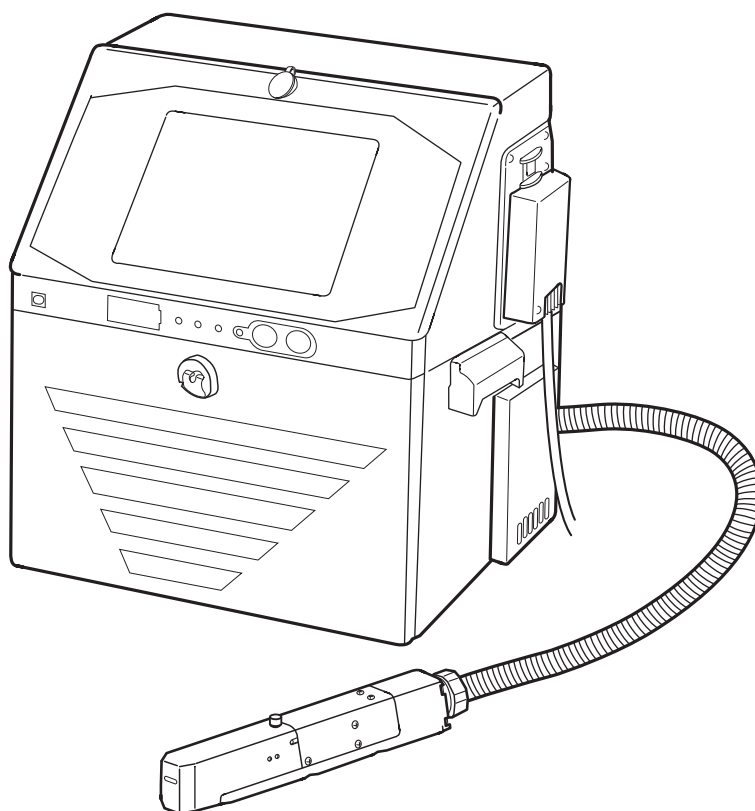


INK JET PRINTER FOR INDUSTRIAL MARKING

HITACHI Printer

Model UX-H



Thank you for purchasing the Hitachi IJ Printer Model UX-H.

This printer employs a noncontact, ink-jet method to print onto a print target.

This instruction manual describes the basic operating procedures, maintenance procedures, and other detailed handling procedures of the Hitachi IJ Printer Model UX-H.

If the printer is improperly handled or maintained, it may not operate smoothly and may become defective or cause an accident. It is therefore essential that you read this manual to gain a complete understanding of the printer and use it correctly.

After thoroughly reading the manual, properly store it for future reference.

IF you changed the language of the screen by mistake, see Chapter 7.8 "Selecting Languages".

■ Usage Precaution

- Before using the printer, thoroughly read the following safety precautions for optimum printer use.
- All the instructions set forth in this manual are important and must therefore be observed without fail.
- After the manual has been read, it must be stored in such a location that all printer operation personnel can refer to it at all times.
- Hitachi will not be liable for any manufacturing loss due to a hangup of the ink jet printer and product damages (product or facility loss) due to a trouble or malfunction of the ink-jet printer. In the event of a printer hangup, Hitachi will send service engineers as immediately as possible to repair the printer and reduce the hangup time.
- Please make sure the print status and print content are correct each time when you start operation of IJP.
- Please implement periodical checkup of print status in the process, even including during production.

■ Restrictions on Export

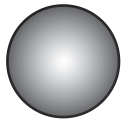
User hereby agrees not to export or re-export this product to any end-user who the user has reason to suspect may utilize the product for the design, development or reproduction of nuclear, chemical or biochemical weapons.

The product or system including the product cannot be used in countries or areas other than those which have concluded a sales contract.

■ Trademark

File management and USB management are carried out using eParts made from eSOL. Ethernet is the product name of Xerox Corporation in America.

"EtherNet/IP" is the product name of ODVA (Open DeviceNet Vendor Association).



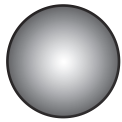
SAFETY PRECAUTIONS

- You should observe the precautions set forth below in order to use the product properly and avoid endangering you or other persons or damaging property. For the purpose of clarifying the severity of injury or damage and likelihood of occurrence, the precautions are classified into two categories, WARNING and CAUTION, which both describe hazardous situations that may arise if you ignore the precautions and perform an incorrect handling or operating procedure. The precautions in these two categories are both important and must therefore be observed without fail.

 WARNING	WARNING is used to indicate the presence of a hazard which may cause severe personal injury or death if the warning against performing an incorrect handling procedure is ignored.
 CAUTION	CAUTION is used to indicate the presence of a hazard which may cause personal injury or property damage if the warning against performing an incorrect handling procedure is ignored.

Pictograph Examples

	The  symbols are used to indicate precautions (including those related to potential warnings) to be observed. Detailed information is furnished by a picture within the symbol outline (a shock hazard is indicated by the example shown at left).
	The  symbols are used to describe prohibited actions. The details of a prohibited action are given by a picture within or near the symbol outline (the example shown at left dictates that you must keep flames away).
	The  symbols are used to describe required actions. Detailed instructions are given by a picture within the symbol outline (the example shown at left dictates that a ground connection must be made).



SAFETY PRECAUTIONS (Continued)

Installation Environment of Printer



WARNING

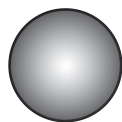
- Ensure that there is no flame- or arc-generating device around the printer.
The ink and makeup are both flammable and may cause fire. Fire can be generated by matches, lighters, cigarettes, heaters, stoves, gas burners, welders, grinders and static electricity. Arcs may be generated from open-type relays, switches, and brush motors. Before handling the ink and makeup, remove static electricity from your body, peripheral equipment, and so on. In the interest of safety, position a dry-chemical fire extinguisher near the printer.
- Since the ink and makeup contain organic solvents, install the printer at an adequately ventilated location.
 - ① Never install the printer in an enclosed space.
 - ② Connect exhaust equipment to the printer in order to prevent it from filling with organic solvent vapor.
 - ③ Secure adequate space for the ink/makeup handling area and printer installation site. At least 200 m³ must be provided per print head. Ensure that adequate ventilation is provided.



CAUTION

- If extraneous noise enters the printer, it may malfunction or break down. For maximum noise immunity, observe the following installation and wiring precautions.
 - ① Ensure that 100 to 120 VAC or 200 to 240 VAC power cables are not bundled with other power supply cables.
 - ② Insulate the printer main body and print head so that they do not come into direct contact with the conveyor or other devices.
 - ③ If the employed print target detector is housed in a metal case, use a plastic mounting brace for the purpose of insulating the detector from the conveyor and other devices.
 - ④ Be sure that the print target detector wiring is not bundled together with other power supply cables.





SAFETY PRECAUTIONS (Continued)

Grounding



WARNING

- Ensure that all electrical wiring, connections and grounding comply with applicable cords. Properly connect the printer to its dedicated ground. Complete the above procedure to avoid electrical shock hazards.
- When welding, keep enough space between the IJ printer and the welding work area to prevent the arc from starting a fire. Also, be sure to insulate the printhead and IJ printer frame to keep the welding current from flowing to the control section of the printer, and to make a separate ground connection for the printer.
- If you wish to receive ink particles in a beaker, for a printing test for example, use an electrically conductive beaker and connect the beaker securely to the ground.
Do not let the tip of the printing head enter the beaker.



Ink particles used for printing are electrically charged. An ungrounded beaker has a gradually rising charge, possibly catching on or causing a fire.

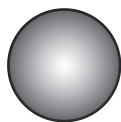
Cable Handling



WARNING

- Use an AC voltage of 100 to 120 V or 200 to 240 V $\pm 10\%$ only and a power frequency of 50 or 60 Hz only.
If the above requirements are not met, the electric parts may overheat and burn, creating a risk of fire or electric shock.





SAFETY PRECAUTIONS (Continued)

Ink and Makeup Handling



WARNING

- When charging a refill of ink or makeup, exchanging ink, or otherwise handling ink or makeup, take enough care not to spill ink or makeup. If you spill any ink or makeup by mistake, wipe it off neatly and promptly with wiping paper or something similar. Do not close the maintenance cover until you make sure that the portion you have just wiped is completely dry. You must pay particular attention when you have spilled ink or makeup inside the printer and it is not completely dry. Why? Because vapors of ink or makeup will stay inside the printer and may catch on or cause a fire.



If you find it hard to wipe the printer when it is turned on, stop it with the maintenance cover open. Power it down, and then wipe it off again.

- If you wish to clean the casing of the printer with wiping paper impregnated with makeup, be sure to do so with the power off.



Attempting to clean it when the power is on will cause vapors of ink or makeup to enter the printer, possibly catching on or causing a fire.

When the cleaning is over, open the maintenance cover and make sure that no makeup has entered and no vapors remain inside.

- Should you find a leak of ink or makeup inside the printer while the printer is running or being maintained, wipe it off promptly with wiping paper or something similar. Then, with the maintenance cover open, stop the printer, power it down, and repair the leak.



Continuing operation with a leak of ink or makeup will cause an anomaly, resulting in abnormal printing.

Ink and makeup are flammable. They may therefore catch on or cause a fire.

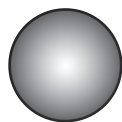
- The ink and makeup, their waste solution, used wiping papers and empty containers are flammable. Waste disposal must comply with appropriate regulations. Consult the appropriate regulatory agency for further information.



CAUTION

- Since the ink and makeup contain organic solvents, observe the following handling precautions.
 - ① When handling the ink or makeup, wear protective gloves and safety goggles to avoid direct skin contact. If the ink or makeup comes into contact with skin, wash thoroughly with soap and warm or cold water.
 - ② When transferring the ink or makeup to or from a bottle, exercise caution to prevent it coming into contact with the printer or surrounding articles. If there is any spillage, immediately wipe it clean using a cloth moistened with makeup.
- Ink and makeup must be stored as flammable liquids. Storage must comply with local regulatory requirements. Consult the appropriate regulatory agency for further information.





SAFETY PRECAUTIONS (Continued)

Main Body Handling



WARNING

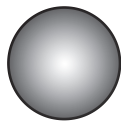
- Do not insert tweezers, a screwdriver, or any other metal article into the ink ejection port in the end of the print head.
When the printer is ready to print, a high voltage (approximately 6 kV) is applied to the deflection electrode section in the print head.
Exercise caution to avoid electric shock, injury, and fire.
- Do not remove covers and/or screws which are not specified on this manual.
A high voltage is applied to some sections of the printer.
Exercise caution to avoid electric shock and injury.
- Exercise caution to avoid inadvertently disconnecting, forcibly pulling, or bending piping tubes.
Since the ink and makeup in some portions of piping tubes are pressurized, they may splash into your eyes or mouth or onto your hands or clothing.
If any ink or makeup enters your eyes or mouth, immediately flush with warm or cold water and consult a physician.
- While the printer is operating, do not look into the ink ejection port in the end of the print head.
Ink or makeup may enter your eyes or mouth or soil your hands or clothing.
If any ink or makeup enters your eyes or mouth, immediately flush with warm or cold water and consult a physician.
- When ejecting the ink, do it after confirming that there is no one in the ejection direction.
(Operate with the end of the print head inserted in a beaker, etc.)
- Before servicing the printer, be sure to stop the ink ejection.
Because ink or makeup may splash into your eyes or mouth or onto your hands or clothing. If any ink or makeup enters your eyes or mouth, immediately flush with warm or cold water and consult a physician.
- If an earthquake, fire, or other emergency occurs while the printer is engaged in printing or just turned on, press the Main power switch to turn off the power.



CAUTION

- Only persons who have completed an operator training course for Hitachi IJP can operate and service the printer.
If the printer is operated or serviced incorrectly, it may malfunction or break down.
- Do not attempt to make repairs for any purpose other than operation or maintenance.





SAFETY PRECAUTIONS (Continued)

Related Regulations



WARNING

- Never drain the ink or makeup waste solution into a public sewer system. Waste disposal must comply with all appropriate regulations. Consult the appropriate regulatory agency for further information.
 - The printer must be managed in compliance with all appropriate regulations.
- Read and understand the appropriate Safety Data Sheet (SDS) before using any ink or makeup.

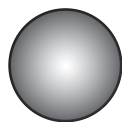


FCC Notice

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

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.



SAFETY PRECAUTIONS (Continued)



WARNING

<Keep all fire away.>

- Ink and Makeup are flammable.
- All fire must be kept away from the machine.
- Spilled Ink and Makeup must be wiped off and dried up immediately.

<Caution when handling Ink/Makeup>

- Strage must comply with local regulatory requirements .
- Read and understand Safety Data Sheet (SDS).
- Be sure to wear protective gloves and safety goggles.
- If the Ink/Makeup in used is an organic solvent, it must be managed in compliance with the Ordinance on the prevention or Organic Solvent poisoning. Refer to the "Instruction Manual" and the "Handling guidance of each ink" for details.



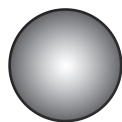
AVERTISSEMENT

< Tenir hors de portée du feu. >

- L'encre et la composition sont inflammables.
- Tenir la machine hors de portée du feu.
- Nettoyez et séchez immédiatement les projections d'encre et de composition.

<Soyez prudent lorsque vous manipulez l'encre/la composition>

- Le stockage doit respecter les obligations réglementaires locales.
- Lisez attentivement la fiche signalétique de sécurité de l'appareil (FSSP).
- Assurez-vous de porter des gants et des lunettes de protection.
- Si l'encre/la composition utilisée est un solvant biologique, vous devez le manipuler conformément au décret sur la prévention des empoisonnements par solvant biologique. Reportez-vous au «Mode d'emploi» et aux «Conseils de manipulation de chaque type d'encre» pour plus de détails.



SECURITY PRECAUTIONS



CAUTION

In the control system, the connection with the information and telecommunications system is progressing recently, and it causes for the increased security risk such as cyber attacks. In a system applying this product, both physical security measures mainly in the installation location and security measures against the network usage are required.

[Security risk example via the network]

- Abnormal operation, performance degradation, information leakage and data tampering by attacks from outside
- Malfunction, harm and damage occurrence due to programs and/or data tampering from outside
- It is used as an attacking step for other systems

However, the security level to be determined varies by each control system. In addition, the assumed security risk is not fixed, it will be something to change on a daily basis.

Not only in our products, individual security protection support functions of each product configuring the system is one means to ensure the security level required for the system, it does not completely prevent the security risk growing day by day.

The construction of the security level required for the control systems are responsible by the system and customer. In addition, for the maintenance of the security level will require continuous improvement of measures.

In a system using this product, trouble, accident or damages caused by unauthorized external access, Hitachi Group will not be able to bear any responsibility.

It is required for the customer side to clarify the target of the security protection of the system. Then set up the typical measures as below, and build out and operate the system.

- Utilization and periodic review of the authentication function for the program and the data to be protected
- Utilize the security functions of the device configuring the network
- Prevention of the unspecified connection by use of the function to identify the target connection
- Measures in the operational management, such as to lock the location of devices or restrict the operator

Please use the USB memory only on this device. Please do regularly virus check for the USB by using a computer with the latest antiviruls software.

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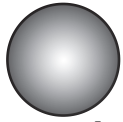
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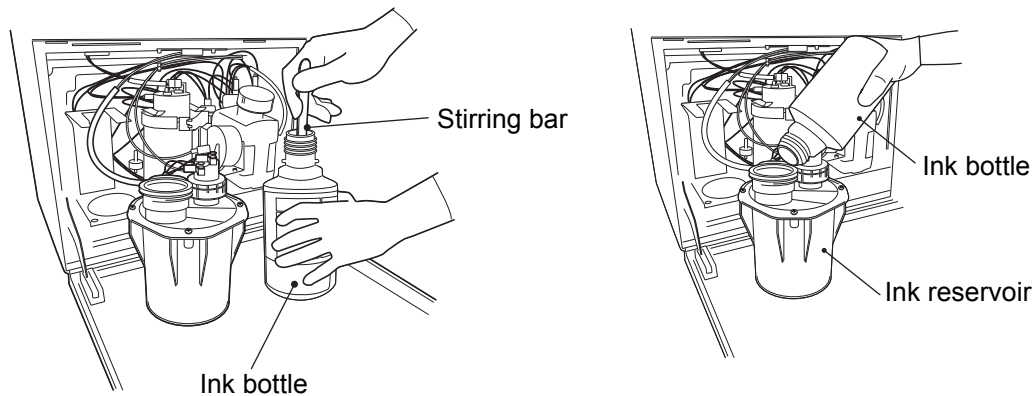
1. USAGE PRECAUTIONS

1.1 Cautions when using pigmented ink

Pigmented ink contains pigment, resin, etc. which have characteristics to coagulate and settle according to time lapsing. With this IJ printer, functions to reduce coagulation and settlement are provided. However, it is necessary to take care, as shown below.

(1) Ink and makeup replenishment

- a) With this IJ printer, ink is replenished from ink reservoir, and makeup from makeup reservoir, to main ink tank periodically during operation. If ink and makeup for replenishment are running low, warning will be displayed. Replenish ink as soon as possible. (Refer to "8.1 Replenishing the ink" and "8.2 Replenishing the makeup" for replenishing procedure.)
- b) Stir any settled pigment inside the bottle using stirring bar before replenishing ink to ink reservoir.



Confirm that settled components are thoroughly stirred inside the bottle.

*What is makeup? :

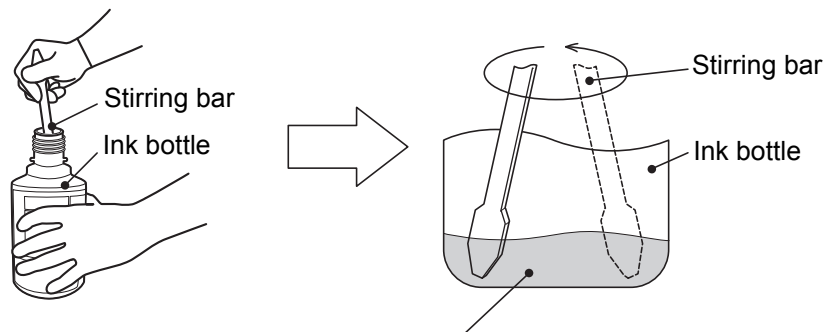
The makeup serves as the replenisher that makes up for the constituent loss due to ink evaporation during ink ejection. It is also used as a cleaning solution.

<Stirring points>

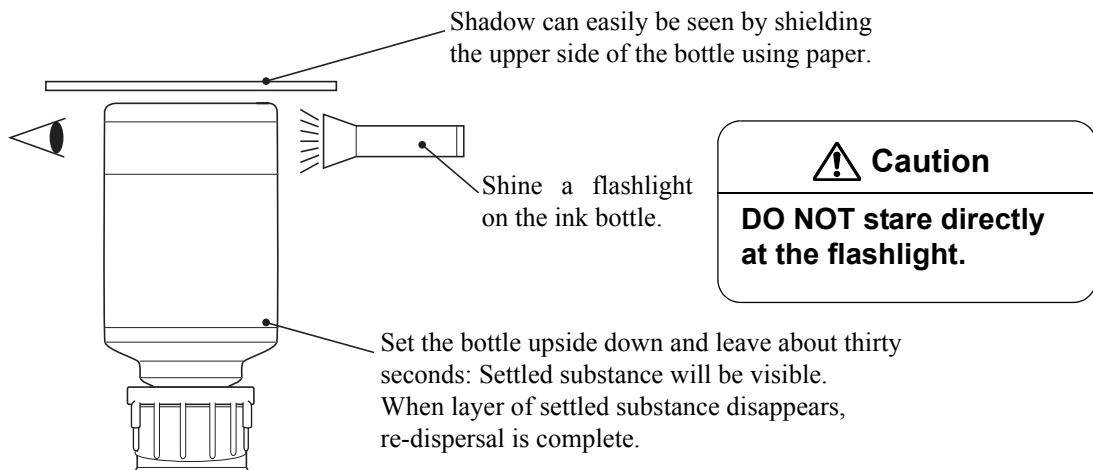
- ① Stir settled pigment component inside the ink bottle using stirring bar.

If ink is replenished without stirring ink, printing density may become thin.

- Settled substance can be easily dispersed by peeling it off the bottom of the bottle.
- During stirring, ink may splash. Be sure to wear protective glove, protective goggles, protective cloth, etc. when stirring.



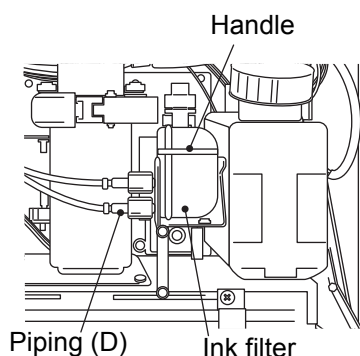
- ② When stirring is performed for 5 to 10 minutes, settled substance will re-disperse.
To confirm the dispersal of settled substance, irradiate light to the bottle, and check the shadow of the settled substance from the opposite side.



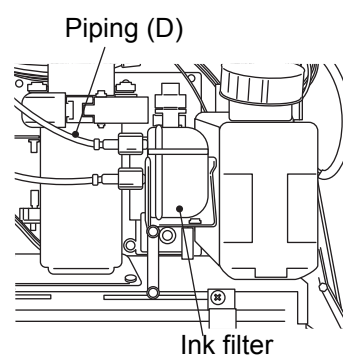
- ③ After settled substance disappears, replenish ink.

