Product Specifications

3-inch Small KIOSK Face Mount Printer

NP-F309*

Revision 1.00 2013.06.21 1ˢᵗ.Edition

All specifications described in this document are subject to change without prior notice.
Though we made assurance doubly sure to write this product specifications,
Please contact us if you find any mistakes and erroneous omitting.

Nippon Primex Inc.

Head Office:
  1-5-12 Unoki Ohta-ku Tokyo 146-8650 Japan
  TEL :+81-3-3750-1234 FAX :+81-3-3750-4555
  E-mail : overseas@primex.co.jp
  URL : http://www.primex.jp

Rev.	V.	Descriptions			Approval	Pic
		Page	Item	Change		
1.00	1		New release		suzuki 2013.06.27	abe 2013.06.21

[VCCI Class A]

This device is class A information technology equipment. Use of this device in home environment may cause jamming.
In this case, users are required to have appropriate countermeasure. VCCI-A

[FCC Class A]

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

PRECAUTION

Please Read Carefully Before Using the Product

Handling the product in a wrong way may decline its performance and also damage the product. Please read the notes below before handling the product. Also, please sufficiently alert the user.

[FAILURE PRECAUTIONS]

Please comply with following in order to use for many years to come and prevent troubles before happens.

STATIC-ELECTRICITY;
● Static discharge prevention or body grounding must be made for installation and removal of the product to prevent damage of heating element and IC etc. Connect it to the earth ground for ESD measures.

HANDLINGS;
● Please do not apply excessive force to the input terminals.
● Use both hands when holding the product in order to prevent from dropping.
● Since it will cause damage of the heat elements, Please do not scrabble or give impact to thermal head with sharp edge object or any hard materials.

INSTALLATION;
● This product is NOT protected against dust or dirt. If used in harsh environment like at dusty place, the thermal head may get damaged or paper feed may not run properly.
● When cooling the product with a fan, keep the air exhaust slit away from the printer's paper exit area so that dust or dirt may not get in the thermal head. It will be a cause for premature failure.
● This product is equipped with an infra-red reflection sensor. The product must be installed where there is NO direct sun light/infra-red light coming in, as otherwise, the sensor would not function properly.
● This product should NOT be installed where it could be exposed to static electricity easily, strong vibration, electromagnetic field, corrosive gas, rain, fog and direct sunlight.

MOVEMENT;
● Avoid printing with no paper loaded. It can damage thermal head and also shorten its life-time.
● Please do not absolutely open the upper cover while printing and/or cutter operation. It may damage thermal head and cutter.
● Please do not pull out the paper with the upper cover closed.
● Please do not block the paper outlet while print operation. Also, please do not grab the paper while print operation.
● Paper may adhere after paper ejection due to environmental condition of static electricity when installation of this product.
Please consult us for reviewing removal of electricity.

[Safety]

For use this product safety, observe strictly followings.

1. Turn OFF the power before connecting or removing connectors. When disconnecting, handle with the connector body and DO NOT pull out by a cable.
2. The product is NOT protected from water or dew drop. DO NOT put water to the product nor handle it with wet hand because it may damage the product due to short circuit or heat or fire.
3. In order to prevent excessive current, add an electrolytic capacitor and a fuse (refer to power supply specifications for details).
4. DO NOT disassemble or modify the product.
5. In case of disposal, follow the regulations or rules of the local authorities.
6. Use power supply in conformity with LPS standard.
7. Plug off the printer when the product is not in use for a long time.
8. Do not touch cutter blade regardless of during cutter operating and stopping.

[Quality]

  To use without spoil the quality of this product, beware of followings.

    [About data]
1. The product supports only control codes and commands authorized in this document.
2. In case printing and paper feeding is interrupted temporary due to data queuing on printer from host while printing, etc., paper feeding may be jumbled on a very first 1 to 4 dot line. Especially, beware when printing graphic, etc.

    [About operation]
3. The print may jumble at the first 1-2 dot right after the paper cut action.
4. DO NOT touch the heating element part of the thermal head, since it could degrade the print quality due to soil.
5. In case of using print papers other than those specified in this document, print quality and lifetime of thermal head may not reach the level guaranteed.
6. DO NOT pull out the paper while the printer is in motion of printing, paper feeding or cutting. When removing the partially cut paper, pull it to either right or left direction.
7. Continuous motor running for a long time generates heat and may affect the printer performance. To avoid the case, it is necessary to limit the continuous motor running time to 6 minutes at maximum with the same interval time for each operation.
8. Motor may produce heat by continuously driving cutter motor for a long time and it may not perform necessary functions. Make sure to follow cutter tolerable frequency.   Using beyond it causes cutter destruction at worst.
9. Set the paper straightened with no slack.
10. A part of this product is made from coated steel plate. It does not affect the product's quality and performance at all even if the cut face of the steel plate get rusty after a long time period.
11. There is a possibility that Huskiness occurs in a printing side on this printer due to its structure.

[Others]

1. This product is designed to use with general electronic devices. (Computer, PC, OA etc.) This product is not designed and guaranteed to use with devices that require extremely high quality and reliability, also to use with devices that those failures may directly endanger human body and life. (Atomic power control device, aerospace aircraft device, transportation device, traffic signal device, ignition control device, medical device and various safety devices: hereafter called as "Specific application".) Users shall take full responsibility for using with such specific application.

2. DO NOT conduct operation that is not suggested in this instruction. It may cause accident or failure.

3. Data cannot be long-term stored, permanently stored and saved since it is basically evanescent. Nippon Primex Inc. is not responsible for any damages of data deletion or lost income due to breakdown, repair or inspection.

4. When selecting RTS/CTS in serial flow control, make sure to connect RTS/CTS signal to the flow control signal of the host side, otherwise flow control will not function and may cause garble character or printing disarray.

5. The coverage of warranty is limited within the product itself, Nippon Primex Inc. is NOT responsible for anything induced by the defect of the product and DO NOT pay for any compensation that may occur

Table of Contents

Appended reference documents (Please refer to documents as below about command and code table)

   ・Command reference [NP-F309*] (D-F10119)
    *Following Code tables are on Command reference in addition to command.
      Domestic code table, Overseas code, Code Page 858、International code,
      Code Page 1250、Code Page 1251、Code Page 1252、Code Page 1254

   ・Kanji code table [JIS C 6226・1983] (D-F10068)

1.　Overview

1.1　Application

This book applies to NP-F309 series.

The specification in this document is for NP-F309 series.

(Notice: Usable paper, characters, power supply, environment, etc. may be different to other models.)

[Note]

・Please refer to separate specification for option products, etc.

　(Please beware that specification may differ to this product.)

・Also, please refer to printer driver manual when use of printer driver.

1.2　Model Description

Basic model of this printer is categorized as follows.

NP-F3092D-**
(1) (2)　　(3)(4)　 (5)

(1)Type (Default setting)
　F: Face mount type

(2)Mechanism (Default setting)
　3:3 inch model

[Note]
　　・3 inch model represents NP-F309**(The following sentence is the same)

(3) Paper holder type(Default setting)
　Standard
　2:φ120_Arm(UPH-Arm_W)

　Manufacturable specifications
　4:φ80_Arm(P091_PaperHolder_3_Unit)

(4)Interface(Default setting)
　Standard
　D:Serial(RS232C), USB(V2.0 FULL SPEED) are usable by selection

　Manufacturable specifications
　U: Only USB（V2.0 FULL SPEED）
　R: Only Serial (RS232C)

(5)OEM etc. (Default setting).
　　No mark: original model

1.3 Features

1) Face mount printer directly attachable to front panel.

2) Print side to eject is selectable for face up or face down printing(Select when attaching).

3) Easy to set paper roll by adoption of paper holder with a cantilever shaft.

4) Direction of paper roll setting is selectable either left or right(Select when attaching).

5) The position of paper roll is selectable either upward or center or downward.(Select when attaching).

6) Printing Speed MAX.150mm/sec

7) Equipped auto-cutter.

8) Equipped paper near end sensor.

9) High quality printing.

10) Interface available USB, Serial(Selectable).

11) Adaption to various 1D barcode.

12) Adaption to 2D barcode: QR code model2.

13) Capable to apply for various application.

14) Driver(Windows XP(32bit) / Windows Vista(32,64bit) / Windows 7(32,64bit) / Windows CE5.0 / Windows CE6.0   Linux(CUPS Driver)[*1]

15) Easy to rewrite firmware[*2] with flash memory.
    Also, 3 pattern of NV bit image can be registered.

16) Easy paper setting by auto loading.

17) Option bezel is available.[*3]

*1：Only Ubuntu was verified.

*2：[F/W] indicates [Firmware] hereinafter.
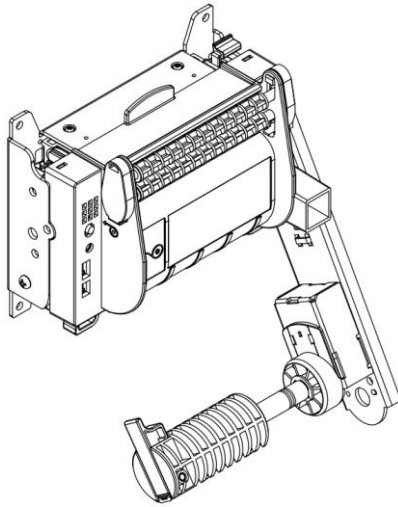
*3：Please refer to [1.5 option].

1.4 Configuration

1) NP-F3092D(Standard)

Configured parts of NP-F3092D are as below.

No	Name	Specifications		Q'ty
		Configured parts		
1	NP-F3092D	φ120_Arm	USB, Serial	1

[Note]

No accessories. (No sample paper rolls)

NP-F3092D(φ120_Arm) [Default status]

2) NP-F3094D

Configured parts of NP-F3094D are as below.

No	Name	Specifications		Q'ty
		Configured parts		
1	NP-F3094D	φ80_Arm	USB, Serial	1

[Note]

No accessories. (No sample paper rolls)
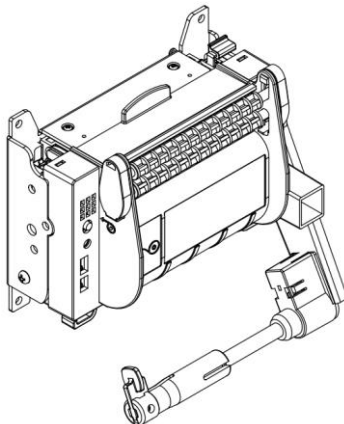
NP-F3094D(φ80_Arm)[Default status]

1.5 Options

1) Power Supply PS8-*2
   DC24V output adapter is available.
   Please refer to [Products specification D-F10058].

[Note]
   Please confirm with actual printer for use when operating high print ratio.

2) Bezel BEZ-430
   A bezel for NP-F309 is available.
   Please refer to [Products specification D-F10125].

2. Specifications

2.1 Basic Specifications

No.	Specifications		NP-F309*
1	Print head	1:Print method	Line thermal dot
		2:Total dots	576 dots
		3:Dot density	8dot/mm
		4: Print width (MAX)	72mm
2	Printing spec	1: Print speed (MAX) *Note1	MAX.150mm/sec
		Conditions	Head temp. 35ºC and more, Optimized drive print ratio 50% or less
			*except communication time
		2: Max. print digit	
		Font A (12×24)	48 digits
		Font B (9×17)	64 digits
		Kanji (24×24)	24 digits
		3: Paper feed pitch	0.125mm
3	Character	1: Character size	
		Font A (12×24)	1.50×3.00mm
		Font B (9×17)	1.13×2.13mm
		Kanji (24×24)	3.00×3.00mm
		2:Characters	
		Japanese	JIS C 6226·1983(Full size) Katakana character set (Half size) Extended graphic character set (Half size) Code Page 858 (Half size) International character set (Half size)
		Polish	Code Page 1250　(Half size)
		Russian	Code Page 1251　(Half size)
		Scandinavian	Code Page 1252　(Half size)
		Turkish	Code Page 1254　(Half size)
		3:Character Modifications	Double width
			Double height
			Quadruple
			Bold print
			Double strike
			Inverted
			90°clock-wise rotation
			underlined
		4:Line feed Q'ty (Default)	4.25mm　(1/6 inch) *Note2

*Note1: Print speed fluctuates depending on the condition.

