CITIZEN
Micro HumanTech

Specifications

LINE THERMAL PRINTER

MODEL PMU2200 II / 2300 II SERIES

Rev. 1.00 Issued on August 22, 2008

CITIZEN SYSTEMS JAPAN CO., LTD.

Revision Record

Revision	Date	Revised section (page)	Contents of Revision	Approved	Checked	Compiled
1.00	2008.8.22		Newly issused		Sakaino	Watanabe
				/	/	/
				/	/	/
				/	/	/

Contents

1. GENERAL OUTLINE

- This specification applies to KIOSK printer PMU2200Ⅱ/2300Ⅱ Series.
- This specification is subject to change without notice.
- Reprinting, duplication, reproduction, and alteration of this specification without our permission may be prohibited.

1.1 Features

1) Small size
2) Recording paper holder settable to various positions for retaining recording paper.
3) High-speed printing of 150 mm/s max.
4) Printing with high definition of 8 dots/mm.
5) Adoption of paper width 58/60/80 mm (different by model)
6) High reliability by the use of long-life head and simple mechanism.
7) Operating temperature range is –20°C to +60°C.
8) Easy maintenance of head and paper by the use of new head open mechanism.
9) Three kinds of interface: serial, parallel, and USB (Printer Class, Virtual COM).
10) Available for OEM.
11) Models supporting black mark or thick paper are available (factory option).

1.2 Accessories

This printer is supplied with accessories as shown below.

1) Installation manual……..1
2) Printer……..1
3) Power cord……...1
4) Paralle I/F cabe1……...1(* Only for parallel model)

1.3 Model Classification

1.3.1 Model Name

Model

PMU2211 II A–RSJPM1–8L2
(1)(2)(3) (4) (5)(6) (7) (8)(9)(10)

(1) Mechanism mounted (Refer to P 13,14.)
2: LT-2223Q Series (2-in. mechanism) 3: LT-2321Q Series (3-in. mechanism)

(2) Paper width (Refer to P 15.)
●0: 58 mm (with 2-in. mechanism) / 80 mm (with 3-in. mechanism)
1: 60 mm (with 2-in. mechanism) / 60 mm (with 3-in. mechanism) * With guide for 60-mm paper

(3) Base style (Refer to P 10, 11, 12.)
●0: Horizontal 1: Vertical front-mount
2: Vertical back-mount

(4) Special mechanism (Refer to P 26.)
●No mark: Standard A: Thick paper

(5) Interface (Refer to P 45 P 48 P 55.)
RS: Serial PA: Parallel
UB: USB

(6) Destination (Refer to P .56.)
J: Japan U: US/EU/Other

(7) Sensor (PNE/Black Mark) * Dual indication permitted. (Refer to P 27 P 57.)
●No mark : Without sensor P : PNE sensor
M1 : Black Mark (Left) M2 : Black Mark (Right)

(8) Maximum paper diameter (Refer to P 25.)
6: 60 mm ●8: 80 mm
1: 102 mm

(9) Direction of paper insertion (Refer to P 15.)
●L: Insert from left (Side without platen open lever)
R: Insert from right (Side with platen open lever)
T: Insert from top (Hold both sides, paper diameter fixed at 102 mm)

(10) Paper holder position (Refer to P 15.)
1: A bit near (hole 1, toward left) ●2: Standard (hole 2, toward left)
3: A bit far (hole 1, toward right) 4: Far (hole 2, toward right)

1.3.2 Precautions

1) Restriction by combination

The following do not exist. (□: free)

- 3-in 60mm Horizontal Black Mark(M1) Model (Refer to P 27.)
  PMU２３１０Ⅱ□－□□(P)M１－□□□
- 3-in 60mm Horizontal Insert from left Model with PNE sensor (Refer to P 59.)
  PMU２３１０Ⅱ□－□□P(M２)－□R□
- 2-in 58mm Vertical Front Model (Refer to P 11.)
  PMU２２０１Ⅱ□－□□□－□□□
- 3-in 60mm Vertical Front Model (Refer to P 11.)
  PMU２３１１Ⅱ□－□□□－□□□
- 3-in 60mm Vertical Back Mode (Refer to P 12.)
  PMU２３１２Ⅱ□－□□□－□□□
- Maximum paper diamete ∅60mm Insert from top Model (Refer to P 25.)
  PMU２□□□Ⅱ□－□□□－６T□
- Maximum paper diamete ∅80mm Insert from top Mode (Refer to P 25.)
  PMU２□□□Ⅱ□－□□□－８T□

2) Registration of Model Name

It is registered in the printer as follows by the option of the factory. They are different by the model, and not possible to change

- Printer Name of the self-printing (Refer to P 40.)
- Printer Name of the self-printing (Refer to P 40.)
- Initial value of the Command GS (E Function 255 “Sets all contents set in printer function setting mode to the state at the time of shipment.”.

＊ It is possible to change to the same setting as another Model by Memory Switch Setting.

1.4 Configuration (Block Diagram)

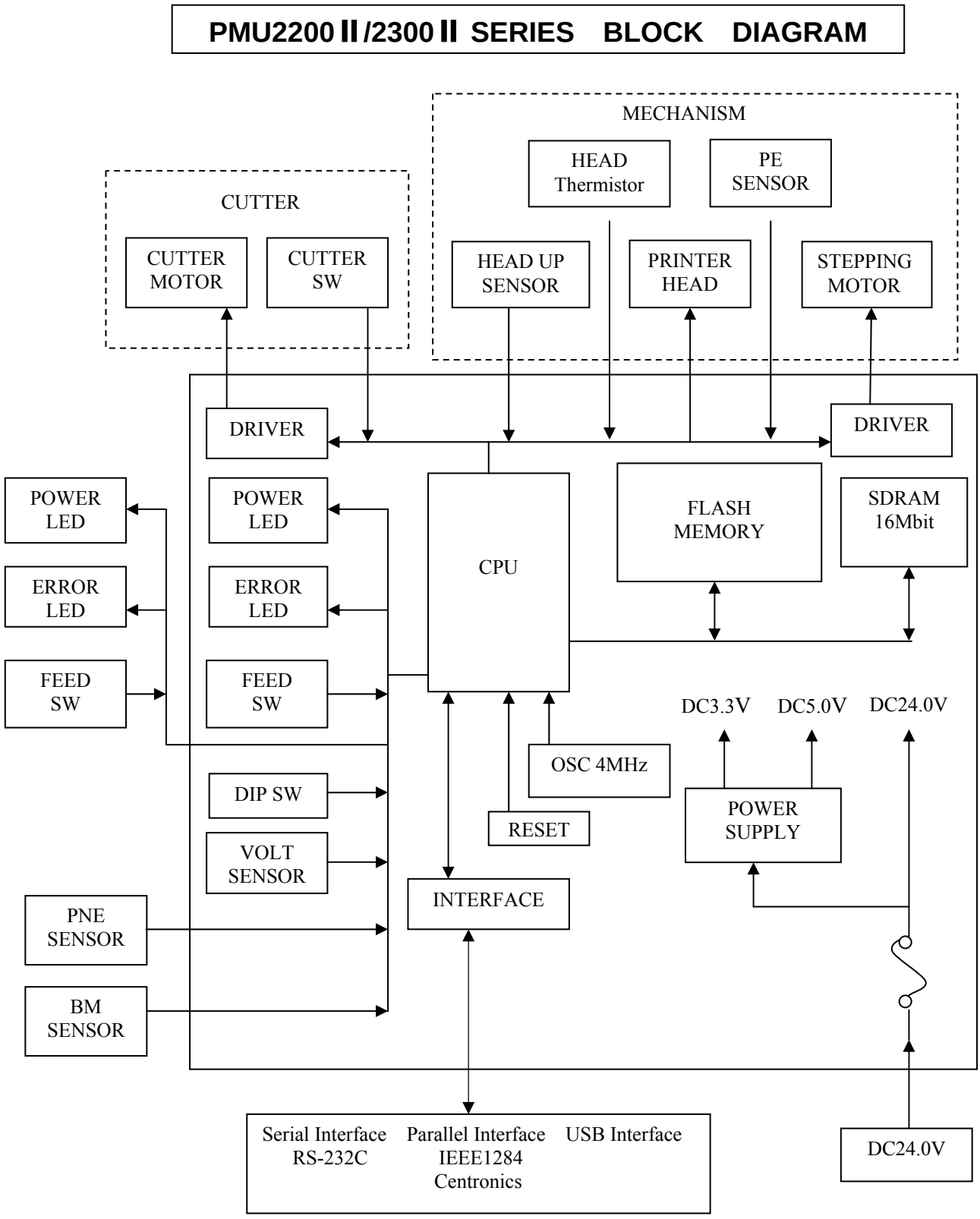


Figure Configuration

2. BASIC SPECIFICATIONS

2.1 Printing Specifications

Table Specifications

Item	PMU2200Ⅱ Series		PMU2300Ⅱ Series	
	PMU220□Ⅱ	PMU221□Ⅱ	PMU2310Ⅱ	PMU230□Ⅱ
Printing system	Line thermal dot printing system			
Print width	54 mm / 432 dots			72 mm / 576 dots
Dot density	8 dots/mm			
Print speed *1	Max. 150 mm/s (1200 dot lines/s)			
Paper feed pitch	0.125 mm			
Print columns	Font A: 36 columns Font B: 48 columns Font C: 54 columns Kanji Font A: 18 columns Kanji Font C: 27 columns			Font A: 48 columns Font B: 64 columns Font C: 72 columns Kanji Font A: 24 columns Kanji Font C: 36 columns
Character size	Font A: 12x24 dots, 1.50x3.00 mm; FontB: 9x24 dots, 1.13x3.00 mm Font C: 8x16 dots 1.00x2.00mm Kanji Font A: 24x24 dots, 3.00x3.00 mm; Kanji Font C: 16x16 dots, 2.00×2.00mm As the space inside character font is included, actual character is smaller than that in the above table.			
Kinds of characters	Alphanumeric, International character set (12 characters x 16 countries), Code 437, 850(858), 852, 857, 858, 860, 863, 864, 865, 866 WPC1252, Katakana, Thai code18, Kanji (JIS Level 1, Level 2), Kana, JIS C 6226-1983			
User memory	256 KB (User-defined characters and created logo can be registered.)			
Barcode type	UPC-A/E, JAN (EAN), 13 columns/8 columns, ITF, CODE39, CODE128, CODABAR, CODE93 PDF417,QRcode			
Line spacing	4.25 mm (1/6 in.), settable by command			
Paper	Paper width: 58mm	Paper width: 60mm		Paper width: 80mm
	Paper thickness: PMU2□□□Ⅱ 60 to 75 μm, PMU2□□□Ⅱ A: 105 to 150μm			
Interface	Serial (RS-232C compliant), Parallel (IEEE1284 compliant), USB			
Input buffer	4K / 45 bytes (*Parallel I/F is 4kbytes only.)			
Input power	Input voltage: DC24V ±7%, Current consumption: 1.9A (peak 9A) * Option: AC adapter 36AD1 or equivalent			
Weight	1.0 kg		1.1 kg	
Operating temperature	–20 to 60°C (* 0 to 45°C with 36AD1), 35 to 85% (without condensation)			
Storage temperature	–25 to 65°C 10 to 90% (without condensation) (TBD)			
Reliability	Print head life: 100 km, 100 million pulses (normal temperature and normal humidity, with recommended paper) Auto cutter life: 1.00 million cut (normal temperature and normal humidity, with paper of 65 μm , full cutting) 0.60 million cut (normal temperature and normal humidity, with paper of 150 μm , full cutting)			
Applicable standards *2	VCCI class A			
	UL, C-UL, FCC class A			
	TUV, GS, CE marking			

*1: The above print speed is under the condition of 24.0V, 25°C, Print duty of 12.5%.
Print speed may be delayed depending on the setting of print condition or the combination of commands.

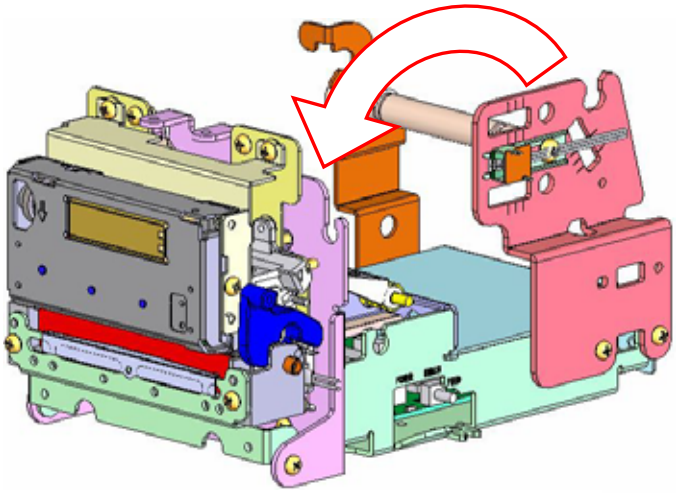
*2: These standards are acquired for the use of optional AC adapter 36AD1 series made by us.

2.2 Base Model

- Base Model is different according to Mechanism mounted, Paper width, Base style.
- Base Model is factory option, it is not possible to change.

2.2.1 Horizontal model

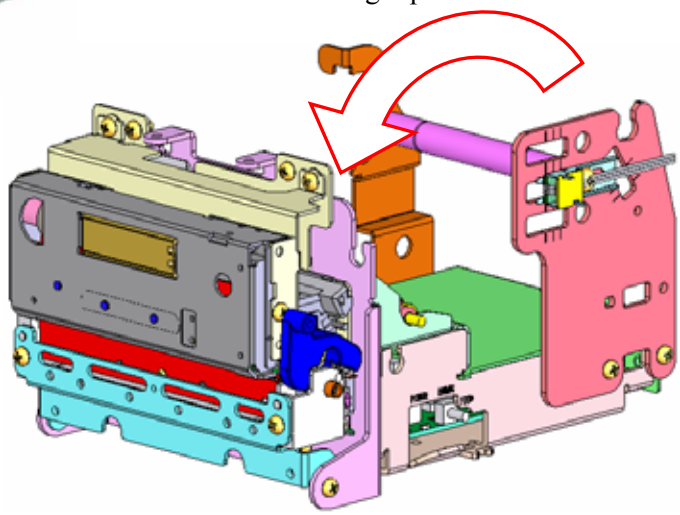
Straight pass



2-in 58mm Model
PMU2200 II □-□□□-□□□

2-in 60mm Model
PMU2210 II □-□□□-□□□

Straight pass

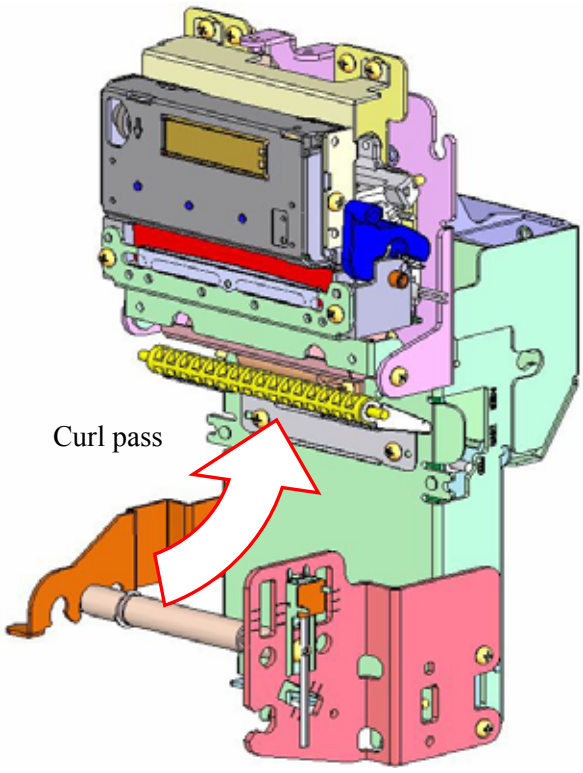


3-in 60mm Model
PMU2310 II □-□□□-□□□

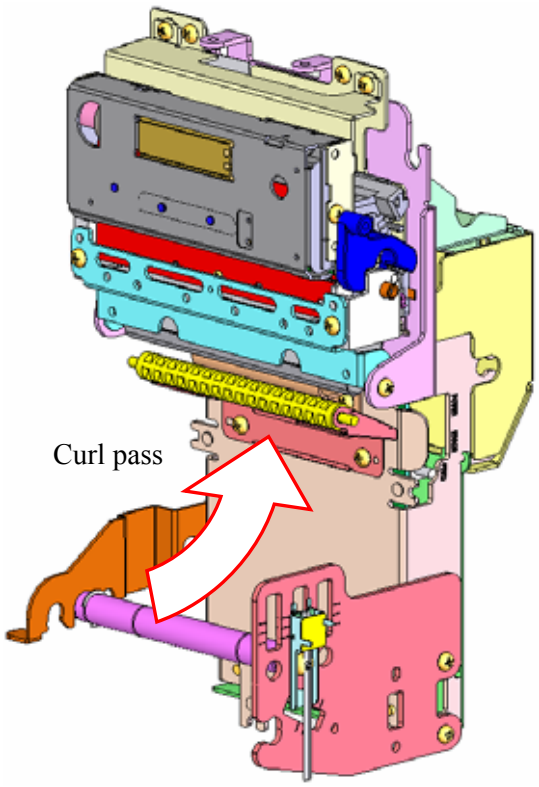
3-in 80mm Model
PMU2300 II □-□□□-□□□

Figure Horizontal model

2.2.2 Vertical Front Model



2-in 60mm Model
PMU2211Ⅱ□-□□□-□□□



3-in 80mm Model
PMU2301Ⅱ□-□□□-□□□

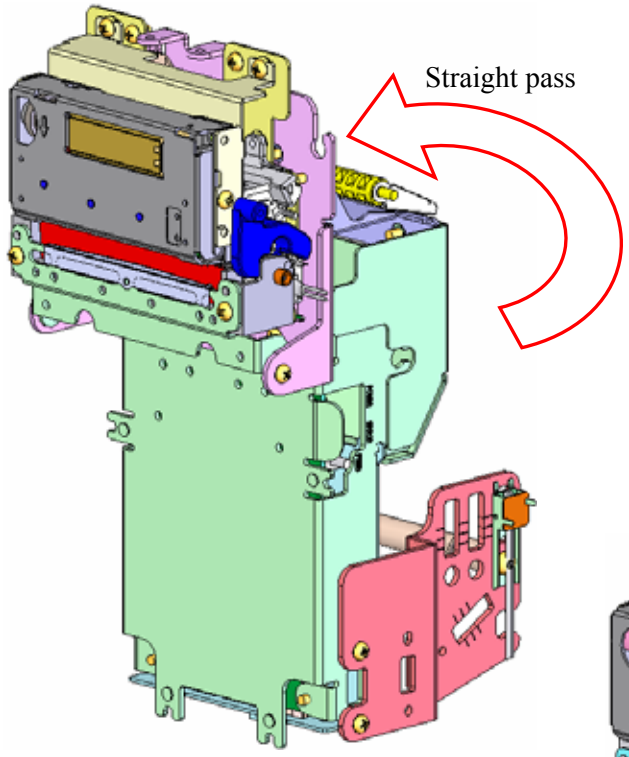
Figure Vertical Front Model

*Notes
The following do not exist.

2-in 60mm Model
PMU2201Ⅱ□-□□□-□□□

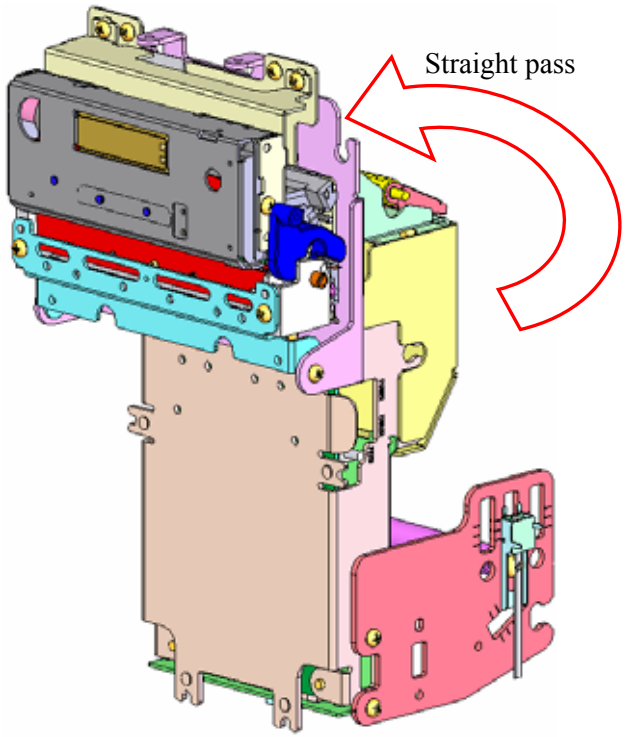
3-in 80mm Model
PMU2311Ⅱ□-□□□-□□□

2.2.3 Vertical Back Model



2-in 58mm Model
PMU2202 II □-□□□-□□□

2-in 60mm Model
PMU2212 II □-□□□-□□□



3-in 80mm Model
PMU2302 II □-□□□-□□□

Figure Vertical Back Model

*Notes
The following do not exist.

3-in 60mm Model
PMU2312 II □-□□□-□□□

2.2.4 2-in Model Setting

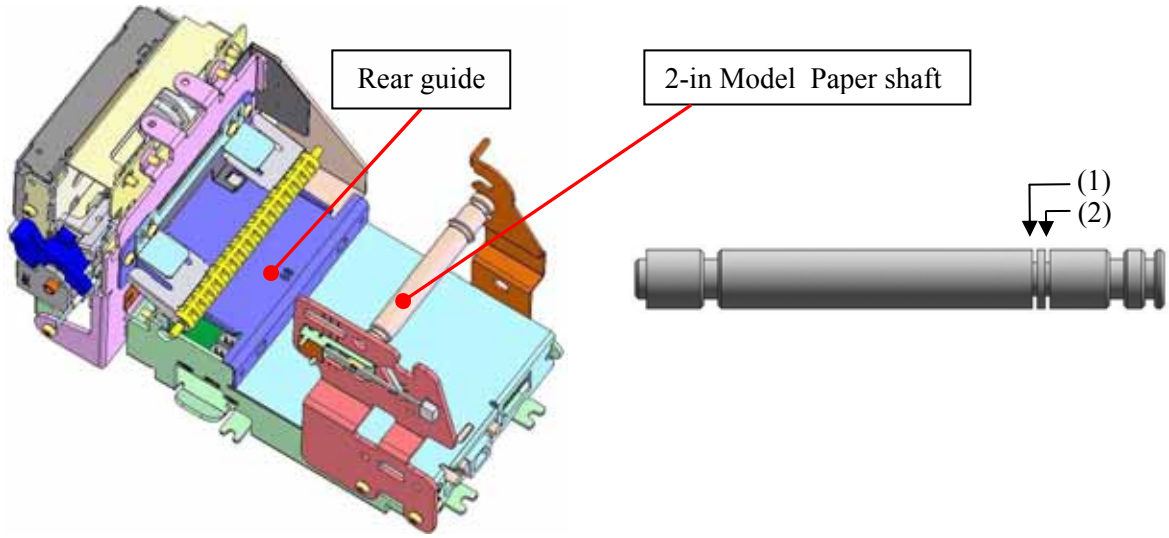


Figure 2-in Model Paper width Hard Setting

Table 2-in Model Paper width Hard Setting

Model	Mechanism	Paper shaft E-ring Direction of paper insertion			Rear guide
		Left	Right	Top	
Horizontal 58mm **PMU2200Ⅱ(A)**	LT-2223VQ(A)	(1)		–	58mm
Horizontal 60mm **PMU2210Ⅱ(A)**		(2)			60mm
Vertical Front 60mm **PMU2211Ⅱ(A)**	LT-2223HQ(A)				–
Vertical Back 58mm **PMU2202Ⅱ(A)**	LT-2223VQ(A)	(1)			58mm
Vertical Back 60mm **PMU2212Ⅱ(A)**		(2)			60mm

∗ A: Thick paper

Table Memory Switch Setting

Model	MSW4-5 Mechanism mounted		MSW2-6 Paper width		MSW4-4 Base style	
Horizontal 58mm **PMU2200Ⅱ(A)**	ON	LT-22XX	ON	58(60)mm	OFF	PMU2XX0/2XX2
Horizontal 60mm **PMU2210Ⅱ(A)**						
Vertical Front 60mm **PMU2211Ⅱ(A)**					ON	PMU2XX1
Vertical Back 58mm **PMU2202Ⅱ(A)**					OFF	PMU2XX0/2XX2
Vertical Back 60mm **PMU2212Ⅱ(A)**						

*Notes

If Memory Switch Setting is not correct , the printer doesn't operate correctly.

2.2.5 3-in Model Setting

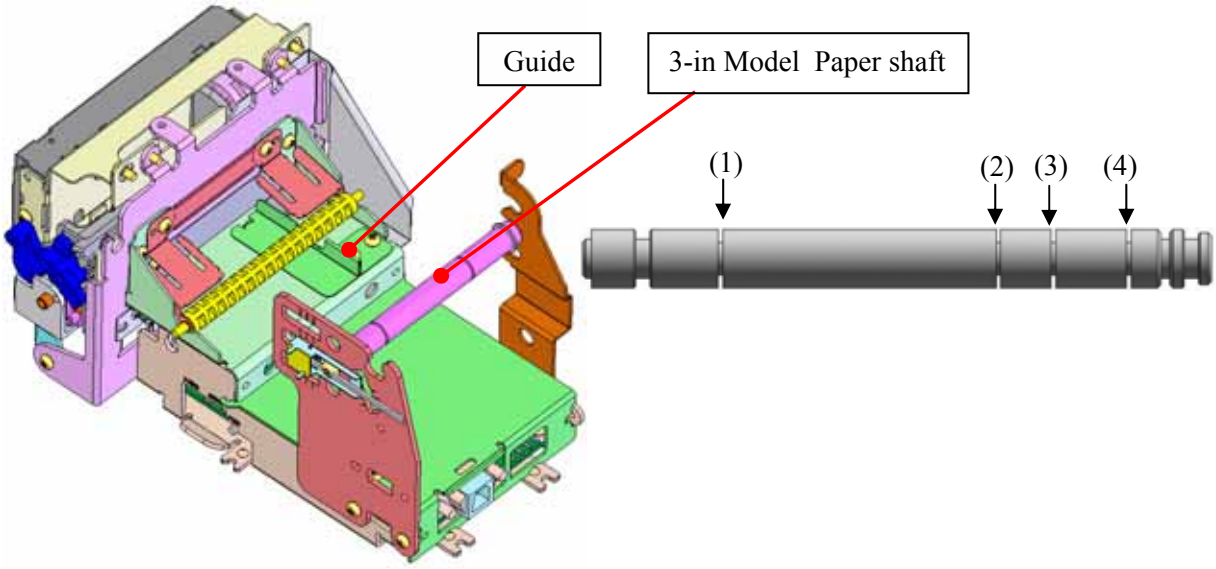


Figure 3-in Model Paper width Hard Setting

Table 3-in Model Paper width Hard Setting

Model	Mechanism	Paper shaft E-ring Direction of paper insertion			Guide
		Left	Right	Top	
Horizontal 60mm **PMU2310Ⅱ(A)**	LT-2321VQ(A)	(2)	(1) (4)	(3)	60mm Guide
Horizontal 80mm **PMU2300Ⅱ(A)**		(4)		–	–
Vertical Front 80mm **PMU2301Ⅱ(A)**	LT-2321HQ(A)				
Vertical Back 80mm **PMU2302Ⅱ(A)**	LT-2321VQ(A)				

∗ A: Thick paper

Table Memory Switch Setting

Model	MSW4-5 Mechanism mounted		MSW2-6 Paper width		MSW4-4 Base style	
Horizontal 60mm **PMU2310Ⅱ(A)**	OFF	LT-23XX	ON	58(60)mm	OFF	PMU2XX0/2XX2
Horizontal 80mm **PMU2300Ⅱ(A)**			OFF	80mm		
Vertical Front 80mm **PMU2301Ⅱ(A)**					ON	PMU2XX1
Vertical Back 80mm **PMU2302Ⅱ(A)**					OFF	PMU2XX0/2XX2

*Notes
If Memory Switch Setting is not correct , the printer doesn't operate correctly.

2.3 Paper

2.3.1 Paper width & Effective print width (Print area)

1) Paper width &

Paper width is factory option, it is not possible to change.

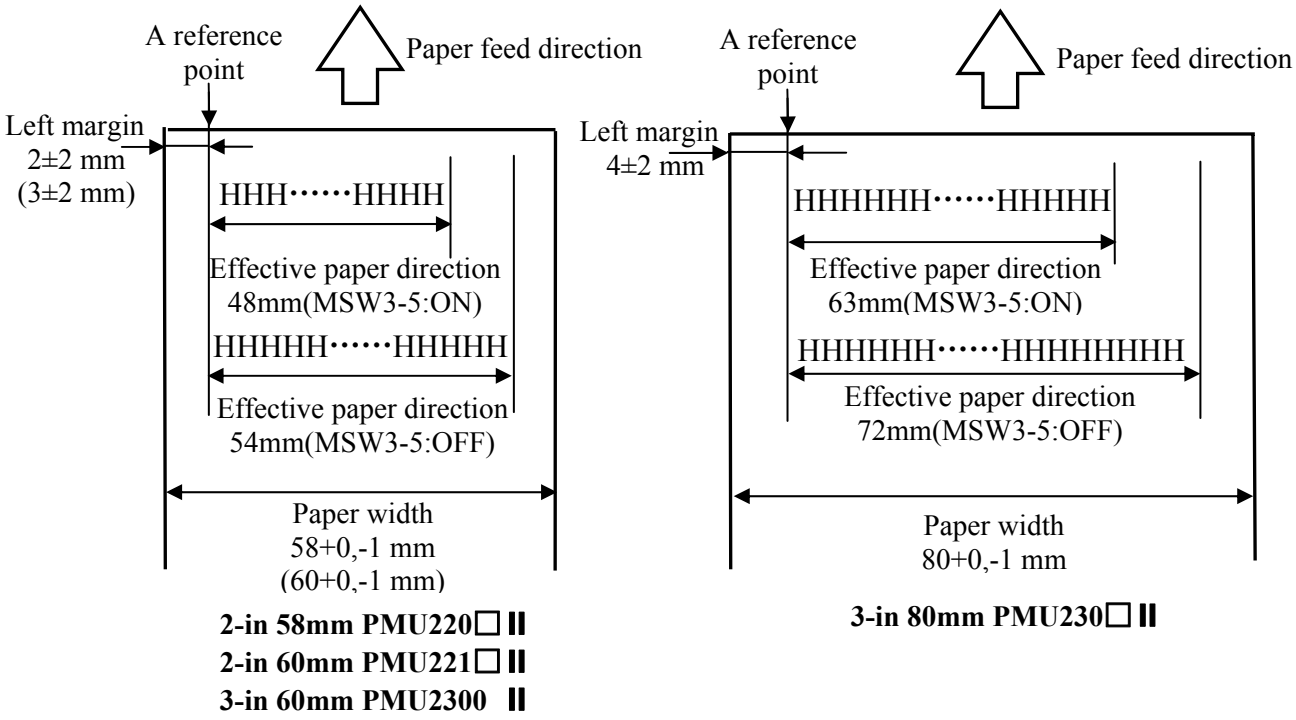


Figure Effective Print Width

2) Effective print width (Print area)

The effective paper direction can be set by MSW3-5.

Table Effective paper direction

Paper width	MSW3-5 Column Number		Print columns FontA	FontB	FontC	Kanji FontA	Kanji FontC	Effective paper direction	
58/60mm	ON	42/32 col	32	42	48	16	24	48mm	384dots
	OFF	48/36 col	36	48	54	18	27	54mm	432dots
80 mm	ON	42/32 col	42	56	64	21	31	63mm	504dots
	OFF	48/36 col	48	64	72	24	36	72mm	576dots

2.3.2 Font size

Table Font size

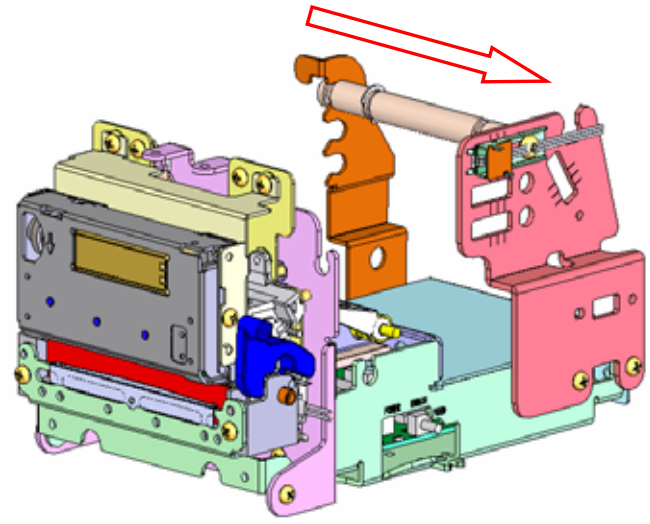
FontA	FontB	FontC	Kanji FontA	Kanji FontC
12×24 dots	9×24 dots	8×16 dots	24×24 dots	16×16 dots
1.50×3.00mm	1.13×3.00mm	1.00×2.00mm	3.00×3.00mm	2.00×2.00mm

*Actual character may be smaller than the above as it includes space inside character font.

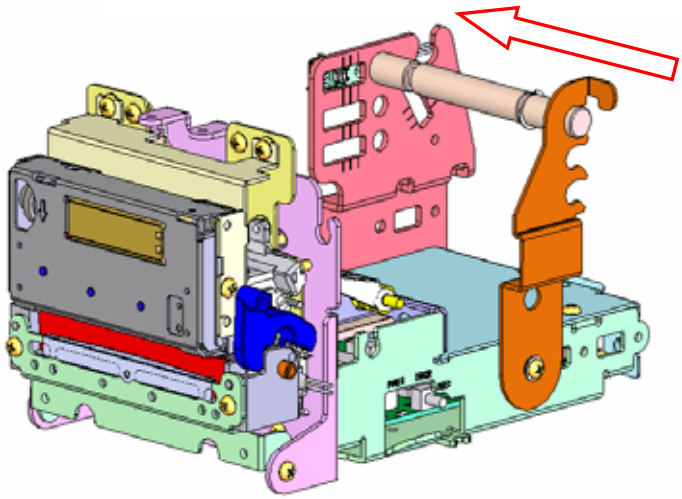
2.3.3 Direction of paper insertion

- The direction of paper insertion can be set to any in three directions.
- Holder (Refer to P 22) and Paper shaft E-ring position (Refer to P 13 14) are different according to C. direction of paper insertion.Direction of paper insertion is factory option, it is not possible to change.