(2) Periodic ink replacement

- For the replacement procedure, refer to Technical manual "6.2 Replacing the ink".
 - While the IJ printer ink circulates for operations, it reacts with atmospheric air elements and deteriorates with time. Therefore, it needs periodic replacement. The guide for determining the replacement interval conforms to the handling guidance of each ink. However, since the proper replacement intervals vary with the printer operating environmental conditions (temperature, humidity, dust, etc.), determine the best replacement intervals in accordance with the obtained printings, and replace all ink inside the printer with new ink.
- Stir any settled pigment inside the bottle using stirring bar before replenishing ink to ink reservoir.
- When disposing of ink from ink reservoir and main ink tank, be careful not to lose rotor. Be sure to pick up the rotor from reservoir (using stirring bar) and check for abrasion of rotor.
- Clean off ink adhering to inside of ink and main ink tanks or adhering to seal part, etc. before replenishing ink. If adhering ink is left as is, it may evaporate and stick, and removal of cap may be impossible.
 - Check for abrasion at the bottom of the tank.
- After periodical ink replacement, confirm the print condition. Confirm the print condition using the current excitation setting and also the excitation setting values just before and after the current value.
(For example, if current setting is "10", confirm with "9", "10" and "11".)
If print condition is good with all three settings, use the original excitation setting value. (In above example, "10")
If print condition is not good with any one of the three settings, perform nozzle property test and change the excitation setting value to the center value of the excitation setting values to ensure good print condition.
Refer to Technical manual "6.10 Excitation V adjustment" for details of nozzle property test.
- When performing periodical ink replacement, fixed orientation of ink filter must be switched. Follow the instructions on screen, and perform as shown below.



During normal operation/ink disposal



During ink replenishment

(3) Storage precautions

- a) Store the ink and makeup in a cold dark place (0 to 20 °C). (Observe this rule no matter whether tanks are unsealed or not.)
- b) The storage validity period is predefined for the ink and makeup. Begin to use the ink/makeup before the "Expiration date" arrives.
Do not use ink whose "Expiration date" has been exceeded.
- c) Once an ink bottle is opened, even if it is stored, the bottled ink begins to deteriorate in the same manner as the ink in the printer. If the above-indicated "Expiration date" is exceeded, discard the bottle of ink.
- d) The makeup must be added to the printer within one year after opening the tank.
Note that the makeup added to the printer needs no replacement.

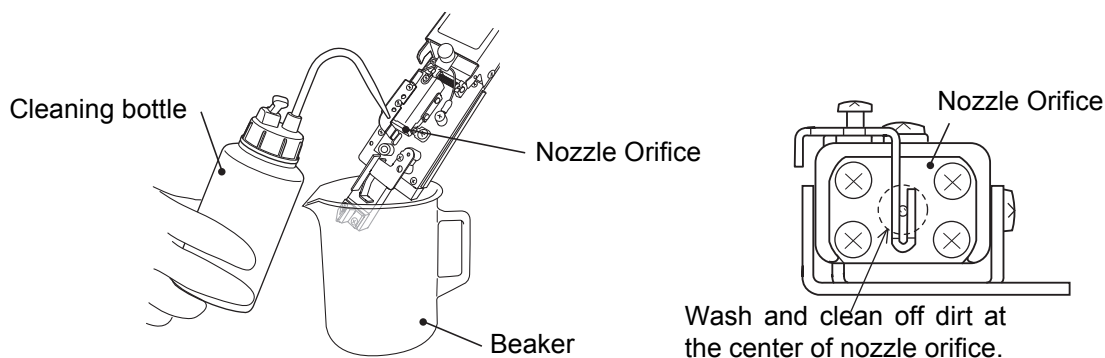
WARNING

- **Do not drain the ink or makeup waste solution into public sewer systems or elsewhere. Waste disposal must comply with all appropriate regulations. Have the used wiping papers and empty container processed by an industrial waste processor. Consult the appropriate regulatory agency for further information.**

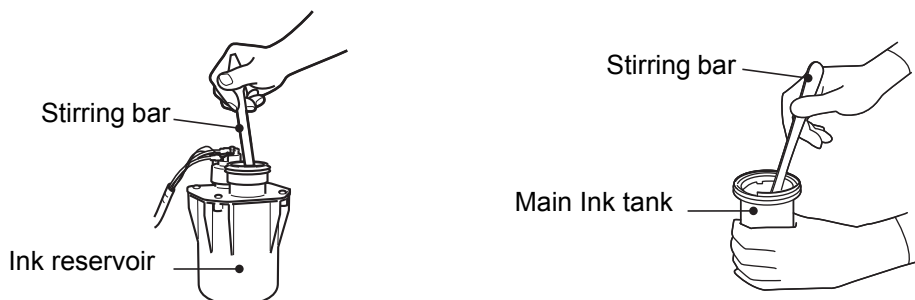
(4) Cautions when starting the unit

Refer to "3.1 Start operation" for starting the unit.

- a) Before ejecting ink, clean nozzle orifice by washing with makeup.



- If any dirt remains, ink stream may bend.
 - After cleaning is complete, remove makeup using blower or paper wiper and dry nozzle orifice well.
- b) If shutdown period exceeds 168 hours (one week), rotor may not rotate normally.
Before starting the unit, stir ink inside ink reservoir and main ink tank using stirring bar.



With this IJ printer, "function of automatic stirring during shut down" is provided.

This function performs ink circulation inside the printer and stirrer operation once every 24 hours even in shutdown status if power and air are supplied.

To start smoothly, it is recommended that you supply power and air during shutdown period.

(Refer to Technical manual "6.16 Automatic stirring during shutdown" for details.)

However, since this function cannot perform ink circulation for all ink paths in printer, the maximum shutdown period with ink charged is 2 or 3 weeks.

(Refer to "1.2 IJ Printer long-term shutdown" for details.)

c) Time for starting operation will vary depending on the shutdown period as shown below.

Shutdown time (T)	Time for starting operation (T)
$T \leq 48\text{h}$	approx. 3 minutes
$48\text{h} < T \leq 96\text{h}$	approx. 4 minutes
$96\text{h} < T \leq 168\text{h}$	approx. 5.5 minutes
$168\text{h} < T$	approx. 7 minutes

* In case of ambient temperature $> 27^{\circ}\text{C}$

* In cold environment, since heating unit operates, time for starting operation will be longer than value in the above table.

(5) Caution when continuously running for 24 hours a day for more than a month

When continuously running the printer for 24 hours without stopping for more than a month, perform "ink circulation" without interruption at least once a month, in order to prevent sediment of ink accumulating in print head cable tube.

Refer to Technical manual "6. Circulation System Operating and Adjustment Procedures",
(No printing can be performed while "Ink Circulation" is being executed.)

(6) Other cautions

a) **The excess and shorts of dot configuration may occur (e.g. lack of dot).**

Set up print condition confirmation process to the downstream of print process.

b) Depending on change of ambient temperature or ink viscosity, warning of "Excitation V-ref. review" may be displayed.

If this warning is displayed, perform nozzle property test and update excitation setting.

c) If the nozzle or gutter is dried by mistake and ink is stuck to them, and it cannot be recovered by washing with makeup, immerse nozzle or gutter in household detergent of 0.5% and wash in an ultrasonic washer for approx 10 minutes. The stuck ink will be loosened and can then be removed. (See Technical manual "6.3.2 Nozzle orifice disassembly and cleaning".)

d) When using the printer in an environment where the humidity is more than 85%, the amount of sediment may increase. Perform air purge (See Technical manual "3.1 Print head air purge").

1.2 IJ printer long-term shutdown

When the IJ printer is shut down for a long time due to production or other circumstances, the ink may accrete inside of the printer and cause such problems as inability to be ejected or to be recovered. When this occurs, the following actions must be taken.

- ① Prevent accretion by operating the printer periodically.
Operate (eject ink) the printer for 1 hour or longer at least once during 1 week*1.
- ② Perform long-term shutdown storage work.
Before storage, drain the ink from inside the printer and fill the printer with makeup.
Refer to Technical manual "6.15 Long-term Shutdown" for detail.

*1 This is reference period, the printer can be continuously shut down without being operated in when you use MEK based ink.

CAUTION

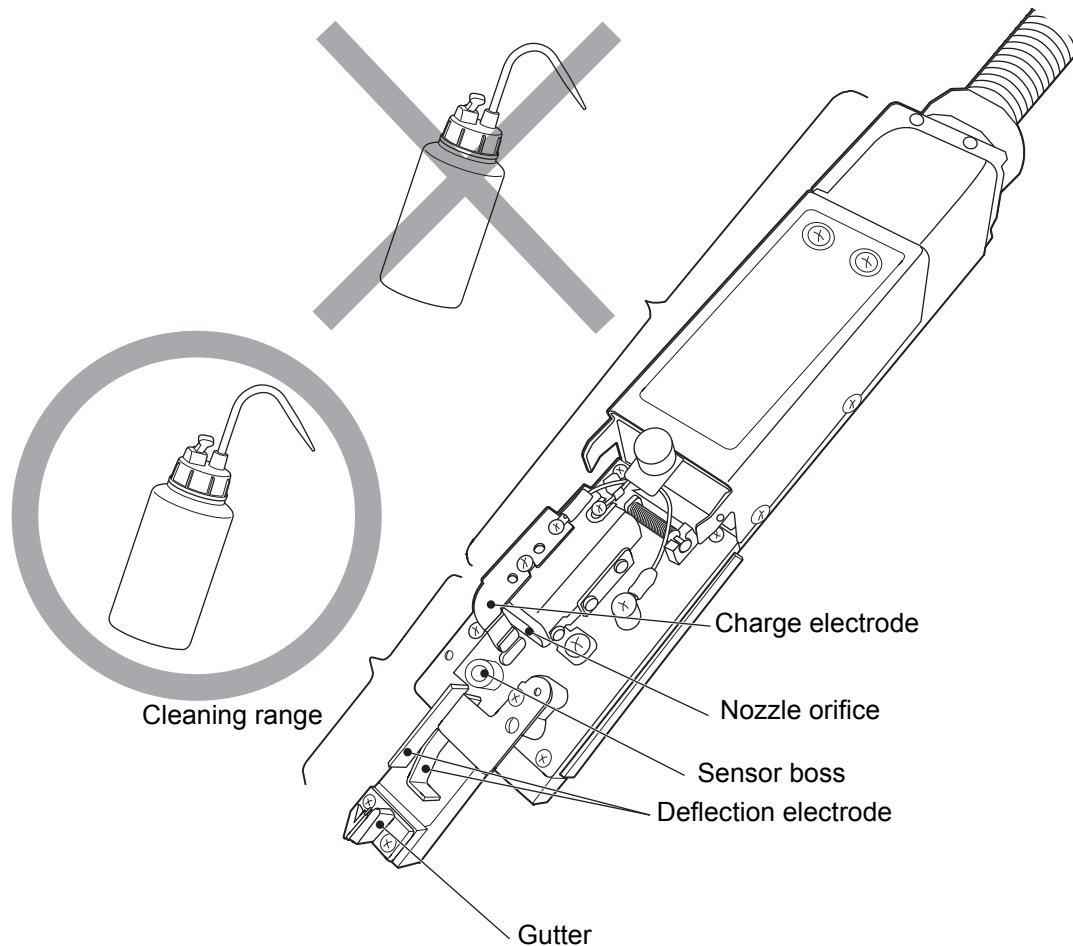
- Since "Perform long-term shutdown storage work" requires special work, it is recommended to contact your local distributor and ask for the work.
- Handling of ink other than the above requires special handling in accordance with the handling guidance of each ink.
- To prevent adhesion, store the equipment at the lowest temperature possible.
- Please note the ink may harden within a week when it is stored in 35 °C or higher.

1.3 Print head cleaning

Take the following precautions when cleaning ink from around the nozzle.

- (1) Orient the end of the print head downward and pour makeup onto the dirty part and clean while catching the makeup in a beaker.

Do not pour the makeup over this section.
Wipe the print head clean with wiping paper dampened with the makeup.



- (2) After cleaning, thoroughly wipe the print head with wiping paper and allow it to dry.
 - Thoroughly dry the nozzle, charge electrode, deflection electrode, mounting base, sensor boss and fringe of the gutter.Confirm that the parts are sufficiently dry before starting the next operation.
If operated while wet, the printer will not start normally.
 - While the print head is wet, do not orient its end upward.
- (3) Never immerse the print head in the makeup.
- (4) When printing is frequently performed or the distance between the print target and the print head is short, ink splashes may stain the end of the print head and the print head cover. If this condition is left unresolved, the stained status will be made worse, resulting in a print error or emergency stop. If a print error or emergency stop frequently occurs because of stain due to ink splashes, stop the operation in progress and clean the end of the print head (around the nozzle, charge electrode, deflection electrode, mounting base and gutter) and the print head cover. Do this in addition to the cleaning to be performed at the end of each day's work.

When recommend that you perform the following air-purge procedure because the stains due to ink splash reduce.
See the Technical Manual "3.1 Print head air purge".

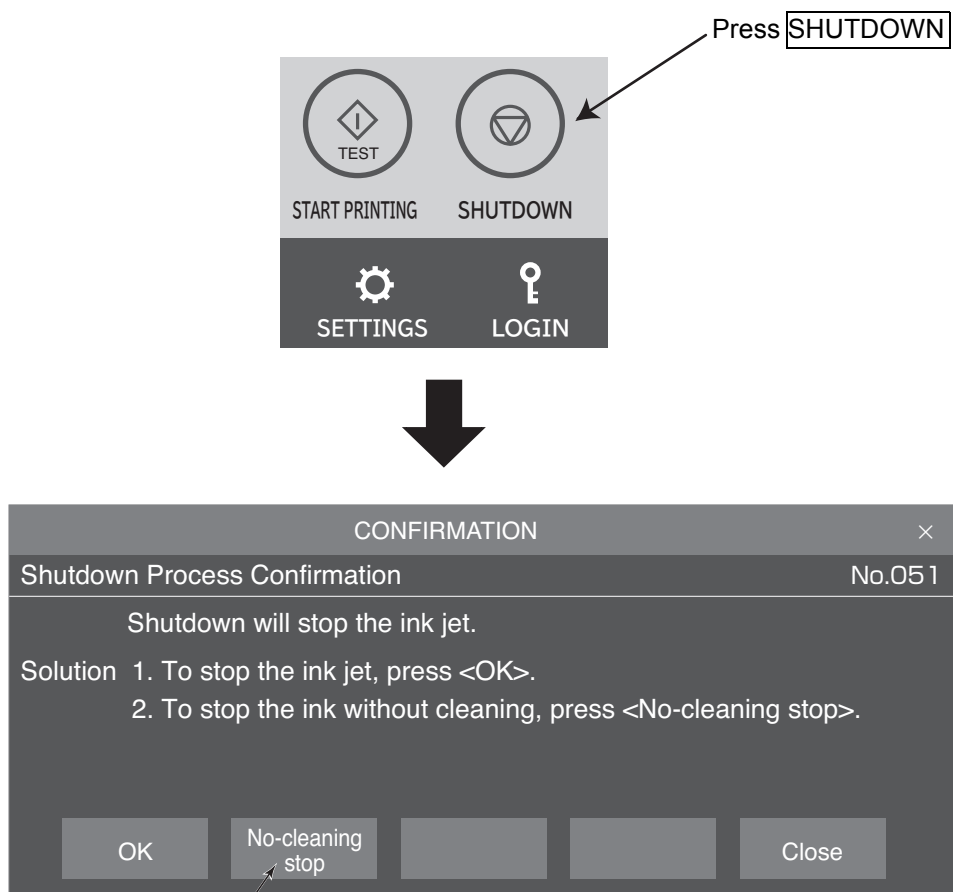
1.4 Shutdown (no-cleaning stop)

When you press the **SHUTDOWN**  → **OK** at HOME screen, the printer stops after completing its automatic nozzle cleaning sequence. If you repeatedly activate the **SHUTDOWN**  → **OK** to stop an operation, excessive makeup will enter the printer, thereby thinning the ink or producing an unduly high ink main tank solution level. If it is absolutely necessary to repeatedly stop the printer operation, use the following procedure. (For detail of the HOME screen, refer to "4.1 Print description screen (initial screen)".)

The no-cleaning stop procedure works even while the startup sequence is being executed. (The **SHUTDOWN**  → **OK** is inoperative during the startup sequence.)

- *1: Do not use the **SHUTDOWN**  → **OK** to stop operation more than two successive times.
- *2: When operation was stopped using **SHUTDOWN**  → **No-cleaning stop**, and if left in that state, the ink will become stuck in the nozzle and cause ink stream bending, nozzle clogging, and printing disorder. Apply makeup to the nozzle orifice to wash it within 30 minutes after a stop, and then eject ink again.

- 1** Press **SHUTDOWN** at HOME screen, and the message "Shutdown Process Confirmation" appears.



- 2** Press **No-cleaning stop** on the message "Shutdown Process Confirmation".

1.5 Cautions on operating time when printer is in service

(1) Cautions when printer is repeatedly stopped immediately after the start of operation

If you repeatedly stop the printer immediately after the start of operation, automatic nozzle cleaning at shutdown will cause the ink in the IJ printer to gradually become thinner. For stable operation of the IJ printer, operate the printer for a given amount of time or more once started. (=in Ink eject status) During the operation, the ink viscosity is adjusted automatically and returns to the initial value. The required amount of operation time varies depending on the ambient temperature or ink types used. Refer to the handling guidance of each ink for details.

(2) Caution when daily operating time is relatively long

The IJ printer ejects ink when printing, so the outside and inside of the print head cover will become dirty with accumulated ink spillage during operation. To prevent printing defects due to this ink accumulation, periodically check the head cover and clean it as required.

1.6 Heating of ink

- (1) If the ambient temperature is under approximately 27°C, the ink is heated by a heating unit in the print head. The startup processing time will be longer depending on the heating unit operation.

When the heater is not operating: Approximately 1.5 minutes

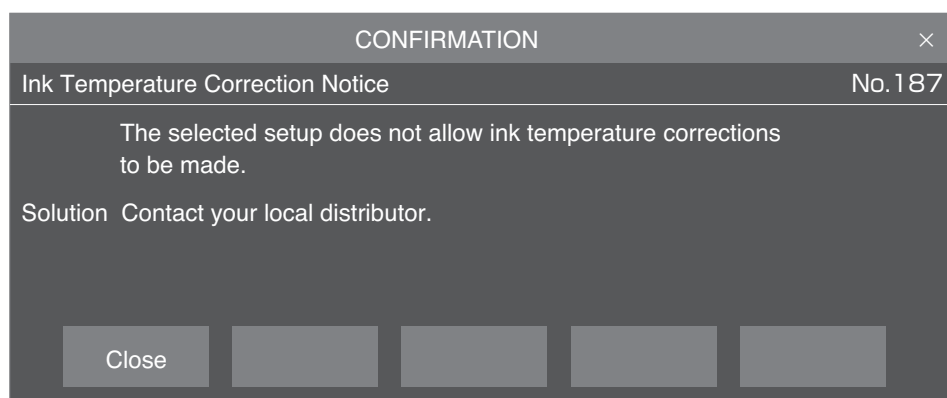
When the heater is operating: Maximum approximately 10 minutes (The startup processing time changes depending on the ambient temperature.)

- (2) When a heating unit fault occurs, take care of the following items.

- ① If a heating unit fault occurs, the messages "Ink Heating Unit too High", "Ink Heating Unit Temperature Sensor Fault", or "Ink Heating Unit Over Current" are displayed and the IJ printer fault stops.

The IJ printer can be restarted by pressing the **Reset** or **Close**. However, the ink will not be heated even if the temperature drops thereafter.

- ② Once "do not perform ink heating" is set, the following message is always displayed whenever the power is turned on thereafter. Cancel the message by pressing the **Close** and be sure to inform your nearest local distributor.

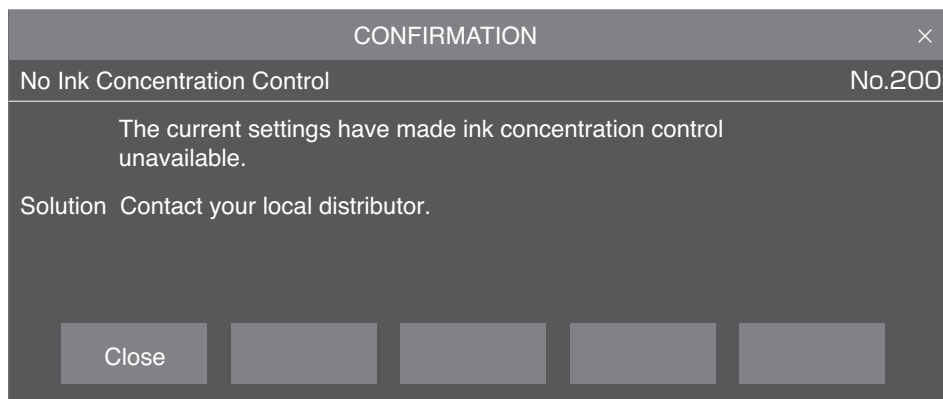


- ③ If the printer is temporally operated in "do not perform ink heating" status, the operation of the printer may become possible by resetting the excitation voltage.

Reset the excitation voltage according to Technical Manual "6.10 Excitation V Adjustment".

1.7 Ink concentration control

- (1) The ink is automatically controlled to maintain optimum concentration for printing.
- (2) If an error occurs in the viscometer which is used to control ink concentration, take care of the following points:
 - ① There are three types of viscometer errors:
"Inside Temperature Sensor Fault", "Viscometer Reading Instability", and "Viscometer Reading Out of Range".
 - ② When a "Inside Temperature Sensor Fault" occurs, the unit will enter the fault stop state.
Re-start is possible by pressing the **Close**, but the setting will be changed to the state in which ink concentration control based on the measured result using the viscometer is not performed thereafter.
Once the setting of automatic concentration control is released, every time the power is turned on, the following message will appear. Cancel the message by pressing the **Close** and be sure to inform your nearest local distributor.



