TOSHIBA

TOSHIBA Barcode Printer

B-FV4D-GL SERIES

Owner's Manual

CE Compliance (for EU only)

This product complies with the requirements of EMC and Low Voltage Directives including their amendments. CE marking is the responsibility of Toshiba Tec Germany Imaging Systems GmbH, Carl-Schurz-Str. 7, 41460 Neuss, Germany.

For a copy of the related CE Declaration of Conformity, please contact your dealer or Toshiba Tec Corporation.

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

FCC Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operations of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

WARNING

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

(for USA only)

CAN ICES-3 (A) / NMB-3 (A)

This Class A digital apparatus complies with Canadian ICES-003.

(for CANADA only)

California Proposition 65 Warning: USA-California only

This Product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

The following information is for EU-member states only:
Disposal of products
(based on EU-Directive 2002/96/EC,
Directive on Waste electrical and electronic equipment – WEEE)

The use of the symbol indicates that this product may not be disposed as unsorted municipal waste and has to be collected separately. Integrated batteries and accumulators can be disposed of with the product. They will be separated at the recycling centers.
The black bar indicates that the product was placed on the market after August 13, 2005.
By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environmental and human health, which could otherwise be caused by inappropriate waste handling of this product.
For more detailed information about the take-back and recycling of this product, please contact your supplier where you purchased this product.

Notification (for Turkey)

AEEE Yönetmeliğine Uygundur

<u>Following information is only for India:</u>

The use of the symbol indicates that this product may not be treated as household waste. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product.
For more detailed information about the take-back and recycling of this product, please contact your supplier where you purchased the product.
This product complies with the “India E-waste Rule 2011” and prohibits use of lead, mercury, hexavalent chromium, polybrominated biphenyls or polybrominated diphenyl ethers in concentrations exceeding 0.1% by weight and 0.01% by weight for cadmium, except for the exemption set in Schedule II of the Rule.

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

Safety Precautions

Safety Summary

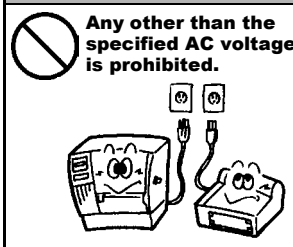
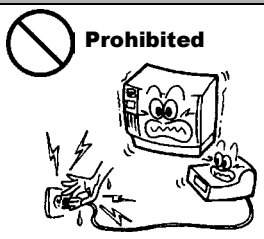
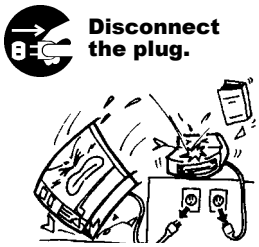
Personal safety in handling or maintaining the equipment is extremely important. Warnings and Cautions necessary for safe handling are included in this manual. All warnings and cautions contained in this manual should be read and understood before handling or maintaining the equipment.
Do not attempt 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 Corporation representative for assistance.

Meanings of Each Symbol

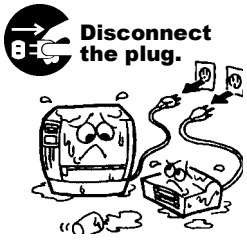
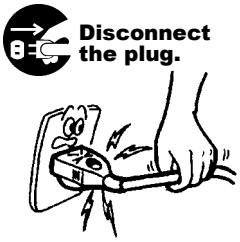
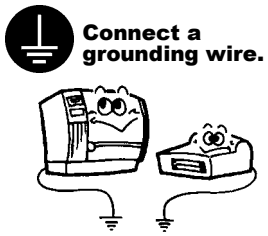
WARNING	This symbol indicates a potentially hazardous situation which, if not avoided, could result in death, serious injury, or serious damage, or fire in the equipment or surrounding objects.
CAUTION	This symbol indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury, partial damage to the equipment or surrounding objects, or loss of data.
PROHIBITED	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".)
MUST be Performed	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".)

NOTE: Indicates information to which you should pay attention when operating the manual.

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 share 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 such as flower vases, flower pots or mugs, etc. on top of the machine. If metal objects or spilled liquid 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 the ventilation slits, as this may cause **fire** or **electric shock**.
	Do not scratch, damage or modify the power cords. Also, 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 their cabinet damaged, first turn off the power switch and disconnect the power cord plug from the outlet, and then contact your authorised Toshiba Tec Corporation representative for assistance. Continued use of the machine in that condition may cause **fire** or **electric shock**.
	Continued use of the machine in an abnormal condition such as when the machine is producing smoke or strange smells may cause **fire** or **electric shock**. In these cases, immediately turn off the power switches and disconnect the power cord plug from the outlet. Then, contact your authorised Toshiba Tec Corporation representative for assistance.

Safety Precautions

 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 authorised Toshiba Tec Corporation representative for assistance. Continued use of the machine in that condition may cause **fire** or **electric shock**.	 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**.
 Ensure that the equipment is properly grounded. Extension cables should also be grounded. **Fire** or **electric shock** could occur on improperly grounded equipment.	 Do not remove covers, repair or modify the machine by yourself. Contact your authorised Toshiba Tec Corporation representative for assistance. You may be **injured** by high voltage, very hot parts or sharp edges inside the machine.
 Do not use a spray cleaner containing flammable gas for cleaning this product, as this may cause a **fire**.	 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 CORPORATION 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

- Utilize our maintenance services.
  After purchasing the machine, contact your authorised Toshiba Tec Corporation representative for assistance once a year to have the inside of the machine cleaned. Dust will build up inside the machine 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, preventing accidents beforehand.
  For details, please consult your authorised Toshiba Tec Corporation representative.
- Using insecticides and other chemicals
  Do not expose the machine to insecticides or other volatile solvents. This will cause the cabinet or other parts to deteriorate and may cause the paint to peel.

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NOTES:

- *This manual may not be copied in whole or in part without prior written permission of Toshiba Tec Corporation.*
- *The contents of this manual may be changed without notification.*
- *Please refer to your local Authorized Service representative with regard to any queries you may have in this manual.*
- *Windows is a registered trademark of Microsoft Corporation.*

1. PRODUCT OVERVIEW

1.1 Introduction

Thank you for choosing the TOSHIBA B-FV4D-GL series barcode printer. This Owner's Manual contains valuable information from general set-up to confirming the printer's operation using test prints. You should read it carefully to help you gain maximum performance and life from your printer. This manual should be kept close at hand for everyday reference.
Please contact your Toshiba Tec Corporation representative for further information concerning this manual.

1.2 Features

This printer has the following features:

Interfaces

The printer comes fitted with the following interfaces:

- USB interface
- Ethernet interface
- Serial (RS232) interface

Easy to use

The printer mechanism is designed to allow easy operation and easy access for maintenance.

1.3 Unpacking

1. Unpack the printer.
2. Check for damage or scratches on the printer. However, please note that Toshiba Tec Corporation shall have no liability for any damage of any kind sustained during transportation of the product.
3. Keep the carton and internal packaging for future transportation of the printer.

1.4 Accessories

When unpacking the printer, please check that the following accessories are supplied with the printer.

- ☐ CD-ROM (1 copy)
- ☐ Quick Installation Manual (1 copy)
- ☐ Safety Precautions (1 copy)
- ☐ USB Cable (1 pc.)
- ☐ Scraper (1 pc.)
- ☐ Cleaner Pen (1 pc.)
- ☐ Cutter Tray (1 pc.)

■ When you need to purchase a power cord

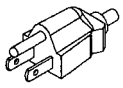
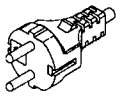
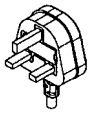
In some countries/regions the power cord is not provided with this unit, if this is the case then please purchase an approved one that meets the following standards or contact your authorised Toshiba Tec Corporation representative.

(As of Oct. 2014)

Country/ Region	Agency	Certification mark	Country/ Region	Agency	Certification mark	Country/ Region	Agency	Certification mark
Australia	SAA		Germany	VDE		Sweden	SEMKKO	
Austria	OVE		Ireland	NSAI		Switzerland	SEV	
Belgium	CEBEC		Italy	IMQ		UK	ASTA	
Canada	CSA		Japan	METI		UK	BSI	
Denmark	DEMKO		Netherlands	KEMA		U.S.A.	UL	
Finland	FEI		Norway	NEMKO		Europe	HAR	
France	UTE		Spain	AEE		China	CCC	

Power Cord Instruction

1. For use with 100 – 125 Vac mains power supply, please select a power cord rated Min. 125V, 10A.
2. For use with 200 – 240 Vac mains power supply, please select a power cord rated Min. 250V.
3. Please select a power cord with the length of 2m or less.
4. The power cord plug connected to the AC power inlet must be able to be inserted into an ICE-320-C14 inlet. Refer to the following figure for the shape.

Country/Region	North America	Europe	United Kingdom	Australia	China
Power Cord Rated (Min.) Type Conductor size (Min.)	 125V, 10A SVT No. 3/18AWG	 250V H05VV-F 3 x 0.75 mm^2	 250V H05VV-F 3 x 0.75 mm^2	 250V AS3191 approved, Light or Ordinary Duty type 3 x 0.75 mm^2	 250V GB5023 3 x 0.75 mm^2
Plug Configuration (locally approved type) Rated (Min.)	 125V, 10A	 250V, 10A	 250V, *1	 250V, *1	 250V, *1

*1: At least, 125% of the rated current of the product.