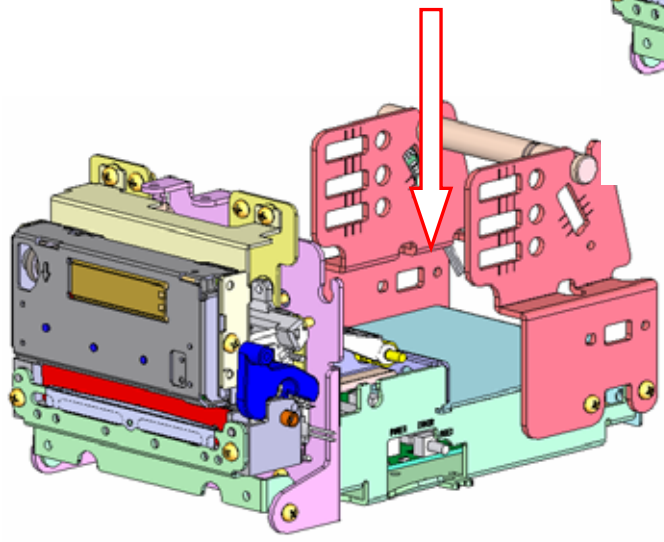
1) Direction of paper insertion (Horizontal Model)



PMU2□□0Ⅱ□-□□□-□L□
L: Insert from left



PMU2□□0Ⅱ□-□□□-□R□
R: Insert from right

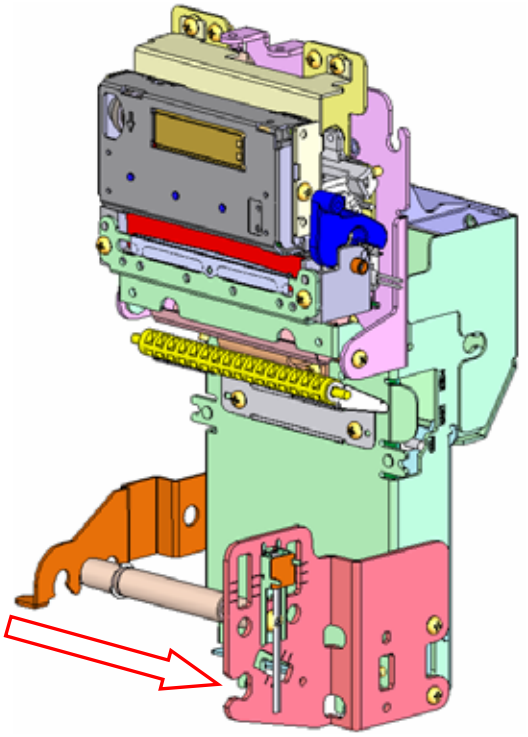


PMU2□□0Ⅱ□-□□□-1T□
T: Insert from top

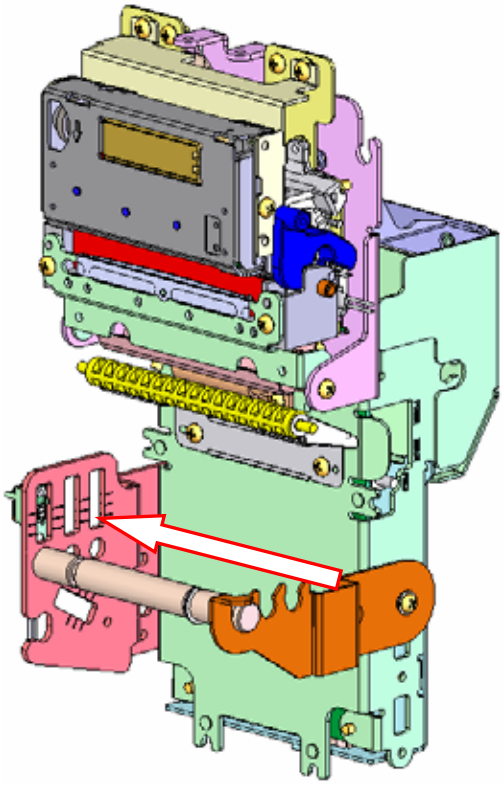
* In case of top insertion type, the printer and the paper shaft are connected with a chain to prevent lost of paper shaft.

Figure Direction of paper insertion (Horizontal Model)

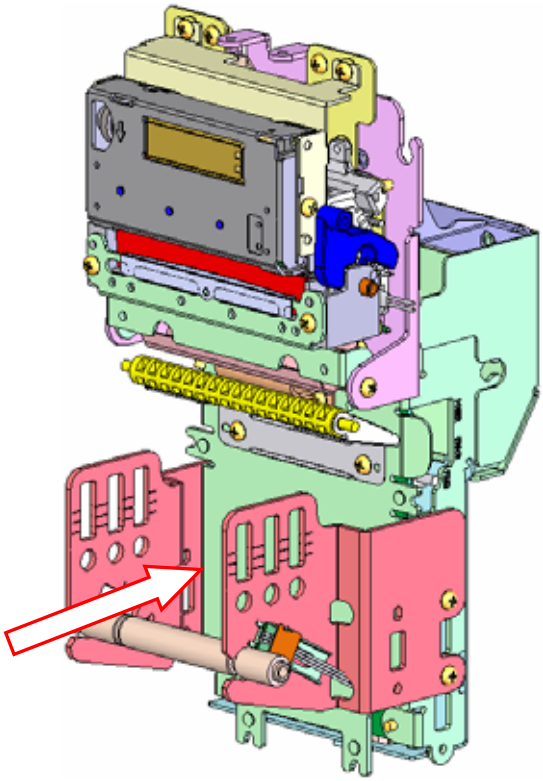
2) Direction of paper insertion (Vertical Front Model)



PMU2□□1Ⅱ□-□□□-□L□
L: Insert from left



PMU2□□1Ⅱ□-□□□-□R□
R: Insert from right

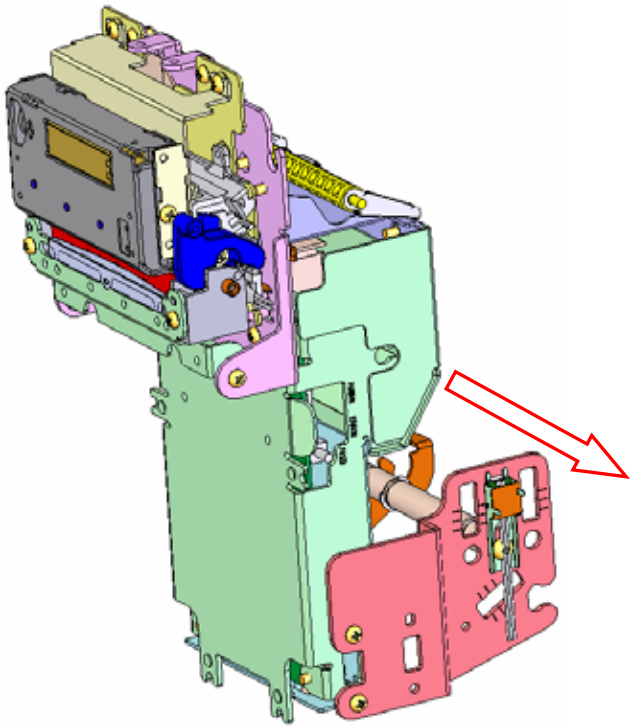


PMU2□□1Ⅱ□-□□□-1T□
T: Insert from top

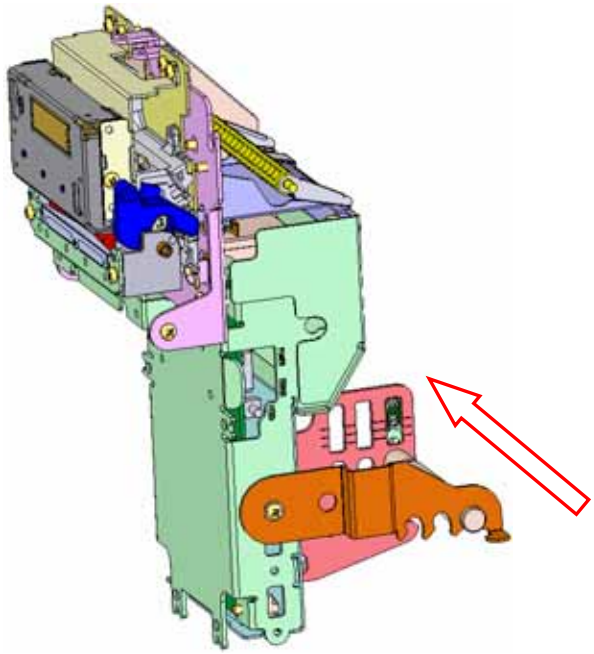
* In case of top insertion type, the printer and the paper shaft are connected with a chain to prevent lost of paper shaft.

Figure Direction of paper insertion (Vertical Front Model)

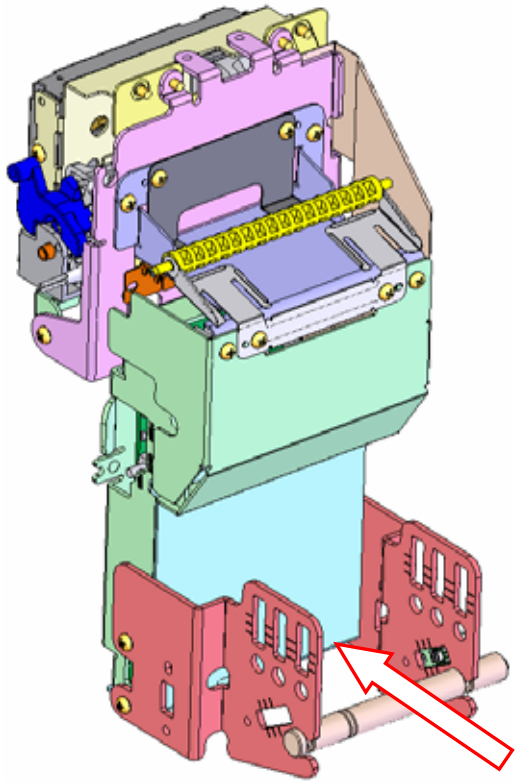
3) Direction of paper insertion (Vertical Back Model)



PMU2□□2Ⅱ□-□□□-□L□
L: Insert from left



PMU2□□2Ⅱ□-□□□-□R□
R: Insert from right



PMU2□□1Ⅱ□-□□□-1T□
T: Insert from top

* In case of top insertion type, the printer and the paper shaft are connected with a chain to prevent lost of paper shaft.

Figure Direction of paper insertion (Vertical Back Model)

2.3.4 Paper holder position

- The paper holder can be set to one of any of four positions.
- The Paper holder position is factory option, it is not possible to change.

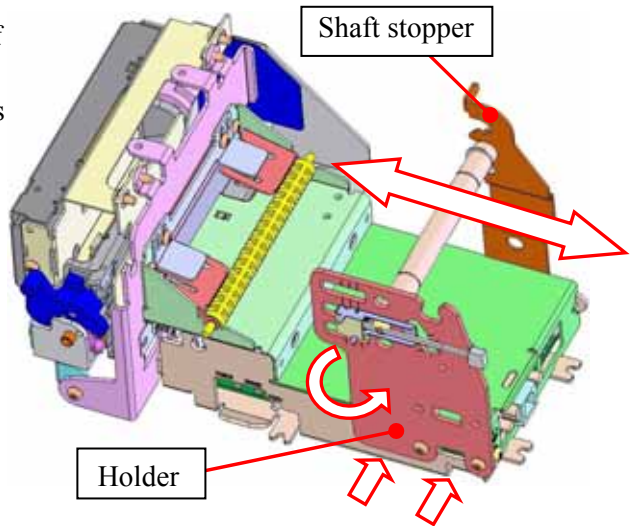
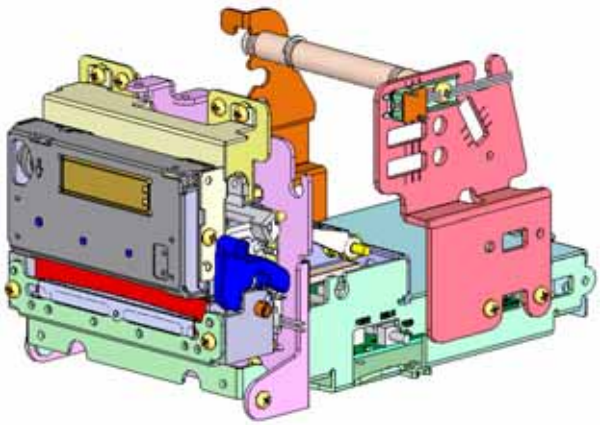
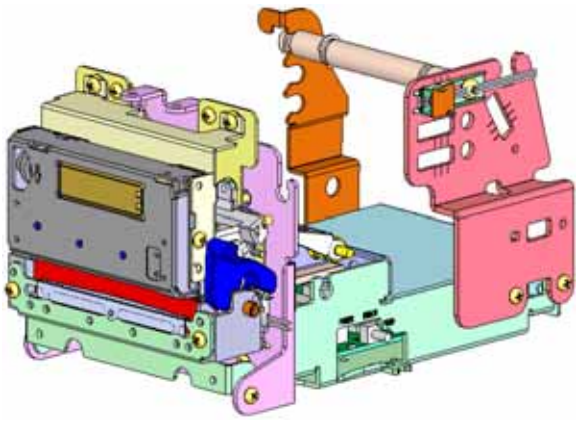


Figure Paper holder position

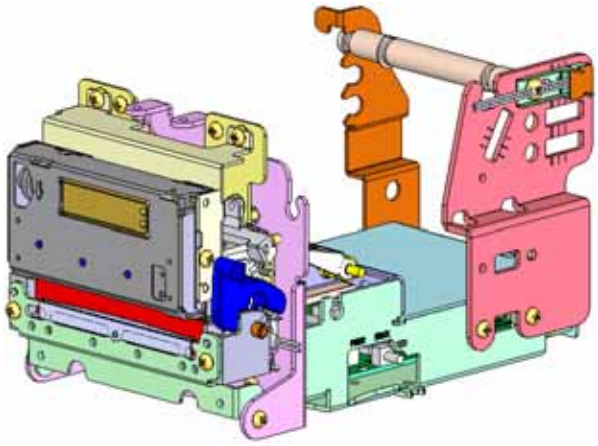
1) Paper holder position (Horizontal Model)



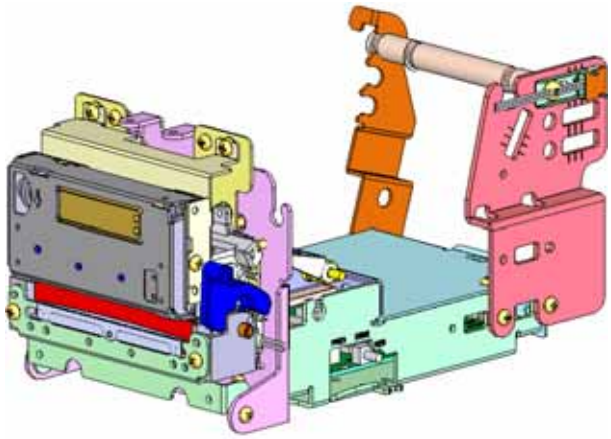
PMU2□□0 II □-□□□-□□1
1: A bit near
(hole 1, toward left)



PMU2□□0 II □-□□□-□□2
2: Standard
(hole 2, toward left)



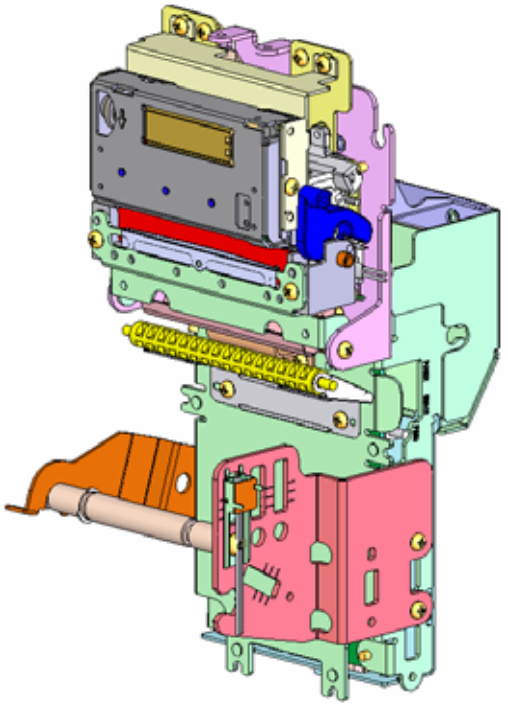
PMU2□□0 II □-□□□-□□3
3: A bit far
(hole 1, toward right)



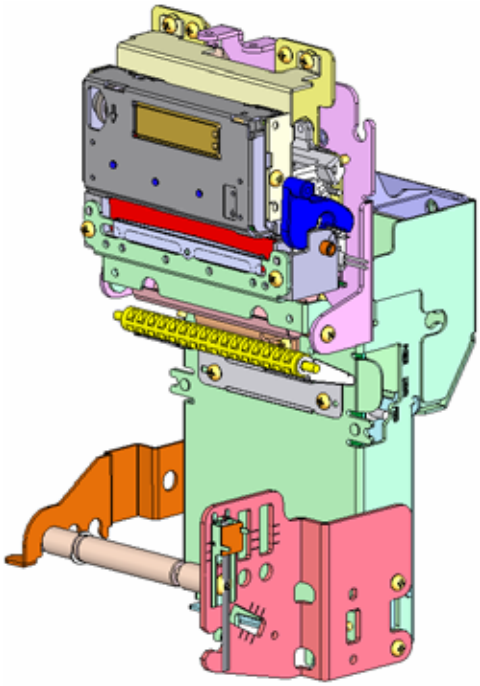
PMU2□□0 II □-□□□-□□4
4: Far
(hole 2, toward right)

Figure Paper holder position (Horizontal Model)

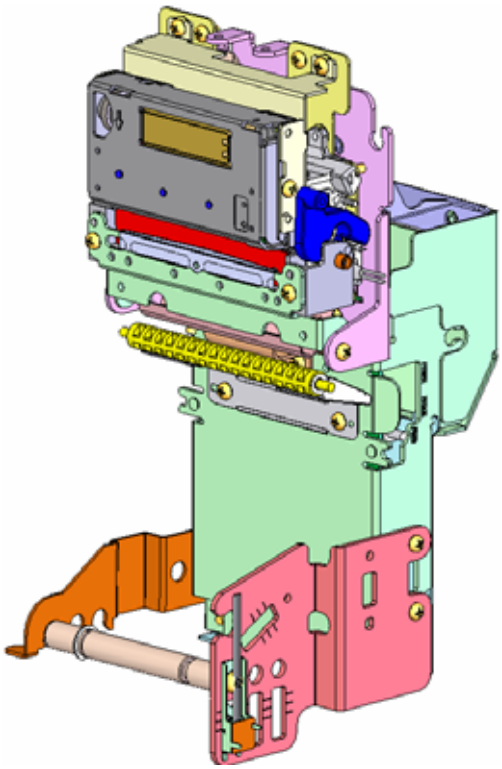
2) Paper holder position (Vertical Front Model)



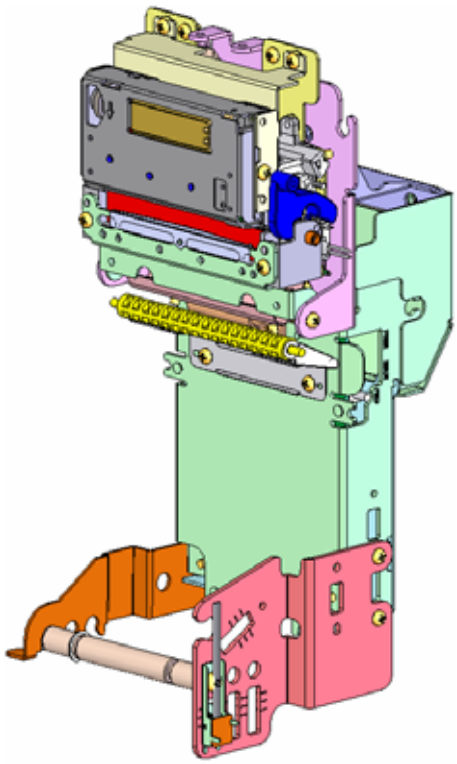
PMU2□□1 II □-□□□-□□1
1: A bit near
(hole 1, toward left)



PMU2□□1 II □-□□□-□□2
2: Standard
(hole 2, toward left)



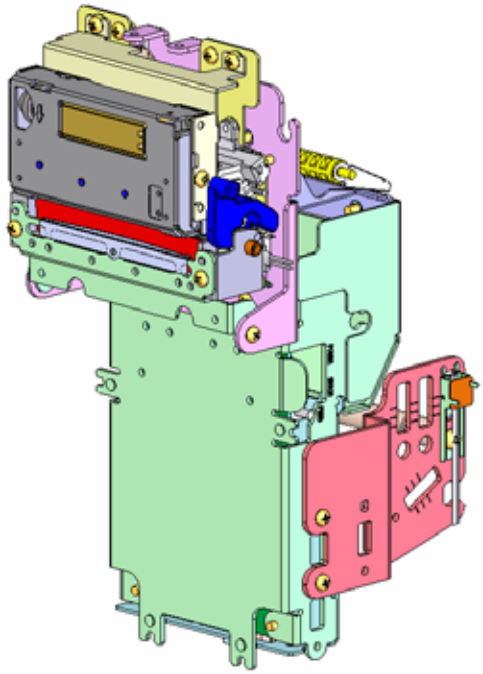
PMU2□□0 II □-□□□-□□3
3: A bit far
(hole 1, toward right)



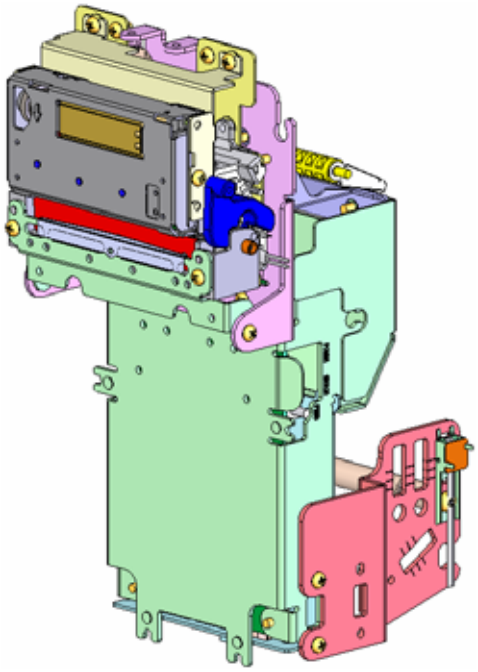
PMU2□□0 II □-□□□-□□4
4: Far
(hole 2, toward right)

Figure Paper holder position (Vertical Front Model)

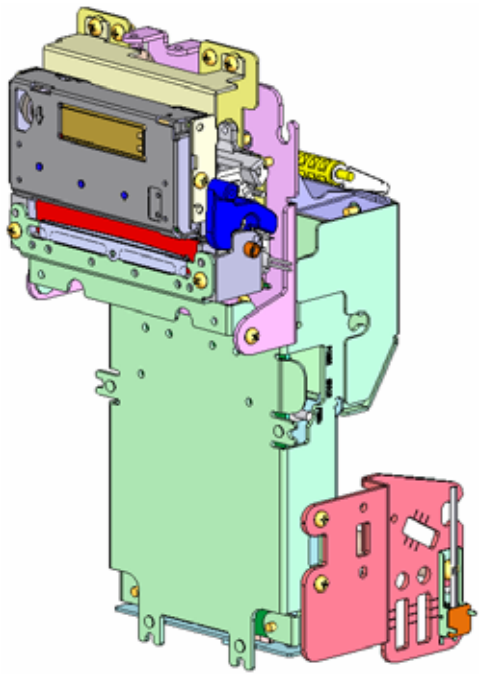
3) Paper holder position (Vertical Back Model)



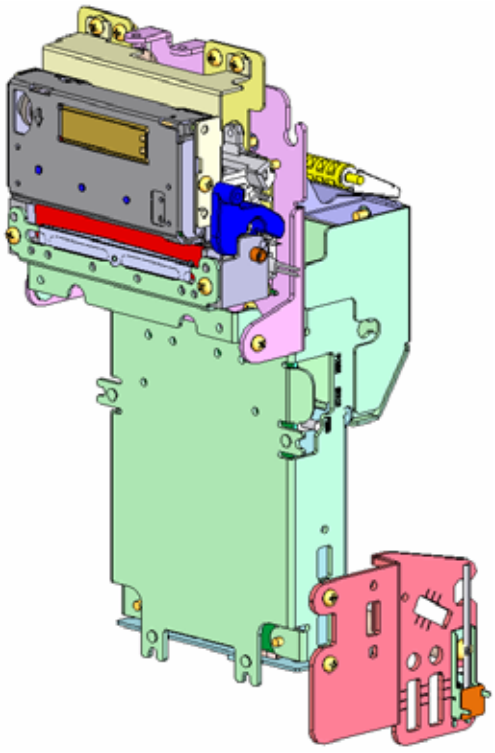
PMU2□□2Ⅱ□-□□□-□□1
1: A bit near
(hole 1, toward left)



PMU2□□2Ⅱ□-□□□-□□2
2: Standard
(hole 2, toward left)



PMU2□□2Ⅱ□-□□□-□□3
3: A bit far
(hole 1, toward right)



PMU2□□2Ⅱ□-□□□-□□4
4: Far
(hole 2, toward right)

Figure Paper holder position (Vertical Back Model)

4) Paper holder setting position

Paper holder setting position differs according to paper insertion, and becomes the following the Table. 3-in model has one kind of Plate Paper Holder. 2 - in model has two kinds of Plate Paper Holder.

- Direction of paper insertion L: Insert from left

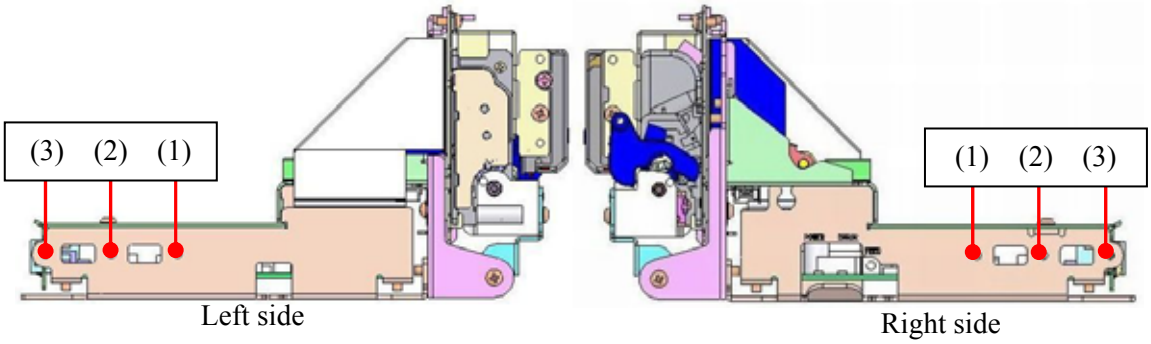
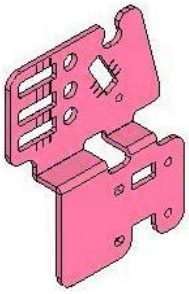
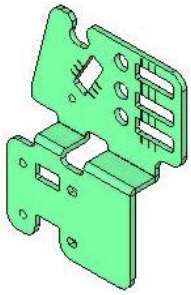


Figure Paper holder setting position

Table Paper diameter (Direction of paper insertion L: Insert from left)

Holder position	Left side			Right side			2-in Holder (*3-in is all the same.)
	(3)	(2)	(1)	(1)	(2)	(3)	
1: A bit near	—	—				—	 Plate Paper Holder2 2in
2: Standard	—		—	—			
3: A bit far		—	—			—	 Plate Paper Holder 2in
4: Far		—	—	—			

*It becomes an installation in the direction of figure in the table.

- Direction of paper insertion R: Insert from right

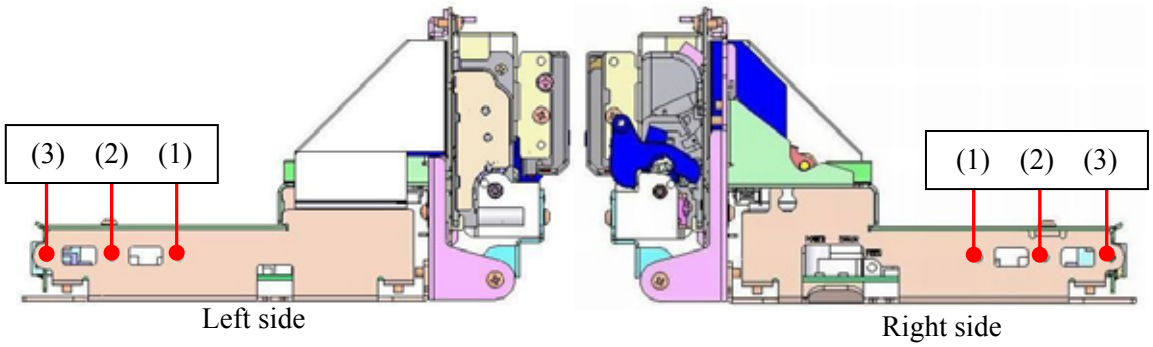
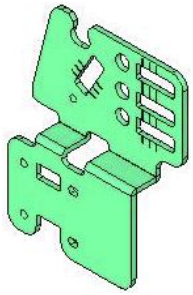
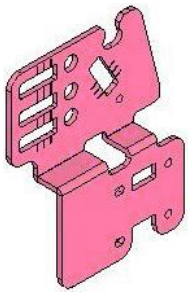


Figure Paper holder setting position

Table Paper diameter (Direction of paper insertion R: Insert from right)

Holder position	Left side			Right side			2-in Holder (*3-in is all the same.)
	(3)	(2)	(1)	(1)	(2)	(3)	
1: A bit near	—				—	—	 Plate Paper Holder 2in
2: Standard			—		—	—	
3: A bit far	—			—		—	 Plate Paper Holder2 2in
4: Far			—	—	—		

*It becomes an installation in the direction of figure in the table.

- Direction of paper insertion T: Insert from top

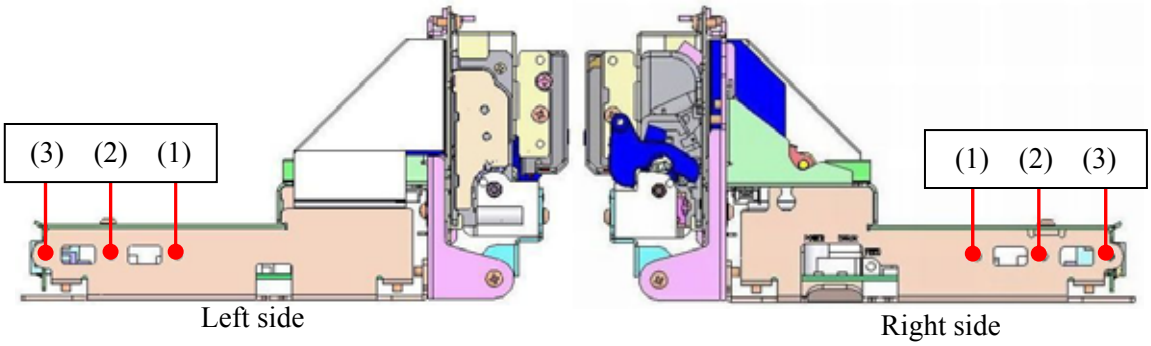
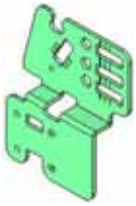
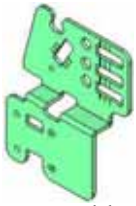


Figure Paper holder setting position

Table Paper diameter (Direction of paper insertion T: Insert from top)

Holder position	Left side			Right side			2-in Holder (*3-in is all the same.)
	(3)	(2)	(1)	(1)	(2)	(3)	
1: A bit near	—					—	Left side:  Plate Paper Holder 2in Right side:  Plate Paper Holder2 2in
2: Standard			—	—			
3: A bit far	—					—	Left side:  Plate Paper Holder2 2in Right side:  Plate Paper Holder 2in
4: Far			—	—			

*It becomes an installation in the direction of figure in the table.

2.3.5 Paper diameter

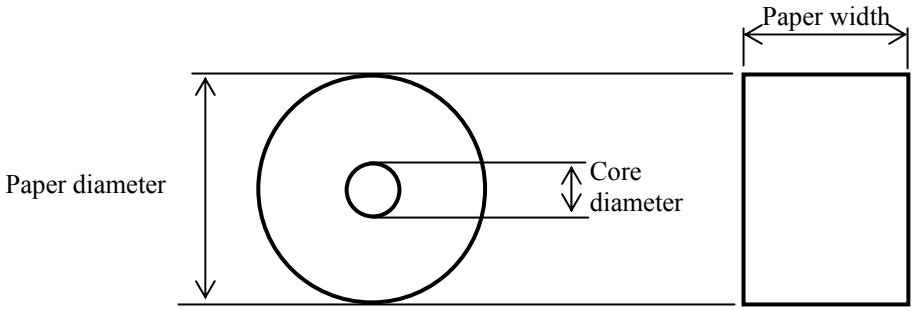


Figure Paper

Table Paper diameter

Item		Specifications
Paper diameter		∅102mm max.(∅25mm min)
The position of paper holder		This printer can be set for ∅60, ∅80, and ∅102. *Maximum paper diameter : T is ∅102mm only.
Core diameter	inner	∅12mm
	external	∅18mm ±1

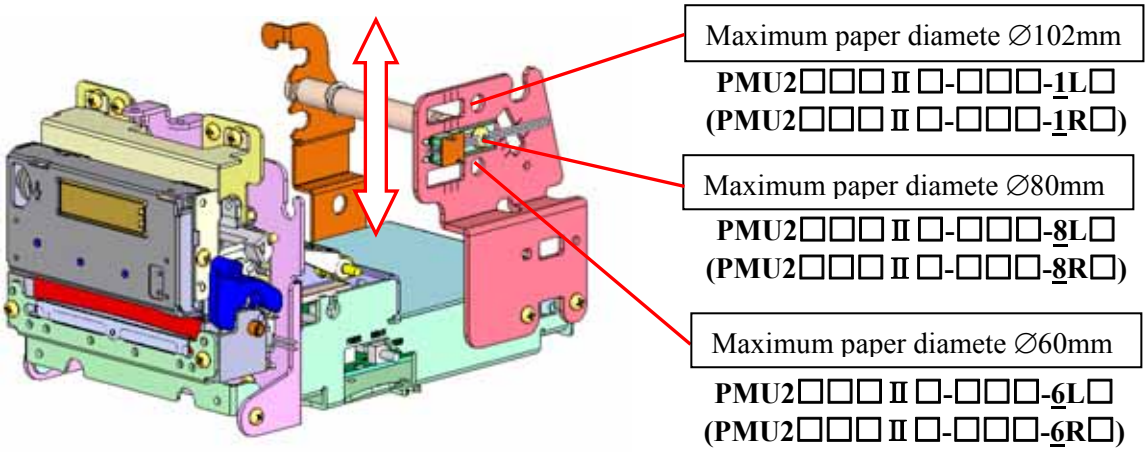


Figure Maximum paper diameter L: Insert from left (R: Insert from right)

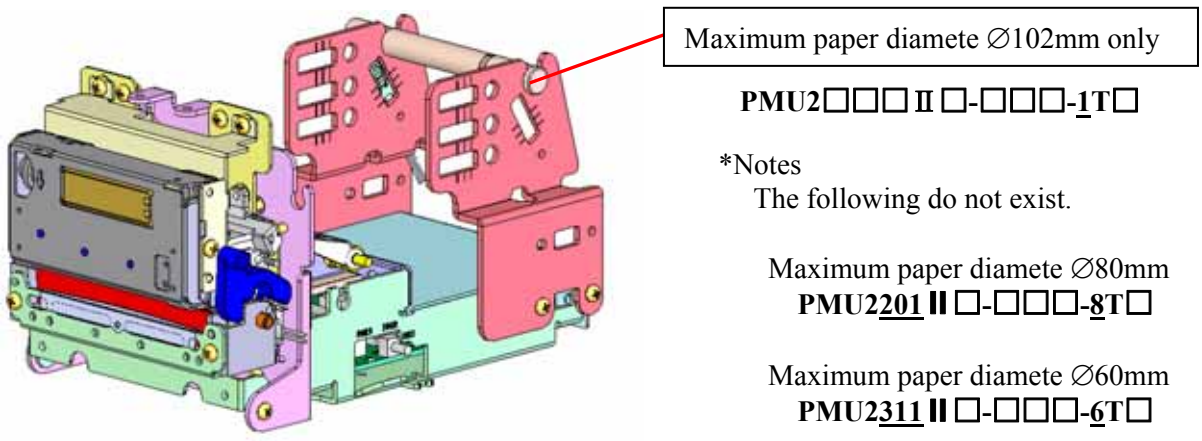


Figure Maximum paper diameter T: Insert from top

2.3.6 Paper thickness

- Paper thickness is different in Standard model and Thick paper molel.
- Standard model and Thick paper molel are factory option, it is not possible to change.

*Mechanism mounted is different in Standard model and Thick paper molel in consideration of the paper thickness.