- ③ When "Viscosity Reading Instability" or "Viscosity Readings Out of Range" occurs, the unit will not enter the fault stop state and printing can be continued. However, you should contact your nearest local distributor for inspection.

1.8 Gutter cleaning

The IJ printer collects ink not used for printing from the gutter. At the same time, it sucks in atmospheric gas, dust, and other matter from the air. If these substances are mixed with the ink in the gutter, undissolved components in the ink or makeup may stick to the gutter. If the system is run for 24 consecutive hours without automatic cleaning, these components will gradually accumulate in the gutter. This, together with the ink stream coming into contact with it, may cause such errors as "an error stemming from a dirty head".

- ① Clean the gutter and its perimeters with makeup periodically.
 - ② Perform the procedures described in "6.5 Cleaning the Gutter" in Technical Manual, and clean the gutter and the recovery route.
- Should the solution above do not work, contact your nearest distributor.

1.9 Protection sheet

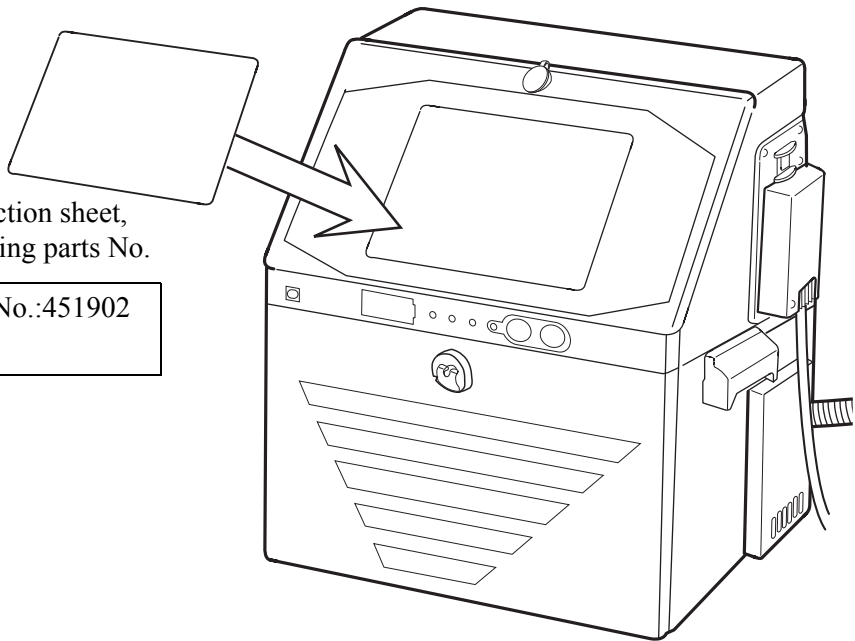
A protection sheet is provided to protect the screen display of the IJ printer.
This is used to prevent the screen display from becoming dirty, scratched, etc.

(1) Installing the protection sheet

- ① Clean all dirt, debris, ink, etc., from the panel surface.
Use a paper wipe, etc., soaked in water or makeup to wipe the display clean.
*Install the protection sheet after the panel surface has dried.
- ② Peel off the removable paper from the back of the protection sheet.
*Do not touch the double-sided tape on the back of the protection sheet.
- ③ Affix the protection sheet to the IJ printer screen display as shown in the figure.

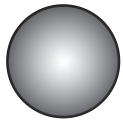
When ordering the protection sheet,
please specify the following parts No.

Protection sheet parts No.:451902
(3pcs/pack)



(2) Usage Precautions

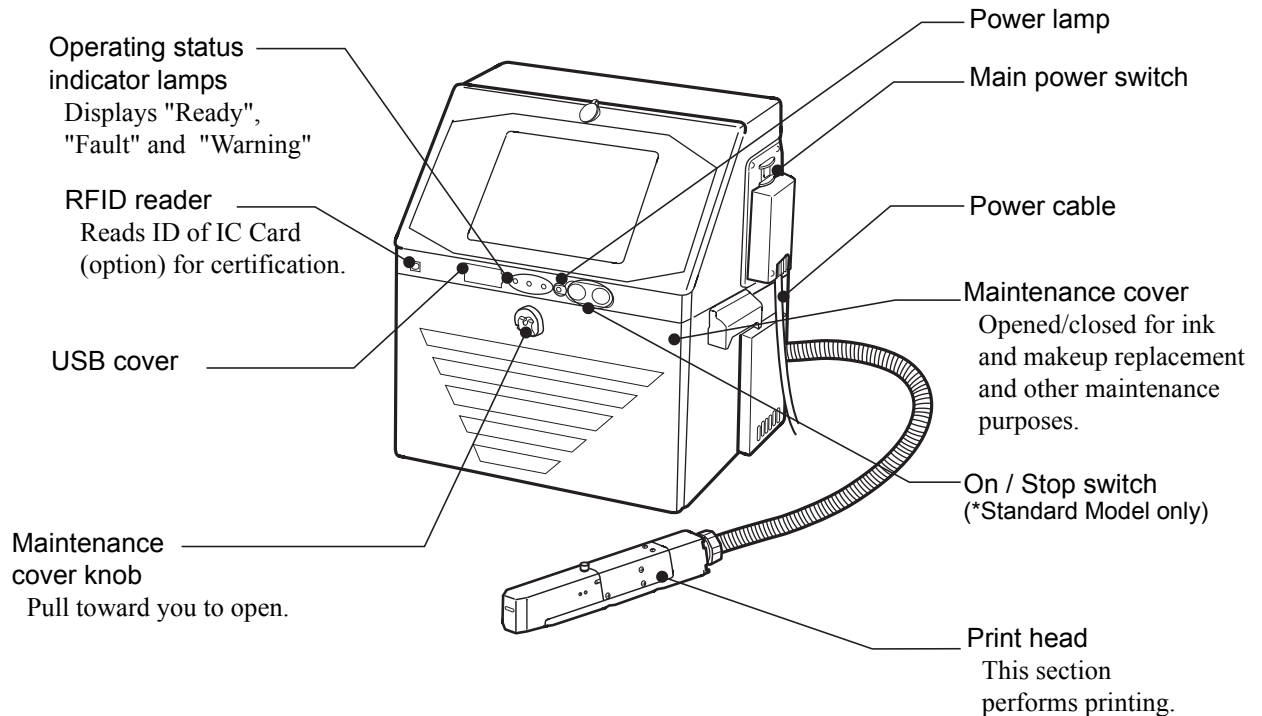
Be careful not to get ink or makeup on the protection sheet.
If ink or makeup does get on the protection sheet, wipe it off immediately.



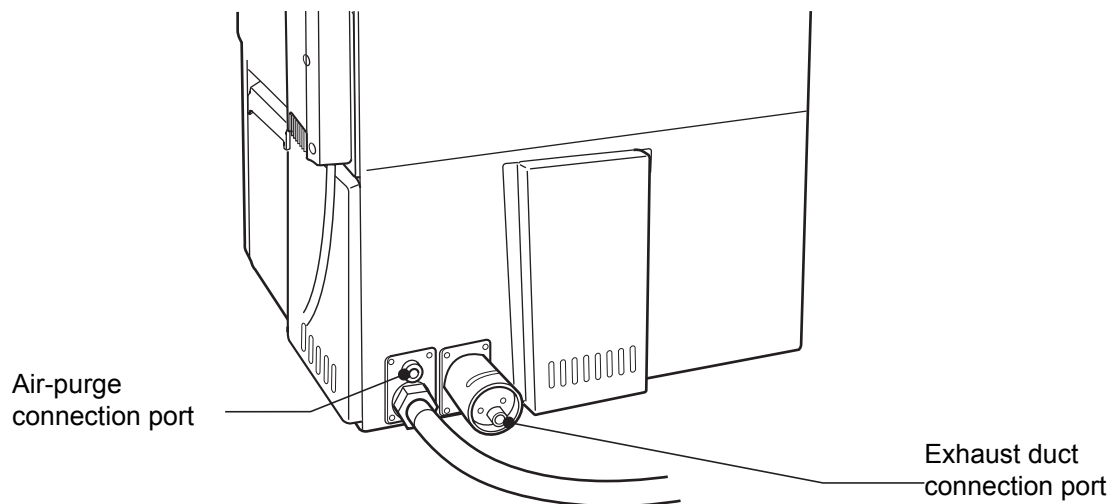
2. COMPONENT NAMES AND FUNCTIONS

2.1 External views

(1) External views



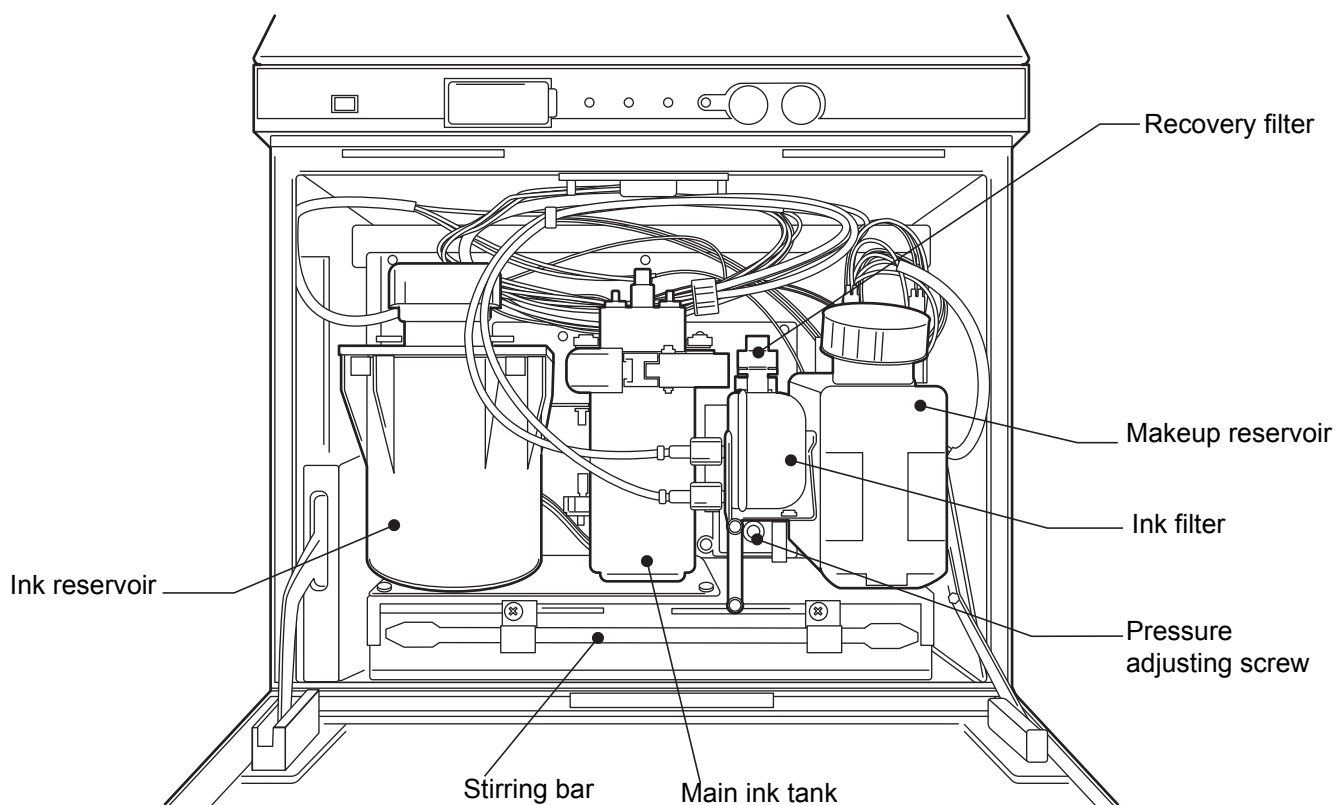
(2) External views (rear side)



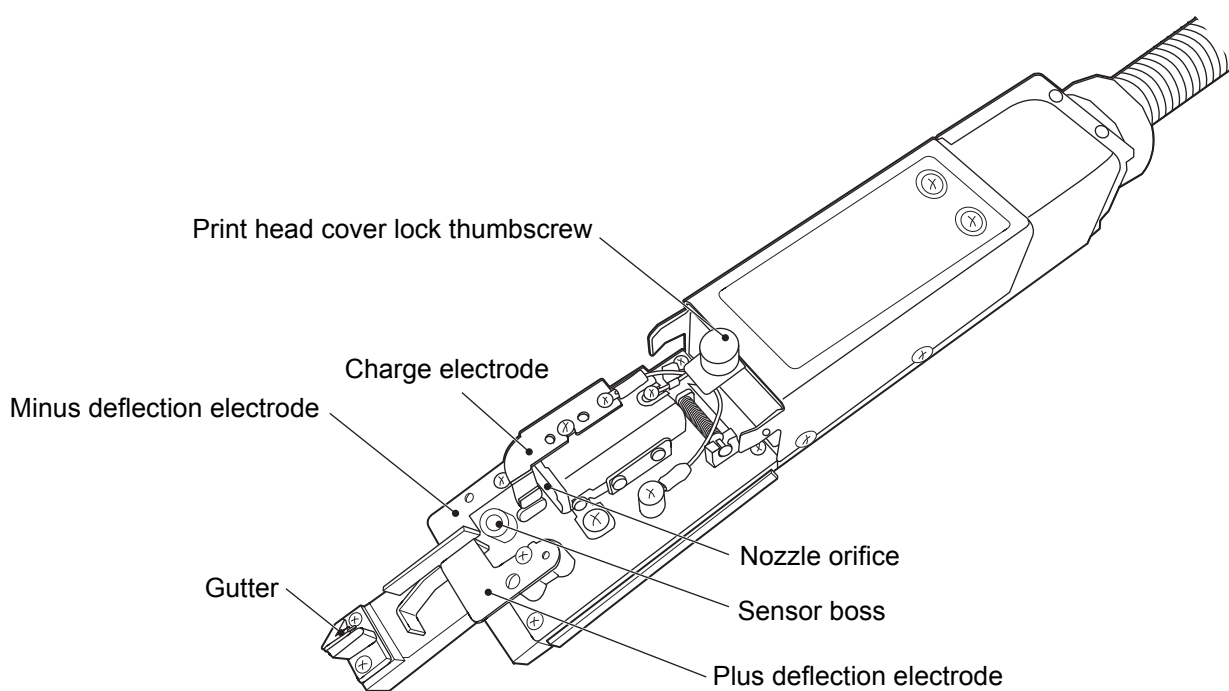
Attention to the handling of IJ printer

Stainless steel of the main body has the character it not to be easy rust, but it is a possibility that rust is generated when leaving it for a long time. To prevent rust being generated, we will recommend that the surface of the main body be kept clean as much as possible.

2.2 Main body internal parts arrangement



2.3 Print head



2.4 Screen display

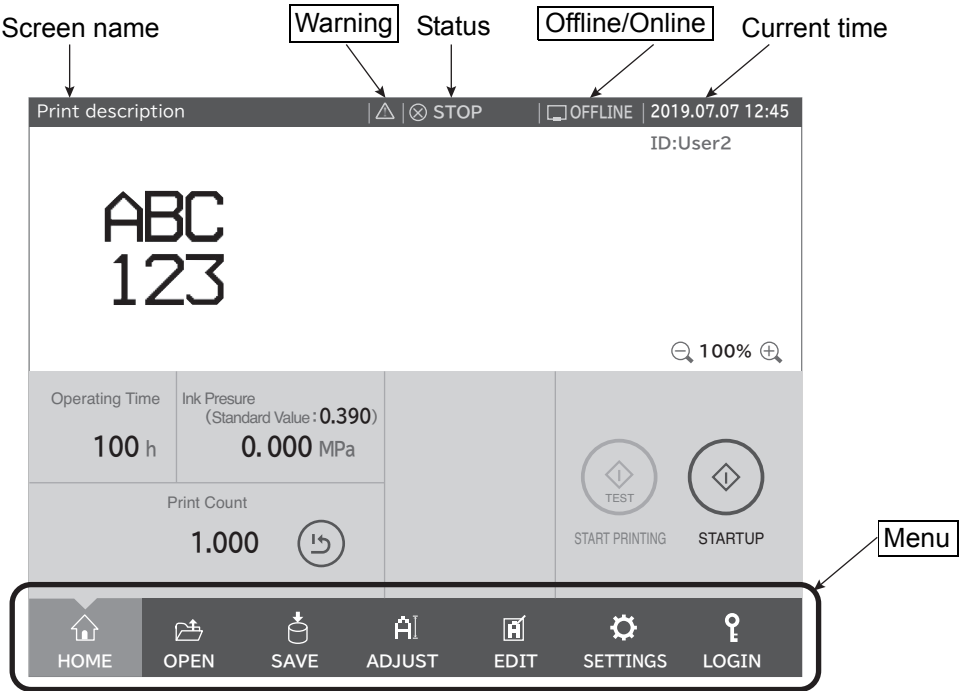
⚠ CAUTION

- A touch panel is employed for data entry to operation screen.
When manipulating the Touch panel, use only fingers. If the touch panel is operated with metal and/or sharp objects such as ballpoint pen, it may malfunction or break down.

(1) Print description screen (initial screen)

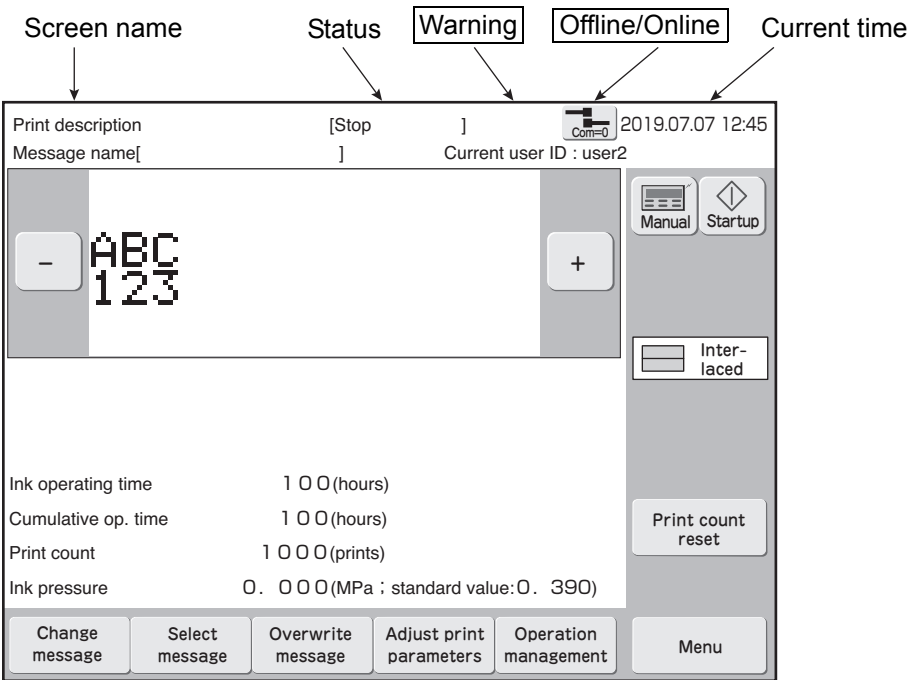
For details of screen, refer to "4.1 Print description screen (initial screen)".

[New HMI]



- For operation of Menu, refer to "3.3.5 Operation of screen transition(New HMI)".