*Note2: Changeable by command.

No.	Specifications		NP-F309*
4	Print mode		Line mode
5	Barcode Specs.	1:1D barcode	UPC-A
			UPC-E
			JAN-13(EAN-13)
			JAN-8(EAN-8)
			CODE39
			ITF
			CODABAR
			CODE128
		2:2D barcode	QR Code Model II
6	Interface	1:USB(Dtype, Utype)	V2.0 FULL SPEED Compliance
		2:Serial (Dtype,Rtype)	RS232C Compliance
7	Auto cutter	1: Cut Mode	Partial cut / Full cut * by command selection
8	Receive buffer		Approx.15K byte
9	Alarm display		ALARM LED
10	Operation Switch		FEED switch RESET switch
11	External Dimensions	*Shipping dimensions *Without stopper and paper	NP-F3092: Approx.122.2(W) x 97.6(D) x 160.8(H) mm NP-F3094: Approx.121.2(W) x 73.0(D) x 123.5(H) mm
12	Weight	*Without roll paper	NP-F3092: Approx. $597^{\pm50}$g NP-F3094: Approx. $520^{\pm50}$g
13	Position of attachment		Please refer to [5.Printer Installation]
14	Packing	1:Individual dimensions	Approx. $224^{\pm5}$ (W) x $169^{\pm5}$ (D) x $168^{\pm5}$ (H) mm
		2:Individual Weight	NP-F3092: Approx. $830^{\pm50}$g NP-F3094: Approx. $750^{\pm50}$g
		3:External Dimensions	Approx. $531^{\pm10}$ (W) x $472^{\pm10}$ (D) x $375^{\pm10}$ (H) mm
		4:Weight (12pcs)	NP-F3092: Approx. $12.9^{\pm0.5}$kg NP-F3094: Approx. $11.9^{\pm0.5}$kg

2.2 Paper Specifications

1) Paper width and thickness

	NP-F309*
Paper width	80_{-1}^{0} mm
Paper thickness	59~75μm

[Note]Please use core width as same as paper width.

2) Paper form

・Form shall be roll one.

	Arm	External diameter(Max)	Core I.D	Core O.D
NP-F3092	For φ120	φ120mm	φ25.4mm	φ33.4mm
NP-F3094	For φ80	φ80mm	φ12.0mm	φ18.0mm
			φ12.0mm	φ22.0mm

[Note about paper]
・Use Thermal paper.
・DO NOT stick end of paper with glue and scotch tape.
・The core of roll paper should not be deformed.
・The core should not be stuck out over the side of the paper roll.
・DO NOT use paper having kept at high temperature and humidity.
・Roll paper should not be loosened.
・Printing surface shall be outer surface. (Involute paper is not applicable).
・Be careful when using pre-printed papers. Especially, to a paper sensor on non-printed surface and a paper near end sensor at side.
・Do not use using the paper stored for long time because it may not be satisfied with its print quality.
・Make sure to use roll paper with core.

3) Recommended paper

Base paper part no.	Paper thickness	Manufacturer	Setting value of recommended print density[1]
TF50KS-E2D	59μm	Nihon Paper Co.,Ltd	More than 100%
PD150R	75μm	Oji Paper Co., Ltd	More than 110%
PD160R	75μm	Oji Paper Co., Ltd	More than 110%

*1:Default setting value of print density is 100%.
　　Settable by command [Print density setting] 《GS ~ n》 .(110% : n=〔6E〕h)

[Note]
・Print quality may drop depending on environmental temperature and humidity, please determine print density setting upon verifying print quality under the environment to use.
　Print density can be set by a command [Print Density Setting] <GS~n>.
・Thermal paper may get contaminated or printer may get condensation by vapor arising from the thermal paper if printing at higher printing ratio is activated under lower temperature and higher humidity environment. Please be careful to prevent water from dropping to thermal head. It may cause galvanic corrosion.
　Please keep a power off until dew disappears if condensation arose.
・Please use high reliable thermal papers with low Na+ion, K+ion, and CI-ion when papers(Roll paper) other than recommended is used.

4) Paper near end setting

How to set
The position of paper near end sensor is fixed and cannot be moved.
The following setting is available by [Memory switch setting]. Please set after confirmation of core external diameter of paper roll to use.

External diameter of roll core	Memory switch setting		Detect external diameter value of paper near end	Factory setting	
				NP-F3092	NP-F3094
φ18mm	MS2-6	OFF	φ22±2.5mm	-	○
φ22mm		ON	φ28±2.5mm	-	-
φ33.4mm		ON	φ39±2.5mm	○	-

【NOTE】
　*Refer to [4.1 Function setting] about memory switch setting.
　*Regard detect external diameter value of paper near end as reference value due to it fluctuates depending on the type of paper, thickness, etc.
　*In case detect external diameter value of paper near end:φ22mm is selected（MS2-6:OFF）and activated under following condition either (1) or (2), paper near end is detected at that point. (～φ28).
　(1) When φ28mm or less paper is set.
　(2) When power-on with setting φ28mm or less paper is set.

2.3　Print Area

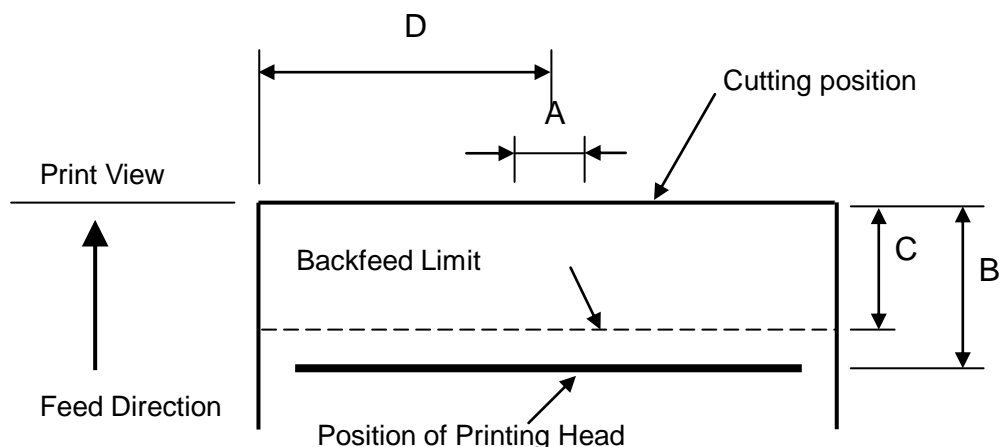Print View
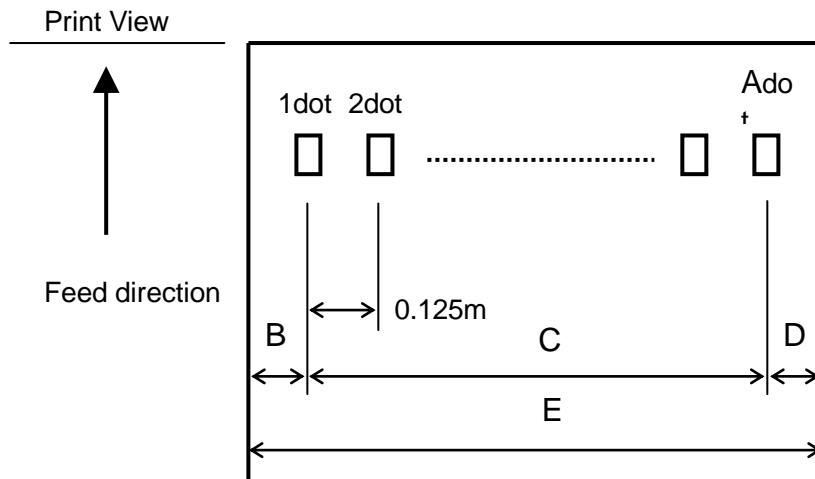
1) Name of Symbols

Symbol	Name
A	Print Dot Number
B	Left Margin
C	Area of Printing
D	Right Margin
E	Paper Width

2) Relationships between Paper Width and Print Area

	A(dot)	B(±1mm)	C(±0.2mm)	D(±1mm)	E($^{-1+0}$mm)
NP-F309*	576 dots	4 mm	72 mm	4 mm	80 mm

2.4   Specifications of Cutter

Symbol	Descriptions	Measurement
A	Tab size on Partial Cutting	1.0~2.5mm
B	Position of Printer Head from cut.	7.5±1.0mm
C	Limit of Backfeed	4.5mm
D	Tab on partial cutting	29mm

1) Cutting Method   : Slide System

2) Cutting Mode   : Partial cut / Full cut

[Note]
    Selectable by command.

3) Allowance of Cutting Frequency   : 20 cuts per minute(1 cut per 3sec)

4) Paper Thickness   : Refer to [2.2 Paper specification]

5) Minimum cutting length   : 30mm

[Note]
    * Please beware that loading platen such as pulling out printed paper strongly after partial cut may cause next print line head deformed.
    *Please feed paper for more than approx. 1mm (8 dot line) when activating print after a partial cut for prevention of deformed print line head
   *Tear off the paper, after a partial cut, by pulling it toward the hand holding tip of the paper either right or left side cut in order to avoid loading platen.
    *Above B measurement will be 9.5±1mm because Approx.2mm paper feed is operated automatically for preventing paper jam after cutting.
    *Please do not use like ingenerating strips by cutting.   It may cause paper jam.
    *Using partial cut is recommended in this product. In case using Full cut, depending on the environment, Cut paper may stick to paper exit by its static electricity. Please make sure to confirm before using.

2.5 Paper sensor position
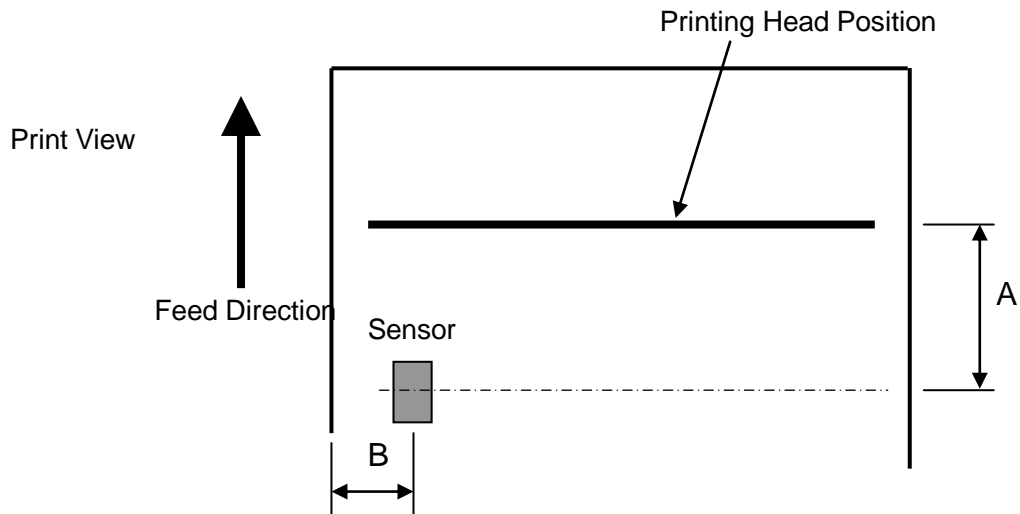
1) Name of Symbol

Symbol	Descriptions
A	Print Head position ~ Sensor Position
B	Sensor position

2) Sensor position

	A(±1mm)	B(±0.5mm)
NP-F309*	7.5mm	4.0mm

[Note]

    *Please remove dust / wisps of paper adhere to sensor constantly.

