
Printer does not cut.	Check for a paper jam in the cutter. Call your Authorized Service representative if necessary.
You see a raised nap where the paper has been cut.	1. Clean the cutter blades. 2. The blades are worn. −> Call your Authorized Service representative.

APPENDIX 1 LED INDICATION

APPENDIX 1 LED INDICATION

Symbols in the message

○: The LED is illuminated. ◎: The LED is flashing. ●: The LED is unlit.

No.	LED Indication			Printer Status	Restoration by PAUSE key Yes/No	Acceptance of Status Request Reset Command Yes/No
	POWER	ONLINE	ERROR			
1	○	○	●	Online mode	-----	Yes
	○	◎	●	Online mode (communicating)	-----	Yes
2	○	●	●	The print head block is opened in online mode.	-----	Yes
3	○	●	●	Pause state	Yes	Yes
4	○	●	○	A parity, overrun, or framing error has occurred during a communication by RS-232C.	Yes	Yes
5	○	●	○	A paper jam has occurred during paper feed.	Yes	Yes
6	○	●	○	A problem has occurred at the cutter module.	Yes	Yes
7	○	●	○	The media has run out, or the media is not loaded properly.	Yes	Yes
8	○	●	○	A feed or an issue was attempted with the print head block opened. (Except when the [FEED] key is pressed.)	Yes	Yes
9	○	●	○	The print head has a problem.	Yes	Yes
10	○	●	○	The print head is overheated.	No	Yes
11	○	●	○	• The ribbon has run out. • The ribbon has been torn. A problem has occurred with the sensor that determines the torque for the ribbon motor.	Yes	Yes
12	○	●	○	A feed or printing was attempted with the Front Cover opened.	Yes	Yes
13	○	○	●	In writable character or PC command save mode	-----	Yes
14	○	●	○	An error has occurred in writing to the flash ROM.	No	Yes
15	○	●	○	An error has occurred in formatting the flash ROM.	No	Yes
16	○	●	○	Saving failed because of an insufficient capacity of the flash ROM.	No	Yes
17	○	●	○	A command error has occurred in analyzing the command.	Yes	Yes
18	○	●	○	A momentary power failure has occurred.	No	No
19	○	●	●	The flash ROM is being initialized.	-----	-----
20	○	●	○	Data cannot be read from/written to a backup EEPROM properly.	-----	-----

APPENDIX 1 LED INDICATION

No.	LED Indication			Printer Status	Restoration by PAUSE key Yes/No	Acceptance of Status Request Reset Command Yes/No
	POWER	ONLINE	ERROR			
21	○	●	○	When the following abnormal operations are performed, a system error occurs: (a) Command fetch from an odd address (b) Access to word data at an odd address (c) Access to long-word data at an odd address (d) Access to the area of 80000000H to FFFFFFFFH in the logic space in user mode. (e) An undefined instruction in an area other than a delay slot was decoded. (f) An undefined instruction in a delay slot was decoded. (g) An instruction to rewrite a delay slot was decoded.	No	No

APPENDIX 2 INTERFACE

APPENDIX 2 INTERFACE

Note:
To prevent radiation and reception of electrical noise, the interface cables must meet the following requirements:

- *In case of a parallel interface cable or serial interface cable, fully shielded and fitted with metal or metallised connector housings.*
- *Keep as short as possible.*
- *Should not be bundled tightly with power cords.*
- *Should not be tied to power line conduits.*
- *A parallel interface cable to be used should conform to IEEE1284.*

■ Parallel interface (Centronics)

Mode: Conforming to IEEE1284
Compatible mode (SPP mode), Nibble mode

Data input method: 8 bit parallel

Control signal:

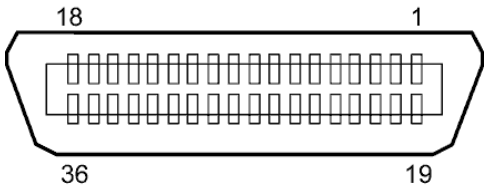
SPP Mode	Nibble Mode
nStrobe	HostClk
nAck	PtrClk
Busy	PtrBusy
Perror	AckDataReq
Select	Xflag
nAutoFd	HostBusy
nInit	nInit
nFault	nDataAvail
nSelectIn	IEEE1284Active

Data input code: ASCII code
European 8 bit code
Graphic 8 bit code
JIS8 code
Shift JIS Kanji code
JIS Kanji code

Receive buffer: 1M byte

Connector:

PIN No.	Signal	
	SPP Mode	Nibble Mode
1	nStrobe	HostClk
2	Data 1	Data 1
3	Data 2	Data 2
4	Data 3	Data 3
5	Data 4	Data 4
6	Data 5	Data 5
7	Data 6	Data 6
8	Data 7	Data 7
9	Data 8	Data 8
10	nAck	PtrClk
11	Busy	PtrBusy
12	PError	AckDataReq
13	Select	Xflag
14	nAutoFd	HostBusy
15	NC	NC
16	0V	0V
17	CHASSIS GND	CHASSIS GND
18	+5V (For detection)	+5V (For detection)
19	TWISTED PAIR GND(PIN1)	TWISTED PAIR GND(PIN1)
20	TWISTED PAIR GND(PIN2)	TWISTED PAIR GND(PIN2)
21	TWISTED PAIR GND(PIN3)	TWISTED PAIR GND(PIN3)
22	TWISTED PAIR GND(PIN4)	TWISTED PAIR GND(PIN4)
23	TWISTED PAIR GND(PIN5)	TWISTED PAIR GND(PIN5)
24	TWISTED PAIR GND(PIN6)	TWISTED PAIR GND(PIN6)
25	TWISTED PAIR GND(PIN7)	TWISTED PAIR GND(PIN7)
26	TWISTED PAIR GND(PIN8)	TWISTED PAIR GND(PIN8)
27	TWISTED PAIR GND(PIN9)	TWISTED PAIR GND(PIN9)
28	TWISTED PAIR GND(PIN10)	TWISTED PAIR GND(PIN10)
29	TWISTED PAIR GND(PIN11)	TWISTED PAIR GND(PIN11)
30	TWISTED PAIR GND(PIN31)	TWISTED PAIR GND(PIN31)
31	nInit	nInit
32	nFault	NDataAvail
33	0V	0V
34	NC	NC
35	NC	NC
36	nSelectIn	IEEE1284Active



IEEE1284-B Connector

■ USB interface

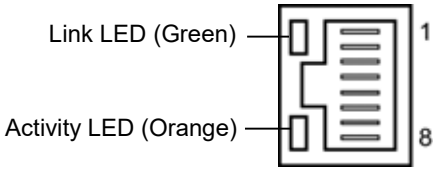
Standard: Conforming to V2.0 Full speed
Transfer type: Control transfer, Bulk transfer
Transfer rate: Full speed (12M bps)
Class: Printer class
Control mode: Status with the receive buffer free space information
Number of ports: 1
Power source: Self power
Connector: Type B

Pin No.	Signal
1	VCC
2	D-
3	D+
4	GND

Series B
Plug

■ LAN

Standard: IEEE802.3 10BASE-T/100BASE-TX
Number of ports: 1
Connector: RJ-45
LED status: Link LED
Activity LED



LED	LED Status	LAN status
Link	ON	10Mbps link or 100Mbps link is detected.
	OFF	No link is detected. ** Communication cannot be made while the Link LED is off.*
Activity	ON	Communicating
	OFF	Idle

LAN cable: 10BASE-T: UTP category 3 or category 5
100BASE-TX: UTP category 5
Cable length: Segment length Max. 100 m

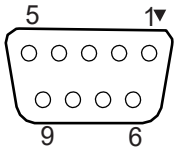
Note:
When a generally-used twisted pair Ethernet (TPE) or UTP cable is used, a communication error may occur depending on your operating environment. In such case, you may be requested to use a shielded twisted pair cable.