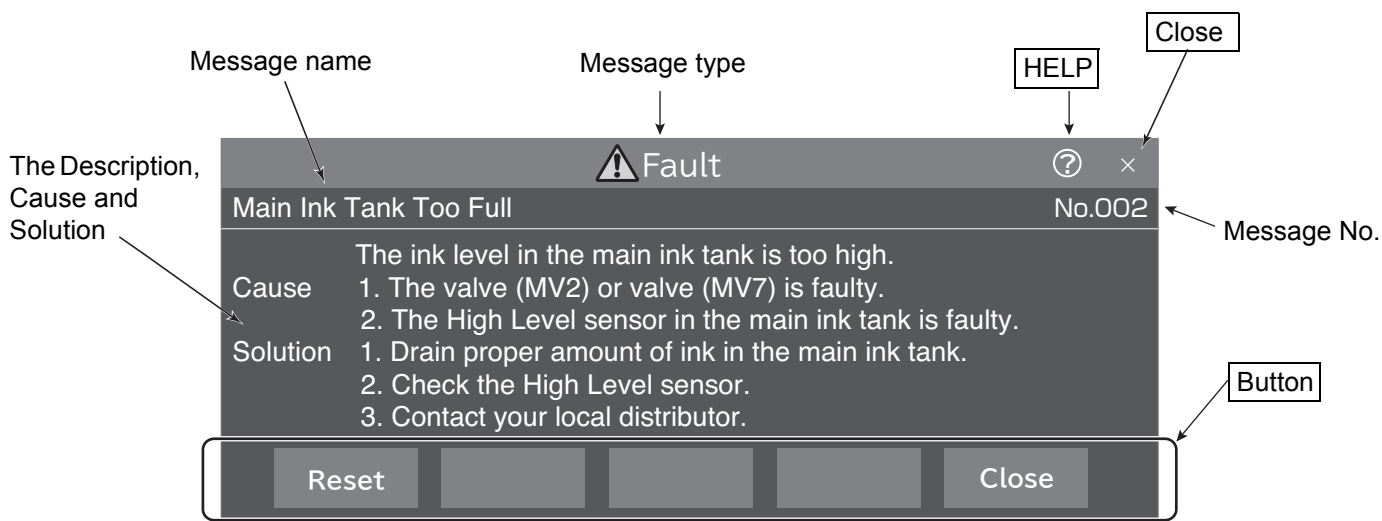
[Previous HMI]



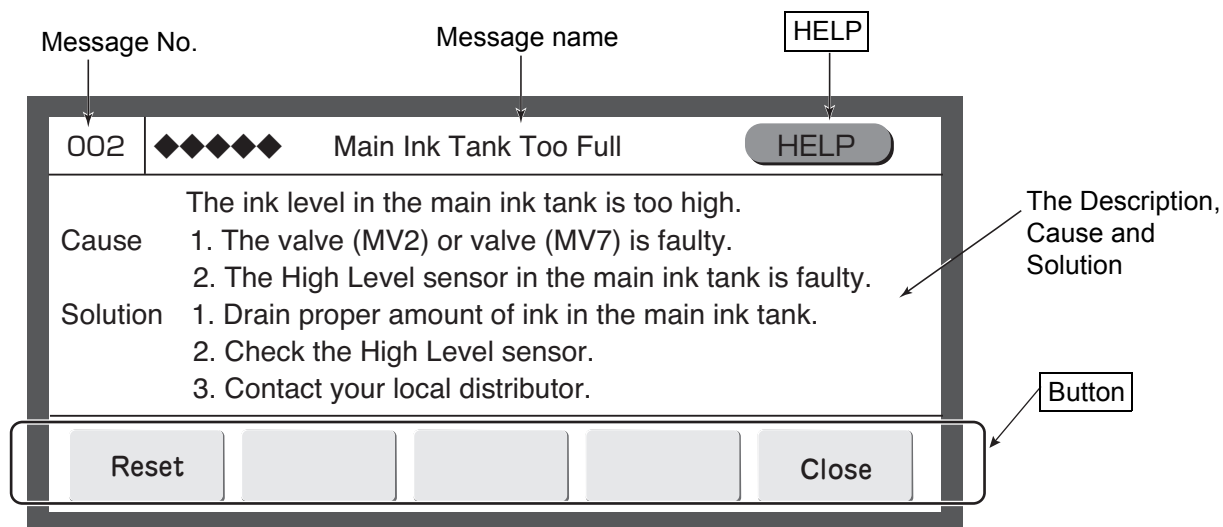
(2) Message

For details of message, refer to "9. When Warning or Fault was generated".

[New HMI]



[Previous HMI]





3. BASIC OPERATION

3.1 Start operation

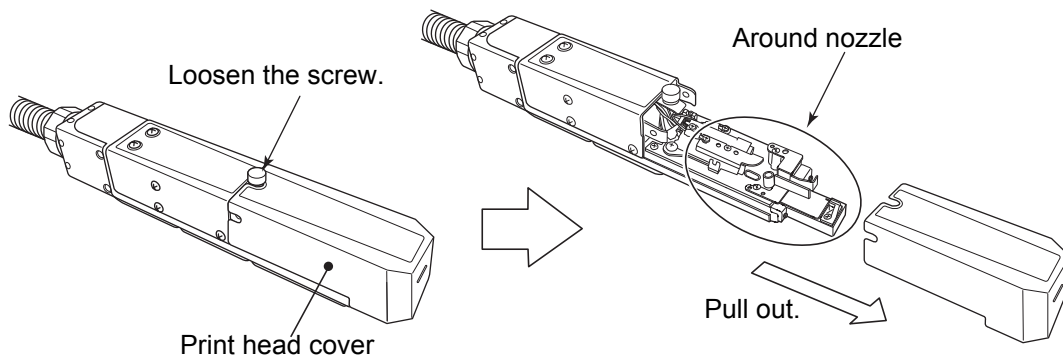
3.1.1 Start operation

⚠ CAUTION

- The ink and makeup contains organic solvents.
When handling the ink and makeup, wear protective gloves and goggles so that the ink will not directly contact your skin.
- An LCD touch panel is used for the screen.
Do not press the buttons with unreasonable force.
- If the system shuts down, turn off the main power switch.
To turn on the power and reuse the system, see "11. EMERGENCY PROCEDURES".



- 1 Remove the print head cover, and check whether or not the print head cover and the area around the nozzle are soiled by ink.**

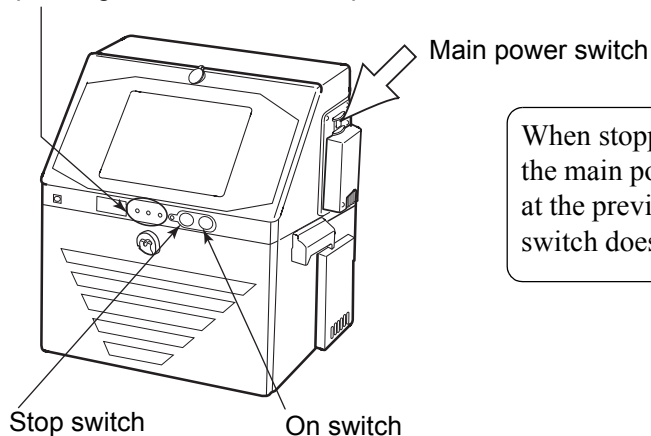


Since the IJ printer prints by ejecting ink against the print target, the outside and inside of the print head cover are soiled by splashing of the ink from the print target. To prevent printing problems due to soiling, check the soiling state and clean as required.

See "1.3 Print head cleaning" for a description of the cleaning method.

- 2 Turn on the power by pressing the main power switch.**

Operating status Indicator lamps



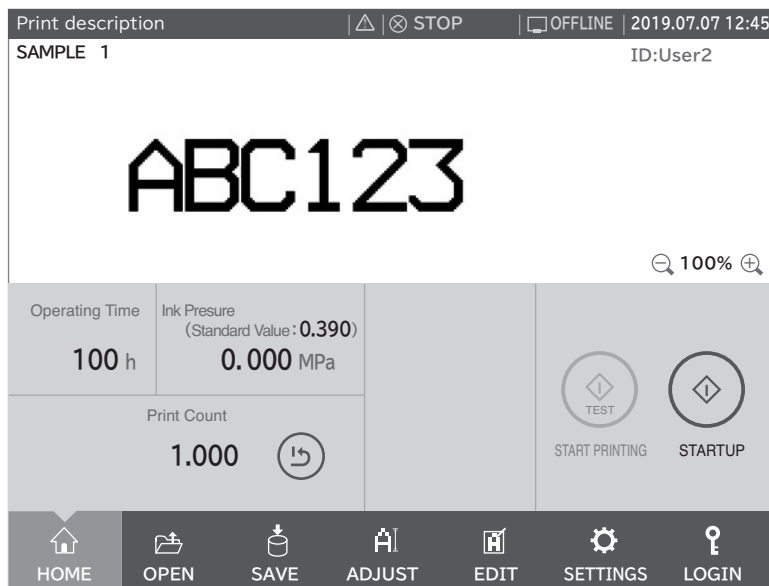
When stopped only by Stop switch and the main power switch was not turned off at the previous operation, the main power switch does not have to be pressed.

3 Press the On switch. (Press for about 2 seconds.)

In the case of turning on the power again, ensure that status indicator lamp is off when On switch is pressed.

The "Print description" screen shown below appears.

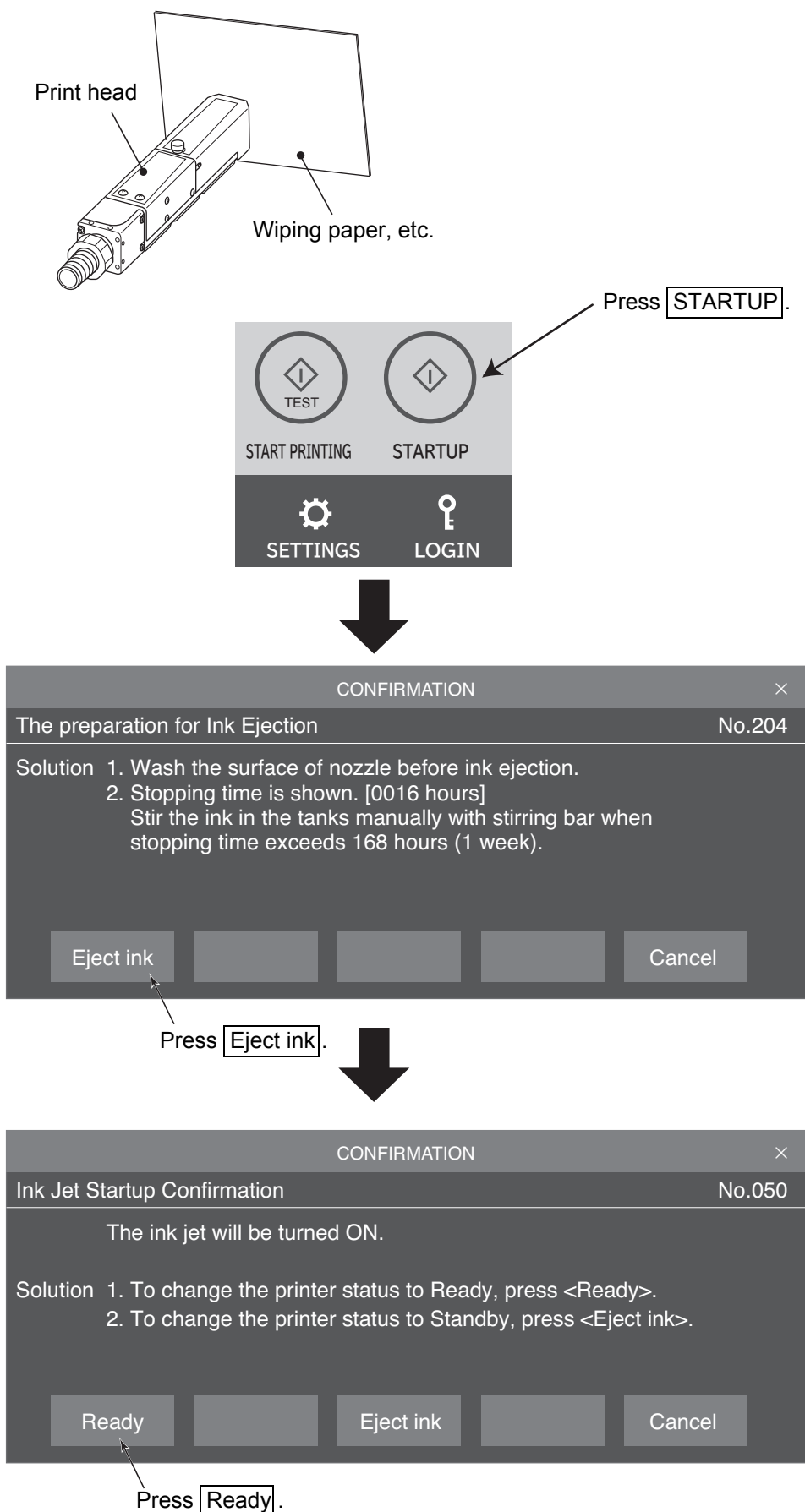
If the "Select login user" screen opened, see "3.1.4 Specifying the login user".



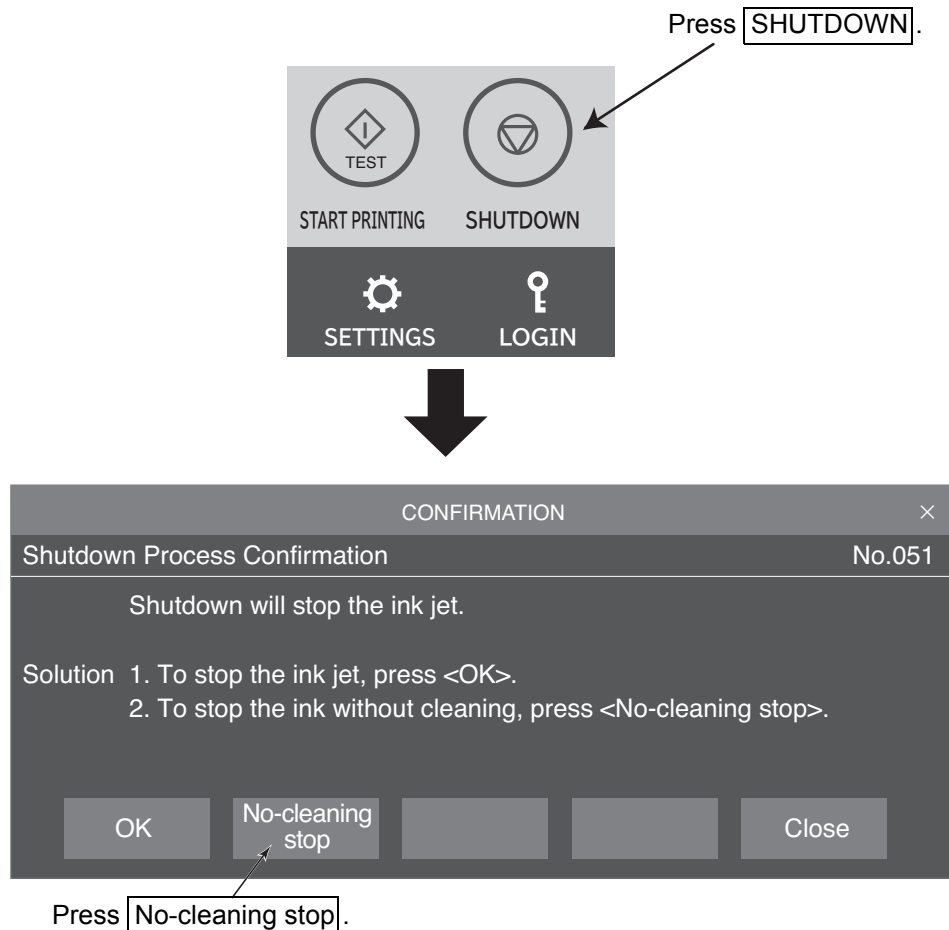
- Confirm the print description, count value, and calendar character contents.

4 Place a piece of wiping paper, etc., against the ink injection port at the end of the print head and press the **STARTUP**  → **Ready** .

- Ink is ejected from the nozzle inside the print head.
- Place a piece of wiping paper, etc., against the ink ejection port in preparation for splashing of the ejected ink.



- Continuous ejection of ink even though not printing is abnormal. If this occurs, stop ink ejection by pressing the **SHUTDOWN**  → **No-cleaning stop**.



- For a description of subsequent operation, see "3.1.2 When an error occurred at the start of operation".
- At ink ejection, ink may momentarily spurt out and soil the paper. However, this is normal.

5 Wait until the status changes from "Starting" to "Ready".

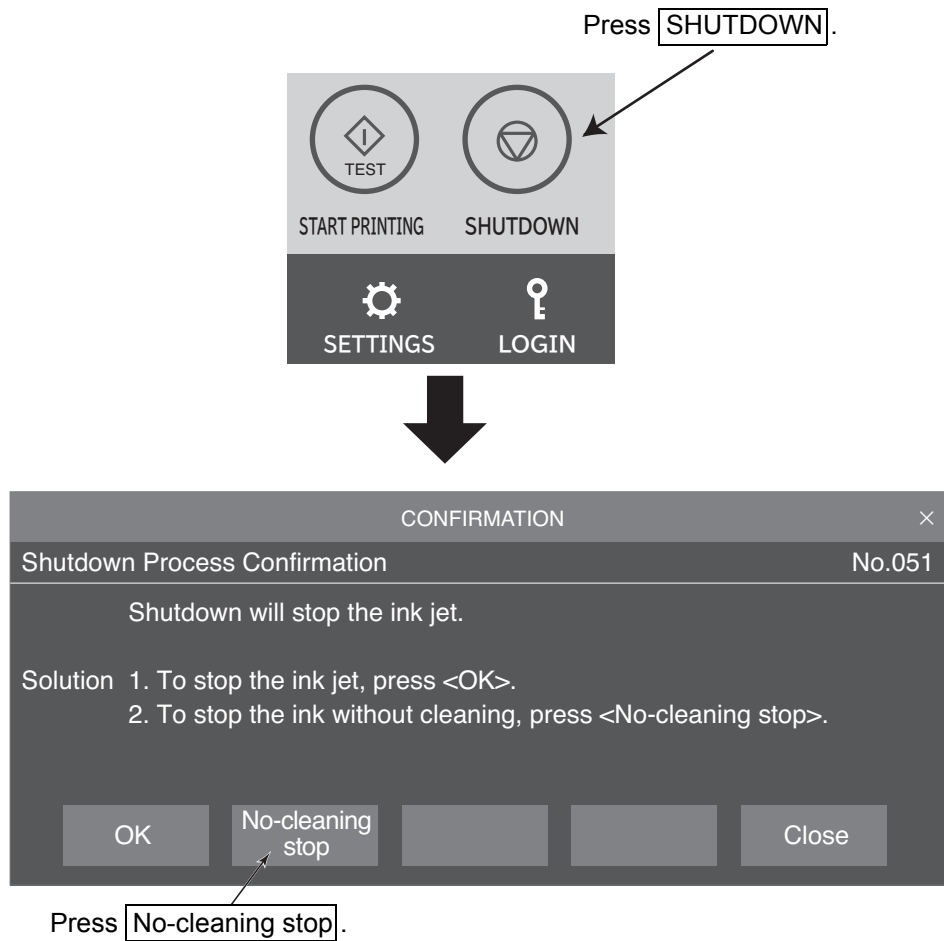
- When the temperature is under 27 °C , it may take longer than usual for the printer to enter the "Ready" state.
- Check the Ink pressure. If there is a difference of 0.010 or more from the standard value, adjust the pressure to the standard value ± 0.002 . Refer to Technical manual "6.9 Adjusting the pressure")

6 Input the print target detection signal and check whether or not the print state and print description are correct.

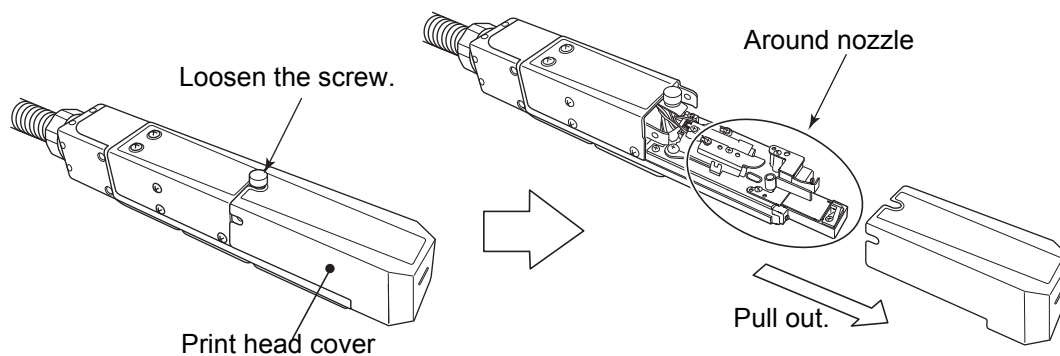
- If the print target detection signal is input when the status is "Ready", the set print description is printed.

3.1.2 When an error occurred at the start of operation

- 1 Stop ink ejection by pressing the **SHUTDOWN**  → **No-cleaning stop**.



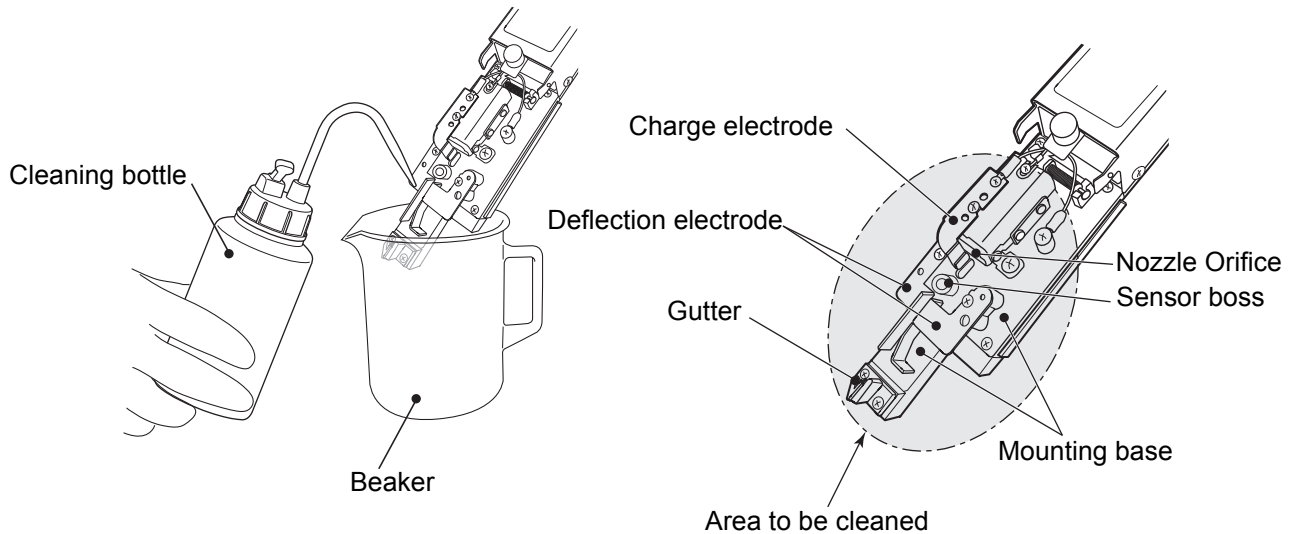
- 2 Loosen the screw and remove the print head cover.