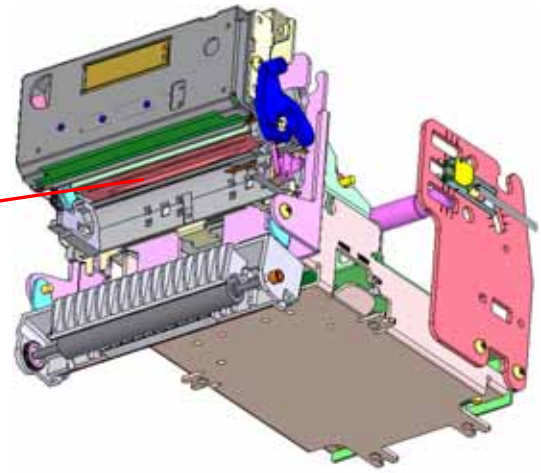


Figure Difference of Thick paper molel

Table Paper thickness

Model		Paper thickness
Normal specification	PMU2□□□Ⅱ -□□□-□□□	60μm to 75μm
Special specification, other model	PMU2□□□Ⅱ**A** -□□□-□□□	105μm to 150μm

2.3.7 Recommended thermal paper and print density setting

It is necessary to change the setting of print density depending on the paper type and paper thickness. Print density setting must be changed by the customize value setting GS (E command. (Refer to P61 “7.2 Memory Switches”.)

Table Recommended Thermal Paper

Manufacturer	Product name	Quality characteristics, Purpose	Paper thickness (μm)	Remarks
Nippon Paper	TF50-KS-E2D	Normal paper	67	
Mitsubishi Paper Mills	HP220AB-1	High storage paper	75	
Mitsubishi Paper Mills	P220AC	Normal thick paper	105	
Nippon Paper	TC98KS-T1	Overcoat paper	125	
Nippon Paper	TF11KS-ET	Normal thick paper	145	

*Notes

- Use specified paper. Use of paper other than specified may result in broken head, faulty printing, etc.
- Pay attention to temperature, humidity, and environment when storing the printed paper. Otherwise, the printout may disappear.

2.3.8 Other

Coloring side: Outer of paper
Termination processing: Paper must not be fixed to the core.
No folding process must be applied to the paper end.

2.4 Black Mark Specifications (In case of M Type): Option

- Black Mark Sensor and Black Mark Sensor position is factory option, it is not possible to change.

2.4.1 Black Mark position

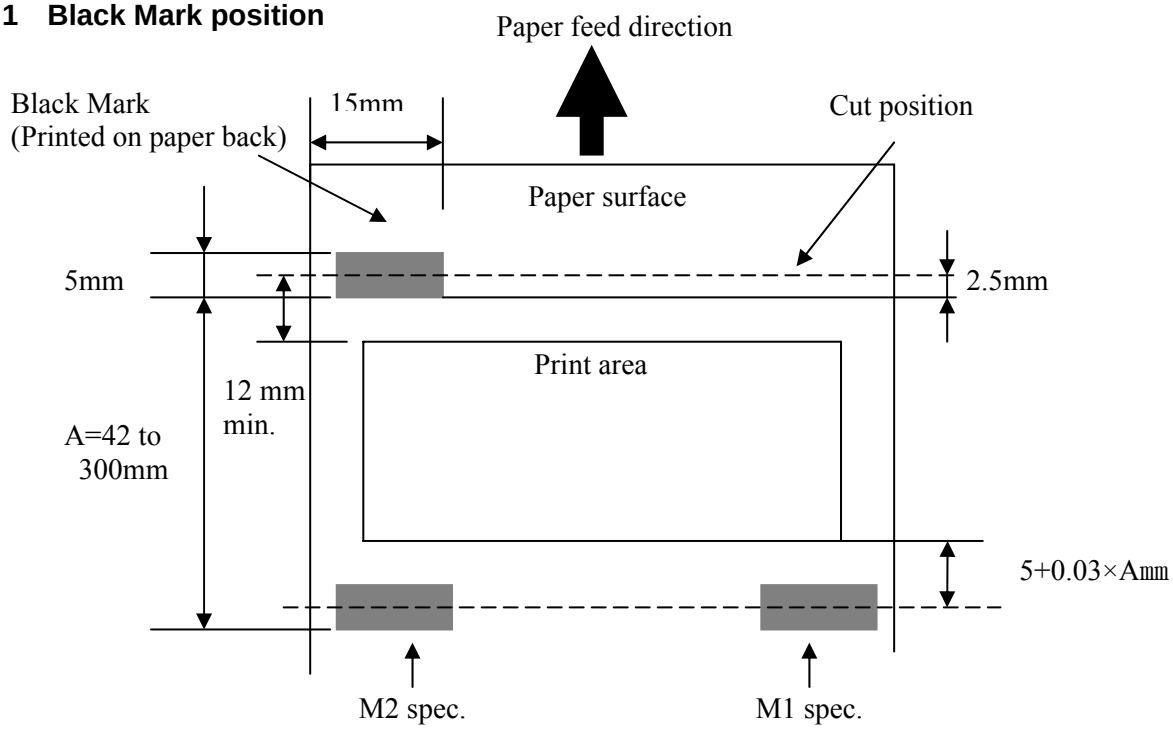


Figure Black Mark

2.4.2 Notes

- Printing by the use of black mark paper must be within the range shown in the above figure.
- The print range must be within the above use range. For the setting value of printing range in the paper feed direction, allow for the margin shown in the above figure not to exceed the pitch of black mark. Note that insufficient margin may cause a fault such as skipping a page.
- The numeric value is the center value of design and the print area and the right and left margins may deviate by a maximum of 2 mm due to variation in paper position or parts.
- When you design the pre-print receipt layout, take followings into the consideration very carefully. The top of print position by detecting black mark can deviate by +/-2mm from sntadard print position. The length of printed receipt can deviate +/-5% by the environment or platen diameter accuracy. Pre-printing on the back surface of paper is prohibited.
- As paper is shifted to the M2 side in case of PMU2310, no M1 specification is present.

The following do not exist.

3in 60mm Horizontal M1 Model
PMU2310Ⅱ□-□□(P)M1-□□□

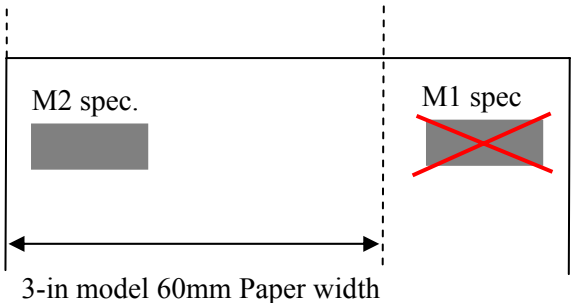


Figure 3-in model 60mm Paper width

2.4.3 Memory Switch Setting

Memory Switch Setting is as follows.

Table Memory Switch Setting

No.	Function	OFF	ON
MSW3-4	Paper Select	Thermal	Black MK
MSW4-1	Auto Length	Invalid	Valid
MSW4-4	Base style	PMU2XX0/2XX2	PMU2XX1

■: Default (Factory set)

- MSW3-4 Paper Select

  " Thermal "is Standerd model. The printer is operated on the assumption that Thermal paper is set.
  " Black Mark "is Black Mark model. The printer is operated on the assumption that Black Mark paper is set.

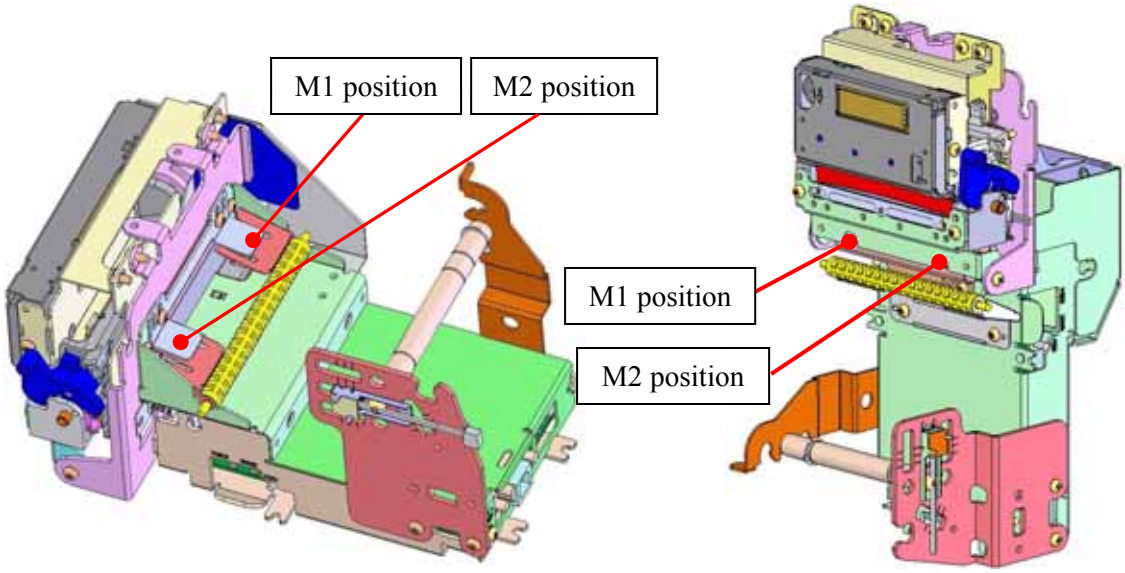
  ∗When Standerd model has been changed into Black Mark Mode by MSW3-4 "Black MK", the printer cannot be set according to the communication as long as Black Mark Senser and Black Mark paper are not set In this case, please change "Black MK" to "Thermal" by Memory Switch Setting Mode.(Refer to P42 " 3.3.3 Memory Switch Setting Mode ")
  Even if "Black MK" has been selected, Thermal paper can be used because it compulsorily becomes "Thermal" at Mermory Switch Setting mode. In the mode, set MSW3-4 from "Black MK" to " Thermal ".

- MSW4-1 Auto Lengt

  The printer automatically measures Black Mark. when turning the power switch on.

- MSW4-4 Base style

  The sensor position（distance between papercutting position and sensor position） is different in Horizontal / Vertical Front Model and Vertical Front Model . The printer doesn't operate correctly if the Base styl is not correct.



Horizontal / Ver tical Front Model　　Vertical Front Model

Figure Black Mark Sensor position

2.5 Auto Cutter Specifications

2.5.1 Specifications

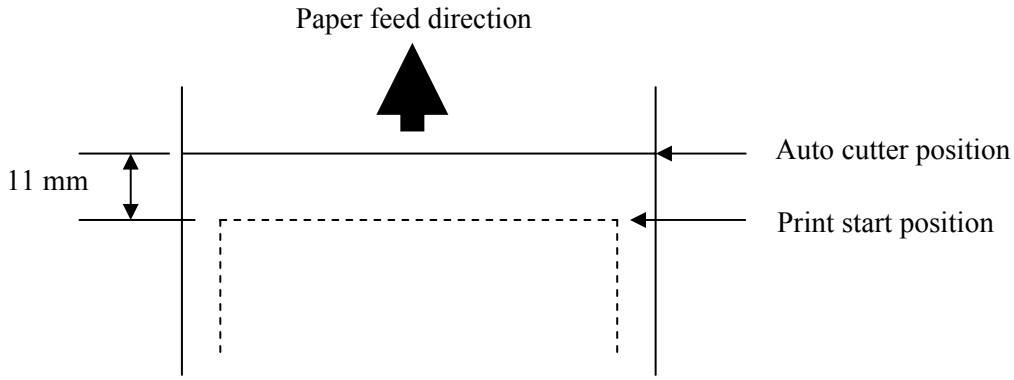


Figure Cutting Position of Auto Cutter

Table Auto Cutter Specifications

Item	Specifications
Cutting method	Slide cutter (V-shaped movable blade)
Cutting mode	Full cutting (Cut down) Partial cutting (uncut at one point)
Cutting duty	20 cuts/min. max.
Paper thickness	65 μm to 150 μm
Minimum cutting length	30 mm
Error detection	Home position detection by mechanical sensor
Cutting position	Approx. 11 mm between print position and cutting position

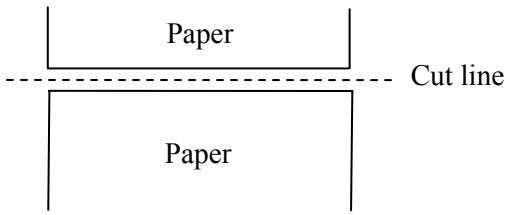


Figure Full cutting

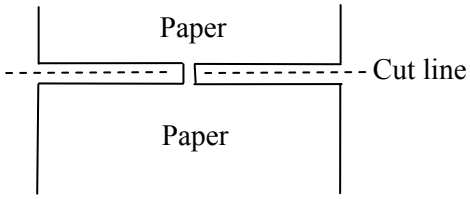
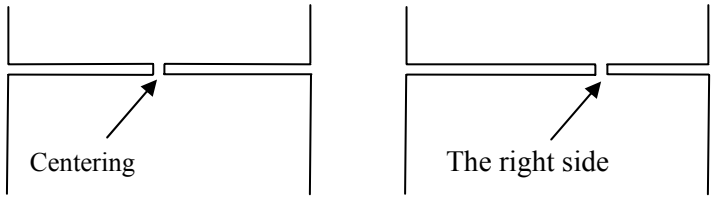


Figure Partial cutting

2.5.2 Notes

- Allow for sufficient margin in setting the cutting position of the cutter in consideration of warp or variation in paper.
- Margin of more than 5 mm is recommended between print end and cutting position.
- As for 3-in 60mm mode1,Uncut at one point is the right side of the paper.



2-in 60mm Model **PMU221□Ⅱ**

3-in 60mm Model **PMU2310Ⅱ**

Figure 60mm model Partial cutting position

2.5.3 Memory Switch Setting

Memory Switch Setting is as follows.

Table Memory Switch Setting

No.	Function	OFF	ON
MSW2-2	Auto Cutter	Invalid	■ Valid
MSW3-1	Resume Cttr Err	■ Valid	Invalid
MSW4-3	Feed&Cut at TOF	Invalid	■ Valid
MSW4-8	Partial Only	■ Invalid	Valid

■: Default (Factory set)

- MSW2-2 Auto Cutter
  The cutter operation is done

- MSW3-1 Resume Cttr Err
  When Cutter lock error is generated, remove the failure and press the FEED switch to restore.But, even if the FEED switch is pushed by the state of Cutter lock error, A might not be released. In that case, Cutter lock error is released referring to P69 “8.4 Releasing Cutter Lock (Cutter Error) ”.

- MSW4-3 Feed&Cut at TOF

  It operates as follows when it is valid.
  MSW3-4 OFF : Thermal
  When auto loading , the printer does the full cutting operation.

  When the platen holder is opened and closed, the printer does the full cutting operation.

  When the printer does paper feed over 25mm by feed sw, it does the full cutting operation.

  MSW3-4 ON : Black MK
  When the printer automatically measures Black Mark, it does the full cutting operation.

  When the platen holder is opened and closed, the printer does the full cutting operation.

  When the printer does paper heading by feed sw, it does the full cutting operation.

- MSW4-8 Partial Only
  All the cutter operation is Partial cutting. The cutter operation can’t do full cutting

2.6 Power Supply

2.6.1 Power Connector Pin Assignment (CN101)

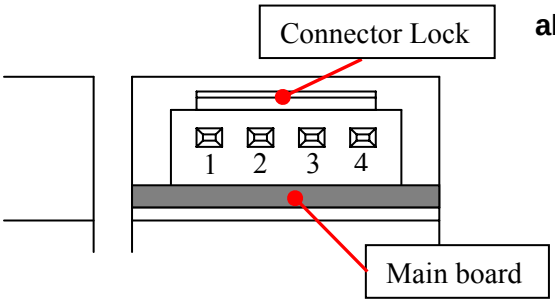


Figure CN101 Power Connector

able Power Connector Pin Assignment (CN101)

No.	Function
1	+24V
2	GND
3	GND
4	GND

Connector used: B4PS-VH (JST (JST Mfg. Co., Ltd.)) or equivalent

2.6.2 Specifications

- Operating voltage: DC24V±10%
- Current consumption :

Table Current consumption

Item	Paper width 58/60mm (432dots)	Paper width 80mm (576dots)
	PMU220☐Ⅱ PMU221☐Ⅱ PMU2310 Ⅱ	PMU2300 Ⅱ
Average current (24.0V, 25°C, Printing duty 12.5%)	Approx. 1.2A	Approx. 1.5A
Peak current (with full dot printing)	Approx. 9.0A	
Standby current	Approx. 80 mA	

*When optional AC adapter 36AD1 is used
AC100/120/230V ±10% (* Operating temperature range is 0°C to 45°C.)

2.6.3 Cable for Power Supplies to Accessory

Table Cable Specifications

Item	Specifications
Housing used	VHR-4N (JST (JST Mfg. Co., Ltd.)) or equivalent
Terminal used	SVH-21T-P1.1 (JST (JST Mfg. Co., Ltd.))
Cable used	AWG18 (UL1007) or equivalent
Cable length	300 mm (End cut off)

2.6.4 Precautions

1) Before plugging or unplugging the connector, be sure to turn the printer power off.

2) Always keep the input voltage within the specified range.

3) Connect Vp and GND before using the printer.

4) Use the power supply capable of limiting peak current.

5) Pay attention to the length of wiring and line diameter. Excessively long power code may result in printer malfunction due to voltage drop, etc.

6) Use the specified power supply. Otherwise, printing operation may be adversely affected.

7) If power supply incapable of limiting peak current is used, print quality may be degraded depending on the contents of printing or low-voltage error may be caused.

8) Easy disconnection of power supply must be available in case of emergency.

9) Use power supply with overvoltage protection, overcurrent protection, and various kinds of protective circuits.

10) Be careful to avoid erroneous wiring and wrong use. Otherwise, not only breakage of printer but also bad effect on human body, peripheral equipment, etc. may be caused.

11) Operating voltage is 24V ± 10%.But Print Density changes by Operating voltage. In that case, adjust it by Customize Value MSW10-1 “Print Density”.

Table Customize Value

No.	Function	Contents of Setting	
MSW10-1	Print Density	70%	75%
		80%	85%
		90%	95%
		■100%	105%
		110%	115%
		120%	125%
		130%	135%
		140%	—

■: Default (Factory set)

2.7 Reliability

2.7.1 Life

- Mechanism: 23 million lines
- Thermal head: 100 million pulses, 100 km
  (Head average resistance change is within ±15%)
- Auto cutter: 1.00 million cuts (with paper thickness 65 μm, full cutting)
  0.60 million cuts (with paper thickness 150 μm, full cutting)

<Conditions for thermal head life>

- Average printing duty: 12.5%
- Recommended thermal paper: 65 μm

2.7.2 MCBF

- MCBF: 23 million lines
  MTBF is defined as overall mean time between failures including accidental failure and abrasive failure up to printing of 23 million lines or life of mechanical body.

- Note
  The life of the mechanical body is 23 million lines and MTBF does not indicate the durable life.

2.7.3 Precautions

The above reliability specifications indicate the value in case recommended thermal paper is used and this reliability cannot be insured with paper other than recommended thermal paper.

2.8 Safety (Applicable Standards)

2.8.1 Safety standards

	Printer	
UL	UL60950-1: 2003 1st	
C-UL	CSA22.2 NO.60950-1-03 1st	
TUV	EN60950-1/A11:2004	
PSE Law	—	

2.8.2 EMI standards

:FCC ClassA
:VCCI ClassA
:EN55022 ClassA

2.8.3 CE marking

:EMC directive, Low voltage directive

2.9 Environment

2.9.1 Temperature, Humidity

1) Operating
   - Temperature: –20°C to 60°C
   - Humidity: 10% RH to 90% RH (without condensation)

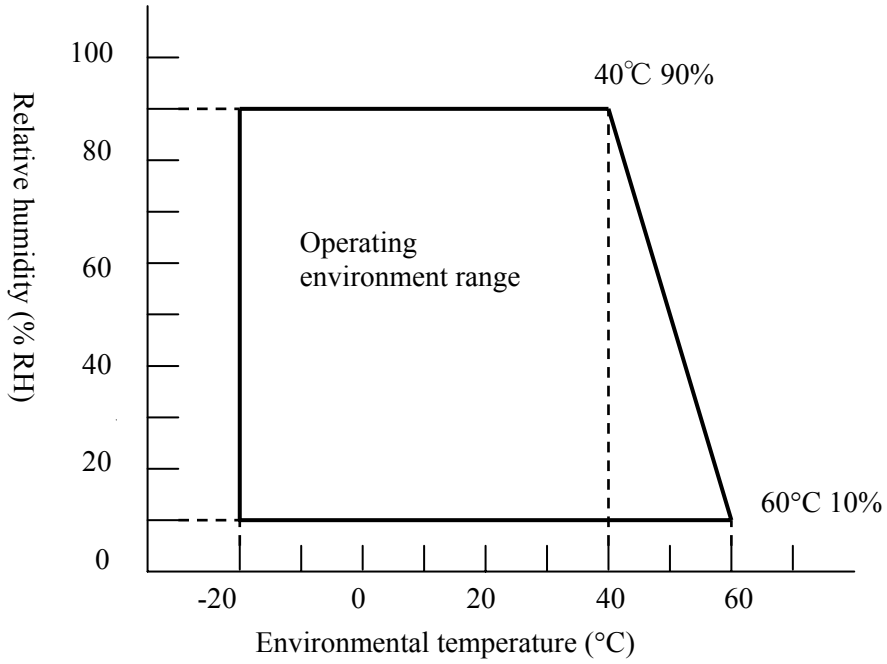


Figure Operating

2) Storage (without paper)
   - Temperature: –25°C to 65°C
   - Humidity: 10% RH to 90% RH (without condensation)

* In case of storage at high temperature and high humidity, the combination of 40°C and 90% RH assumes the worst.

2.9.2 Vibration, Dropping, and Shock

1) Vibration test (In package)

- Direction of vibration: XYZ
- Vibration frequency: 10 Hz to 55 Hz
- Sweep time: Object sweep 10 min. go and return
- Vibration acceleration: G constant
- Application time: 1 hour (Total 3 hours)
- Packing condition: Minimum packing

After vibration, be sure neither visual nor operational problem shall exist in the appearance and inside of the printer.

2) Drop shock test

- Drop height: 60 cm
- Drop direction: 1 corner, 3 edges, 6 faces
- Drop times: 1 for each (10 times in total) in minimum packing condition

After dropping, be sure neither visual nor operational problem shall exist in the appearance and inside of the printer.

3) Shock test (Without packing)

- Drop height: 5 cm
- Drop direction: 4 edges
- Drop direction with one side held: 5 times each

After dropping in non-operating condition, neither visual nor operational problem shall exist in the appearance and inside of the printer.

2.9.3 Noise

- Measurement standard :65 dBor less (only in printing state)
  (* 70 dB or less when cutter operation is included.)

*It is the above-mentioned value, when our test pattern is printed.Noise Value changes by the paper used, Printing duty (Printing speed, Printing Density).

3. CONTROLS

Various kinds of operation and status can be accessed from the control panel at the left side of the printer.

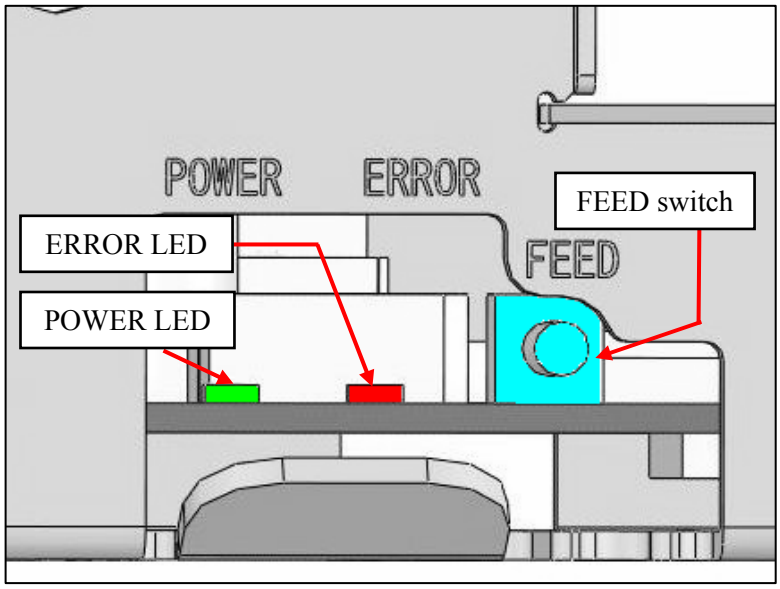


Figure Control Panel

3.1 LED Output

1) POWER LED (Green)

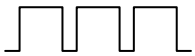
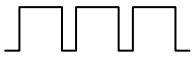
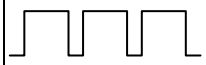
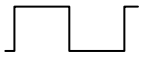
- ON: Power is applied.
- Blinking: Memory check error, Hex dump mode, Memory switch setting mode, Self-printing
- OFF: Power is not applied.

2) ERROR LED (Red)

- ON: Memory check error, Platen open, Paper-End, Paper Near-End, Black mark detection error
- Blinking: Various kinds of error, Waiting for macro execution
- OFF: Operating normally

3.2 Details on Error and LED Indication

Table Errors and LED Indication

Content of Error		POWER LED (Green)	ERROR LED (Red)
1) Error to recover automatically	[1] Head overheat error	ON	
	[2]Platen open error (MSW3-8 OFF: With automatic return set)	ON	
2) Recoverable error	[1] Platen open error (MSW3-8 ON: With recoverable feature set)	ON	
	[2]Cutter lock error	ON	
3) Not recoverable error	[1] Memory check error		ON
	[2] Low voltage error	ON	
	[3] High voltage error	ON	
4) Other state	[1] Paper near end	ON	ON
	[2] Paper end	ON	ON
	[3]Platen open	ON	ON
	[4] Waiting for macro execution	ON	
5) Black mark specification relation	[1] Black mark paper detection error	ON	

1) Error to recover automatically

[1] Head overheat error

- Explanation of error: When the head temperature rises (approx. 75°C or more), the printing stops and ERROR LED blinks to protect overheating of print head. When the head temperature drops (approx. 70°C or less), printing restarts automatically.
- POWER LED: ON
- ERROR LED: Blinking with longer ON time
- Recovery condition: Automatically recovered by the drop of temperature

[2] Platen open error (MSW3-8 OFF: With automatic recovery set)

- Explanation of error: Platen is opened during printing (platen open lever is pressed down and platen retaining unit is open).
- POWER LED: ON
- ERROR LED: Blinking with longer ON time
- Recovery condition: Platen is closed (platen retaining unit is closed and platen open lever is lifted).

2) Recoverable error

[1] Platen open error (MSW3-8 ON: At the setting of recoverable feature)

- Explanation of error: Platen is opened during printing (Platen open lever is pressed down and platen retaining unit is opened).
- POWER LED: ON
- ERROR LED: Blinking with longer ON time
- Recovery condition: Close the platen and send Clear Recoverable Error command to clear the error.

* DLE ENQ 1, DLE ENQ 2: For details, refer to Command Reference Specifications.

[2] Cutter lock error

- Explanation of error: Cutter cannot operate and abnormality occurred.
- POWER LED: ON
- ERROR LED: Repetition of short blinking twice and long blinking once.
- Recovery condition: Remove the failure and press the FEED switch to restore (with MSW3-1 set to OFF) or use DLE ENQ 1or2 command to restore (with MSW3-1 set to ON).

3) Not recoverable error

[1] Memory check error

- Explanation of error: CPU self-diagnosed the circuit and detected abnormality in external RAM memory.
- POWER LED: Short blinking
- ERROR LED: ON
- Recovery condition: Not recoverable. However, turning the power off and removing the cause of abnormality by replacing external RAM or the like will recover the normal state.

[2] Low voltage error

- Explanation of error: Occurs when VP voltage supplied to the printer is lowered. Immediately after occurrence, turn the printer power off.
- POWER LED: ON
- ERROR LED: ERROR LED repeats short blinking three times and long blinking once.
- Recovery condition: Not recoverable. However, turning the power off once and raising VP voltage to DC 24V ±7% will recover the normal state.

[3] High voltage error

- Explanation of error: Occurs when VP voltage supplied to the printer rises. Immediately after occurrence, turn the printer power off.
- POWER LED: ON
- ERROR LED: ERROR LED repeats short blinking 4 times and long blinking once.
- Recovery condition: Not recoverable. However, turning the power off once and raising VP voltage to DC24V ±7% will recover the normal state.

4) Other state

[1] Paper Near End
- Explanation of error: If paper diameter becomes smaller than a certain level, Paper Near End sensor actuates to indicate that paper is near end. (MSW2-8 OFF: When PNE enable is set)
- POWER LED: ON
- ERROR LED: ON
- Recovery condition: Set new paper.

[2] Paper End
- Explanation of error: When paper end is reached, the paper sensor located in the paper path near the print head detects the end of roll paper causing ERROR LED to light and printing operation to stop.
- POWER LED: ON
- ERROR LED: ON
- Recovery condition: Set new paper.

[3] Platen Open
- Explanation of error: When the platen is opened in the standby state, ERROR LED goes on.
- POWER LED: ON
- ERROR LED: ON
- Recovery condition: Close the platen.

[4] Waiting for macro execution
- Explanation: Waiting for macro execution
- POWER LED: ON
- ERROR LED: ERROR LED provides long blinking.
- Recovery condition: Press the FEED switch.

5) Black mark (Option) specification relations

[1] Black mark detection error (Auto recovery error)
- Explanation: When no black mark can be detected or paper in use is not specified one, the printer is put in the BUSY state.
- POWER LED: ON
- ERROR LED: Repetition of long blinking twice and short blinking three times
- Recovery condition: Set specified paper.

* When Standerd model has been changed into Black Mark Mode by Memory Switch Setting is mistaken ,The printer is returned to Standerd Mode by Memory Switch Setting Mode(Refer to P27 “2.4 Black Mark Specifications (In case of M Type): Option”)

3.3 FEED Switch

1) Paper Feed
Pressing this switch causes paper to advance in accordance with the amount of line feed set by ESC 2 and ESC 3. However, no paper feed occurs in the following cases.

Table No paper feed

No.	Cases
1	When the FEED switch is disabled by ESC c 5
2	When Paper End detector detected No Paper
3	When platen is open
4	When error occurred
5	When waiting for macro (macro execution by FEED switch), pressing the FEED switch causes a macro to be executed.

2) Clear cutter lock error (with MSW3-1 OFF: FEED switch is set to Enabled)
At the time of cutter lock error, pressing the FEED switch after removing the cause of the error can clear the error.

3) Feed&Cut (MSW4-3 Feed&Cut at TOF ON: Valid)
When the printer does paper feed over 25mm by feed sw, it does the full cutting operation.

MSW3-4 Paper Select ON: Black MK.
When the printer does paper heading by feed sw, it does the full cutting operation.

3.3.1 Self-printing

1) Function
This function allows monitoring of printer setting status by the printout.

2) Starting self-printing
In the print ready state, turning the printer power on with the FEED switch pressed and held causes the printer status to be printed on the paper. The contents of the printout are as shown below.

[1] Printer name: PMU2211ⅡA-RSJPM1-8L2 (Refer to P 6 7.)
[2] ROM version: DC**-XXXX (Refer to P 7 56.)
[3] BOOT version: XXX.XX
[4] FONT version: XXX.XX
[5] Interface setting
[6] Buffer size
[7] Contents of DIP switch setting (* Only for serial interface)
[8] Contents of memory switch
[9] Font A (20H to FFH)
[10] Font B (20H to FFH)
[11] Font C (20H to FFH)
[12] Kanji font A 192 characters (only Kanji model:MSW9-3)
[13] Kanji font C 192 characters (only Kanji model:MSW9-3)

3) End of self-printing
After printing a specified pattern of printout, the printer is reset and initialized.

*When the printer does self-print in Black Mark mode, it becomes the same control as a standard mode, and prints a black mark paper as a thermal paper. However, when the self-print by the command is specified, it doesn't become the same control as a standard mode, and it is controlled as black mark mode.

3.3.2 Hexadecimal Dump Printing

1) Function
This function provides printing of data sent from the host in hexadecimal code and the corresponding characters.

2) Starting hexadecimal dump printing
While pressing and holding the FEED switch with paper set and platen opened, turn the printer power on and then close the platen. The printer prints "HEX ダンプ印字モード(HEX dump print mode)" on the roll paper and then prints the data received thereafter in hexadecimal code and the corresponding characters.

Example: Dump printing with Kanji model. (MSW9-3 Kanji : ON)

Example: Dump printing with non-Kanji model. (MSW9-3 Kanji : OFF)

- During hexadecimal dump printing, command other than real-time command is disabled.
- If print data is less than one line, occurrence of offline factor causes the line to be printer.

3) End of hexadecimal dump
Press the FEED switch three times consecutively. In this case, the printer prints "Completed" and feeds paper to the cut position followed by reset operation. Otherwise, turn the printer power off or lets the printer to be reset with I/F signal.

3.3.3 Memory Switch Setting Mode

1) Settable memory switch
MSW1, MSW2, MSW3, MSW4, MSW5, MSW7, MSW9, MSW10

2) Starting memory switch setting mode
While pressing and holding the FEED switch with paper set and platen open, turn the printer power on, press the FEED switch twice, and then close the platen. The memory switch setting mode is started. When this mode is started, POWER LED blinks and the printer prints the contents of current setting and guidance of operating method.

3) Selecting memory switch
Press the FEED switch short (within 0.5 s) to select the memory switch to be set in the following order. Here, the printer prints the selected memory switch status. However, when [9] is selected, the printer prints to verify the flash memory writing.

[1] MSW1
[2] MSW2
[3] MSW3
[4] MSW4
[5] MSW5
[6] MSW7
[7] MSW9
[8] MSW10
[9] Write/Initializing setting

Notes on operation
- When [1] through [8] are selected, pressing the FEED switch long (2 s or more) causes the setting of the selected memory switch to be started. (Go to the following 4) Memory switch setting.)
- When [9] is selected, pressing the FEED switch long causes all current memory switch setting to be written into flash memory and the printer to be reset. (Go to the following 5) End of memory switch setting mode.)
- When [9] is selected, opening the platen and pressing and holding the FEED switch long causes current memory switch setting to be discarded and the factory set value to be recovered followed by reset operation. (Go to the following 5) End of memory switch setting mode.)

4) Setting memory switch
[1] Print the status of the bits currently being set.
[2] Press the FEED switch short (within 0.5 s) to reverse the bit selected. If the bit is in the ON state, ERROR LED goes on.
[3] Press the FEED switch long (2 s or more) to save the current bit. If there is any change, the bit status is printed.
Start the following bit setting.
The order of changing bit is shown below.
Bit 0 → Bit 1 →…→ Bit 6 → Bit 7 → Bit 0 →…
[4] Open the platen to terminate the setting. Then close the platen to print the status of current memory switch and return to 3) Selecting memory switch.

5) Terminating memory switch setting mode
When setting is completed, the contents of setting are saved and initialization (reset) occurs and the printer enters normal print-ready condition.

3.4 Operation External Output

The signals of LEDs and FEED switch can be output to the outside.

3.4.1 Connector Pin assignment (CN105)

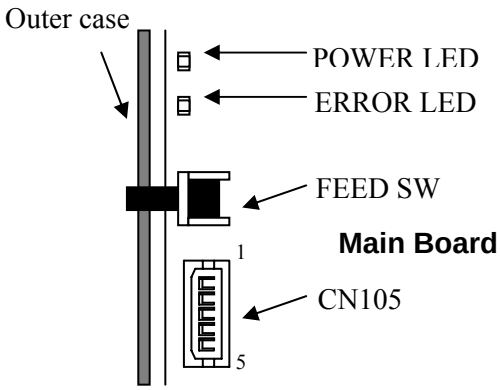


Figure Location of CN105 on Main Board

Table Connector Connection(CN105)

No.	Signal	Input/Output	Function
1	VCC	–	Circuit power supply (+5V)
2	FEED SW	Input	FEED switch input
3	GND	–	Circuit GND
4	POWER LED	Output	POWER LED output
5	ERROR LED	Output	ERROR LED output

Connector used: 53014-0510 (Molex))

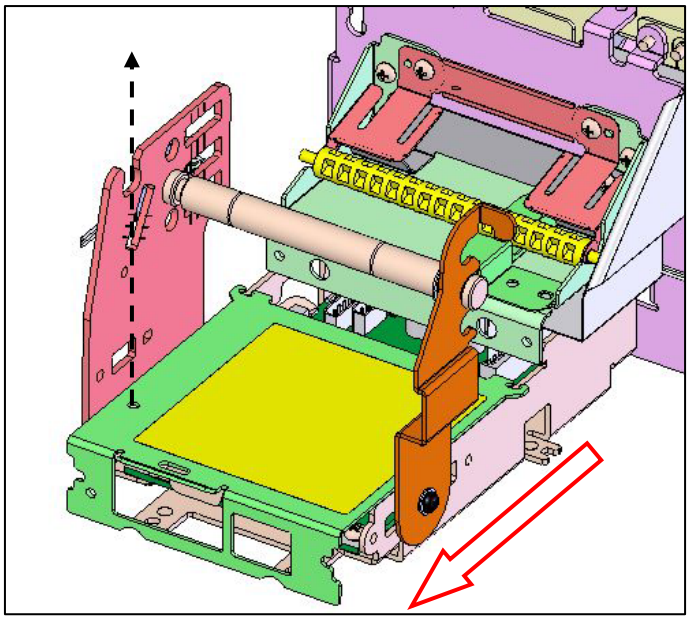


Figure Opening of Main board cover

CN105 is located on the Main Board. To access the Main Board, remove the screw holding the main board cover and slide the main board cover.

