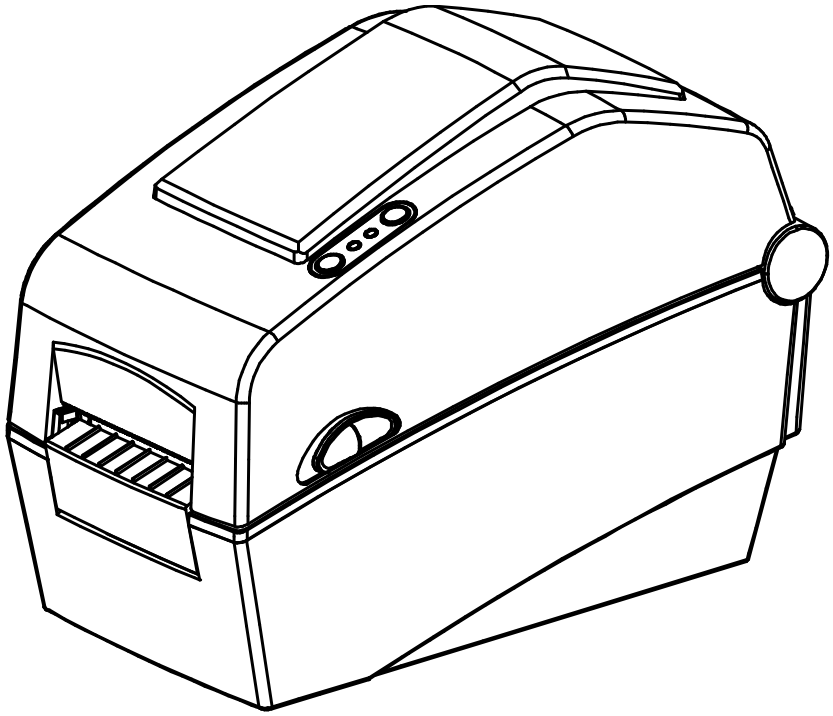
BIXOLON®

User's Manual

Label Printer

Ver. 1.06

SLP-D220 / D220E
SLP-D223 / D223E



http://www.bixolon.com

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■ Manual Information

This user manual contains basic information for product usage as well as for emergency measures that may be required.

※ The following separate manuals provide more detailed content on various technological issues and areas.

1. Windows Driver Manual

This manual provides information on the installation instructions and main functions of the Windows Driver.

2. Unified Label Printer Utility Manual

This manual provides information on the usage of software for function selection of this product, operating condition modification, etc.

The following functions are available.

1) Firmware Downloader
2) Factory Font Downloader
3) Soft-Font (or Downloadable-font) Downloader
4) PCX File Downloader
5) User Setting Manager
6) File Transfer Manager
7) SLCS Tester

3. Programming (SLCS) Manual

This manual provides information on label printer commands.

4. True Font Downloader Manual

This manual provides information on the usage of the font downloader that can download True Fonts and facilitate their usage as Device Fonts.

5. Ethernet interface Manual

This manual provides information on the configuration and usage of Ethernet interface.

6. Label design program Manual

This manual provides information on the usage of the Windows PC program that can make labels by adding text, graphics, or barcodes at desired positions.

We at BIXOLON maintain ongoing efforts to enhance and upgrade the functions and quality of all our products. In following, product specifications and/or user manual content may be changed without prior notice.

■ Safety Precautions

In using the present appliance, please keep the following safety regulations in order to prevent any hazard or material damage.

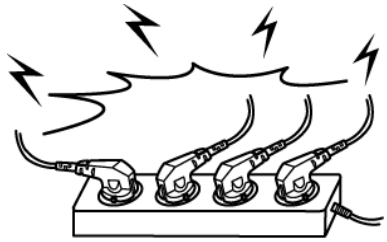
WARNING

Violating following instructions can cause serious injury or death.

Do not plug several products in one multi-outlet.

- This can provoke over-heating and a fire.
- If the plug is wet or dirty, dry or wipe it before usage.
- If the plug does not fit perfectly with the outlet, do not plug in.
- Be sure to use only standardized multi-outlets.

PROHIBIT



You must use only the supplied adapter.

- It is dangerous to use other adapters.

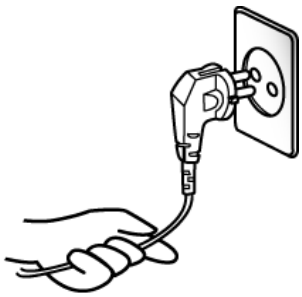
PROHIBIT



Do not pull the cable to unplug.

- This can damage the cable, which is the origin of a fire or a breakdown of the printer.

PROHIBIT



Keep the plastic bag out of children's reach.

- If not, a child may put the bag on his head.

PROHIBIT



Do not plug in or unplug with your hands wet.

- You can be electrocuted.

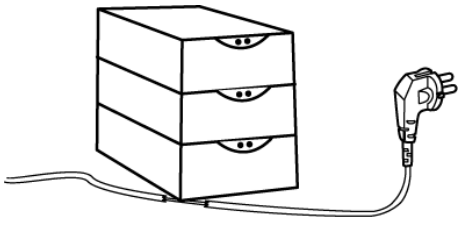
PROHIBIT



Do not bend the cable by force or leave it under any heavy object.

- A damaged cable can cause a fire.

PROHIBIT

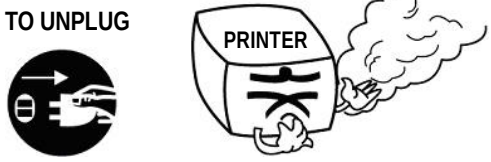


CAUTION

Violating following instructions can cause slight wound or damage the appliance.

If you observe a strange smoke, odor or noise from the printer, unplug it before taking following measures.

- Switch off the printer and unplug the set from the mains.
- After the disappearance of the smoke, call your dealer to repair it.



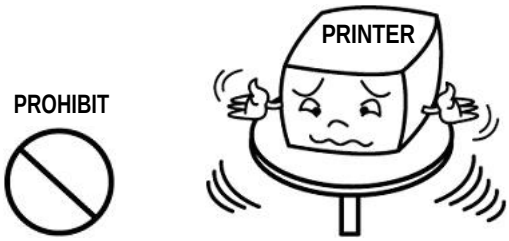
Keep the desiccant out of children's reach.

- If not, they may eat it.



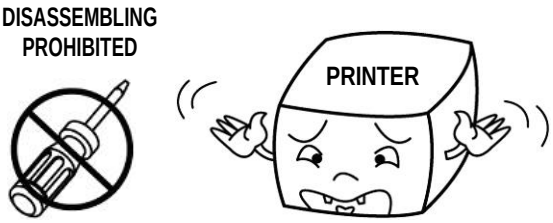
Install the printer on the stable surface.

- If the printer falls down, it can be broken and you can hurt yourself.



Use only approved accessories and do not try to disassemble, repair or remodel it for yourself.

- Call your dealer when you need these services.
- Do not touch the blade of auto cutter.



Do not let water or other foreign objects in the printer.

- If this happened, switch off and unplug the printer before calling your dealer.



Do not use the printer when it is out of order. This can cause a fire or an electrocution.

- Switch off and unplug the printer before calling your dealer.



■ Other Precautions

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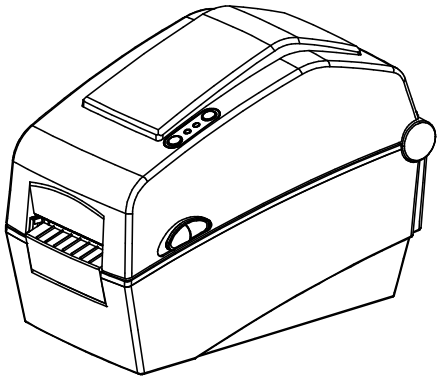
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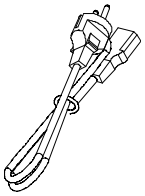
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1. Content Confirmation

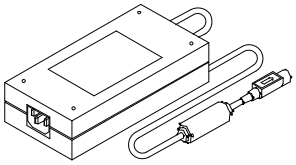
The following items should all be contained in the printer package.
Contact the dealer from which the purchase was made if any item is damaged and/or missing.



