

DECLARATION OF CONFORMITY

Manufacturer's Name : Japan CBM Corporation
Manufacturer's Address: CBM Bldg., 5-68-10, Nakano, Nakano-ku
Tokyo, 164-0001, Japan

Declaration on the Product

Product Name Line Thermal Printer
Model Number(s) CMP-10
(S.No.9880001 -)

Conforms with the following standards:

EN60950	A4
EN55022	1994 Class A
EN61000-3-2	1995
EN50082-1	1992
IEC801-2	1991 4KV CD, 8KV AD
IEC801-3	1984 3V/m, 26MHz-1000MHz AM1KHz 80%
IEC801-4	1988 + 0.5KV Signal line + 1KV AC mains

Supplementary information

“The product complies with the requirements of the low Voltage Directive 73/23/EEC, 93/68/EEC and the EMC Directive 89/336EEC, 92/31/EEC, 93/68EEC”.

Tokyo, Japan
July 1988

Signature:
Mikio Moriya
General Manager
R & D Department

WARNING!

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

READ THESE INSTRUCTIONS CAREFULLY!

- Follow all warnings and instructions marked on the product.
- Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.
- Do not place this product on an unstable cart, stand or table. The product may fall, causing serious damage to the product.
- The slots and openings on the back or bottom of the case are provided for ventilation. To ensure reliable operation of the product and to protect it from overheating, do not block or cover these openings. They should never be blocked by placing the product on beds, sofas, rugs or other similar surfaces. This product should never be placed near to or over a radiator or heater. It should not be placed in an built-in installation unless proper ventilation is provided.
- This product should be operated from the type of power source indicated on the marking label.
- Never push objects of any kind into the device through cabinet slots as they may touch dangerous voltage points or other vital parts that could lead to excessive risk of fire or electric shock. Never spill liquid of any kind on the product.
- Do not attempt to service this product yourself.

CAUTION: Use shielded cable for this equipment.

IMPORTANT! This equipment generates, uses, and emits radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing devices pursuant to Sub-part J of Part 15 off FCC Rules, designed to provide reasonable protection against such interference when operated in commercial environments. Operating this equipment in a residential area is likely to cause interference, in which case the user - at his own expense - will be required to take whatever measures may be necessary to correct the interference.



FOLLOW INSTRUCTIONS STRICTLY



MAY CAUSE DAMAGE TO THE UNIT

- Do not subject the printer to strong impacts or shocks, such as kicking, stamping, hitting, dropping, and the like.
- Install the printer in well-ventilated places. Do not use it in such a way as to cause the closure of its ventilation.
- Do not install the device in chemical laboratories, where reactions are expected to take place or in locations where salts or gases contaminate the air.
- Do not connect/disconnect the power cord or the data cable, while holding the cable itself!
- Do not pull, install, use, or carry the equipment in a way as to apply excessive force on the cables.
- Do not drop or insert any external objects, such as clips or pins, into the equipment.
- Do not spill liquids or spray any chemical-containing liquid over the equipment. If any liquid is spilled on it, turn off the power, disconnect the power cable and power cord from the mains socket and contact our local dealer.
- Do not disassemble or remodel the equipment. Treatment of this kind may cause fire or dangerous electric shocks.
- Use the printer only with the specified commercial power supply and AC adapter.
- If you drop or break the AC adapter, or if water or other liquid substances get inside it, unplug it immediately from the mains socket and contact our dealer.
- Do not damage, break, bend, pull by force or twist the AC adapter cord. Do not put heavy objects on it or apply excessive heat. The AC adapter may brake and cause fire, electric shocks, etc. If the AC adapter cord is damaged, contact our local dealer.
- Do not connect/disconnect the AC adapter with wet hands.
- Do not overload a single electrical outlet, using a table tap or a current tap socket.
- The packing plastic bag of the printer must be kept away from children -

DANGER OF SUFFOCATION!




PRECAUTIONS DURING INSTALLATION

- Do not use or store the printer in locations exposed to fire, moisture, direct sunshine or near heaters or thermal devices where the prescribed operating temperature and humidity are not met, or in a places exposed to oil leaks, iron powder, or dust. The device may brake, emit smoke, or catch fire.
- Install the printer on a flat, stable desks or tables free from vibrations.
- Do not use any sharp-pointed objects, such as a pens, to touch the operation panel of the printer.
- Do not use the device near radio or TV receivers. Do not share the power from a common socket together with radio or TV receivers because this may cause reception problems.
- Use the printer only with the specified power supply, voltage and frequency.
- Confirm that the mains socket, used for the connection, has sufficient capacity.
- Avoid connecting the power cable to a mains socket shared by other devices or extending the wiring too fa - the cable may catch fire. Do not step on or apply excessive force (pull) to the cable.
- Never connect the grounding cable (frame ground) to a gas pipe beacuse of the danger of explosion. When connecting or disconnecting the grounding cable, be sure to disconnect the power cable and the power plug from the mains socket.
- When connecting/disconnecting the cables, be sure to turn off the power first, including the connected side, and then connect/disconnect them, holding the plug and the connector. Pulling the cable itself cam seriously damage it.
- If a reverse-polarity connection is made, internal elements may be broken or a mating device may be adversely affected.
- Use a shielding wire or twisted pair for a signal line, in order to minimize noise effects. Do not route the cable too long or connect it to a noisy device. Connection to noisy devices can cause erroneous printing due to corrupt data.
- Use the printer in locations where the mains socket is close at hand so that you can easily disconnect the power plug from it and shut off the power.
- When the printer will be kept in storage for longer periods of time, or during transportation, unplug all cables from it and remove the paper roll.


DAILY MAINTENANCE PROCEDURES!