APPENDIX 2 INTERFACE

■ Serial interface (Option: B-7704-RS-QM-R)

Type: RS-232C
Communication mode: Full duplex
Transmission speed: 2400 bps, 4800 bps, 9600 bps, 19200 bps, 38400 bps, 115200 bps
Synchronization: Start-stop synchronization
Start bit: 1 bit
Stop bit 1 bit, 2 bit
Parity: None, EVEN, ODD
Connector:

Pin No.	Signal	I/O
1	CD (N.C)	-
2	TXD (Transmit Data)	Output
3	RXD (Received Data)	Input
4	DSR (Data Set Ready)	Input
5	SG (Signal Ground)	-
6	DTR (Data Terminal Ready)	Output
7	CTS (Clear to Send)	Input
8	RTS (Request to Send)	Output
9	CI (N.C)	-



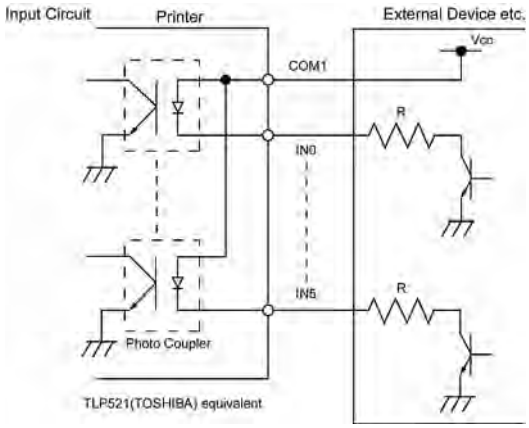
■ Expansion I/O Interface (Option: B-SA704-IO-QM-R)

Input Signal IN0 to IN5
Output Signal OUT0 to OUT6
Connector (External Device Side) FCN-781P024-G/P or equivalent
Connector (Printer Side) FCN-685J0024 or equivalent

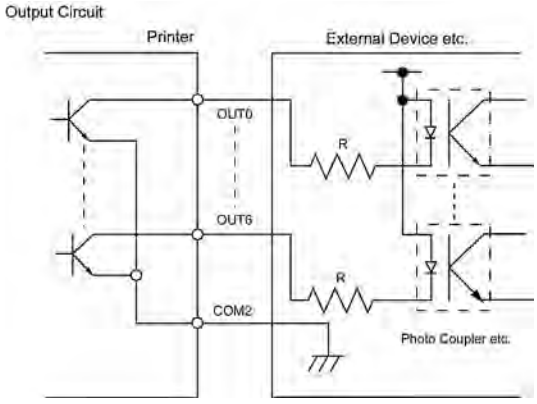
Pin	Signal	I/O	Function	Pin	Signal	I/O	Function
1	IN0	Input	FEED	13	OUT6	Output	
2	IN1	Input	PRINT	14	N.C.	-----	
3	IN2	Input	PAUSE	15	COM1	Common (Power)	
4	IN3	Input		16	N.C.	-----	
5	IN4	Input		17	N.C.	-----	
6	IN5	Input		18	N.C.	-----	
7	OUT0	Output	FEED	19	N.C.	-----	
8	OUT1	Output	PRINT	20	N.C.	-----	
9	OUT2	Output	PAUSE	21	COM2	Common (Ground)	
10	OUT3	Output	ERROR	22	N.C.	-----	
11	OUT4	Output		23	N.C.	-----	
12	OUT5	Output	POWER ON	24	N.C.	-----	

N.C.: No Connection

Input Circuit



Output Circuit



Operating environment Temperature: 0 to 40 °C
Humidity: 20 to 90% (No Condensation)

[redacted]

Toshiba Tec Corporation

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