    *In order to prevent malfunction of paper sensor, please do not pre-print on paper feed direction of sensor position ±5mm width.

2.6 Power Supply Specifications
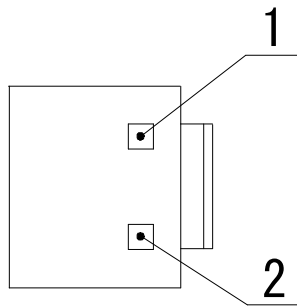
1) Power supply input connector

2pin connector CN1
Printer side connector：S2P-VH(JST) or equivalent
Externally-supplied connector:VHR-2N(JST) or equivalent

Terminal No	Function
1	DC+24V
2	GND

Connector fig(From the side of interdigitation)

2) Power Supply Voltage   DC24V±5%

3) Consumption Current

[Condition] Partition Drive :Optimization, power-supply voltage :DC24V, temperature :25 degree Celsius, Print Density : 100%

	NP-F309	
Print ratio	Approx.18%(Please refer to print ex.) ANK rolling 50lines (Repeat "A～Z"、"0～9") +Paper feed 5line+Full cut	100%(Please refer to print ex.) Print length 20mm
Print content	Font A 48digits	Print width 72mm (576dots)
Print example	48digits ABCD～98ABCDEFGHIJKL MNOPQR～MNOPQRSTUVWX YZ012345～0123456789 ・ ・ ・ YZ01～WXYZ0123456789 ABCDEF～ABCDEFGHIJKL MNOPQRST～OPQRSTUVWX	72mm
Reference consumption current	Average : Approx.1.0A Peak : Approx.4.5A	Average : Approx.3.2A Peak : Approx.4.5A

[Note]
・Print width and partition drive are set with default status of this product.
・Print ratio[*1] = Print current dot number÷Total dot number of head.

*1：Please select optimization or dual partition or quadruple partition when to print its print ratio exceeding 60%.
*Please do not exceed a range of power supply voltage under any conditions whatsoever because degradation/destruction may happen once voltage exceed over a range.
*Because large peak current follows depending on power supply voltage and print contents, in order to assure print quality, use a power supply which has enough capacity and connect all wires regarding power supply. Also, please use wire should be AWG#16 or equivalent.
* Although current capacity of thermal head itself is 10.2A, current capacity of connector cable is not included to this, determine dot number of simultaneous current-carrying not to exceed the current capacity.
* If power supply cable is excessively long, the operation may become unstable. Cable should be made as short as possible. If not possible, fook up cables near the printer and place an electrolytic capacitor of 2200μ between power supply and GND. Please arrange wiring that power supply line and signal line to printer does not get an electromagnetic influence against other power supply lines. Please use rated voltage 35V or more.
* Please set element for excessive current protection and appropriate fuse to the power line.
* Use LPS power supply.

2.7 Reliability Specifications

1) Life time

(1) Thermal Head
Anti-pulse Characteristics   :100 million pulse
Anti-abrasion characteristics   :100km

(2) Cutter life   : 0.8million cut

(3)Life Definition
・Entering point of abrasion failure period.
・Condition to satisfy life is as follows;
    Average Print Ratio：12.5%
    Recommended thermal paper：Recommended thermal paper
    Print Density   : 100%
    Temperature/humidity：20 degree, 60%

[Note]
  * In case of using paper other than recommended paper, since life time will differ depending on paper quality, width and thickness, confirm with paper in actual use at the user's side.
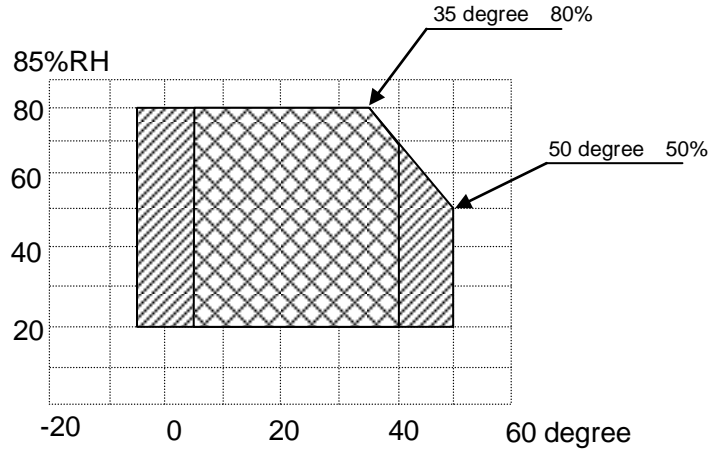
2.8 Environment Specifications

1) Operating Environment
Temperature　:　-5～50 degree（print warranty is 5 to 40 degree）
Humidity　:　20～80%RH
　　　Except, 85%RH assumes 35ºC for no condensation

*Warrant scope of Print Quality (P/Q) & Print Operable (P/O) range

35 degree　80%
50 degree　50%

⬛ (cross-hatch)	P/Q temp. & humidity range
⬛ (diagonal)	P/O temp. & humidity range

2) Storage Environment (except for papers)
Temperature　:　-20 to 70 degree
Humidity　:　10～90%RH
　　　Except, no condensation.
High temp and humidity: 40ºC90%RH (no condensation) shall be the worst value.
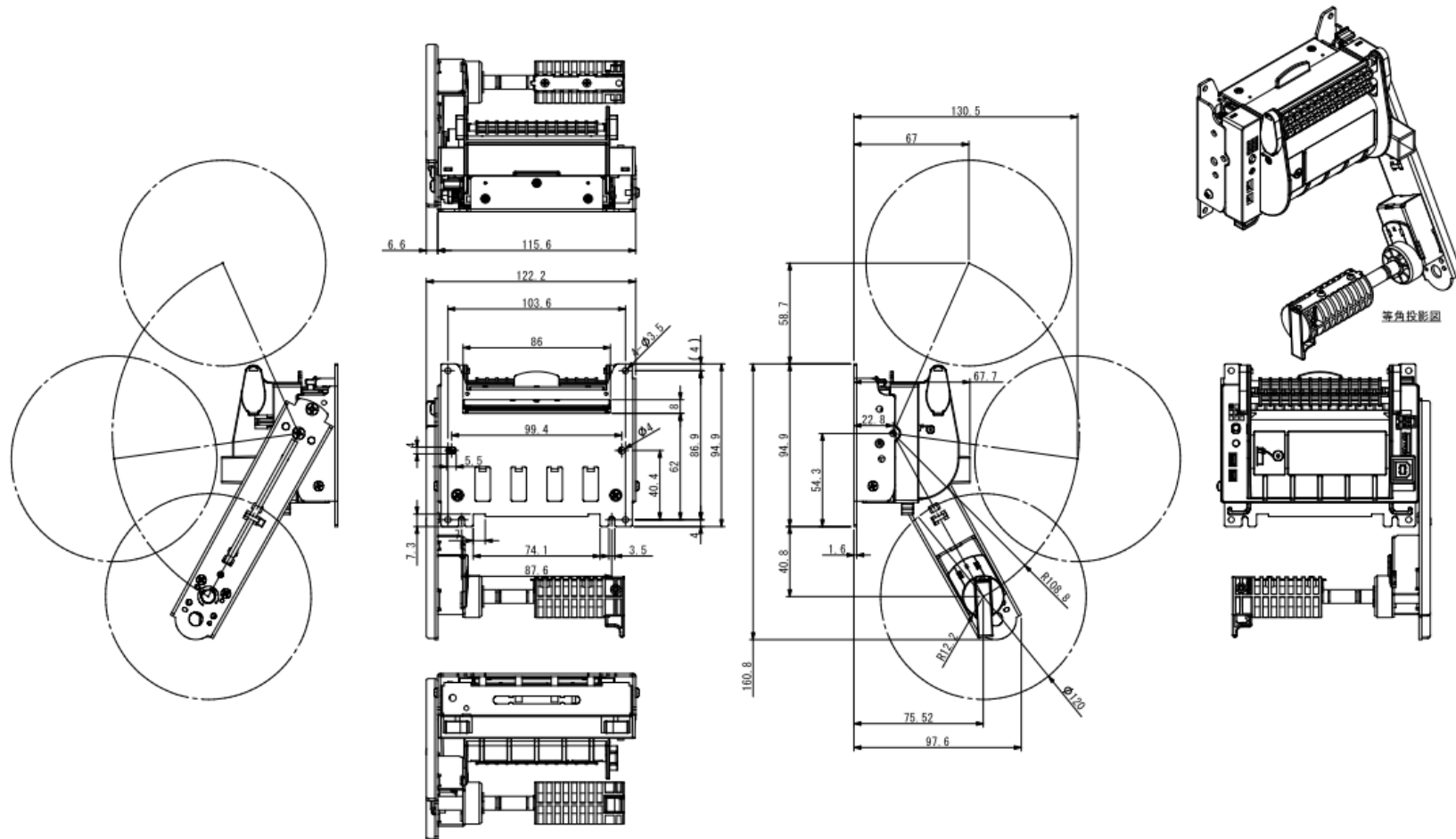
2.9 Regulations

Regulations on this product are as below.

	NP-F309**	Remarks
CE Mark	Acquired	
UL60950-1	Acquired	Note 1
VCCI	Class A(Acquired)	
FCC	Class A(Acquired)	

Note 1　Not applicable in case exterior appearance differs to standard shipping.

2.10 External Dimensions

1) NP-F3092(Φ120_Arm)

Unit : mm

[Note]
・Configuration may be changed due to communization of components or improvement except the place described its measure such as external dimensions, attachment hole, paper outlet, etc.
・This figure describes the status that paper holder is attached at the right side when seeing from the side of paper insertion. (Setting of paper roll is operated from the left side.)
・When paper holder is attached at the other side, the position will be symmetry against [Paper center].

