



MODEL : LK-B21R

4" DESKTOP LABEL PRINTER

All specifications are subject to change without notice



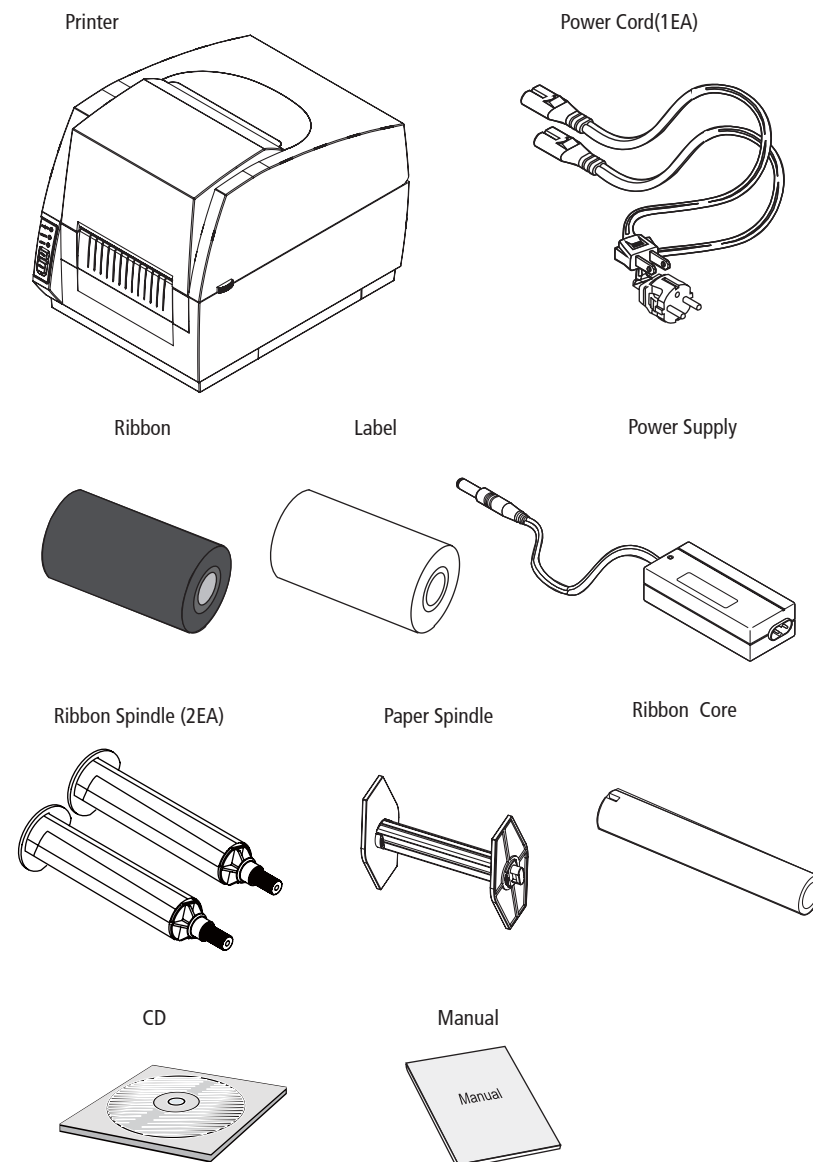
Disposal of Old Electrical&Electronic Equipment(Applicable in the European Union and other European countries with separate collection systems)

This symbol on the product or on its packaging indicates that this product shall not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronics equipment. For more detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

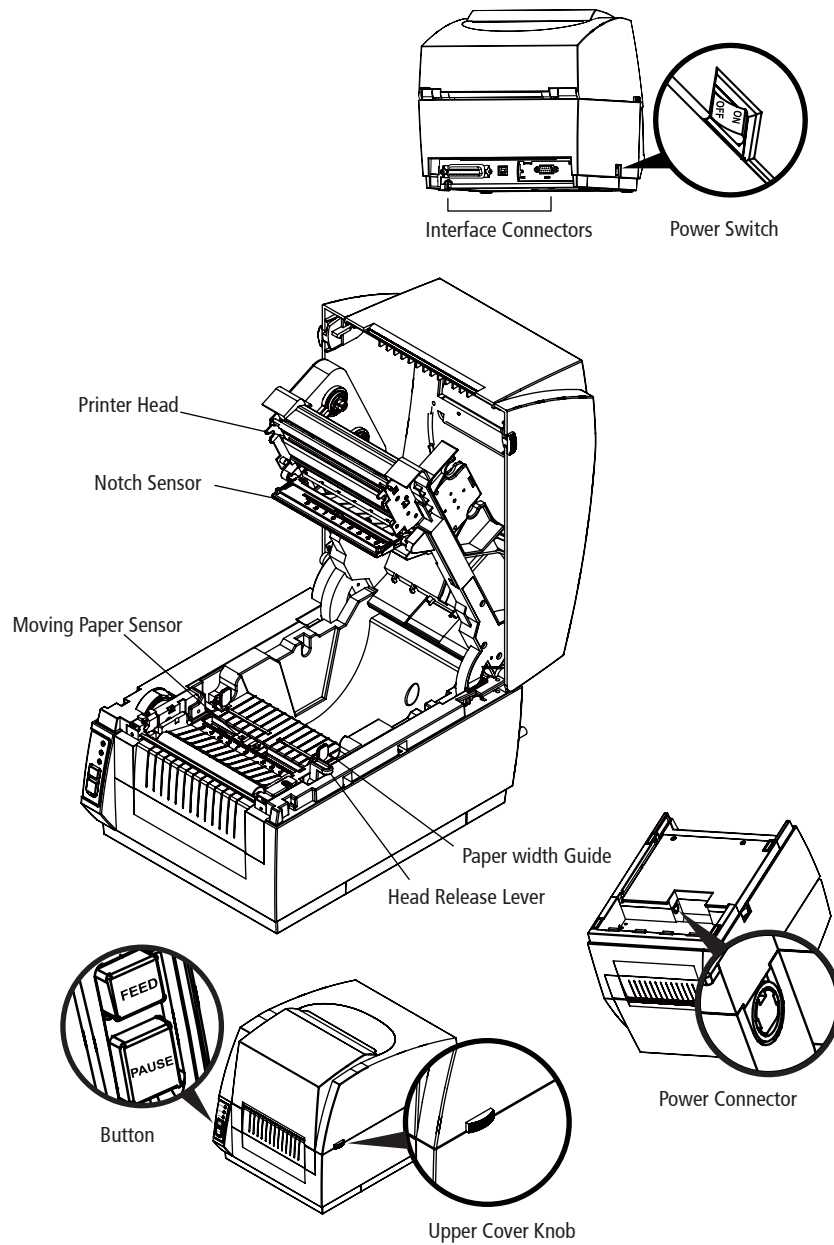
Table of Contents

1. Unpacking	3
2. Inspecting the Printer	4
3. Attaching Power Supply	6
4. Hooking Up the Printer and Computer	7
5. Loading the Paper	8
6. Loading Ribbon	10
7. Setting Up the Sensors	10
8. Self Test	13
9. Interface	14
10. Media Roll Size	16
11. Labels	17
12. Tags and Strip with Slots	18
13. Tags and Strip with Black Marks	19
14. Plain Continuous Stock	20
15. Specifications	21
16. Command List	23
17. RFID STSTEM	30
18. Recommended UHF Tags	31