3 Clean the inside of the cleaning section with makeup.

Clean the nozzle orifice, charge electrode, deflection electrode, gutter, mounting base, and sensor boss with makeup.

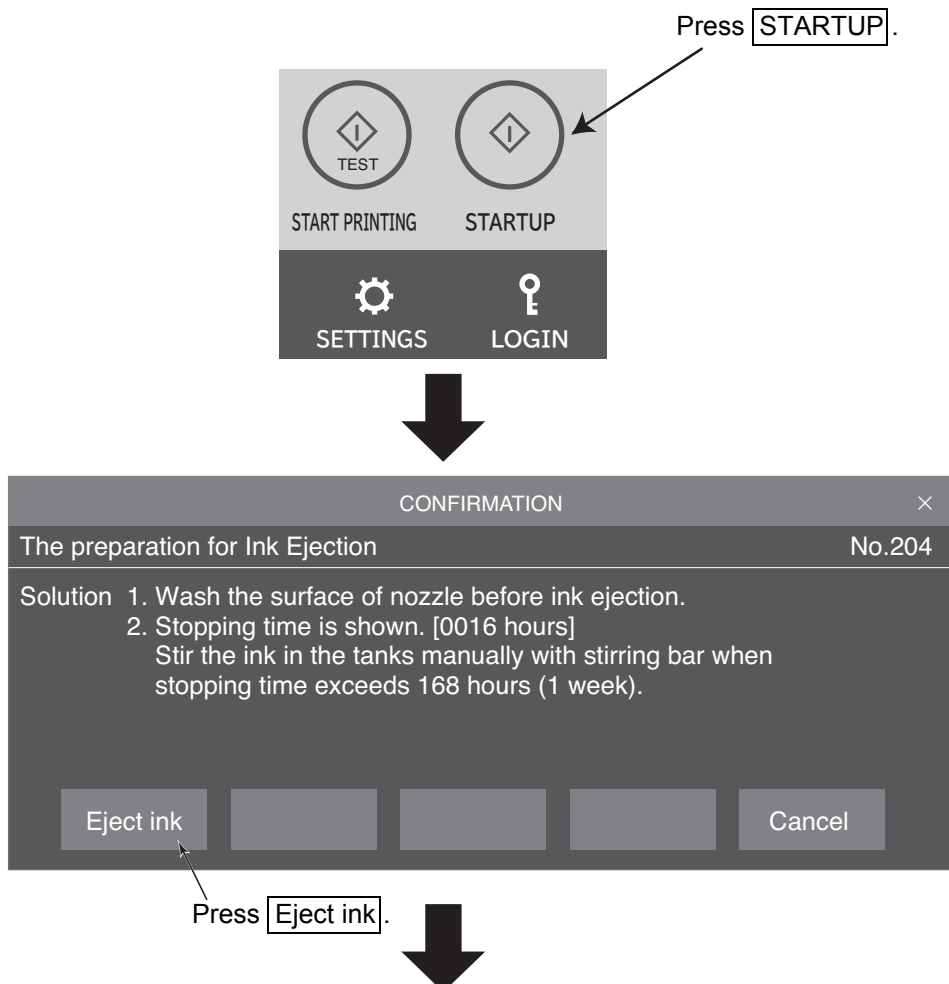
(Also see "1.3 Print head cleaning".)

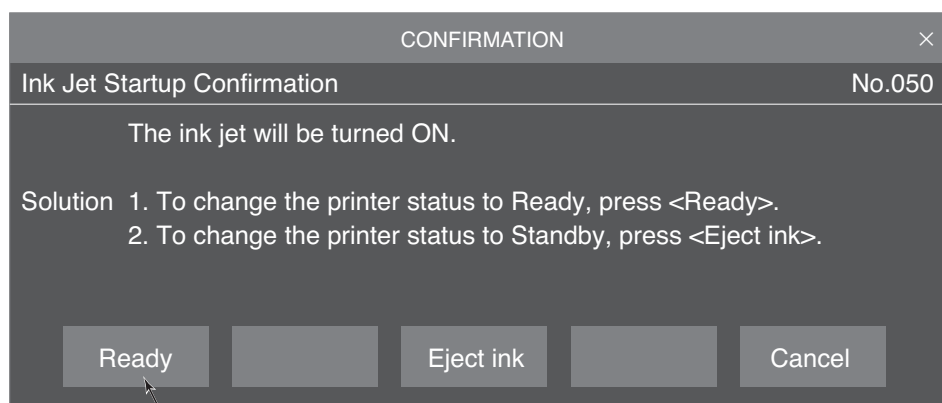


* Thoroughly wipe off the makeup on the surface of each part (including the mounting base) and dry each part thoroughly with wiping paper.

4 With the print head cover removed, press the **STARTUP** → **Ready**.

- Ink is ejected from the nozzle. (The status changes from "Stop" to "Starting".)
- Operate the unit with the end of the print head remaining inside the beaker.

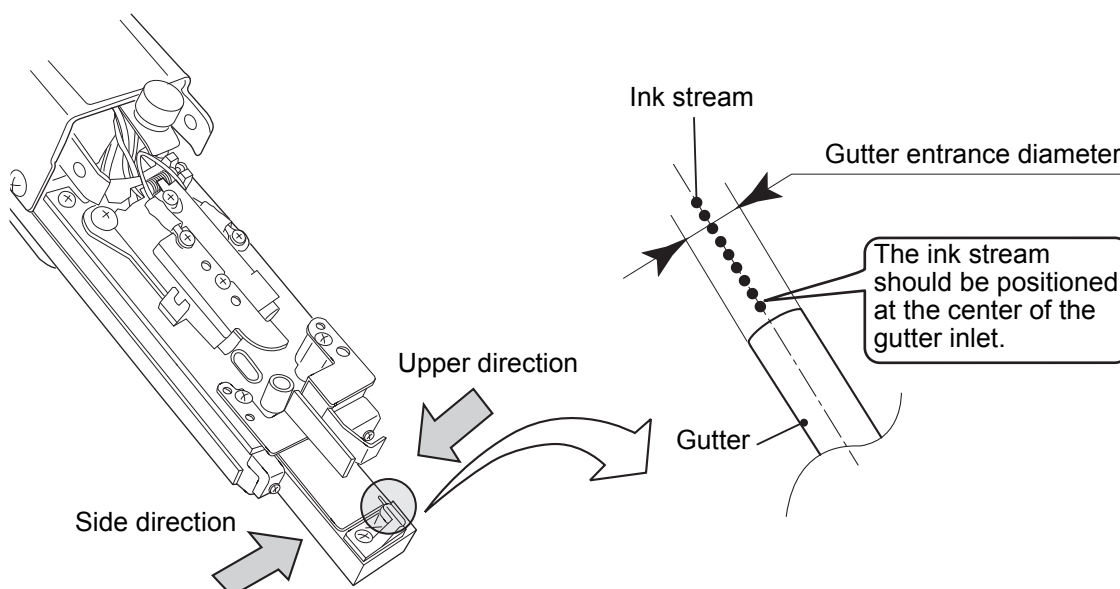




Press **Ready**.

5 Confirm that the ink stream is at the center of the gutter.

- Check the position of the ink stream from the sides and top of the print head as shown in the figure and confirm that it is in the center of the gutter.



- If the ink stream is not at the center of the gutter, perform step **1** and stop the ink injection. After that, take action in accordance with Technical Manual "6.3 How to correct ink stream bending and nozzle clogging".

! WARNING

- Wear protective gear (goggles and mask) when checking the position of the ink stream.
- If you should get ink or makeup in your eyes or mouth, immediately wash with warm water or water and see a doctor.
- When ejecting the ink, do it after confirming that there is no one in the ejection direction.
(Operate with the end of the print head inserted in a beaker, etc.)

6 Install the print head cover.

- Wait until the status changes to "Ready".
- If the "Cover open" error was displayed, press the **Close**.

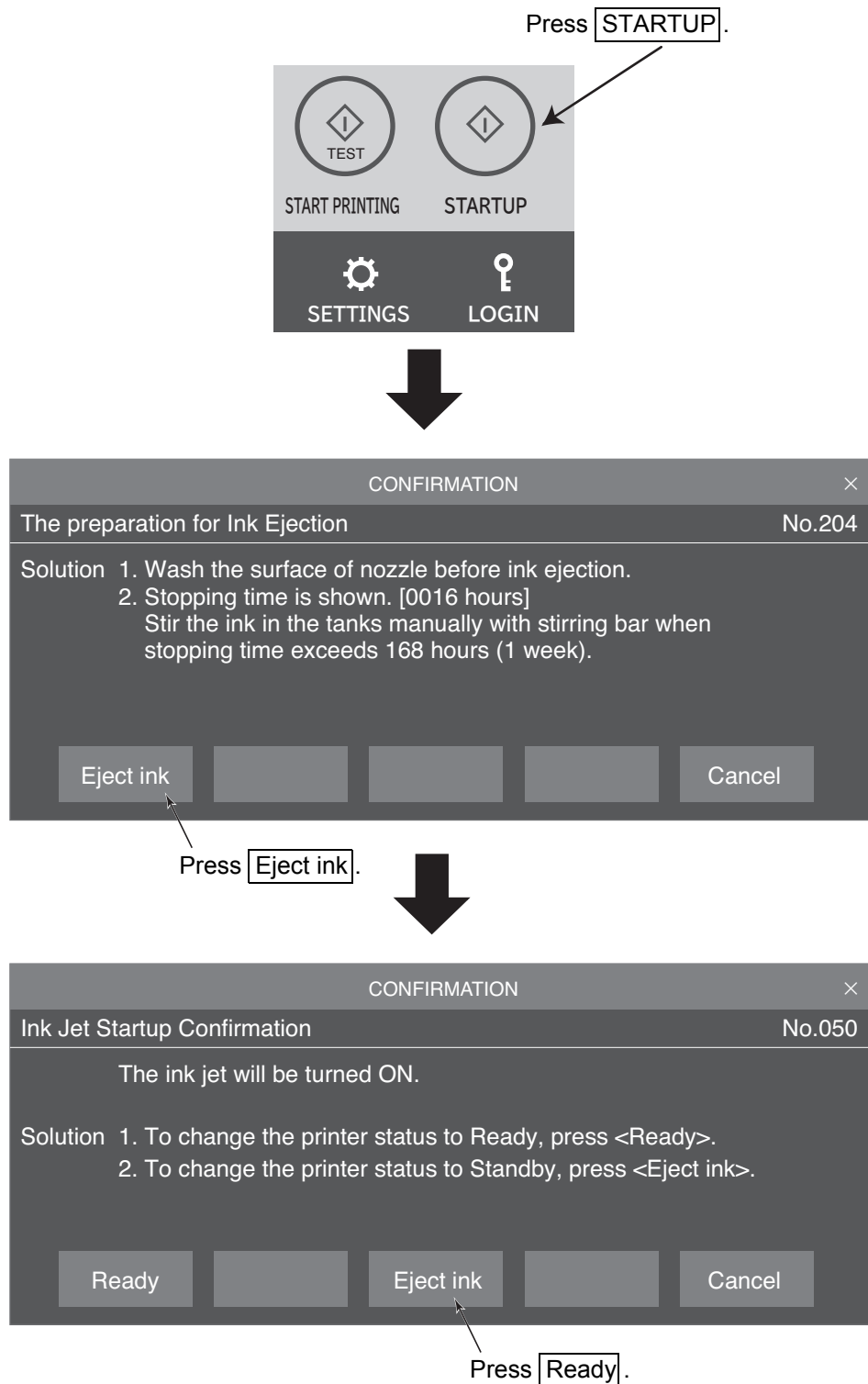
7 Input the print target detection signal and check the printing state.

(See "3.1.1 Start operation".)

Ink ejection for maintenance

Use this procedure when you want to eject ink from the nozzle for a purpose other than printing.
(Use only during maintenance. To print, press the **STARTUP** → **Ready**).

Press the **STARTUP** → **Eject ink**.



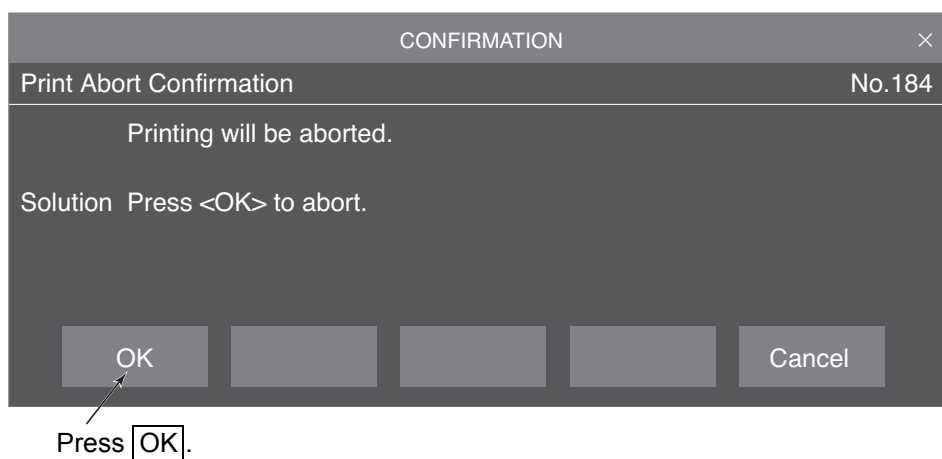
- Operation can be aborted by pressing the **Cancel** at the "Ink Jet Startup Confirmation message".
- If the print head cover installed, the printer will not enter the Ready state even if this operation is performed. (Enters the Standby state)

3.1.3 Ready and Standby state switching operation

(1) "Ready" state → "Standby" state switching

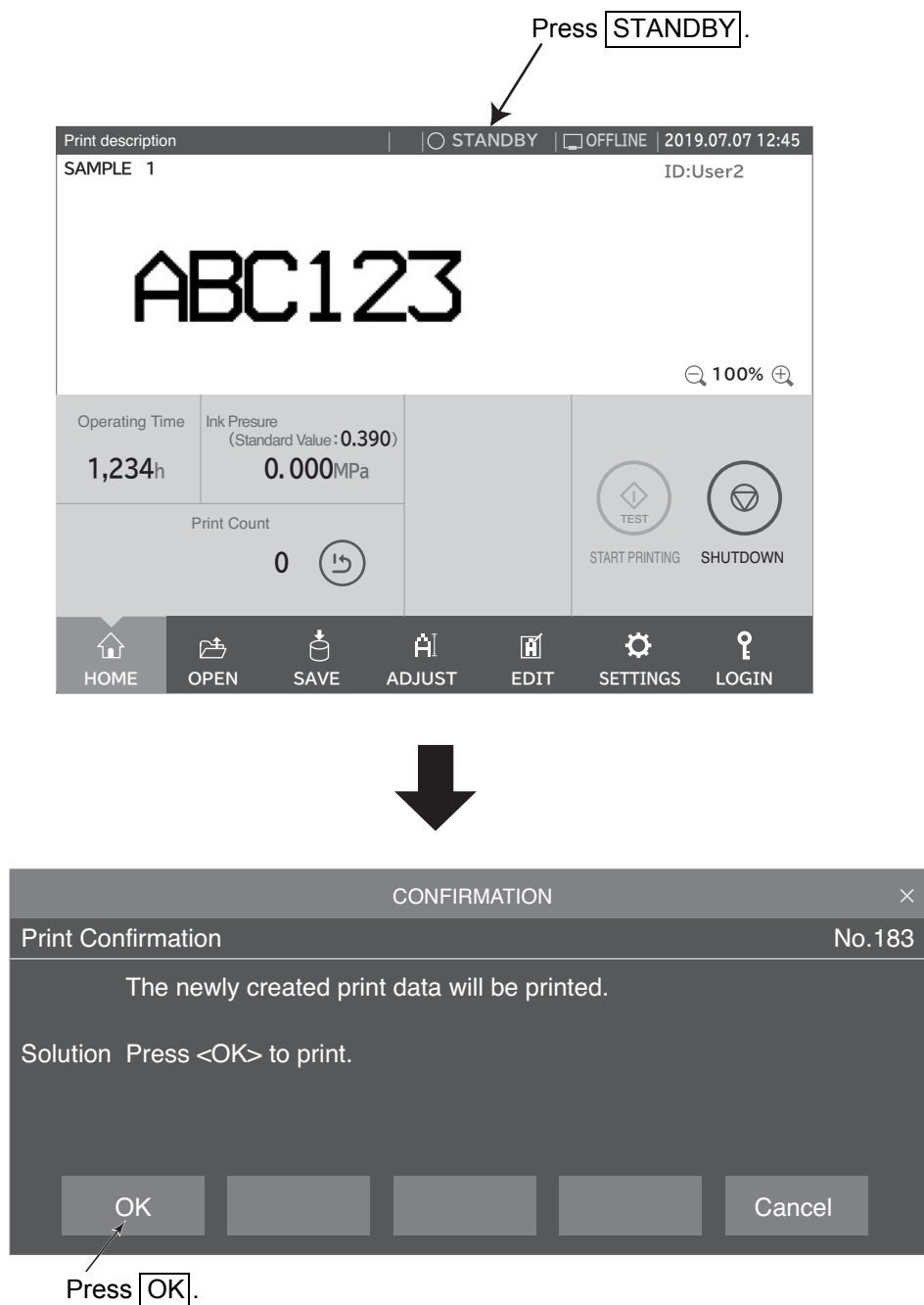
- With the conveyor interlock being activated by "Ready" signal, should this "Ready" signal be turned to "Standby", the conveyor will stop.

- 1** Press **READY** on the upper of the screen, and the message "Print Abort Confirmation" appears. Then press **OK**.



(2) "Standby" state → "Ready" state switching

- 1 Press **STANDBY** on the upper of the screen, and the message "Print Confirmation" appears. Then press **OK**.



3.1.4 Specifying the login user

(1) Functions

- Specifies the user to be logged in at power-on.
- Selects the user and inputs the password when logging in.
- The administrator defines the user name and password and password protection setting in advance.
The password protection setting can be changed beforehand for each user. The user name must be within 12 digits.
- Sets whether or not to select a user which logs in when the power is turned on.
See the Technical Manual "3.3 Selecting login user when power is turned on".

(2) Operation

The administrator sets the login procedure necessary at power-on beforehand.

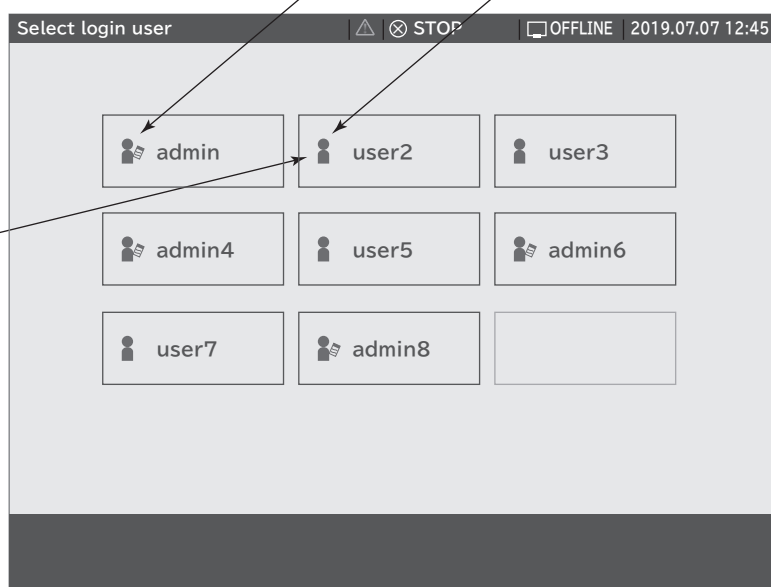
1 Turn on the power.

The Select login user screen is displayed.

This icon shows "Administrator".

This icon shows "User".

The saved user names are displayed.



2 Press user name **user2**.

A password input window opens.

Input the password for "user2".

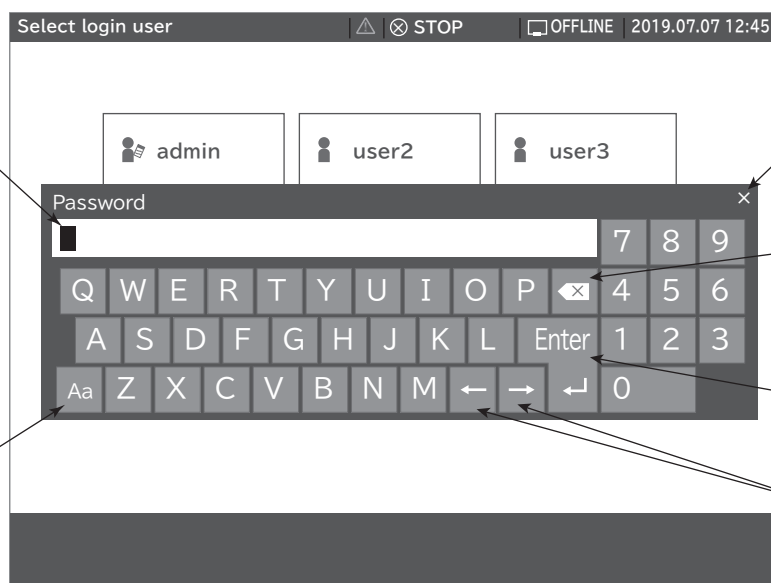
The window will close.