SLP-D220/D223



Power Cord



AC Adapter



Quick Manual

※ Optional items

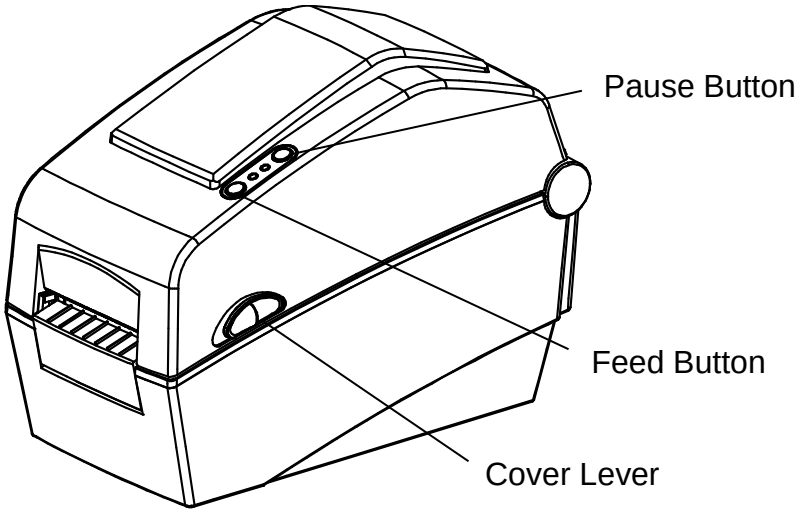


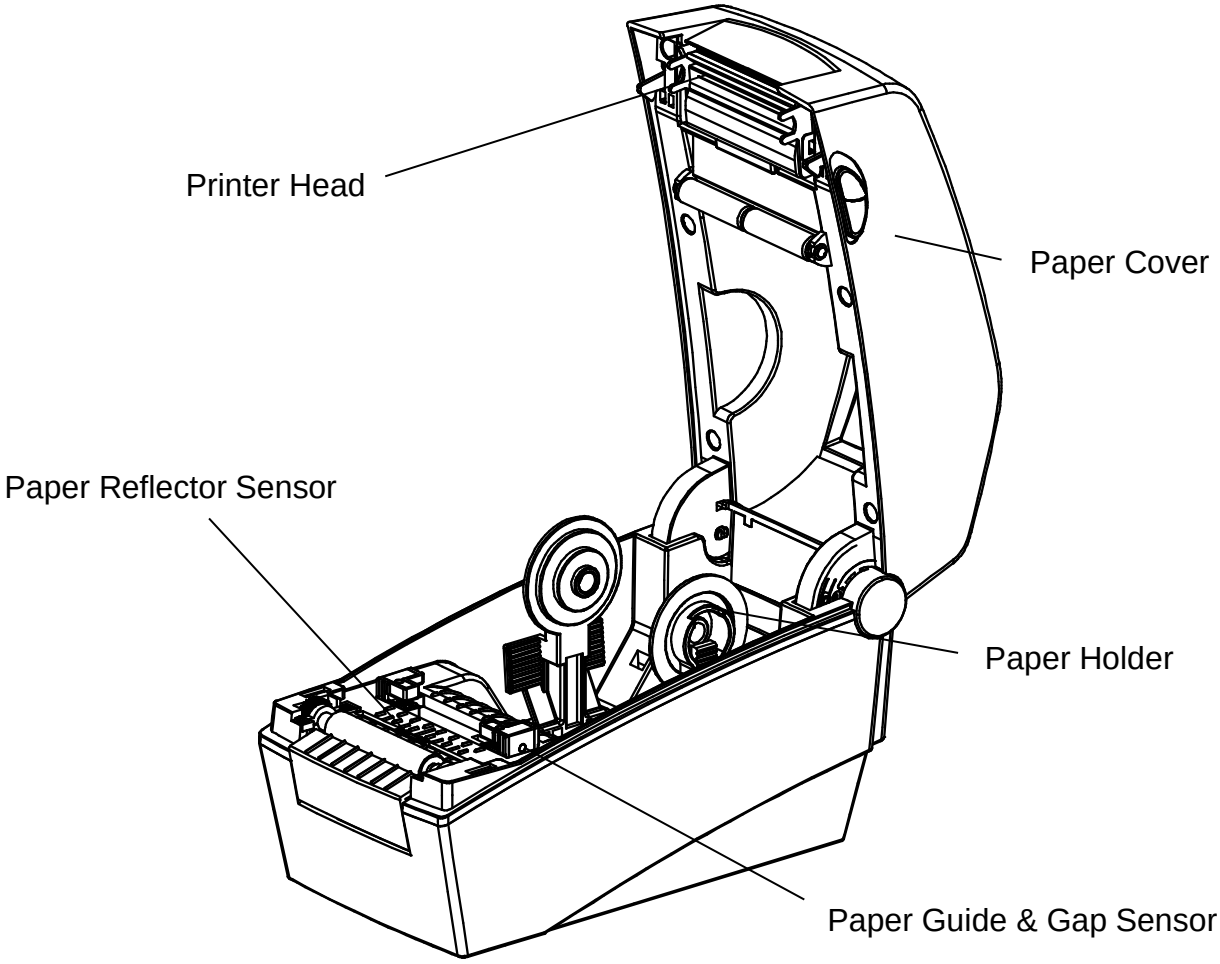
USB Cable

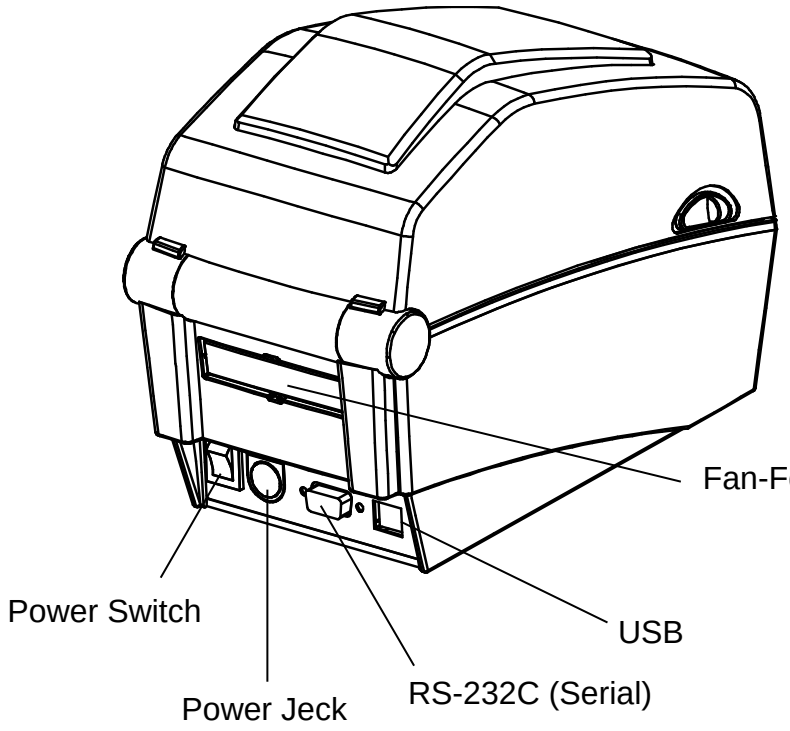


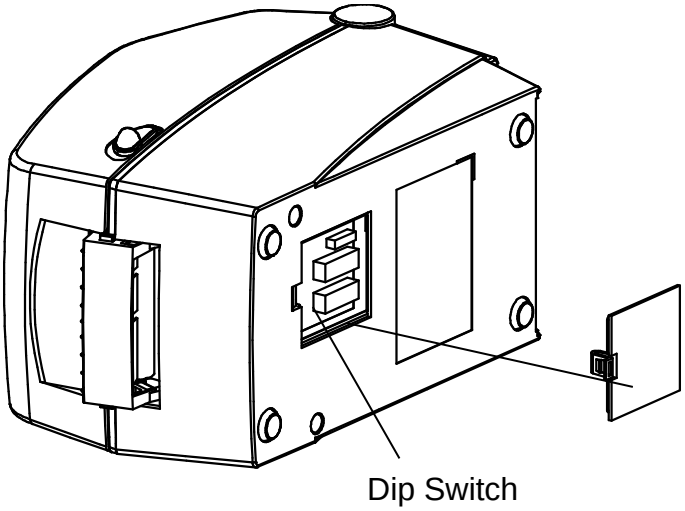
RS-232C(Serial) Cable

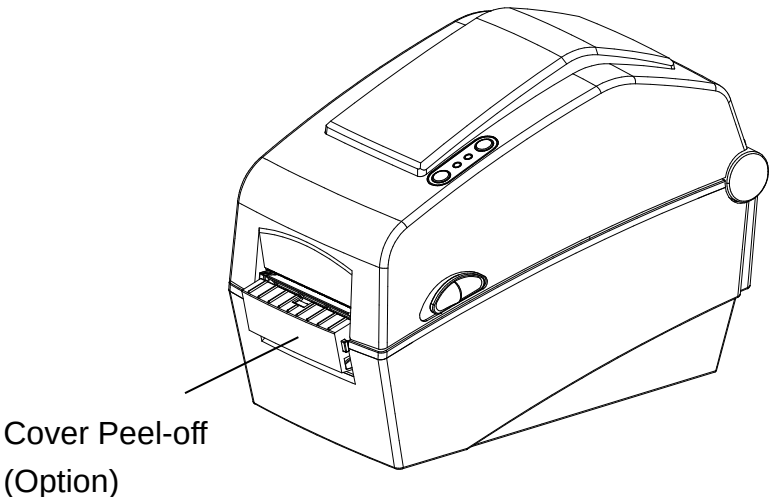
2. Product Part Names






Fan-Fold or External Paper
Power Switch
USB
Power Jeck
RS-232C (Serial)