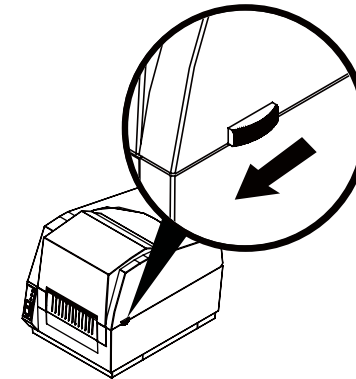
1. Unpacking



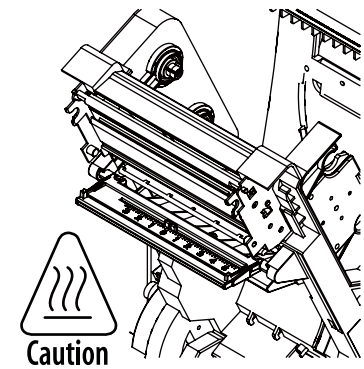
2. Inspecting the printer



Opening the printer

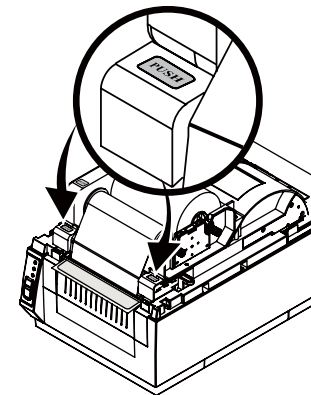


Open the upper cover by pushing the knob in the direction of the arrow



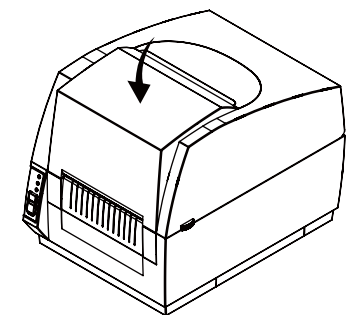
Make sure to be careful of the HOT head

Closing the paper upper guide



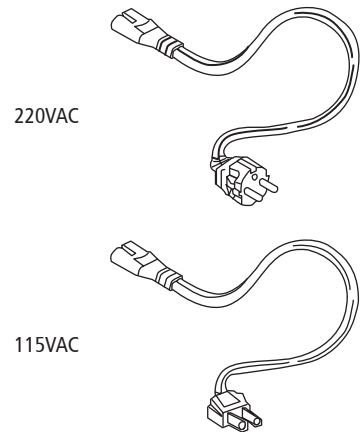
Make sure you hear the closing sound of the paper upper guide.

Closing the upper cover

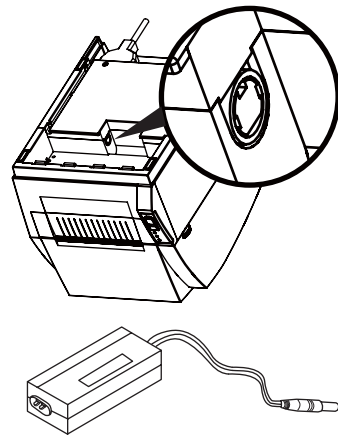


Close the upper cover and make sure you hear the closing sound of the upper cover.

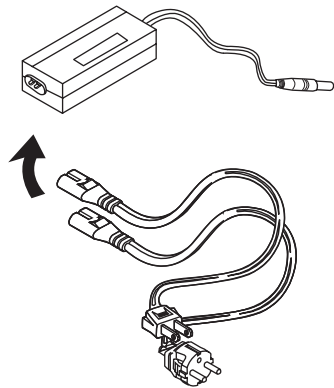
3. Attaching Power Supply



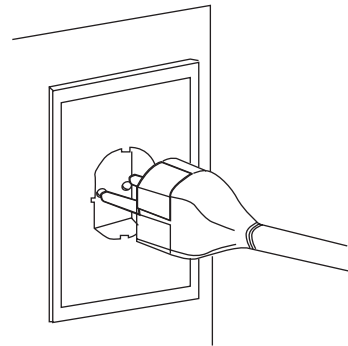
Check the specification of the AC power cord if it is correct with your power system



Turn off the power of the printer and connect the power supply to the printer



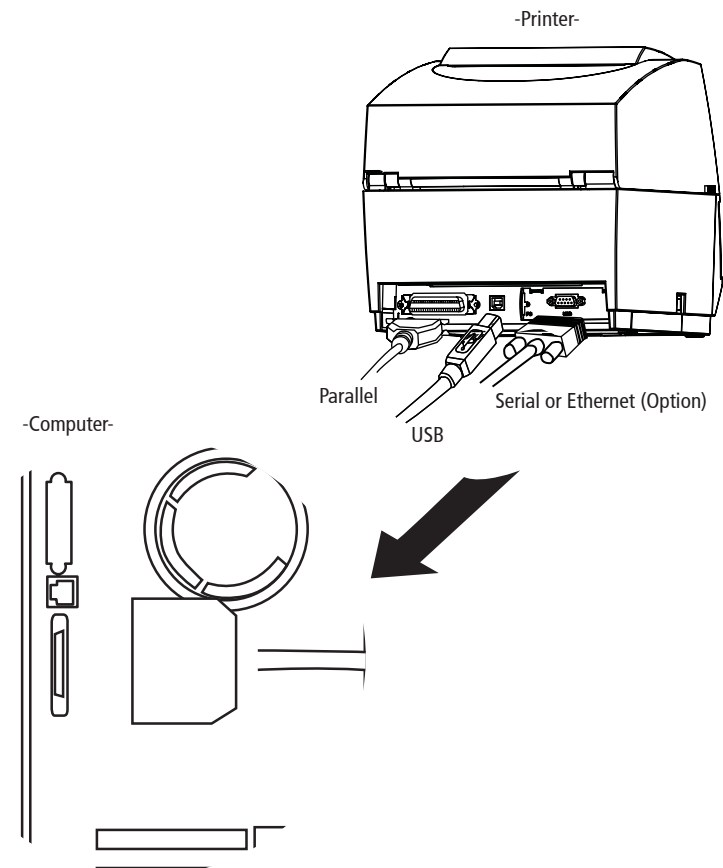
Connect the AC power cord to the power supply



Insert a plug into the outlet

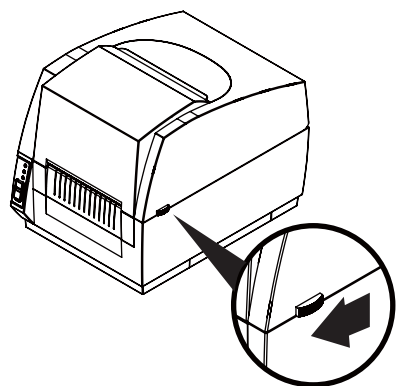
1 2
3 4

4. Hooking Up the printer and computer

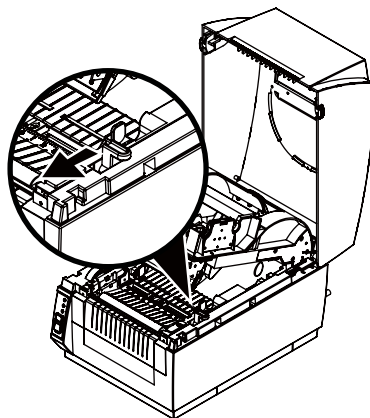


Make sure the printer is turned off then connect the printer to the PC

5. Loading the Paper

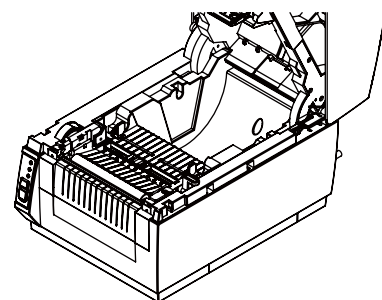


Turn off the printer and open the upper cover by pushing the in the direction of the arrow.

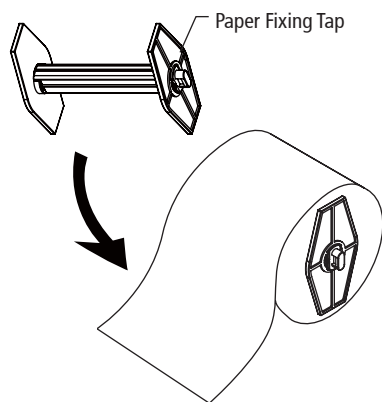


Rise up the paper upper guide by pulling the head release lever

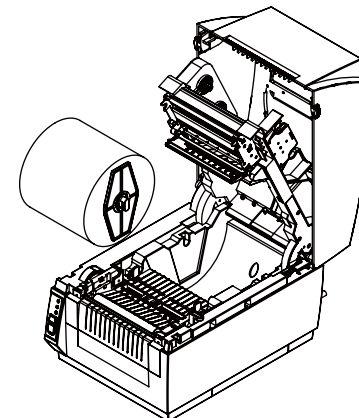
1 2
3 4



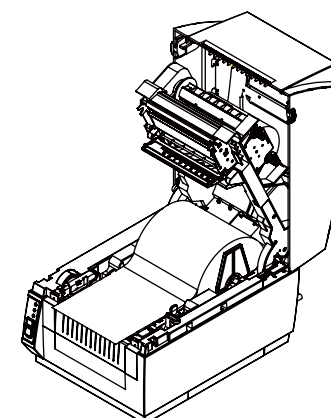
Open the paper width guide by pushing it to the right & left sides.