1.5 Appearance

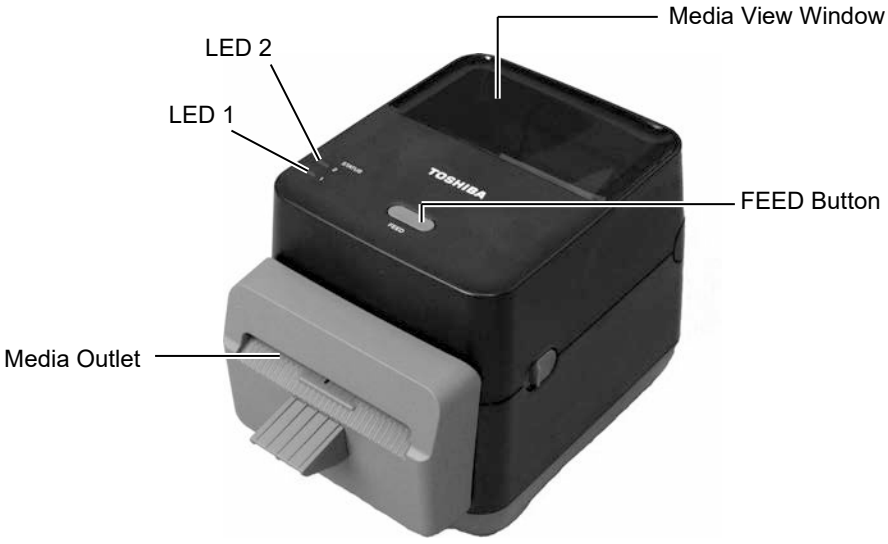
1.5.1 Dimensions

The parts and units shown and named in this section are used for descriptions in the following chapters.

W: 184.0 (7.2”) x D: 271.2 (10.7”) x H: 198.8 (7.8”)

Dimensions in mm (inches)

1.5.2 Front View



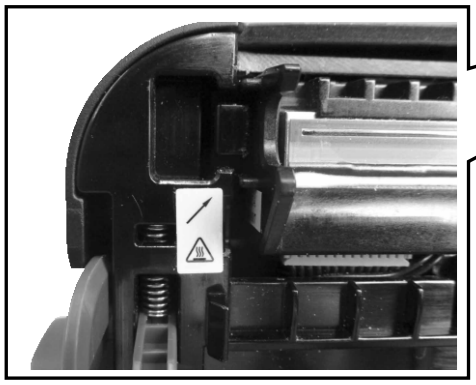
1.5.3 Rear View

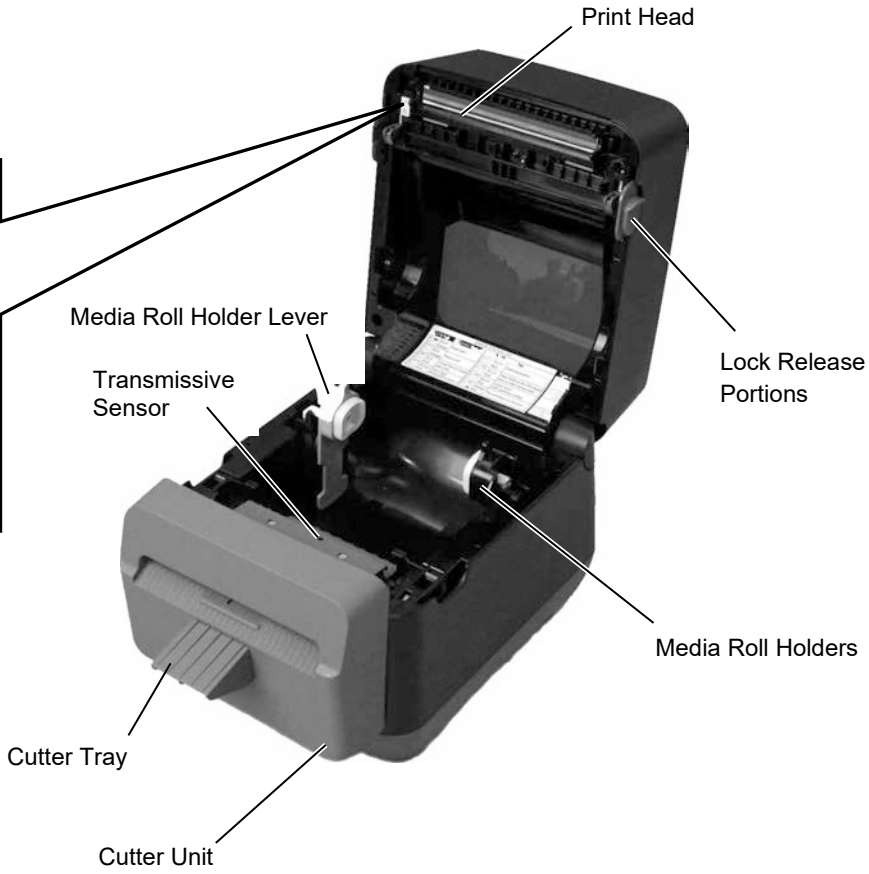
> ⚠ ***CAUTION!***
> *To avoid injury, be careful not to trap your fingers in the Paper Slot while opening or closing the Top Cover.*

For details of the rear view, refer to ***Section 2.4 Connecting the Cables to the Printer***.

1.5.4 Interior

> ⚠ ***WARNING!***
> *The print head becomes very hot during printing. Do not touch the print head or touch around it directly after printing. By doing so you may get burnt.*





1.5.5 Button and Indicator Lamp

The [FEED] button has three functions. It can operate as a FEED, RESTART or PAUSE button depending on current the printer state.

As a FEED button	• Pressing this button when the printer is online will cause the media to feed forwards.
As a RESTART button	• Pressing this button after removing the cause of an error returns the printer to an online state. • Pressing this button with the printer is paused will resume printing.
As a PAUSE button	• Pressing this button while the printer is printing will stop the printing after completing the current label. The printer is then paused.

The indicator lamps (LED1 and LED 2) light up or flash in different colors and sequences depending on the printer status. A quick guide to lamp statuses and their meaning is shown inside the top cover.

LED 1	LED 2	Printer Status
Unlit	Unlit	The power is off. The Top Cover is open if the printer power is on.
Green	Unlit	Stand-by
Green *S*	Unlit	Printing is temporarily stopped (paused).
Green *F*	Unlit	Communicating with a host
Green	Green	Writing data to the flash or USB memory
Green	Green *M*	The Flash ROM on the CPU board or USB memory is being initialized.
Orange	Green	A paper jam occurred.
Orange	Red	The media has ended.
Orange	Red *F*	The media has ended while the print data is being sent to the printer.
Red	Red *M*	Top Cover (Thermal Head) open error. The Top Cover has been opened during an operation.
Red	Orange *F*	The print head temperature exceeded the upper limit.
Red	Green	A communication error occurred. (Only when the RS-232C is used.)
Red	Green *S*	Command error
Red	Green *M*	• Flash ROM on the CPU board error, or USB memory error • An erase error while formatting the Flash ROM on the CPU board or USB memory • Unable to save files due to insufficient storage space on the Flash ROM on the CPU board or USB memory.
Red	Orange *M*	The print head is broken.

F: Flashes fast (0.5 sec)
M: Flashes at medium speed (1.0 sec)
S: Flashes slowly (2.0 sec)

2. PRINTER SETUP

This section outlines the steps necessary to setup your printer prior to its operation. The section includes precautions, connecting cables, assembling accessories, loading media, and performing a test print.

2.1 Precautions

> ⚠ ***CAUTION!***
> *Avoid using the printer in the locations where it is subjected to intense light (e.g. direct sunlight, desk light). Such light may affect the sensors of the printer, causing malfunctions.*

To insure the best operating environment, and to assure the safety of the operator and the equipment, please observe the following precautions.

- *Operate the printer on a stable, level, operating surface in a location free from excessive humidity, high temperature, dust, vibration or direct sunlight.*
- *Keep your work environment static free. Static discharges can cause damage to delicate internal components.*
- *Make sure that the printer is connected to a clean source of AC Power and that no other high voltage devices that may cause line noise interference are connected to the same mains.*
- *Ensure that the printer is connected only to AC mains that has a proper ground (earth) connection.*
- *Do not operate the printer with the cover open. Be careful not to allow fingers or articles of clothing to get caught into any of the moving parts of the printer.*
- *Make sure to turn off the printer power and to remove the power cord from the printer whenever working on the inside of the printer or when cleaning the printer.*
- *For best results, and longer printer life, use only Toshiba Tec Corporation recommended media. (Refer to the Supply Manual.)*
- *Store the media in accordance with the specifications.*
- *This printer mechanism contains high voltage components; therefore you should never remove any of the covers of the machine as you may receive an electrical shock. Additionally, the printer contains many delicate components that may be damaged if accessed by unauthorised personnel.*
- *Clean the outside of the printer with a clean dry cloth or a clean cloth slightly dampened with a mild detergent solution.*
- *Use caution when cleaning the thermal print head as it may become very hot while printing. Wait until it has had time to cool before cleaning. Use only the Toshiba Tec Corporation recommended print head cleaner to clean the print head.*
- *Do not turn off the printer power or remove the power plug while the printer is printing or while the Indicator Lamp is flashing.*
- *The socket-outlet needs to be installed near the equipment and must be easily accessible.*
- *Pull out the plug from the outlet more than once a year to clean around the prongs. Accumulating dust and dirt could cause a fire due to the heat released by electric leakage.*

2.2 Procedure before Operation

NOTES:

1. *To be able to communicate with a host computer, an RS-232C, Ethernet, or USB cable connection is required.*
   (1) RS-232C cable: 9 pins (do not use a null modem cable)
   (2) Ethernet cable: 10/100 Base
   (3) USB cable: V2.0 (Full Speed)
2. *Use of the Windows Driver will enable printing from Windows applications.*
   The printer can also be controlled with its own programming commands. For details, please contact your Toshiba Tec Corporation representative.