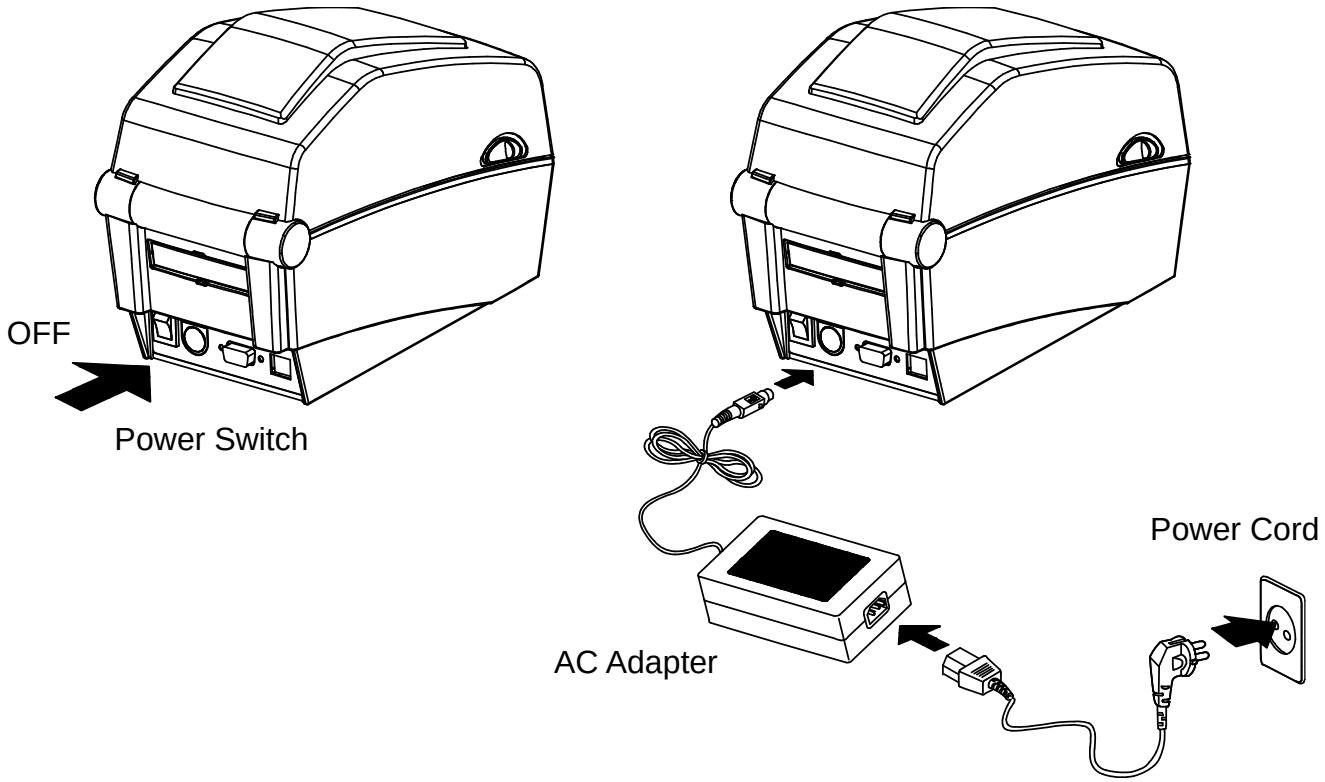

Dip Switch


Cover Peel-off
(Option)

3. Installation & Usage

3-1 Power Connection

Connect power to the printer as shown below.



1) Turn off the printer power switch.

2) Check to see that the AC adapter voltage matches that of the power source.

3) Connect the AC adapter jack to the printer power connector.

4) Connect the power jack to the AC adapter.

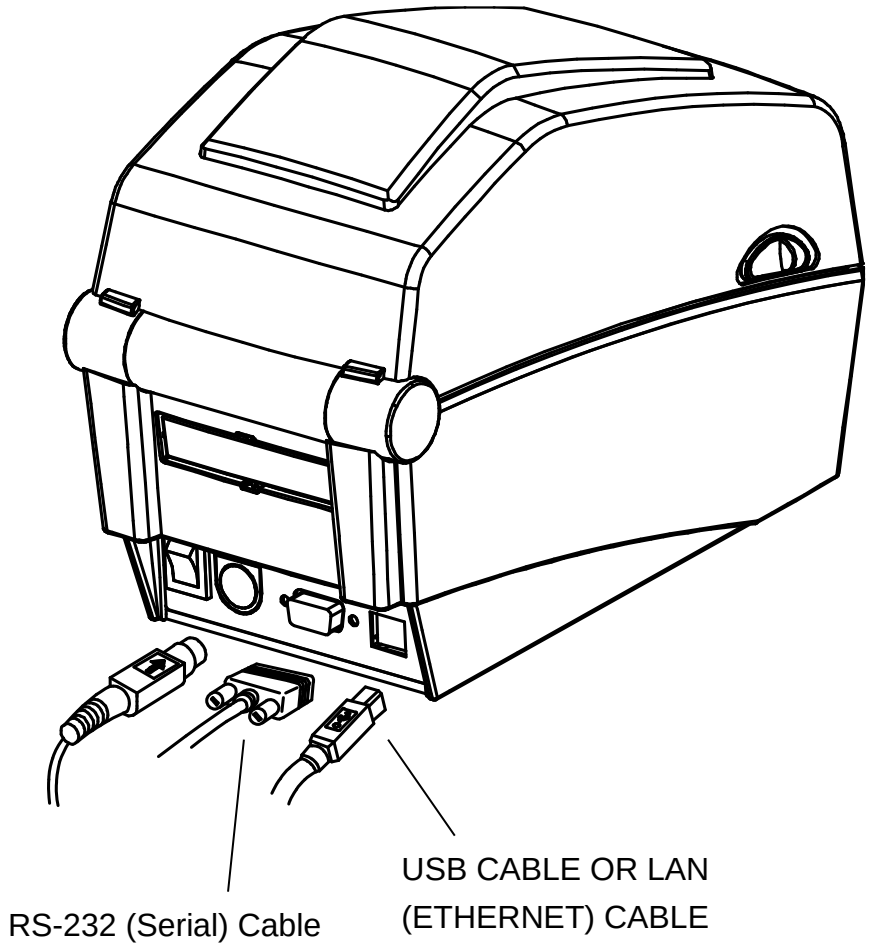
5) Connect the power cord to a power source/outlet.

3-2 Interface Cable Connection

Connect the interface cable as shown below.

This printer supports the following communications interface standards.

- RS-232C (Serial)
- USB
- Ethernet (exclusively for SLP-D220E, D223E)

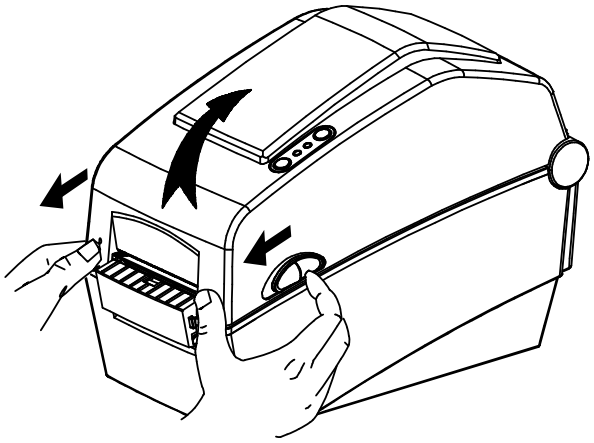


1) Turn off the power switch.

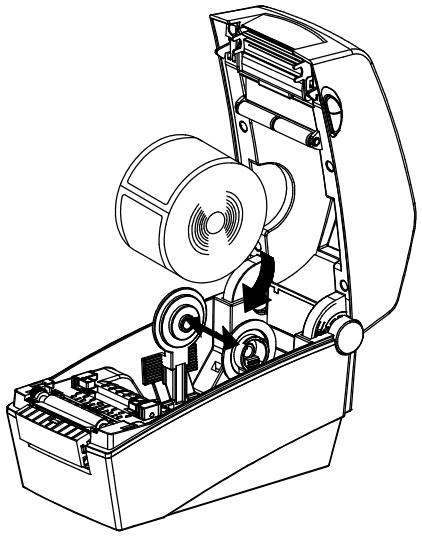
2) Connect the communication cable to the printer communication port.
   - For a Serial cable, secure by tightening the screws on both sides.
   - Connect USB cable when using USB interface.
   - Connect LAN cable when using Ethernet interface.

3-3 Paper Installation

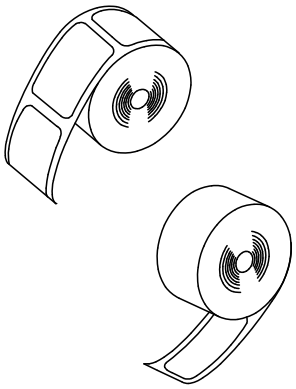
1) Open the Paper Cover.