Pull out one of the adjustable width tabs. Insert a paper roll replace the tab and center.

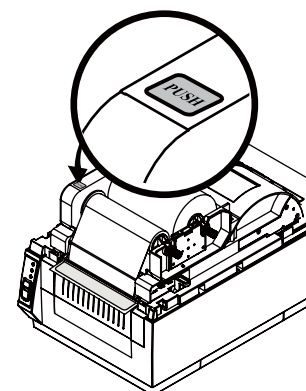


Insert paper roll into the printer

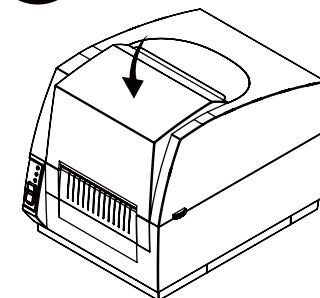


Adjust the paper width guide to meet the paper width

5 6
7 8

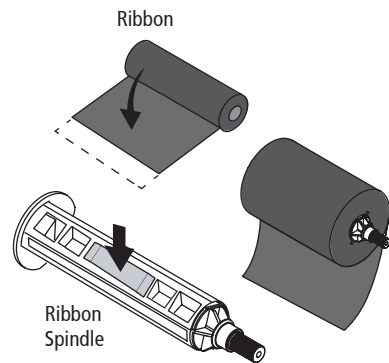


Push the head stopper release lever in the direction of the arrow until the paper upper guide comes down.

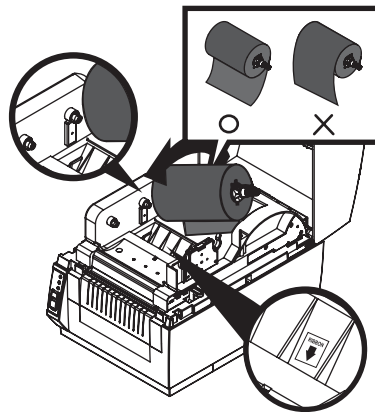


Close the upper cover and make sure you hear the closing sound of the upper cover.

6. Loading Ribbon

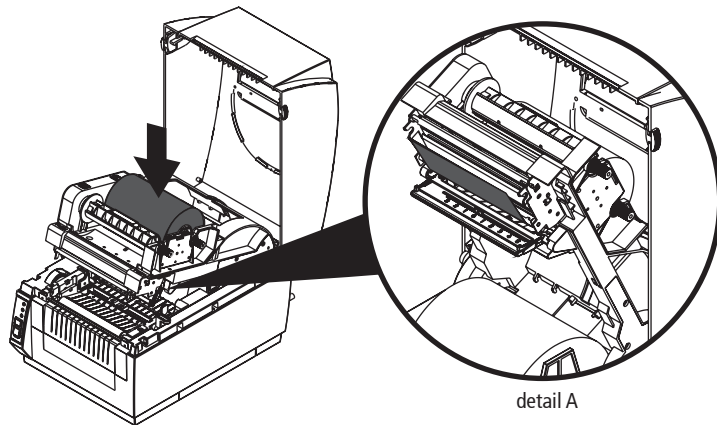


Remove the vinyl covering on the ribbon. Depress the indicated button on the ribbon spindle while inserting the ribbon roll.



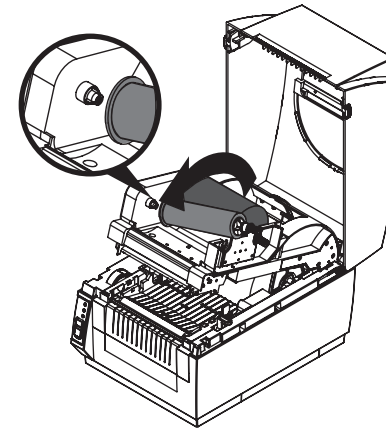
Insert one side of the ribbon spindle

1 2
3

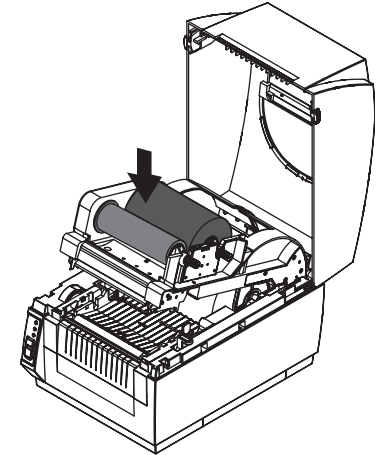


Push the other side of the ribbon spindle down to secure it.

Pull out the ribbon edge through ribbon mechanism as shown in the picture

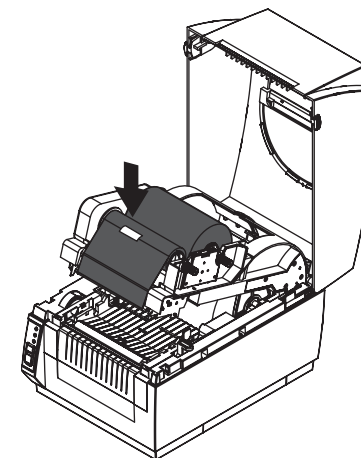


Insert one side of the ribbon spindle

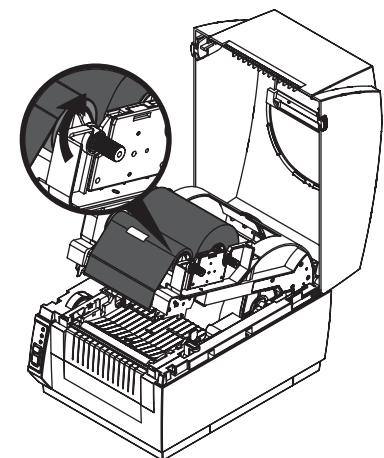


Push the other side of the ribbon spindle down to secure it.

4 5
6 7

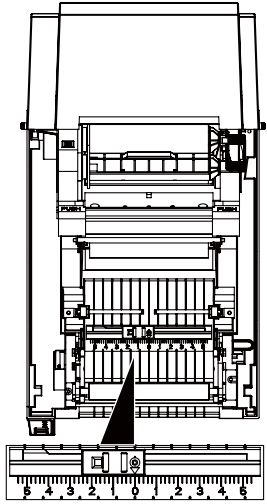


Attach the ribbon to the core with tape as shown.

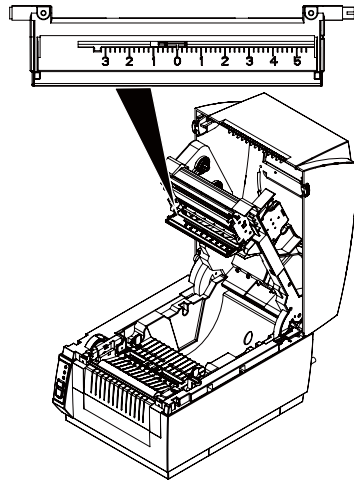


Turn the adjustment knob in the arrow direction to tighten the ribbon.