This section describes the steps needed to setup the printer correctly.

1. Unpack the printer and its accessories from the box.
2. Place the printer where it is to be used referring to Safety Precautions supplied with the printer for tips on the correct use and placement.
3. Make sure that the Power Switch is off. (Refer to **Section 2.3**.)
4. Connect the printer to a host computer or network using an RS-232C, Ethernet or USB cable. (Refer to **Section 2.4**.)
5. Insert the Power Cord into the AC power inlet of the printer, and then plug the Power Cord into a properly grounded power outlet. (Refer to **Section 2.5**)
6. Load the media. (Refer to **Section 2.7**.)
7. Install the Printer Driver on the host computer. (Refer to the Printer Driver on the CD-ROM.)
8. Turn the Power ON. (Refer to **Section 2.3**.)

2.3 Turning the Printer ON/OFF

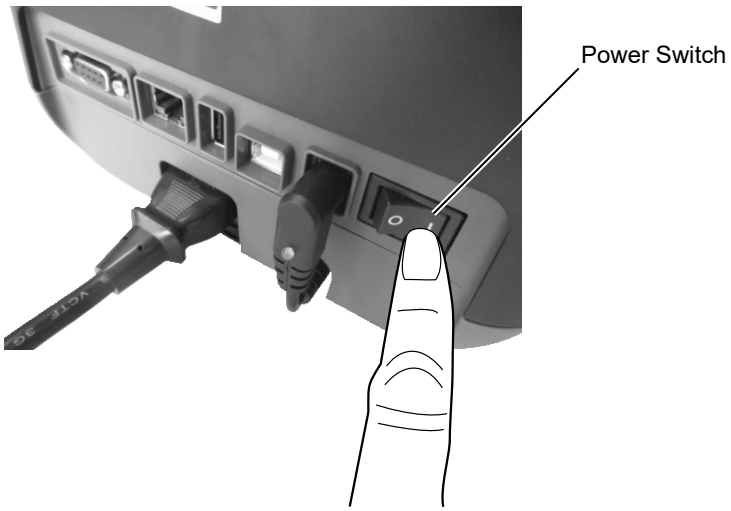
When the printer is connected to a host computer it is good practice to turn the printer ON before turning on the host computer and to turn OFF the host computer before turning off the printer.

2.3.1 Turning ON the Printer

⚠ 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.

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.



NOTE:

*If the LED 1 or 2 is illuminated in red, go to **Section 4.1, Troubleshooting Guide**.*

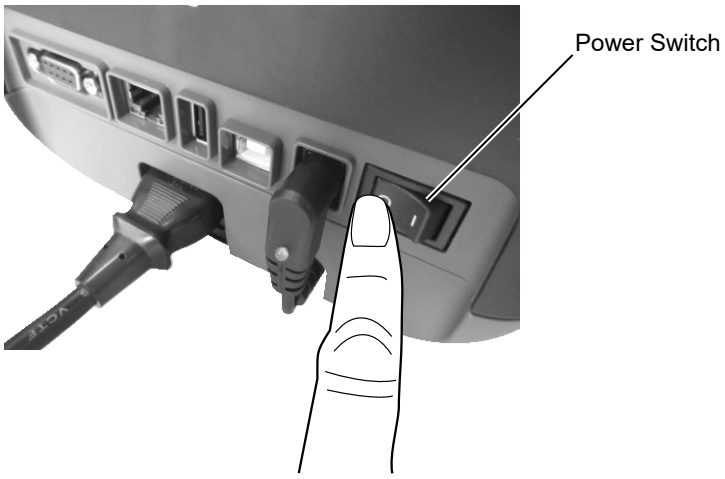
2. As the printer powers on LED 1 and 2 will lite first in orange then off and finally LED 1 should stay illuminated in green.

2.3.2 Turning OFF the Printer

> ⚠ ***CAUTION!***
>
> 1. Do not turn off the printer power while the printer is printing as this may cause a paper jam or damage to the printer.
> 2. Do not turn off the printer power while LED 1 is flashing as this may lead to loss or corruption of the data being downloaded.

1. Before turning off the printer power switch, verify that: LED 1 is illuminated in green (not flashing) and LED 2 is extinguished.

2. To turn OFF the printer power, press the power switch as shown in the diagram below. Note that (○) is the power OFF side of the switch.



2.4 Connecting Cables to the Printer

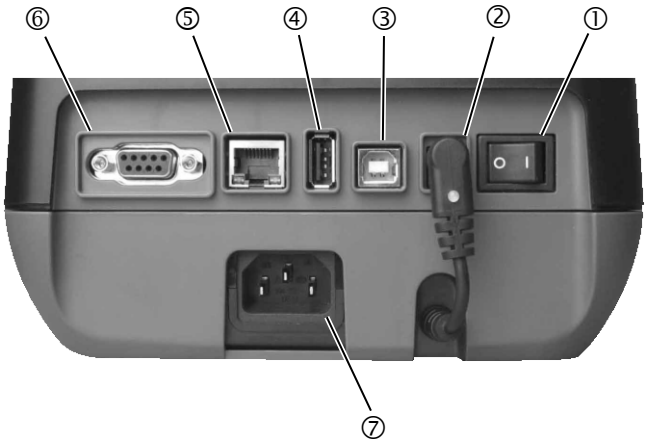
> ***CAUTION!***
> *Be sure to connect the serial cable while the printer and the host computer are in a powered-off state. Failure to do this may cause electric shocks, short-circuits, or damage to the printer or Host computer.*

> ***NOTE:***
> *For the specifications of the serial interface cable, refer to* ***APPENDIX 2, INTERFACE****.*

This section details how to connect communication cables to the printer from your host computer or other devices. There are three different means of connection that can be used on the printer. These are:

- An Ethernet cable connection can be used to connect to a network or directly to your host computer's Ethernet port.
  NOTE:
  - Use an Ethernet cable conforming to the standard.
    10BASE-T: Category 3 or greater
    100BASE-TX: Category 5 or greater
    Cable length: Up to 100 m segment length
  - In some environments communication errors may be caused by electromagnetic interference on the cable. If this occurs you may need to use a shielded cable (STP).
- A USB cable connection between the printer's USB interface port and one of your host computer's USB ports.
  NOTE:
  - When disconnecting the USB cable from the host computer, follow the "Safely remove hardware" procedure on the host computer.
  - Use a USB cable conforming to V2.0 or greater and with a Type B plug on one end.
- A serial cable connection between the printer's RS-232C serial port and one of your host computer's COM ports.

The diagrams below show all the possible cable connections to the current versions of the printer.

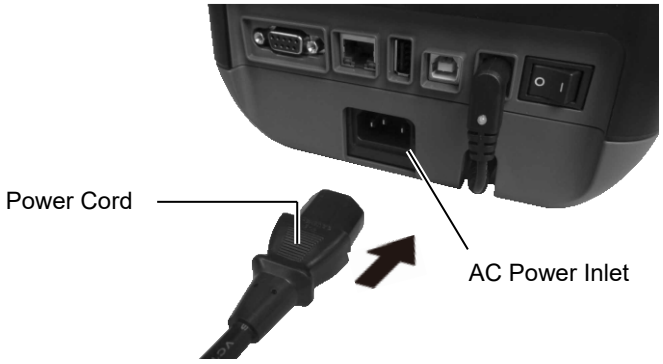


① Power Switch
② Power Jack
Remark*:*
Make sure that the Power Jack is connected to the printer as shown above.
③ USB Interface for connecting a host computer
④ USB Interface for connecting a USB memory
⑤ Ethernet Interface
⑥ Serial Interface (RS-232C)
⑦ AC Power Inlet

2.5 Connecting the Power Cord

> ***NOTE:***
> *If a power cord is not provided with this printer, please purchase the correct one referring to page 1-2.*

1. Make sure that the printer power switch is in the OFF (O) position.
2. Insert the Power Cord into the AC power inlet.



2.6 Opening/Closing the Top Cover

When opening or closing the Top Cover, please be sure to follow the instructions below.

⚠ WARNING!