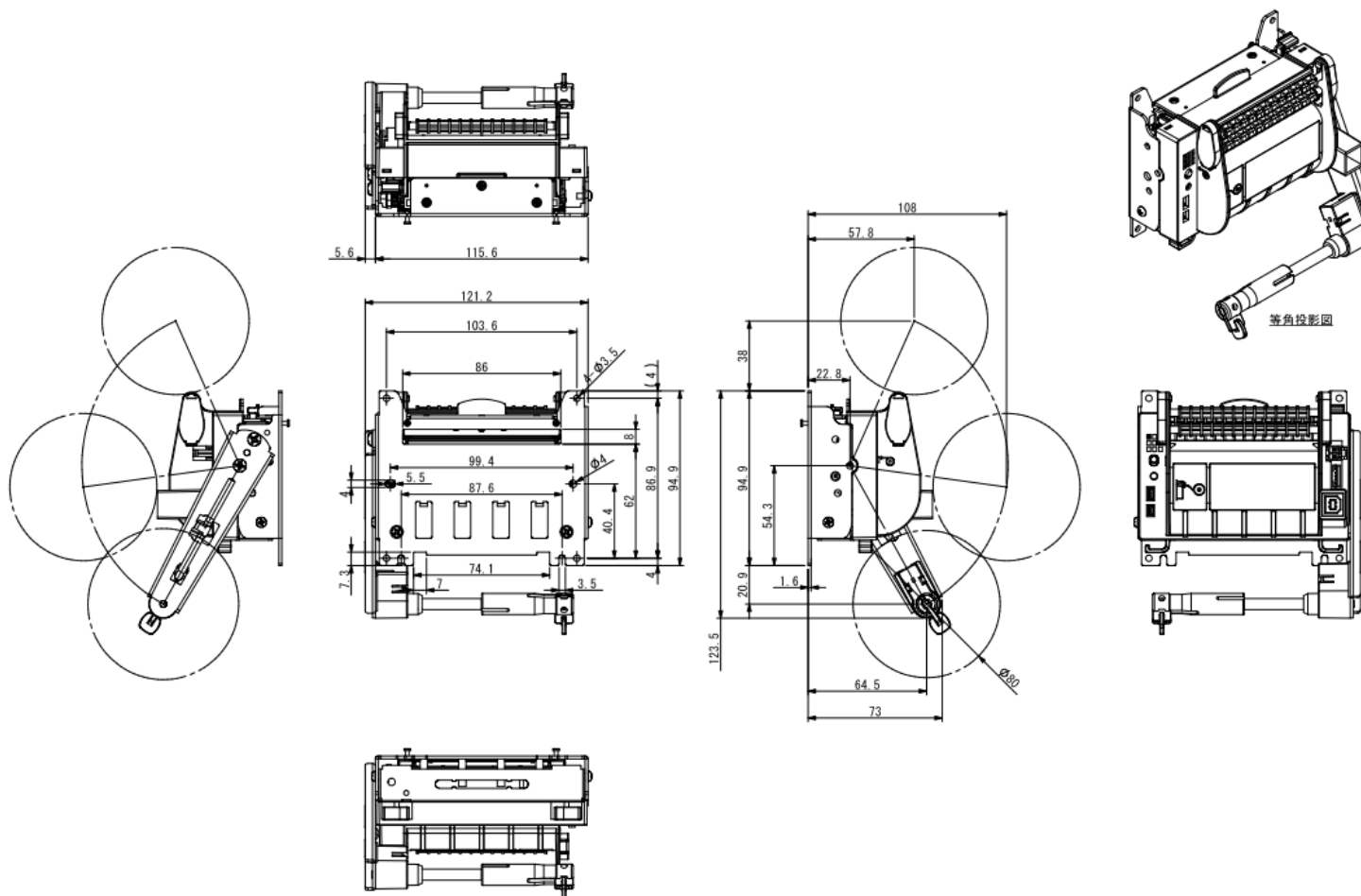D-F10119 NP-F309 series Product Spec. Rev.1.00

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2) NP-F3094(φ80_Arm)

等角投影図

Unit：mm

[Note]
　・Configuration may be changed due to communization of components or improvement except the place described its measure such as external dimensions,
　　 attachment hole, paper outlet, etc.
　・This figure describes the status that paper holder is attached at the right side when seeing from the side of paper insertion.
　　(Setting of paper roll is operated from the left side.)
　・When paper holder is attached at the other side, the position will be symmetry for [Paper center].

3. Configurations

3.1 Interface [USB(V2.0 FULL SPEED)]

1) Version : V2.0 FULL SPEED (12Mbps)

2) Port : Upstream port (B jack)

3) Power Supply : Self-Powered

4) RESET Function : Printer get Automatic RESET when USB cable connected to the host is inserted to printer side.

*When using with USB interface, please make sure to use driver[NOTE1] we provide.
When direct transfer, make sure to monitor receive buffer remaining amount[NOTE2] and do not transmit data exceeding this amount.

[NOTE1]: Please use either one of the following drivers or latest version NPI drivers(NPI EX driver is recommended).
NPI EXDriver Ver.2.0.0.0 or later
NPI Printer_DS2.0 or later

[NOTE2]: Receive buffer remaining amount's auto-reply format (when MS2-5: OFF)
[FF]h + [01]h + [00]h + [00]h + [00]h + n   *[00 ≤ n ≤ 0F]h
n = Receive buffer remaining amount (0 ~ 15K Byte)

3.2 Interface [SERIAL (RS-232C compliance)]

1) Synchronization : Asynchronous

2) Transmission Speed : 2400,4800,9600,14400,19200,38400, 57600, 115200bps (user selection)

3) 1 word consists of
    Start bit : 1bit
    Data bit : 7 or 8 bit (user selection)
    Parity bit : odd, even or no parity (user selection)
    Stop bit : more than 1 bit

4) Signal Polarity
    RS-232C
    Mark = Logic "1" /OFF （-3V～-12V）
    Space = Logic "0" /ON （+3V～+12V）

5) Receive Data (RXD signal)
    Mark ＝1
    Space ＝0

6) Transmit Data (TXD signal) [1]
    Mark ＝1
    Space ＝0

    XON/XOFF when controlled
      《DC1》［11］h code, XON : Possible to receive data [2]
      《DC3》［13］h code, XOFF : Impossible to receive data [3]

7) Receive-Control (RTS signal)
    Mark : Impossible to receive data [4]
    Space : Possible to receive data [2]

8) Transmit-Permission (CTS signal)
    Mark : Impossible to transfer data
    Space : Possible to transfer data

[1] : Data transmission is not operated during receiving data. Also, when sequential receiving of data, data transmission will be operated after data transmission is stopped. In addition, data transmission(timing) may be different during printing or depending on receiving data.

[2] : Occur after power ON or after self-diagnostic print also after software reset or when releasing receiving buffer full and firmware rewrite.

[3] : Occur when receiving buffer full or after receiving memory switch setting command also after receiving software reset command and firmware rewrite.

[4] : Occur when power OFF or during self-diagnostic print and software reset or when receiving buffer full or after receiving memory switch setting command and firmware rewrite.

3.3 Connector Signal Details

1) CN1：Power Input Connector (2 pin connector)
*Please refer to [2.5 Power Specifications]

2) CN3：USB Data Signal Input Connector
Printer side： B jack CU02SCV1000(CviLux)equivalent
Host side ： B plug or equivalent

Pin №	Signal	INPUT/OUTPUT	Function	Remark
1	VBUS	INPUT	Power line	Non twist power line
2	D-	INPUT/OUTPUT	Data line	Twist pair signal line
3	D+	INPUT/OUTPUT	Data line	Twist pair signal line
4	GND	—	Power line	Non twist power line
Shell	Shield	—		

[Note]
*Use USB cable that conforms to the standard (FULL SPEED)
*Performance with a non-standard USB cable is not guaranteed.

3) CN4：SERIAL Data Signal Input Connector
Printer side：S5B-PH-K-S(JST) equivalent
Host side ： PHR-5(JST) equivalent

Pin №	Signal	INPUT/OUTPUT	Function	Remark
1	RXD	INPUT	Serial receiving data	
2	TXD	OUTPUT	Serial transmitting data	
3	RTS	OUTPUT	Receiving permission signal	
4	CTS	INPUT	Transmit permission signal	
5	GND	—	GND for signal	

[Note]
*In case of actual use, use after sufficient confirmation by the user's side.
*Please beware not to flow common current to GND for signal.
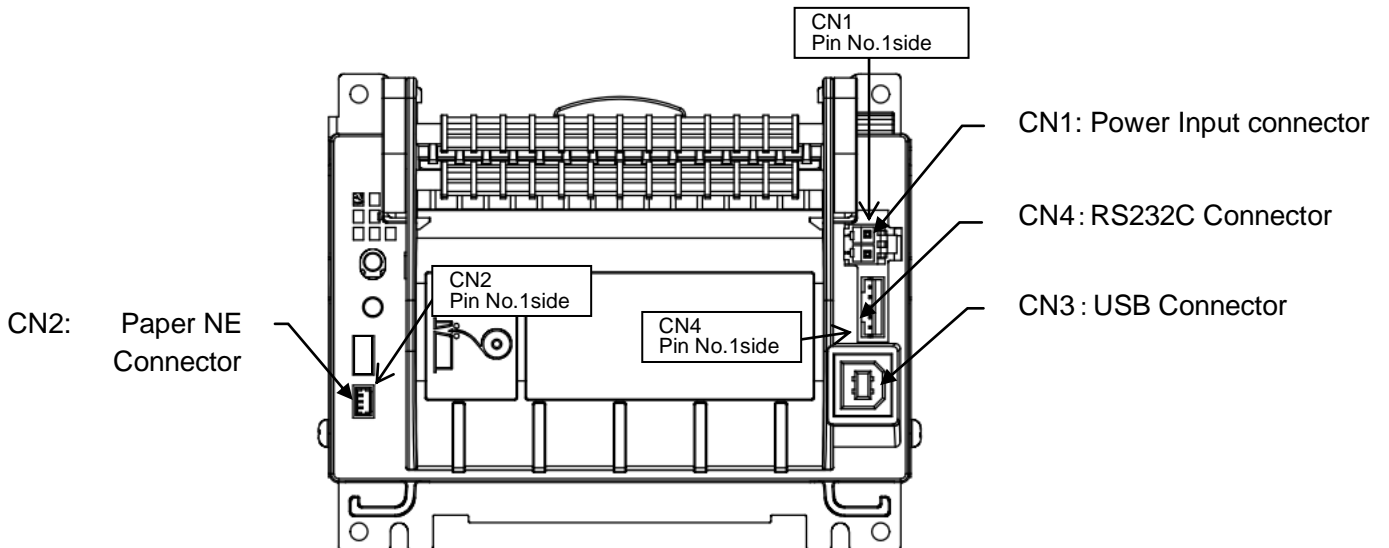
4) CN2： Paper Near End Connector
Connect to "Standard paper near end sensor"

[Note]
*Please do not connect other than "Standard paper near end sensor"
*Please valid memory switch MS2-4.

4. Function

4.1 Function Setting
4.1.1 Switch Setting
1) Memory Switch MS1

	Function	O N	OFF	Factory Setting NP-F3092D (φ120_Arm)	Factory Setting NP-F3094D (φ80_Arm)
MS1-1	Communication setting	Please refer to table 1		OFF	OFF
MS1-2				OFF	OFF
MS1-3				OFF	OFF
MS1-4	Serial transmit speed	Please refer to table 2		O N	O N
MS1-5				OFF	OFF
MS1-6				O N	O N
MS1-7	SERIAL flow control*NOTE1	XON/XOFF	RTS/CTS	OFF	OFF
MS1-8	Auto cutter control	INVALID	VALID	OFF	OFF

Table 1: Communication Setting

Interface	Bit length	Parity setting	MS1-1	MS1-2	MS1-3	Factory Setting
Serial	8bit	NIL	OFF	OFF	OFF	○
		NIL	O N	OFF	OFF	—
		ODD	OFF	O N	OFF	—
		EVEN	O N	O N	OFF	—
	7bit	NIL	OFF	OFF	O N	—
		ODD	O N	OFF	O N	—
		EVEN	OFF	O N	O N	—
Reserved	-	-	O N	O N	O N	—

[Note]

    *Please do not set as MS1-1=MS1-2=MS1-3=ON.

    *About interface

    Even when setting as SERIAL, if the printer detects VBUS signal by connecting USB cable, interface of the printer will automatically switch to USB mode.

    Even if USB cable is disconnected, interface of the printer will not automatically switch to serial mode.

    Please turn the power OFF/ON when switching to serial mode.

    USB is not available in R-type. SERIAL is not available in U-type.

Table 2: SERIAL transmission speed

SERIAL transmit speed	MS1-4	MS1-5	MS1-6	Factory Setting
115200	OFF	OFF	OFF	—
57600	O N	OFF	OFF	—
38400	OFF	O N	OFF	—
19200	O N	O N	OFF	—
14400	OFF	OFF	O N	—
9600	O N	OFF	O N	○
4800	OFF	O N	O N	—
2400	O N	O N	O N	—

*1 : *Flow control when XON/OFF control

(i) All of the statuses when XON/OFF control will be transmitted by ASCII conversion data in • • • • • of 0xFF 0xFE • • • • • 0x00.

(ii) ASCII conversion method is;
Higher 4 bits　　　= 0x30 + higher-order 4 bits > 4
Lower 4 bits　　　= 0x30 + lower 4 bits
Thus, convert to the below mentioned values.