- During maintenance operations be sure to switch the printer off and unplug it from the socket.
- Use a dry soft cloth to wipe off stains and dust from the surfaces of the printer case. For harder soiling, use a water moist cloth. Never use organic solvents, such as alcohol, thinner, benzenes, ketone, or chemical dusters.
- If the printer is contaminated with paper powder, use a soft brush for cleaning. Be careful not to damage the printing head.


CAUTION!

-  During printing the head and motor are very hot. Be careful not to touch them before they cool off. Do not touch the heating surface of the with bare hands or metal objects.


CLEANING THE PRINTING HEAD

-  1. Referring to “4.5 Removing Paper Jam,” dismount the plate roller unit.
2. Moisten slightly with alcohol, and clean the heating surface of the printing head with it.
3. Reassemble the plate roller unit.

CAUTION!

-  When dismounting or reassembling the plate roller unit, be sure to raise the printing head - otherwise, they may be damaged. Handle the detached plate roller unit with care or you may damage it.

CAUTION!

1. The use of non-specified paper may cause irregularity of printing density. If this is the case, use the DIP switch to reset this parameter
-  2. Do not paste the paper to the core.
3. If the paper comes in contact with a chemical or oil, it may discolor or fail to print.
4. Do not rub the paper surface with your finger nails or metal objects -it may discolor.

Notes

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INTRODUCTION

The **CITIZEN CMP-10** is a compact, full featured line thermal printer, which can be used in a large variety of job environments ranging from door-to-door sales through small and mid-sized catering establishments, car-rentals, parking lots, field services to on-board sales on land, sea and air. Its abundant built-in wireless technology features allow the device to replace the traditional paper-based business processes and to realize commercial transactions at the point of sale or service. Easily worn on the belt it is a highly efficient device for printing plain text and graphic receipts on demand plus logos, bar codes and other graphic elements.

Features:

1. Small and lightweight.
2. High speed and low noise emission of the line thermal printing mechanism.
3. Long-life printing head and high reliability, owing to its simplicity.
4. Easy paper-loading, owing to the auto-loading function.
5. Built-in IrDA.
6. Built-in magstripe reader.
7. Accommodates two paper-roll diameters - 40 and 55 mm.

Unpacking

When unpacking the package, confirm the availability of:

·Printer unit:	1
·Sample paper roll:	1 roll
·AC adapter:	1 piece
·AC cord:	1 piece
·User's manual:	1 copy



CAUTION!

- Install the printer body on a flat and stable desk at a minimum risk of vibrations.
- Do not install the printer near a heater or in a place exposed to direct sunshine.
- Do not use the printer in high-temperature, high-humidity, or contaminated environments.
- Do not allow the formation of condensed moisture on the printer. If such condensation appears do not switch the printer ON until it has become completely dry.
- Use only the accessory AC adapter. Do not use this adapter for other purposes.