3.4.2 Precautions

- Before the work, remove the paper and unplug the interface and power connectors.
- Allow wiring by using the gap given after the cover is closed. Here, be careful not to pinch wiring by the closure of the cover.
- After work, be sure to close the main board cover. Avoid operation with the main board exposed.
- A resistance (47 Ω) has been mounted in the circuit of POWER LED and ERROR LED. However, install the resistance in accordance with the rating of the LED used. (Transistor collector-emitter saturation voltage $V_{CE\ (sat)} = 0.3V$ (max), Current rating 100mA(max))
- The FEED switch input terminal is as shown in the above circuit. Though a ceramic capacitor is inserted in the circuit to prevent chattering, be sure that chattering may be large depending on the switch.
- Do not use this connector for other than operation external output. Wrong use may cause not only damage to the printer but also bad effect on human body, peripheral equipment, etc.

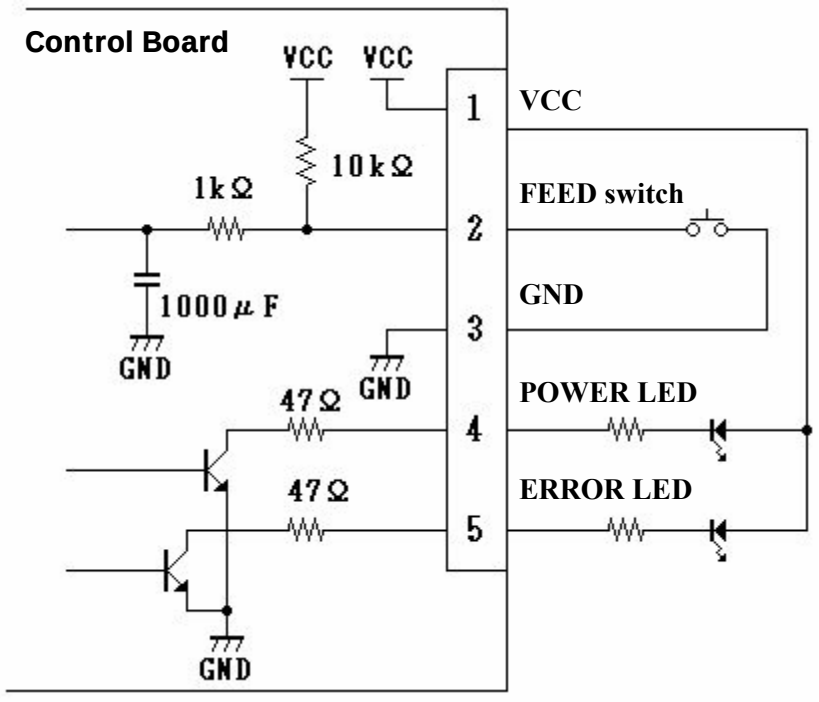


Figure Example of Connection

4. INTERFACES

4.1 RS-232C Serial Interface

4.1.1 Connector Pin Assignment (CN301)

Table Connector Connection (CN301)

No.	Signal	Input/Output	Function
1	NC	–	Non Connect
2	RD	Input	Receive data
3	TD	Output	Transmit data
4	DTR	Output	Printer BUSY signal
5	GND	–	GND for signal
6	DSR	Input	Dataset Ready
7	RTS	Output	Printer BUSY signal
8	NC	–	Non Connect
9	NC	–	Non Connect

Adaptable connector (D-Sub connector)

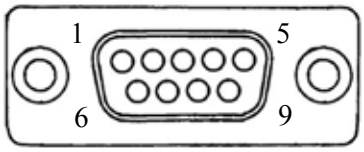


Figure CN301 Connector

Printer side: 17LE-23090-027 (DDK or equivalent)
Cable side: 17JE-13090-02 (DDK or equivalent)
* Note: Signal for RS-232C complies with EIA RS-232C.

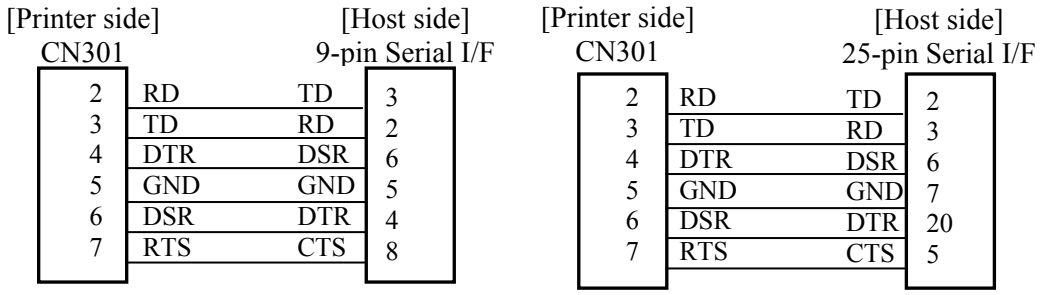


Figure Connection to 9 / 25-pin Serial Port

*When connecting it besides 9 / 25-pin Serial Port, confirm each signal and connect it correctly.

4.1.2 Specifications

Table Specifications

Item		Specifications
Synchronization system		Asynchronous
Baud rate		1200, 2400, 4800, 9600, 19200, 38400,57600,115200bps (user selection) *1200、38400、57600、115200bps can be set by Customize Value. When baud rate is 115200bps, the stop bit of host side is set '2'. Or, the parit bit of host side and printer side is set 'odd'or 'even'.
1 Word compositi on	Start bit	1 bit
	Data bit	7 bits or 8 bits (user selection)
	Parity bit	Odd, even, or no parity (user selection)
	Stop bit	1 bit or more
Signal polarity RS-232C	Mark	Logical "1" (–3V to –12V)
	Space	Logical "0" (+3V to +12V)

4.1.3 Description of Input/Output Signals

1) Input/output signal

Table Input/output signal

<table>
<tr><th>Signal</th><th>Function</th></tr>
<tr><td>RD</td><td>Receive data
TD signal irregularly caused when the printer is connected to the host, when the host power is turned on or off, etc. is treated as Break signal while other data are discarded.
(Turning the host off causes unstable status of TD depending on the host. Printing of unstable TD is prevented.)</td></tr>
<tr><td>TD</td><td>Transmit data</td></tr>
<tr><td>DSR</td><td>When DTR/DSR control is selected, data is transmitted after confirming that this signal is Space.
When XON/XOFF control is selected, data is transmitted with DSR ignored.</td></tr>
<tr><td>DTR, RTS</td><td>Space indicates the BUSY state of the printer and Mark indicates that the printer is ready for reception.
The condition for BUSY can be changed by the setting (MSW1-3).

<table>
<tr><th>No.</th><th>Condition for DTR</th></tr>
<tr><td>1</td><td>From reset (including reset by NV memory write command, I/F signal, and test print command) or just after printer power on till the printer enters the ready state</td></tr>
<tr><td>2</td><td>During self-printing</td></tr>
<tr><td>3</td><td>Input buffer full state (Refer to 2) Buffer full state.)</td></tr>
<tr><td>4</td><td>While the platen is open</td></tr>
<tr><td>5</td><td>While paper is being fed by the FEED switch</td></tr>
<tr><td>6</td><td>When waiting for pressing of the FEED switch at the execution of a macro</td></tr>
<tr><td>7</td><td>No Paper state</td></tr>
<tr><td>8</td><td>Error state</td></tr>
</table>

Under the conditions 1 to 3 above, the printer becomes BUSY regardless of the setting of memory switch. (MSW1-3 ON: The printer does not become BUSY state regardless of the setting.)
When XON/XOFF control is selected, however, Mark state occurs under the conditions of 1 and 2. In other condition, Space state is caused. This is used for confirming the status of connection between the printer and the host. Under the conditions other than 3, the printer is in the offline state.

XON/XOFF output condition

<table>
<tr><th>No.</th><th>Send XON</th></tr>
<tr><td>1</td><td>From reset (including reset by NV memory write command, I/F signal, and test print command) or just after printer power on till the printer enters the ready state.</td></tr>
<tr><td>2</td><td>When input buffer full state is cleared. However, no output is given when the printer is in the offline state even if the memory switch is set to OFF.</td></tr>
<tr><td>3</td><td>When the printer changes from offline to online. However, no output is given in the buffer full state.</td></tr>
</table>

<table>
<tr><th>No.</th><th>Send XOFF</th></tr>
<tr><td>1</td><td>When the input buffer becomes buffer full state</td></tr>
<tr><td>2</td><td>When the printer changes from online to offline. However, no output is given in the buffer full state.</td></tr>
</table>
</td></tr>
</table>

2) Buffer full state
Buffer full state is given when the remainder of the input buffer is in the following state.

Table Input Buffer Full

Set value	Buffer full	Clear
4K bytes	Remaining 512 bytes	Remaining 544 bytes

When the remainder of the input buffer is 0 byte, the received data is discarded.

3) Data receive error
When any of the following error occurs, the data caused is printed with "?" or discarded. (Msw1-4)
- Parity error
- Flaming error
- Overrun error

*Note
When a command followed by Write FROM is used, the printer may possibly become DTR state temporarily at the time of writing. In this case, as the printer can process nothing, the transmitted data may be discarded.

4) Electrical characteristics
RS-232C circuit (MAX232 or equivalent)

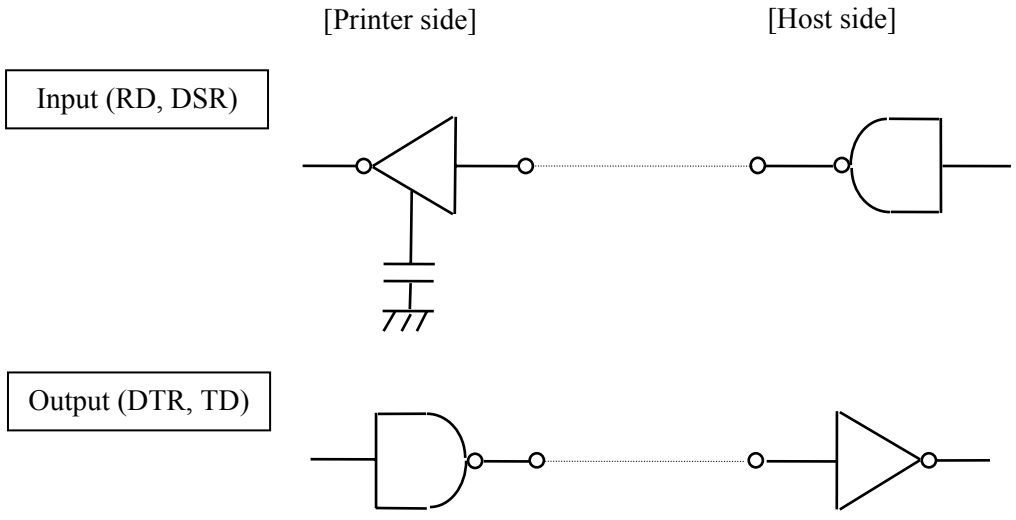


Figure Electrical characteristics

4.2 Bidirectional Parallel Interface (IEEE1284)

4.2.1 Connector Pin Assignment

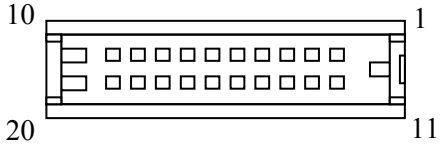


Figure CN401 Connector

Connector used: 53313-2065 (Monolex)

Table Connector Connection (CN401)

No.	Input/Output	Signal
1	Input	nSTB
2	Input/Output	DATA0
3	Input/Output	DATA1
4	Input/Output	DATA2
5	Input/Output	DATA3
6	Input/Output	DATA4
7	Input/Output	DATA5
8	Input/Output	DATA6
9	Input/Output	DATA7
10	Output	nACK
11	Output	BUSY
12	Output	PE
13	Output	SELECT
14	Input	nAUTOFD
15	Input	nINIT
16	Output	nFAULT
17	Input	nSELECTIN
18	—	GND
19	—	GND
20	—	+5V

4.2.2 Specifications of Supplied Cable for I/F Wiring

Table Cable Specifications

Item	Specifications
Housing used	51089-2005
Terminal used	50212 (Molex)
Cable used	AWG26 (UL1007) or equivalent
Cable length	300 mm (without cable-end treatment)

4.2.3 Connection to Parallel Port

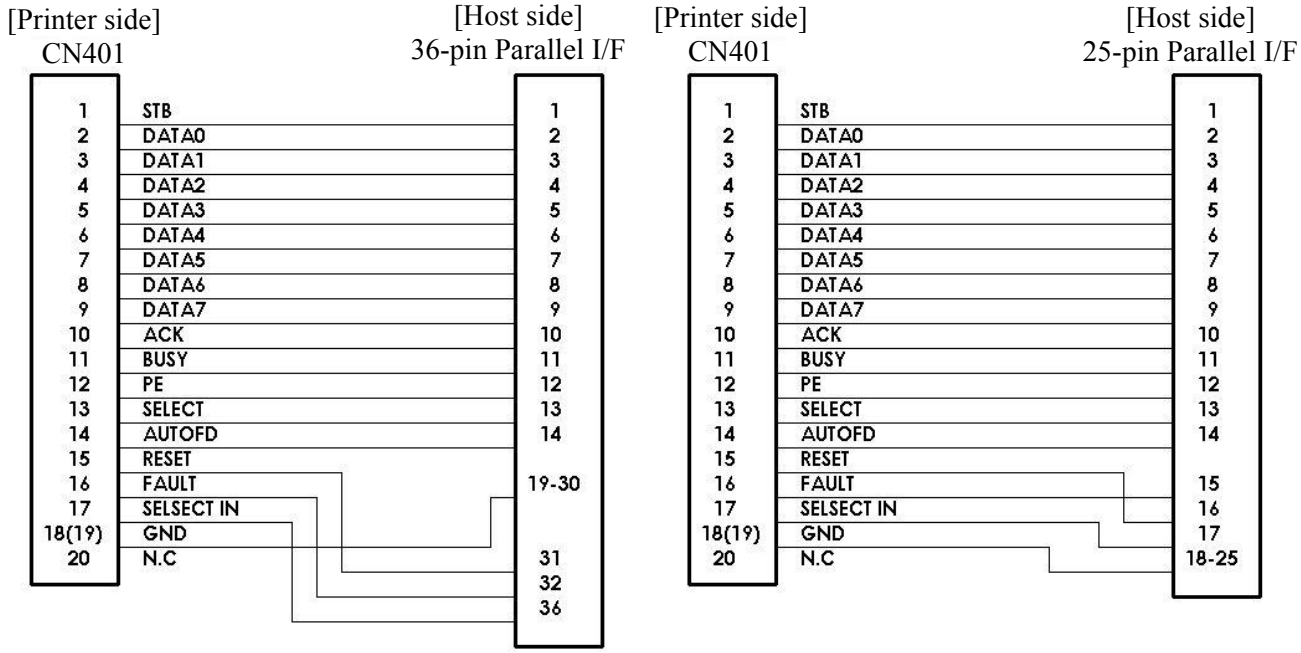


Figure Connection to 36 / 25-pin Parallel Port

* When you want to connect to the connector other than the above, be careful not to make a mistake by confirming the status of each signal.

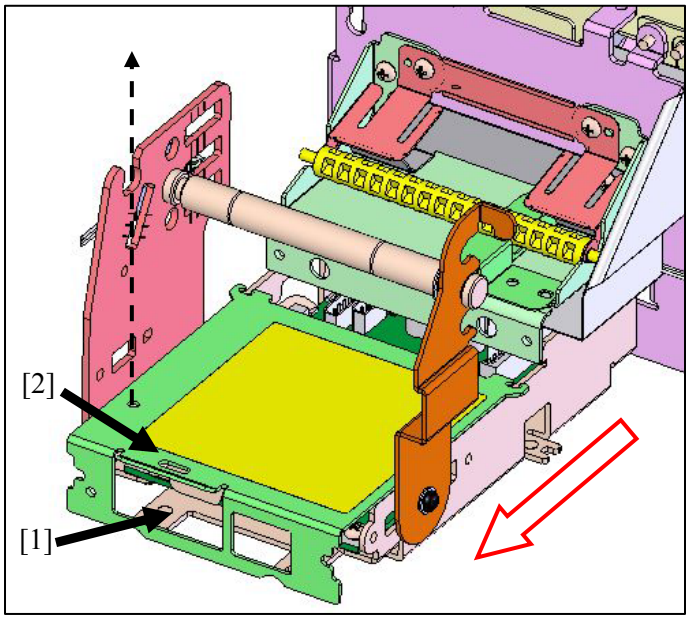


Figure Opening of Main board cover

CN401 is located on the Main Board. To access the Main Board, remove the screw holding the main board cover and slide the main board cover.

Precautions

- Before the work, remove the paper and unplug the interface and power connectors.
- Let the wiring go outside through the opening in [1].
- After wiring, fix the cable with a cable tie using the hole [2] to prevent the cable from being pulled from the outside.
- Be careful not to pinch wiring by the closure of the cover.
- After work, be sure to close the main board cover. Avoid operation with the main board exposed.
- Do not use this port for other than communication. Wrong use may cause not only damage to the printer but also bad effect on human body, peripheral equipment, etc.

4.2.4 Specifications

1) Compatibility Mode (Host → Printer communication: Centronics-compliant)

[1] General
Compatibility Mode specifies the Centronics interface widely used conventionally.

[2] Specifications

Table Cable Specifications

Item	Specifications
Data transmission system	8-bit parallel
Synchronization system	By nSTROBE signal supplied externally
Handshake	By nACK signal and BUSY signal
Signal level	All signals are TTL compatible.

2) Reverse Mode (Printer → Host communication)
Transmitting status data from this printer to the host is made by Nibble or Byte mode.

[1] General
Reverse Mode specifies the data transmission from asynchronous printer controlled by the host.
Data transmission in Nibble Mode is carried out through existing control line in units of 4 bits (Nibble). With Byte Mode, data transmission is carried out by using the 8-bit data line in bidirectional mode. In any case, concurrent execution with Compatibility Mode is impossible and communication is carried out in half duplex mode.

[2] Precautions
The first "n" of a signal name indicates "LOW" active signal. Without any one of the above signals, bidirectional communication cannot be implemented. For interface, always use twisted-pair lines for each signal line and connect the return side to the signal ground level. All the interface conditions shall be standard at the C-MOS level and shall meet the following characteristics. The rise time and the falling time of each signal shall be 0.5 μs. Data transmission with nAck signal or Busy signal ignored shall be avoided. If such a signal is ignored, data may be lost. The interface cable shall be in the minimum necessary length.

4.2.5 Description of Input/Output Signals

1) Input/Output Signals
Description of input/output signal

[1] Input/output signal (Compatibility Mode)

I. Input signal to printer

Table Input signal to printer

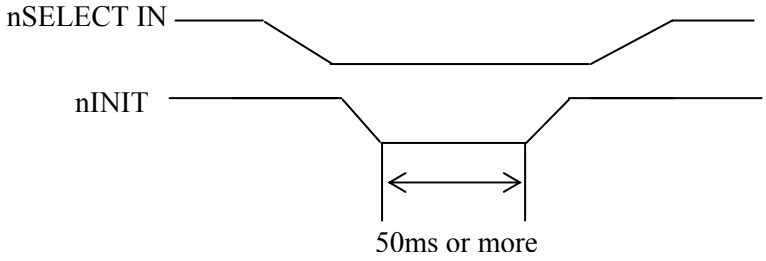
Signal	Function
DATA0 - 7	8-bit parallel signal (Positive logic)
nSTROBE	Strobe signal to read 8-bit data (Negative logic)
nINIT	Causes a reset by the nINIT signal in the Compatibility Mode. (This signal can be enabled by the setting: MSW3-3) 
nSELECT IN	A signal to make “HIGH” when transferring to the IEEE1284 mode. (Negative logic) However, nINIT signal is invalid with nSelectIn/1284-Active “HIGH”.

Figure nINIT Signal

II. Output signal to printer

Table Output signal from the printer

Signal	Function
nACK	8-data request signal (Negative logic)
BUSY	A signal to indicate the Busy state of the printer No. / BUSY conditions 1 / From reset (including reset by NV memory write command, I/F signal, and test print command) or just after printer power on till the printer enters the ready state 2 / During self-printing 3 / Input buffer full state (Refer to 4) Buffer full state.) 4 / While the platen is open 5 / While paper is being fed by the FEED switch 6 / When waiting for pressing of the FEED switch at the execution of a macro 7 / No Paper state 8 / Error state Under the conditions 1 to 3 above, the printer becomes BUSY regardless of the setting of memory switch. The printer does not become BUSY state regardless of the setting.
SELECT	Always Active (“HIGH”)
nFAULT	A signal to set “LOW” when the printer is in the error state. (Negative logic)
PE	A signal output with No Paper or Near-End condition (by command setting).(Positive logic)

* Note
When a command followed by Write FROM is used, the printer may possibly become BUSY state temporarily at the time of writing. In this case, as the printer can process nothing, the transmitted data may be discarded.

[2] Power relations

Table Power relations

Signal	Function
+5VDC	5V pulled up by the 3.3-kΩ resistance
GND	GNE for signal (common ground on the circuit)
FG	Ground for safety (Case ground)

2) Electrical characteristics

[1] Input signal level (nStrobe, Data0～7)
All the input signals are at the C-MOS level.

Table Input signal level

Signal	"HIGH" level	"LOW" level
DATA line	2.0V MIN	0.8V MAX
Other than DATA line	3.5V MIN	1.5V MAX

[2] Output signal level
All the output signals are at the C-MOS level.

Table Output signal level

Signal	"HIGH" level	"LOW" level
DATA line	4.4V MIN	0.1V MAX
Other than DATA line	4.9V MIN	0.1V MAX

[3] Input/output condition
All the input/output signals other than STB signal are pulled up by 3.3 kΩ.
*STB signal is pulled up by 1.2 kΩ.

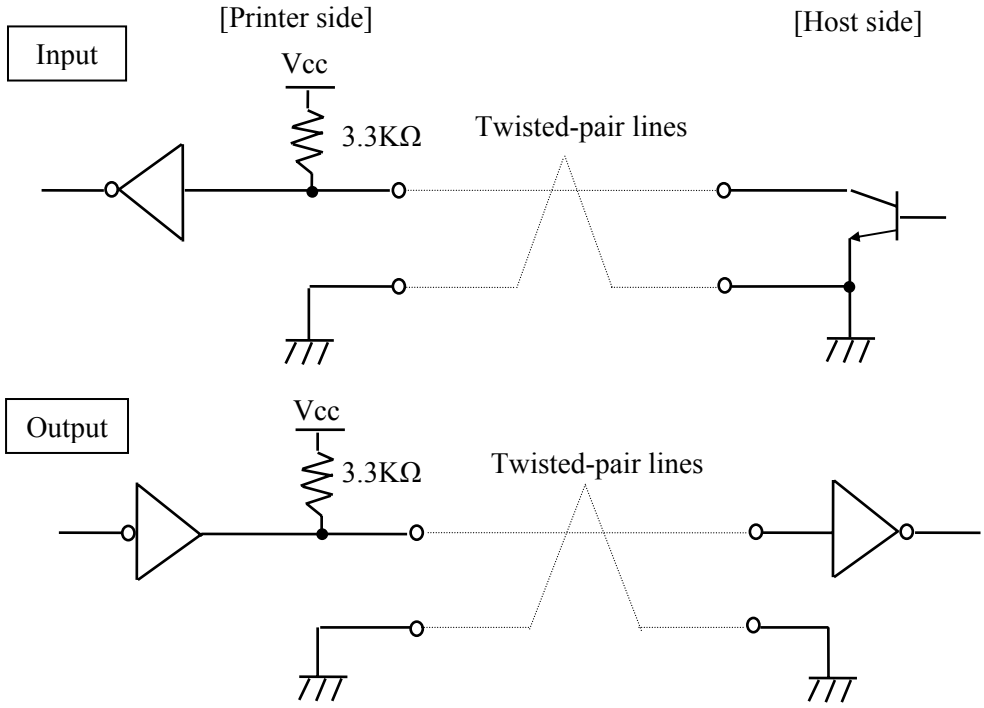


Figure Input/output condition

3) Buffer full state
When the remaining capacity of the input buffer is in the following state, the printer is in the Buffer full state.

Table Input Buffer Full

Set value	Buffer full	Clear
4K bytes	Remaining 384 bytes	Remaining 512 bytes
45 bytes	Remaining 16 bytes	Remaining 26 bytes

- When the remainder of the input buffer is 0 byte, the received data is discarded.

4) Status transmission from the printer

Status can be transmitted in the Reverse Mode (Nibble/Byte) mode. (With GS a n, DLE EOT n, GS r, GS I n commands used)

- Printer transmitting buffer is in 99 bytes. The host shall be transferred to the Reverse Mode to prevent occurrence of missing status. Though Reverse Idle state is recommended when using ASB, presence or absence of printer transmission data must always be monitored if Reverse Mode is not available. ASB status accumulated instead of being transmitted is transmitted in a lump (OR) of latest statuses.

- Each status information can be identified as shown below.

Table Identification of Status

Command, Code	Status
GS I	<0**0****>B
GS r	<0**0****>B
XON	<00010001>B
XOFF	<00010011>B
DLE EOT	<0**1**10>B
ASB (First byte)	<0**1**00>B
ASB (Second byte)	<0**0****>B

4.3 USB Interface

4.3.1 Connector Pin Assignment (CN201)

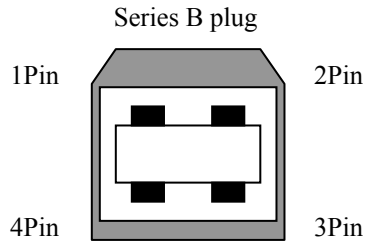


Figure CN201 Connector

Note: Do not use a cable longer than 5m.

Table Connector Connection (CN201)

No.	Signal
1	VBus(+5V)
2	–Data(D–)
3	+Data(D+)
4	GND

4.3.2 Specifications

Table Specifications

Item	Specifications
Overall specifications	Based on the specification of USB1.1
Communication speed	USB full-speed mode (12 MHz)
Communication system	USB bulk transfer system
Power specifications	0 mA (All are supplied from the printer.)

The USB mode function can be set by MSW5-3.

Table USB Mode Memory Switch Setting

No.	Function	OFF	ON
MSW5-3	USB Mode	Virtual COM	■Printer Class

■: Default (Factory set)

*Operates by using the USB port of Windows PC as virtual COM port (RS-232 communication port) by the driver.

The VCom Flow Protocol function can be set by MSW7-7.

Table VCom Flow Control Memory Switch Setting

No.	Function	Contents of Setting	
MSW7-7	VCom Protocol	■PC Setting	DTR/DSR
		XON/XOF	—

■: Default (Factory set)

5. Destination

Destination is as follows.

5.1 Memory Switch Setting

Memory Switch Setting is as follows.

Table Destination Memory Switch Setting

Destination	MSW9-1 Code Page	MSW9-2 Int'Char Set	MSW9-3 Kanji
J : Japan	Katakana	Japan	ON
U: US/EU/Other	PC437	U.S.A	OFF

5.2 Other

Serial Interface Model

The screws of Serial Interface connecter are different according to destination.

Table The screws of Serial Interface connecter

Destination	ROM version	The screw
J : Japan	PMU2□□□Ⅱ□－RJ□－□□□	Millimeter
U: US/EU/Other	PMU2□□□Ⅱ□－RU□－□□□	Inch

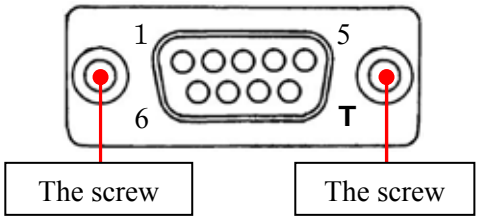


Figure CN301 Connector (Serial Interface)

5.3 ROM version

ROM version is as follows. It is not possible to change.

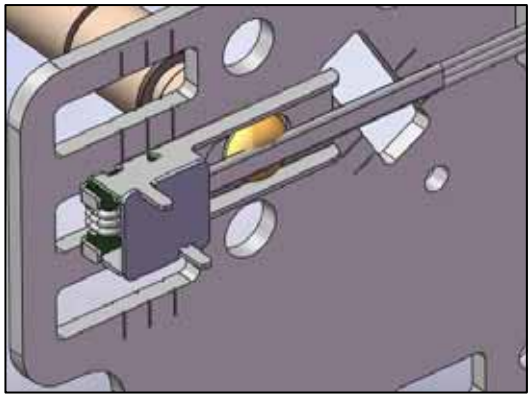
Table Destination ROM version

Destination	ROM version
J : Japan	DC00-XXXX
U: US/EU/Other	DC01-XXXX

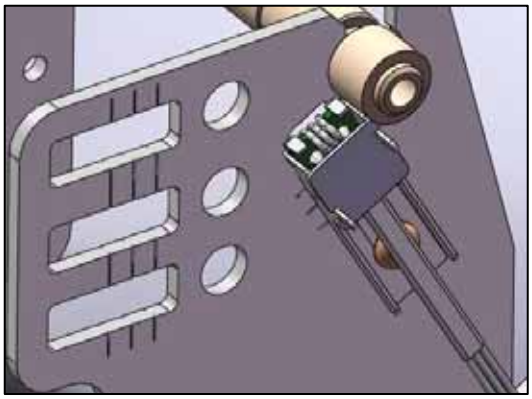
* The difference of ROM version is only the self-printing (Refer to P 40.).
* The difference of the function of the Destination is only 5.1 Memory Switch Setting.

6. PAPER NEAR-END (PNE) Sensor * (Option)

6.1 Specifications



L: Insert from left (R: Insert from right)



T: Insert from top

Figure PNE Sensor position

- The PNE Sensor Setting position is different in the direction of paper insertion
- The factory-set PNE Sensor setting position is on “the scale second to the axis”.
- The PNE Sensor is connected with CN108 on Main Board.

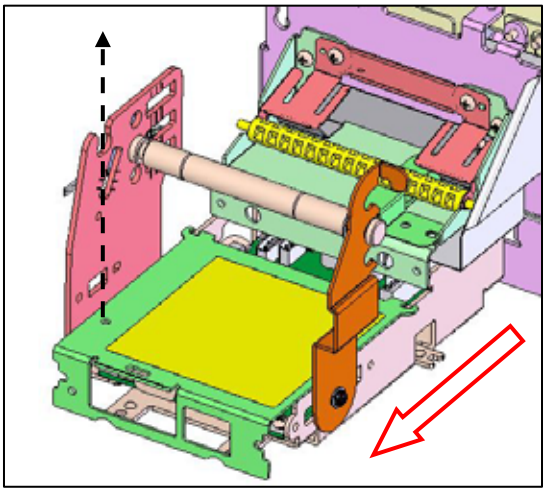


Figure Opening of Main board cover

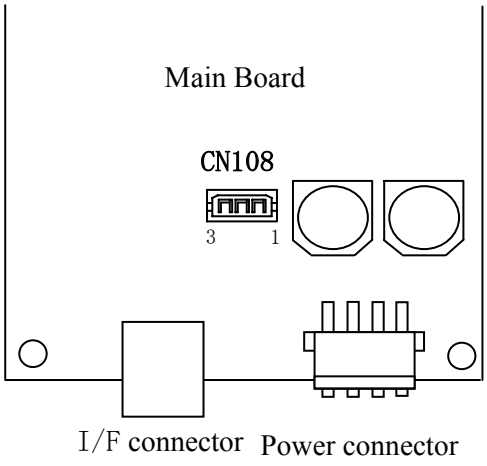


Figure Location of CN108 on Main Board

6.2 Memory Switch Setting

The PNE sensor function can be set to Enable or Disable by MSW2-8.

Table Memory Switch Setting

No.	Function	OFF	ON
MSW2-8	PNE Sensor	Valid	Invalid

6.3 Setting PNE Sensor

As the PNE sensor can be placed at any place, it can be set at the most appropriate position. Holding the paper shaft by hand, loosen the screw a little. Shift the PNE sensor position (by using the Δ mark and the scale). When the sensor position is determined, tighten the screw by holding the paper shaft by hand.

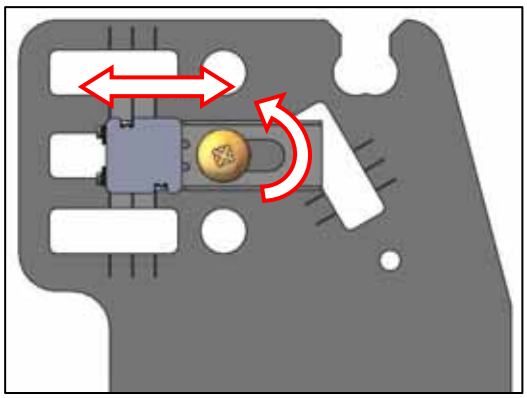


Figure Setting

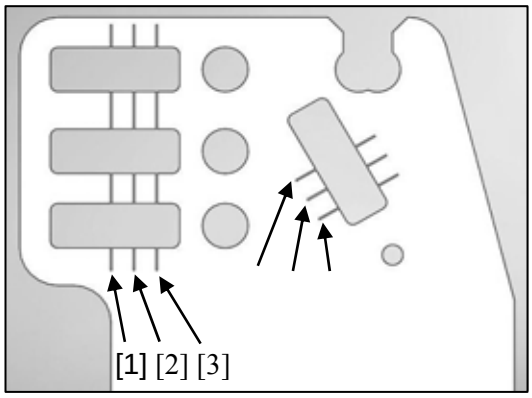


Figure Scale position

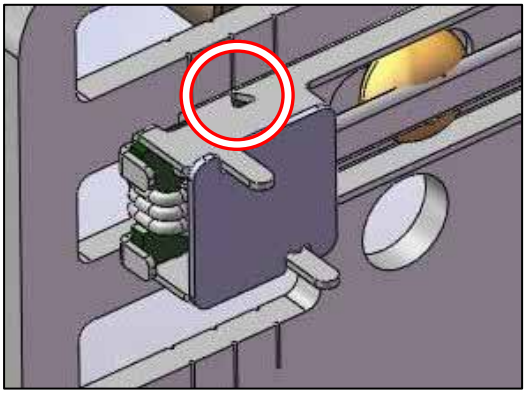


Figure Δ mark

Table Position of PNE Sensor Scale

Scale position		Paper diameter atthe detection (Reference)
[1]	Scale closest to axis	∅18mm
[2]	Scale second close to axis	∅25mm
[3]	Scale third close to axis	∅31mm

6.4 Note

- As the PNE sensor may malfunction due to external disturbing light, pay attention to install a light shielding cover, etc. to prevent entry of external disturbing light when using the PNE sensor.
- As the value of "Roll paper external diameter at the detection of PNE sensor" varies depending on the printer body or type of roll paper, it must be handled as reference.
- In case of roll paper using honeycomb core, when paper near-end is detected at the place away from the outer diameter of the above roll paper, adjustment of setting position is required.
- The relationships between scale and remaining paper are shown in the table below.
- Do not use PNE sensor other than that made by our company. Wrong use may cause not only damage to the printer but also bad effect on human body, peripheral equipment, etc.
- As 3-in 60mm Horizontal Insert from left Mode, PNE cannot be detected by the space of Paper－PNE sensor Therefore the following do not exist.