Back space

Enter

Cursor

Shift



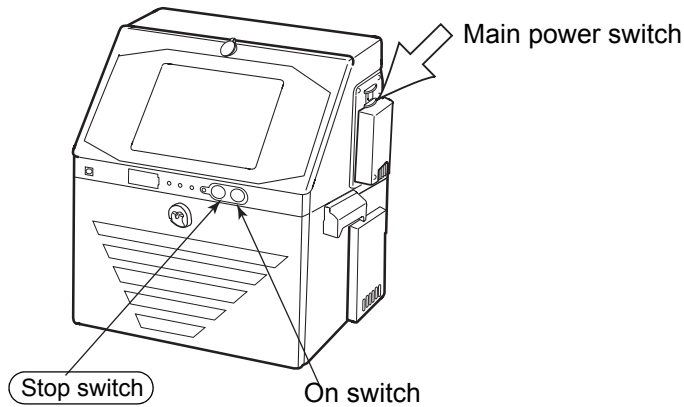
3 Input the password for user name "user2" and press **Enter**.

The initial screen is displayed.

3.2 Shut down operation

3.2.1 Automatically stopping by pressing one button

- 1 Press the Stop switch. (Press for about 2 seconds.)**
All operations up to IJ printer power OFF are performed automatically.



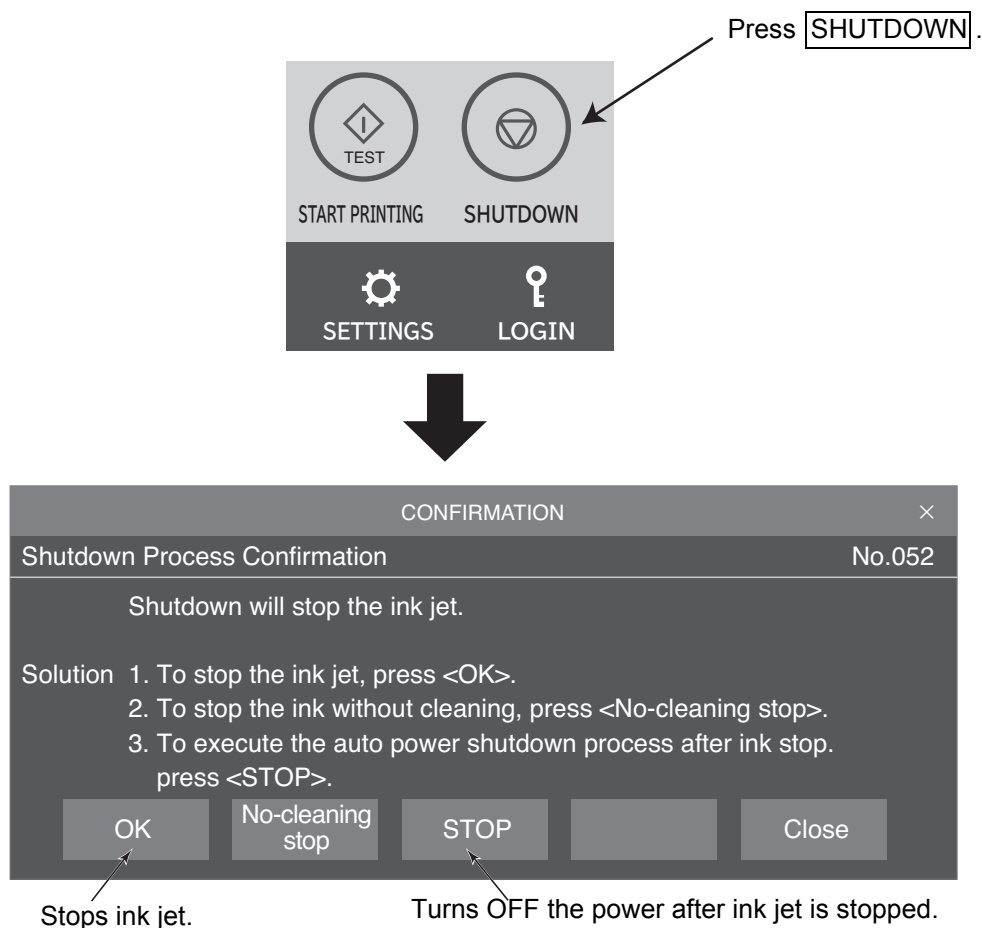
The power is turned OFF by Stop switch from the state in which ink is being ejected or being stopped.
(The main power switch does not have to be turned off. The power consumption does not change even if the main power switch remains ON.)

3.2.2 Stopping ink ejection by pressing the screen button

- Perform ink stop processing using the following procedure.

- 1 Press the **SHUTDOWN**  → **OK**.**

A confirmation screen is displayed.



- Wait for the status to change from "Stopping" to "Stop".

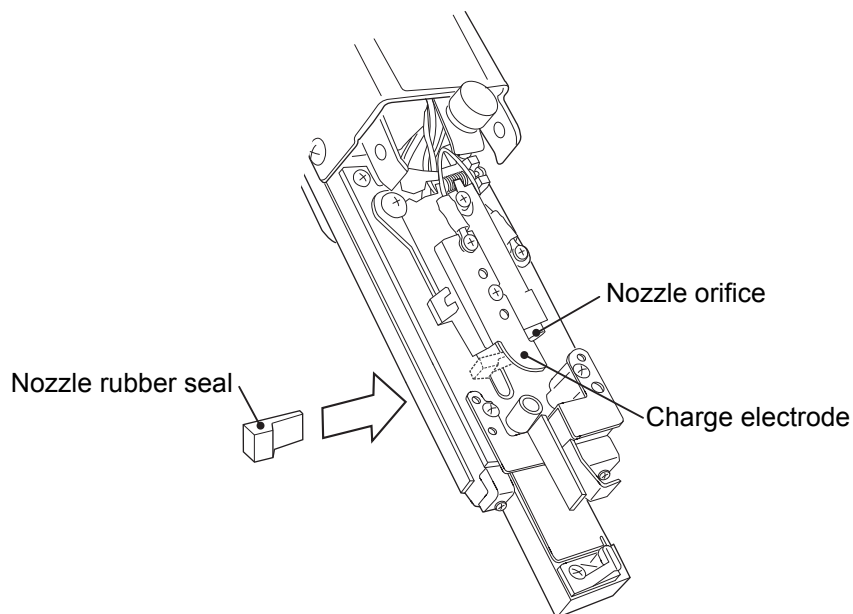
3.2.3 Turning off the main power switch

- Press Stop switch normally instead of main power switch to turn off the power at the end of operation.
- If the IJ printer will not be used for a long time, turn off the main power switch.
- Do not turn off the main power switch while ink is being ejected.
See "11. EMERGENCY PROCEDURES".
- The state when the power is turned on at the next operation differs depending on the state when the main power switch was turned off.

Turn off method	Method which displays a screen at the next operation
When the main power switch was turned off after being stopped by Stop switch.	Screen is displayed when the startup switch is turned ON after the main power switch was turned ON.
When the main power switch was turned off without using the stop switch	Screen is displayed when the main power switch is turned ON.

Handling the nozzle rubber seal

1. The "nozzle rubber seal" prevents drying of the nozzle orifice and dust from sticking to the plate. When the IJ printer will not be used for several days over a holiday, etc., we recommend that the "nozzle rubber seal" be installed between the nozzle orifice and charge electrode at shutdown.



Usage precautions

- ① Store the "nozzle rubber seal" in a plastic bag, etc., to protect it from dirt and dust.
- ② Always install the "nozzle rubber seal" after cleaning it with makeup.
- ③ When installing the "nozzle rubber seal", be careful not to deform the charge electrode.

3.2.4 Careful Cleaning

(1) Overview

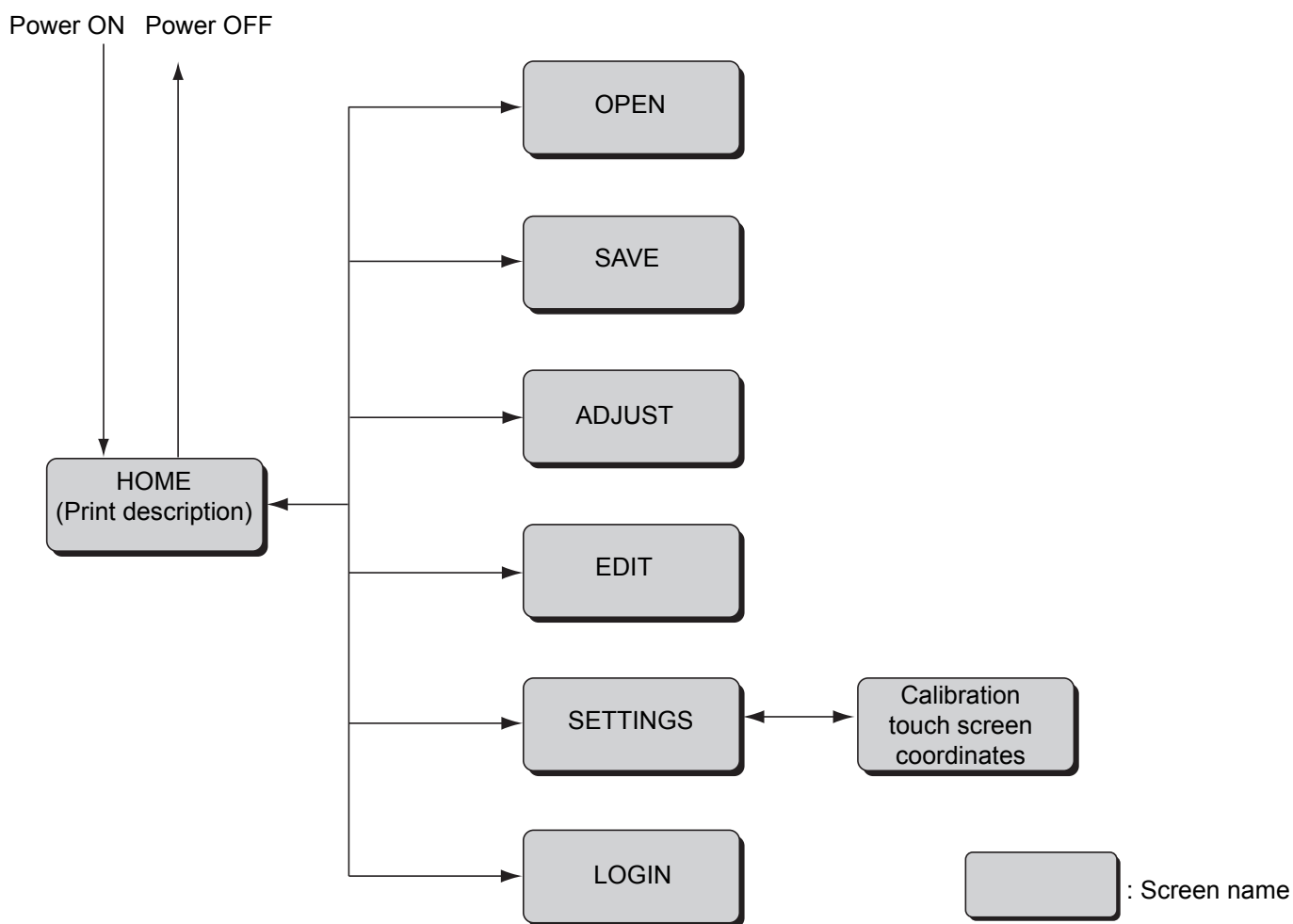
- This is the function to clean the printer carefully when IJ Printer is frequently used in high-temperature environment, or before the weekend, such as 2-3 day shutdown period. This careful cleaning uses more amount of makeup than the normal cleaning.
- Please note that precautions shall be fully understood when using this function, because with the "Careful-Cleaning" function, IJP uses more amount of makeup than the normal Cleaning Stop.

(2) How to use Careful Cleaning function

- Please contact your nearest local distributor to use this function.

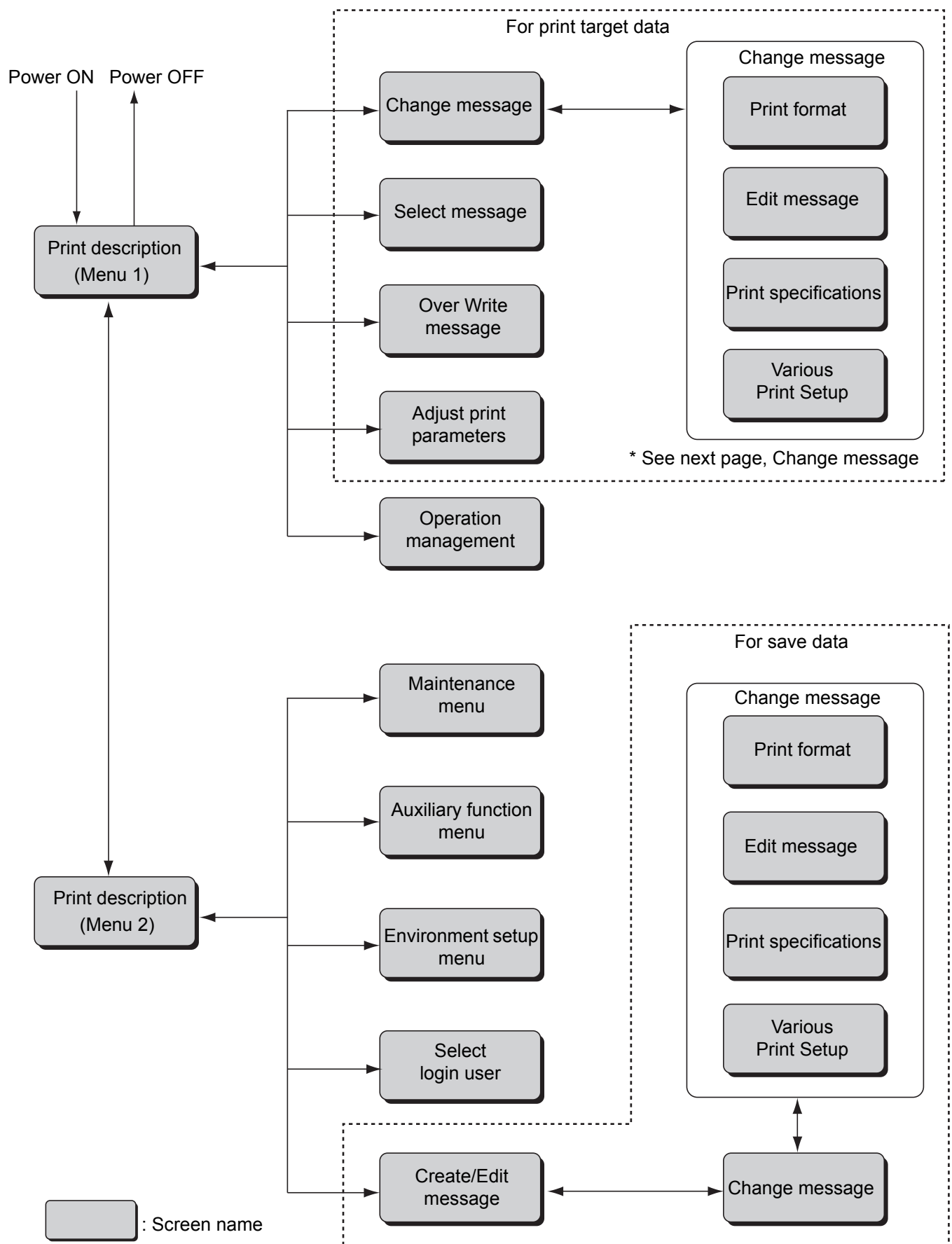
3.3 Basic operation

3.3.1 Operating Scheme (New HMI)

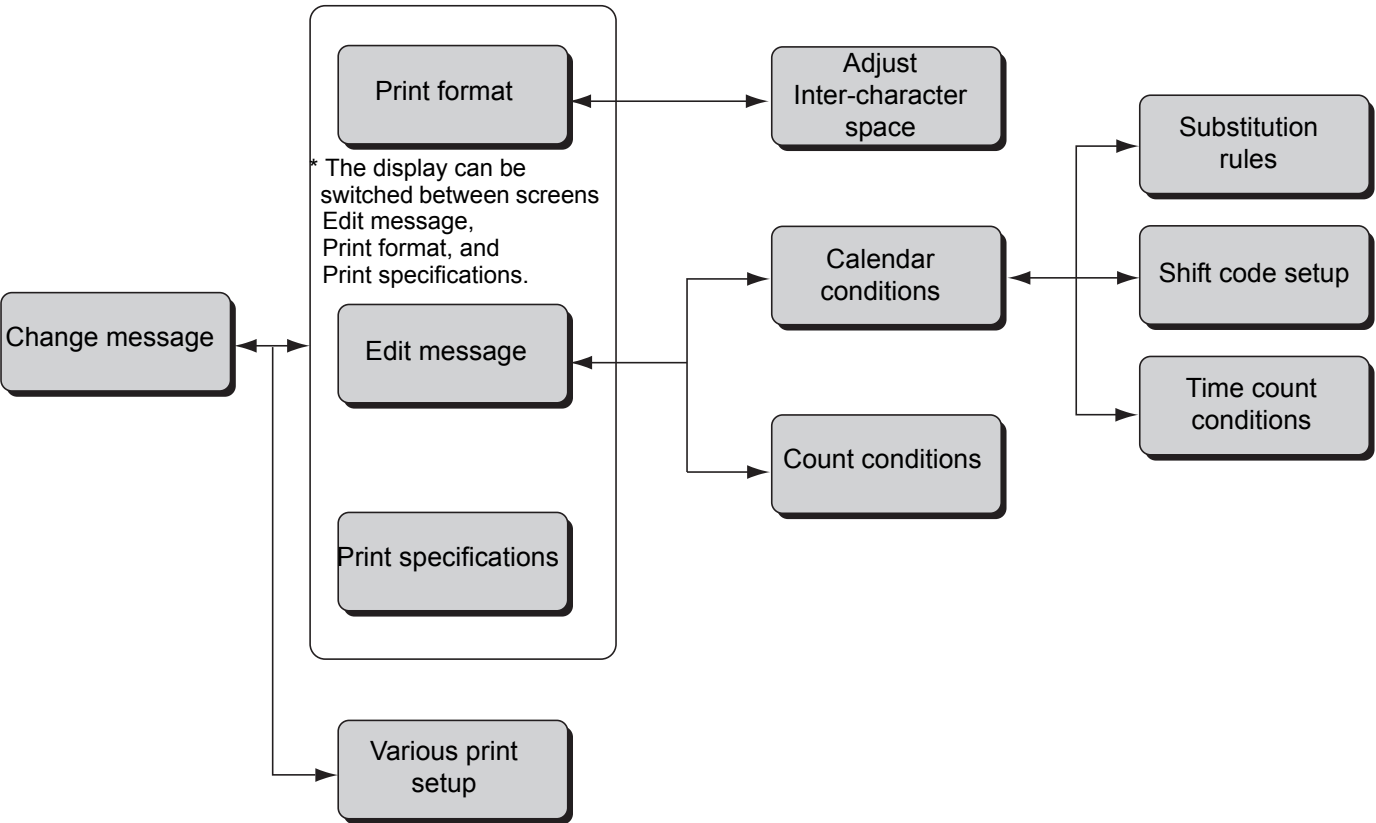


- * The new HMI screens can move directly to other displays without going back to HOME screen.
- * "Ink eject" and "Ink stop" can operate only when HOME screen is displayed.
- * Please refer to "3.3.3 Change procedure of (New HMI) ⇔ (Previous HMI)" for the change procedure of the operation scheme (New HMI) and (Previous HMI).