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	00	10	20	30	40	50	60	70	80	90	:0	;0	<0	=0	>0	?0
1	01	11	21	31	41	51	61	71	81	91	:1	;1	<1	=1	>1	?1
2	02	12	22	32	42	52	62	72	82	92	:2	;2	<2	=2	>2	?2
3	03	13	23	33	43	53	63	73	83	93	:3	;3	<3	=3	>3	?3
4	04	14	24	34	44	54	64	74	84	94	:4	;4	<4	=4	>4	?4
5	05	15	25	35	45	55	65	75	85	95	:5	;5	<5	=5	>5	?5
6	06	16	26	36	46	56	66	76	86	96	:6	;6	<6	=6	>6	?6
7	07	17	27	37	47	57	67	77	87	97	:7	;7	<7	=7	>7	?7
8	08	18	28	38	48	58	58	78	88	98	:8	;8	<8	=8	>8	?8
9	09	19	29	39	49	59	69	79	89	99	:9	;9	<9	=9	>9	?9
A	0:	1:	2:	3:	4:	5:	6:	7:	8:	9:	::	;:	<:	=:	>:	?:
B	0;	1;	2;	3;	4;	5;	6;	7;	8;	9;	:;	;;	<;	=;	>;	?;
C	0<	1<	2<	3<	4<	5<	6<	7<	8<	9<	:<	;<	<<	=<	><	?<
D	0=	1=	2=	3=	4=	5=	6=	7=	8=	9=	:=	;=	<=	==	>=	?=
E	0>	1>	2>	3>	4>	5>	6>	7>	8>	9>	:>	;>	<>	=>	>>	?>
F	0?	1?	2?	3?	4?	5?	6?	7?	8?	9?	:?	;?	<?	=?	>?	??

*Inside the table indicates character strings.

(iii) Contents assigned in • • • • apply to all of the data including standard status, status header (0xFF).
(iv) Printer ignores ESC s FEh command.
(v) Do not issue ESC s FEh command from driver and tool.

2) Memory Switch MS2

	Function		ON	OFF	Factory Setting NP-F3092D (φ120_Arm)	NP-F3094D (φ80_Arm)
MS2-1	Japanese Kanji code		Shift JIS	JIS	OFF	OFF
MS2-2	Reserved		—	—	OFF	OFF
MS2-3	Reserved		—	—	OFF	OFF
MS2-4	Paper Near End detection[Note2]		INVALID	VALID	OFF	OFF
MS2-5	Receive buffer remaining size auto-reply (USB)[Note3]		INVALID	VALID	OFF	OFF
MS2-6	Paper Near End detection correction	NP-F3092D[*4]	φ39	-	ON	-
		NP-F3094D[*5]	φ28	φ22	-	OFF
MS2-7	Reserved		—	—	OFF	OFF
MS2-8	Reserved		—	—	OFF	OFF

[Note]

 *Please make sure to turn OFF MS2-2, MS2-3, MS2-7, MS2-8.

*2：In case of disconnecting PNE (standard is connect), make sure to turn MS2-4 OFF.

*3：In case of setting MS2-5:ON, beware since print failure such as garble character etc. may occur when transmitting large volumes of data at one time.
VALID only when USB interface.

*4：When use of NP-F3092D(φ120_Arm), please make sure to turn MS2-6 ON.

*5：When use of NP-F3094D(φ80_Arm), please refer to [2.2.4）Paper Near End setting].
When MS2-6：OFF, paper near end occurs(Detection Signal ON) after paper near end sensor detects and approx. 3.7mm of paper feeding is operated.

Paper near end occurs (Detection signal ON) after paper near end sensor detects and approx. 3.7mm paper feeding is operated.
However, paper near end will be regarded at the time power ON and paper near end sensor detects soon after paper replacement.
In case MS-2-6:ON, paper near end occurs(Detection signal ON) immediately after paper near end sensor detects.
Please consider the detection value as reference value since it changes depending on the condition of paper.

4.1.2 Memory Switch setting by manual

When setting (or changing) memory switch configuration manually, please follow the instructions as below under printable condition.

1) Shift operation to setting mode

    (1)   Set paper (Close Printer unit, Power OFF)
    (2)   FEED switch: ON (Hold switch down until (iii) (iv) finish.)
    (3)   Turn ON power (Confirm printer startup)
    (4)   Printer unit OPEN → CLOSE
    (5)   FEED switch: OFF (Release hold.)
    (6)   Enter into setting mode and comments with "** MEMORY SW SETTING MODE **"   and for multiple lines will be printed.

2) How to set each switch
Sequentially set [ON][OFF] from MS1-1 to MS2-8 by confirming print under Setting mode .

Setting [ON]	Long press FEED switch (more than 1sec)
Setting [OFF]	Short press FEED switch (less than 1sec)

Setting finishes after repeating 16 times of the above operations. Print out list of set contents right before automatically entering into software reset movement. The latest setting becomes effective.

[Note]
    *In case of stopping set procedure in the middle, please open platen arm and press FEED switch 1 time, then CLOSE the front cover to complete setting.
    (Setting already completed at this moment becomes effective, while all MS remainders are automatically set as OFF.)

4.1.3 Memory Switch setting by on-line command

When setting (or changing) memory switch configuration in on-line command, make sure that paper is loaded and the printer is ready for on-line print, and set by the following commands from the host.
Once the printer normally receives set commands, it activates software reset after printing out setting contents and new settings become effective.

1) Setting command
    [Memory Switch Setting and Printing] «GS M n d1 d2»
This command is to set the memory switches MS1/MS2 and also to print out the set contents.

[Note]
    *Refer to "4.1.1 Switch Setting" for each MS(=Memory Switch) content and [NOTE].
    *Refer to [Memory Switch Setting and Printing] <GS M n d1 d2> for MS setting by command.
    *It is also possible to transmit MS setting command by using NiiPrinterTool etc.

4.1.4 Self diagnostic printing

1) Check points by self-diagnostic print
・Function of control circuit board
・Version of control F/W
・Setting statuses of Memory Switch (MS)
・Movement of paper end sensor (paper sensor)

2) Start / finish of self-diagnostic print

Turn ON the power while pressing FEED switch and release the FEED switch after initialization response of the printer mechanism. Then self-diagnostic print activates. Finish after printing out prescribed printing patterns. During self-diagnostic printing, printer is in off-line status.

4.1.5 Paper Detector (Paper Sensor)

Paper detection sensor is mounted on paper path inside the printer mechanism. This detects status that paper runs out completely. When detection, the printer transmits the paper end status and stops printing.

Please do not use a roll paper that is glued (or taped) to the core at the end of paper because that kind of a roll paper is impossible for the sensor to detect paper end status.

Please replace a paper roll as soon as paper-out status is detected.

4.2 Error Handling

1) Details of Error Detections

ALARM[*1] Status	Item	Status	Data receive	Status Information	Release method
-	Communication Error	232C communication error Parity Overrun Framing	Enable	-	Rectify Communication Conditions
OFF	Normal	Normal status	Enable	-	
OFF	Print start status	Print start setting by command(not error)	Enable	bit7 1	Print end setting by Command
Blink	Voltage abnormal	Voltage abnormal	Unable	bit6 1	Power OFF to ON After removing error factor
Blink	Cutter Paper Jam	Cutter Paper Jam	Unable	bit4 1	Open printer unit and close after removing error factor.
Blink	Head Temperature Abnormal	Head temperature at Over approx.70 degree	Unable	bit3 1	Auto recovery at Approx. 60 degree of head
Light	Paper End	No paper	Unable	bit2 1	Paper replenishment
Light	Printer Unit Open	Printer Unit Open	Unable	bit1 1	Close printer unit
Blink 1	Paper Near End	Detection of remaining paper Paper Near End detection (MS2-4: when sensor valid)	Enable	bit0 1	Paper replenishment

[Note]
- Printer stops all operations when detecting above errors except "Communication Error", "Paper NE" and "Print start status". (Print operation and Paper feeding by FEED switch are invalid too.)
- No automatic loading when detecting above errors except "Paper NE", "Paper End" and "Print start status".
- Turns ON error bit of status information.
- After releasing paper near end, it full cuts after auto loading the paper.
- After releasing platen open, it full cuts after feeding the paper.

*1：Please refer to [4.6 Alarm lamp display and Switch function of operation] for the pattern of Alarm lamp.

4.3 Buffer Full Print

Auto line feed will be executed at the time when a printer receives data of the amount of 1 line*1 based on [Line Feed Amount Setting of Smallest Paper Feed Pitch Unit] « ESC 3 n »command.

*1 Volume of buffer full data (Largest print digit number) differs depending on each size of ANK / Japanese Kanji (Refer to 2.1.2 Print specification).

4.4 Drive Mode Selection

Fixed partition (no partition, 2 partitions, and 4 partitions) or optimization is selectable by command. Select after considering consumption current by print ratio. (Refer to [2. 6 3 Consumption current]).

1) Partition drive Selection
Please refer to [Partition Drive Selection] command.

	No partition	2 partition	4 partition
Dots number of Simultaneous current-carrying	576dot	288dot	144dot

[Note]
・Printing speed decreases when except No partition is selected. Blank line (Max. 1 dot line) may happen depending on the print contents (like the pattern whose print ratio changes).

2) Optimization
Switch to high speed, standard, current-saving (low), and current-saving (high) depending on total dot number /1 line to print.

	High speed	Standard	Current-saving (low)	Current-saving (high)
Dots number of Simultaneous current-carrying	288dot	144dot	72dot	48dot

[Note]
*When optimization is selected, printing speed will be fluctuated depending on print ratio, and there is some printing sound.
*When optimization is selected, blank line (Max. 1 dot line) may occur and print quality may decline somewhat.

4.5 Print Selection of Full size / Half size

Language Font	Selecting Method
Japanese	Command [FS &], [FS .] or shift JIS code switch
Polish	Fixed (only half size)
Russian	Fixed (only half size)
Scandinavian	Fixed (only half size)
Turkish	Fixed (only half size)

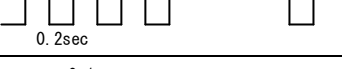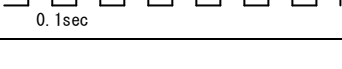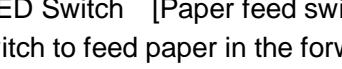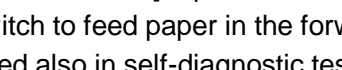### 4.6 Alarm Lamp Display and Switch Function

Printer equips with the following alarm lamp display and switch function.

1) ALARM LED(red):[alarm lamp]
      Indicate printer status by patterns of ALARM LED.
      BLINK/ON/OFF when rewriting to Flash ROM.
      *ALARM LED patterns are shown in below chart.

Display Pattern	Printer Status	Priority (8:High~1:Low)
1 / 0 (steady)	Normal / Print (receive) enable	1
1 / 0 (blink 0.2sec / 0.2sec)	Paper Near End	2
1 / 0	Paper out	3
	Printer unit open status	4
1 / 0 (2.2sec / 2.2sec)	Head temperature abnormal (approx. 70ºC or more) or inappropriate head connection	5
1 / 0 (0.2sec / 0.2sec, 1.0sec)	Auto cutter error	6
	Voltage abnormal	7
1 / 0 (0.1sec / 0.1sec)	F/W write mode	8

2) FEED Switch　[Paper feed switch]
  Switch to feed paper in the forward direction
  Used also in self-diagnostic test print, memory switch setting.
       [Note]
 *Switchable to valid or invalid by setting [FEED switch VALID/INVALID] <ESC c 5>command.
 *When conducting FEED switch, full-cut is activated after feeding paper.