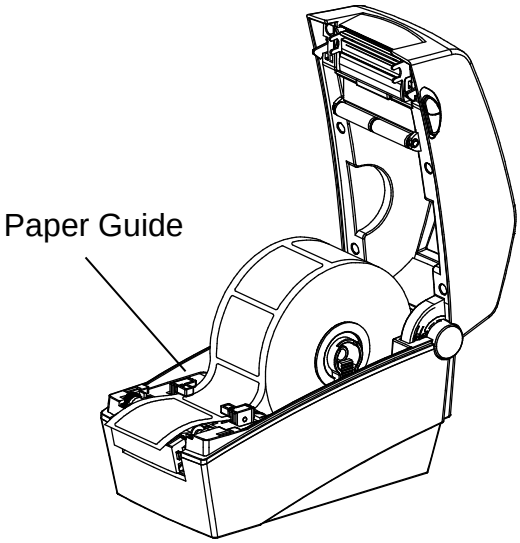
2) Spread the paper holder and insert paper as shown.



3) Whether the paper label is wound inwards or outwards, its printing surface must face up.

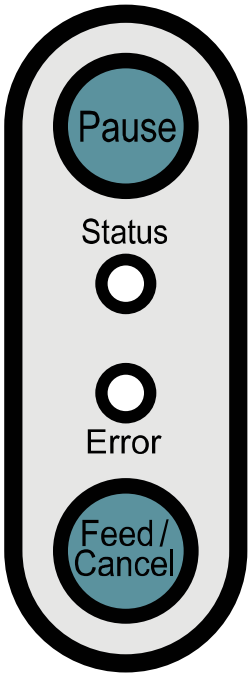


4) Adjust the paper guide to the width of the paper.



5) Close the Paper Cover until a click sound is heard.

3-4 LED Display



Pause : During print jobs, this button can be used to temporarily cease printing and/or again to resume printing.

Status : The current printer status can be viewed. (Refer to table)

Error : The current printer status can be viewed. (Refer to table)

Feed/Cancel : Paper feed or cancel the print job.

[The current printer status can be viewed via the printer's LED display.]

LED Type		Printer Status
Status	Error	
Green On	Green On	Normal status, on standby to receive date from the host (e.g. PC)
Red On	Red Blinking	Paper cover opened
Red On	Orange Blinking	No paper
Red On	Green Blinking	Print stoppage due to TPH (print head) overheating (Printing resumes automatically after a certain period of time if the temperature of TPH drops)
Off	Red On	On standby for user button input for automatic sensor level correction
Green Blinking	Red On	Print stoppage after input of Pause button, Press Pause button again to resume printing
Green On	Red Blinking	Print cancellation after input of Cancel button, Press Cancel button to return to standby mode, all data received deleted in Cancel mode
Green On	Off	Power Save mode activated

* Power Save Mode*

When the printer is not used, the Power Save mode is activated to save power.

If the printer is not used for more than 180 seconds, it enters the Power Save mode.

If a print command or external input is given, the Power Save mode is deactivated.

3-5 Test printing

3-5-1 Printing using Windows driver

Windows Driver installation files and manuals are provided on the BIXOLON official website. (http://www.bixolon.com)
Please refer to the manual to install the Windows Driver and print a test page.

3-5-2 Printing using label design program

Label Design Program installation files and manuals are provided on the BIXOLON official website. (http://www.bixolon.com)
Please refer to the manual to install the Label Design Program and print a test page.

4. Self-Test

The self-test checks whether the printer has any problems.
(Users cannot perform this procedure if using the printer's label peel-off option.)
If the printer does not function properly, contact an authorized dealer.

The self-test checks the following;

1) Make sure that the paper roll has been installed properly.

2) Turn on the power while holding down the FEED button. The self-test begins.

3) The self-test prints the current printer status, which provides the control ROM version and the DIP switch settings.

4) After the self-test results are printed out:

- No button input within 2 seconds: Normal Print Mode
- Button pressed once within 2 seconds: Hex Dump Mode
- Button pressed twice within 2 seconds: Line Print Mode

* The BXL-POS command set is used in Line Print Mode.
Received data is printed in sequence similar to a receipt printer.

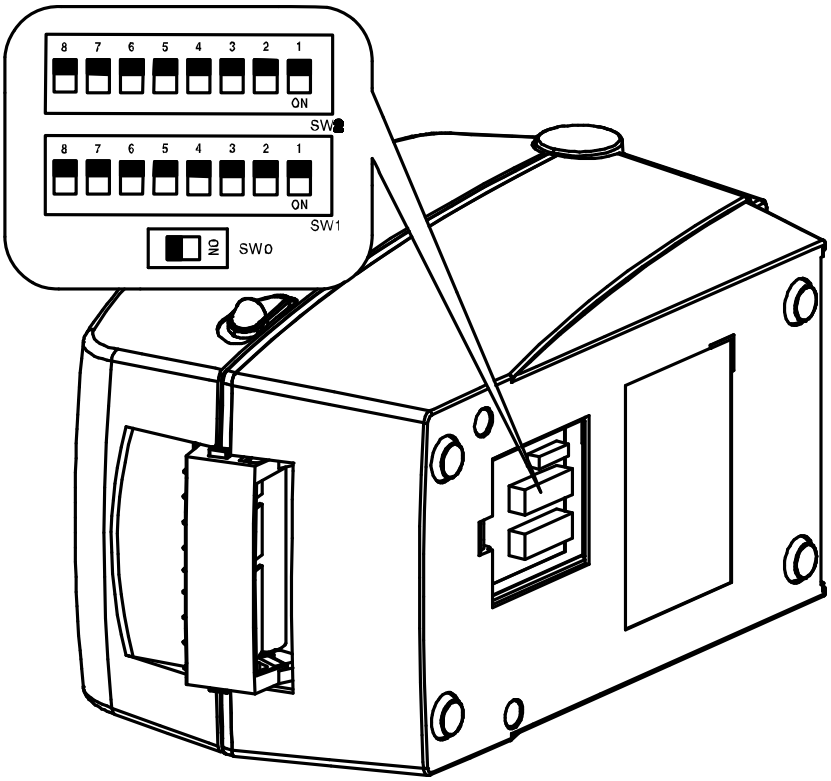
5. Detailed features

5-1 Printer Settings with Dip switches

The following functions can be selected using the dip switches.

- Print Speed, Print Density, Paper Select
- Back Feed, Paper Sensor Operation
- Serial Communication Speed and Busy Status

The dip switches are located on the bottom of the printer.



Follow these steps when changing dip switch settings:

1) Turn the printer power switch off.

2) Turn the printer upside down and remove the dip switch cover on the bottom.

3) Flip the dip switches using tweezers or another narrow-ended tool. Switches are off when up and on when down following the figure.

4) New settings take effect when the printer is turned back on.

※ CAUTION

- Make sure if the dip switch cover is closed prior to operating

[Table 0] DIP Switch 0 (only for SLP-D220E and D223E)

Function	Description	
Ethernet operation during power save mode	Off	Disable Ethernet when Power Save Mode is enabled
	On	Enable Ethernet when Power Save Mode is enabled

[Table 1] Dip Switch 1

No	Functions	Details			
1-1	Speed Selection	Off	5.0 ips		
		On	6.0 ips		
1-2 1-3 1-4	Density Selection	4	3	2	Density
		Off	Off	Off	6
		Off	Off	On	8
		Off	On	Off	10
		Off	On	On	12
		On	Off	Off	14
		On	Off	On	16
		On	On	Off	18
		On	On	On	20
1-5	Exhibition Selection	Off	Normal Mode		
		On	Demo Mode		
1-6	Media Selection	Off	Label Paper		
		On	Thermal Continuous Paper		
1-7	No Use	Default --- off			
1-8	Back Feed Option	Off	Back Feeding Enable		
		On	Back Feeding Disable		

[Table 2] Dip Switch 2

No	Functions	Details		
2-1 2-2	Baud Rate Selection	2	1	Baud Rate
		Off	Off	9,600 bps
		Off	On	19,200 bps
		On	Off	57,600 bps
		On	On	115,200 bps
2-3	Media Detection	Off	Detect Gap	
		On	Detect Black Mark - Dip S/W 1-6 OFF: Reverse Side Black Mark	
2-4	No Use	Default --- off		
2-5	Emulation	Off	SLCS,EPL,ZPL	
		On	DPL	
2-6	Busy Condition	Off	Receive Buffer Full	
		On	*Offline *Receive Buffer Full	
2-7	Paper End Sensor Status	Off	Enable	
		On	Disable	
2-8	Long Label Split Printing	Off	Disable	
		On	Enable	

5-2 Printer Settings with Utility Program

The printer settings utility program offered by the manufacturer can be used to change a variety of basic printer settings. The basic settings set via the utility override printer command settings. Thus, users wishing to use command settings to control the printer should not change the basic settings via the utility.