7. Setting up the sensors



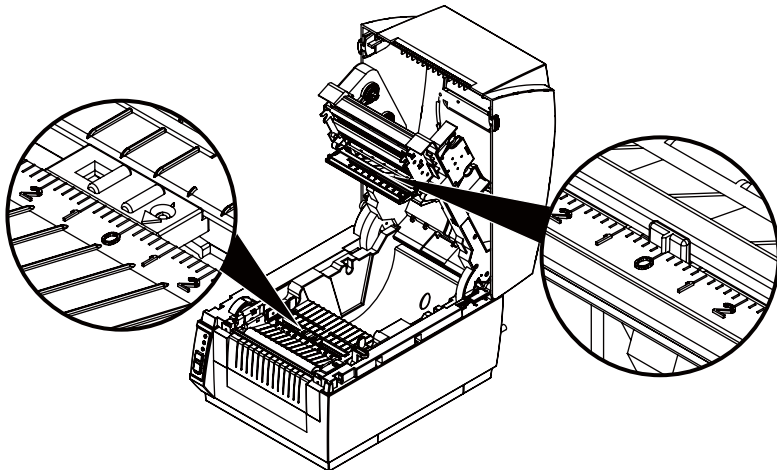
Set Black Mark Sensor right to the size of roll paper



Locate notch sensor on the same number point as the black mark sensor is indicating on.

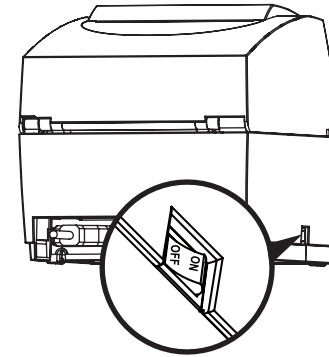
1 2
3

****0 is the initialization number for sensor of the product.****

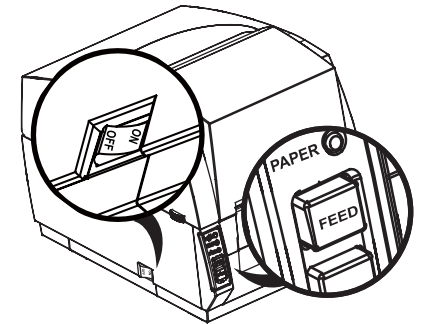


Black Mark Sensor and Notch sensor must always point to the same number

8. Self Test

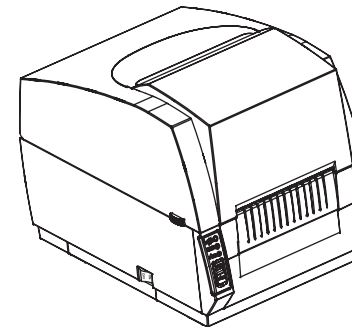


Turn off the printer

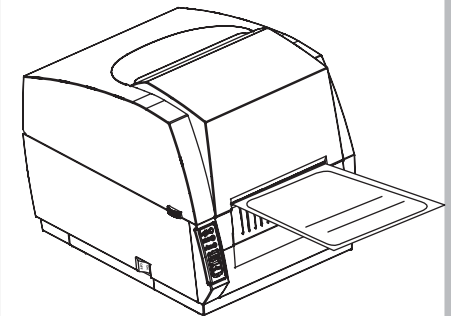


While holding down the feed button, turn on the printer

1 2
3 4



Set free the feed button

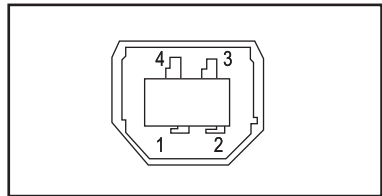


The printer starts printing some basic information

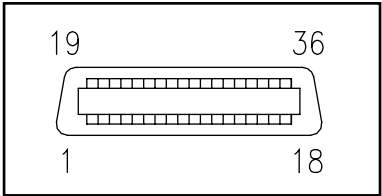
9. Interface

Interface Connectors

Standard

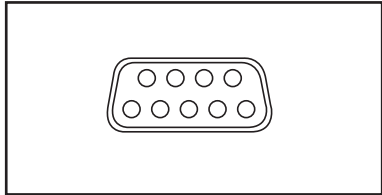


<USB "B" Type>

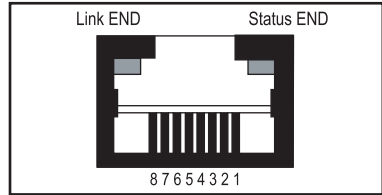


<Centronics Parallel>

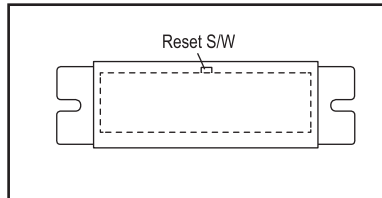
Option



<9 Pin Serial>



<Ethernet>



<Wi-fi>

9Pin Serial Interface

Pin	Signal	I/O	Description
2	RXD	Input	Printer receive data line RS-232C level
3	TXD	Output	Printer transmit data line RS-232C level
4, 7	DTR	Output	Printer handshake to host line RS-232C level
5	GND	-	System Ground
6	DSR	Input	Data Send Ready
1,8,9	NC	-	

Centronics Parallel Interface

Pin	Signal	I/O	Description
1	STROBE-	Input	Synchronize signal Data received
2~9	DATA0~7	Input/Output	Data bit Transmitted 0~7
10	ACK-	Output	Data receiving completed.
11	BUSY	Output	Impossible to print of data receiving.
12	PE	Output	Paper empty
13	SELECT	Output	Printer status for ON/OFF line
14	AUTO FEED-	Input	Paper auto feed signal
15	GROUND	-	System ground
16	GROUND	-	System ground
17	NC	-	
18	LOGIC-H	-	+5V
19~30	GROUND	-	System ground
31	INIT-	Input	Initialize
32	ERROR-	Output	Printer error
33	GROUND	-	System ground
34	NC	-	
35	+5V	-	+5V
36	SELECT IN-	Input	Printer select signal

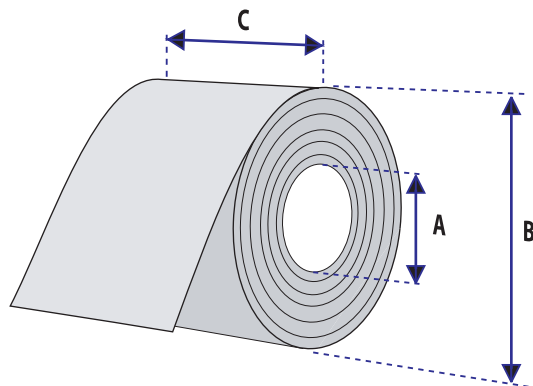
USB Interface

Pin	Signal	I/O	Description
1	+5V	-	+5V
2	DATA-	-	Printer transmit data line
3	DATA+	-	Printer transmit data line
4	GND	-	System Ground

Ethernet Interface

Pin	Signal	I/O
1	Data Out +	Output Data +
2	Data Out -	Output Data -
3	GND	Ground
4	Data IN +	Input Data +
5	Data IN -	Input Data -
6	N.C	
7	N.C	
8	N.C	

10. Media Roll Size



Core		
Diameter(A)	25.4 or 38.1 mm	(1.0 or 1.5 inches)
Max. width	118 mm	(4.65 inches)
Roll		
Max.diameter(B)	125 mm	(5 inches)
Max.media width(C)	116 mm	(4.57 inches)
Min.media width(C)	38.1 mm	(1.5 inches)
Max.media thickness	0.15 mm	(0.006 inches)
Min.mdeia thickness	0.06 mm	(0.003 inches)

All types of media should normally be wound with the printable side facing outwards and unroll from the top of the roll.

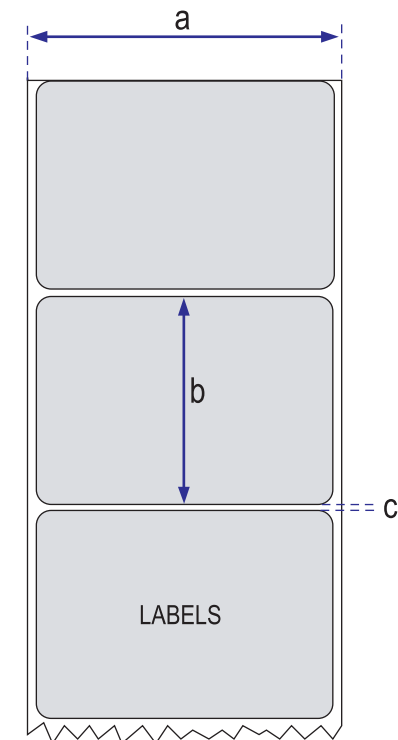
However tags and continuous strip can optionally be wound with the printable side facing inwards and unroll from the bottom of the roll as long as they are not used for cut-off operation.