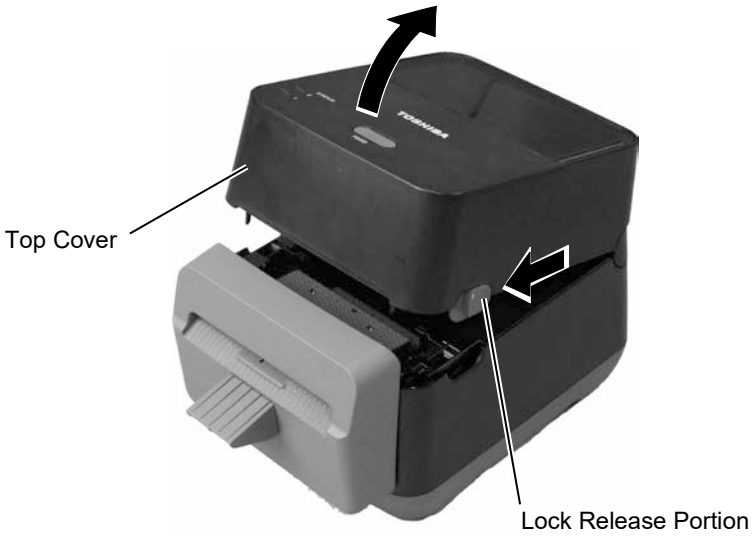
To avoid injury, be careful not to trap your fingers while opening or closing the cover.

⚠ CAUTION!

1. *Be careful not to touch the Print Head Element when opening the Top Cover. Failure to do this may cause missing dots by static electricity or other print quality problems.*
2. *Do not cover the Cover Open Sensor with your finger, hand, etc. Doing so may cause the sensor to wrongly detect a cover close state.*

To open the Top Cover:

1. Open the Top Cover while pulling the Lock Release Portions as indicated by the arrows.



NOTE:

Be sure to close the Top Cover completely. Failure to do this may affect the print quality.

To close the Top Cover:

1. Close the Top Cover.

2.7 Loading the Media

⚠ WARNING!

1. *Do not touch any moving parts. To reduce the risk of fingers, jewellery, clothing, etc. being drawn into the mechanism, be sure to load the media **only** once the printer has completely stopped moving.*
2. *To avoid injury, be careful not to trap your fingers while opening or closing the Top Cover.*

⚠ CAUTION!

Be careful not to touch the Print Head Elements when opening the Top Cover. Doing this may cause damage to some of the dots through static discharge or other print quality problems.

This section describes how to load the media in the printer. This printer is intended for printing label (without liner) rolls. Please use Toshiba Tec Corporation approved media.

NOTES:

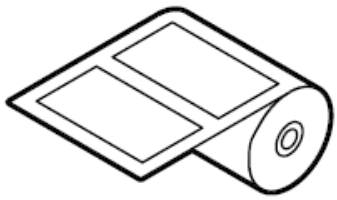
1. The size of the media which can be loaded inside the printer is as follows:

   Outer roll diameter: Max. 127mm (5")

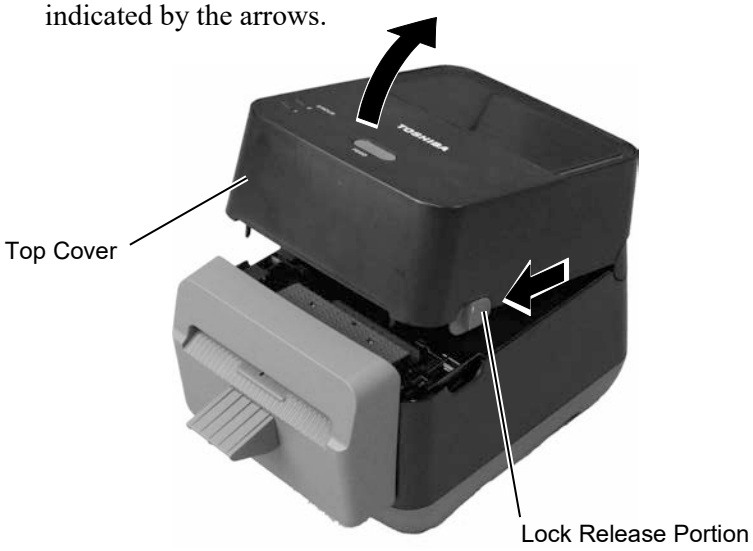
   Inner core diameter: 40 (1.57") mm

2. Use the outside wound type media and load it so that the print side faces up.

Outside wound

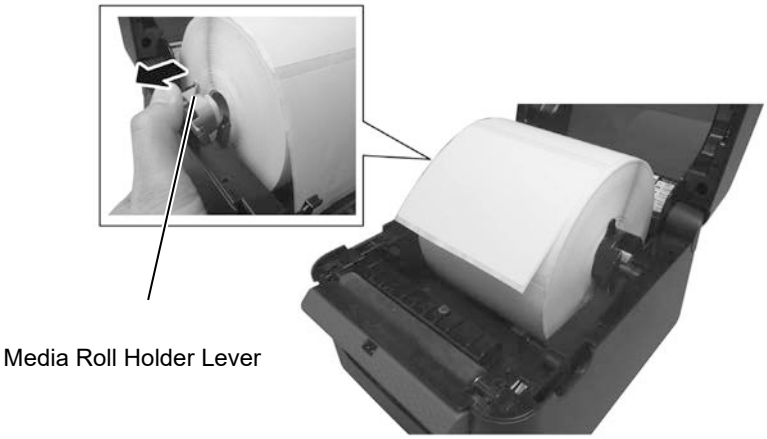


1. Open the Top Cover while pulling the Lock Release Portions as indicated by the arrows.



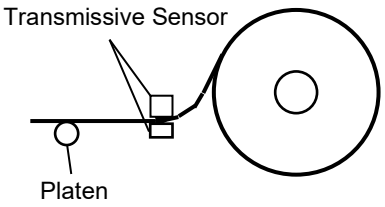
2.7 Loading the Media (Cont.)

2. Press the Media Roll Holder Lever down and outward, set the media between the Media Roll Holders ensuring that the printing side is facing up. Release the Media Roll Holder Lever to clamp the media roll securely.



NOTES:

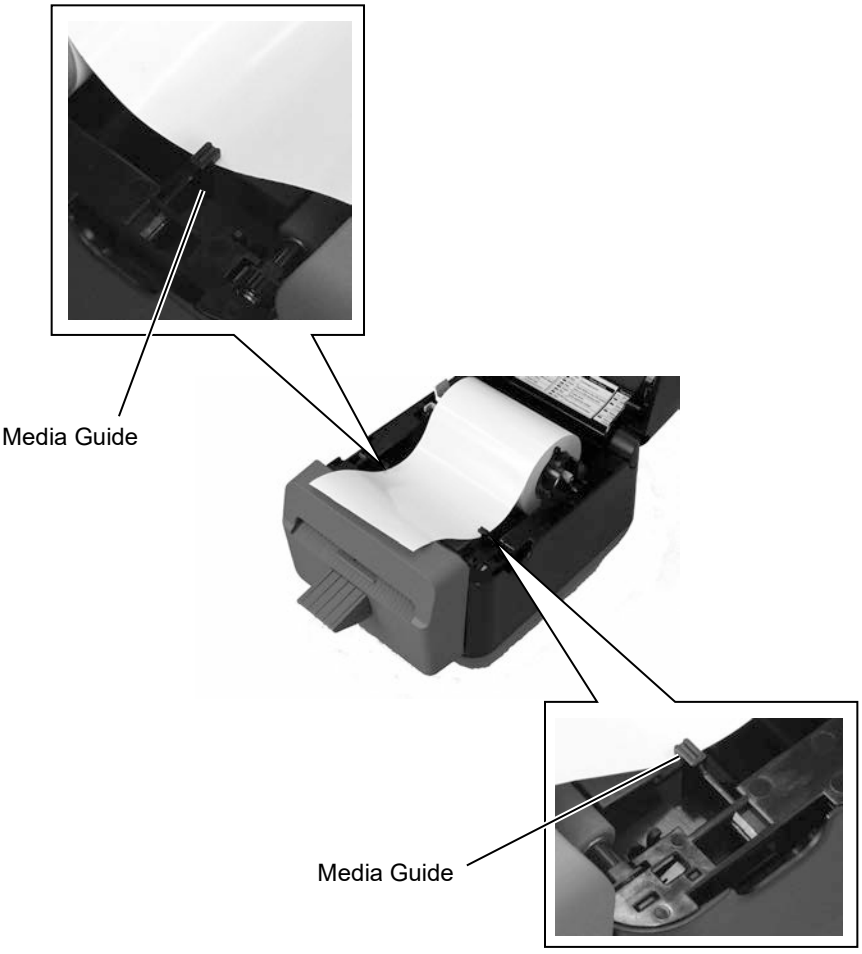
1. Media path



2. Make sure that the print side faces up.

3. Cut the leading edge of the media straight with scissors.

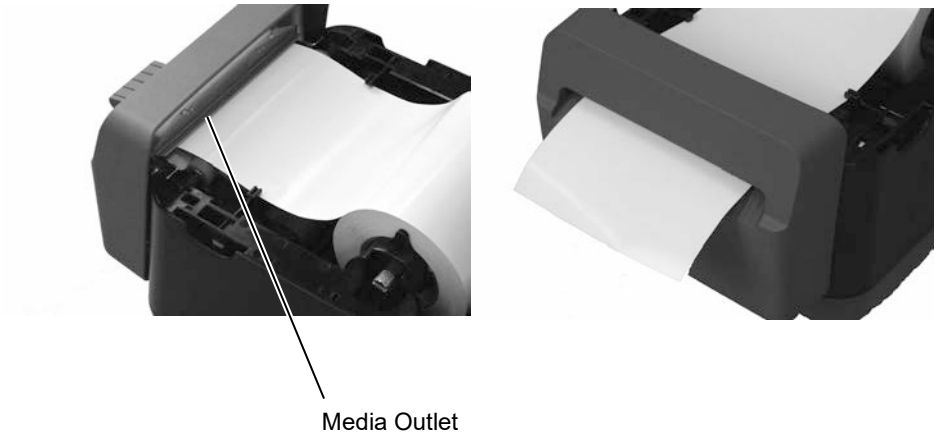
3. Pass the media through the Media Guides. Pull the media until it reaches the front of the printer.