3.3.2 Operating Scheme (Previous HMI)
(1) Overall view

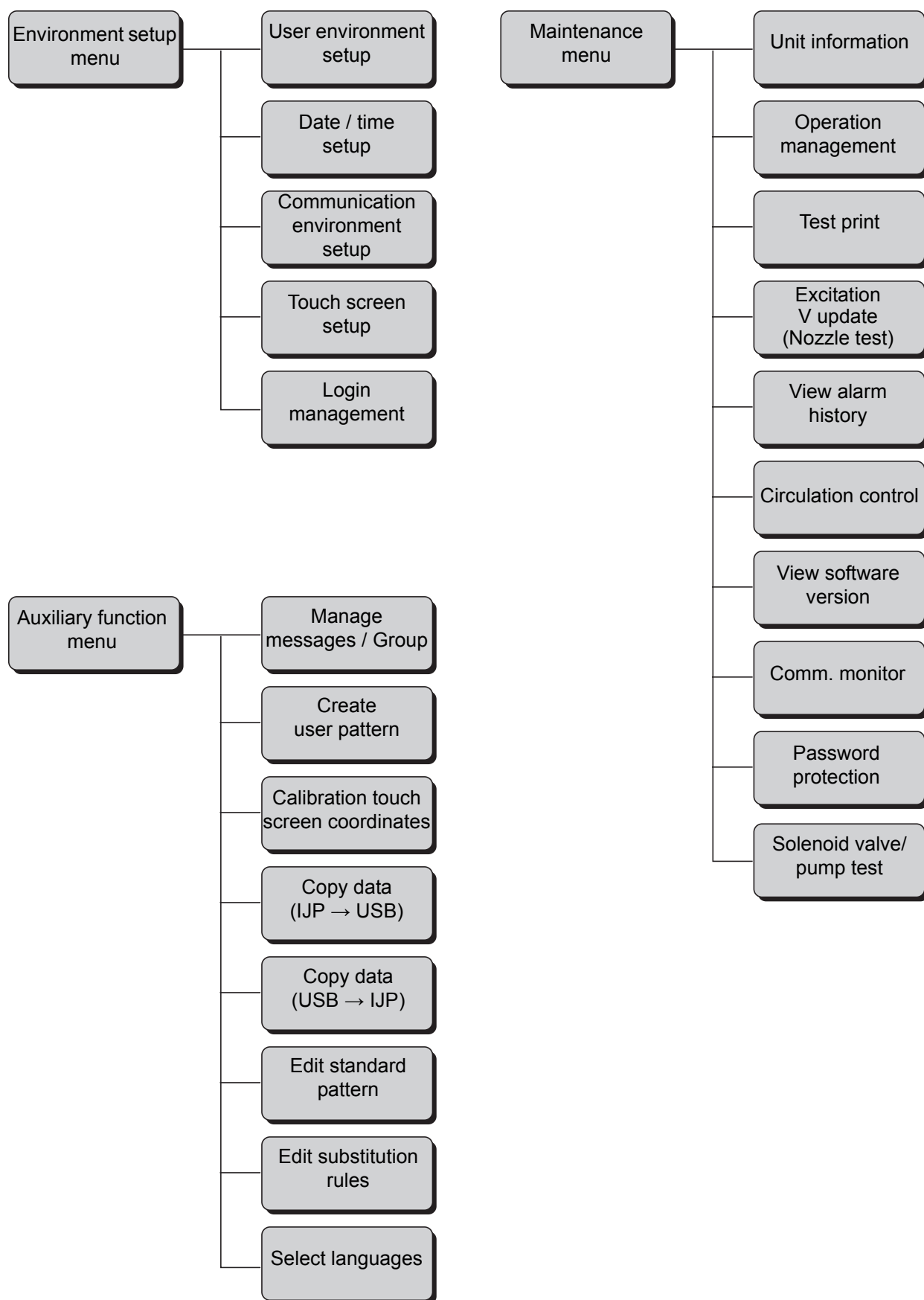


(2) Change message



 : Screen name

(3) Environment setup menu, Auxiliary menu, Maintenance menu



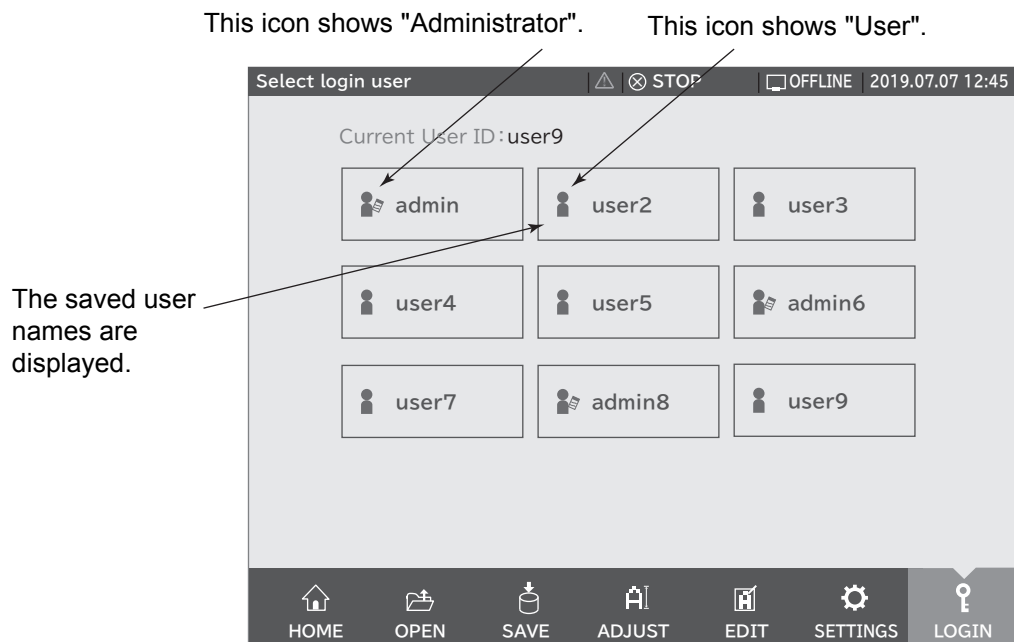
3.3.3 Change procedure of (New HMI) ⇔ (Previous HMI)

(1) Change procedure of (New HMI) ⇒ (Previous HMI)

1 The new HMI screen is displayed.

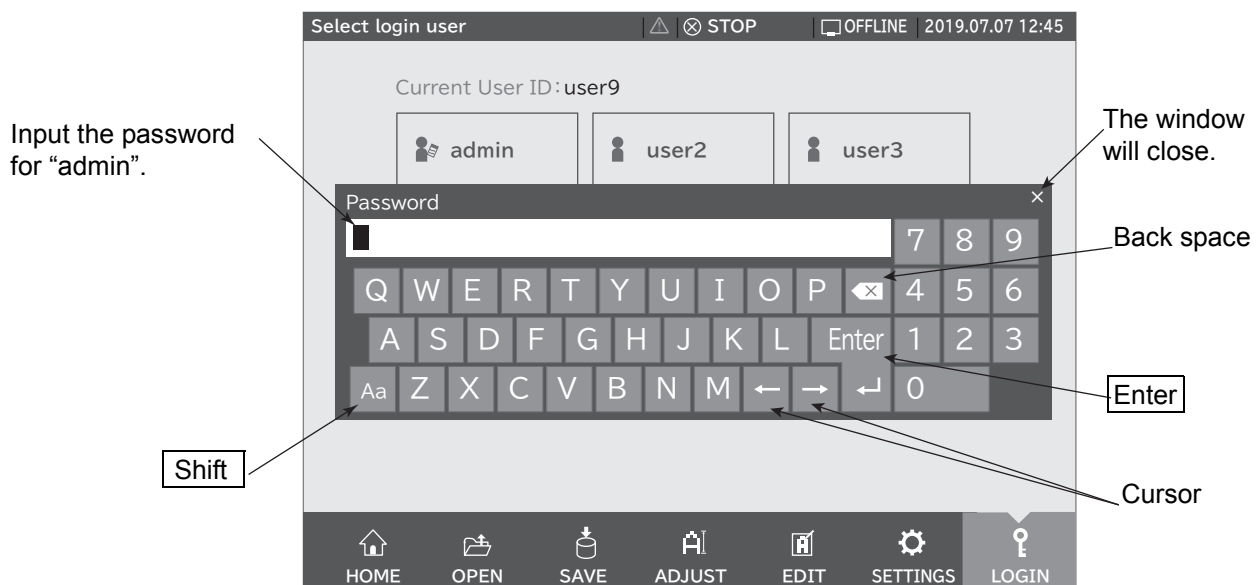
2 Press menu **LOGIN**.

The Select login user screen will be displayed.



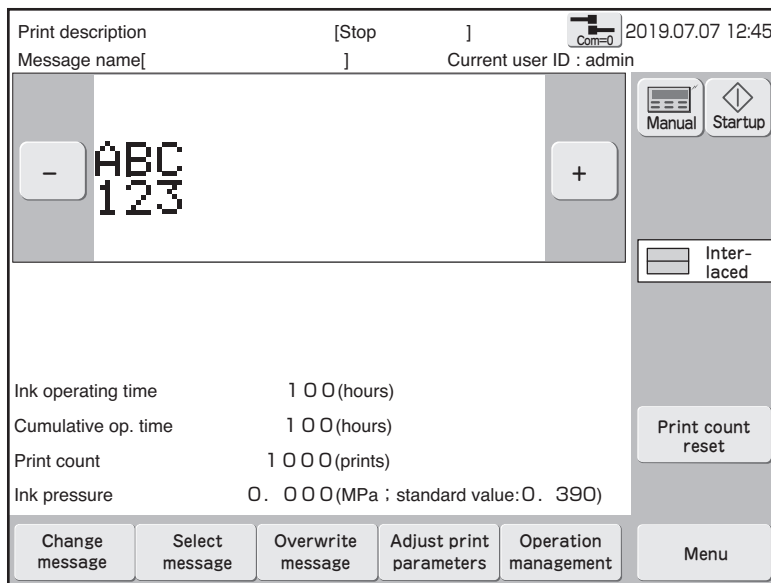
3 Press the administrator name **admin**.

A password input window opens.



4 Input the password for the administrator name "admin" and press **Enter** .

Logs in again using administrator name "admin" and the touch screen returns to the Print description screen (Previous HMI) is displayed.



The screenshot shows the 'Print description' screen of an HMI. At the top, it displays 'Print description', '[Stop]', a printer icon with 'Com=0', and the date/time '2019.07.07 12:45'. Below this, it shows 'Message name[]' and 'Current user ID : admin'. The main display area is divided into two sections. The top section has a large digital display showing 'ABC' and '123', with '-' and '+' buttons on either side. The bottom section displays various operational statistics: 'Ink operating time 1 0 0 (hours)', 'Cumulative op. time 1 0 0 (hours)', 'Print count 1 0 0 0 (prints)', and 'Ink pressure 0. 0 0 0 (MPa ; standard value:0. 390)'. On the right side, there are buttons for 'Manual', 'Startup', 'Inter-laced', and 'Print count reset'. At the bottom, there is a row of buttons: 'Change message', 'Select message', 'Overwrite message', 'Adjust print parameters', 'Operation management', and 'Menu'.

Print description	[Stop]	 Com=0	2019.07.07 12:45		
Message name[]	Current user ID : admin				
- ABC 123 +		Manual	Startup		
		Inter-laced			
Ink operating time 1 0 0 (hours)		Print count reset			
Cumulative op. time 1 0 0 (hours)					
Print count 1 0 0 0 (prints)					
Ink pressure 0. 0 0 0 (MPa ; standard value:0. 390)					
Change message	Select message	Overwrite message	Adjust print parameters	Operation management	Menu

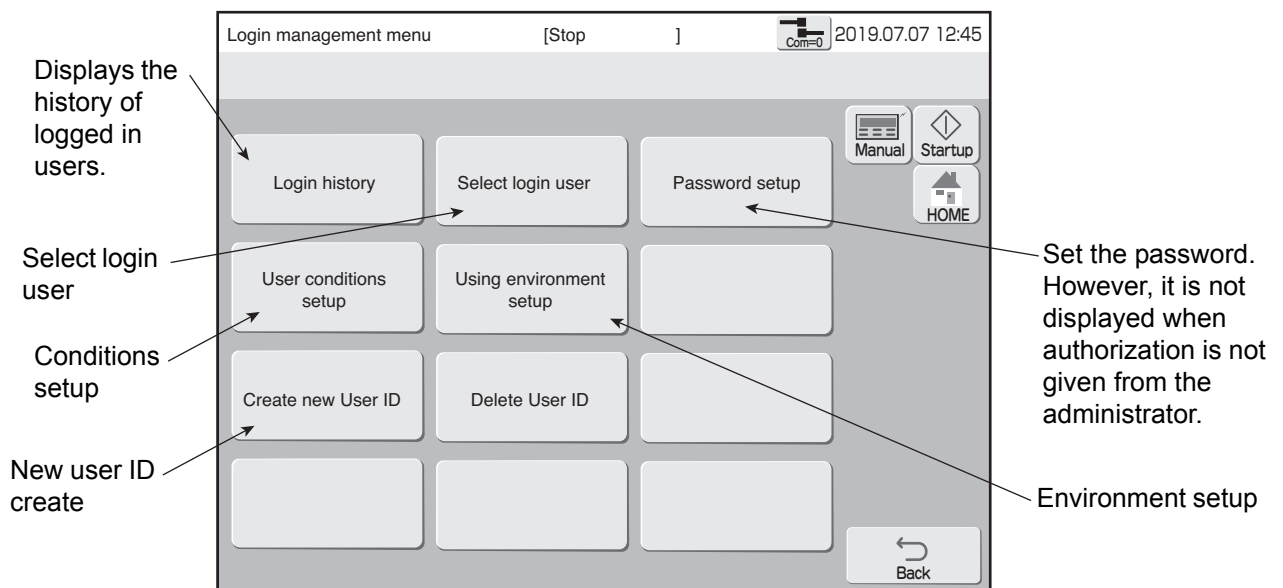
(2)Change procedure of (Previous HMI) ⇒ (New HMI)

Setup on "Touch screen setup" is necessary to display the New HMI screens.
For details, refer to Technical Manual "3.5 Human Machine Interface [HMI] setup".

1 The previous HMI screen is displayed.

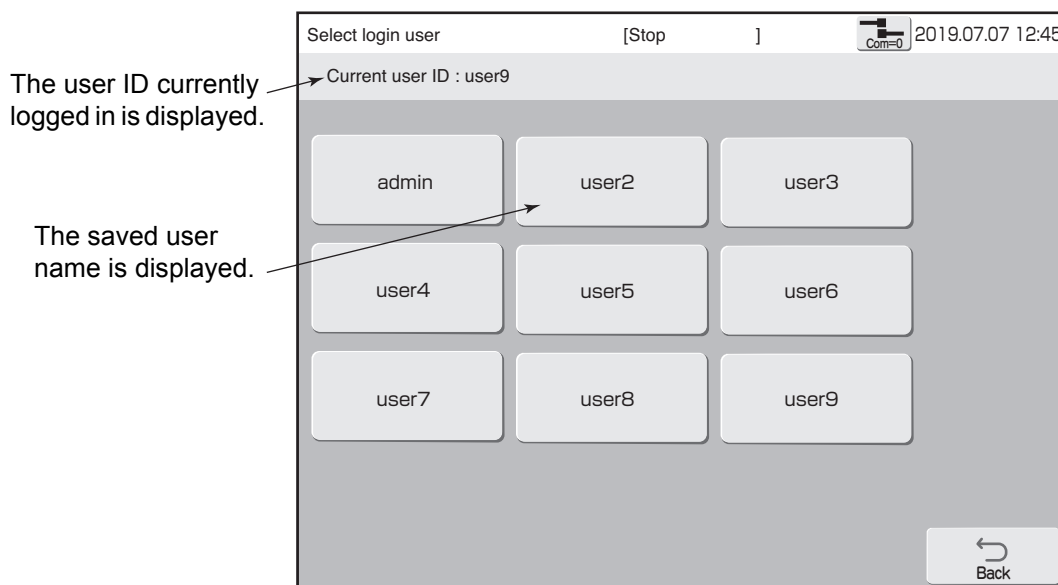
2 Press **Login management** in the environment setup menu.

The Login management menu is displayed.



3 Press **Select login user** .

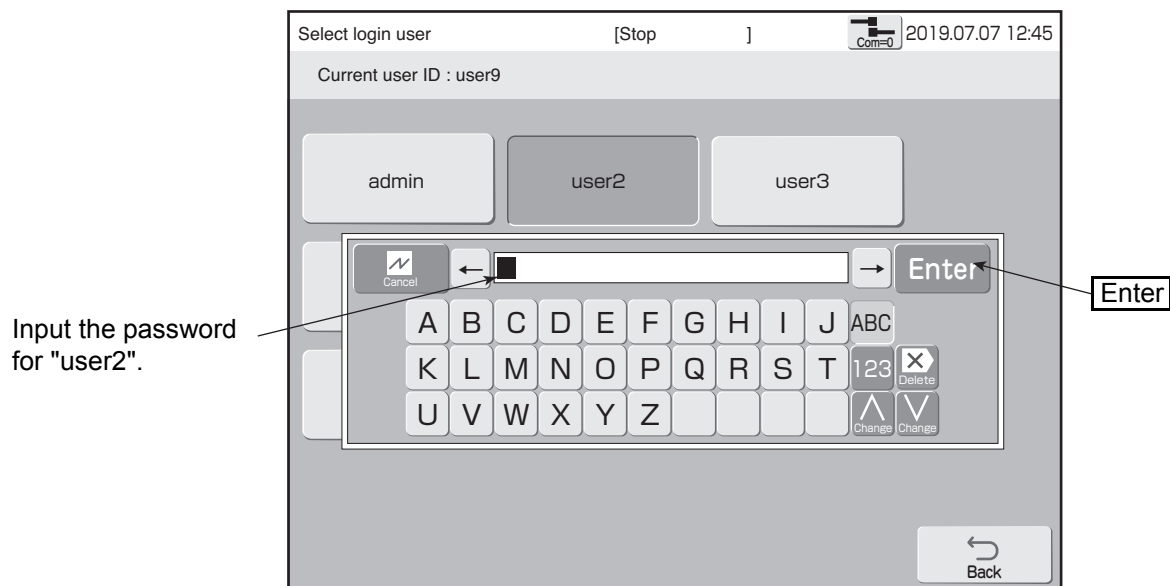
The Select login user screen is displayed.



4 Press user name **user2.**

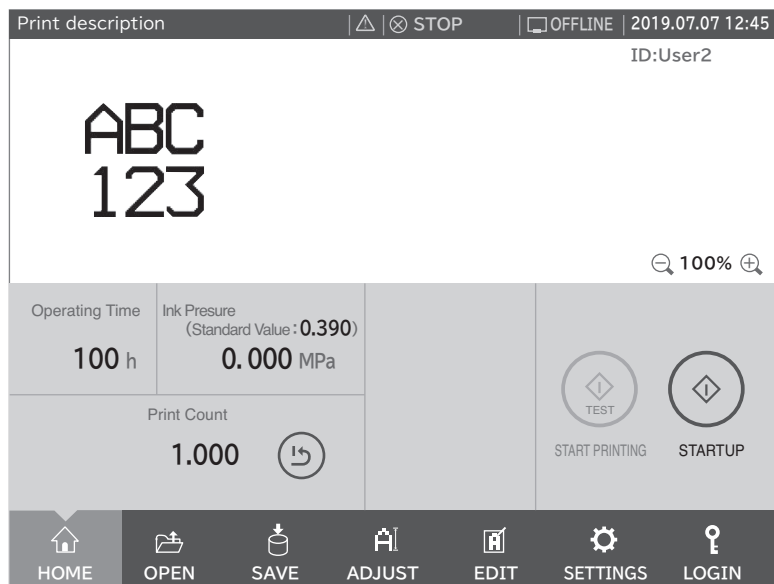
A password input window opens.

[Caution] Administrator user can't transfer to New HMI screens.



5 Input the password for user name "user2" and press **Enter **Enter**.**

Logs in again using user name "user2" and the touch screen returns to the Print description screen (New HMI) is displayed.



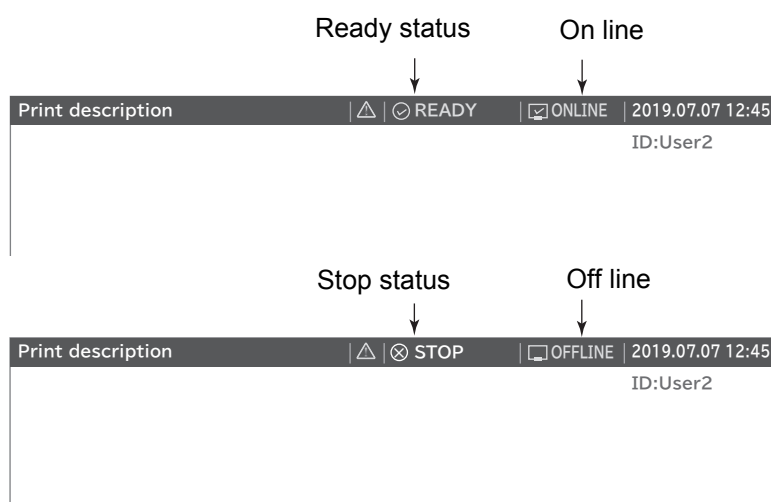
3.3.4 Status

(1) The printer is in one of the following states.

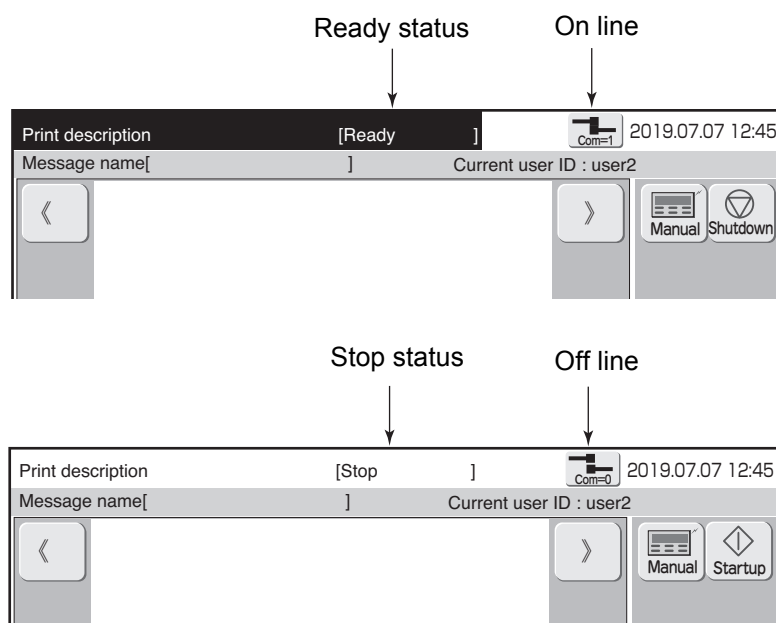
No.	State	Description
1	Stop	The ink is stopped. No deflection voltage is applied.
2	Standby	The ink is ejected. No deflection voltage is applied.
3	Ready	The ink is ejected. The deflection voltage is applied (printing is permitted by the sensor signal).
4	Starting	State in which the printer changes from the inactive state to the standby state.
5	Ink heating	Start up in process, with the ink being heated.
6	Stopping	State in which the printer changes from the standby state to the stop state.
7	Drop adjust	Period during which ink particles are not properly charged in the standby state.
8	Cover open	Period during which the nozzle head cover is open in the standby state
9	Service	Circulation control process for maintenance task execution.
10	Fault	State in which a fault exists.

(2) The current states including the on-line/off-line (communication) state is constantly displayed at the top of the screen.