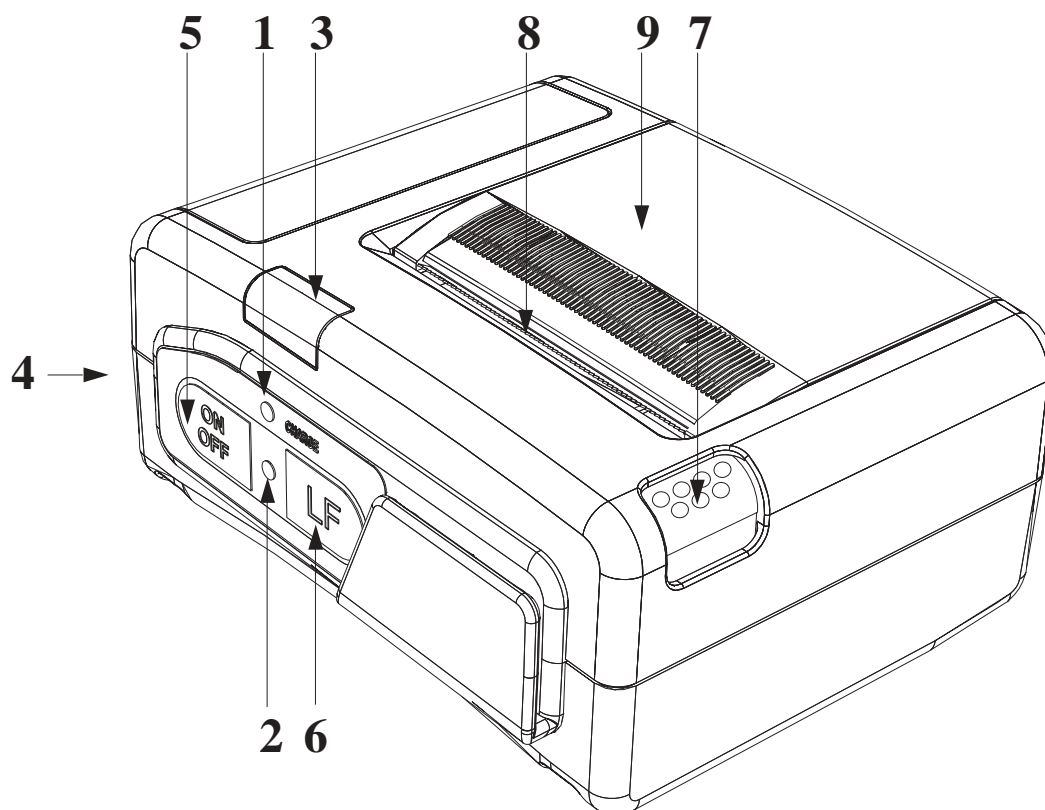
Technical parameters

Feature	Parameters
Printing system	Direct thermal printing
Printing speed	50 mm /sec
Printing head	Total dots: 384
	Dot density: 8 dots/mm
	Printing width: 48 mm
	Durability: 50 million pulses (at normal temperature, 12.5% density, rated energuy)
Printing	Port rate: prints while receiving data
Emulation	ESC/POS
Font	SHIFT JIS Code JIS Code ASCII Code
Code tables	
Characters per line	Kanji (24 x 24 dots) : 16 charaters ASCII: 32 characters/line FONT A 42 characters/line FONT B
Dot matrix	Kanji: 24H x 24V ASCII: 12H x 24V (FONT A) 19H x 16V (FONT B)
Bar code type	EAN 13, EAN 8, UPC-A, UPC-E CODE 39, CODE 128, CODABAR
Paper feed	Friction feed
Paper width	58 +/- 1
Paper thickness	60 - 65 µm
Paper path	Rear (Cam Shell Type)
Recommended paper	TF50-KS-E2C (Nippon Seishi)
Paper roll maximum diameter	40 mm(CMP-10/40), 50 mm(CMP-10/50)
Minimum core diameter	8 mm
Interfaces	RS-232C (special cable - optional) IrDA version 1.0
IrDA I/F	Speed: 115 000 BPS MAX
Serial port	Speed: 4800, 9600, 19200, 38400, 57600, 115200 bps Parity: None Data length: 8 bits Stop bit: 1 bit
IrDA Communication	80 cm distance (conditions specified)
Input buffer	64 KB

Technical parameters

Feature	Parameters
LED color	Power LED - GREEN and RED
	Battery Charge: GREEN and RED
Operation	Power button 1 Feed button 1
Sensors	Paper end sensor
Supply voltage	DC 9V +/- 5%
Power consumption	At non-printing: Approx. 2 W
AC Adapter	Input: AC 120 to 240V, 50/60Hz Output: DC 9 V, 2A
Battery charging time	Approximately 3 hours
Maximum lines printed with fully charged battery	40 000 lines (temperature at 20° C, 8 dots space, between lines - 36 dots) Online consists of 12 characters 5" (35H) and 12 characters " "(20H - space) where every 5 are followed by a space. Number of lines may differ depending on battery condition and the printed text.
Power supply monitoring	Auto Power OFF (programmable - from 0 to 60 sec.). Low battery monitoring included.
Static electricity	6 kV
(IEC Pub.801-2)	8kV
Noise	Less than 52 dB
Power consumption	Idle - approximately 2w When printing - approximately 15W
Vibration	Operation amplitude of 2 mm in direction XYZ at a frequency of 1000 cpm
Shock	No operation acceleration: 100 G Velocity: 7,0 m/s Drop test: 6 surfaces drop
Life cycle	5 years
Safety	No smoke, no fire, no smell at short, open test or motor lock test. No sharp edges.
Applicable standard (main body)	GS, CE Marking
Dimensions	
Weight	Battery included:
Options	RS-232C Cable; Mag-Stripe reader; Belt Clip; Strapper;

The CITIZEN CMP-10 - Outer appearance and operation controls



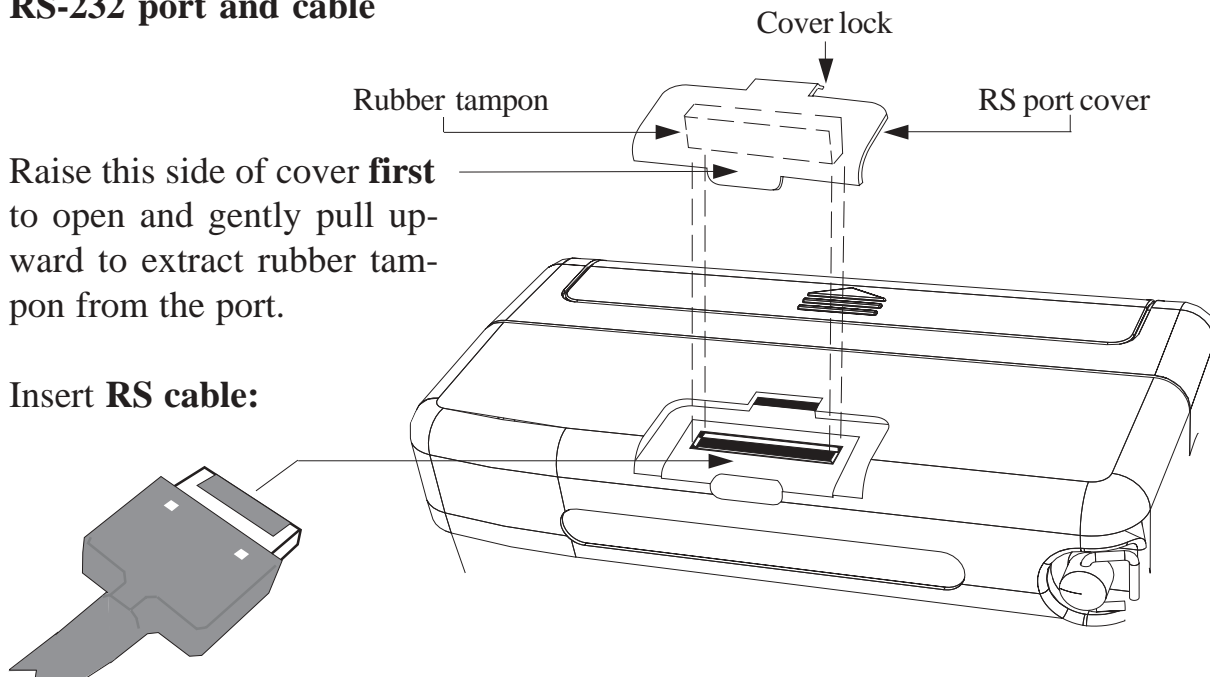
LED Indicators (Bicolor - Red and Green)