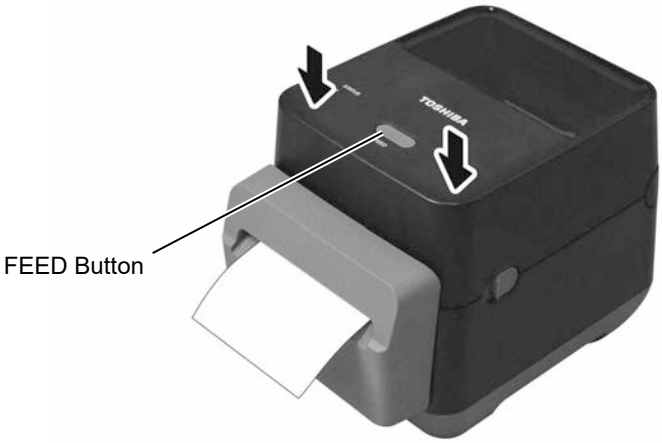
***NOTE**:*
Be careful not to squeeze the media with the Media Guides. Doing so bends the media, which can cause a paper jam or feed failure.

2.7 Loading the Media (Cont.)

4. Pass the media through the media outlet of the cutter block.



5. Close the Top Cover, then press the [FEED] button to check the media feeds correctly.



2.8 Self Print Test and Dump Mode Utilities

These utilities are used to print out a test with details of the printer settings and set the printer into Dump mode.

2.8.1 Self Print Test and Dump Mode

1. Turn off the printer power and install a media roll in the printer.
2. Press and hold the [FEED] Button while turning on the printer. The status lamps (LED 1 and LED 2) will light up in the following order:
   Orange → Green → Other colour sequences
3. *Release the [FEED] Button when LED 1 lights in orange and LED 2 lights in green.*
4. Press the [FEED] button.
5. The printer prints the self print test, and then enters Dump Mode.
6. *To return to Online operation, turn the printer off, then on again.*

> ***NOTE**:*
> *The following commands will have no effect the test print. D, AX, XS, Z2;1, Z2;2 (only the AY command will)*

Print test label sample

```
B-FV4D-G PRINTER INFO.

PROGRAM VERSION         28OCT2015B-FV4  V1.6C
TPCL VERSION            15SEP2015 V1.4
CG VERSION              27FEB2014 V1.0
CHINESE VERSION         27FEB2014 V1.0
CODEPAGE VERSION        27FEB2014 V1.0
BOOT VERSION            V1.4
KERNEL FONT VERSION     1.0.05
WLAN MODULE             [Not installed]
BLUETOOTH MODULE        [Not installed]
[PARAMETERS]
HW DETECT               [0001110000100110]
TONE ADJUST(T)          [-03]
TONE ADJUST(D)          [+00]
FEED ADJUST             [+0.0mm]
CUT ADJUST              [+0.0mm]
BACKFEED ADJUST         [+0.0mm]
X-COORD. ADJUST         [+0.0mm]
CODEPAGE                [PC-850]
ZERO SLASH              [0]
FEED KEY                [FEED]
EURO CODE               [B0]
CONTROL CODE            [AUTO]
MAXI CODE SPEC.         [TYPE 1]
SENSOR SELECT           [Transmissive]
PRINT SPEED             [2ips]
FORWARD WAIT            [OFF]
AUTO CALIB.             [OFF]
MULTI LABEL             [OFF]
AUTO THP CHK            [OFF]
BASIC                   [OFF]
Reserved item1
Reserved item1
FLASH ROM               [16MB]
SDRAM                   [32MB]
USB SERIAL NUM.         [000000000001]
```

2.8.1 Self Print Test and Dump Mode (Cont.)

```
[INFORMATION]
INFORMATION              [B-FV4D-GL14-QM-R]
                         [2305M000001]
TOTAL FEED1              [0.00km]
TOTAL FEED2              [00000cm]
                         [0000.0inch]
TOTAL PRINT              [0.00km]
TOTAL CUT                [0]
[RS-232C]
BAUD RATE                [9600]
BIT                      [8]
STOP BIT                 [1]
PARITY                   [None]
FLOW                     [XON/XOFF]
[LAN]
IP ADDRESS               [192.168.010.020]
SUBNET MASK              [255.255.255.000]
GATEWAY                  [000.000.000.000]
MAC ADDRESS              [ab-cd-ef-01-23-45]
DHCP                     [ON]
DHCP CLIENT ID           [FFFFFFFFFFFFFFFF]
                         [FFFFFFFFFFFFFFFF]
DHCP HOST NAME           [                 ]
                         [                 ]
SOCKET COMM.             [ON]
SOCKET COMM. PORT        [9100]
```

The test print content are different based on the emulation mode. The list below is for TPCL mode.

PROGRAM VERSION ----------
TPCL VERSION----------
CG VERSION ----------
CHINESE VERSION----------
CODEPAGE VERSION ----------
BOOT VERSION ----------
KERNEL FONT VERSION---------- } Firmware version

WLAN MODULE ---------- WLAN module installation flag
BLUETOOTH MODULE ---------- Bluetooth module installation flag
HW DETECT---------- Hardware detection flag
TONE ADJUST(T) ---------- Reserved parameter
TONE ADJUST(D)---------- Print tone fine adjustment value
FEED ADJUST---------- Print position fine adjustment value
CUT ADJUST ---------- Reserved parameter
BACKFEED ADJUST ---------- Back feed amount fine adjustment value
X-COORD. ADJUST---------- X-coordinate fine adjustment value
CODEPAGE---------- Character code selection
ZERO SLASH---------- Font “0” selection
FEED KEY---------- [FEED] key function setting
EURO CODE---------- Euro code setting
CONTROL CODE---------- Control code type
MAXI CODE SPEC. ---------- Maxicode specification setting
SENSOR SELECT---------- Sensor type
PRINT SPEED ---------- Print Speed
FORWARD WAIT ---------- Forward feed standby after issue
AUTO CALIB. ---------- Automatic calibration setting

2.8.1 Self Print Test and Dump Mode (Cont.)

MULTI LABEL ---------- Multi label setting
AUTO TPH CHECK ---------- Automatic print head check for broken dots setting
BASIC ---------- Basic interpreter setting
Reserved item1 ---------- } Reserved parameter
Reserved item2 ---------- }
FLASH ROM ---------- Flash ROM Capacity
SDRAM ---------- SDRAM Capacity
USB SERIAL NUM. ---------- USB serial number
INFORMATION ---------- Printer model name and serial number.
TOTAL FEED1 ---------- Total feed distance (condition1)
TOTAL FEED2 ---------- Total feed distance (condition2)
TOTAL PRINT ---------- Total Print distance
TOTAL CUT ---------- Reserved parameter
[RS-232C] ---------- RS-232C setting value
(BAUD RATE, BIT, STOP BIT, PARITY, FLOW)
[LAN] ---------- Network setting values
(IP ADDRESS, SUBNET MASK, GATEWAY, MAC ADDRESS, DHCP, DHCP CLIENT ID, SOCKET COMM., SOCKET COMM. PORT)

3. MAINTENANCE

⚠ WARNING!

1. *Be sure to turn OFF the power before performing any maintenance. Failure to do this may cause an electric shock.*
2. *To avoid injury, be careful not to trap your fingers while opening or closing the cover.*
3. *Be careful when handling the print head as it becomes very hot during printing. Allow it to cool before performing any maintenance.*
4. *Do not pour water directly onto the printer.*

This chapter details the routine maintenance procedures.
To ensure the continuous high quality operation of your printer, you should regularly perform these maintenance routines. Where the printer is intensively used (high throughput) it should be done on a daily basis. Where the printer is not intensively used (low throughput) it should be done on a weekly basis.

3.1 Cleaning

To maintain the printer performance and print quality, please clean the printer regularly, or whenever the media is replaced.
When the cutter is used, cleaning is required to keep printer and cutter life after 1 roll is printed or the end of day.

3.1.1 Print Head

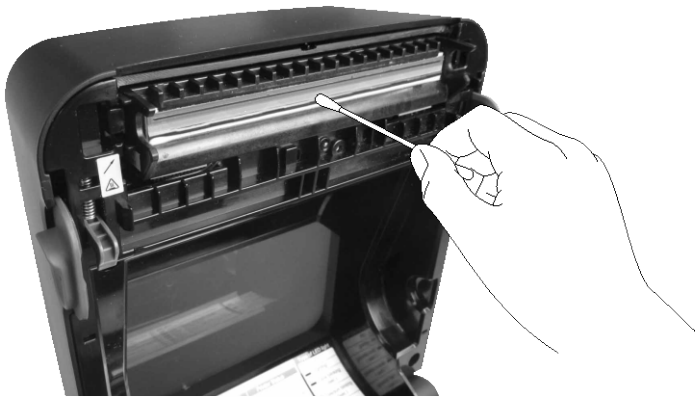
⚠ CAUTION!