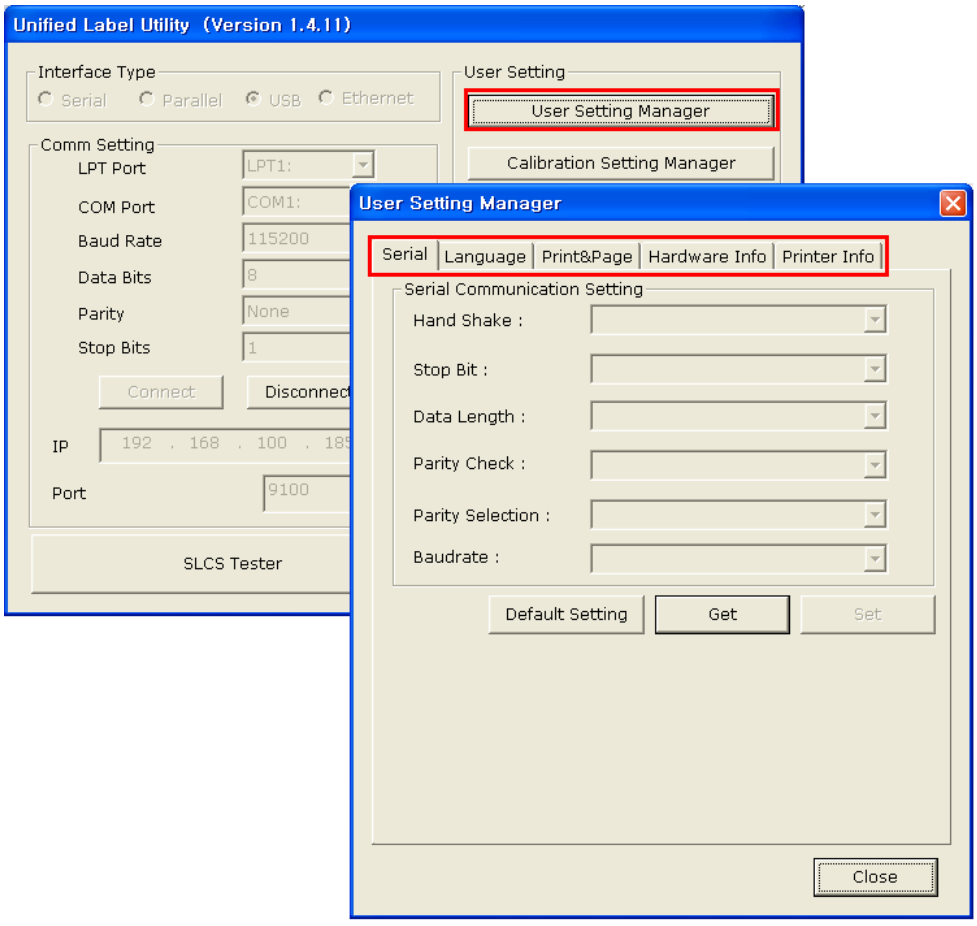
Unified Label Utility installation files and manuals are provided on the BIXOLON official website. (http://www.bixolon.com)
Please refer to the manual to install the Unified Label Utility and print a test page.

1) Serial Communications Settings
Handshake, Stop Bit, Data Bit, Parity, Baud Rate, etc. can be set.

2) Language Selection
Code Page and International Character Set can be set.

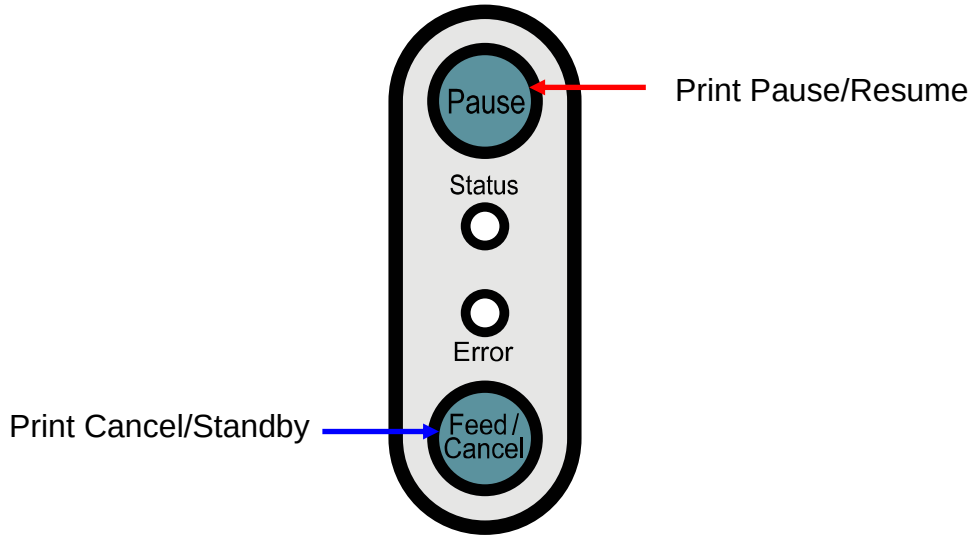
3) Basic Ribbon Size & Print Density Settings
Paper Width and Length, Left/Right Margins, Print Density, Label length measurement function, etc. can be set.

4) Hardware Information Storage
For user management of equipment, the hardware version, serial number, ID, etc. can be saved and/or confirmed via command.



5-3 Pause/Cancel

During multiple-page print jobs, the Pause and Cancel button can be used to temporarily cease printing and cancel the print job altogether, respectively.



5-3-1 Pause/Resume Function

1) When printing labels, pressing the Pause button will result in the temporary stoppage of printing after the currently printed label is completed, and a change in the LED status.
   - Status LED: Green Blinking
   - Error LED: Red On

2) While the print job is paused, press the Pause button again to resume printing.

5-3-2 Print Cancellation

1) During label printing and/or pause mode, pressing the Cancel button enters the print cancellation mode.

2) The following processes occur in the print cancellation mode.
   - All label printing cancelled
   - All data received in the printer communications buffer deleted.
   - All received data deleted.

3) The LED status in the print cancellation mode can be as follows.
   - Status LED: Green On
   - Error LED: Red Blinking

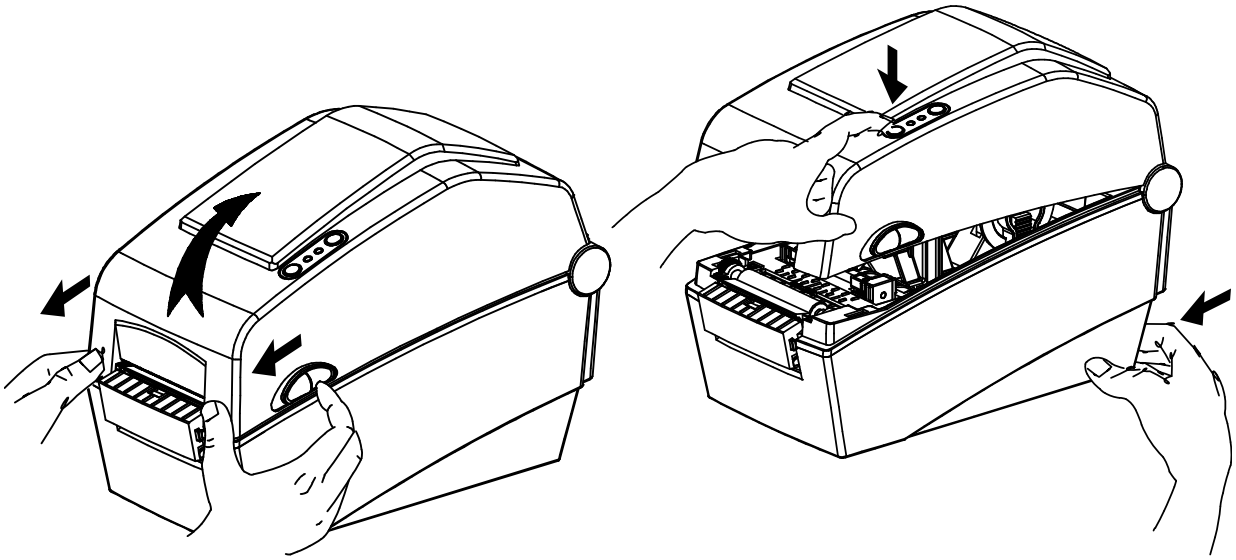
4) While in the print cancellation mode, press the Cancel button again to return to print standby mode.

5-4 Gap Sensor Auto-Calibration

Gap sensor auto-calibration is used when the printer does not detect a gap on the label paper correctly. Generally a printer is set to detect most gap types, but sometimes detection fails and paper continues to be fed without stopping when special paper is used. In such cases, use the gap sensor auto-calibration function to facilitate proper detection.

1) Check to see that the paper is aligned correctly.

2) Open the paper cover and turn on the printer while holding down the paper feed button.
   - The green LED blinks.