3-in 60mm Horizontal Insert from left Model with PNE sensor

PMU2310Ⅱ□-□□P(M1)-□R□

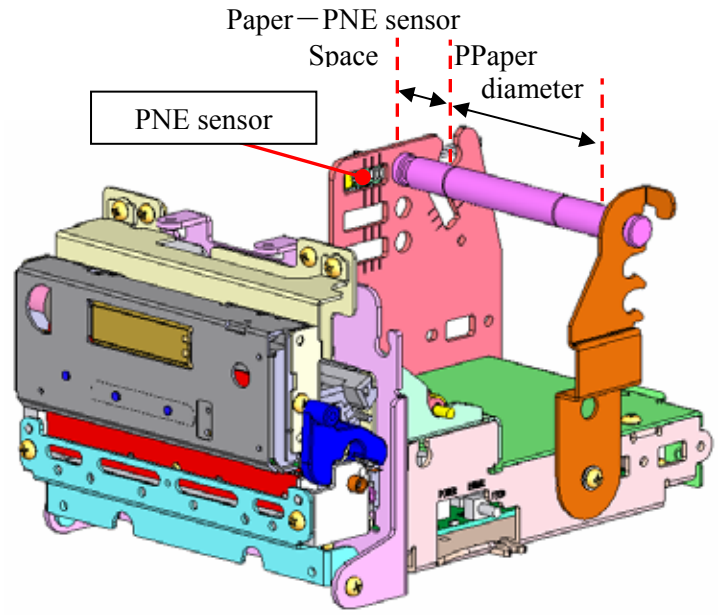


Figure 3-in 60mm Horizontal Insert from left Model

7. FUNCTION SELECTION

When using this control board, some functions can be set as default values.

7.1 DIP Switch (Only Serial Interface)

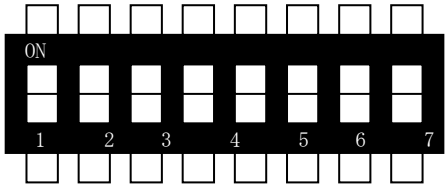


Figure DIP Switch (SW301)

The DIP switch is located on the RS-232C serial interface board.
Before changing the DIP switch setting, turn the printer power off.

Table DIP Switch

Switch No.	Function	ON	OFF
1	Selects setting of communication condition.	Follows DIP switch setting.	■ Follows customer value setting.
2	Hand shake	XON/XOFF	■ DTR/DSR
3	Bit length	7 bits	■ 8 bits
4	Parity check	With parity check	■ No parity check
5	Selects parity.	Even	■ Odd
6	Selects baud rate.	Refer to Selecting Baud Rate in Attached Table.	
7			
8	Reserved	–	■ Fixed

■: Default (Factory set)

Table Baud Rate Selection

Switch No. / Baud rate (bps)	6	7
2400	■ OFF	■ OFF
4800	ON	OFF
9600	OFF	ON
19200	ON	ON

■: Default (Factory set)

Other baud rate (1200, 38400, 57600, 115200 bps) can be set by Mamory Switches.

Table Baud Rate Selection when firmware is downloaded

Switch No. / Baud rate (bps)	6	7
115200	■ OFF	■ OFF
9600	ON	OFF
19200	OFF	ON
38400	ON	ON

■: Default (Factory set)

7.2 Memory Switches

Memory switch is a generic name for the following. Memory switches MSW1, MSW2, MSW3, MSW4, MSW5,Customize value, Serial interface communication condition.

1) Memory switches MSW1, MSW2, MSW3, MSW4,MSW5

Table Memory Switch Setting

No.	Function	OFF	ON
MSW1-1	Power ON Info	■Valid	Not Send
MSW1-2	Buffer Size (* Note 1)	■4Kbytes	45bytes
MSW1-3	BUSY condition	■Full/Err	Full
MSW1-4	Receive Error	■Print "?"	No Print
MSW1-5	CR mode	■Gnored	LF
MSW1-6	Reserved	■Fixed	—
MSW1-7	DSR Signal.	■Invalid	Valid
MSW1-8	Reserved	■Fixed	—
MSW2-1	Reserved	—	■Fixed
MSW2-2	Auto Cutter	Invalid	■Valid
MSW2-3	Spool Print	■Invalid	Valid
MSW2-4	Full Col print	■LineFeed	WaitData
MSW2-5	Resume aft PE	■Next	Top
MSW2-6	Paper width (* Note 2)	80mm	58 mm
MSW2-7	Reserved	Fixed	—
MSW2-8	PNE Sensor	Valid	■Invalid
MSW3-1	Resume Cttr Err	■Valid	Invalid
MSW3-2	Reserved	■Fixed	—
MSW3-3	Parallel 31 Pin	■Valid	Invalid
MSW3-4	Paper Select.	■Thermal	Black MK
MSW3-5	Column Number	■48/36 col	42/32 col
MSW3-6	Reserved	■Fixed	—
MSW3-7	CBM1000 Mode	■Invalid	Valid
MSW3-8	Resume Open Err	■Close	Command

■: Default (Factory set)

Note 1 As for Parallel I/F and USB I/F, the input buffer always becomes 4Kbytes regardless of the setting.

Note 2 Paper width is limited by the setting of MSW4-5 Mechanism mounted. Paper width 80 mm must not be selected when LT-22XX is selected by MSW2-6 Paper width. If selected, the operation is outside the warranty.

Table Memory Switch Setting

No.	Function	OFF	ON
MSW4-1	Auto Length	Invalid	■Valid
MSW4-2	Auto Loading	Invalid	■Valid
MSW4-3	Feed&Cut at TOF	Invalid	■Valid
MSW4-4	Base style (* Note 3)	■PMU2xx0/2	PMU2xx1
MSW4-5	Mechanism mounted	LT-23xx	LT-22xx
MSW4-6	Reserved	■Fixed	—
MSW4-7	Reserved	■Fixed	—
MSW4-8	Partial Only	■Invalid	Valid
MSW5-1	Reserved	■Fixed	—
MSW5-2	Reserved	■Fixed	—
MSW5-3	USB Mode	Virtual COM	■Printer Class
MSW5-4	Reserved	■Fixed	—
MSW5-5	Reserved	■Fixed	—
MSW5-6	Speed / Quality	■Speed	Quqlity
MSW5-7	Reserved	■Fixed	—
MSW5-8	Reserved	■Fixed	—

■: Default (Factory set)

Note 3: As the distance from BM sensor to print head differs by PMU2XX0 (Horizontal), PMU2XX2 (vertical on back), or PMU2XX1 (vertical on front), set to comply with the specification (enabled only with Black mark model). If the setting is not correct, cut position or print start position may become abnormal.

2) Customize value
Customize value setting is available with GS (E command.

Table Serial Interface Communication Conditions

No.	Function	Contents of Setting	
MSW7-1	Baud Rate	1200 bps	2400 bps
		4800 bps	■9600 bps
		19200 bps	38400 bps
		57600 bps	115200 bps
MSW7-2	Data Length	7 bits	■8 bits
MSW7-3	Stop Bits	■1 bit	2 bits
MSW7-4	Parity	■NONE	EVEN
		ODD	—
MSW7-5	Flow Control	■DTR/DSR	XON/XOFF
MSW7-6	Reserved	—	—
MSW7-7	VCom Protocol	■PC Setting	DTR/DSR
		XON/XOF	—

■: Default (Factory set)

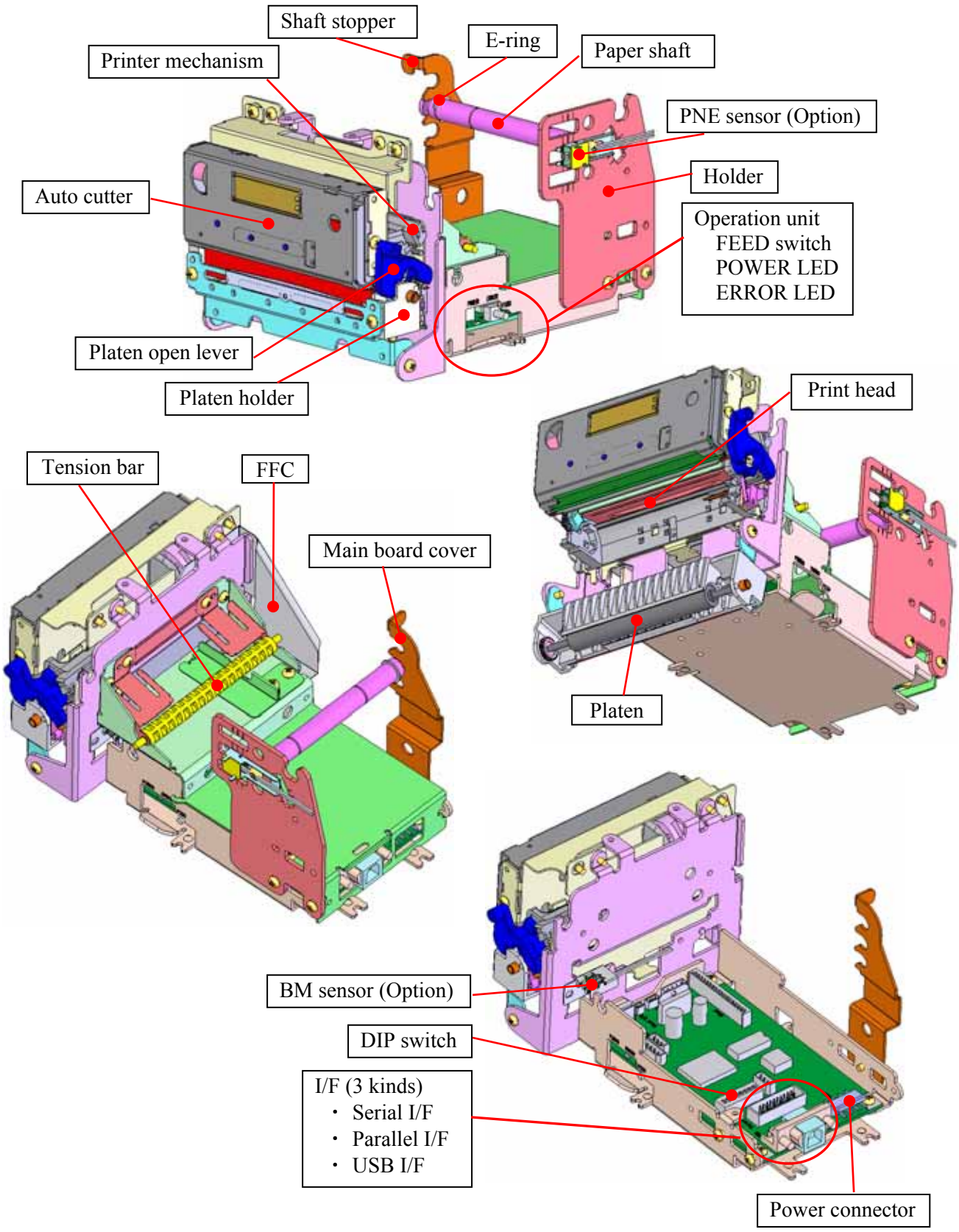
Table Customize Value

No.	Function	Contents of Setting	
MSW9-1	Code Page	■ PC437	Katakana
		PC850,858	PC860
		PC863	PC865
		PC852	PC866
		PC857	WPC1252
		PC864	Thai code 18
MSW9-2	Int'Char Set	■ USA	France
		Germany	England
		Denmark	Sweden
		Italy	Spain
		Japan	Norway
		Denmark 2	Spain 2
		Latin America	Korea
		Croatia	China
MSW9-3	Kanji	■ OFF	ON
MSW9-4	JIS / Shift JIS	■ JIS	Shift-JIS
MSW10-1	Print Density	70%	75%
		80%	85%
		90%	95%
		■ 100%	105%
		110%	115%
		120%	125%
		130%	135%
		140%	—
MSW10-2	Print Speed	Level 1	Level 2
		Level 3	Level 4
		Level 5	Level 6
		Level 7	Level 8
		■ Level 9	—
MSW10-3	Reserved	—	—

■: Default (Factory set) MSW9-1,9-2,9-3 differs by the destination.

8. OPERATING INSTRUCTIONS

8.1 Component Names



8.2 Precautions

8.2.1 Failures

[1] During printing or cutter operation, never touch the printer. Otherwise, injury to human body and/or printer or auto cutter breakage may occur.

[2] Static electricity may cause breakage of driver IC, etc. in the thermal head. Take sufficient grounding measure.

[3] Do not pull by force the paper set on the printer.

[4] As the heating element and driver IC of thermal head are fragile, do not apply metal nor sandpaper.

[5] Avoid blocking of paper exit. Do not touch the paper while the printer is printing.

[6] Avoid printing with head surface wetted by dew condensation, etc.

[7] Set paper straightforward without slack.

[8] Use the printer in the stable state without vibration.

8.2.2 Print quality

[1] In case of intermittent printing where printing or paper feed is suspended temporarily during printing because the printer is waiting for data from the host or in other case, paper feed may become irregular in 1 to 3 dot lines after the start of printing.

[2] Just after auto cutter operation, printing may become irregular in 1 to 3 dots at the top of the printing.

[3] With paper set, close the platen holder, and the printer performs cutting operation after feeding paper by several dots. Cutting operation does not occur when MSW4-3 is set to OFF.

[4] Do not touch the heating element of the print head by hand. Otherwise printing quality may be degraded by dirty finger.

[5] Do not use paper other than recommended. Otherwise, print quality or thermal head life may not be warranted. Especially, if the recording paper contains [Na+, K+, Cl-], thermal head life may be degraded extremely.

[6] Press the center part or both sides to close the platen holder securely. Closing the platen holder with one side pressed may cause single side closure, resulting in uneven printout.

8.2.3 Safety

[1] During printing and just after printing, the temperature of the print head and its periphery rise high. Never touch these places to avoid burning.

[2] Be careful in handling the edged portion of the printer components (especially cutter blade) to avoid injury.

[3] There is a cutter inside the paper exit. Never insert a finger into the paper exit not only during printer operation but also in non-operating state.

[4] Do not hold the following places.

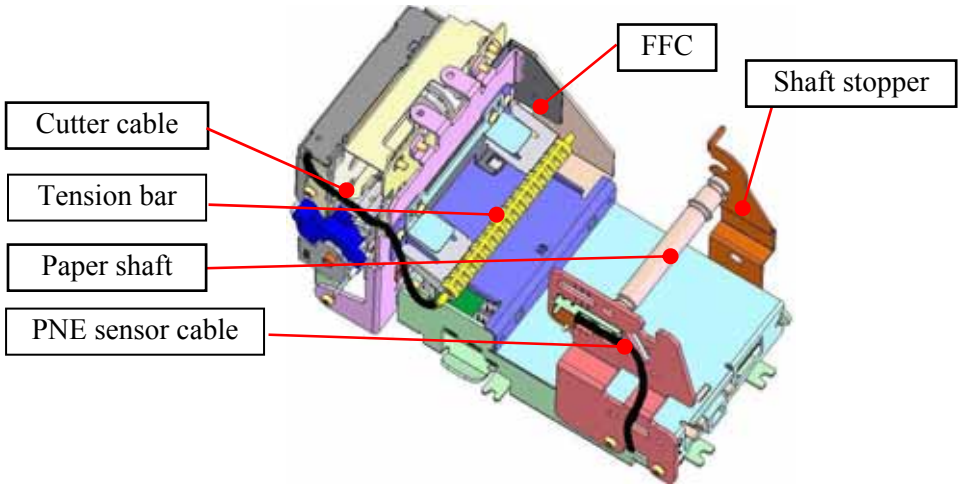


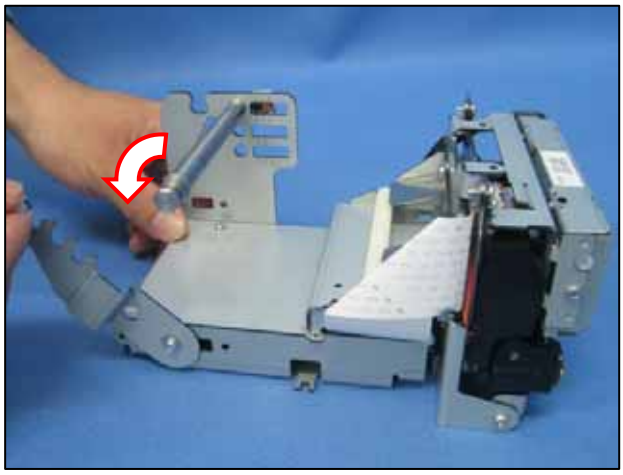
Figure Prohibition part

8.2.4 Other

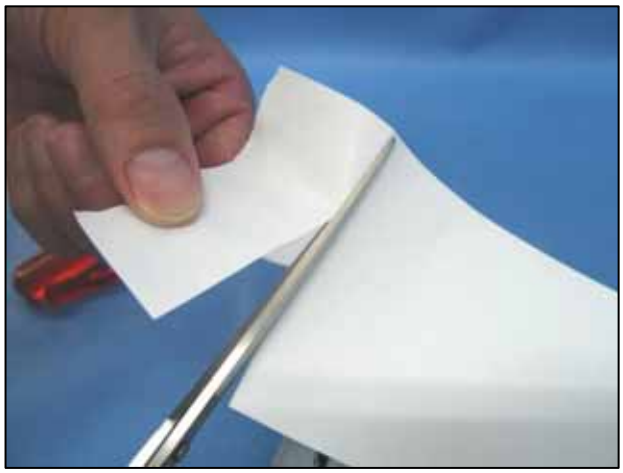
[1] As this printer adopts plated steel plate, rust may be caused at the edge. However, this has no bad effect on the printer performance.

8.3 Setting (Replacing) Paper

Replace paper in the following procedure.

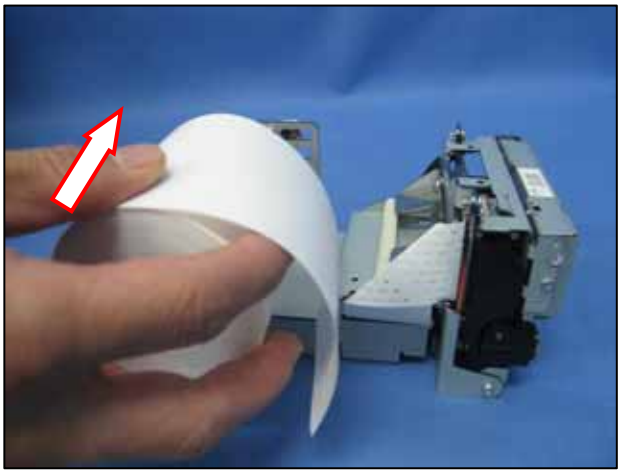


1) Remove the shaft stopper. If paper core remains, remove it.

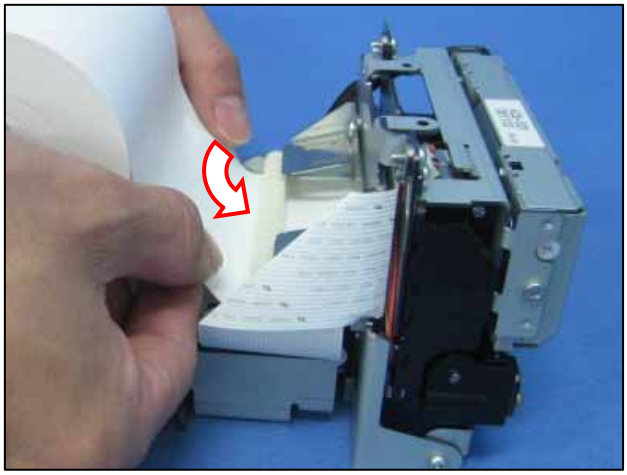


2) If the end of the replacement paper is uneven, cut it straight with scissors.

Horizontal Front Model

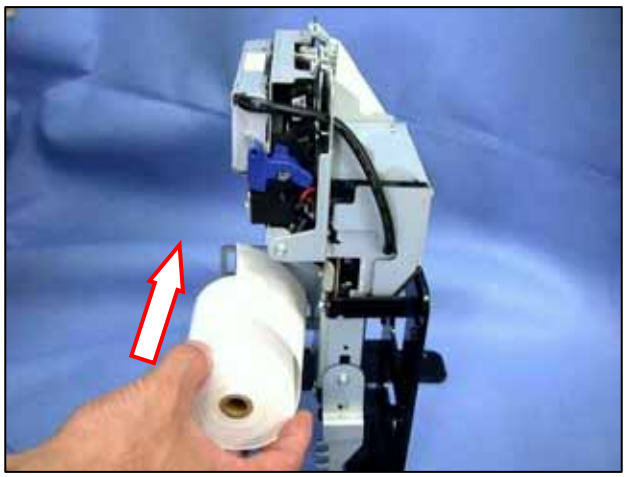


3) Observing the direction of paper winding, set the paper to the paper shaft till the core hooks the E-ring. Then press in the shaft stopper till it is locked.

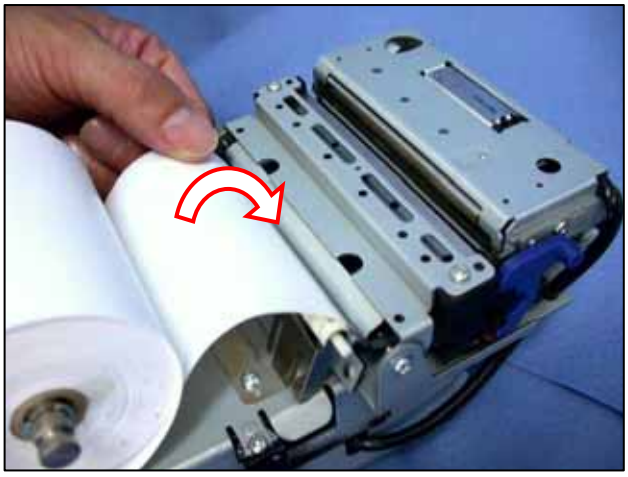


4) Insert the paper end into the paper slot. Then auto loading starts. (Auto loading does not occur when MSW4-2 is set to OFF.)

Vertical Front Model

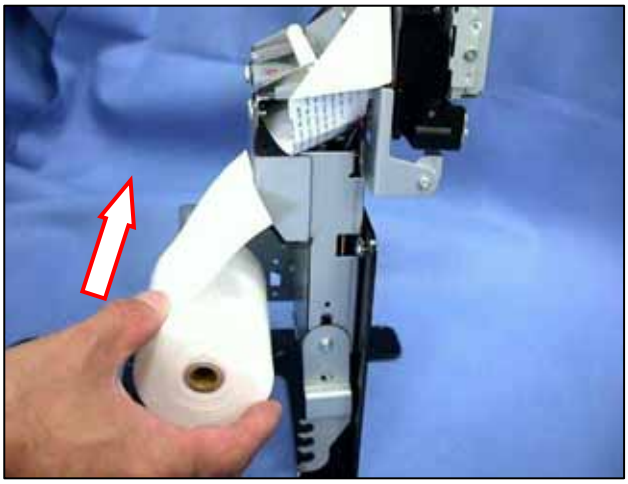


3) Observing the direction of paper winding, set the paper to the paper shaft till the core hooks the E-ring. Then press in the shaft stopper till it is locked.

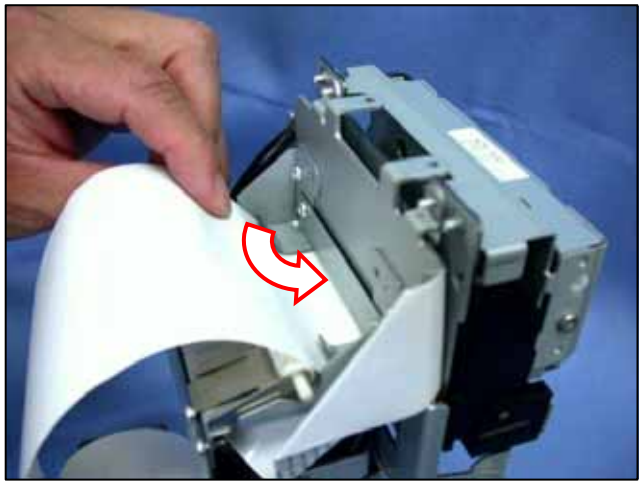


4) Insert the paper end into the paper slot. Then auto loading starts. (Auto loading does not occur when MSW4-2 is set to OFF.)

Vertical Back Model



3) Observing the direction of paper winding, set the paper to the paper shaft till the core hooks the E-ring. Then press in the shaft stopper till it is locked.



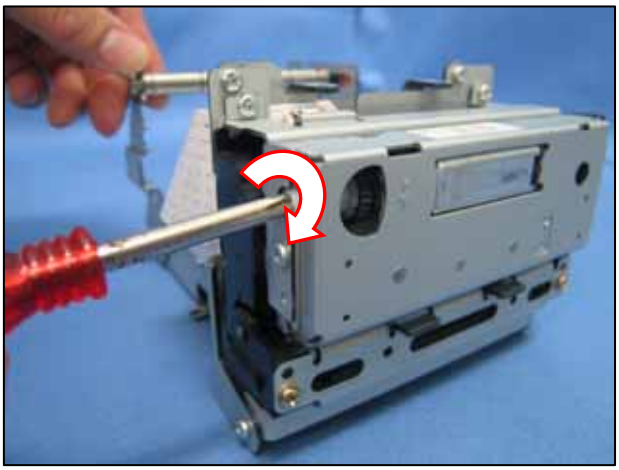
4) Insert the paper end into the paper slot. Then auto loading starts. (Auto loading does not occur when MSW4-2 is set to OFF.)

Precautions

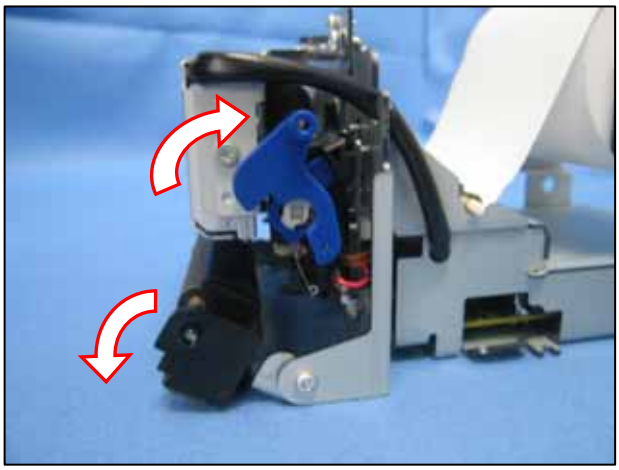
- Always use specified paper.
- When paper other than specified is used, the print quality and printer life may be outside the warranty.
- Set paper straightforward without slack.

8.4 Releasing Cutter Lock (Cutter Error)

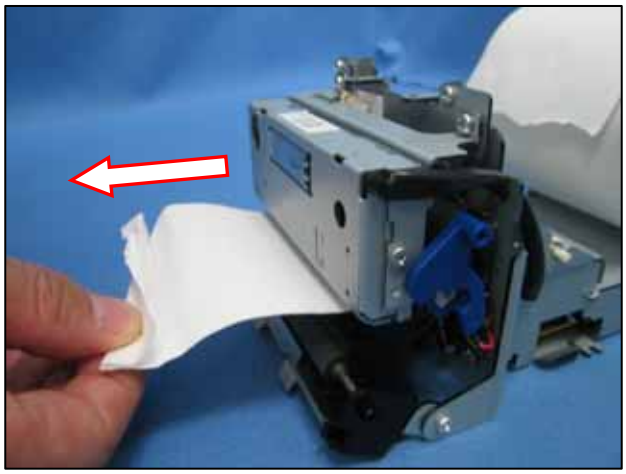
Use the following procedure to release the cutter lock (cutter error).



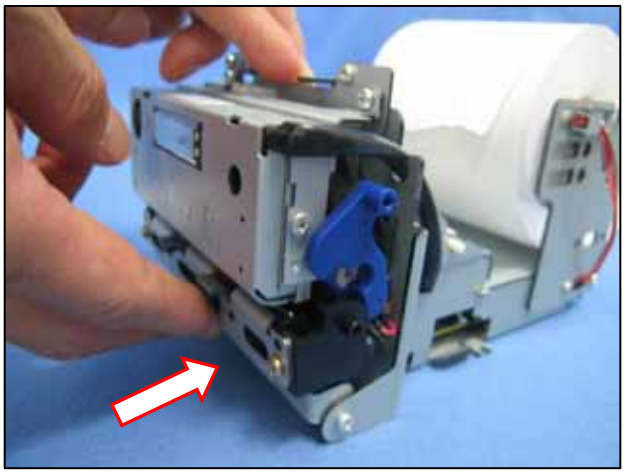
1) Turn the printer power off. Rotate the cutter motor by using a screwdriver to have the cutter blade rested.



2) Open the platen holder. Be careful not to have your finger pinched under it.



3) Remove the cause of cutter lock such as paper jam, etc.



4) Close the platen holder. Push the platen until it locks firmly. Then turn the printer power on and set paper.

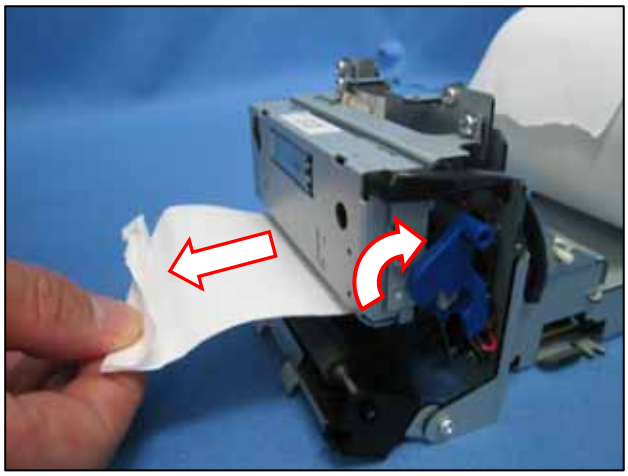
Precautions

- Cutter moving blade may be projected, be careful not to touch the cutter blade.
- Just after printing, the print head temperature is high. Be careful not to touch the print head.
- Never touch the surface of the heating element of the print head by bare hand or using metal or the like.

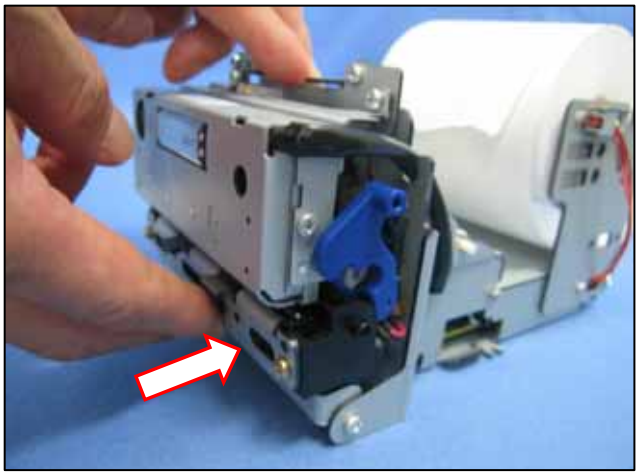
8.5 Removing Paper Jam

Remove paper jam in the following procedure.

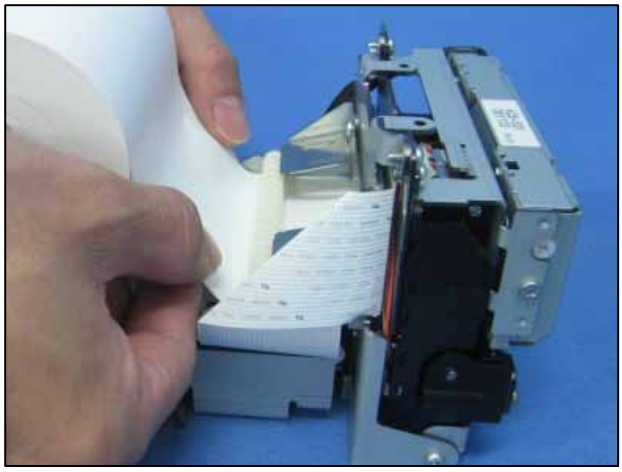
1) Turn the printer power off and cut the paper.



2) Open the platen holder and remove the cause of the paper jam.



3) Close the platen holder. Push in until it locks firmly.



4) Turn the printer power on and set paper.

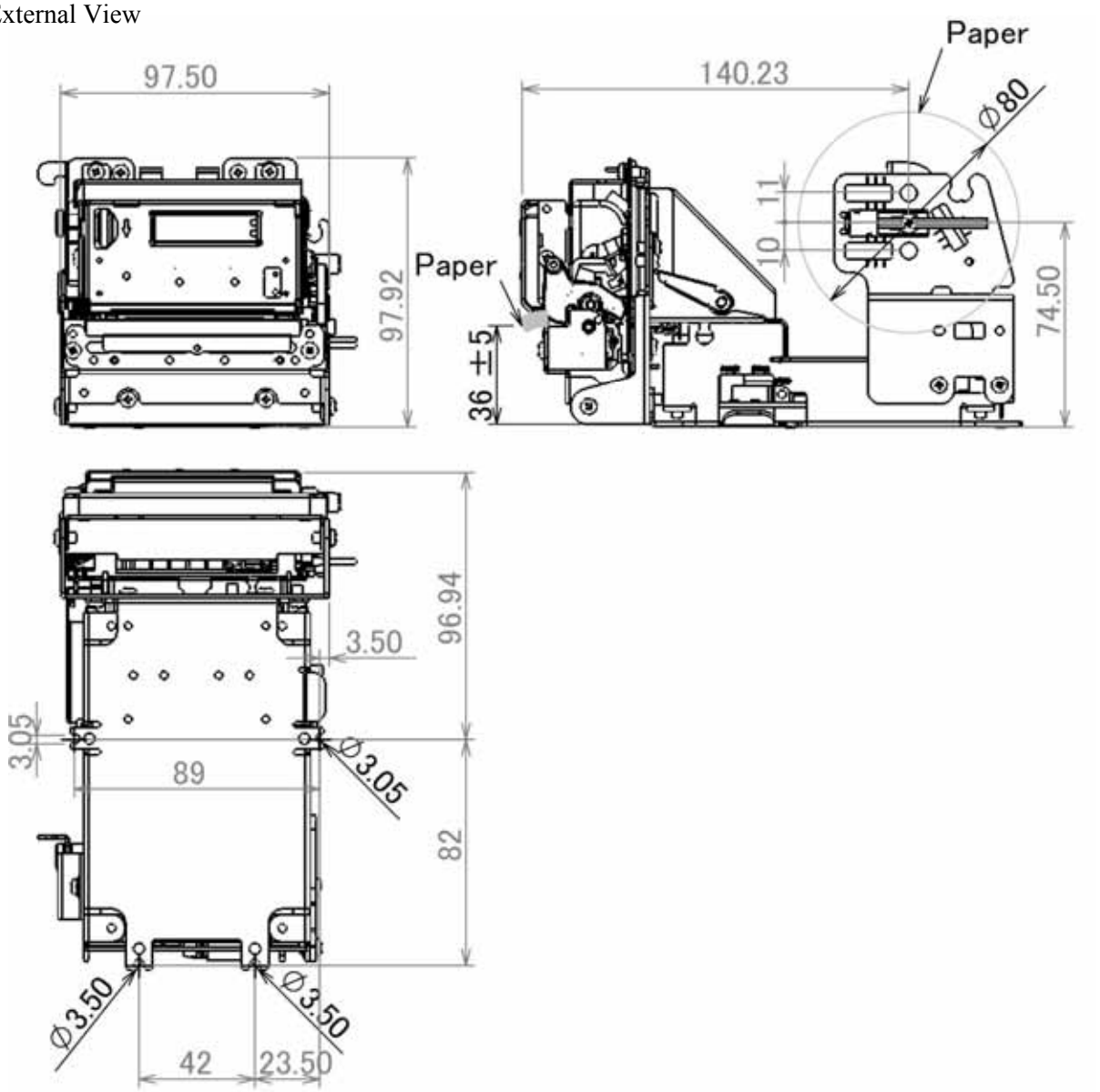
Precautions

- Be sure to turn the printer power off to remove paper jam.
- Just after printing, the print head temperature is high. Be careful not to touch the print head.
- Never touch the surface of the heating element of the print head by bare hand or using metal or the like.