- | | |
|-----------------------|---|
| 1. RED on | - Charging battery |
| GREEN on | - battery is Fully charged |
| 2. GREEN on | - the device is switched ON or Self Testing is in progress. |
| RED/GREEN blinks fast | - paper END |
| RED/GREEN blinks slow | - printer head OVERHEATED |
| RED on | - mag-stripe reader ENABLED |
| | (RED off when card reading is over) |

Controls and buttons

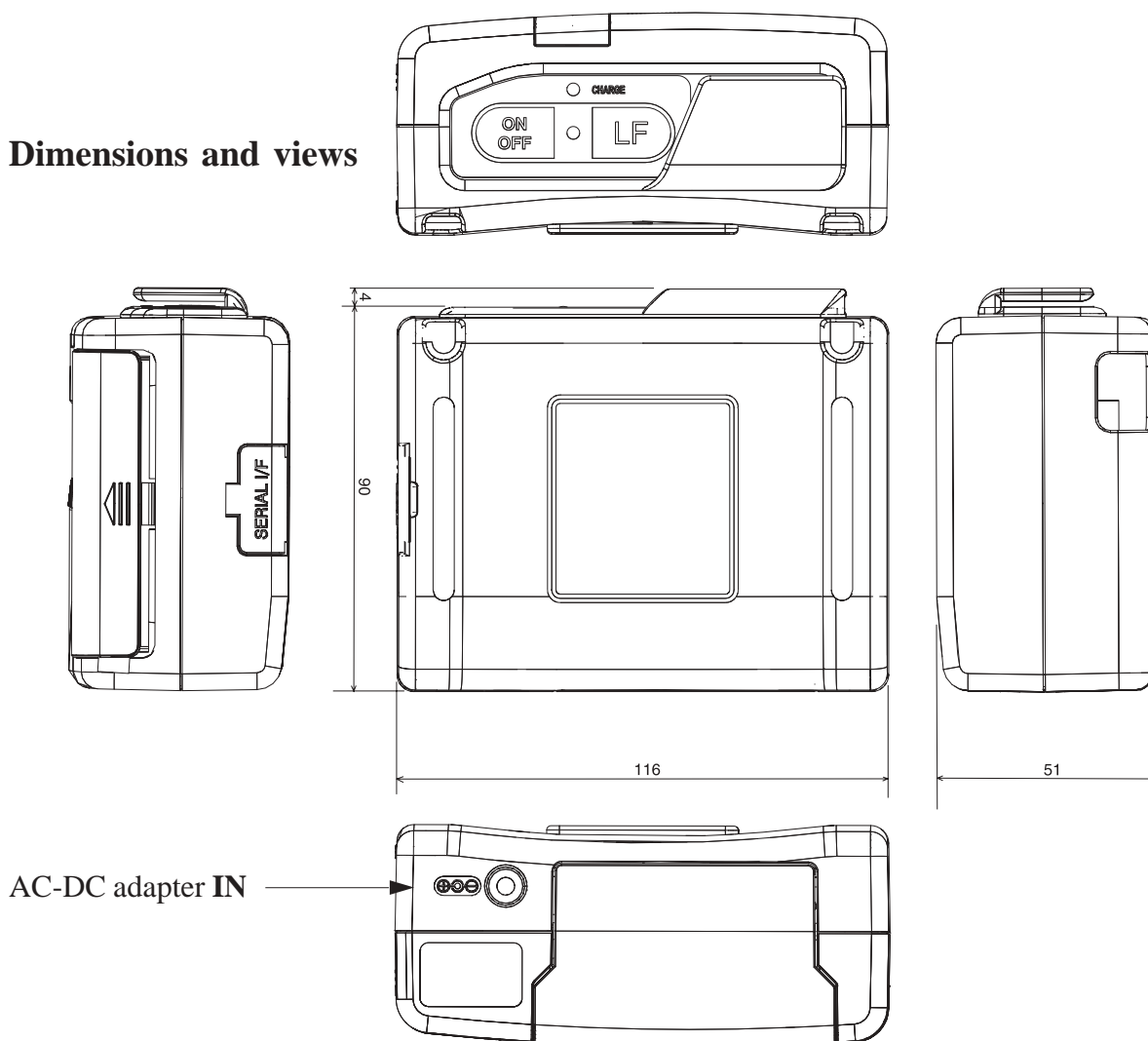
- | | |
|----------------------------|--|
| 3. IrDA interface trceiver | - receives data from host and transmits printer status. |
| 4. Serial port - RS-232C | - for cable connection to host. |
| 5. Power ON/OFF switch | - hold pressed for 1 sec to switch ON - just press for switch OFF. |
| 6. Line feed button | - press once for 1 line paper feed.
- press down and hold for continuous paper feed to any required length. |
| 7. Open cover button | - press down to open the cover (9) for replacing the paper roll. |
| 8. Paper cutting edge | - pull sideways to cut off printed paper. |