Protect the media against sand, grit, and other hard particles during printing and storage. Keep the cover closed. Even very small foreign particles may cause severe harm to the delicate printhead.

11. Labels

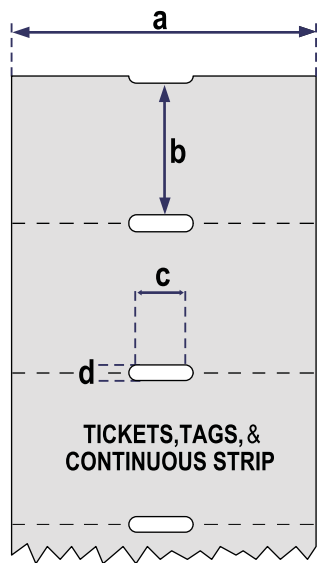
<- a -> Media width (inch, liner)		
Maximum	116.0 mm	(4.57 inches)
Minimum	38.1 mm	(1.5 inches)
<- b -> Label length		
Minimum	10 mm	(0.39 inches)
<- c -> Label gap height		
Maximum	10 mm	(0.39 inches)
Minimum	2 mm	(0.08 inches)
Liner		
Opacity	75%	



12. Tags and Strip with Slots

<-- a --> Tag or strip width		
Maximum	116.0 mm	(4.57 inches)
Minimum	38.1 mm	(1.5 inches)
<-- b --> Tag length		
Minimum	10 mm	(0.39 inches)
<-- c --> Detection slot width		
Minimum	14 mm	(0.55 inches)
<-- d --> Detection slot height		
Maximum	10 mm	(0.39 inches)
Minimum	2 mm	(0.08 inches)

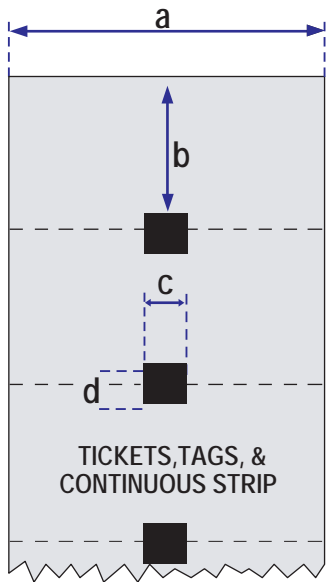
The label gap sensor is offset 4.5 mm(0.177 inches) to the right of the center for the media path.



13. Tags and Strip with Black Marks

<-- a --> Tag or strip width		
Maximum	116.0 mm	(4.57 inches)
Minimum	38.1 mm	(1.5 inches)
<-- b --> Tag length		
Minimum	10 mm	(0.39 inches)
<-- c --> Black mark width		
Minimum	14 mm	(0.55 inches)
<-- d --> Black mark height		
Maximum	10 mm	(0.39 inches)
Minimum	3 mm	(0.12 inches)

The black mark sensor is offset 10 mm (0.394 inches) to the right of the center of the media path.
Max. reflectance 5% at 940 nanometer. Carbon black.



14. Plain Continuous Stock

The printer can use continuous stock without any detection slots or black marks.

The printer must be set for continuous stock by the Q command.

The length of each copy is decided by the size of the print image and any additional media feed is decided by the Q command.

Continuous stock cannot be used in the Test (Dump) Mode.

<-- a --> Tag or strip width		
Maximum	116.0 mm	(4.57 inches)
Minimum	38.1 mm	(1.5 inches)



15. Specifications

Product Specifications

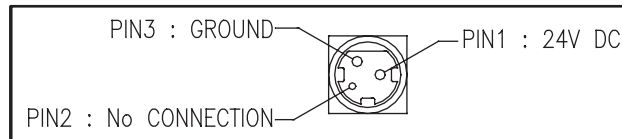
Print method		Thermal Transfer and Direct Thermal
Print speed(max)		152mm/sec
Print width(max)		104mm (4.1")
Print length(max)		630mm (24.8")
Resolution		203dpi, 8 dots/mm
Paper Width(min~max)		40~118mm (1.5~4.52")
Paper roll size(max)		127mm (5.0")
Paper thickness		0.08~0.18mm
Paper Type		Label , Tag, Continuous, Fanfold
Paper sensor		Label gap, Notch, Black Mark
Ribbon width(outside diameter)		33mm to 110mm (1.3~4.3")
Ribbon length		360M, Φ -74mm (2.9")
Interface	Standard	USB, Parallel (IEEE-1284)
	Option	RS232C, Ethernet, Wireless LAN 802.11b
Memory	Standard	8MB SDRAM, 1.5MB Flash
	Option	2MB Flash
Serial baud rate		38400bps
Auto Cutter (Option)	Life	1,000,000
	Type	Guillotine
Peeler		Option
Programming Language		EPL II Compatible, ZPL II Compatible
Barcode	1D	Codabar, Code93, Code128, Code39, EAN8/JAN8
		EAN13/JAN13, EAN14/UPC-A, Industrial2 of 5
		Standard 2 of 5, Interleaved 2 of, LOGMARS
		MSI, Plessey, POSTNET, UPC-E, UCC-EAN Extensions
	2D	MaxiCode, PDF 417
Font Specification		5bitmapped (8x12, 10x16, 12x20, 14x24, 32x48)
Weight		7.9lbs (3.6kg)

Certification

- (1) FCC PART15 CLASS A
- (2) CE EMCD (CE-EMCD Class B should use Parallel shield Cable complied with IEEE-1284 standards)
- (3) UL/cUL (UL 60950-1)
- (4) MIC
- (5) RoHS (TUV)

Electrical Characteristics

- (1) Input Voltage DC 24V \pm 10%
- (2) Current Consumption
 - Operating: Approx. 1.5 A (at ASC II printing)
 - Peak : Approx. 10 A
 - (at print duty 100%, For 10 seconds or less)
 - Stand-by : Approx. 0.15 A
- (3) Power Connector



16. Command List

EPL Command List

No.	Command		Description
1	A		ASC II Text
2	AUTOFR		Automatic Form Printing
3		3	Code 39 std. or extended
4		3C	Code 39 with check digit
5		9	Code 93
6		0	Code 128 UCC Serial Shipping Container Code
7		1	Code 128 auto A,B,C modes
8		1A	Code 128 mode A
9		1B	Code 128 mode B
10		1C	Code 128 mode C
11		K	Codabar
12		E80	EAN8
13		E82	EAN8 2 digit add-on
14		E85	EAN8 5 digit add-on
15		E30	EAN13
16		E32	EAN13 2 digit add-on
17		E35	EAN13 5 digit add-on
18	B	2G	German Post Code
19		2	Interleaved 2 of 5
20		2C	Interleaved 2 of 5 with mod 10 check digit
21		2D	Interleaved 2 of 5 with human readable check
22		P	Postnet 5,9,11 & 13 digit
23		PL	Planet 11 & 13 digit
24		1E	UCC/EAN 128
25		UA0	UPC A
26		UA2	UPC A 2 digit add-on
27		UA5	UPC A 5 digit add-on
28		UE0	UPC E
29		UE2	UPC E 2 digit add-on
30		UE5	UPC E 5 digit add-on
31		2U	UPC Interleaved 2 of 5
32		L	Plessey (MSI-1) with mod. 10 check digit
33		M	MSI-3 with mod. 10 check digit
34		M	MaxiCode
35		P	PDF417
36	C		Counter
37	D		Density
38	dump		Dump Mode
39	eR		User Defined Error / Status Character