9. APPEARANCE SPECIFICATIONS

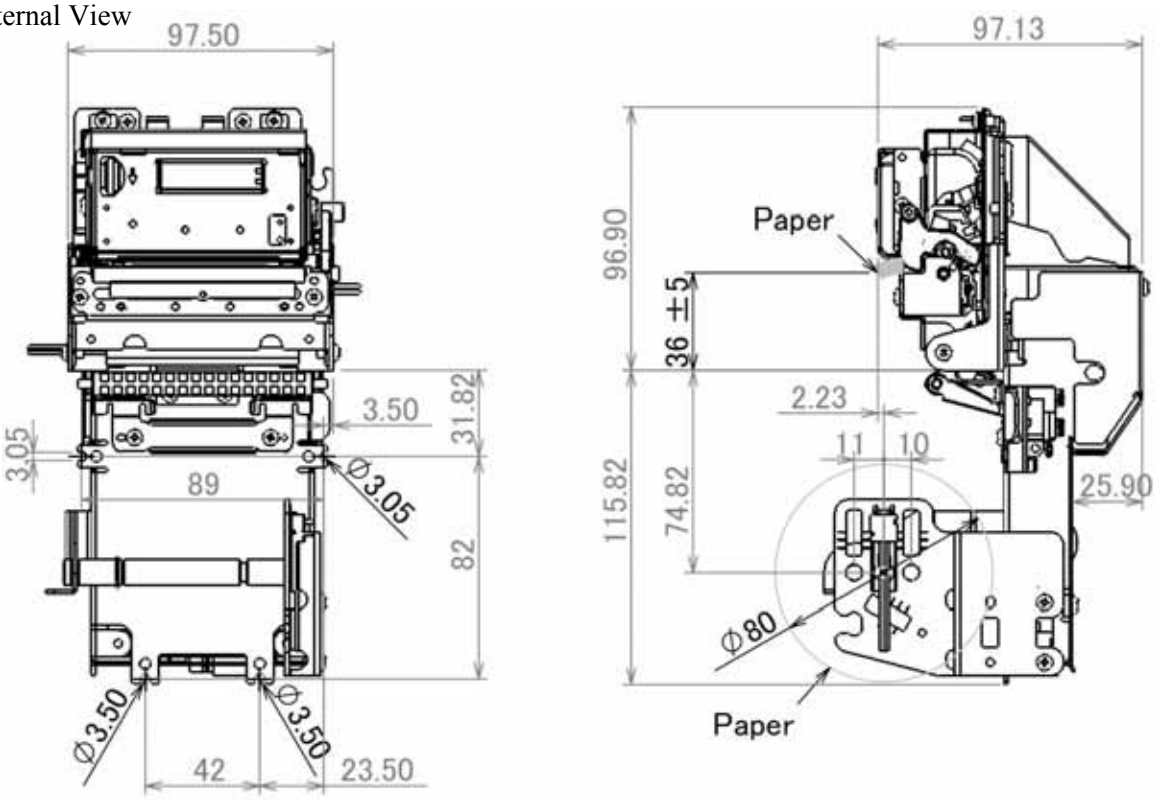
9.1 PMU2200II / 2210II Appearance Specifications (2-in. Mechanism-mounted, horizontal model)

1) Dimensions (mm): W98 × H98 × D179
2) Weight: Approx.1.0 kg
3) External View



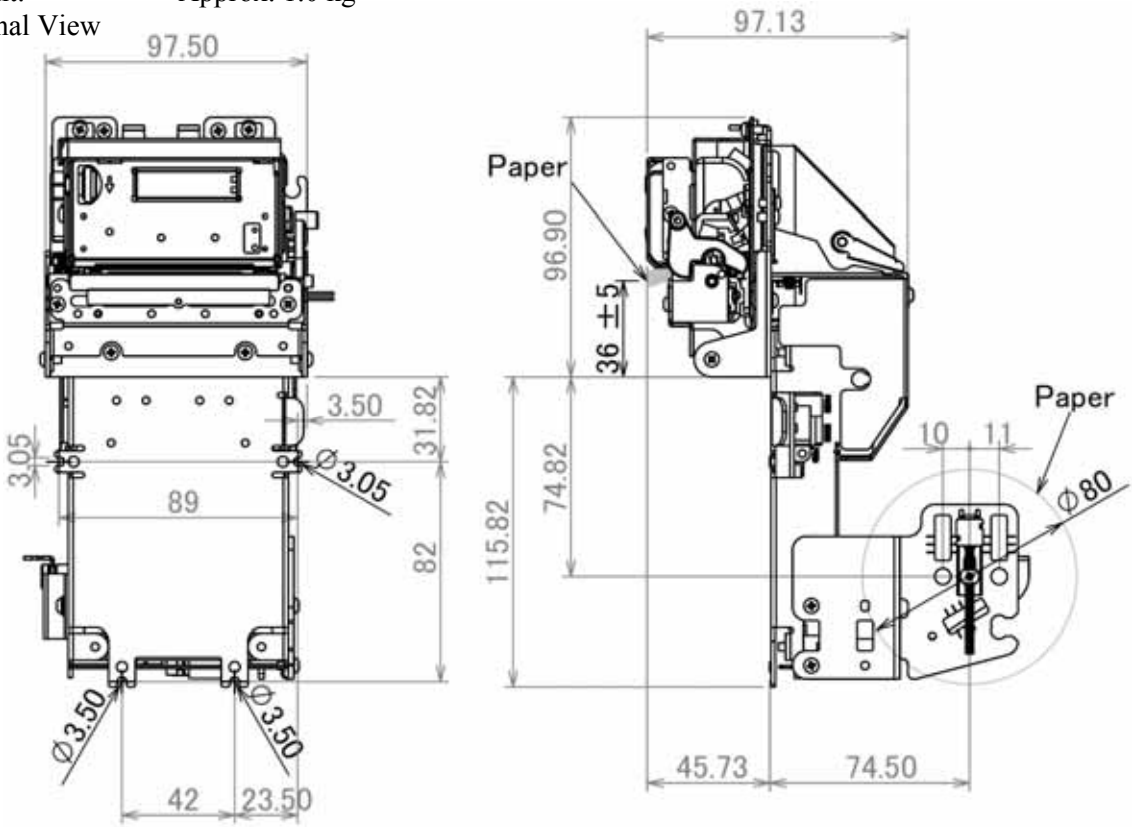
9.2 PMU2211II Appearance Specifications (2-in. Mechanism-mounted Vertical Front Model)

1) Dimensions (mm): W98 × H213 × D98
2) Weight: Approx.1.0 kg
3) External View



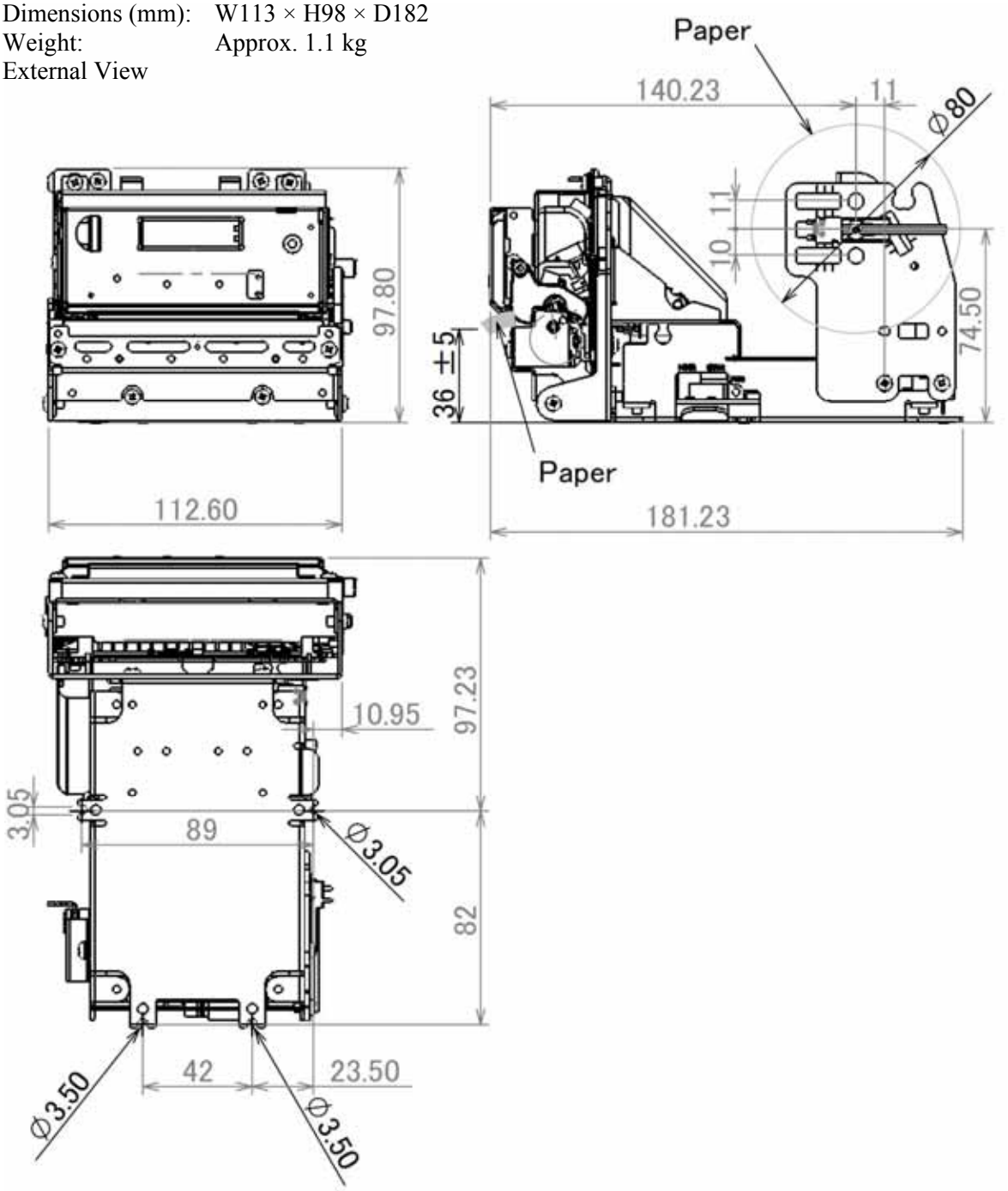
9.3 PMU2202II / 2212II Appearance Specifications (2-in. Mechanism-mounted Vertical Back Model)

1) Dimensions (mm): W98 × H213 × D98
2) Weight: Approx. 1.0 kg
3) External View



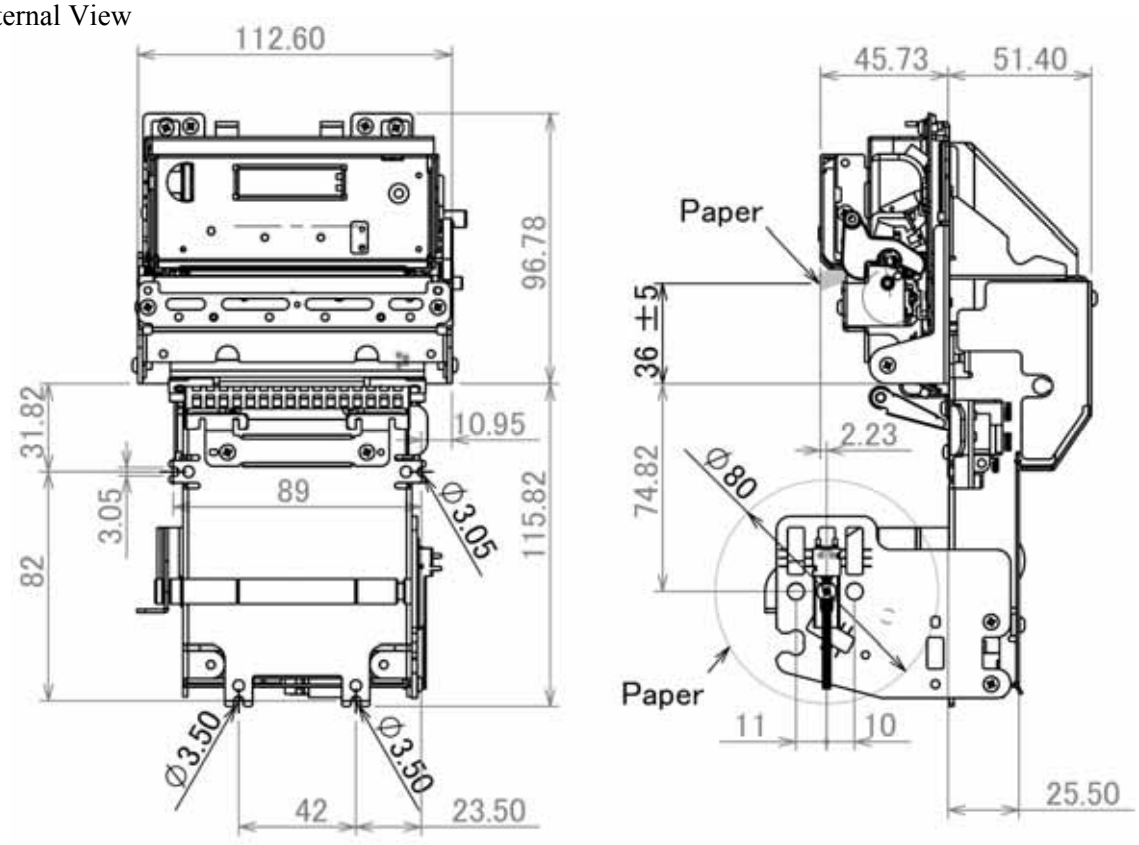
9.4 PMU2300II / 2310II Appearance Specifications (3-in. Mechanism-mounted Horizontal Model)

1) Dimensions (mm): W113 × H98 × D182
2) Weight: Approx. 1.1 kg
3) External View



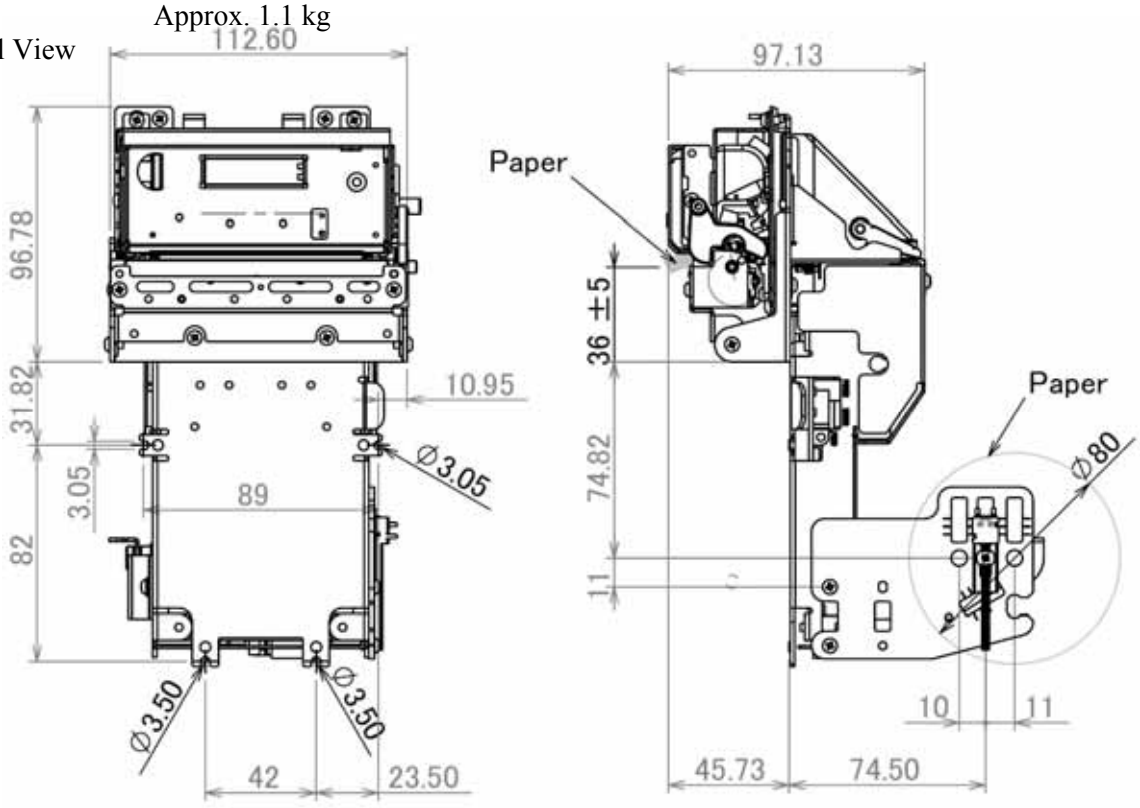
9.5 PMU2301II Appearance Specifications (3-in. Mechanism-mounted Vertical Front Model)

1) Dimensions (mm): W113 × H213 × D98
2) Weight: Approx. 1.1 kg
3) External View



9.6 PMU2302II Appearance Specifications (3-in. Mechanism-mounted Vertical Back Model)

1) Dimensions (mm): W113 × H213 × D98
2) Weight: Approx. 1.1 kg
3) External View



9.7 Installation

- Install the printer on a flat sturdy surface (flatness within 0.3).
- When installing the printer, be careful not to be injured by the edge of the sheet metal or the like.
- Do not hold weak portion like harness when moving the printer. Otherwise, accident may happen.
- Fix the printer at the following position with four screws of M3 x 6 to 10 mm.
- Connect the printer with the earth through a metallic part of the installation body or the screw of the following picture.

Installation example

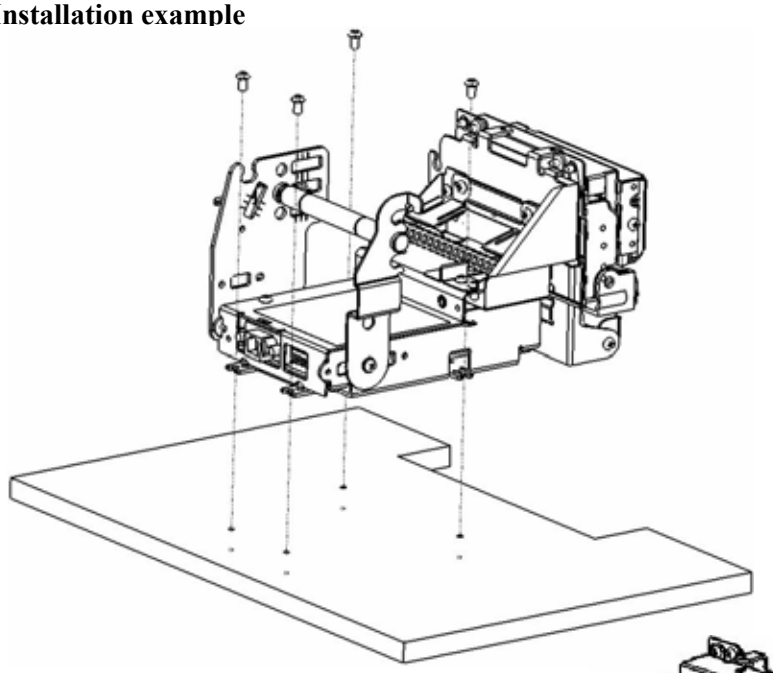


Figure Horizontal Model

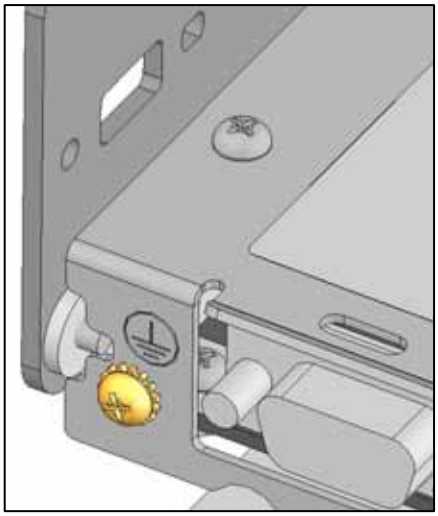


Figure FG connect screw

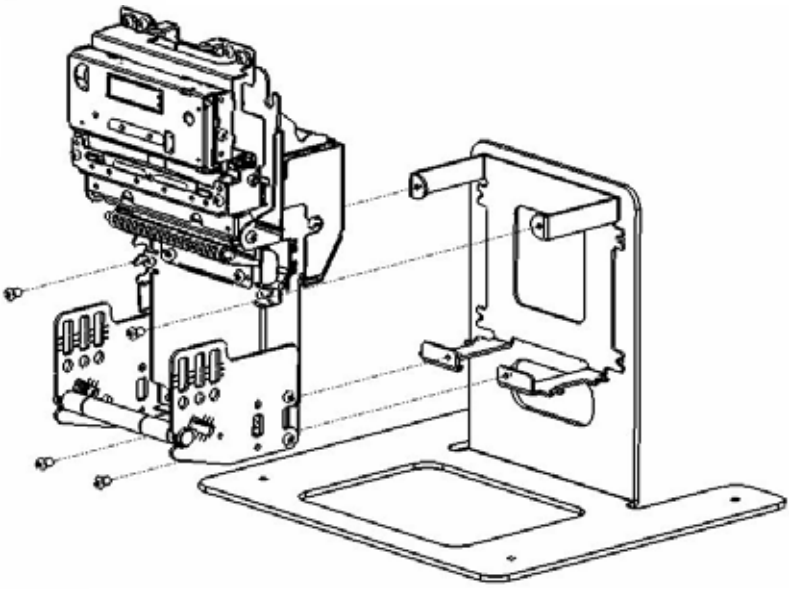


Figure Vertical Front Model

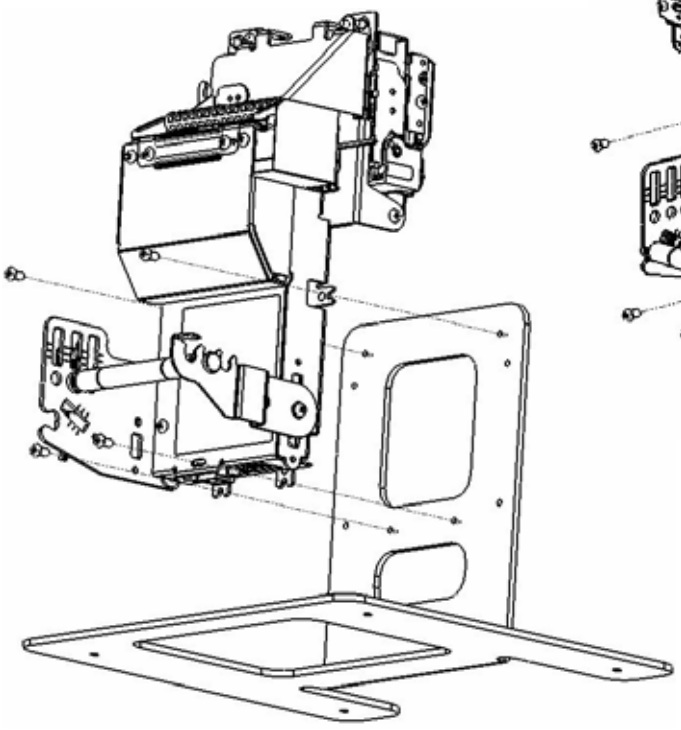


Figure Vertical Back-mount Model

10. PRINT CONTROL COMMANDS

○ **Print Control Commands**

Control Command	Function	MODE	GS P
LF	Prints and line feeds	**S • P**	
CR	Prints and carriage return	**S • P**	
FF	Prints and returns in page mode	**P**	
ESC FF	Prints data in page mode	**P**	
ESC J	Prints and paper feeds in minimum units of pitch	**S • P**	○
ESC d	Prints and paper feeds by n lines	**S • P**	

○ **Print Character Commands**

Control Command	Function	MODE	GS P
CAN	Cancels print data in page mode.	**P**	
ESC SP	Sets amount of space at the right of a character.	**S • P**	○
ESC !	Spacifies print mode in a batch.	**S • P**	
ESC %	Specifies and clear download character set.	**S • P**	
ESC &	Defines download character.	**S • P**	
ESC -	Specifies and clears underline.	**S • P**	
ESC ?	Deletes downloaded character.	**S • P**	
ESC E	Specifies and clears enhanced printing.	**S • P**	
ESC G	Specifies and clears double printing.	**S • P**	
ESC M	Selects character font.	**S • P**	
ESC R	Selects international character set.	**S • P**	
ESC V	Specifies and clears 90° clockwise turning of character.	**S**	
ESC t	Selects character code table.	**S • P**	
ESC {	Specifies and clears inverted printing.	**S**	
GS !	Specifies character size.	**S • P**	
GS B	Specifies and clears white-on-black character.	**S • P**	
GS b	Specifies and clears smoothing.	**S • P**	

○ **Print Position Commands**

Control Command	Function	MODE	GS P
HT	Horizontal tab	**S・P**	
ESC $	Specifies absolute position.	**S・P**	○
ESC D	Sets horizontal tab.	**S・P**	
ESC T	Selects print direction of characters in page mode.	**P**	
ESC W	Sets print area in page mode.	**P**	○
ESC ¥	Specifies relative position.	**S・P**	○
ESC a	Justify position.	**S**	
GS $	Specifies absolute position of character vertical direction in page mode.	**P**	○
GS L	Sets left margin.	**S**	○
GS W	Sets print area width.	**S・P**	○
GS ¥	Specifies relative position of character vertical direction in page mode.	**S・P**	○

○ **Line Feed Span Commands**

Control Command	Function	MODE	GS P
ESC 2	Sets 1/6-in. line feed.	**S・P**	
ESC 3	Sets line feed amount in units of minimum paper feed pitch.	**S・P**	○

○ **Bit Image Commands**

Control Command	Function	MODE	GS P
ESC *	Specifies bit image mode.	**S・P**	
GS *	Defines download bit image.	**S・P**	
GS /	Prints download bit image.	**S・P**	
GS v 0	Prints raster bit image.	**S**	

○ **Status Commands**

Control Command	Function	MODE	GS P
DLE EOT	Sends status in real time.	**S・P**	
ESC u	Transmitting the status of peripheral equipment (Serial Mode Only)	S・P	
ESC v	Sending Printer status	S・P	
GS a	Enables/disables auto status transmission.	**S・P**	
GS r	Sends status.	**S・P**	

○ **Paper Detecting Commands**

Control Command	Function	MODE	GS P
ESC c 3	Selects paper low detector effective for paper low signal output.	S • P	
ESC c 4	Selects paper low detector effective for stopping printing.	S • P	

○ **Panel Switch Commands**

Control Command	Function	MODE	GS P
ESC c 5	Enables or disables panel switch.	S • P	

○ **Macro Commands**

Control Command	Function	MODE	GS P
GS :	Starts and terminates macro definition.	S • P	
GS ^	Executes macro.	S • P	

○ **Cutter Commands**

Control Command	Function	MODE	GS P
ESC i	Cuts paper fully.		
ESC m	Cuts paper partially.		
GS V	Cuts paper.	S • P	○

○ **Bar Code Commands**

Control Command	Function	MODE	GS P
GS H	Selects print position of visual code.	S • P	
GS f	Selects the font of visual code.	S • P	
GS h	Sets the height of barcode.	S • P	
GS k	Prints barcode.	S • P	
GS w	Sets horizonatal size of barcode.	S • P	

○ **2-dimensional Code Commands**

Control Command	Function	MODE	GS P
GS (k	Setting and printing 2-dimensional code	S • P	

○ **Command for Flash Memory**

Control Command	Function	MODE	GS P
FS p	Prints user NV memory bit image.	S	
FS q	Defines user NV memory bit image.	S	

○ **Kanji Control Commands**

Control Command	Function	MODE	GS P
FS !	Specifies Kanji print mode in a batch.	**S・P**	
FS &	Specifies Kanji mode.	**S・P**	
FS -	Specifies and clears Kanji underline.	**S・P**	
FS .	Clears Kanji mode.	**S・P**	
FS 2	Defines external characters.	**S・P**	
FS C	Selects Kanji code system.	**S・P**	
FS S	Sets Kanji space amount.	**S・P**	○
FS W	Specifies and clears double-height, double-width size of Kanji.	**S・P**	
FS (A	Specifies modification of Kanji characters.	**S・P**	

○ **Black Mark Control Command**

Control Command	Function	MODE	GS P
GS FF	Prints and ejects with black mark.	**S・P**	
GS I	Sets black mark length.	**S・P**	

○ **Printer Setting Commands**

Control Command	Function	MODE	GS P
GS (E	User-set command	**S**	
GS (K	Selects print control method.	**S**	
GS (M	Customizes printer.	**S**	

○ **Other Commands**

Control Command	Function	MODE	GS P
DLE ENQ	Real-time request for printer	**S・P**	
DLE DC4	Clears buffer.	**S・P**	
ESC =	Controls data input.	**S・P**	
ESC @	Initializes printer.	**S・P**	
ESC L	Selects page mode.	**S**	
ESC S	Selects standard mode.	**P**	
GS (A	Executes test printing.	**S**	
GS I	Sends printer ID.	**S・P**	
GS P	Sets basic calculation pitch.	**S・P**	

Note) "S" in MODE denotes Standard and "P" Page mode.
Note) "○" in GS P indicates the effect of command <GS P>.

11. CHARACTER CODE TABLE

11.1 Codepage

11.1.1 Codepage 00H to 7FH & PC437 (USA, Europe Standard)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NUL	DLE		0	@	P	`	p	Ç	É	á	▒	└	╨	α	≡
1		XON	!	1	A	Q	a	q	ü	æ	í	▓	┴	╤	β	±
2			″	2	B	R	b	r	é	Æ	ó	▓	┬	╥	Γ	≧
3		XOFF	#	3	C	S	c	s	â	ô	ú	│	├	╙	π	≦
4	EOT	DC4	$	4	D	T	d	t	ä	ö	ñ	┤	─	╘	Σ	⌠
5	ENQ		%	5	E	U	e	u	à	ò	Ñ	╡	┼	╒	σ	⌡
6			&	6	F	V	f	v	å	û	a	╢	╞	╓	μ	÷
7			’	7	G	W	g	w	ç	ù	o	╖	╟	╫	τ	≈
8		CAN	(	8	H	X	h	x	ê	ÿ	¿	╕	╚	╪	Φ	°
9	HT		)	9	I	Y	i	y	ë	Ö	⌐	╣	╔	┘	θ	
A	LF		*	:	J	Z	j	z	è	Ü	¬	║	╩	┌	Ω	·
B		ESC	+	;	K	[	k	{	ï	¢	½	╗	╦	█	δ	√
C	FF	FS	,	<	L	¥	l	|	î	£	¼	╝	╠	▄	∞	n
D	CR	GS	−	=	M	]	m	}	ì	¥	¡	╜	═	▌	∅	²
E		RS	.	>	N	^	n	~	Ä	Pt	«	╛	╬	▐	∈	■
F			/	?	O	_	o	·	Å	ƒ	»	┐	╧	▄	∩	

11.1.2 Codepage 00H to 7FH & Katakana

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NUL	DLE		0	@	P	`	p	_	┴	SP	ー	タ	ミ	═	×
1		XON	!	1	A	Q	a	q	▂	┬	ｰ	ア	チ	ム	╞	円
2			″	2	B	R	b	r	▃	┤	┌	イ	ツ	メ	╪	年
3		XOFF	#	3	C	S	c	s	▄	├	┘	ウ	テ	モ	╡	月
4	EOT	DC4	$	4	D	T	d	t	▅	─	、	エ	ト	ヤ	◢	日
5	ENQ		%	5	E	U	e	u	▆	┼	・	オ	ナ	ユ	◣	時
6			&	6	F	V	f	v	▇	│	ヲ	カ	ニ	ヨ	◥	分
7			’	7	G	W	g	w	▇	│	ァ	キ	ヌ	ラ	◤	秒
8		CAN	(	8	H	X	h	x	▏	┌	ィ	ク	ネ	リ	♠	〒
9	HT		)	9	I	Y	i	y	▌	┐	ゥ	ケ	ノ	ル	♥	市
A	LF		*	:	J	Z	j	z	▌	└	ェ	コ	ハ	レ	♦	区
B		ESC	+	;	K	[	k	{	▌	┘	ォ	サ	ヒ	ロ	♣	町
C	FF	FS	,	<	L	¥	l	|	▌	┌	ャ	シ	フ	ワ	●	村
D	CR	GS	−	=	M	]	m	}	▌	┐	ュ	ス	ヘ	ン	○	人
E		RS	.	>	N	^	n	~	▌	└	ョ	セ	ホ	“	／	▒
F			/	?	O	_	o	・	＋	┘	ッ	ソ	マ	°	\	SP

11.1.3 Codepage 00H to 7FH & PC850 (Multilingual)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NUL	DLE		0	@	P	`	p	Ç	É	á	▒	└	ð	Ó	—
1		XON	!	1	A	Q	a	q	ü	æ	í	▓	┴	Ð	ß	±
2			″	2	B	R	b	r	é	Æ	ó	▓	┬	Ê	Ô	═
3		XOFF	#	3	C	S	c	s	â	ô	ú	|	├	Ë	Ò	¾
4	EOT	DC4	$	4	D	T	d	t	ä	ö	ñ	┤	—	È	õ	¶
5	ENQ		%	5	E	U	e	u	à	ò	Ñ	Á	┼	·	Õ	§
6			&	6	F	V	f	v	å	û	a	Â	ã	Í	µ	÷
7			’	7	G	W	g	w	ç	ù	o	À	Ã	Î	þ	¸
8		CAN	(	8	H	X	h	x	ê	ÿ	¿	©	╚	Ï	Þ	°
9	HT		)	9	I	Y	i	y	ë	Ö	®	╣	╔	┘	Ú	¨
A	LF		*	:	J	Z	j	z	è	Ü	¬	║	╩	┌	Û	·
B		ESC	+	;	K	[	k	{	ï	ø	½	╗	╦	█	Ù	¹
C	FF	FS	,	<	L	¥	l	|	î	£	¼	╝	╠	▄	ý	³
D	CR	GS	−	=	M	]	m	}	ì	Ø	¡	¢	═	¦	Ý	²
E		RS	.	>	N	^	n	~	Ä	×	«	¥	╬	Ì	—	■
F			/	?	O	_	o	·	Å	ƒ	»	┐	¤	▄	´	

11.1.4 Codepage 00H to 7FH & PC860 (Portuguese)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NUL	DLE		0	@	P	`	p	Ç	É	á	▒	└	╨	α	≡
1		XON	!	1	A	Q	a	q	ü	À	í	▓	┴	╤	β	±
2			″	2	B	R	b	r	é	È	ó	▓	┬	╥	Γ	≧
3		XOFF	#	3	C	S	c	s	â	ô	ú	│	├	╙	π	≦
4	EOT	DC4	$	4	D	T	d	t	ã	õ	ñ	┤	─	╘	Σ	⌠
5	ENQ		%	5	E	U	e	u	à	ò	Ñ	╡	┼	╒	σ	⌡
6			&	6	F	V	f	v	Á	Ú	a	╢	╞	╓	μ	÷
7			’	7	G	W	g	w	ç	ù	o	╖	╟	╫	τ	≈
8		CAN	(	8	H	X	h	x	ê	Ì	¿	╕	╚	╪	Φ	°
9	HT		)	9	I	Y	i	y	Ê	Õ	Ò	╣	╔	┘	θ	
A	LF		*	:	J	Z	j	z	è	Ü	¬	║	╩	┌	Ω	·
B		ESC	+	;	K	[	k	{	Í	¢	½	╗	╦	█	δ	√
C	FF	FS	,	<	L	¥	l	|	Ô	£	¼	╝	╠	▄	∞	n
D	CR	GS	−	=	M	]	m	}	ì	Ù	¡	╜	═	▌	∅	2
E		RS	.	>	N	^	n	~	Ã	Pt	«	╛	╬	▐	∈	■
F			/	?	O	_	o	·	Â	Ó	»	┐	╧	▄	∩	