RS-232 port and cable

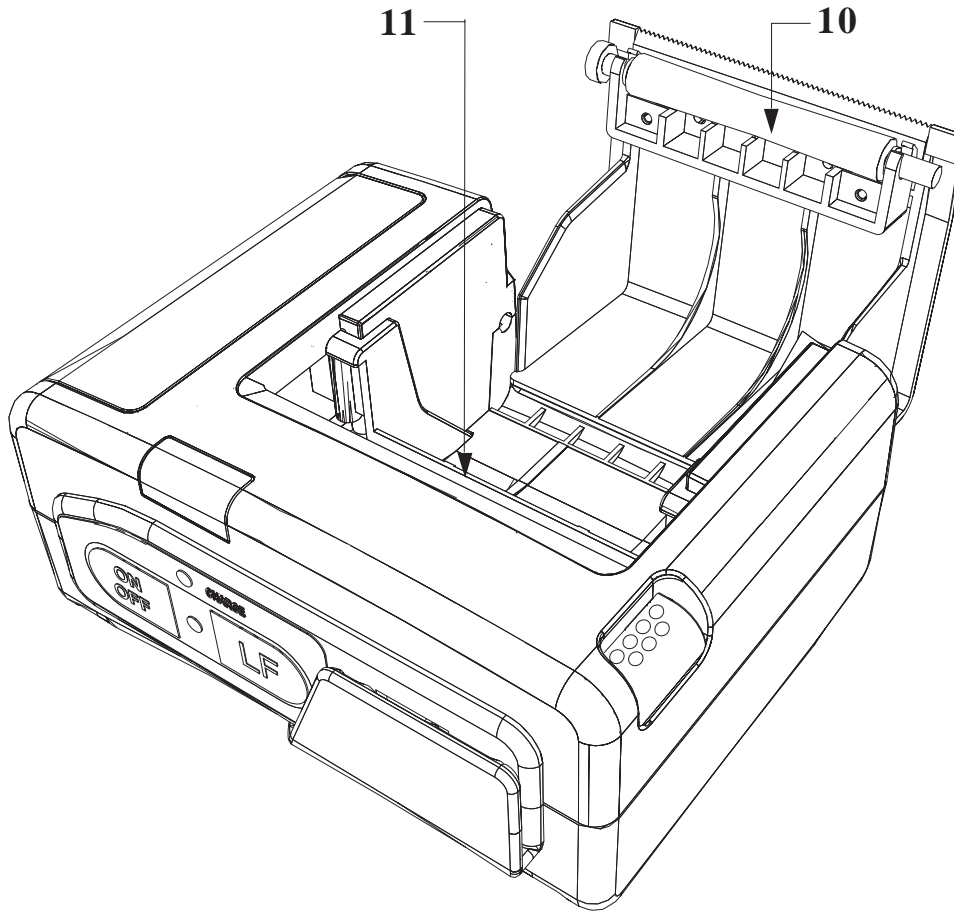


To replace cover first put **cover lock** in opening and then press tampon down until the cover is firmly in place.