1. *Do not allow any hard objects to touch the print head or platen, as this may cause damage to them.*
2. *Do not use any volatile solvents including thinner and benzene, as this may cause discoloration of the cover, print failure, or breakdown of the printer.*
3. *Do not touch the print head element with bare hands, as static may damage the print head.*

NOTE:

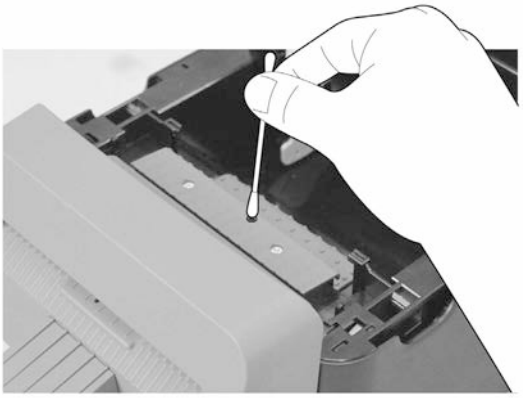
Print Head Cleaners can be purchased from your authorised Toshiba Tec Corporation service representative.

1. Turn the power off.
2. Open the Top Cover.
3. Clean the Print Head Element 1 time per day with a Cleaner Pen, cotton swab or soft cloth slightly moistened with ethyl alcohol.



3.1.2 Sensor

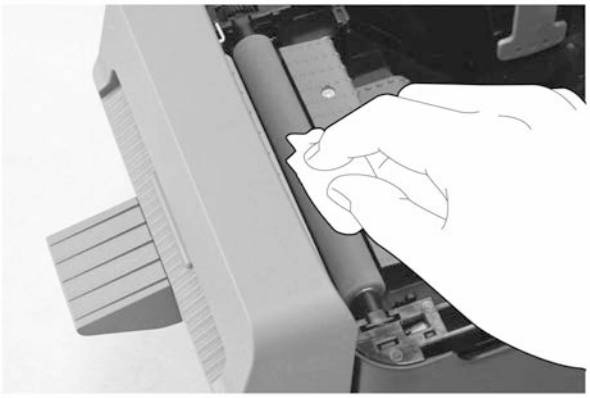
1. Wipe the Transmissive Sensor with a soft cloth or a cotton swab lightly moistened with absolute (pure) ethyl alcohol.
2. To remove dust or paper particles, wipe the Transmissive Sensor with a dry soft cloth.



3.1.3 Platen Roller

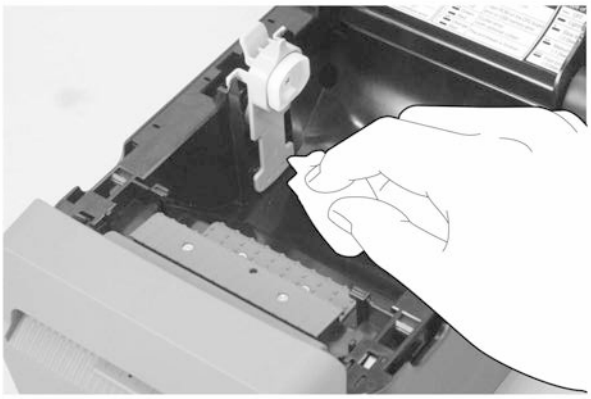
> ⚠ ***CAUTION!***
> *Do not apply alcohol to the platen roller. This may cause deteriorate the platen roller.*

1. Turn the power off and open the top cover.
2. Wipe the platen roller with a soft cloth slightly moistened with Silicone oil.



3.1.4 Media Housing

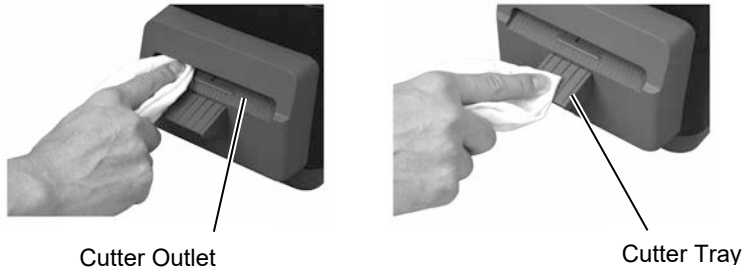
Wipe the media housing with a dry soft cloth. Wipe off dirt with a soft cloth slightly moistened with mild detergent solution.



3.1.5 Cutter

> ***NOTE:***
> *Clean the cutter every one label roll or at the end of day.*

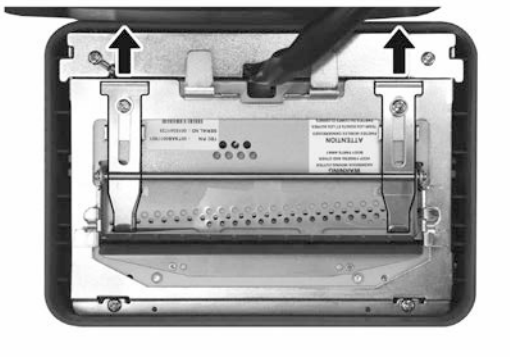
1. Turn the power off.
2. Wipe Cutter Outlet and Cutter Tray with a dry soft cloth.



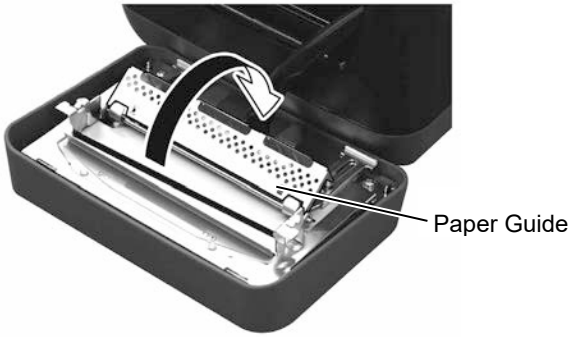
3. Open the Top Cover.
4. Detach the Cutter Tray from the Cutter Block, then remove the Cutter Block from the printer by lifting it.

3.1.5 Cutter (Cont.)

5. Slide two levers as indicated by the arrows, and open the Paper Guide for cleaning.



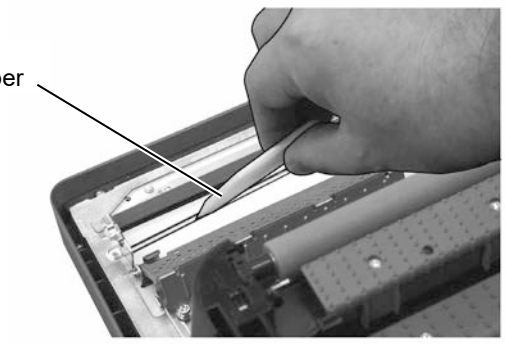
6. Open the Paper Guide for cleaning.

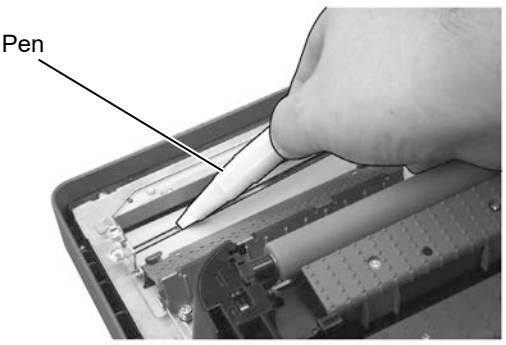


7. Use the Scraper to remove adhesive residues from the cutter blade.
8. Use the Cleaner Pen to clean the blade surface.

WARNING!

As the cutter blade is sharp, care should be taken not to injure yourself while cleaning.



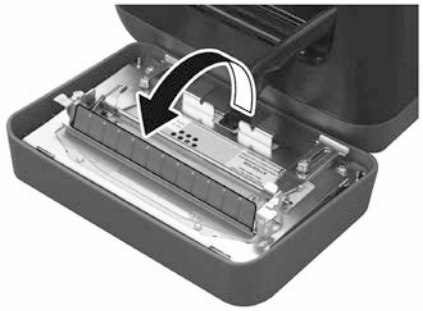


3.1.5 Cutter (Cont.)

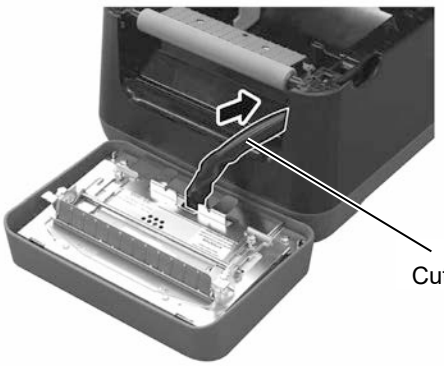
9. Close the Paper Guide, and return two levers to the original positions.

CAUTION!

When closing the Paper Guide, be careful not to drop metal or other foreign objects, such as a paper clip into the guide, as this may cause a malfunction of the printer.