11.1.5 Codepage 00H to 7FH & PC863 (Canadian-French)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NUL	DLE		0	@	P	`	p	Ç	É	¦	▒	└	⊥	α	≡
1		XON	!	1	A	Q	a	q	ü	È	´	▓	┴	┬	β	±
2			″	2	B	R	b	r	é	Ê	ô	▓	┬	├	Γ	≧
3		XOFF	#	3	C	S	c	s	â	ô	ú	│	├	└	π	≦
4	EOT	DC4	$	4	D	T	d	t	Â	Ë	¨	┤	─	┘	Σ	⌠
5	ENQ		%	5	E	U	e	u	à	Ï	↘	┤	┼	┌	σ	⌡
6			&	6	F	V	f	v	¶	û	³	┤	├	┌	μ	÷
7			’	7	G	W	g	w	ç	ù	−	┐	├	┼	τ	≈
8		CAN	(	8	H	X	h	x	ê	¤	Î	┐	└	┼	Φ	°
9	HT		)	9	I	Y	i	y	ë	Ô	⌐	┤	┌	┘	θ	
A	LF		*	:	J	Z	j	z	è	Ü	¬	│	┴	┌	Ω	·
B		ESC	+	;	K	[	k	{	Ï	¢	½	┐	┬	▉	δ	√
C	FF	FS	,	<	L	¥	l	|	Î	£	¼	┘	├	▄	∞	n
D	CR	GS	−	=	M	]	m	}	=	Ù	¾	┘	─	▌	∅	²
E		RS	.	>	N	^	n	~	À	Û	«	┘	┼	▌	∈	■
F			/	?	O	_	o	·	§	ƒ	»	¬	┴	▄	∩	

11.1.6 Codepage 00H to 7FH & PC865 (Nordic)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NUL	DLE		0	@	P	`	p	Ç	É	á	▒	└	┴	α	≡
1		XON	!	1	A	Q	a	q	ü	æ	í	▓	┴	┬	β	±
2			″	2	B	R	b	r	é	Æ	ó	▓	┬	├	Γ	≧
3		XOFF	#	3	C	S	c	s	â	ô	ú	│	├	└	π	≦
4	EOT	DC4	$	4	D	T	d	t	ä	ö	ñ	┤	─	┘	Σ	⌠
5	ENQ		%	5	E	U	e	u	à	ò	Ñ	┤	┼	┌	σ	⌡
6			&	6	F	V	f	v	å	û	a	┤	├	┌	μ	÷
7			’	7	G	W	g	w	ç	ù	o	┐	├	┼	τ	≈
8		CAN	(	8	H	X	h	x	ê	ÿ	¿	┐	└	┼	Φ	°
9	HT		)	9	I	Y	i	y	ë	Ö	⌐	┤	┌	┘	θ	
A	LF		*	:	J	Z	j	z	è	Ü	¬	│	┴	┌	Ω	·
B		ESC	+	;	K	[	k	{	Ï	ø	½	┐	┬	▉	δ	√
C	FF	FS	,	<	L	¥	l	|	Î	£	¼	┘	├	▄	∞	n
D	CR	GS	−	=	M	]	m	}	Ì	Ø	¡	┘	─	▌	∅	2
E		RS	.	>	N	^	n	~	Ä	Pt	«	┘	┼	▐	∈	■
F			/	?	O	_	o	·	Å	ƒ	¤	┐	┴	▄	∩	

11.1.7 Codepage 00H to 7FH & PC852 (Eastern Europe)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NUL	DLE		0	@	P	`	p	Ç	É	á	▒	└	đ	ó	-
1		XON	!	1	A	Q	a	q	ü	Ĺ	í	▓	┴	Đ	ß	”
2			″	2	B	R	b	r	é	í	ó	▓	┬	Ď	Ó	ˋ
3		XOFF	#	3	C	S	c	s	â	ú	ú	|	├	Ë	Ń	ˇ
4	EOT	DC4	$	4	D	T	d	t	ä	ö	Ą	┤	—	ď	ń	˘
5	ENQ		%	5	E	U	e	u	ů	Ľ	ą	Á	┼	Ň	ň	§
6			&	6	F	V	f	v	ć	Ľ	Ž	Â	Ă	Í	Š	÷
7			’	7	G	W	g	w	ç	Ś	ž	Ě	ă	î	š	¸
8		CAN	(	8	H	X	h	x	ł	ś	Ę	Ş	╚	ě	Ŕ	°
9	HT		)	9	I	Y	i	y	ë	Ö	ę	╣	╔	┘	Ú	¨
A	LF		*	:	J	Z	j	z	Ő	Ü	ť	║	╩	┌	ŕ	·
B		ESC	+	;	K	[	k	{	ő	Ť	ź	┐	╦	▉	Ű	ű
C	FF	FS	,	<	L	¥	l	|	î		Č	┘	╠	▄	ý	Ř
D	CR	GS	-	=	M	]	m	}	Ź	Ł	ş	Ż	═	Ţ	Ý	ř
E		RS	.	>	N	^	n	~	Ä	×	«	ż	╬	Ů	ţ	■
F			/	?	O	_	o	·	Ć	č	»	¬	¤	▀	´	SP

11.1.8 Codepage 00H to 7FH & PC866 (Russian)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NUL	DLE		0	@	P	`	p	А	Р	а	▒	└	╨	р	Ё
1		XON	!	1	A	Q	a	q	Б	С	б	▓	┴	┬	с	ё
2			″	2	B	R	b	r	В	Т	в	▓	┬	┬	т	Є
3		XOFF	#	3	C	S	c	s	Г	У	г	│	├	└	у	є
4	EOT	DC4	$	4	D	T	d	t	Д	Ф	д	┤	—	└	ф	Ї
5	ENQ		%	5	E	U	e	u	Е	Х	е	┤	┼	┌	ц	ї
6			&	6	F	V	f	v	Ж	Ц	ж	┤	├	┌	ц	ў
7			’	7	G	W	g	w	З	Ч	з	┐	├	┼	ч	
8		CAN	(	8	H	X	h	x	И	Ш	и	┐	└	┼	х	°
9	HT		)	9	I	Y	i	y	Й	Щ	й	┤	┌	┘	ш	∙
A	LF		*	:	J	Z	j	z	К	Ъ	к	‖	╨	┌	щ	·
B		ESC	+	;	K	[	k	{	Л	Ы	л	┐	┬	▉	ъ	ű
C	FF	FS	,	<	L	¥	l	|	М	Ь	м	┘	├	▄	ы	No.
D	CR	GS	−	=	M	]	m	}	Н	Э	н	┘	─	Ţ	э	¤
E		RS	.	>	N	^	n	~	О	Ю	о	┘	┼	Ů	ю	■
F			/	?	O	_	o	·	П	Я	п	┐	╨	▀	я	

11.1.9 Codepage 00H to 7FH & PC857 (Turkish)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NUL	DLE		0	@	P	`	p	Ç	É	á	▒	└	º	ó	—
1		XON	!	1	A	Q	a	q	ü	æ	í	▓	┴	ª	ß	±
2			″	2	B	R	b	r	é	Æ	ó	▓	┬	Ê	ô	
3		XOFF	#	3	C	S	c	s	â	ô	ú	|	├	Ë	ò	¾
4	EOT	DC4	$	4	D	T	d	t	à	ö	ñ	┤	—	È	õ	¶
5	ENQ		%	5	E	U	e	u	ä	ò	Ñ	Á	┼		Õ	§
6			&	6	F	V	f	v	å	û	Ğ	Â	ã	Í	µ	÷
7			’	7	G	W	g	w	ç	ù	ğ	À	Ã	Î		¸
8		CAN	(	8	H	X	h	x	ê	İ	¿	©	╚	Ï	×	°
9	HT		)	9	I	Y	i	y	ë	Ö	®	╣	╔	┘	Ú	¨
A	LF		*	:	J	Z	j	z	è	Ü	¬	║	╩	┌	Û	.
B		ESC	+	;	K	[	k	{	ï	ø	½	╗	╦	█	Ù	¹
C	FF	FS	,	<	L	¥	l	|	î	£	¼	╝	╠	▄	Ì	³
D	CR	GS	−	=	M	]	m	}	I	Ø	¡	¢	═	¦	ÿ	²
E		RS	.	>	N	^	n	~	Ä	Ş	«	¥	╬	Ì	−	■
F			/	?	O	_	o	·	Å	ş	»	¬	¤	■	´	SP

11.1.10 Codepage 00H to 7FH & PC864 (Arabic)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NUL	DLE		0	@	P	`	p	٥	β	(RSP)	٠	¢	ذ	ـ	ّ
1		XON	!	1	A	Q	a	q	·	∞	(SHY)	١	ء	ر	ف	ْ
2			″	2	B	R	b	r	•	ϕ	ٓ	٢	آ	ز	ق	ٔ
3		XOFF	#	3	C	S	c	s	√	±	£	٣	أ	س	ك	ٕ
4	EOT	DC4	$	4	D	T	d	t	▒	½	¤	٤	ؤ	ش	ل	ٖ
5	ENQ		%	5	E	U	e	u	┤	¼	ٱ	٥	ع	ص	م	ٗ
6			&	6	F	V	f	v	╡	≈		٦	ئ	ض	ن	٘
7			'	7	G	W	g	w	╢	«		٧	ا	ط	ه	ٙ
8		CAN	(	8	H	X	h	x	╖	»	ا	٨	ب	ظ	و	ٚ
9	HT		)	9	I	Y	i	y	╕	لأ	ب	٩	ة	ع	ى	ٛ
A	LF		*	:	J	Z	j	z	╣	لأ	ت	ف	ت	غ	ي	ٜ
B		ESC	+	;	K	[	k	{	║		ث	؛	ث	!	ض	ٝ
C	FF	FS	,	<	L	\	l	|	╗		ء	س	ج	¬	ط	ٞ
D	CR	GS	−	=	M	]	m	}	╝	لا	ج	ش	ج	÷	غ	ٟ
E		RS	.	>	N	^	n	~	╜	لا	ح	ص	خ	×	غ	■
F			/	?	O	_	o		╛	،	خ	؟	د	ع	م	

11.1.11 Codepage 00H to 7FH & WPC1252

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NUL	DLE		0	@	P	`	p	€			°	À	Ð	à	ð
1		XON	!	1	A	Q	a	q		‘	¡	±	Á	Ñ	á	ñ
2			″	2	B	R	b	r	’	’	¢	²	Â	Ò	â	ò
3		XOFF	#	3	C	S	c	s	ƒ	“	£	³	Ã	Ó	ã	ó
4	EOT	DC4	$	4	D	T	d	t	,,	”	¤	´	Ä	Ô	ä	Ô
5	ENQ		%	5	E	U	e	u	…	·	¥	µ	Å	Õ	å	Õ
6			&	6	F	V	f	v	†	-	¦	¶	Æ	Ö	æ	ö
7			’	7	G	W	g	w	‡	–	§	·	Ç	×	ç	÷
8		CAN	(	8	H	X	h	x	ˆ	˜	¨	¸	È	Ø	è	ø
9	HT		)	9	I	Y	i	y	‰	™	©	¹	É	Ù	é	ù
A	LF		*	:	J	Z	j	z	Š	š	ª	º	Ê	Ú	ê	ú
B		ESC	+	;	K	[	k	{	<	>	«	»	Ë	Û	ë	û
C	FF	FS	,	<	L	¥	l	|	Œ	œ	¬	¼	Ì	Ü	ì	ü
D	CR	GS	-	=	M	]	m	}			-	½	Í	Ý	í	ý
E		RS	.	>	N	^	n	~	Ž	ž	®	¾	Î	Þ	î	þ
F			/	?	O	_	o	·		Ÿ	¯	¿	Ï	ß	ï	ÿ

11.1.12 Codepage 00H to 7FH & Thaicode18

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NUL	DLE		0	@	P	`	p	ก	๙		ฐ	ภ	ะ	เ	๐
1		XON	!	1	A	Q	a	q	ข	๑	ก	ฑ	ม	ั	แ	๑
2			"	2	B	R	b	r	ฃ	๒	ข	ฒ	ย	า	โ	๒
3		XOFF	#	3	C	S	c	s	ค	๓	ฃ	ณ	ร	ำ	ใ	๓
4	EOT	DC4	$	4	D	T	d	t	ฅ	๔	ค	ด	ฤ	ๅ	ไ	๔
5	ENQ		%	5	E	U	e	u	ฆ	๕	ฅ	ต	ล	ๆ	ๅ	๕
6			&	6	F	V	f	v	ง	๖	ฆ	ถ	ฦ	็	ๆ	๖
7			'	7	G	W	g	w	จ	๗	ง	ท	ว	่	็	๗
8		CAN	(	8	H	X	h	x	ฉ	๘	จ	ธ	ศ	้	่	๘
9	HT		)	9	I	Y	i	y	ช	๙	ฉ	น	ษ	๊	้	๙
A	LF		*	:	J	Z	j	z	ซ	๚	ช	บ	ส	๋	๊	๚
B		ESC	+	;	K	[	k	{	ฌ	๛	ซ	ป	ห	์	๋	๛
C	FF	FS	,	<	L	\	l	|	ญ	ฝ	ฌ	ผ	ฬ	ฺ	์	ฺ
D	CR	GS	-	=	M	]	m	}	ฎ	ฯ	ญ	ฝ	อ	ฮ	ฺ	ฯ
E		RS	.	>	N	^	n	~	ฏ	ะ	ฎ	พ	ฮ	ะ	๎	ะ
F			/	?	O	_	o		ฐ	ั	ฏ	ฟ	ฯ	฿	๏	

11.2 International Character Code Table

	Country	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
0	USA	#	$	@	[	\	]	^	'	{	|	}	~
1	France	#	$	à	°	ç	§	^	'	é	ù	È	¨
2	Germany	#	$	§	Ä	Ö	Ü	^	'	ä	ö	ü	β
3	UK	£	$	@	[	\	]	^	'	{	|	}	~
4	Denmark I	#	$	@	Æ	Ø	Å	^	'	æ	ø	å	~
5	Sweden	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
6	Italy	#	$	@	°	\	é	^	ù	à	ò	è	ì
7	Spain I	Pt	$	@	¡	Ñ	¿	^	'	¨	ñ	}	~
8	Japan	#	$	@	[	¥	]	^	'	{	|	}	~
9	Norway	#	¤	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
10	Denmark II	#	$	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
11	Spain II	#	$	á	¡	Ñ	¿	é	'	ì	ñ	ó	ú
12	Latin America	#	$	á	¡	Ñ	¿	é	ü	ì	ñ	ó	ú
13	Korea	#	$	@	[	₩	]	^	'	{	|	}	~
14	Croatia	#	$	Ž	Š	Đ	Ć	Č	ž	š	đ	ć	č
15	China	#	¥	@	[	\	]	^	'	{	|	}	~

11.3 Kanji Code Table

11.3.1 JIS Non-Kanji

Shift-JIS	JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
813F	2120			、	。	,	.	・	:	;	?	!	゛	゜	´	`	¨
814F	2130	^	￣	_	ヽ	ヾ	ゝ	ゞ	〃	仝	々	〇	〇	一	―	-	／
815F	2140	＼	～	∥	｜	…	‥	‘	’	“	”	(	)	〔	〕	［	］
816F	2150	{	}	〈	〉	《	》	「	」	『	』	【	】	＋	－	±	×
8180	2160	÷	＝	≠	＜	＞	≦	≧	∞	∴	♂	♀	°	′	″	℃	￥
8190	2170	$	¢	£	%	#	&	*	@	§	☆	★	○	●	◎	◇	
819E	2220		◆	□	■	△	▲	▽	▼	※	〒	→	←	↑	↓	=	
81AE	2230											∈	∋	⊆	⊇	⊂	⊃
81BE	2240	∪	∩									∧	∨	￢	⇒	⇔	∀
81CE	2250	∃												∠	⊥	⌒	∂
81DE	2260	∇	≡	≒	≪	≫	√	∽	∝	∵	∫	∬					
81EE	2270			Å	‰	♯	♭	♪	†	‡	¶					○	
823F	2320																
824F	2330	0	1	2	3	4	5	6	7	8	9						
825F	2340		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
826F	2350	P	Q	R	S	T	U	V	W	X	Y	Z					
8280	2360		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
8290	2370	p	q	r	s	t	u	v	w	x	y	z					
829E	2420		ぁ	あ	ぃ	い	ぅ	う	ぇ	え	ぉ	お	か	が	き	ぎ	く
82AE	2430	ぐ	け	げ	こ	ご	さ	ざ	し	じ	す	ず	せ	ぜ	そ	ぞ	た
82BE	2440	だ	ち	ぢ	っ	つ	づ	て	で	と	ど	な	に	ぬ	ね	の	は
82CE	2450	ば	ぱ	ひ	び	ぴ	ふ	ぶ	ぷ	へ	べ	ぺ	ほ	ぼ	ぽ	ま	み
82DE	2460	む	め	も	ゃ	や	ゅ	ゆ	ょ	よ	ら	り	る	れ	ろ	ゎ	わ
82EE	2470	ゐ	ゑ	を	ん												
833F	2520		ァ	ア	ィ	イ	ゥ	ウ	ェ	エ	ォ	オ	カ	ガ	キ	ギ	ク
834F	2530	グ	ケ	ゲ	コ	ゴ	サ	ザ	シ	ジ	ス	ズ	セ	ゼ	ソ	ゾ	タ
835F	2540	ダ	チ	ヂ	ッ	ツ	ヅ	テ	デ	ト	ド	ナ	ニ	ヌ	ネ	ノ	ハ
836F	2550	バ	パ	ヒ	ビ	ピ	フ	ブ	プ	ヘ	ベ	ペ	ホ	ボ	ポ	マ	ミ
8380	2560	ム	メ	モ	ャ	ヤ	ュ	ユ	ョ	ヨ	ラ	リ	ル	レ	ロ	ヮ	ワ
8390	2570	ヰ	ヱ	ヲ	ン	ヴ	ヵ	ヶ									
839E	2620		Α	Β	Γ	Δ	Ε	Ζ	Η	Θ	Ι	Κ	Λ	Μ	Ν	Ξ	Ο
83AE	2630	Π	Ρ	Σ	Τ	Υ	Φ	Χ	Ψ	Ω							
83BE	2640		α	β	γ	δ	ε	ζ	η	θ	ι	κ	λ	μ	ν	ξ	ο
83CE	2650	π	ρ	σ	τ	υ	φ	χ	ψ	ω							
83DE	2660																
83EE	2670																

Shift-JIS	JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
843F	2720		А	Б	В	Г	Д	Е	Ё	Ж	З	И	Й	К	Л	М	Н
844F	2730	О	П	Р	С	Т	У	Ф	Х	Ц	Ч	Ш	Щ	Ъ	Ы	Ь	Э
845F	2740	Ю	Я														
846F	2750		а	б	в	г	д	е	ё	ж	з	и	й	к	л	м	н
8480	2760	о	п	р	с	т	у	ф	х	ц	ч	ш	щ	ъ	ы	ь	э
8490	2770	ю	я														
849E	2820		─	│	┌	┐	┘	└	├	┬	┤	┴	┼	━	┃	┏	┓
84AE	2830	┛	┗	┣	┳	┫	┻	╋	┠	┯	┨	┷	┿	┝	┰	┥	┸
84BE	2840	╂															
84CE	2850																
84DE	2860																
84EE	2870																

11.3.2 JIS Level 1 Characters

Shift-JIS	JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
889E	3020		亜	唖	娃	阿	哀	愛	挨	姶	逢	葵	茜	穐	悪	握	渥
88AE	3030	旭	葦	芦	鯵	梓	圧	斡	扱	宛	姐	虻	飴	絢	綾	鮎	或
88BE	3040	粟	袷	安	庵	按	暗	案	闇	鞍	杏	以	伊	位	依	偉	囲
88CE	3050	夷	委	威	尉	惟	意	慰	易	椅	為	畏	異	移	維	緯	胃
88DE	3060	萎	衣	謂	違	遺	医	井	亥	域	育	郁	磯	一	壱	溢	逸
88EE	3070	稲	茨	芋	鰯	允	印	咽	員	因	姻	引	飲	淫	胤	蔭	
893F	3120		院	陰	隠	韻	吋	右	宇	烏	羽	迂	雨	卯	鵜	窺	丑
894F	3130	碓	臼	渦	嘘	唄	鬱	蔚	鰻	姥	厩	浦	瓜	閏	噂	云	運
895F	3140	雲	荏	餌	叡	営	嬰	影	映	曳	栄	永	泳	洩	瑛	盈	穎
896F	3150	頴	英	衛	詠	鋭	液	疫	益	駅	悦	謁	越	閲	榎	厭	円
8980	3160	園	堰	奄	宴	延	怨	掩	援	沿	演	炎	焔	煙	燕	猿	縁
8990	3170	艶	苑	薗	遠	鉛	鴛	塩	於	汚	甥	凹	央	奥	往	応	
899E	3220		押	旺	横	欧	殴	王	翁	襖	鴬	鴎	黄	岡	沖	荻	億
89AE	3230	屋	憶	臆	桶	牡	乙	俺	卸	恩	温	穏	音	下	化	仮	何
89BE	3240	伽	価	佳	加	可	嘉	夏	嫁	家	寡	科	暇	果	架	歌	河
89CE	3250	火	珂	禍	禾	稼	箇	花	苛	茄	荷	華	菓	蝦	課	嘩	貨
89DE	3260	迦	過	霞	蚊	俄	峨	我	牙	画	臥	芽	蛾	賀	雅	餓	駕
89EE	3270	介	会	解	回	塊	壊	廻	快	怪	悔	恢	懐	戒	拐	改	
8A3F	3320		魁	晦	械	海	灰	界	皆	絵	芥	蟹	開	階	貝	凱	劾
8A4F	3330	外	咳	害	崖	慨	概	涯	碍	蓋	街	該	鎧	骸	浬	馨	蛙
8A5F	3340	垣	柿	蛎	鈎	劃	嚇	各	廓	拡	撹	格	核	殻	獲	確	穫
8A6F	3350	覚	角	赫	較	郭	閣	隔	革	学	岳	楽	額	顎	掛	笠	樫
8A80	3360	橿	梶	鰍	潟	割	喝	恰	括	活	渇	滑	葛	褐	轄	且	鰹
8A90	3370	叶	椛	樺	鞄	株	兜	竃	蒲	釜	鎌	噛	鴨	栢	茅	萱	
8A9E	3420		粥	刈	苅	瓦	乾	侃	冠	寒	刊	勘	勧	巻	喚	堪	姦
8AAE	3430	完	官	寛	干	幹	患	感	慣	憾	換	敢	柑	桓	棺	款	歓
8ABE	3440	汗	漢	澗	潅	環	甘	監	看	竿	管	簡	緩	缶	翰	肝	艦
8ACE	3450	莞	観	諌	貫	還	鑑	間	閑	関	陥	韓	館	舘	丸	含	岸
8ADE	3460	巌	玩	癌	眼	岩	翫	贋	雁	頑	顔	願	企	伎	危	喜	器
8AEE	3470	基	奇	嬉	寄	岐	希	幾	忌	揮	机	旗	既	期	棋	棄	
8B3F	3520		機	帰	毅	気	汽	畿	祈	季	稀	紀	徽	規	記	貴	起
8B4F	3530	軌	輝	飢	騎	鬼	亀	偽	儀	妓	宜	戯	技	擬	欺	犠	疑
8B5F	3540	祇	義	蟻	誼	議	掬	菊	鞠	吉	吃	喫	桔	橘	詰	砧	杵
8B6F	3550	黍	却	客	脚	虐	逆	丘	久	仇	休	及	吸	宮	弓	急	救
8B80	3560	朽	求	汲	泣	灸	球	究	窮	笈	級	糾	給	旧	牛	去	居
8B90	3570	巨	拒	拠	挙	渠	虚	許	距	鋸	漁	禦	魚	亨	享	京	

Shift-JIS	JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
8B9E	3620		供	侠	僑	兇	競	共	凶	協	匡	卿	叫	喬	境	峡	強
8BAE	3630	彊	怯	恐	恭	挟	教	橋	況	狂	狭	矯	胸	脅	興	蓄	郷
8BBE	3640	鏡	響	饗	驚	仰	凝	尭	暁	業	局	曲	極	玉	桐	粁	僅
8BCE	3650	勤	均	巾	錦	斤	欣	欽	琴	禁	禽	筋	緊	芹	菌	衿	襟
8BDE	3660	謹	近	金	吟	銀	九	倶	句	区	狗	玖	矩	苦	躯	駆	駈
8BEE	3670	駒	具	愚	虞	喰	空	偶	寓	遇	隅	串	櫛	釧	屑	屈	
8C3F	3720		掘	窟	沓	靴	轡	窪	熊	隈	粂	栗	繰	桑	鍬	勲	君
8C4F	3730	薫	訓	群	軍	郡	卦	袈	祁	係	傾	刑	兄	啓	圭	珪	型
8C5F	3740	契	形	径	恵	慶	慧	憩	掲	携	敬	景	桂	渓	畦	稽	系
8C6F	3750	経	継	繋	罫	茎	荊	蛍	計	詣	警	軽	頚	鶏	芸	迎	鯨
8C80	3760	劇	戟	撃	激	隙	桁	傑	欠	決	潔	穴	結	血	訣	月	件
8C90	3770	倹	倦	健	兼	券	剣	喧	圏	堅	嫌	建	憲	懸	拳	捲	
C89E	3820		検	権	牽	犬	献	研	硯	絹	県	肩	見	謙	賢	軒	遣
8CAE	3830	鍵	険	顕	験	鹸	元	原	厳	幻	弦	減	源	玄	現	絃	舷
8CBE	3840	言	諺	限	乎	個	古	呼	固	姑	孤	己	庫	弧	戸	故	枯
8CCE	3850	湖	狐	糊	袴	股	胡	菰	虎	誇	跨	鈷	雇	顧	鼓	五	互
8CDE	3860	伍	午	呉	吾	娯	後	御	悟	梧	檎	瑚	碁	語	誤	護	醐
8CEE	3870	乞	鯉	交	佼	侯	候	倖	光	公	功	効	勾	厚	口	向	
8D3F	3920		后	喉	坑	垢	好	孔	孝	宏	工	巧	巷	幸	広	庚	康
8D4F	3930	弘	恒	慌	抗	拘	控	攻	昂	晃	更	杭	校	梗	構	江	洪
8D5F	3940	浩	港	溝	甲	皇	硬	稿	糠	紅	紘	絞	綱	耕	考	肯	肱
8D6F	3950	腔	膏	航	荒	行	衡	講	貢	購	郊	酵	鉱	砿	鋼	閤	降
8D80	3960	項	香	高	鴻	剛	黒	号	合	壕	拷	濠	豪	轟	麹	克	刻
8D90	3970	告	国	穀	酷	鵠	黒	獄	漉	腰	甑	忽	惚	骨	狛	込	
8D9E	3A20		此	頃	今	困	坤	墾	婚	恨	懇	昏	昆	根	梱	混	痕
8DAE	3A30	紺	艮	魂	些	佐	叉	唆	嵯	左	差	査	沙	瑳	砂	詐	鎖
8DBE	3A40	裟	坐	座	挫	債	催	再	最	哉	塞	妻	宰	彩	才	採	栽
8DCE	3A50	歳	済	災	采	犀	砕	砦	祭	斎	細	崎	裁	載	際	剤	在
8DDE	3A60	材	罪	財	冴	坂	阪	堺	榊	肴	咲	崎	埼	碕	鷺	作	削
8DEE	3A70	咋	搾	昨	朔	柵	窄	策	索	錯	桜	鮭	笹	匙	冊	刷	
8E3F	3B20		察	拶	撮	擦	札	殺	薩	雑	皐	鯖	捌	錆	鮫	皿	晒
8E4F	3B30	三	傘	参	山	惨	撒	散	桟	燦	珊	産	算	纂	蚕	讃	賛
8E5F	3B40	酸	餐	斬	暫	残	仕	仔	伺	使	刺	司	史	嗣	四	士	始
8E6F	3B50	姉	姿	子	屍	市	師	志	思	指	支	孜	斯	施	旨	枝	止
8E80	3B60	死	氏	獅	祉	私	糸	紙	紫	肢	脂	至	視	詞	詩	試	誌
8E90	3B70	諮	資	賜	雌	飼	歯	事	似	侍	児	字	寺	慈	持	時	

Shift-JIS	JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
8E9E	3C20		次	滋	治	爾	璽	痔	磁	示	而	耳	自	蒔	辞	汐	鹿
8EAE	3C30	式	識	鳴	竺	軸	宍	雫	七	叱	執	失	嫉	室	悉	湿	漆
8EBE	3C40	疾	質	実	蔀	篠	偲	柴	芝	屡	蕊	縞	舎	写	射	捨	赦
8ECE	3C50	斜	煮	社	紗	者	謝	車	遮	蛇	邪	借	勺	尺	杓	灼	爵
8EDE	3C60	酌	釈	錫	若	寂	弱	惹	主	取	守	手	朱	殊	狩	珠	種
8EEE	3C70	腫	趣	酒	首	儒	受	呪	寿	授	樹	綬	需	囚	収	周	
8F3F	3D20		宗	就	州	修	愁	拾	洲	秀	秋	終	繍	習	臭	舟	蒐
8F4F	3D30	衆	襲	讐	蹴	輯	週	酋	酬	集	醜	什	住	充	十	従	戎
8F5F	3D40	柔	汁	渋	獣	縦	重	銃	叔	夙	宿	淑	祝	縮	粛	塾	熟
8F6F	3D50	出	術	述	俊	峻	春	瞬	竣	舜	駿	准	循	旬	楯	殉	淳
8F80	3D60	準	潤	盾	純	巡	遵	醇	順	処	初	所	暑	曙	渚	庶	緒
8F90	3D70	署	書	薯	藷	諸	助	叙	女	序	徐	恕	鋤	除	傷	償	
8F9E	3E20		勝	匠	升	召	哨	商	唱	嘗	奨	妾	娼	宵	将	小	少
8FAE	3E30	尚	庄	床	廠	彰	承	抄	招	掌	捷	昇	昌	昭	晶	松	梢
8FBE	3E40	樟	樵	沼	消	渉	湘	焼	焦	照	症	省	硝	礁	祥	称	章
8FCE	3E50	笑	粧	紹	肖	菖	蒋	蕉	衝	裳	訟	証	詔	詳	象	賞	醤
8FDE	3E60	鉦	鍾	鐘	障	鞘	上	丈	丞	乗	冗	剰	城	場	壌	嬢	常
8FEE	3E70	情	擾	条	杖	浄	状	畳	穣	蒸	譲	醸	錠	嘱	埴	飾	
903F	3F20		拭	植	殖	燭	織	職	色	触	食	蝕	辱	尻	伸	信	侵
904F	3F30	唇	娠	寝	審	心	慎	振	新	晋	森	榛	浸	深	申	疹	真
905F	3F40	神	秦	紳	臣	芯	薪	親	診	身	辛	進	針	震	人	仁	刃
906F	3F50	塵	壬	尋	甚	尽	腎	訊	迅	陣	靭	笥	諏	須	酢	図	厨
9080	3F60	逗	吹	垂	帥	推	水	炊	睡	粋	翠	衰	遂	酔	錐	錘	随
9090	3F70	瑞	髄	崇	嵩	数	枢	趨	雛	据	杉	椙	菅	頗	雀	裾	
909E	4020		澄	摺	寸	世	瀬	畝	是	凄	制	勢	姓	征	性	成	政
90AE	4030	整	星	晴	棲	栖	正	清	牲	生	盛	精	聖	声	製	西	誠
90BE	4040	誓	請	逝	醒	青	静	斉	税	脆	隻	席	惜	戚	斥	昔	析
90CE	4050	石	積	籍	績	脊	責	赤	跡	蹟	碩	切	拙	接	摂	折	設
90DE	4060	窃	節	説	雪	絶	舌	蝉	仙	先	千	占	宣	専	尖	川	戦
90EE	4070	扇	撰	栓	栴	泉	浅	洗	染	潜	煎	煽	旋	穿	箭	線	
913F	4120		繊	羨	腺	舛	船	薦	詮	賤	践	選	遷	銭	銑	閃	鮮
914F	4130	前	善	漸	然	全	禅	繕	膳	糎	噌	塑	岨	措	曾	曽	楚
915F	4140	狙	疏	疎	礎	祖	租	粗	素	組	蘇	訴	阻	遡	鼠	僧	創
916F	4150	双	叢	倉	喪	壮	奏	爽	宋	層	匝	惣	想	捜	掃	挿	掻
9180	4160	操	早	曹	巣	槍	槽	漕	燥	争	痩	相	窓	糟	総	綜	聡
9190	4170	草	荘	葬	蒼	藻	装	走	送	遭	鎗	霜	騒	像	増	憎	

Shift-JIS	JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
919E	4220		臓	蔵	贈	造	促	側	則	即	息	捉	束	測	足	速	俗
91AE	4230	属	賊	族	続	卒	袖	其	揃	存	孫	尊	損	村	遜	他	多
91BE	4240	太	汰	詑	唾	堕	妥	惰	打	柁	舵	楕	陀	駄	騨	体	堆
91CE	4250	対	耐	岱	帯	待	怠	態	戴	替	泰	滞	胎	腿	苔	袋	貸
91DE	4260	退	逮	隊	黛	鯛	代	台	大	第	醍	題	鷹	滝	瀧	卓	啄
91EE	4270	宅	托	択	拓	沢	濯	琢	託	鐸	濁	諾	茸	凧	蛸	只	
923F	4320		叩	但	達	辰	奪	脱	巽	竪	辿	棚	谷	狸	鱈	樽	誰
924F	4330	丹	単	嘆	坦	担	探	旦	歎	淡	湛	炭	短	端	箪	綻	耽
925F	4340	胆	蛋	誕	鍛	団	壇	弾	断	暖	檀	段	男	談	値	知	地
926F	4350	弛	恥	智	池	痴	稚	置	致	蜘	遅	馳	築	畜	竹	筑	蓄
9280	4360	逐	秩	窒	茶	嫡	着	中	仲	宙	忠	抽	昼	柱	注	虫	衷
9290	4370	註	酎	鋳	駐	樗	瀦	猪	苧	著	貯	丁	兆	凋	喋	寵	
929E	4420		帖	帳	庁	弔	張	彫	徴	懲	挑	暢	朝	潮	牒	町	眺
92AE	4430	聴	脹	腸	蝶	調	諜	超	跳	銚	長	頂	鳥	勅	捗	直	朕
92BE	4440	沈	珍	賃	鎮	陳	津	墜	椎	槌	追	鎚	痛	通	塚	栂	掴
92CE	4450	槻	佃	漬	柘	辻	蔦	綴	鍔	椿	潰	坪	壷	嬬	紬	爪	吊
92DE	4460	釣	鶴	亭	低	停	偵	剃	貞	呈	堤	定	帝	底	庭	廷	弟
92EE	4470	悌	抵	挺	提	梯	汀	碇	禎	程	締	艇	訂	諦	蹄	逓	
933F	4520		邸	鄭	釘	鼎	泥	摘	擢	敵	滴	的	笛	適	鏑	溺	哲
934F	4530	徹	撤	轍	迭	鉄	典	填	天	展	店	添	纏	甜	貼	転	顛
935F	4540	点	伝	殿	澱	田	電	兎	吐	堵	塗	妬	屠	徒	斗	杜	渡
936F	4550	登	菟	賭	途	都	鍍	砥	砺	努	度	土	奴	怒	倒	党	冬
9380	4560	凍	刀	唐	塔	塘	套	宕	島	嶋	悼	投	搭	東	桃	梼	棟
9390	4570	盗	淘	湯	涛	灯	燈	当	痘	祷	等	答	筒	糖	統	到	
939E	4620		董	蕩	藤	討	謄	豆	踏	逃	透	鐙	陶	頭	騰	闘	働
93AE	4630	動	同	堂	導	憧	撞	洞	瞳	童	胴	萄	道	銅	峠	鴇	匿
93BE	4640	得	徳	涜	特	督	禿	篤	毒	独	読	栃	橡	凸	突	椴	届
93CE	4650	鳶	苫	寅	酉	瀞	噸	屯	惇	敦	沌	豚	遁	頓	呑	曇	鈍
93DE	4660	奈	那	内	乍	凪	薙	謎	灘	捺	鍋	楢	馴	縄	畷	南	楠
93EE	4670	軟	難	汝	二	尼	弐	迩	匂	賑	肉	虹	廿	日	乳	入	
943F	4720		如	尿	韮	任	妊	忍	認	濡	禰	祢	寧	葱	猫	熱	年
944F	4730	念	捻	撚	燃	粘	乃	廼	之	埜	嚢	悩	濃	納	能	脳	膿
945F	4740	農	覗	蚤	巴	把	播	覇	杷	波	派	琶	破	婆	罵	芭	馬
946F	4750	俳	廃	拝	排	敗	杯	盃	牌	背	肺	輩	配	倍	培	媒	梅
9480	4760	楳	煤	狽	買	売	賠	陪	這	蝿	秤	矧	萩	伯	剥	博	拍
9490	4770	柏	泊	白	箔	粕	舶	薄	迫	曝	漠	爆	縛	莫	駁	麦	