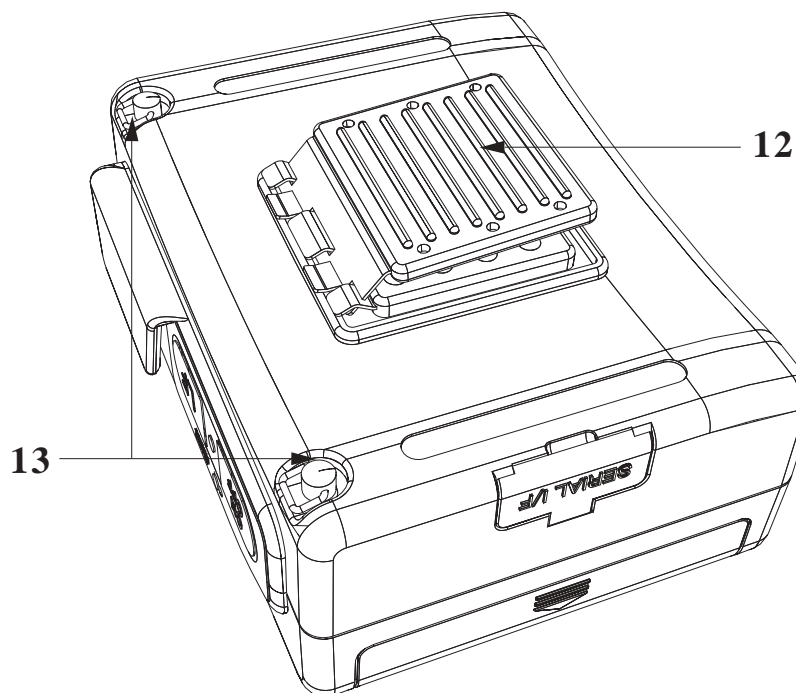
Dimensions and views



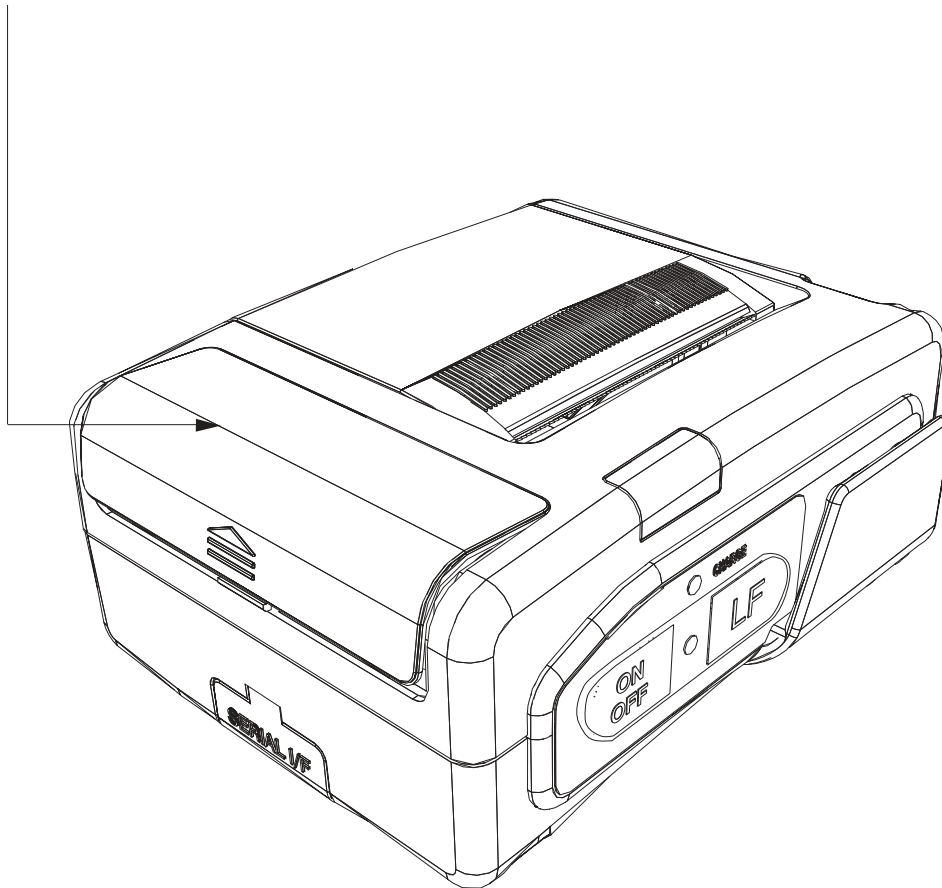
The CMP-10 Inside



- 10. Paper feed roller:** -feeds paper through the **printing mechanism**.
- 11. Printing (thermal)head:** -**transfers rasterized data** on the thermal paper.
- 12. Belt clip:** -to carry the CMP-10 on your belt, or
- 13. Strappers:** -to carry it hung over the neck.

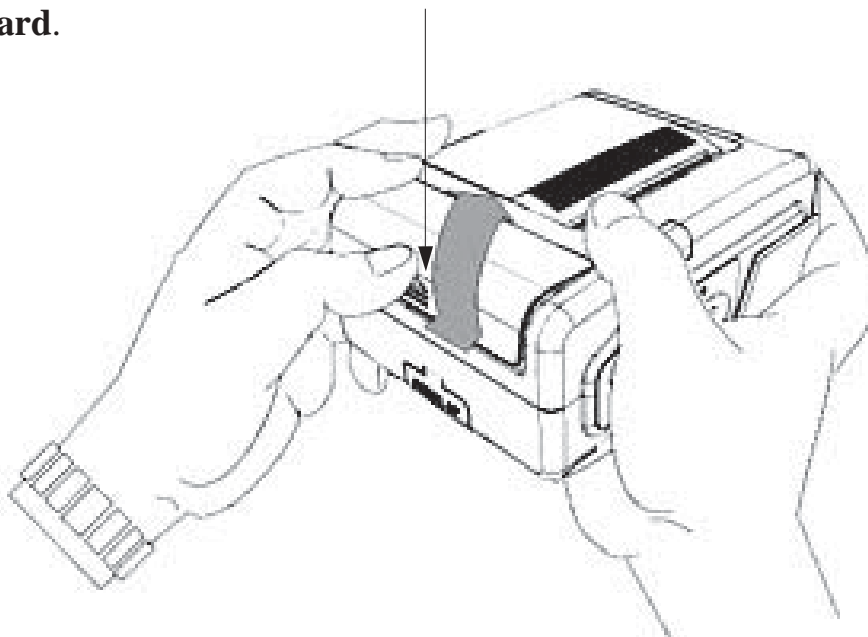


13. Battery cover



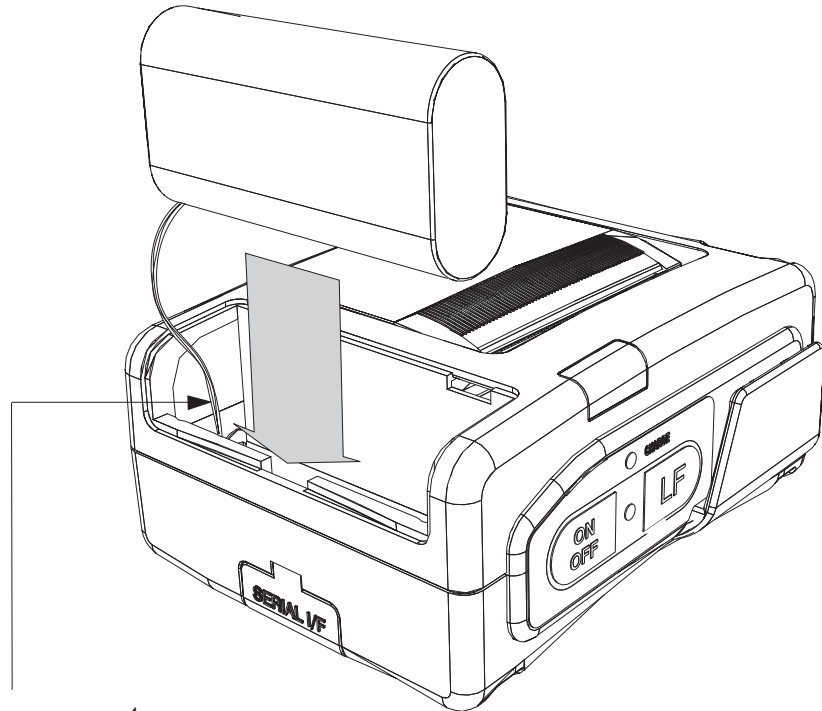
Removing the old battery pack

Remove the battery pack by (1) **pressing this point of the battery cover IN** and pushing **upward**.



2. Switch OFF the printer and unplug AC cord from wall outlet.
3. Remove cover as shown on illustration.
4. Remove battery pack from compartment and disconnect it.

Installing a new battery pack



1. Connect the **battery connector**.
2. Insert the battery connecting cable into the opening above the battery connector.
3. Insert the battery into its compartment.
4. Place battery cover back by sliding it from the back of the printer.

CAUTION! Be sure to place the battery cover firmly in its position after installing the new battery pack!

Functions of the CMP-10

Auto Power OFF

Power is automatically cut off after a specified period of time, during which no command is sent to the printer and the FFED button has not been pressed. The default manufacturer's setting of this time duration is 10 minutes, however, the period can be custom set by the user with a special command to the printer (see Command Reference List).