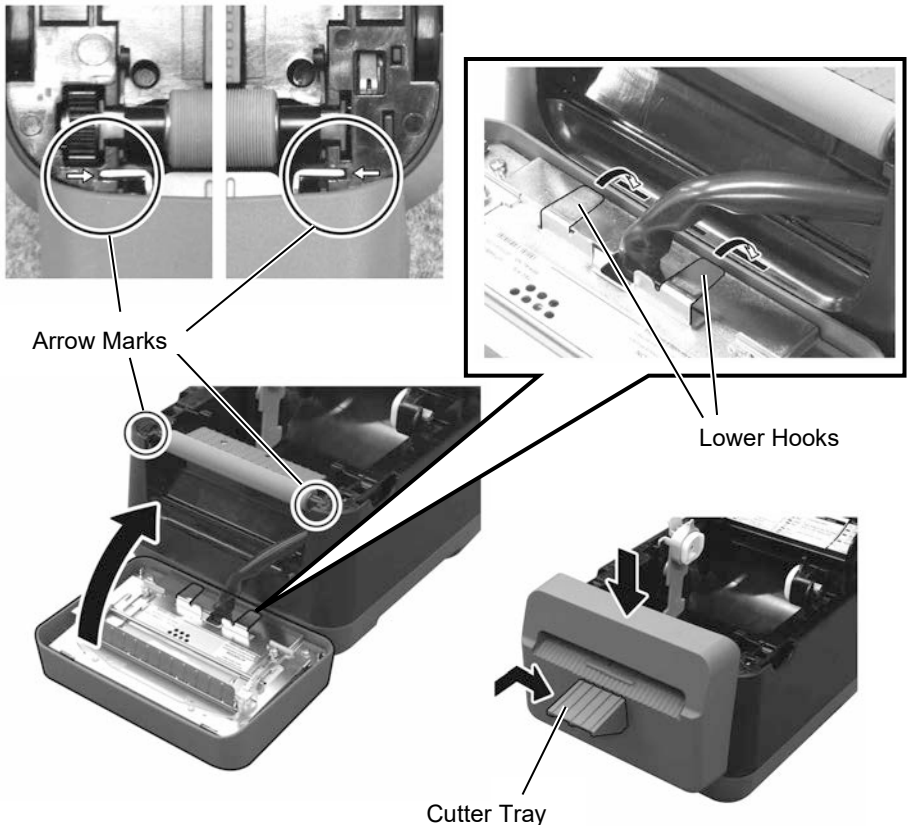
10. Push the Cutter Harness into the printer before re-attaching the Cutter Block.



11. Fit the Cutter Block on the front side of the printer in position. Confirm the two lower hooks and two upper hooks on both sides of the Cutter Block are inserted into the slits with reference to the Arrow Marks. After fitting the Cutter Block, attach the Cutter Tray to the Cutter Block.

CAUTION!

Make sure the Cutter Block is re-attached correctly. Failure to do this may cause problems with printing or cutting.



3.2 Care/Handling of the Media

> ⚠ ***CAUTION!***
>
> *Be sure to carefully review and understand the Supply Manual. Use only media which meet specified requirements. Use of non-specified media may shorten the head life and result in problems with barcode readability or print quality. All media should be handled with care to avoid any damage to the media, or printer. Read the guideline in this section carefully.*

- Do not store media for longer than the manufacturer's recommended shelf life.
- Store media 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.
- Store the media in plastic bags and always reseal after opening. Unprotected media can get dirty and the extra abrasion from the dust and dirt particles will shorten the print head life.
- Store the media in a cool, dry place. Avoid areas where they would be exposed to direct sunlight, high temperature, high humidity, dust or gas.
- The thermal paper used for direct thermal printing must not have specifications which exceed Na^+ 800 ppm, K^+ 250 ppm and Cl^- 500 ppm.
- Some ink used on pre-printed media 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 media manufacturer.

4. TROUBLESHOOTING

⚠ WARNING!

If a problem cannot be solved by taking actions described in this chapter, do not attempt to repair the printer. Turn off and unplug the printer. Then contact an authorised Toshiba Tec Corporation service representative for assistance.

4.1 Troubleshooting Guide

Symptom	Cause	Solutions
The power lamp of the Power Jack does not light up though the power cord is plugged in an AC outlet.	The power cord is not connected to the AC power inlet.	Disconnect the power cord from the AC outlet, connect the power cord to the AC power inlet, then connect it to the AC outlet. (⇒ Section 2.5)
	There is a power failure or the power is not being supplied to the AC outlet.	Test the AC outlet with a power cord from another electric appliance. If power is not being supplied, consult an electrician or your Electricity supplier.
	The fuse of the building has blown or the circuit breaker has tripped.	Check the fuse or circuit breaker.
LED 1 does not light up in green when the power switch is turned on though the power lamp of the Power Jack is lit.	The Power Jack is disconnected from the printer.	Disconnect the power cord from the AC outlet, insert the Power Jack into the printer, then connect the power cord to the AC outlet. (⇒ Section 2.5)
Media is not issued.	The media is not loaded correctly.	Reload the media correctly. (⇒ Section 2.7)
	The interface cable is not connected correctly.	Connect the interface cable again. (⇒ Section 2.4)
Nothing is printed.	The media loaded is not direct thermal media though direct thermal mode is selected.	Load a thermal paper roll. (⇒ Section 2.7)
	The media is not correctly loaded.	Reload the media correctly. (⇒ Section 2.7)
	Print data is not sent from the host computer.	Send the print data.
Poor print	Toshiba Tec Corporation approved media is not used.	Replace the media with an approved one.
	The print head is dirty.	Clean the print head. (⇒ Section 3.1.1)
Missing dots	The print head is dirty.	Clean the print head. (⇒ Section 3.1.1)
	Some of the print head elements are broken.	When missing dots affect the printout, turn off the printer and contact the nearest Toshiba Tec Corporation representative to ask for the replacement of the print head.
Media cannot be cut cleanly.	The cuter blade has reached the end of its useful life.	Turn off the printer and contact the nearest Toshiba Tec Corporation representative to ask for the replacement of the cutter.
A paper jam occurs immediately after printing is performed.	Leaving the printer for a long time without printing may cause a paper jam due to the adhesion between the label and the Platen Roller.	If the printer is not used for a long time, pull the Lock Release Portions toward you to unlock the Top Cover so that the pressure is not applied to the head.

4.2 Status Lamp

LED 1	LED 2	Cause	Solutions
Green	Unlit	Stand-by	Normal
Green *F*	Unlit	Communicating with a host	Normal
Green *S*	Unlit	Printing is temporarily stopped (paused.)	Press the [FEED] Button. Printing is resumed.
Red	Orange *F*	The print head temperature exceeded the upper limit.	Stop printing and allow the print head to cool until LED 1 lights in green. If LED 1 does not light in green or this problem occurs frequently, contact the nearest Toshiba Tec Corporation representative.
Red	Green	A communication error occurred. (Only when the RS-232C is used.)	Press the [FEED] Button to restart the printer or Turn off the power and then back on. If this problem frequently occurs, turn off the printer and contact the nearest Toshiba Tec Corporation representative.
Red	Green *F*	A paper jam occurred in the cutter unit.	Remove the jammed media, then reload the media correctly and press the [FEED] Button. (⇒ Section 4.3)
Orange	Red	The media has ended.	Load a new media roll, then press the [FEED] Button. (⇒ Section 2.7)
Orange	Green	A paper jam occurred.	Remove the jammed media, then reload the media correctly and press the [FEED] Button. (⇒ Section 4.3)
Red	Red *M*	An issue or feed was attempted with the Top Cover opened.	Close the Top Cover correctly, then press the [FEED] button. Printing will resume.
Red	Orange *M*	The print head is broken.	Turn off the power switch and contact the nearest Toshiba Tec Corporation representative.
Unlit	Unlit	The power is off. The Top Cover is open if the printer power is on.	Turn the power on. Close the Top Cover correctly.

Flashing speed of the LED

Symbol	Status	Flashing interval
S	Flashing slowly	2.0 sec.
M	Flashing at medium speed	1.0 sec.
F	Flashing fast	0.5 sec.

4.3 Removing Jammed Media

This section describes in detail how to remove jammed media from the printer.

> ⚠ **CAUTION!**
> *Do not use any tool that may damage the print head.*

1. Turn the power off.
2. Open the Top Cover and open the print head block.
3. Remove the media roll.
4. Remove the jammed media from the printer. DO NOT USE any sharp implements or tools as these could damage the printer.
5. Clean the Print Head and Platen, then remove any further dust or foreign substances.
6. Load the media again, and close the Top Cover.

APPENDIX 1 SPECIFICATIONS

Appendix 1 describes the printer specifications and supplies for use on the B-FV4D-GL printer.

A1.1 Printer

The following are the printer specifications.