3) RESET Switch
      The position of RESET switch is under FEED switch.
      (Press lightly and release with ballpoint pen.)
      Resetting is required due to printer returns to initial status when power-on by activating reset switch.
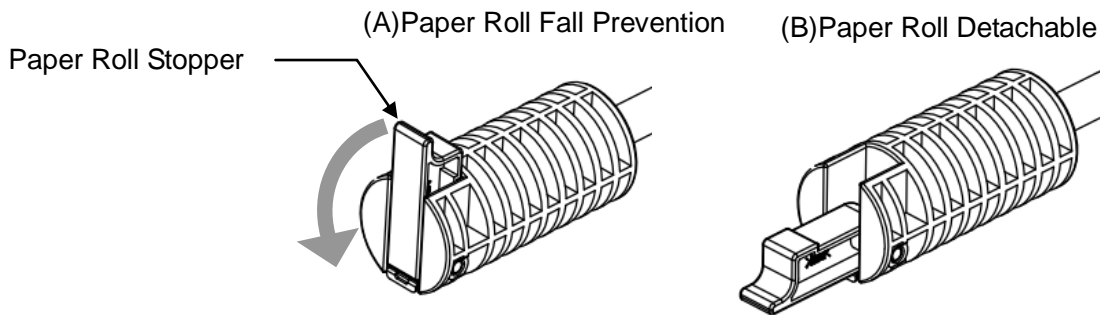   Beware in case data remains in buffer because they will be deleted.

ALARM LED
FEED switch
RESET switch
Back side view
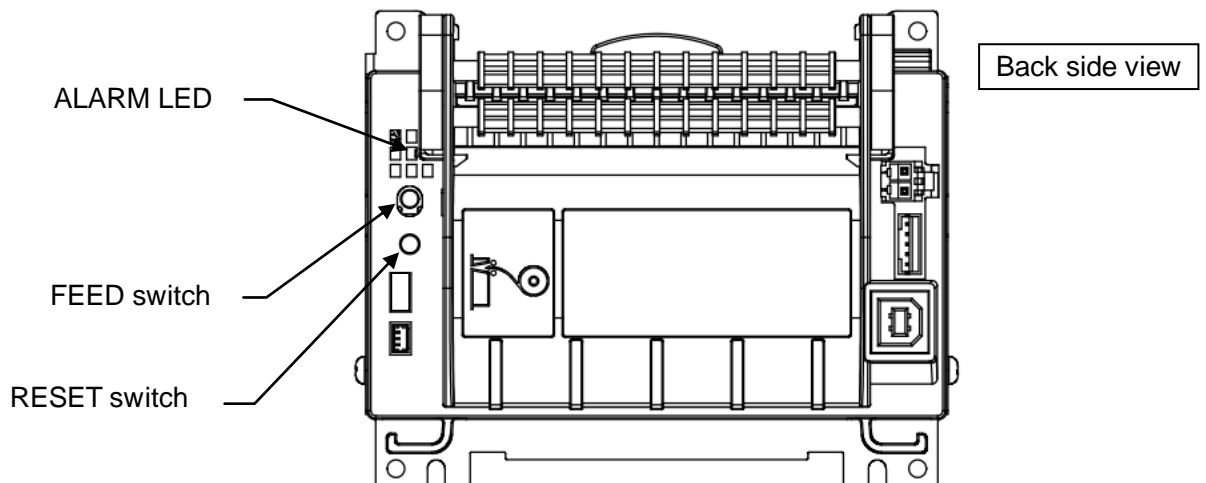
4.7   How to set a paper roll

  1) How to set a paper roll of NP-F3092D(φ120_Arm)

    (1) Please turn power ON
    (2) Please convert paper roll stopper to (B) status.

(A)Paper Roll Fall Prevention   (B)Paper Roll Detachable

Paper Roll Stopper

    (3) Please confirm winding direction of the paper roll and put through the center hole into the paper holder shaft. (Please follow "figure" of the printer main body for paper roll winding direction).
    (4) Please turn a paper roll stopper upright.
    (5) Please straightly insert tip of the paper roll into the paper entrance (Between 2 paper rollers).
    (6) Paper sensor detects the paper and the paper will automatically be loaded. (Please make sure to insert firmly until loading operation starts.)
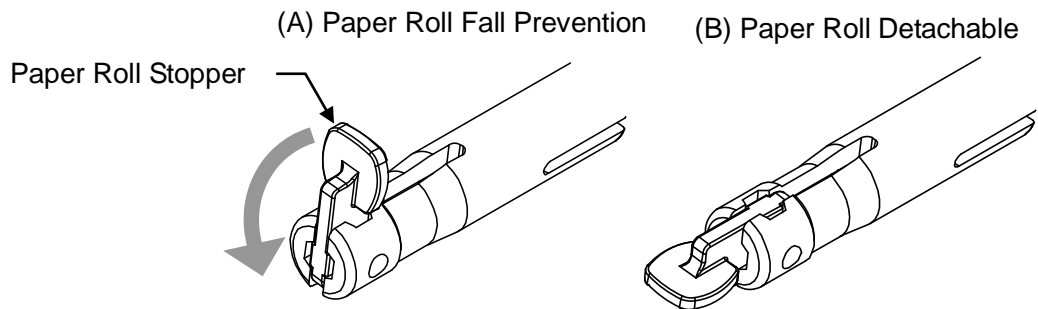   (7) Print operation becomes available after pulling constant length and cutting.

Insert paper between 2 paper rollers.

Paper Entrance

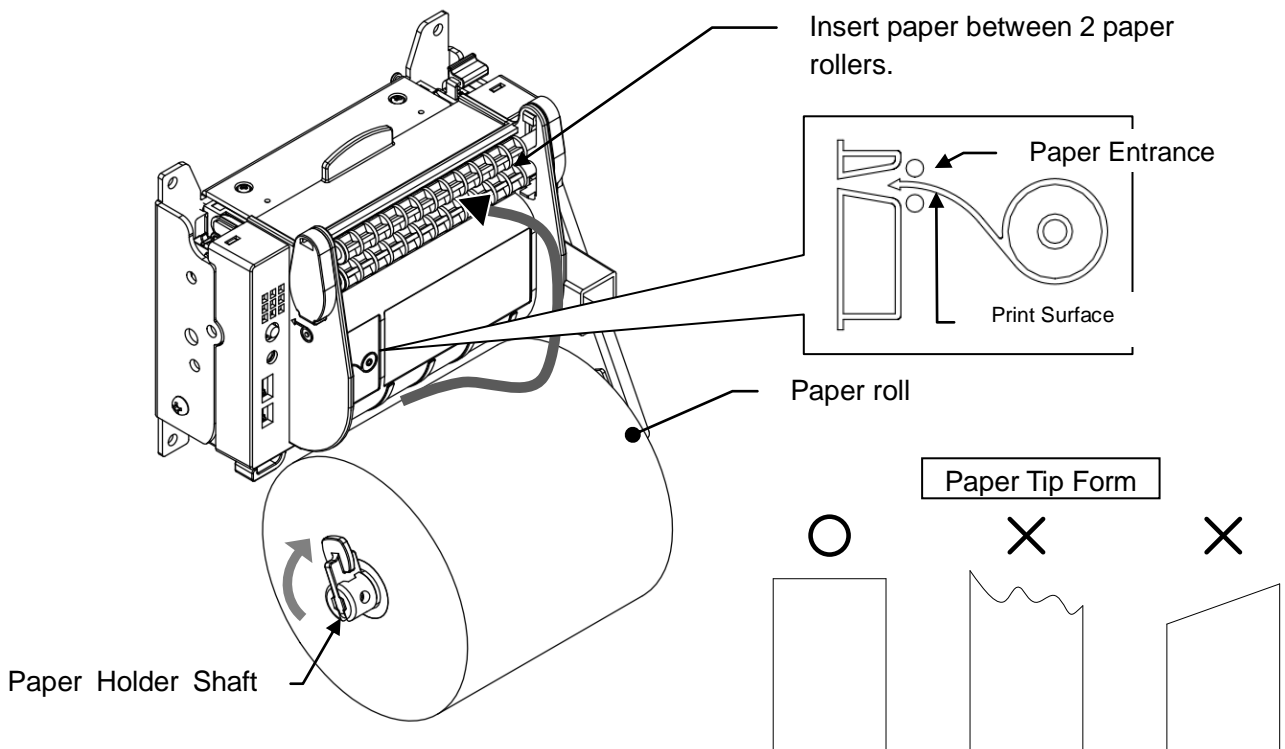Print

Paper Roll

Paper Tip

○   ×   ×

Paper Holder
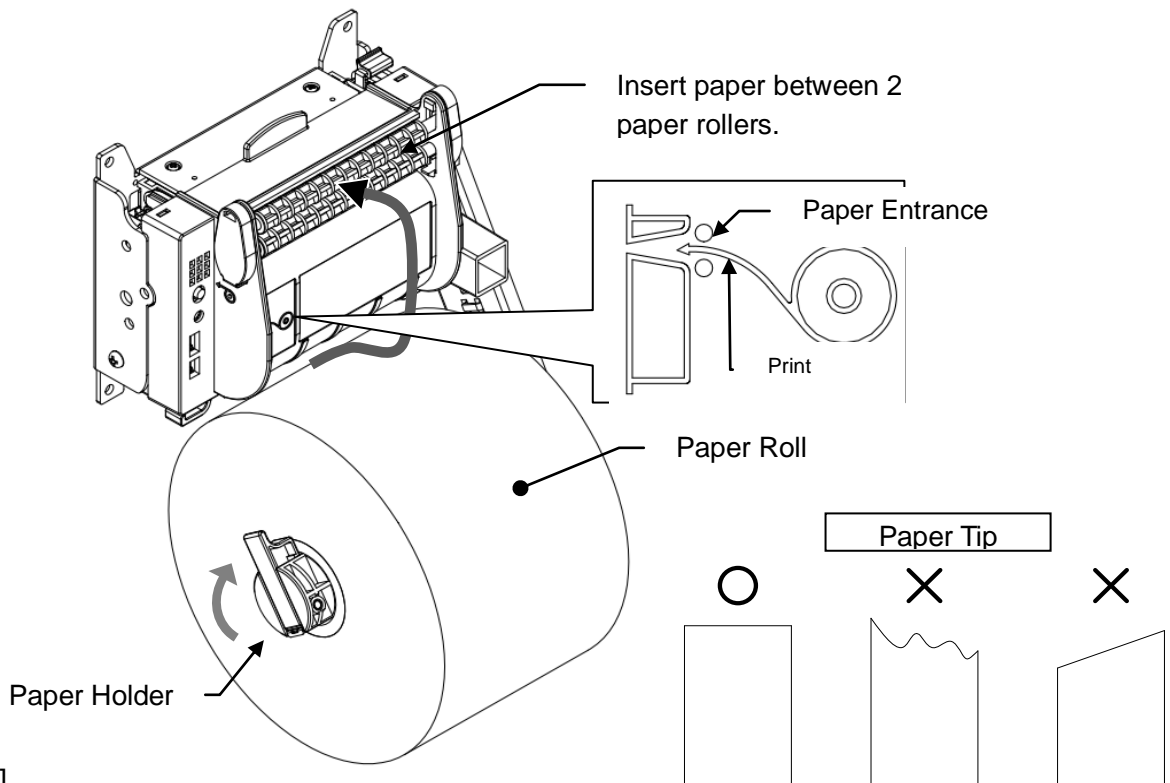
[Note]
・Remove axis core of the old paper roll before inserting a new paper roll.
・Please load paper roll without slack. (It causes paper jam.)
・Tip of paper must be straightened at right angle. (Please refer to "Paper Tip Form" drawing.)
・When inserting paper tip with fracture or bias status, it may not be able to conduct loading operation.
・Since thermal head right after printing will be highly heated, please beware not to touch with your finger or hands etc.
・Please beware not to clamp your finger or hands etc.
・Please do not feed paper with paper set status.

2) How to set a paper roll of NP-F3094D(φ80_Arm)

(1)Please power on
(2)Keep a roll paper stopper (B) condition.