The behaviour of the printer after Auto Power OFF is the same as if it were switched off from the main Power ON/OFF switch.

Interface selection

The interface is automatically selected upon inserting the interface cable connector in the RS coupling.

- If at POWER ON no cable is connected the IrDA interface is selected by default.
- If at POWER On the cable is connected the RS-232C interface selection is made..

Note! If the cable is connected after printer SWITCH ON the IrDA selection will still be valid. If the serial interface is to be used switch the printer OFF, connect the RS cable and then switch ON again.

Low battery detection

The level of the battery is monitored at POWER ON, prior to paper feed and before printing.

Possible detected levels are: “**CUTION**” and “**FATAL**”.

Monitoring the temperature of the printing head

This parameter is monitored by an 8 bit ADC. By controlling the pulse width the temperature of the head is maintained with limits below 50° C. If, for some reason, the temperature level exceeds 55°C the printer will automatically stop printing and the bicolour LED will indicate “error”.

Self testing and internal settings

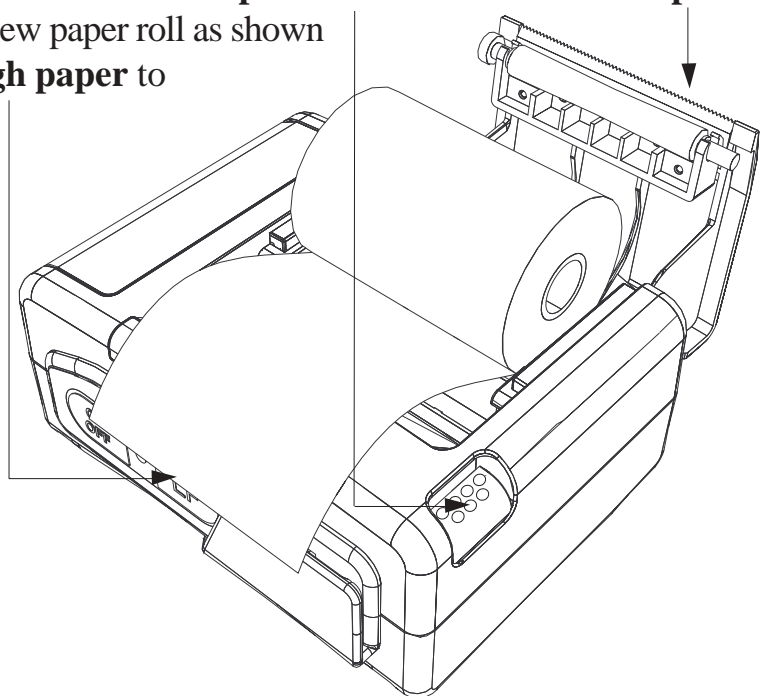
- Keep LINE FEED pressed down.
- Press ON/OFF down and keep it down.
- Release LINE FEED.
- Release ON/OFF.

Immediately after releasing the ON/OFF button the printer will print out a SELF TEST report.

Replacing the paper roll

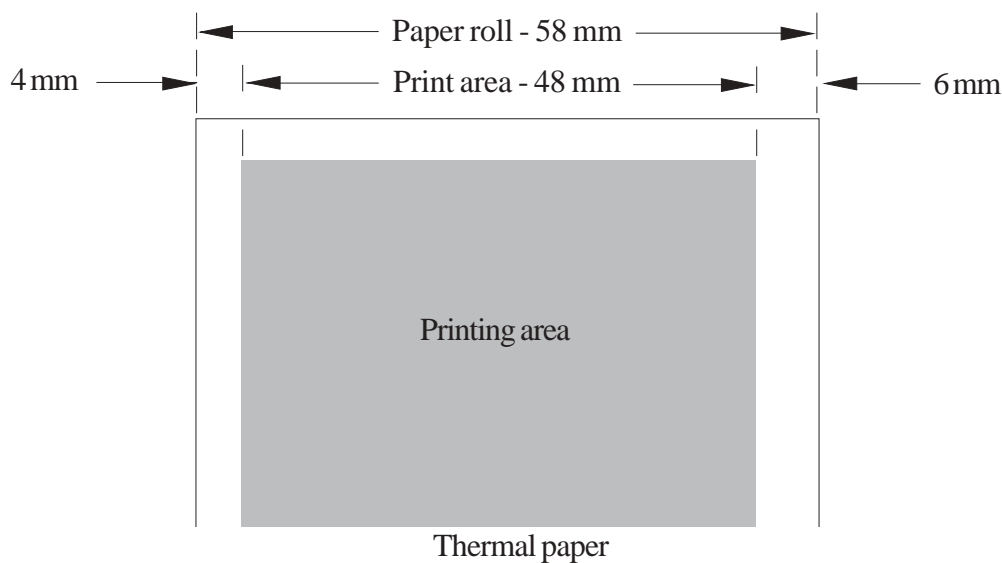
CAUTION! Be sure to use specified paper rolls!

After switching the printer ON press the **Cover Open button** - the cover will **open** the paper roll compartment. Place the new paper roll as shown on illustration and pull out **enough paper** to reach the control panel of the printer.



Note! Make sure that the paper is correctly placed. If it is tilted in one or another direction and does not come out straight from under the cover open it and replace the roll again.