Item	B-FV4D-GL Series
Supply voltage	AC100 to 240V, 50/60 Hz
Power consumption	
During a print job	100 to 120V: 1.0 A, 60 W maximum, 200 to 240V: 0.6 A, 59 W maximum
During standby	100 to 120V: 0.12A, 3.7 W maximum, 200 to 240V: 0.07 A, 3.8 W maximum
Operating temperature range	5°C to 35°C (41°F to 95°F)
Storage temperature range	-20°C to 60°C(-4°F to 140°F)
Relative humidity	30% to 75% RH (no condensation)
Humidity for storage	10% to 90% RH (no condensation)
Resolution	203 dpi (8 dots/mm)
Printing method	Direct thermal
Issue mode	Cut
Printing speed	50.8 mm/sec. (2”/sec.), 76.2 mm/sec. (3”/sec.), 101.6 mm/sec. (4”/sec.), 127 mm/sec. (5”/sec.), 152.4 mm/sec. (6”/sec.)
Available media width	102 mm (4.0”) +1mm/-1.5mm
Effective print width (max.)	99 mm (3.9”)
Max. print ratio	Average 15%
Dimension (W × D × H)	184.0 mm x 271.2 mm x 198.8 mm (7.2” x 10.7” x 7.8”)
Weight	2.8 kg (6.2 lb) (Excluding media)
Available barcode types	EAN8/13, EAN8/13 add on 2&5, UPC-A, UPC-E, UPC-A add on 2&5, UPC-E add on 2&5, CODE39, CODE93, CODE128, GS1-128 (UCC/EAN128), NW7, MSI, Industrial 2 of 5, ITF, RM4SCC, KIX-Code, POSTNET, USPS Intelligent mail barcode, GS1 DataBar
Available two-dimensional code	Data matrix, PDF417, QR Code, Maxi Code, Micro PDF417
Available composite symbol	GS1-128 Composite (CC-A/CC-B/CC-C)
Available font	Times Roman (6 sizes), Helvetica (6 sizes), Presentation (1 size), Letter Gothic (1 size), Courier (2 sizes), Prestige Elite (2 sizes), OCR-A (1 type), OCR-B (1 type), Simplified Chinese (1 size)
Rotations	0°, 90°, 180°, 270°
Standard interface	USB 2.0 full speed Ethernet interface (10/100 Base) Serial interface (RS-232C)

NOTES:

- *Data Matrix™ is a trademark of International Data Matrix Inc., U.S.*
- *PDF417™ is a trademark of Symbol Technologies Inc., US.*
- *QR Code is a trademark of DENSO CORPORATION.*
- *Maxi Code is a trademark of United Parcel Service of America, Inc., U.S.*

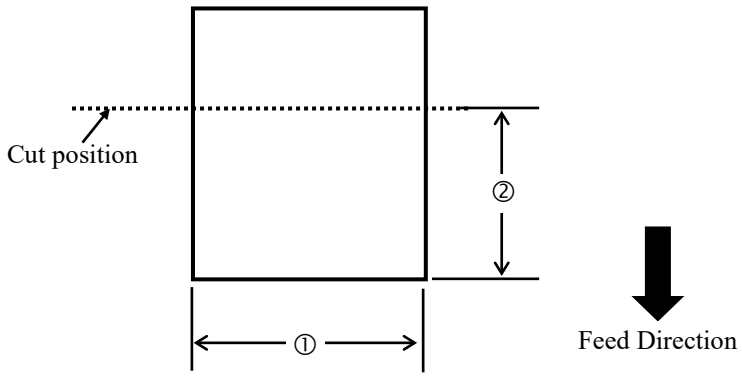
A1.2 Media

Please make sure that the media to be used is approved by Toshiba Tec Corporation. The warranties do not apply to problems caused by using media that is not approved by Toshiba Tec Corporation.
For information regarding Toshiba Tec Corporation-approved media, please contact a Toshiba Tec Corporation authorised representative.

A1.2.1 Media Type

The table below shows the size and shape of the media that can be used on this printer.

Label



Unit: mm (inch)

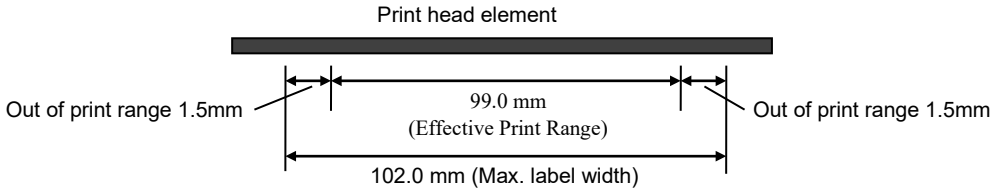
Issue mode / Item	Cut mode
① Label width	102mm (4.0”)
② Cut length	25.4mm to 152.4mm (1.0” to 6”)
Thickness	0.06mm to 0.19mm (0.0024” to 0.0075”)
Max. outer roll diameter	Ø127mm (5”)
Roll direction	Outside wound
Inner core diameter	40mm (1.57”)

NOTES:

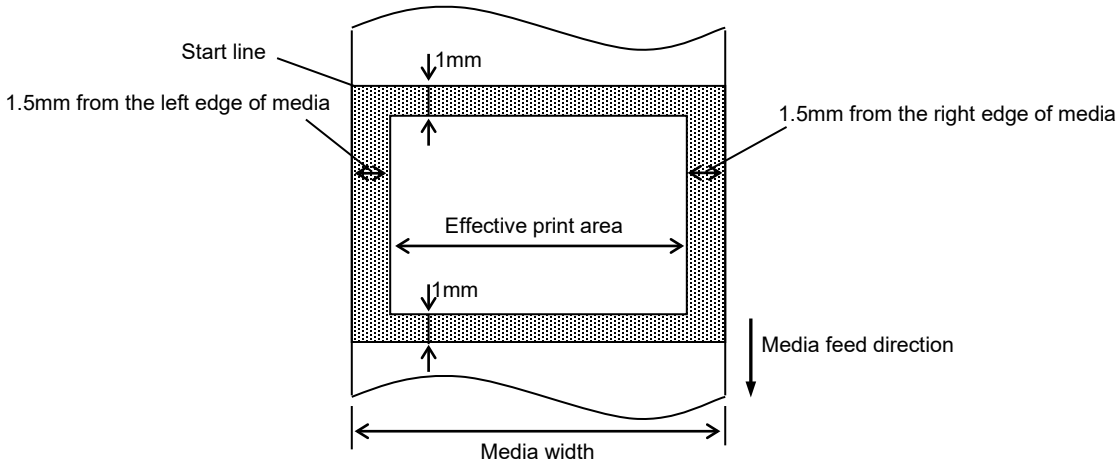
1. *To ensure print quality and print head life use only Toshiba Tec Corporation approved media.*
2. *A label jam is more likely to occur with the approach of label end because labels around the paper core curl intensely.*

A1.2.2 Effective Print Area

The figure below illustrates the relation between the effective print width and label width.



The figure below shows the effective print area on the media.



NOTES:

1. *Be sure not to print on the 1.5-mm wide area from the label edges (shaded area in the above figure).*
2. *The centre of media should be positioned at the centre of the print head.*
3. *Print quality is not guaranteed within 3 mm from the print head stop position (including 1-mm slow-up.)*
4. *Average print (black) rate should be 15% or less. For barcode print area, the print rate should be 30% or less.*
5. *Line weight should be 3 to 12 dots.*

APPENDIX 2 INTERFACE

■ Interface Cables

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

- Fully shielded and fitted with metal or metallized connector housings.
- Keep as short as possible.
- Should not be bundled tightly with power cords.
- Should not be tied to power line conduits.

■ RS-232C Cable description

The serial data cable used to connect the printer to a host computer should be one of the following two types (9-pin or 25-pin connector):

Connector to the Host Computer				Connector to Printer	
Function	9 pin	25 pin		Pin No.	Function
				1	+5V
RXD	2	3	←	2	TXD
TXD	3	2	→	3	RXD
DTR	4	20	→	4	DSR
GND	5	7	↔	5	GND
DSR	6	6	←	6	RDY
RTS	7	4		7	N.C.
CTS	8	5	←	8	RDY
				9	N.C.

NOTE:

Use an RS-232C cable with a connector with inch type securing screws.

GLOSSARIES

GLOSSARIES

Barcode
A code which represents alphanumeric characters by using a series of black and white stripes in different widths. Barcodes are used in various industrial fields: Manufacturing, Hospitals, Libraries, Retail, Transportation, Warehousing, etc. Reading barcodes is a fast and accurate means of capturing data while keyboard entry tends to be slow and inaccurate.

Cut mode
Printer mode of operation where the cutter unit is installed to automatically cut media from the supply roll after they are printed. The print command can specify to cut every media or to cut after a set number of media have been printed.

Direct thermal printing
A printing method using no ribbon, but thermal media which reacts to heat. The thermal print head heats the thermal media directly, causing print image to be printed on the media.

DPI
Dots Per Inch
A unit used to express print density or resolution.

Font
A complete set of alphanumeric characters in one style of type. E.g. Helvetica, Courier, Times

IPS
Inch per second
A unit used to express print speed.

Label
A type of media with adhesive backing supplied on a backing paper.

Media
Material on which images are printed by the printer. Label, tag paper, fanfold paper, perforated paper, etc.

Printer driver
A software program that will convert the application program's printing request into the language that the printer understands.

Print head element
The thermal print head consists of a single line of tiny resistive elements which when current is allowed to flow through them it heats up causing a small dot to be burned onto thermal paper.

Printing speed
The speed at which printing occurs. This speed is expressed in units of IPS (inches per second).

Resolution
The degree of detail to which an image can be duplicated. The minimum unit of divided image is called a pixel. As the resolution becomes higher, the number of pixels increases, resulting in a more detailed image.

Supply
Media

Thermal print head
A print head using thermal direct printing method.

[redacted]

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