(A) Paper Roll Fall Prevention　　(B) Paper Roll Detachable

Paper Roll Stopper

(3)Confirm winding direction of the paper roll and put through the center hole into the paper holder shaft. (Please follow "figure" of the printer main body for paper roll winding direction).
(4)Please turn a paper roll stopper to upright position.
(5)Please straightly insert tip of the paper roll into the paper entrance(Between 2 paper rollers).
(6) Paper sensor detects the paper and the paper will automatically be loaded.
　　(Please make sure to insert firmly until loading operation starts.)
(7) Print operation becomes available after loading constant length and cutting.

Insert paper between 2 paper rollers.

Paper Entrance

Print Surface

Paper roll

Paper Tip Form

Paper Holder Shaft

[Note]
　　・Remove axis core of the old paper roll before replenishing a new paper roll.
　　・Please load paper roll without slack. (It causes paper jam.)
　　・Tip of paper must be straightened at right angle. (Please refer to "Paper Tip Form" drawing.)
　　・When inserting paper tip with fracture or bias status, it may not be able to conduct loading operation.
　　・Since thermal head right after printing will be highly heated, please beware not to touch with your finger or hands etc.
　　・Please beware not to clamp your finger or hands etc.
　　・Please do not feed paper with paper set status.

4.8　How to remove the remained and jammed paper

(1) Handle printer unit and open after handling open lever as shown in the figure.
(2) Please remove all of the paper on the paper path.
(3) When closing printer unit, push the knob part and make sure to lock firmly until hearing a click sound.

[Note]
　・In case printer unit is not opened because of sticking out cutter blade, please let cutter blade return to the standby position by restarting the power.
　・Since thermal head right after printing will be highly heated, please beware not to touch with your finger or hands etc.
　・Please beware not to touch metal edge when printer unit is opened.
　・In case of closing the printer unit, please push knob in the center part and close for sure.
　・When opening the printer unit, please do not apply excessive force by crossing over stop position.
　・Please beware not to clamp your finger or hands etc.
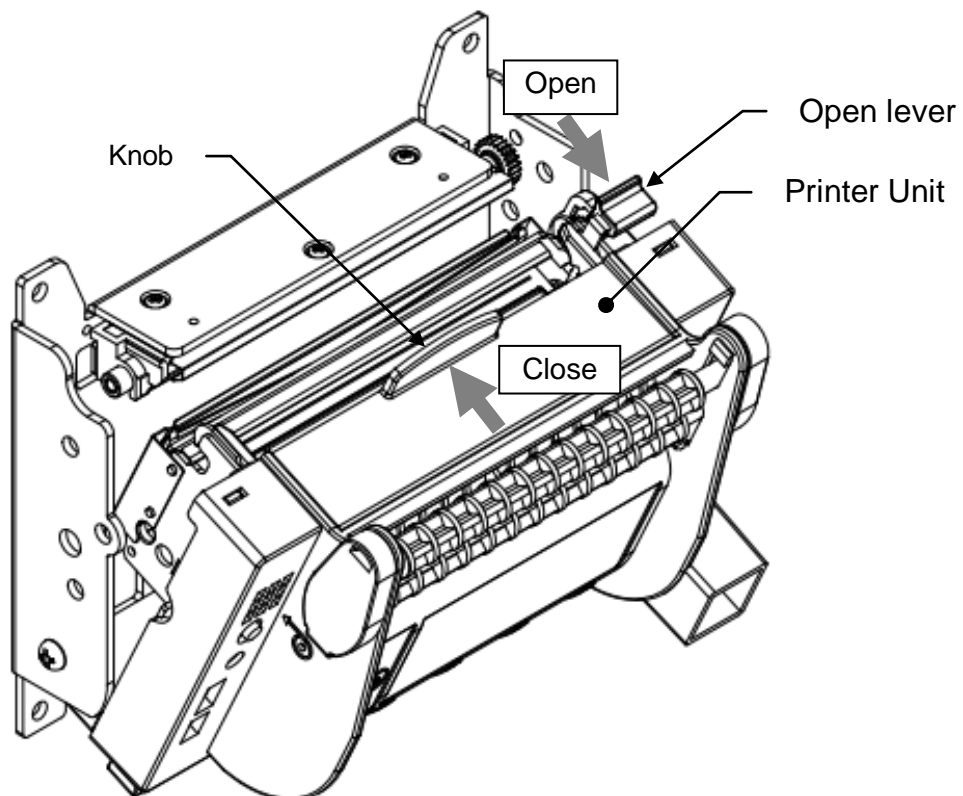
4.9 Cleaning Method

Print quality may decline by paper chaff etc. adhered to the heating element of thermal head.
Also, paper dust may adhere to the platen or sensor part.
In such case, turn OFF the power and open printer unit and follow cleaning instructions below.
Please refer to "4.8 How to remove the remained and jammed paper" for printer unit open/close.

1) Thermal Head
   Please clean surface of heating element with a cotton swab moistened with ethanol or IPA.
   (Please beware not touch to the other parts.)

2) Platen
   Please remove trash and dust on the surface by wiping like rubbing slightly with dry cloth.

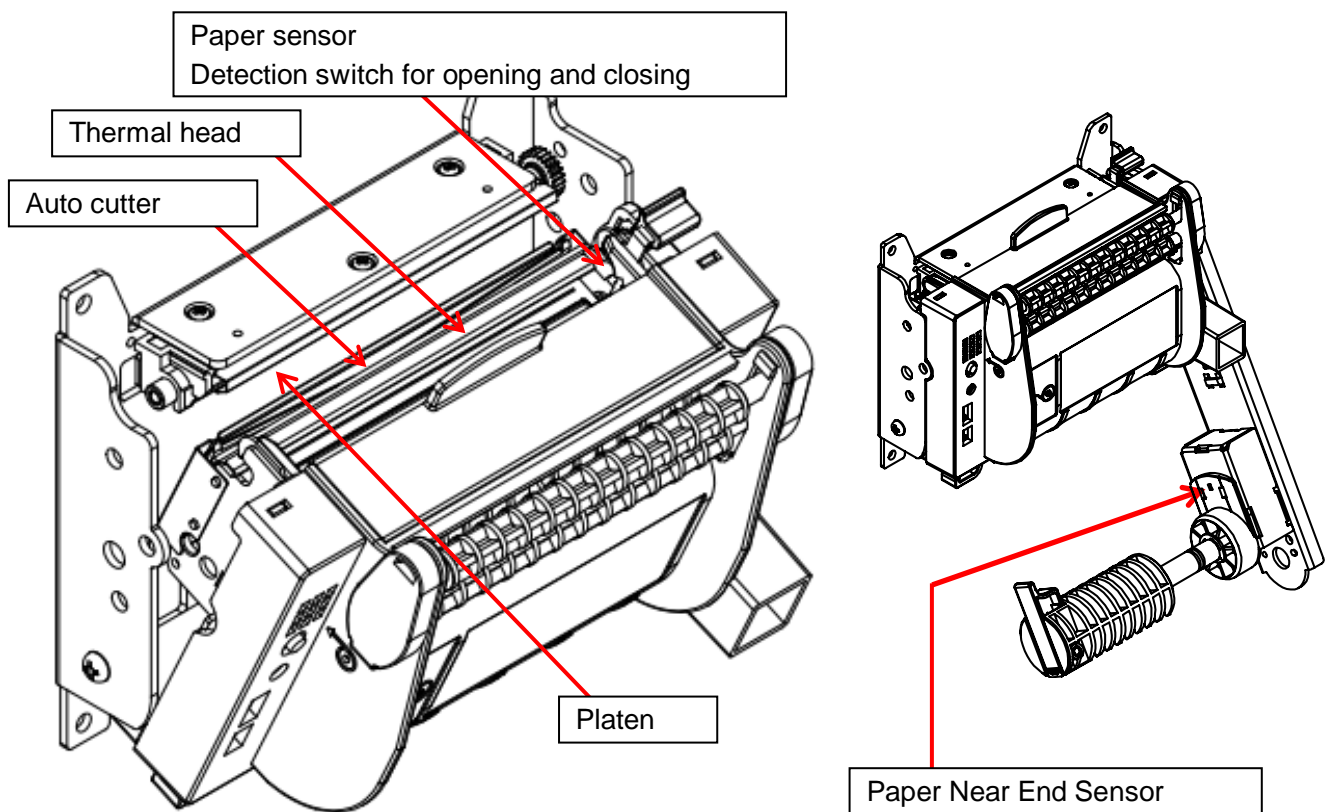3) Paper sensor, paper near end sensor and its surrounding
   Please remove trash / dust adhered to sensor with a soft-bristled brush or a cotton swab.

4) Auto-cutter
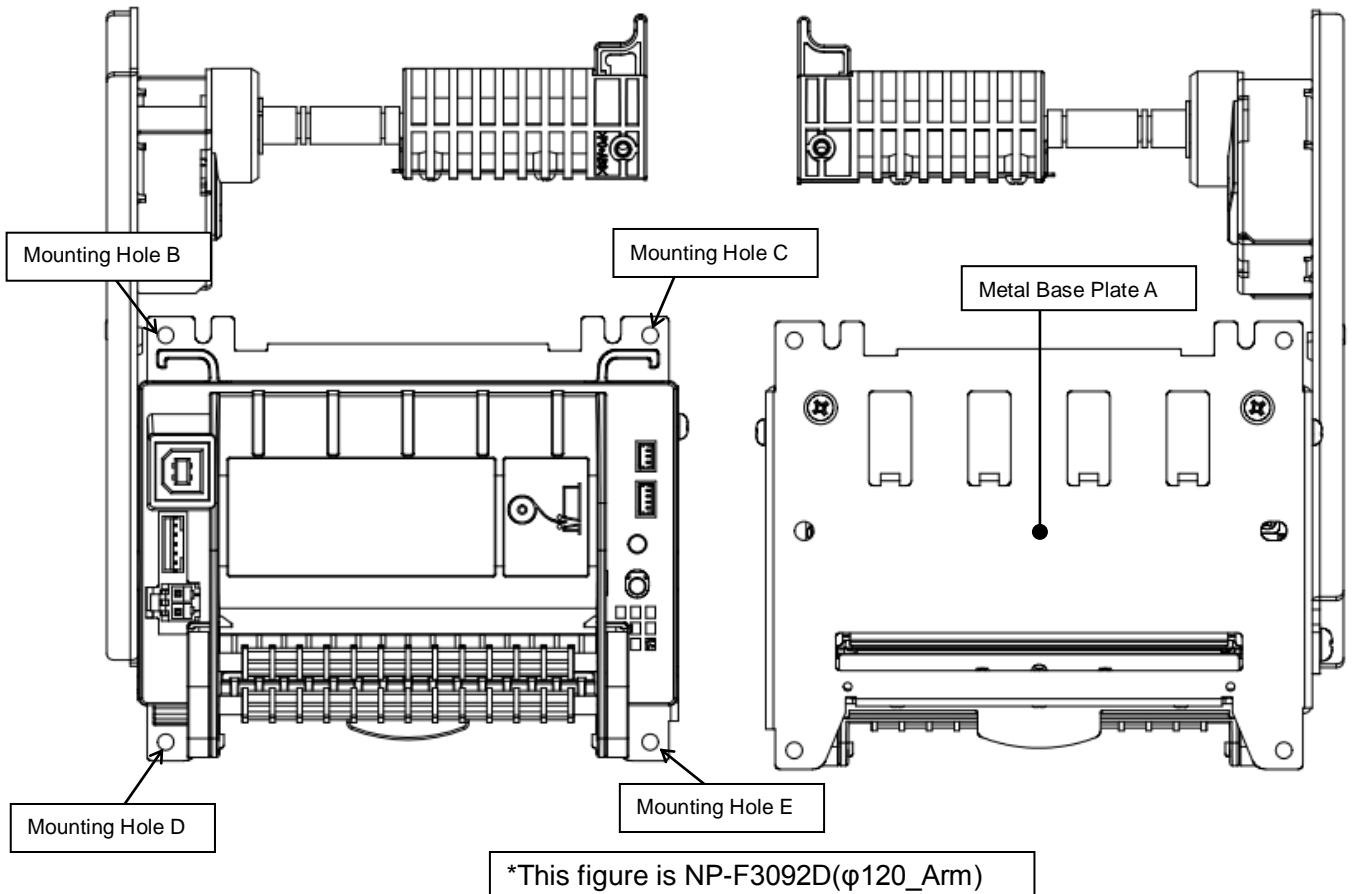   Remove dust etc. adhered by air-blower. (Reference: every 100,000 times movement)

[Notice]
・Since thermal head right after printing will be highly heated, please beware not to touch with your finger or hands etc.
・Please do not touch directly with metal or by your hand to the heating element of the thermal head.
・Please beware of static electricity while cleaning because it may damage the thermal head.
・Since it may have abnormal bloom of paper depending on papers, please check the period of maintenance after verifying paper and decide what kind of a paper to use.
・Please make sure to turn ON the power after ethanol or IPA is completely dried.
・When you open printer unit, Please do not apply excessive force by crossing over stop position.