3) Close the paper cover.
   - An information message is printed and the red LED turns on.

4) Press the paper feed button.
   ① Once
   - The LED color changes to orange.
   - The previous gap sensor correction value is erased and reset to its default value.
   ② Twice (for automatic sensor calibration)
   - The LED color changes to green.
   - The gap sensor auto-calibration is performed as 2~3 pages of paper are fed continuously.
   ③ Three times (for automatic sensor calibration and the label length setting)
   - The LED color changes to green.
   - The gap sensor auto-calibration and label length measurement are performed while slowly feeding 4~5 pages of paper.

5) Gap sensor auto-calibration is complete.

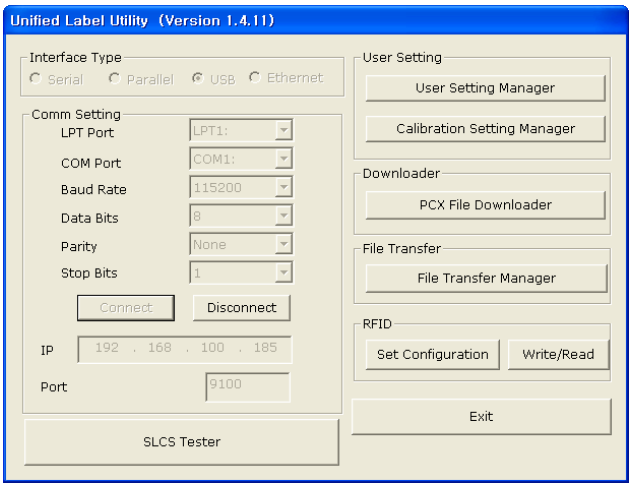
5-5 Gap Sensor Manual-Calibration

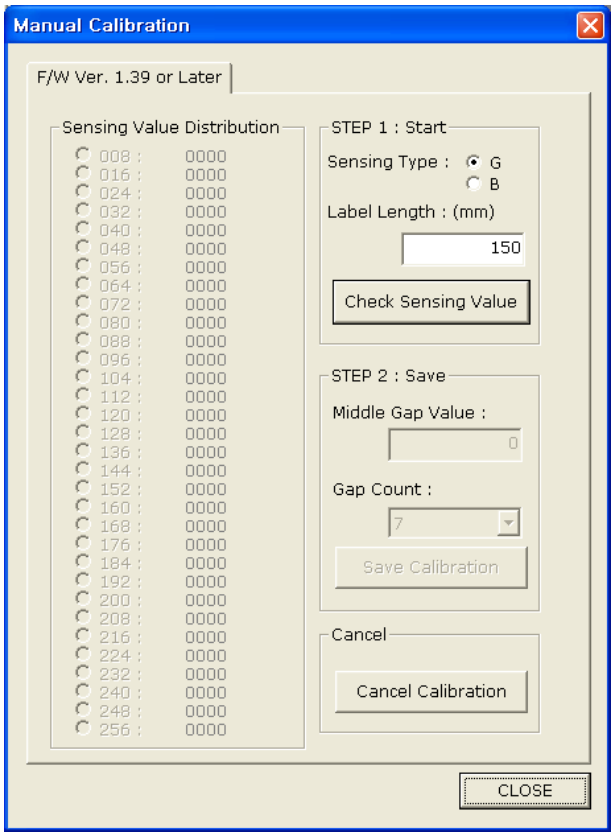
Manual-calibration of media detection can be used when the printer cannot detect a media gap (or black mark) even after auto-calibration has been executed.

Users can calibrate sensor parameters in detail by using the utility program provided by the manufacturer.

The installation files and manuals are provided on the BIXOLON official website. (http://www.bixolon.com)

Please make sure the printer is connected and execute the utility program.
Please the Calibration Setting Manager Button after setting the interface type.





1) Select the sensing type and input the label length by millimeter and click on “Check Sensing Value” tap. Then printer starts to calibrate.

2) Printer will print the scanned values after calibration and the values will appear on the Screen.

3) Optimal sensing values will appear in black bold letters on the left of the utility screen and select one of the values and click on “Save Calibration”

4) If chosen value does not work properly, please try the other values among the black bold letters.

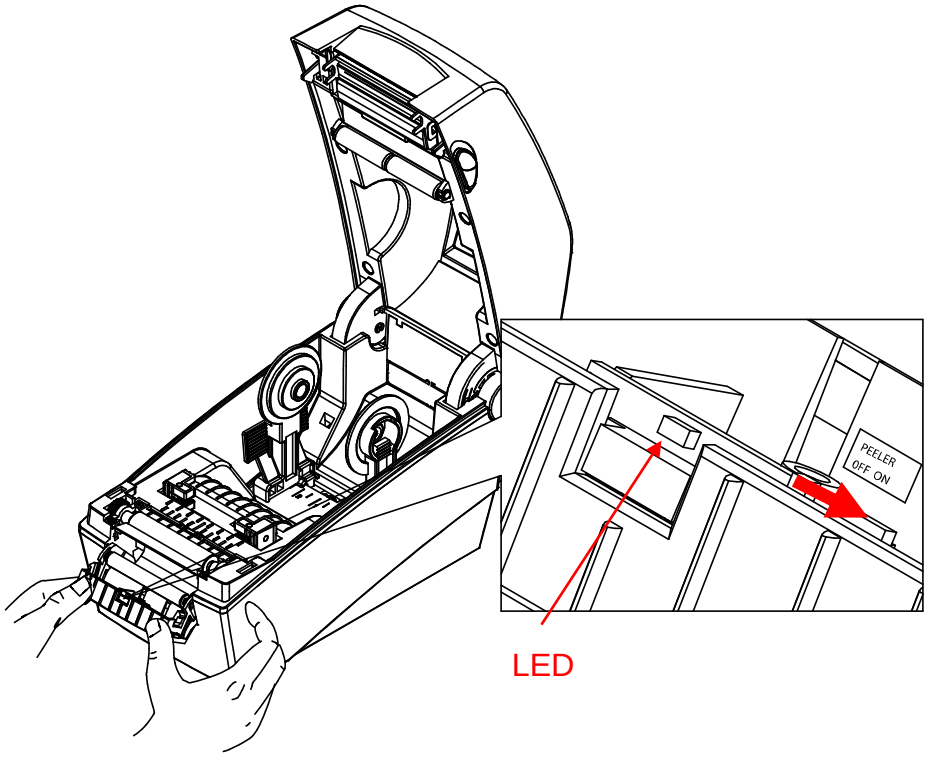
5) To go back to the initial value, please click on “Cancel Calibration”

5-6 The Peel-Off

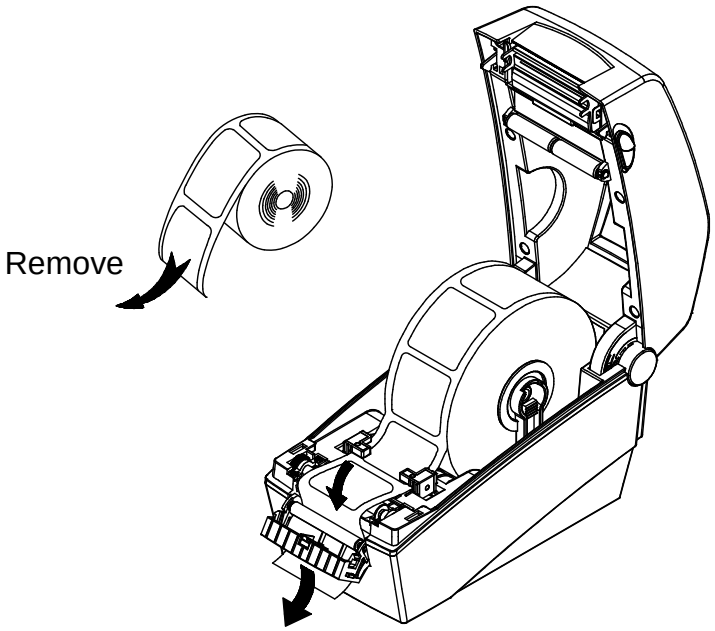
As a function that is used to peel-off labels, it is used only with label paper.

1) Open the paper cover.

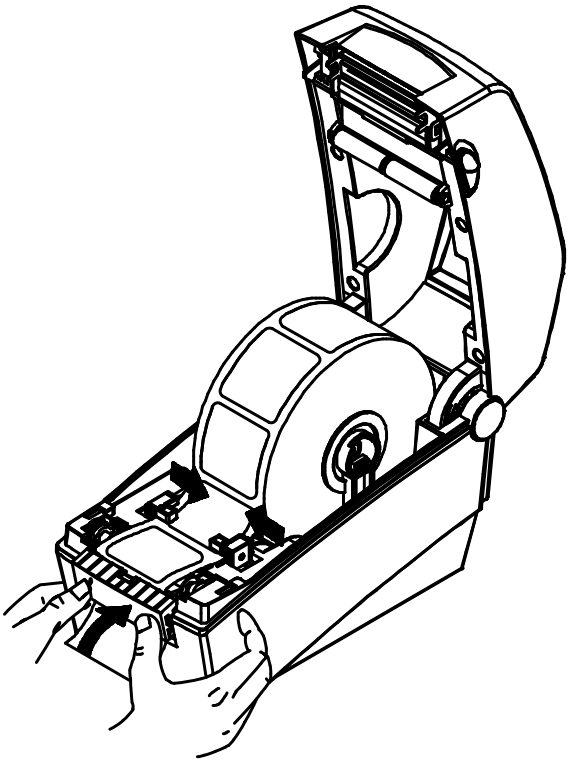
2) Open the label peel-off cover and set the peeler switch to the ON position.
   - Check to see that the LED has turned on.