No.	Command		Description
40	E	I	Print Soft Font Information
41		K	Delete Soft Font
42		S	Store Soft Font
43	F		Cut Position
44	F	E	End Form Store
45		I	Print Form Information
46		K	Delete Form
47		R	Retrieve Form
48	G	S	Store Form
49		G	Print Graphics
50		I	Print Graphics Information
51		K	Delete Graphics
52		M	Store Graphics
53	G	W	Direct Graphics Write
54		X	Compress Graphic Write
55	I		Chracter Set Selection
56	L	E	Line Draw Exclusive OR
57		O	Line Draw Black
58		S	Line Draw Diagonal
59		W	Line Draw White
60	M		Memory Allocation
61	N		Clear Image Buffer
62	O		Hardware Options
63	PA		EPL
64	q		Set Label Width
65	Q		Set Form Length
66	r		Set Double Buffer Mode
67	R		Set Reference Point
68	S		Speed Select
69	T	D	Date Recall & Format Layout
70		S	Set Real Time Clock
71		T	Time Recall & Format Layout
72	U		Print Configuration (General)
73	U	A	Enable Clear Label Counter Mode
74		B	Reset Label Counter Mode
75		E	External Font Information Inquiry
76		F	Form Information Inquiry
77		G	Graphics Information Inquiry
78		I	Host Prompts / Codepage Inquiry
79		N	Disable Error Reporting
80		P	Codepage & Memory Inquiry / Print

No.	Command		Description
81	U	Q	Configuration Inquiry
82		S	Enable Error Reporting
83		V	Version Report
84	V		Define Variable
85	xa		AutoSense
86	X		Box Draw
87	Y		Serial Port Setup
88	Z		Print Direction
89	?		Download Variables
90			Reset Printer
91	^default		Set Printer to Factory Defaults
92	^ee		Error Report - Immediate
93	;		Code Comment Line

DPL Command List

No.	Command	Description
1	<SOH>#	Resets the printer
2	<SOH>A	Sends a readable status string
3	<SOH>B	Toggles pause condition
4	<SOH>D	Disable the interfaaction command
5	<SOH>F	Sends one byte printer status
6	<STX>Kl8n	Sets baud rate
7	<STX>Kl9bdpt	Sets baud rate, data length, parity and stop bit no
8	<STX>Kl<m	Sets symbol set for ASD smooth fonts
9	<STX>KX__	Sets label length for continuous label
10	<STX>KI5__	Sets the gap height
11	<ESC>@0	Clear the flash memory that is used for soft fonts, forms or graphics
12	<STX>A	Sets date and time
13	<STX>a	Enables label echo character
14	<STX>cxxxx	Sets continuous label length
15	<STX>Exxxx	Sets copy count for stored label
16	<STX>e	Select edge sensor for gap
17	<STX>F	Feeds a label
18	<STX>fxxx	Sets stop position and automatic back-feed for the label stock
19	<STX>G	Prints stored label format
20	<STX>lmbfnn	Downloads the graphics file
21	<STX>J	Sets pause for each printed label
22	<STX>j	Cancels pause
23	<STX>L	Enters label formatting state
24	<STX>m	Sets measurement to metric

No.	Command	Description
25	<STX>n	Sets measurement to inches
26	<STX>Oxxxx	Sets print start position
27	<STX>P	Enters data dump mode
28	<STX>Q	Clears memory
29	<STX>qnxx	Clears memory module
30	<STX>r	Selects reflective sensor for gap
31	<STX>Sn	Sets label feed rate
32	<STX>T	Prints test pattern
33	<STX>Vn	Sets cutter and dispenser configuration
34	<STX>xmtn	Release file from memory
35	:xxxx	Sets Cut by Amount
36	An	Sets logic image printing mode
37	Cxxxx	Sets left margin
38	cxx	Sets cut by amount
39	Dwh	Sets width and height pixel size
40	E	Ends the job and exit from label formatting mode
41	G	Stores previous data to global register
42	<STX>Sn	Retrieves the global register contents
43	Hxx	Sets heat value
44	M	Toggles the mirror mode
45	m	Sets measurement in metric
46	n	Sets measurement in inch
47	Pn	Sets print speed
48	Qxxxx	Sets the quantity of labels to print
49	Rxxxx__	Sets vertical offset
50	rn__	Retrieves label data to print buffer
51	smn__	Stores label data to print buffer
52	Tmn	Sets end of line code The nn is represented by HEX value
53	z	Change slash zero to nomal 0
54	+xx	Makes auto increment for numeric
55	>xx	Makes auto increment for alphanumeric
56	-xx	Makes auto decrement for numeric
57	<xx	Makes auto decrement for alphanumeric
58	^xx	Sets count by amount
59	<STX>T<string>	Prints data and time
60	1Xnnnnnnnnnn	Box or Line Command
61	1n(0~8font)	Text Command(Bitmap font)
62	1Y11000yyyyxxx	Graphic selection command
63	xA	Code 3 of 9
64	xB	UPC-A

No.	Command	Description
66	xD	Interleaved 2 of 5
67	xE	Code 128 including subset A, B and C
68	xF	EAN-13
69	xG	EAN-8
70	xH	HBIC
71	xl	Coda bar
72	xJ	Interleaved 2 of 5 with a modulo 10 checksum
73	xK	Plessey
74	xL	Interleaved 2 of 5 with a modulo 10 checksum and shipping bearer bars
75	xM	UPC2
76	xN	UPC5
77	xO	Code 93
78	xP	Postnet
79	xQ	UCC/EAN Code 128
80	xT	Telepen
81	xV	FIM(Facing Identification Mark)
82	xU	UPS MaxiCode
83	xZ	PDF-417
84	xW	Datamatrix

ZPL Command List

No.	Command	Description
1	^A	Scalable/Bitmapped Font
2	^B1	Code 11 BarCode
3	^B2	Interleaved 2 of 5 BarCode
4	^B3	Code 39 BarCode
5	^B4	Code 49 BarCode
6	^B5	Planet Code BarCode
7	^B7	PDF417 BarCode
8	^B8	EAN-8 BarCode
9	^B9	UPC-E BarCode
10	^BA	Code 93 BarCode
11	^BC	Code 128 BarCode(Subsets A, B, and C)
12	^BD	UPS MaxiCode BarCode
13	^BE	EAN-13 BarCode
14	^BF	Micro-PDF417 BarCode
15	^BI	Industrial 2 of 5 BarCode
16	^BJ	Standard 2 of 5 BarCode
17	^BK	ANSI Codabar BarCode

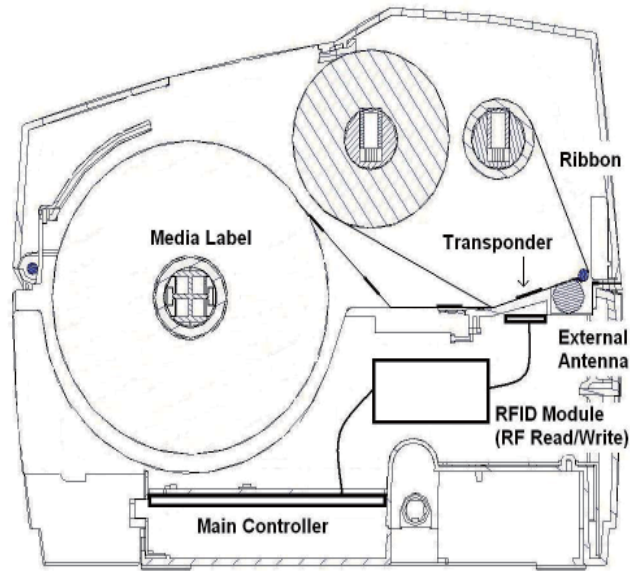
	Command	Description
18	^BL	LOGMARS BarCode
19	^BM	MSI BarCode
20	^BP	Plessey BarCdoe
21	^BQ	QR Code BarCode
22	^BS	UPC/EAN Extensions
23	^BU	UPC-A BarCode
24	^BX	Data Matrix BarCode
25	^BY	BarCode Field Default
26	^BZ	POSTNET BarCode
27	^CC	~CC Change Carets
28	^CD	~CD Change Delimiter
29	^CF	Change Alphanumeric Default Font
30	^CI	Change International Font/Encoding
31	^CT	~CT Change Tilde
32	^DF	Download Format
33	~DG	Download Graphics
34	^FB	Field Block
35	^FC	Field Clock(for Real-Time Clock)
36	^FD	Field Data
37	^FH	Field Hexadecimal Indicator
38	^FN	Field Number
39	^FO	Field Origin
40	^FP	Field Parameter
41	^FR	Field Reverse Print
42	^FS	Field Separator
43	^FT	Field Typeset
44	^FV	Field Variable
45	^FW	Field Orientation
46	^FX	Comment
47	^GB	Graphic Box
48	^GC	Graphic Circle
49	^GD	Graphic Diagonal Line
50	^GE	Graphic Ellipse
51	^GF	Graphic Field
52	^GS	Graphic Symbol
53	^ID	Object Delete
54	^IL	Image Load
55	^IM	Image Move
56	^IS	Image Save
57	^LH	Label Home
58	^LL	Label Length