Printing area position



Electrical characteristics

Power supply

AC - ADAPTER:

Input voltage 90V-264V AC

Output voltage - 9.4 V DC

Battery type:

LiION battery pack

Cell Voltage:

4.2V

Number of cells:

2

Battery pack voltage

8.4V

Battery pack capacity:

1 650 mAh

Printer power consumption:

During operation:

an average of 1.45 A (ASCII Slide Printinh)

Peak - 2A

When idle:

About 80 mA

Mechanical characteristics:

Life cycle of parts:

Power button:	45 000 cycles:	30 cycles/day	x 300 days	x 5 years
Feed button:	45 000 cycles:	30 cycles/day	x 300 days	x 5 years
Serial interface cable:	1500 cycles:	1 cycle/day	x 300 days	x 5 years
Serial interface cover:	1500 cycles:	1 cycle/day	x 300 days	x 5 years
Battery pack connector:	1500 cycles:	1 cycle/day	x 300 days	x 5 years
Paper cover button:	45 000 cycles:	30 cycles/day	x 300 days	x 5 years
Battery cover:	1500 cycles:	1 cycle/day	x 300 days	x 5 years

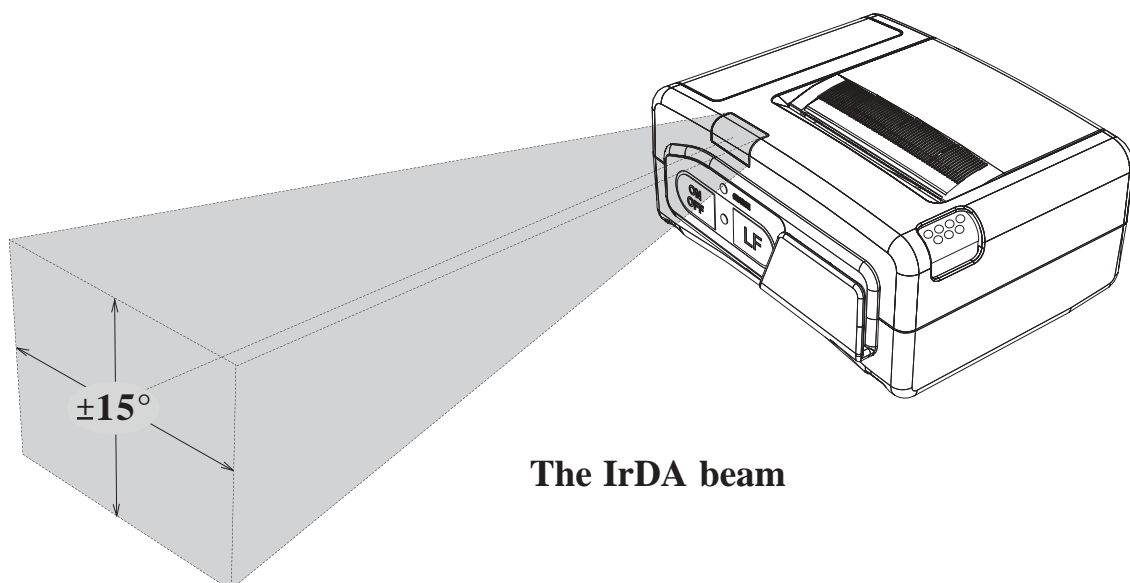
Interface specifications

Serial interface

Interface:	Bidirectional serial communication
Signal level:	RS-232C
Baud Rate:	4800, 9600, 19200, 38400, 57600, 115000 bps
Data length:	8 bits
Start bit:	1 bit
Stop bit:	1 bit
Parity:	none
Connector:	Motorola Star Tac

IrDa Interface

Interface:	Infrared tranceiving mode
Transport wave:	Wave length - 850 to 900 nm
Communication speed:	9600, 19200, 38400, 57600, 115000 bps
Data length:	8 bits
Stop bit:	1 bit
Parity:	none
Communication:	Half dubplex
Flow control:	IrDA standard
Communication distance:	< 80 cm
Logic level:	0 Low level 1 High level
Receiving angle:	Left 15° Right 15° Top 15° Bottom 15°



The IrDA beam

The list of Commands

1	HT	Horizontal tab command
2	LF	Printing and paper feed
3	CR	Ignored
4	EC SP	Setting the space between characters
5	ESC\$	Setting the absolute position for print
6	ESC%	Set/cancel custom selected characters for printing
7	ESC&	Loading custom selected symbols
8	ESC!	Setting the text printing mode
9	ESC*	Print graphic information
10	ESC-	Set/cancel underlining
11	ESC .	Diagnostic information /self-test/
12	ESC 2	Specifying 1/6-inch line height
13	ESC 3	Specifying n/203 inch line height
14	ESC =	Data input control
15	ESC?	Mag-stripe card reading
16	ESC @	Initializing the Printer
17	ESC D	Setting horizontal tab position
18	ESC E	Setting/canceling bold print
19	ESC G	Setting/canceling bold print
20	ESC J	Printing and feeding paper by n/203 inch
21	ESC S	Setting interface baud rate
22	ESC T	Printing short diagnostic information
23	ESC V	Specifying/canceling 90° -right- turned characters

The list of Commands

24	ESC Y	Set the print intensity
25	ESC \	Set the relative horizontal printing position
26	ESC‘	Returning data on battery voltage and printer head t°
27	ESC a	Aligning the characters
28	ESC c5	Enabling/disabling the function of the LF button
29	ESC d	Printing and feeding the paper by n lines
30	ESC v	Transmitting the printer status
31	ESC x	Set the automatic switch-off time
32	ESC {	Setting/canceling the inverted characters
33	GS k	Printing the bar code
34	GS w	Set the bar-code horizontal size
35	GS h	Set the bar-code height
36	GS H	Set the position of the bar-code duplicate text
37	GS f	Set the font of the bar-code duplicate text
38	GS *	Loading a graphic image (logo)
39	GS /	Print the downloaded graphic image
40	GS :	Start/end of a macros definition
41	GS ^	Executing the macros
42	GS L	Left margin alignment setting
43	FS &	Enable the table of JIS symbols
44	FS .	Disable the JIS table of symbols
45	FS C	Enable/Disable Shift-JIS setup
46	FS !	Set attributes for printing in the JIS and Shift-JIS modes