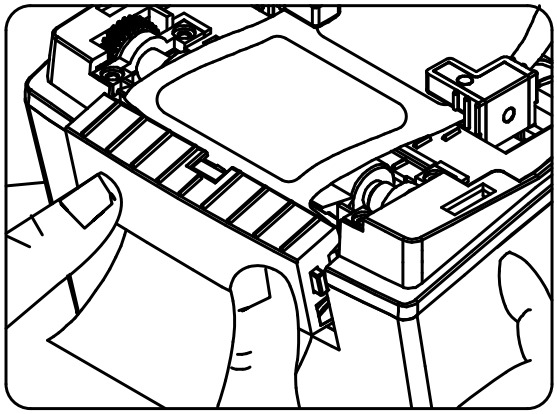
3) Remove one sheet of the label paper, and insert the paper as shown in the image below.
   - Prior to removing a label, the peeler switch must be set to the ON position.



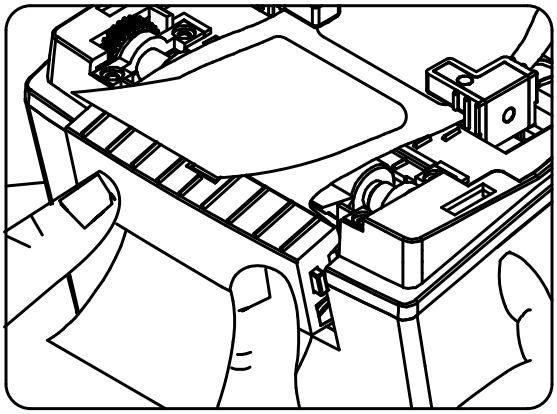
4) Adjust the paper guides and close the label peel-off cover.



(O)



(X)



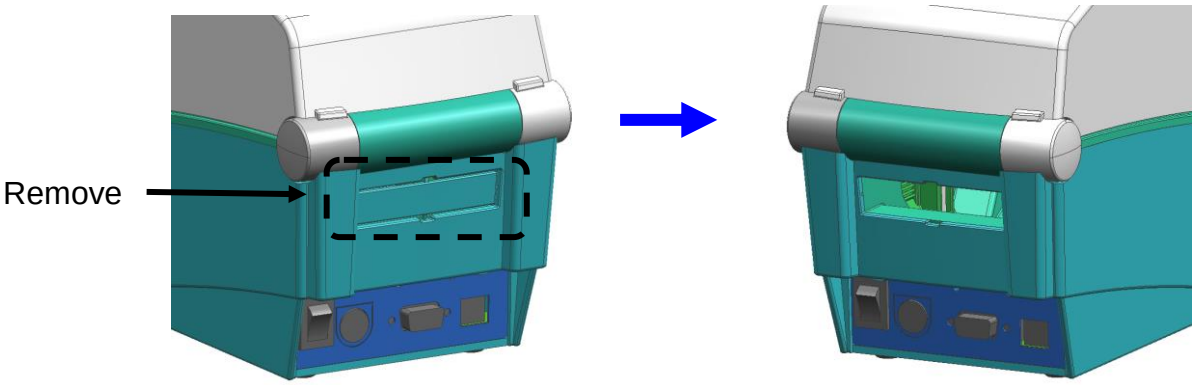
5) Close the Paper Cover until a click sound is heard.

5-7 Using Fan-Fold Paper

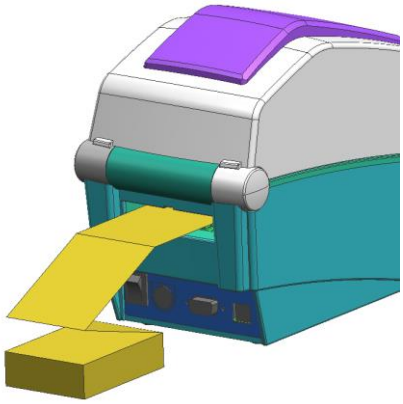
Supplying paper to the printer externally is done as follows.

5-7-1 Printer Preparation
Remove the rear paper supply cover on the back side of the printer with a knife or other cutting instrument.

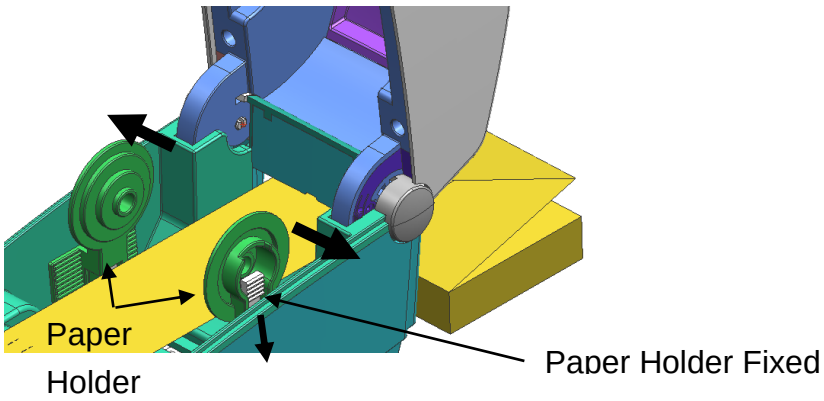
※ CAUTION
- Take care not to injure the hands and/or any other part of the body when performing this step.



5-7-2 When Using Pan-Fold Paper
1) Insert the paper through the slot on the rear of the printer.



2) Adjust the paper holders and guides to the width of the paper.



6. Cleaning Head

Printing quality might be degraded by dust, foreign substance, adhesive substance, or other pollution materials stuck in the printer head or inside the printer.

When dirty, clean the print head as follows:

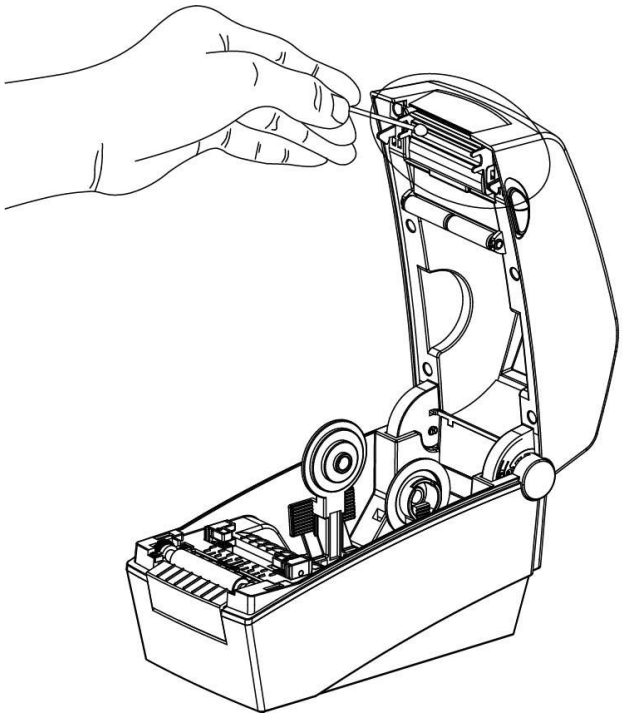
※ **CAUTION**

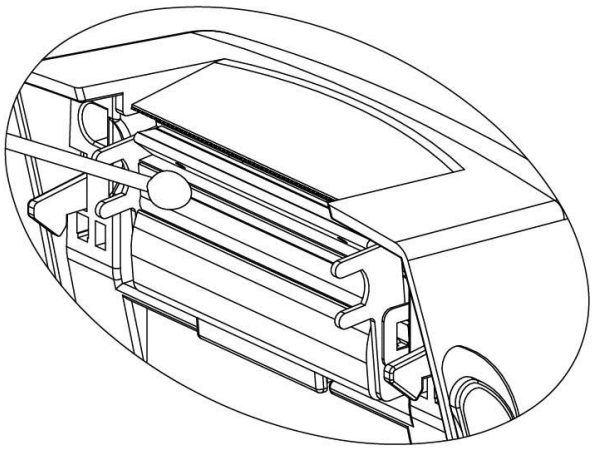
- Make sure to turn the printer power off prior to cleaning.
- As the print head gets very hot during printing, if intending to clean the print head, turn the printer power off and wait approximately 2~3 minute before commencement.
- When cleaning the print head, take care not to touch the heated portion of the print head.
  → Printer Head is susceptible to damage from static electricity, etc.
- Take care not to allow the print head to become scratched and/or damaged in any way.