Paper sensor
Detection switch for opening and closing

Thermal head

Auto cutter

Platen

Paper Near End Sensor

4.10   Installation

Please connect frame ground (FG) of this product and frame ground (FG) of mounting side chassis in order to prevent malfunction, breakage of thermal head and control board due to static electricity.

Mounting Hole B

Mounting Hole C

Metal Base Plate A

Mounting Hole D

Mounting Hole E

*This figure is NP-F3092D(φ120_Arm)

(1)   In case the mounting part of mounting side chassis is frame ground (metal plate);
Frame ground will be connected by contact of frame ground of this product (Metal Base Plate A) and frame ground of mounting part of mounting side chassis.

(2)   In case the mounting part of mounting side chassis is NOT frame ground;
Fix by screwing (recommend with toothed metal washer) frame ground of mounting side chassis and this product with using "Mounting Hole B, C, D and E" and connect frame ground with using electric wire of more than AWG#20 (recommended) at the shortest position.

[Note]
・Connection of frame ground will redouble strongly-fixed by using screws with toothed metal washer for "Mounting Hole B, C, D and E" when mounting this product.
・Please set this product not to get applied excess force, get deformed, and get distorted.
・Deformation or Distortion with this product cause quality loss, meandering of paper, paper jam, noise, and cutting failure.
・Please set this product at the flat surface and use in the place without vibration.
・Please beware not to damage wire lead, etc. when fixing with screws.
・Please secure the space for connector connection due to space for power supply and communication connector.
・When use for full-cutting, cut paper may not fall sometimes. Please have exterior designing enabling to take out paper.
・Please design this product not to interfere from exterior components. If exterior components interfere, it influences print and cut function and causes breakage of this product.

5.   Paper holder

   * The figure is for NP-F3092D(φ120_Arm)

5.1   Receipt print surface and paper roll position selection
   10 ways of installations in the below chart are selectable for this printer. Please refer to the chart below and select receipt print surface and paper roll position way that suits the most to build into the device.

|	When setting paper roll to the rear (left), Attach paper holder unit to the "right surface"			When setting paper roll to the rear (right), Attach paper holder unit to the "left surface"		
	Paper Roll "Lower"	Paper Roll "Middle"	Paper Roll "Upper"	Paper Roll "Lower"	Paper Roll "Middle"	Paper Roll "Upper"
Face Down Print (recommend)	Ex-factory setting position					
Face Up Print						Ex-factory setting position

[Note]
   ・We recommend to issue receipt with this printer showing a face down print. Operability of paper insertion and paper jam release etc., are better than face up print.
   ・Please do not use at a tilt.
   ・Note that there will be no problems with movement when using in a face up print with paper roll lower position,   paper may bend downwards.

5.2   Position Change of Paper Holder

*This figure is for NP-F3092D(φ120_Arm)

1) When changing position at the same surface (ex-factory surface)
・Please remove screw B (M4)
・Please loosen slightly screw A (M4) of rotation center
・ Please rotate the paper holder centering screw A and fix with screw B at the desired
  position (B-1 ~ B-3)
・Please tighten finally screw A

2) When switching to the other side of the surface
・Please disconnect cable of PNE sensor.
・Please detach paper holder by unscrewing screw A (M4) and screw B (M4).
・Please attach paper holder by using screw A to the other side.
  (The screw is tightened provisionally)
・Please rotate the paper holder centering screw A and fix with screw B at the desired position
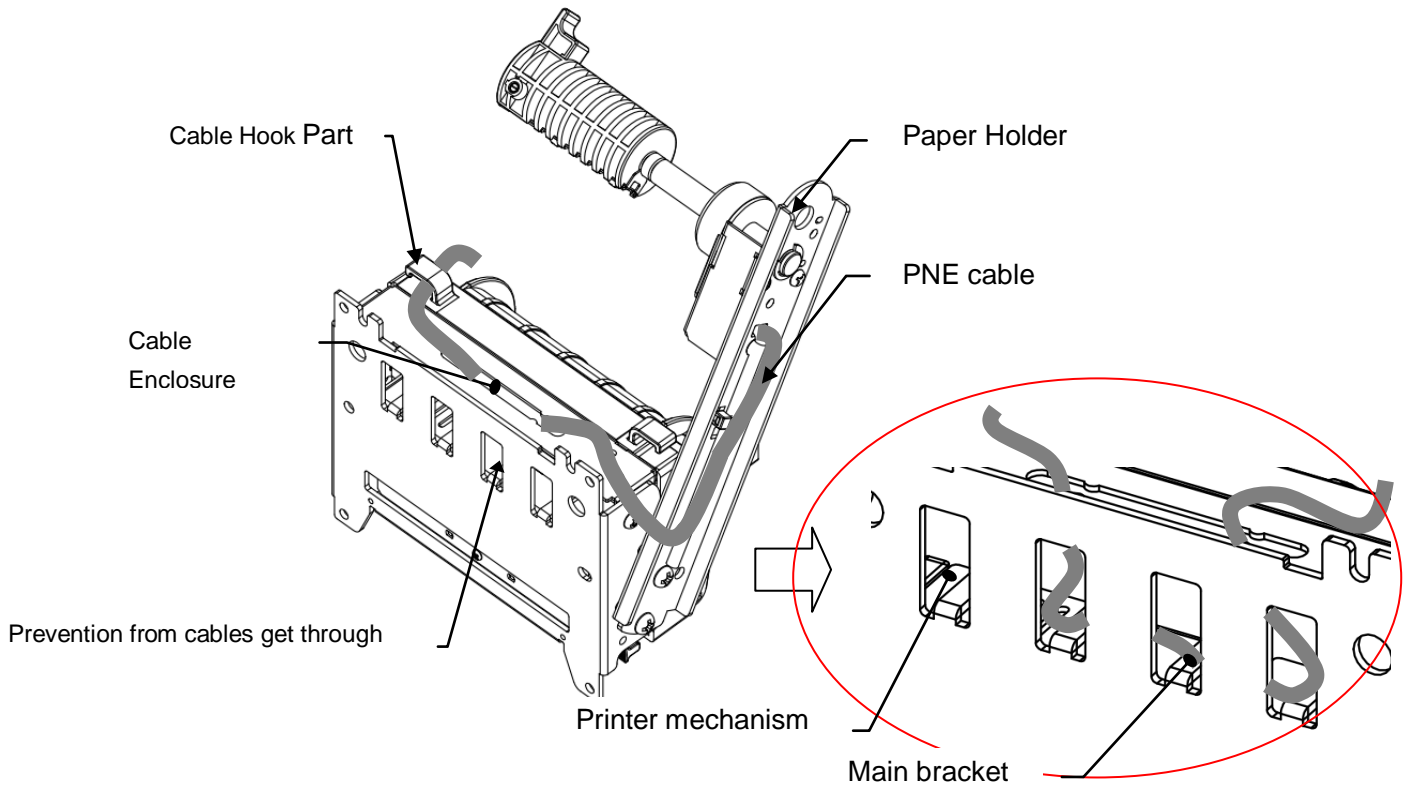 (B-1 ~ B-3)
・Please tighten finally screw A
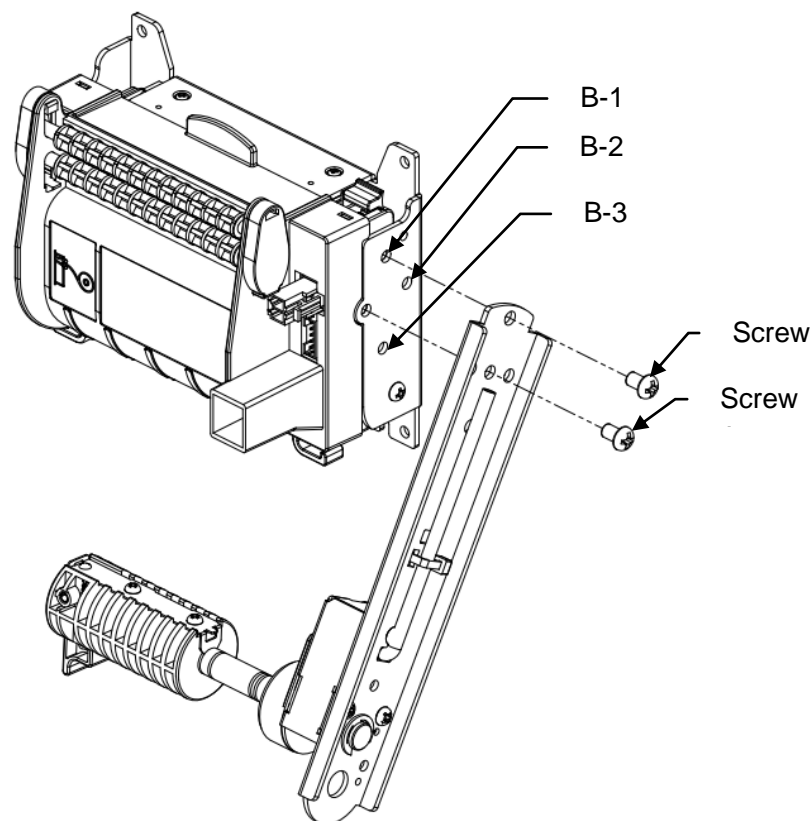
[Note]
・Please handle cable of PNE sensor.
・Screws (M4) are self-tapping type. When screwing to the new attachment hole, you may feel the
  rotating force of the screw driver heavy.
・Although mounting positions of the paper holder are symmetric, there is no B-2 hole of left
  surface position. (2 holes in B-1, B-3)
・Please use a Phillips screwdriver (#2).
・Please use the screws(A,B,C,) attached to the product and do not use other screws.
  Use of screws whose length differ or other type screws cause breakage.
  Please consult us in case of losing.

5.3 Each cables handling

*This figure is for NP-F3092D(φ120_Arm)

1) How to handle PNE cable

Depending on attaching position of the paper holder, PNE cable length may leave a leftover. There is "Cable Enclosure" equipped to the figure position below for storing extra wire length. Please use accordingly.

Cable Hook Part

Paper Holder

PNE cable

Cable Enclosure

Prevention from cables get through

Printer mechanism

Main bracket

[Note]

・Enclosed cables must be used by [Prevention from cables get through] in [Cable housing],and do not push it in the gaps of chassis.

Please beware of interfering open and close of printer unit.

2) Handling interface cable and power cable

Depending on paper holder attaching direction, paper roll position, handling of the cable will be changed. Please handle accordingly not to trouble when operating such as paper roll replacement etc. There is "Cable Hook Part" equipped to the figure position below. Please use when needed.

Interface cable

Cable Hook Part