	Command	Description
59	^LR	Label Reverse Print
60	^LS	Label Shift
61	^LT	Label Top
62	^MC	Map Clear
63	^MD	Media Darkness
64	^MM	Print Mode
65	^MN	Media Tracking
66	^MT	Media Type
67	^PM	Printing Mirror Image of Label
68	^PO	Print Orientation
69	^PQ	Print Quantity
70	^PR	Print Rate
71	^PW	Print Width
72	^SC	Set Serial Communications
73	~SD	Set Darkness
74	^SN	Serialization Data
75	^ST	Set Date and Time(for Real-Tiime Clock)
76	^XA	Start Format
77	^XF	Recall Format
78	^XG	Recall Graphic
79	^XZ	End Format

RFID Command (for ZPL)

	Command	Description
80	^RF	Read or Write RFID Format
81	^RI	Get RFID Tag ID
82	^RR	Specify RFID Retries for a Block
83	^RS	Set Up RFID Parameters
84	^WT	Write(Encode) Tag

17. RFID SYSTEM



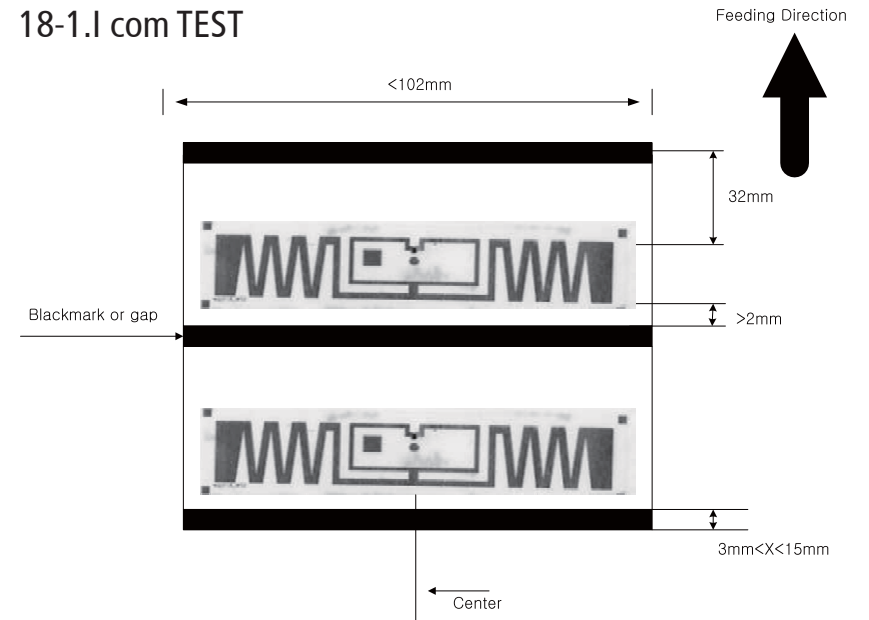
[figure #1]

The communication between the RFID Tag and the LK-B21R printer can be made when the transponder is located upward the external antenna.
(See the figure #1)

The transponder position should be accurate to read or write the RFID Tags without any failure.

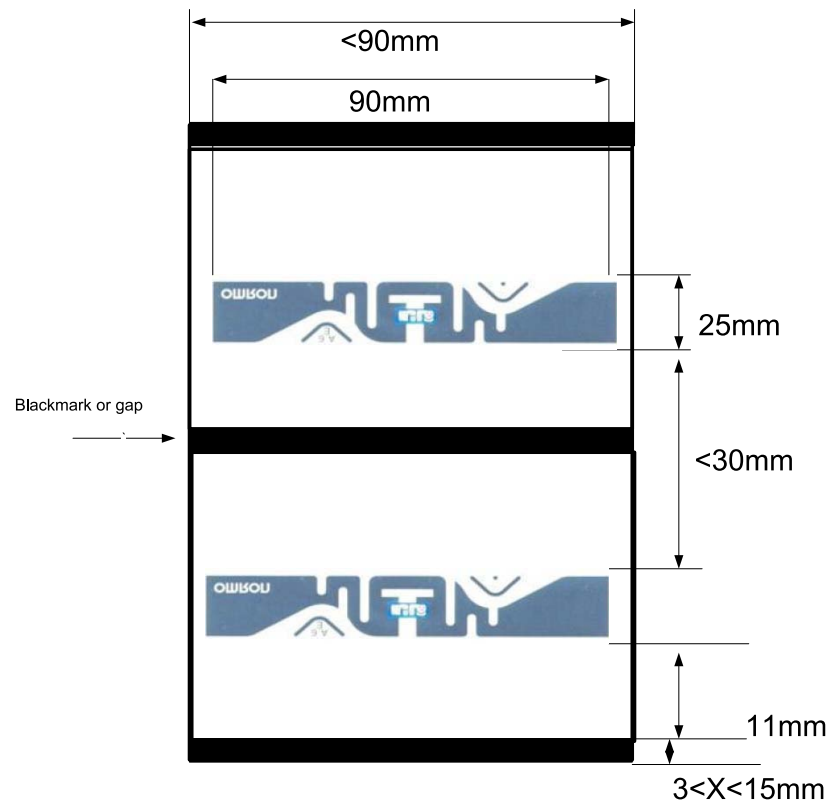
18. Recommended UHF Tags

18-1.I com TEST



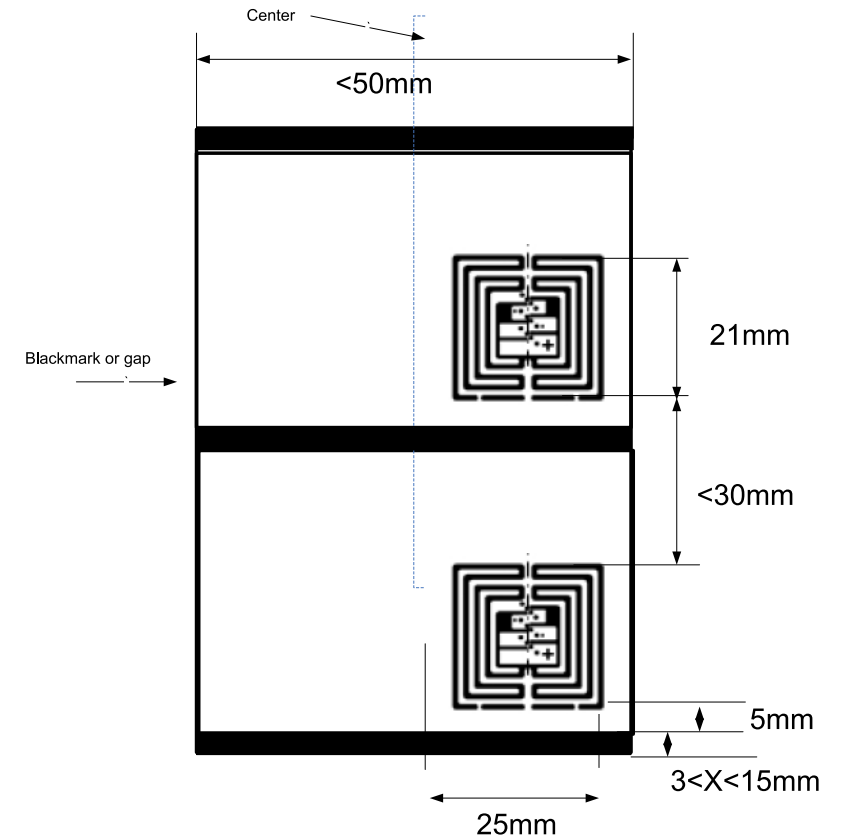
Notes: Dimension are to Transponder Antenna leading edge, not the Transponder leading edge