6-1 Cleaning Head

1) Open the paper cover and clean the printhead using the cloth or cotton swab soaked in alcohol for medical.
2) After cleaning the head, do not use the printer until the alcohol used for cleaning evaporates completely (1~2 min) and the printer has completely dried.

※ Perform the cleaning process each time the paper roll is replaced to prevent print quality deterioration.





6-2 Cleaning Sensors, Roller or/and Paper Path

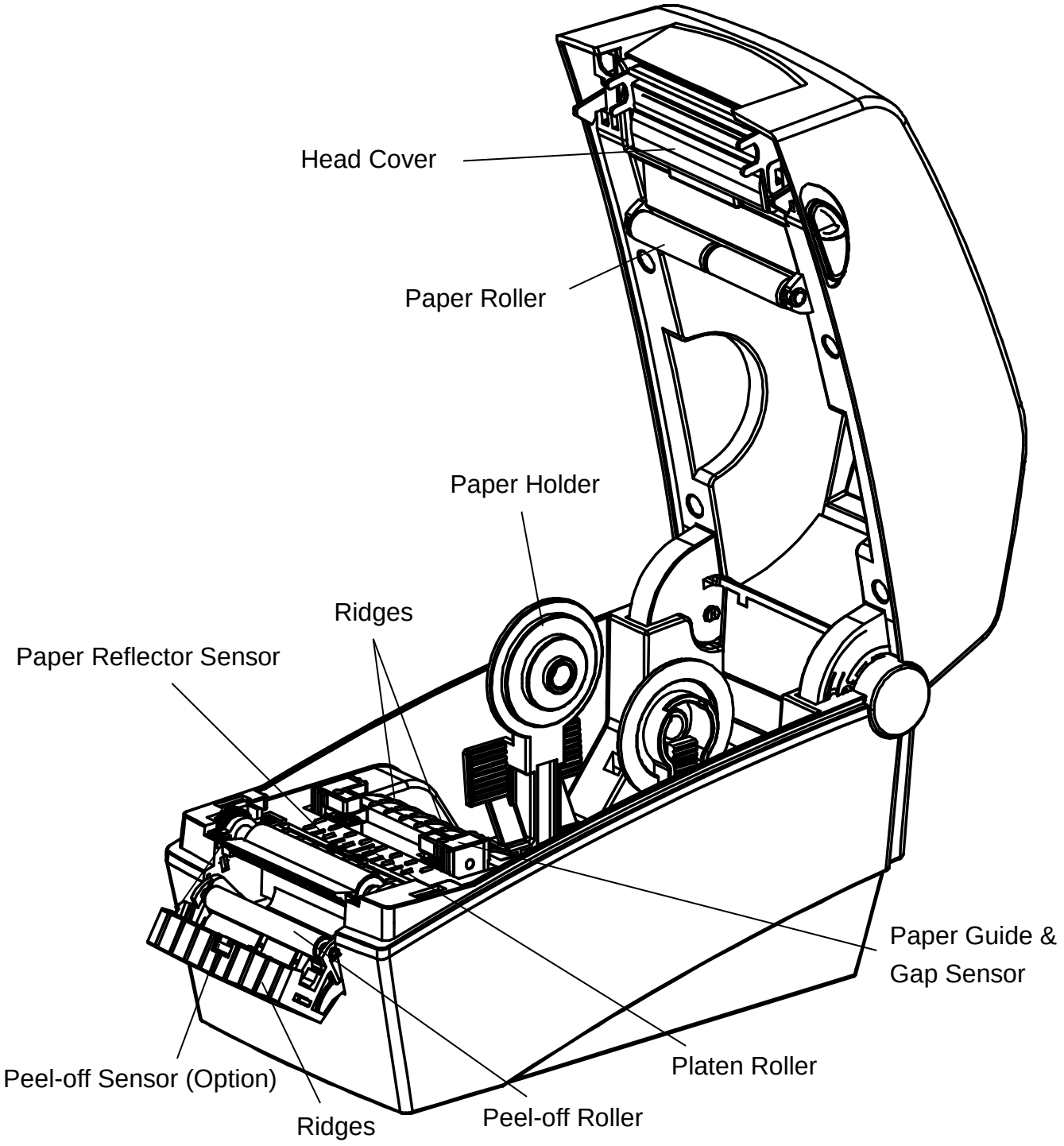
1) Open the paper cover and ribbon assembly, and remove the paper and ribbon.

2) Remove any dust or foreign substance using dry cloth or cotton swab.

3) Soak the cloth or cotton swab in alcohol for medical use and use it to remove adhesive foreign substances or other pollution materials.

4) After cleaning the parts, do not use the printer until the alcohol evaporates completely (1~2 min) and the printer has completely dried

※ Clean the parts when there is a degradation of performance in printing quality or paper detection.



7. Appendix

7-1 Specifications

Item		Description
Printer	Printing Method	Direct Thermal Printing
	Dot Density	SLP-D220: 203 dpi (8 dot/mm) SLP-D223: 300 dpi (11.8 dot/mm)
	Printing Width	SLP-D220: Max 54 mm SLP-D223: Max 56.9 mm
	Printing Speed	SLP-D220: 152 mm/sec (6ips) SLP-D223: 100 mm/sec (4ips)
Paper	Width	15 ~ 60 mm
	Roll	Max 130mm
	Core	12.5 ~ 38.1mm (0.5 ~ 1.5”)
AC Adapter	Input Voltage	AC 100~240V
	Frequency	50/60 Hz
	Output Voltage	DC 24V
Usage Conditions	Temperature	0 ~ 40 ℃ (Operating) -20 ~ 60 ℃ (Storage)
	Humidity (except for paper)	10 ~ 80 % RH (Operating) 10 ~ 90 % RH (Storage)

※ Note

- Printing speed can vary depending on the data transmission speed and combination of control commands.

- This equipment is indooruse and all the communication hiring are limited to inside of the building.

- The switch is the disconnecting device. Turn off switch from any hazard.

7-2 Certification

1) EMC & Safety Standards

- Europe: CE EMC,CB-Scheme:IEC60950-1, GS: EN60950-1: 2001
- North America: FCC rules parts 15B

WARNING

Use of an unprotected interface cable with this printer conflicts with EMC standards. Users should only use cables approved by BIXOLON.

2) CE Mark

• EMC Directive 89/336/EEC	EN55002:1994+A1:1995+A2:1997 EN55024:1998+A1:2001+A2:2003 EN61000-3-2:2000 EN61000-3-3:1995+A1:2001 EN6100-4-2:1995+A1:1998+A2:2001 EN6100-4-3: 2002+A1:2002 EN6100-4-4:2004 EN6100-4-5:1995+A1:2001 EN6100-4-6:1996+A1:2001 EN6100-4-8:1993+A1:2001 EN6100-4-11:1994+A1:2001
• Low Voltage Directive 73/23/EEC	Safety: EN60950-1:2001

3) WEEE (Waste Electrical and Electric Equipment)



This mark shown on the product or its literature indicates that the corresponding item should not be discarded at the end of its working life with other household waste. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate marked items from other types of waste and recycle them responsibly to promote the sustained reuse of material resources. Household users should contact either the retailer where they purchased this product, or their local government office for details of where and how they can conduct environmentally safe recycling of such items. Commercial users should contact their suppliers and check the terms and conditions of purchase contracts. This product should not be combined with other commercial waste for disposal.

4) Rating Label Symbol Information



DC (Direct current)

7-3 Label Types

The label types used with this printer are as follows.

- DIP Switch Labels: PP
- Other Labels: PET

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BIXOLON Co., Ltd. maintains ongoing efforts to enhance and upgrade the functions and quality of all our products.
In the following, product specifications and/or user manual content may be changed without prior notice.

Caution

Some semiconductor devices are easily damaged by static electricity. You should turn the printer “OFF”, before you connect or remove the cables on the rear side, in order to guard the printer against the static electricity. If the printer is damaged by the static electricity, you should turn the printer “OFF”.

Compliance information

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

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. Operation 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.

Caution: Exposure to Radio Frequency Radiation.
To comply with FCC RF exposure compliance requirements, a separation distance of at least 20 cm must be maintained between the antenna of this device and all persons.

Caution: Any Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

Class A Digital Device : Wired Device
This Apparatus complies with class “A” limits for radio interference as specified in the Canadian department of communications radio interference regulations.

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

Appareil numérique de classe A: appareil filaire
Get appareil est conforme aux normes class “A” d’interference radio tel que specifier par ministre canadien des communications dans les reglements d’interference radio.

Cet appareil numérique de la classe A est conform à la norme NMB-003 du Canada.

Waste Electrical and Electric Equipment (WEEE)



This marking shown on the product or its literature, indicates that is should not be disposed with other household wastes at the end of its working life, To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources. Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling. Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.