Shift-JIS	JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
949E	4820		函	箱	硲	箸	肇	筈	櫨	幡	肌	畑	畠	八	鉢	溌	発
94AE	4830	醗	髪	伐	罰	抜	筏	閥	鳩	噺	塙	蛤	隼	伴	判	半	反
94BE	4840	叛	帆	搬	斑	板	氾	汎	版	犯	班	畔	繁	般	藩	販	範
94CE	4850	釆	煩	頒	飯	挽	晩	番	盤	磐	蕃	蛮	匪	卑	否	妃	庇
94DE	4860	彼	悲	扉	批	披	斐	比	泌	疲	皮	碑	秘	緋	罷	肥	被
94EE	4870	誹	費	避	非	飛	樋	簸	備	尾	微	枇	毘	琵	眉	美	
953F	4920		鼻	柊	稗	匹	疋	髭	彦	膝	菱	肘	弼	必	畢	筆	逼
954F	4930	桧	姫	媛	紐	百	謬	俵	彪	標	氷	漂	瓢	票	表	評	豹
955F	4940	廟	描	病	秒	苗	錨	鋲	蒜	蛭	鰭	品	彬	斌	浜	瀕	貧
956F	4950	賓	頻	敏	瓶	不	付	埠	夫	婦	富	冨	布	府	怖	扶	敷
9580	4960	斧	普	浮	父	符	腐	膚	芙	譜	負	賦	赴	阜	附	侮	撫
9590	4970	武	舞	葡	蕪	部	封	楓	風	葺	蕗	伏	副	復	幅	服	
959E	4A20		福	腹	複	覆	淵	弗	払	沸	仏	物	鮒	分	吻	噴	墳
95AE	4A30	憤	扮	焚	奮	粉	糞	紛	雰	文	聞	丙	併	兵	塀	幣	平
95BE	4A40	弊	柄	並	蔽	閉	陛	米	頁	僻	壁	癖	碧	別	瞥	蔑	箆
95CE	4A50	偏	変	片	篇	編	辺	返	遍	便	勉	娩	弁	鞭	保	舗	鋪
95DE	4A60	圃	捕	歩	甫	補	輔	穂	募	墓	慕	戊	暮	母	簿	菩	倣
95EE	4A70	俸	包	呆	報	奉	宝	峰	峯	崩	庖	抱	捧	放	方	朋	
963F	4B20		法	泡	烹	砲	縫	胞	芳	萌	蓬	蜂	褒	訪	豊	邦	鋒
964F	4B30	飽	鳳	鵬	乏	亡	傍	剖	坊	妨	帽	忘	忙	房	暴	望	某
965F	4B40	棒	冒	紡	肪	膨	謀	貌	貿	鉾	防	吠	頬	北	僕	卜	墨
966F	4B50	撲	朴	牧	睦	穆	釦	勃	没	殆	堀	幌	奔	本	翻	凡	盆
9680	4B60	摩	磨	魔	麻	埋	妹	昧	枚	毎	哩	槙	幕	膜	枕	鮪	柾
9690	4B70	鱒	桝	亦	俣	又	抹	末	沫	迄	侭	繭	麿	万	慢	満	
969E	4C20		漫	蔓	味	未	魅	巳	箕	岬	密	蜜	湊	蓑	稔	脈	妙
96AE	4C30	粍	民	眠	務	夢	無	牟	矛	霧	鵡	椋	婿	娘	冥	名	命
96BE	4C40	明	盟	迷	銘	鳴	姪	牝	滅	免	棉	綿	緬	面	麺	摸	模
96CE	4C50	茂	妄	孟	毛	猛	盲	網	耗	蒙	儲	木	黙	目	杢	勿	餅
96DE	4C60	尤	戻	籾	貰	問	悶	紋	門	匁	也	冶	夜	爺	耶	野	弥
96EE	4C70	矢	厄	役	約	薬	訳	躍	靖	柳	薮	鑓	愉	愈	油	癒	
973F	4D20		諭	輸	唯	佑	優	勇	友	宥	幽	悠	憂	揖	有	柚	湧
974F	4D30	涌	猶	猷	由	祐	裕	誘	遊	邑	郵	雄	融	夕	予	余	与
975F	4D40	誉	輿	預	傭	幼	妖	容	庸	揚	揺	擁	曜	楊	様	洋	溶
976F	4D50	熔	用	窯	羊	耀	葉	蓉	要	謡	踊	遥	陽	養	慾	抑	欲
9780	4D60	沃	浴	翌	翼	淀	羅	螺	裸	来	莱	頼	雷	洛	絡	落	酪
9790	4D70	乱	卵	嵐	欄	濫	藍	蘭	覧	利	吏	履	李	梨	理	璃	

Shift-JIS	JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
979E	4E20		痢	裏	裡	里	離	陸	律	率	立	葎	掠	略	劉	流	溜
97AE	4E30	琉	留	硫	粒	隆	竜	龍	侶	慮	旅	虜	了	亮	僚	両	凌
97BE	4E40	寮	料	梁	涼	猟	療	瞭	稜	糧	良	諒	遼	量	陵	領	力
97CE	4E50	緑	倫	厘	林	淋	燐	琳	臨	輪	隣	鱗	麟	瑠	塁	涙	累
97DE	4E60	類	令	伶	例	冷	励	嶺	怜	玲	礼	苓	鈴	隷	零	霊	麗
97EE	4E70	齢	暦	歴	列	劣	烈	裂	廉	恋	憐	漣	煉	簾	練	聯	
983F	4F20		蓮	連	錬	呂	魯	櫓	炉	賂	路	露	労	婁	廊	弄	朗
984F	4F30	楼	榔	浪	漏	牢	狼	篭	老	聾	蝋	郎	六	麓	禄	肋	録
985F	4F40	論	倭	和	話	歪	賄	脇	惑	枠	鷲	亙	亘	鰐	詫	藁	蕨
986F	4F50	椀	湾	碗	腕												
9880	4F60																
9890	4F70																

11.3.3 JIS Level 2 Characters

Shift-JIS	JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
989E	5020		弌	丐	丕	个	丱	丶	丼	丿	乂	乖	乘	亂	亅	豫	亊
98AE	5030	舒	弍	于	亞	亟	亠	亢	亰	亳	亶	从	仍	仄	仆	仂	仗
98BE	5040	仞	仭	仟	价	伉	佚	估	佛	佝	佗	佇	佶	侈	侏	侘	佻
98CE	5050	佩	佰	侑	佯	來	侖	儘	俔	俟	俎	俘	俛	俑	俚	俐	俤
98DE	5060	俥	倚	倨	倔	倪	倥	倅	伜	俶	倡	倩	倬	俾	俯	們	倆
98EE	5070	偃	假	會	偕	偐	偈	做	偖	偬	偸	傀	傚	傅	傴	傲	
993F	5120		僉	僊	傳	僂	僖	僞	僥	僭	僣	僮	價	僵	儉	儁	儂
994F	5130	儖	儕	儔	儚	儡	儺	儷	儼	儻	儿	兀	兒	兌	兔	兢	竸
995F	5140	兩	兪	兮	冀	冂	囘	册	冉	冏	冑	冓	冕	冖	冤	冦	冢
996F	5150	冩	冪	冫	决	冱	冲	冰	况	冽	凅	凉	凛	几	處	凩	凭
9980	5160	凰	凵	凾	刄	刋	刔	刎	刧	刪	刮	刳	刹	剏	剄	剋	剌
9990	5170	剞	剔	剪	剴	剩	剳	剿	剽	劍	劔	劒	剱	劈	劑	辨	
999E	5220		辧	劬	劭	劼	劵	勁	勍	勗	勞	勣	勦	飭	勠	勳	勵
99AE	5230	勸	勹	匆	匈	甸	匍	匐	匏	匕	匚	匣	匯	匱	匳	匸	區
99BE	5240	卆	卅	丗	卉	卍	凖	卞	卩	卮	夘	卻	卷	厂	厖	厠	厦
99CE	5250	厥	厮	厰	厶	參	簒	雙	叟	曼	燮	叮	叨	叭	叺	吁	吽
99DE	5260	呀	听	吭	吼	吮	吶	吩	吝	呎	咏	呵	咎	呟	呱	呷	呰
99EE	5270	咒	呻	咀	呶	咄	咐	咆	哇	咢	咸	咥	咬	哄	哈	咨	
9A3F	5320		咫	哂	咤	咾	咼	哘	哥	哦	唏	唔	哽	哮	哭	哺	哢
9A4F	5330	唹	啀	啣	啌	售	啜	啅	啖	啗	唸	唳	啝	喙	喀	咯	喊
9A5F	5340	喟	啻	啾	喘	喞	單	啼	喃	喩	喇	喨	嗚	嗅	嗟	嗄	嗜
9A6F	5350	嗤	嗔	嘔	嗷	嘖	嗾	嗽	嘛	嗹	噎	噐	營	嘴	嘶	嘲	嘸
9A80	5360	噫	噤	嘯	噬	噪	嚆	嚀	嚊	嚠	嚔	嚏	嚥	嚮	嚶	嚴	囂
9A90	5370	嚼	囁	囃	囀	囈	囎	囑	囓	囗	囮	囹	圀	囿	圄	圉	
9A9E	5420		圈	國	圍	圓	團	圖	嗇	圜	圦	圷	圸	坎	圻	址	坏
9AAE	5430	坩	埀	垈	坡	坿	垉	垓	垠	垳	垤	垪	垰	埃	埆	埔	埒
9ABE	5440	埓	堊	埖	埣	堋	堙	堝	塲	堡	塢	塋	塰	毀	塒	堽	塹
9ACE	5450	墅	墹	墟	墫	墺	壞	墻	墸	墮	壅	壓	壑	壗	壙	壘	壥
9ADE	5460	壜	壤	壟	壯	壺	壹	壻	壼	壽	夂	夊	夐	夛	梦	夥	夬
9AEE	5470	夭	夲	夸	夾	竒	奕	奐	奎	奚	奘	奢	奠	奧	奬	奩	
9B3F	5520		奸	妁	妝	佞	侫	妣	妲	姆	姨	姜	妍	姙	姚	娥	娟
9B4F	5530	娑	娜	娉	娚	婀	婬	婉	娵	娶	婢	婪	媚	媼	媾	嫋	嫂
9B5F	5540	媽	嫣	嫗	嫦	嫩	嫖	嫺	嫻	嬌	嬋	嬖	嬲	嫐	嬪	嬶	嬾
9B6F	5550	孃	孅	孀	孑	孕	孚	孛	孥	孩	孰	孳	孵	學	斈	孺	宀
9B80	5560	它	宦	宸	寃	寇	寉	寔	寐	寤	實	寢	寞	寥	寫	寰	寶
9B90	5570	寳	尅	將	專	對	尓	尠	尢	尨	尸	尹	屁	屆	屎	屓	

Shift-JIS	JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
9B9E	5620		屐	屏	孱	屬	屮	乢	屶	屹	岌	岑	岔	妛	岫	岻	岶
9BAE	5630	岼	岷	峅	岾	峇	峙	峩	峽	峺	峭	嶌	峪	崋	崕	崗	嵜
9BBE	5640	崟	崛	崑	崔	崢	崚	崙	崘	嵌	嵒	嵎	嵋	嵬	嵳	嵶	嶇
9BCE	5650	嶄	嶂	嶢	嶝	嶬	嶮	嶽	嶐	嶷	嶼	巉	巍	巓	巒	巖	巛
9BDE	5660	巫	已	巵	帋	帚	帙	帑	帛	帶	帷	幄	幃	幀	幎	幗	幔
9BEE	5670	幟	幢	幤	幇	幵	并	幺	麼	广	庠	廁	廂	廈	廐	廏	
9C3F	5720		廖	廣	廝	廚	廛	廢	廡	廨	廩	廬	廱	廳	廰	廴	廸
9C4F	5730	廾	弃	弉	彝	彜	弋	弑	弖	弩	弭	弸	彁	彈	彌	彎	弯
9C5F	5740	彑	彖	彗	彙	彡	彭	彳	彷	徃	徂	彿	徊	很	徑	徇	從
9C6F	5750	徙	徘	徠	徨	徭	徼	忖	忻	忤	忸	忱	忝	悳	忿	怡	恠
9C80	5760	怙	怐	怩	怎	怱	怛	怕	怫	怦	怏	怺	恚	恁	恪	恷	恟
9C90	5770	恊	恆	恍	恣	恃	恤	恂	恬	恫	恙	悁	悍	惧	悃	悚	
9C9E	5820		悄	悛	悖	悗	悒	悧	悋	惡	悸	惠	惓	悴	忰	悽	惆
9CAE	5830	悵	惘	慍	愕	愆	惶	惷	愀	惴	惺	愃	愡	惻	惱	愍	愎
9CBE	5840	慇	愾	愨	愧	慊	愿	愼	愬	愴	愽	慂	慄	慳	慷	慘	慙
9CCE	5850	慚	慫	慴	慯	慥	慱	慟	慝	慓	慵	憙	憖	憇	憬	憔	憚
9CDE	5860	憊	憑	憫	憮	懌	懊	應	懷	懈	懃	懆	憺	懋	罹	懍	懦
9CEE	5870	懣	懶	懺	懴	懿	懽	懼	懾	戀	戈	戉	戍	戌	戔	戛	
9D3F	5920		戞	戡	截	戮	戰	戲	戳	扁	扎	扞	扣	扛	扠	扨	扼
9D4F	5930	抂	抉	找	抒	抓	抖	拔	抃	抔	拗	拑	抻	拏	拿	拆	擔
9D5F	5940	拈	拜	拌	拊	拂	拇	抛	拉	挌	拮	拱	挧	挂	挈	拯	拵
9D6F	5950	捐	挾	捍	搜	捏	掖	掎	掀	掫	捶	掣	掏	掉	掟	掵	捫
9D80	5960	捩	掾	揩	揀	揆	揣	揉	插	揶	揄	搖	搴	搆	搓	搦	搶
9D90	5970	攝	搗	搨	搏	摧	摯	摶	摎	攪	撕	撓	撥	撩	撈	撼	
9D9E	5A20		據	擒	擅	擇	撻	擘	擂	擱	擧	舉	擠	擡	抬	擣	擯
9DAE	5A30	攬	擶	擴	擲	擺	攀	擽	攘	攜	攅	攤	攣	攫	攴	攵	攷
9DBE	5A40	收	攸	畋	效	敖	敕	敍	敘	敞	敝	敲	數	斂	斃	變	斛
9DCE	5A50	斟	斫	斷	旃	旆	旁	旄	旌	旒	旛	旙	无	旡	旱	杲	昊
9DDE	5A60	昃	旻	杳	昵	昶	昴	昜	晏	晄	晉	晁	晞	晝	晤	晧	晨
9DEE	5A70	晟	晢	晰	暃	暈	暎	暉	暄	暘	暝	曁	暹	曉	暾	暼	
9E3F	5B20		曄	暸	曖	曚	曠	昿	曦	曩	曰	曵	曷	朏	朖	朞	朦
9E4F	5B30	朧	霸	朮	朿	朶	杁	朸	朷	杆	杞	杠	杙	杣	杤	枉	杰
9E5F	5B40	枩	杼	杪	枌	枋	枦	枡	枅	枷	柯	枴	柬	枳	柩	枸	柤
9E6F	5B50	柞	柝	柢	柮	枹	柎	柆	柧	檜	栞	框	栩	桀	桍	栲	桎
9E80	5B60	梳	栫	桙	档	桷	桿	梟	梏	梭	梔	條	梛	梃	檮	梹	桴
9E90	5B70	梵	梠	梺	椏	梍	桾	椁	棊	椈	棘	椢	椦	棡	椌	棍	

Shift-JIS	JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
9E9E	5C20		棔	棧	棕	椶	椒	椄	棗	棣	椥	棹	棠	棯	椨	椪	椚
9EAE	5C30	椣	椡	棆	楹	楷	楜	楸	楫	楔	楾	楮	椹	楴	椽	楙	椰
9EBE	5C40	楡	楞	楝	榁	楪	榲	榮	槐	榿	槁	槓	榾	槎	寨	槊	槝
9ECE	5C50	榻	槃	榧	樮	榑	榠	榜	榕	榴	槞	槨	樂	樛	槿	權	槹
9EDE	5C60	槲	槧	樅	榱	樞	槭	樔	槫	樊	樒	櫁	樣	樓	橄	樌	橲
9EEE	5C70	樶	橸	橇	橢	橙	橦	橈	樸	樢	檐	檍	檠	檄	檢	檣	
9F3F	5D20		檗	蘗	檻	櫃	櫂	檸	檳	檬	櫞	櫑	櫟	檪	櫚	櫪	櫻
9F4F	5D30	欅	蘖	櫺	欒	欖	鬱	欟	欸	欷	盜	欹	飮	歇	歃	歉	歐
9F5F	5D40	歙	歔	歛	歟	歡	歸	歹	歿	殀	殄	殃	殍	殘	殕	殞	殤
9F6F	5D50	殪	殫	殯	殲	殱	殳	殷	殼	毆	毋	毓	毟	毬	毫	毳	毯
9F80	5D60	麾	氈	氓	气	氛	氤	氣	汞	汕	汢	汪	沂	沍	沚	沁	沛
9F90	5D70	汾	汨	汳	沒	沐	泄	泱	泓	沽	泗	泅	泝	沮	沱	沾	
9F9E	5E20		沺	泛	泯	泙	泪	洟	衍	洶	洫	洽	洸	洙	洵	洳	洒
9FAE	5E30	洌	浣	涓	浤	浚	浹	浙	涎	涕	濤	涅	淹	渕	渊	涵	淇
9FBE	5E40	淦	涸	淆	淬	淞	淌	淨	淒	淅	淺	淙	淤	淕	淪	淮	渭
9FCE	5E50	湮	渮	渙	湲	湟	渾	渣	湫	渫	湶	湍	渟	湃	渺	湎	渤
9FDE	5E60	滿	渝	游	溂	溪	溘	滉	溷	滓	溽	溯	滄	溲	滔	滕	溏
9FEE	5E70	溥	滂	溟	潁	漑	灌	滬	滸	滾	漿	滲	漱	滯	漲	滌	
E03F	5F20		漾	漓	滷	澆	潺	潸	澁	澀	潯	潛	濳	潭	澂	潼	潘
E04F	5F30	澎	澑	濂	潦	澳	澣	澡	澤	澹	濆	澪	濟	濕	濬	濔	濘
E05F	5F40	濱	濮	濛	瀉	瀋	濺	瀑	瀁	瀏	濾	瀛	瀚	潴	瀝	瀘	瀟
E06F	5F50	瀰	瀾	瀲	灑	灣	炙	炒	炯	烱	炬	炸	炳	炮	烟	烋	烝
E080	5F60	烙	焉	烽	焜	焙	煥	煕	熈	煦	煢	煌	煖	煬	熏	燻	熄
E090	5F70	熕	熨	熬	燗	熹	熾	燒	燉	燔	燎	燠	燬	燧	燵	燼	
E09E	6020		燹	燿	爍	爐	爛	爨	爭	爬	爰	爲	爻	爼	爿	牀	牆
E0AE	6030	牋	牘	牴	牾	犂	犁	犇	犒	犖	犢	犧	犹	犲	狃	狆	狄
E0BE	6040	狎	狒	狢	狠	狡	狹	狷	倏	猗	猊	猜	猖	猝	猴	猯	猩
E0CE	6050	猥	猾	獎	獏	默	獗	獪	獨	獰	獸	獵	獻	獺	珈	玳	珎
E0DE	6060	玻	珀	珥	珮	珞	璢	琅	瑯	琥	珸	琲	琺	瑕	琿	瑟	瑙
E0EE	6070	瑁	瑜	瑩	瑰	瑣	瑪	瑶	瑾	璋	璞	璧	瓊	瓏	瓔	珱	
E13F	6120		瓠	瓣	瓧	瓩	瓮	瓲	瓰	瓱	瓸	瓷	甄	甃	甅	甌	甎
E14F	6130	甍	甕	甓	甞	甦	甬	甼	畄	畍	畊	畉	畛	畆	畚	畩	畤
E15F	6140	畧	畫	畭	畸	當	疆	疇	畴	疊	疉	疂	疔	疚	疝	疥	疣
E16F	6150	痂	疳	痃	疵	疽	疸	疼	疱	痍	痊	痒	痙	痣	痞	痾	痿
E180	6160	痼	瘁	痰	痺	痲	痳	瘋	瘍	瘉	瘟	瘧	瘠	瘡	瘢	瘤	瘴
E190	6170	瘰	瘻	癇	癈	癆	癜	癘	癡	癢	癨	癩	癪	癧	癬	癰	

Shift-JIS	JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
E19E	6220		癲	癶	癸	發	皀	皃	皈	皋	皎	皖	皓	皙	皚	皰	皴
E1AE	6230	皸	皹	皺	盂	盍	盖	盒	盞	盡	盥	盧	盪	蘯	盻	眈	眇
E1BE	6240	眄	眩	眤	眞	眥	眦	眛	眷	眸	睇	睚	睨	睫	睛	睥	睿
E1CE	6250	睾	睹	瞎	瞋	瞑	瞠	瞞	瞰	瞶	瞹	瞿	瞼	瞽	瞻	矇	矍
E1DE	6260	矗	矚	矜	矣	矮	矼	砌	砒	礦	砠	礪	硅	碎	硴	碆	硼
E1EE	6270	碚	碌	碣	碵	碪	碯	磑	磆	磋	磔	碾	碼	磅	磊	磬	
E23F	6320		磧	磚	磽	磴	礇	礒	礑	礙	礬	礫	祀	祠	祗	祟	祚
E24F	6330	祕	祓	祺	祿	禊	禝	禧	齋	禪	禮	禳	禹	禺	秉	秕	秧
E25F	6340	秬	秡	秣	稈	稍	稘	稙	稠	稟	禀	稱	稻	稾	稷	穃	穗
E26F	6350	穉	穡	穢	穩	龝	穰	穹	穽	窈	窗	窕	窘	窖	窩	竈	窰
E280	6360	窶	竅	竄	窿	邃	竇	竊	竍	竏	竕	竓	站	竚	竝	竡	竢
E290	6370	竦	竭	竰	笂	笏	笊	笆	笳	笘	笙	笞	笵	笨	笶	筐	
E29E	6420		筺	笄	筍	笋	筌	筅	筵	筥	筴	筧	筰	筱	筬	筮	箝
E2AE	6430	箘	箟	箍	箜	箚	箋	箒	箏	筝	箙	篋	篁	篌	篏	箴	篆
E2BE	6440	篝	篩	簑	簔	篦	篥	籠	簀	簇	簓	篳	篷	簗	簍	篶	簣
E2CE	6450	簧	簪	簟	簷	簫	簽	籌	籃	籔	籏	籀	籐	籘	籟	籤	籖
E2DE	6460	籥	籬	籵	粃	粐	粤	粭	粢	粫	粡	粨	粳	粲	粱	粮	粹
E2EE	6470	粽	糀	糅	糂	糘	糒	糜	糢	鬻	糯	糲	糴	糶	糺	紆	
E33F	6520		紂	紜	紕	紊	絅	絋	紮	紲	紿	紵	絆	絳	絖	絎	絲
E34F	6530	絨	絮	絏	絣	經	綉	絛	綏	絽	綛	綺	綮	綣	綵	緇	綽
E35F	6540	綫	總	綢	綯	緜	綸	綟	綰	緘	緝	緤	緞	緻	緲	緡	縅
E36F	6550	縊	縣	縡	縒	縱	縟	縉	縋	縢	繆	繦	縻	縵	縹	繃	縷
E380	6560	縲	縺	繧	繝	繖	繞	繙	繚	繹	繪	繩	繼	繻	纃	緕	繽
E390	6570	辮	繿	纈	纉	續	纒	纐	纓	纔	纖	纎	纛	纜	缸	缺	
E39E	6620		罅	罌	罍	罎	罐	网	罕	罔	罘	罟	罠	罨	罩	罧	罸
E3AE	6630	羂	羆	羃	羈	羇	羌	羔	羞	羝	羚	羣	羯	羲	羹	羮	羶
E3BE	6640	羸	譱	翅	翆	翊	翕	翔	翡	翦	翩	翳	翹	飜	耆	耄	耋
E3CE	6650	耒	耘	耙	耜	耡	耨	耿	耻	聊	聆	聒	聘	聚	聟	聢	聨
E3DE	6660	聳	聲	聰	聶	聹	聽	聿	肄	肆	肅	肛	肓	肚	肭	冐	肬
E3EE	6670	胛	胥	胙	胝	胄	胚	胖	脉	胯	胱	脛	脩	脣	脯	腋	
E43F	6720		隋	腆	脾	腓	腑	胼	腱	腮	腥	腦	腴	膃	膈	膊	膀
E44F	6730	膂	膠	膕	膤	膣	腟	膓	膩	膰	膵	膾	膸	膽	臀	臂	膺
E45F	6740	臉	臍	臑	臙	臘	臈	臚	臟	臠	臧	臺	臻	臾	舁	舂	舅
E46F	6750	與	舊	舍	舐	舖	舩	舫	舸	舳	艀	艙	艘	艝	艚	艟	艤
E480	6760	艢	艨	艪	艫	舮	艱	艷	艸	艾	芍	芒	芫	芟	芻	芬	苡
E490	6770	苣	苟	苒	苴	苳	苺	莓	范	苻	苹	苞	茆	苜	茉	苙	

Shift-JIS	JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
E49E	6820		茵	茴	茖	茲	茱	荀	茹	荐	荅	茯	茫	茗	茘	莅	莚
E4AE	6830	莪	莟	莢	莖	茣	莎	莇	莊	荼	莵	荳	荵	莠	莉	莨	菴
E4BE	6840	萓	菫	菎	菽	萃	菘	萋	菁	菷	萇	菠	菲	萍	萢	萠	莽
E4CE	6850	萸	蔆	菻	葭	萪	萼	蕚	蒄	葷	葫	蒭	葮	蒂	葩	葆	萬
E4DE	6860	葯	葹	萵	蓊	葢	蒹	蒿	蒟	蓙	蓍	蒻	蓚	蓐	蓁	蓆	蓖
E4EE	6870	蒡	蔡	蓿	蓴	蔗	蔘	蔬	蔟	蔕	蔔	蓼	蕀	蕣	蕘	蕈	
E53F	6920		蕁	蘂	蕋	蕕	薀	薤	薈	薑	薊	薨	蕭	薔	薛	藪	薇
E54F	6930	薜	蕷	蕾	薐	藉	薺	藏	薹	藐	藕	藝	藥	藜	藹	蘊	蘓
E55F	6940	蘋	藾	藺	蘆	蘢	蘚	蘰	蘿	虍	乕	虔	號	虧	虱	蚓	蚣
E56F	6950	蚩	蚪	蚋	蚌	蚶	蚯	蛄	蛆	蚰	蛉	蠣	蚫	蛔	蛞	蛩	蛬
E580	6960	蛟	蛛	蛯	蜒	蜆	蜈	蜀	蜃	蛻	蜑	蜉	蜍	蛹	蜊	蜴	蜿
E590	6970	蜷	蜻	蜥	蜩	蜚	蝠	蝟	蝸	蝌	蝎	蝴	蝗	蝨	蝮	蝙	
E59E	6A20		蝓	蝣	蝪	蠅	螢	螟	螂	螯	蟋	螽	蟀	蟐	雖	螫	蟄
E5AE	6A30	螳	蟇	蟆	螻	蟯	蟲	蟠	蠏	蠍	蟾	蟶	蟷	蠎	蟒	蠑	蠖
E5BE	6A40	蠕	蠢	蠡	蠱	蠶	蠹	蠧	蠻	衄	衂	衒	衙	衞	衢	衫	袁
E5CE	6A50	衾	袞	衵	衽	袵	衲	袂	袗	袒	袮	袙	袢	袍	袤	袰	袿
E5DE	6A60	袱	裃	裄	裔	裘	裙	裝	裹	褂	裼	裴	裨	裲	褄	褌	褊
E5EE	6A70	褓	襃	褞	褥	褪	褫	襁	襄	褻	褶	褸	襌	褝	襠	襞	
E63F	6B20		襦	襤	襭	襪	襯	襴	襷	襾	覃	覈	覊	覓	覘	覡	覩
E64F	6B30	覦	覬	覯	覲	覺	覽	覿	觀	觚	觜	觝	觧	觴	觸	訃	訖
E65F	6B40	訐	訌	訛	訝	訥	訶	詁	詛	詒	詆	詈	詼	詭	詬	詢	誅
E66F	6B50	誂	誄	誨	誡	誑	誥	誦	誚	誣	諄	諍	諂	諚	諫	諳	諧
E680	6B60	諤	諱	謔	諠	諢	諷	諞	諛	謌	謇	謚	諡	謖	謐	謗	謠
E690	6B70	謳	鞫	謦	謫	謾	謨	譁	譌	譏	譎	證	譖	譛	譚	譫	
E69E	6C20		譟	譬	譯	譴	譽	讀	讌	讎	讒	讓	讖	讙	讚	谺	豁
E6AE	6C30	谿	豈	豌	豎	豐	豕	豢	豬	豸	豺	貂	貉	貅	貊	貍	貎
E6BE	6C40	貔	豼	貘	戝	貭	貪	貽	貲	貳	貮	貶	賈	賁	賤	賣	賚
E6CE	6C50	賽	賺	賻	贄	贅	贊	贇	贏	贍	贐	齎	贓	賍	贔	贖	赧
E6DE	6C60	赭	赱	赳	趁	趙	跂	趾	趺	跏	跚	跖	跌	跛	跋	跪	跫
E6EE	6C70	跟	跣	跼	踈	踉	跿	踝	踞	踐	踟	蹂	踵	踰	踴	蹊	
E73F	6D20		蹇	蹉	蹌	蹐	蹈	蹙	蹤	蹠	踪	蹣	蹕	蹶	蹲	蹼	躁
E74F	6D30	躇	躅	躄	躋	躊	躓	躑	躔	躙	躪	躡	躬	躰	軆	躱	躾
E75F	6D40	軅	軈	軋	軛	軣	軼	軻	軫	軾	輊	輅	輕	輒	輙	輓	輜
E76F	6D50	輟	輛	輌	輦	輳	輻	輹	轅	轂	輾	轌	轉	轆	轎	轗	轜
E780	6D60	轢	轣	轤	辜	辟	辣	辭	辯	辷	迚	迥	迢	迪	迯	邇	迴
E790	6D70	逅	迹	迺	逑	逕	逡	逍	逞	逖	逋	逧	逶	逵	逹	迸	

Shift-JIS	JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
E79E	6E20		遏	遐	遑	遒	逎	遉	逾	遖	遘	遞	遨	遯	遶	隨	遲
E7AE	6E30	邂	遽	邁	邀	邊	邉	邏	邨	邯	邱	邵	郢	郤	扈	郛	鄂
E7BE	6E40	鄒	鄙	鄲	鄰	酊	酖	酘	酣	酥	酩	酳	酲	醋	醉	醂	醢
E7CE	6E50	醫	醯	醪	醵	醴	醺	釀	釁	釉	釋	釐	釖	釟	釡	釛	釼
E7DE	6E60	釵	釶	鈞	釿	鈔	鈬	鈕	鈑	鉞	鉗	鉅	鉉	鉤	鉈	銕	鈿
E7EE	6E70	鉋	鉐	銜	銖	銓	銛	鉚	鋏	銹	銷	鋩	錏	鋺	鍄	錮	
E83F	6F20		錙	錢	錚	錣	錺	錵	錻	鍜	鍠	鍼	鍮	鍖	鎰	鎬	鎭
E84F	6F30	鎔	鎹	鏖	鏗	鏨	鏥	鏘	鏃	鏝	鏐	鏈	鏤	鐚	鐔	鐓	鐃
E85F	6F40	鐇	鐐	鐶	鐫	鐵	鐡	鐺	鑁	鑒	鑄	鑛	鑠	鑢	鑞	鑪	鈩
E86F	6F50	鑰	鑵	鑷	鑽	鑚	鑼	鑾	钁	鑿	閂	閇	閊	閔	閖	閘	閙
E880	6F60	閠	閨	閧	閭	閼	閻	閹	閾	闊	濶	闃	闍	闌	闕	闔	闖
E890	6F70	關	闡	闥	闢	阡	阨	阮	阯	陂	陌	陏	陋	陷	陜	陞	
E89E	7020		陝	陟	陦	陲	陬	隍	隘	隕	隗	險	隧	隱	隲	隰	隴
E8AE	7030	隶	隸	隹	雎	雋	雉	雍	襍	雜	霍	雕	雹	霄	霆	霈	霓
E8BE	7040	霎	霑	霏	霖	霙	霤	霪	霰	霹	霽	霾	靄	靆	靈	靂	靉
E8CE	7050	靜	靠	靤	靦	靨	勒	靫	靱	靹	鞅	靼	鞁	靺	鞆	鞋	鞏
E8DE	7060	鞐	鞜	鞨	鞦	鞣	鞳	鞴	韃	韆	韈	韋	韜	韭	齏	韲	竟
E8EE	7070	韶	韵	頏	頌	頸	頤	頡	頷	頽	顆	顏	顋	顫	顯	顰	
E93F	7220		顱	顴	顳	颪	颯	颱	颶	飄	飃	飆	飩	飫	餃	餉	餒
E94F	7230	餔	餘	餡	餝	餞	餤	餠	餬	餮	餽	餾	饂	饉	饅	饐	饋
E95F	7240	饑	饒	饌	饕	馗	馘	馥	馭	馮	馼	駟	駛	駝	駘	駑	駭
E96F	7250	駮	駱	駲	駻	駸	騁	騏	騅	駢	騙	騫	騷	驅	驂	驀	驃
E980	7260	騾	驕	驍	驛	驗	驟	驢	驥	驤	驩	驫	驪	骭	骰	骼	髀
E990	7270	髏	髑	髓	體	髞	髟	髢	髣	髦	髯	髫	髮	髴	髱	髷	
E99E	7220		髻	鬆	鬘	鬚	鬟	鬢	鬣	鬥	鬧	鬨	鬩	鬪	鬮	鬯	鬲
E9AE	7230	魄	魃	魏	魍	魎	魑	魘	魴	鮓	鮃	鮑	鮖	鮗	鮟	鮠	鮨
E9BE	7240	鮴	鯀	鯊	鮹	鯆	鯏	鯑	鯒	鯣	鯢	鯤	鯔	鯡	鰺	鯲	鯱
E9CE	7250	鯰	鰕	鰔	鰉	鰓	鰌	鰆	鰈	鰒	鰊	鰄	鰮	鰛	鰥	鰤	鰡
E9DE	7260	鰰	鱇	鰲	鱆	鰾	鱚	鱠	鱧	鱶	鱸	鳧	鳬	鳰	鴉	鴈	鳫
E9EE	7270	鴃	鴆	鴪	鴦	鶯	鴣	鴟	鵄	鴕	鴒	鵁	鴿	鴾	鵆	鵈	
EA3F	7320		鵝	鵞	鵤	鵑	鵐	鵙	鵲	鶉	鶇	鶫	鵯	鵺	鶚	鶤	鶩
EA4F	7330	鶲	鷄	鷁	鶻	鶸	鶺	鷆	鷏	鷂	鷙	鷓	鷸	鷦	鷭	鷯	鷽
EA5F	7340	鸚	鸛	鸞	鹵	鹹	鹽	麁	麈	麋	麌	麒	麕	麑	麝	麥	麩
EA6F	7350	麸	麪	麭	靡	黌	黎	黏	黐	黔	黜	點	黝	黠	黥	黨	黯
EA80	7360	黴	黶	黷	黹	黻	黼	黽	鼇	鼈	皷	鼕	鼡	鼬	鼾	齊	齒
EA90	7370	齔	齣	齟	齠	齡	齦	齧	齬	齪	齷	齲	齶	龕	龜	龠	

Shift-JIS	JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
EA9E	7420		堯	槇	遙	瑤											
EAAE	7430																
EABE	7440																
EACE	7450																
EADE	7460																
EAEE	7470																