18-2. Omron Gen2 Wave



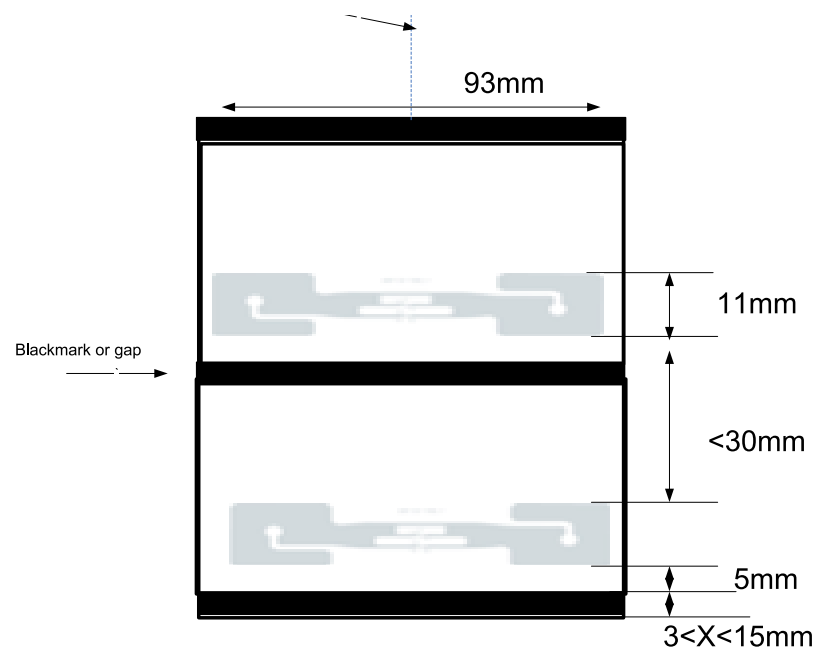
♣ Minimum Gap 30mm

18-3. Refsec PHARAMA 1X1 TAG TEST



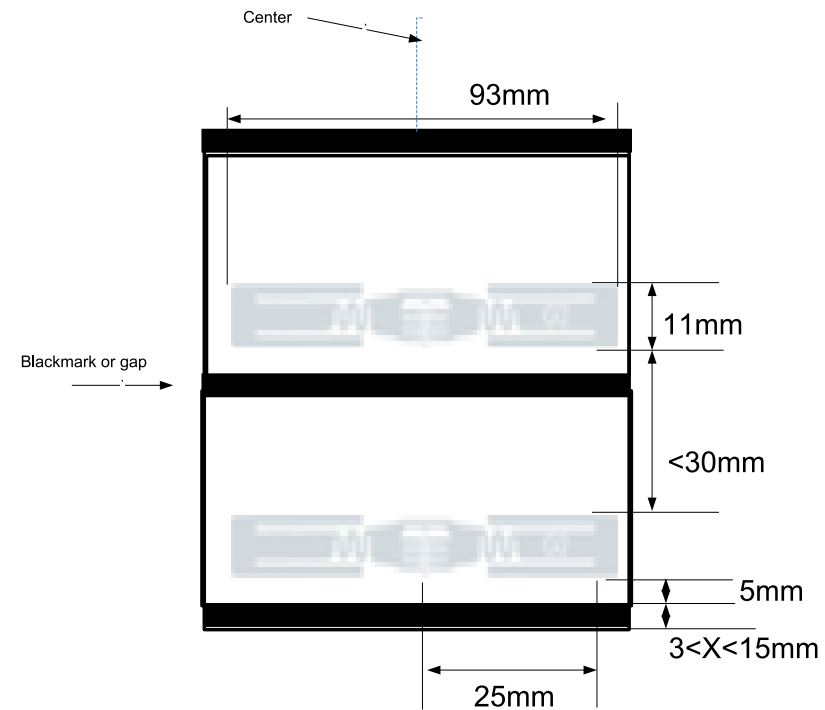
♣ Minimum Gap 30mm

18-4. Rafsec DOGBONE TEST



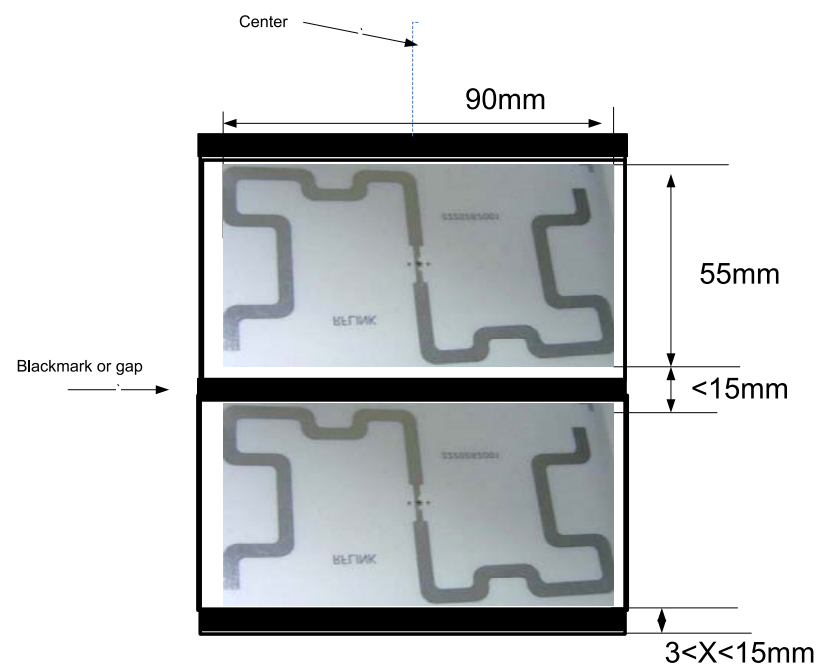
♣ Minimum Gap 30mm

18-5. Rafsec G2 ShortDipole TEST



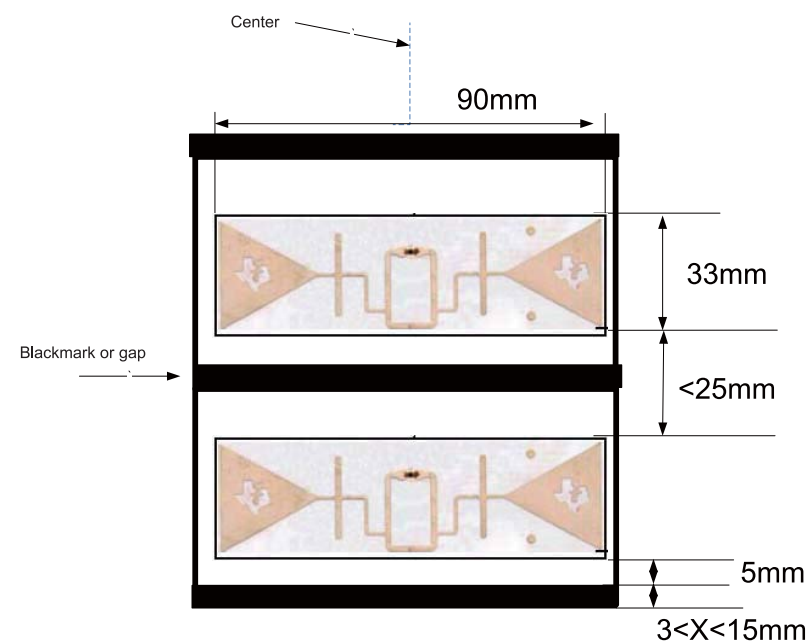
♣ Minimum Gap 30mm

18-6. RFLINK222026001 TEST



♣ Minimum Gap 15mm

18-7. TI RI-UHF-00C01-03 TEST



♣ Minimum Gap 25 mm