(a) New HMI

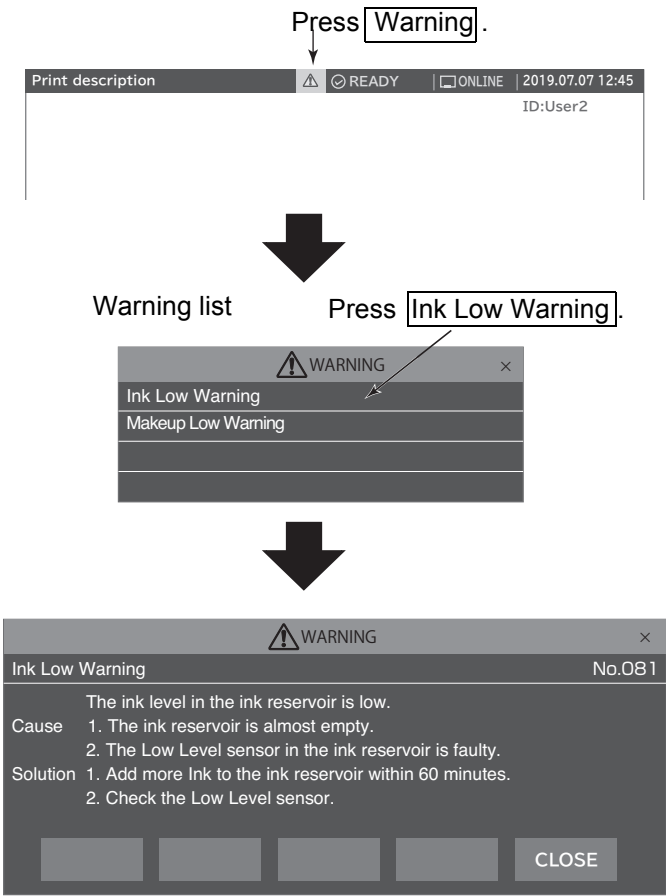


(b) Previous HMI

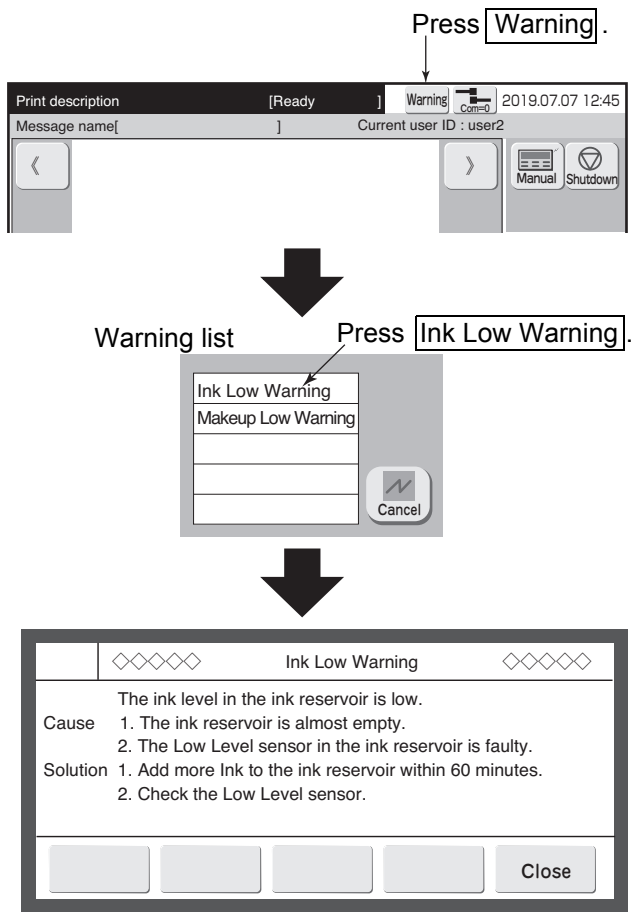


(3) When there is a "Not reset alarm", a **Warning** is displayed.
When the **Warning** is pressed, a warning list is displayed.

(a) New HMI



(b) Previous HMI



3.3.5 Operation of screen transition (New HMI)

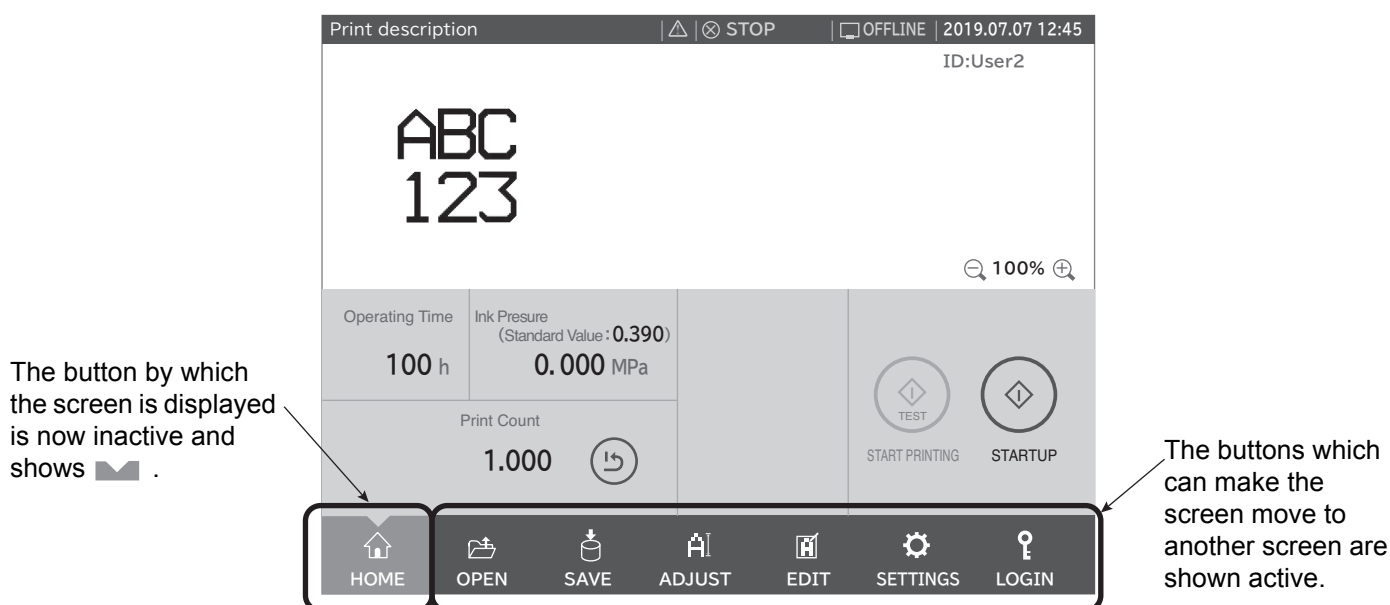
(1) Overview

- In New HMI screens, Menu buttons at the bottom of the screen can make the screen move to another screen.

Item	Description	Reference
HOME (Print description)	• Start/stop ink ejection. • Display the print layout and operating information.	4.1
OPEN	• Calls and prints saved messages.	4.3
SAVE	• Saves created messages. The save procedure can select "overwrite message" or "new message".	4.4, 4.6
ADJUST	• Creates and edits messages different from the current message.	4.14.4
EDIT	• Inputs the characters to be printed.	4.6
SETTINGS	• Displays operation status.	5.2
LOGIN	• Logs in again as a different user from currently logged in user.	6.4

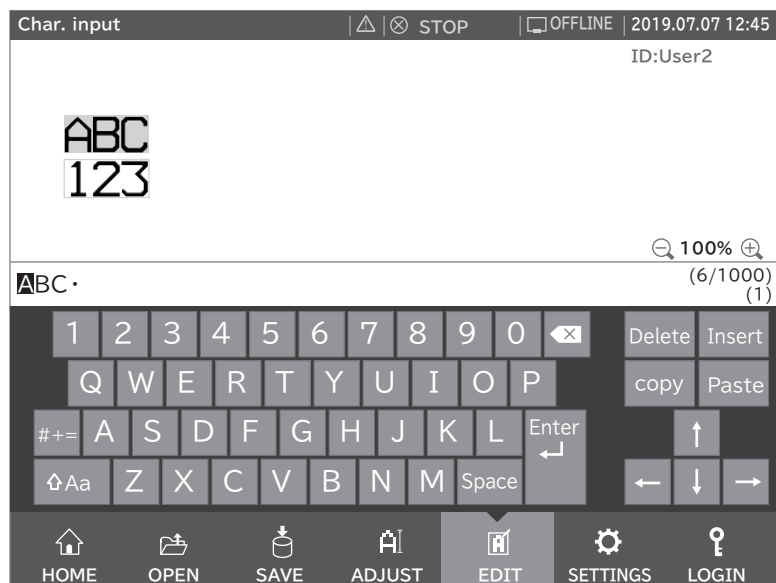
(2) Procedure of screen transition

- 1** The print description screen (New HMI) is displayed.



2 Press menu **EDIT**.

The Edit screen (New HMI) will be displayed.



3.3.6 Basic operation to change the settings

3.3.6-1 New HMI

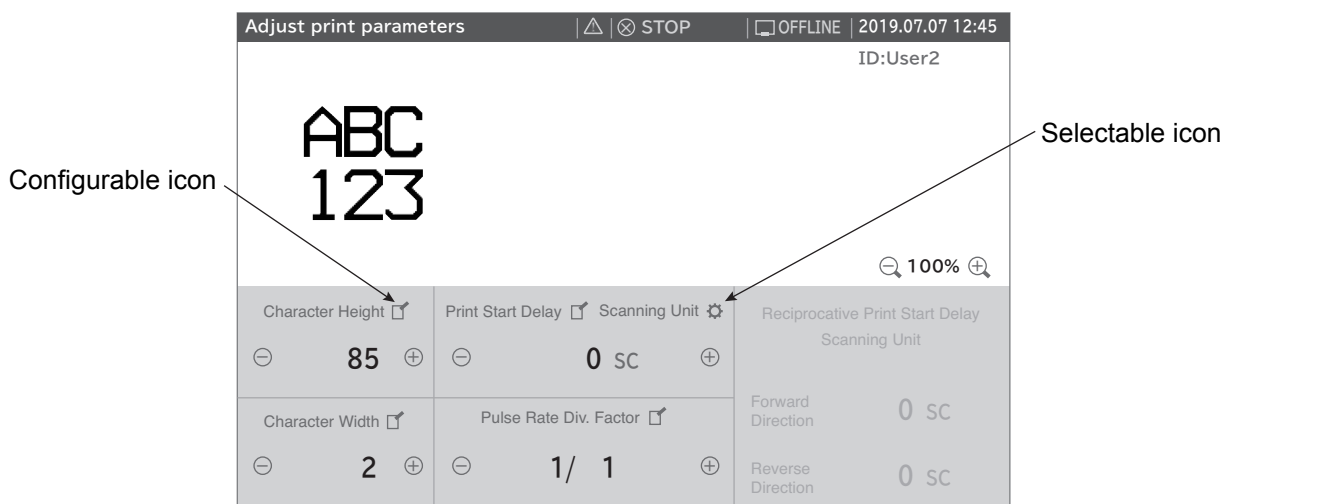
(1) Overview

- There are 2 types of settings.

No.	Classification	Set value confirmation method	Set value change method
1	Setting of value	The numerical value is displayed on the screen.	When "configurable icon" is displayed, display the numerical window by pressing the numerical value and input the value.
2	Setting of selection	The set value selection is displayed on the screen.	When "Selectable icon" is displayed, display the selection menu window by pressing the set value and select the set value from the items.

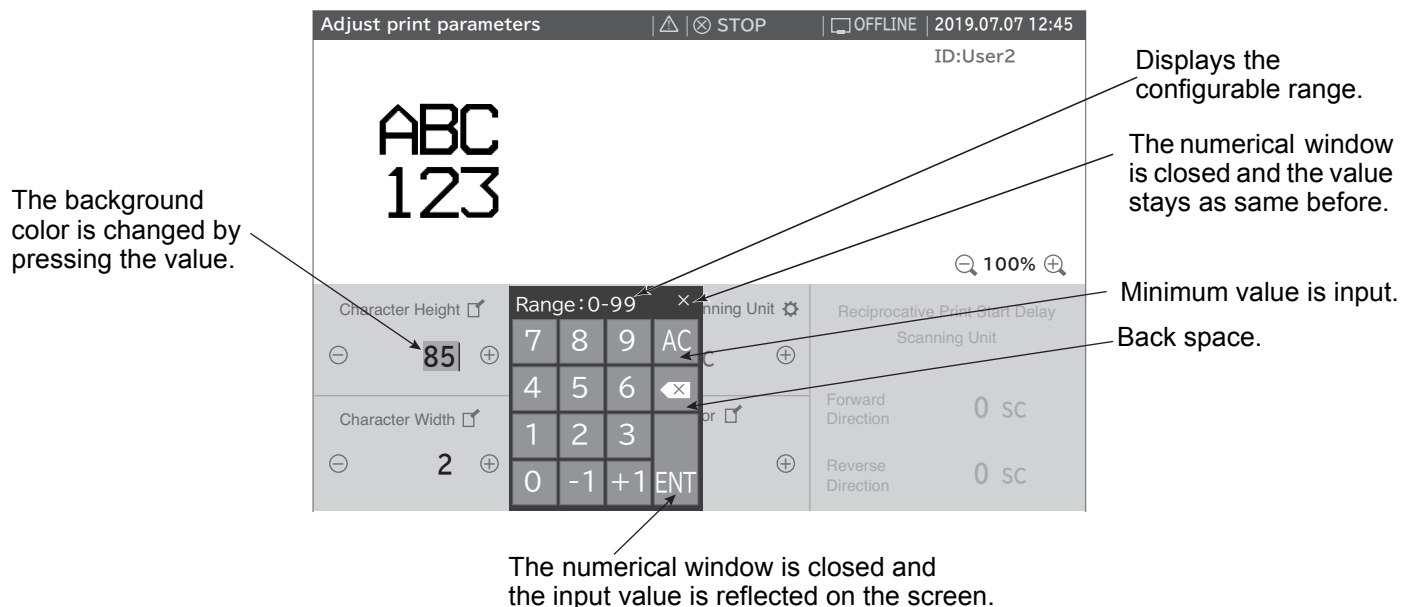
(2) Operation ("Adjust print parameters screen (New HMI)" is used as an example.)

- There are 2 types of settings.



① "Character Height" setting (Value input)

Display the numerical window by pressing the numerical value and input the value.



② "Scanning Unit" setting (Item select)

Display the selection menu window by pressing the set value and select the set value from the items.

The screenshot shows the 'Adjust print parameters' window. At the top, it displays 'Adjust print parameters', a status bar with 'STOP', 'OFFLINE', and the date/time '2019.07.07 12:45', and the user ID 'ID:User2'. The main display area shows 'ABC' and '123'. Below this, there are four parameter settings: 'Character Height' (85), 'Print Start Delay' (0 SC), 'Character Width' (2), and 'Pulse Rate Div. Factor' (1/1). The 'Scanning Unit' setting is currently set to '0 SC'. A selection menu is open over the 'Scanning Unit' setting, showing three options: 'Scanning unit (SC)', 'Character unit (CH)', and 'Length mm (mm)'. The 'Length mm (mm)' option is highlighted. A '100%' zoom indicator is visible in the top right corner of the menu.

The background color is changed by pressing the set value.

The selection menu window is closed and the set value stays as same before.

When the selection is enabled, the item becomes activated.

When the selection is disabled, the item becomes inactivated.

3.3.6-2 Previous HMI

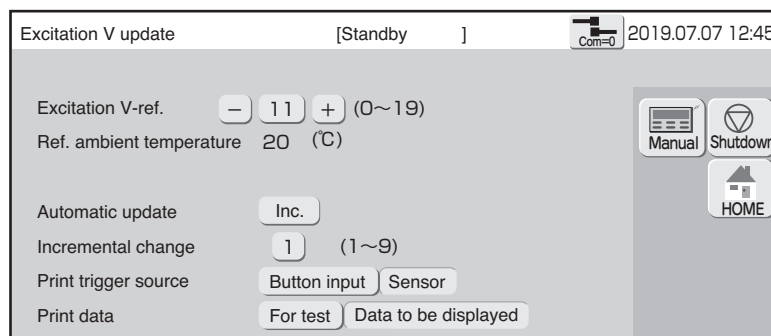
(1) Overview

- There are 3 types of settings.

No.	Classification	Set value confirmation method	Set value change method
1	Setting of value	The numerical value is displayed on the numeric buttons.	Display the numerical window by pressing the numeric button and input the value.
2	Setting with few selections. (All selection buttons are displayed: mainly a choice between the two)	The pressed button becomes yellow.	Press the applicable button.
3	Settings with many selections. (When a button is pressed, a selection menu is displayed in a window.)	The set value selection is displayed on the input button.	Display the selection menu window by pressing the button and select the relevant item.

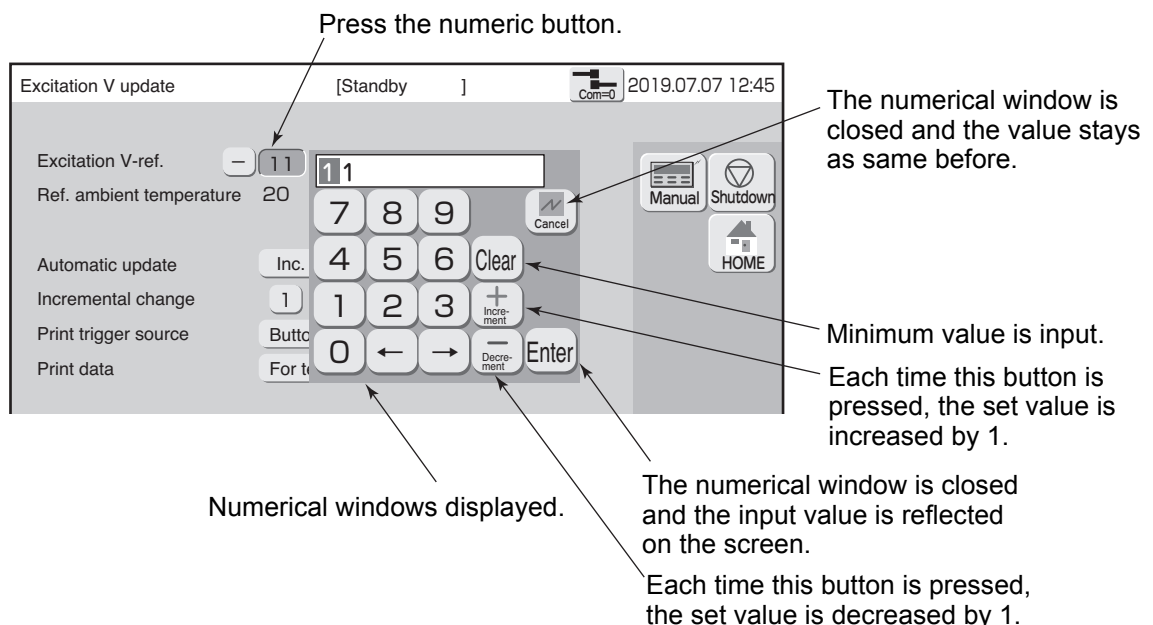
(2) Operation (Maintenance "Excitation V update" screen is used as an example.)

- There are 3 types of settings.



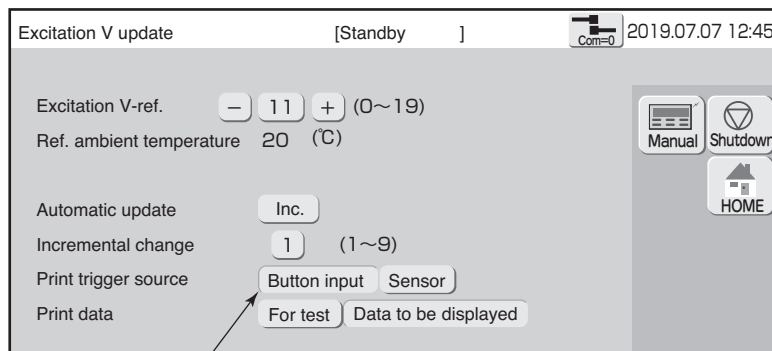
① "Excitation V-ref." setting (Value input)

Display the numerical window by pressing the numbers button and input the value.



② "Print trigger source" setting

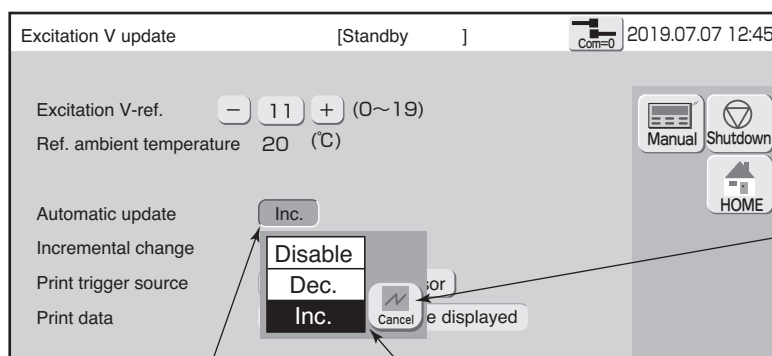
Press the applicable button.



Press the **Button input**.

③ "Automatic update" setting

Display the selection menu window by pressing the button and close from within that window.



Press the button.

Selection menu window is displayed.

The selection menu window is closed and the set value stays as same before.

3.3.7 Operations (OK, Back, Apply) which exit from a screen (Previous HMI)

(1) Overview

- There are 2 types of setup screens.

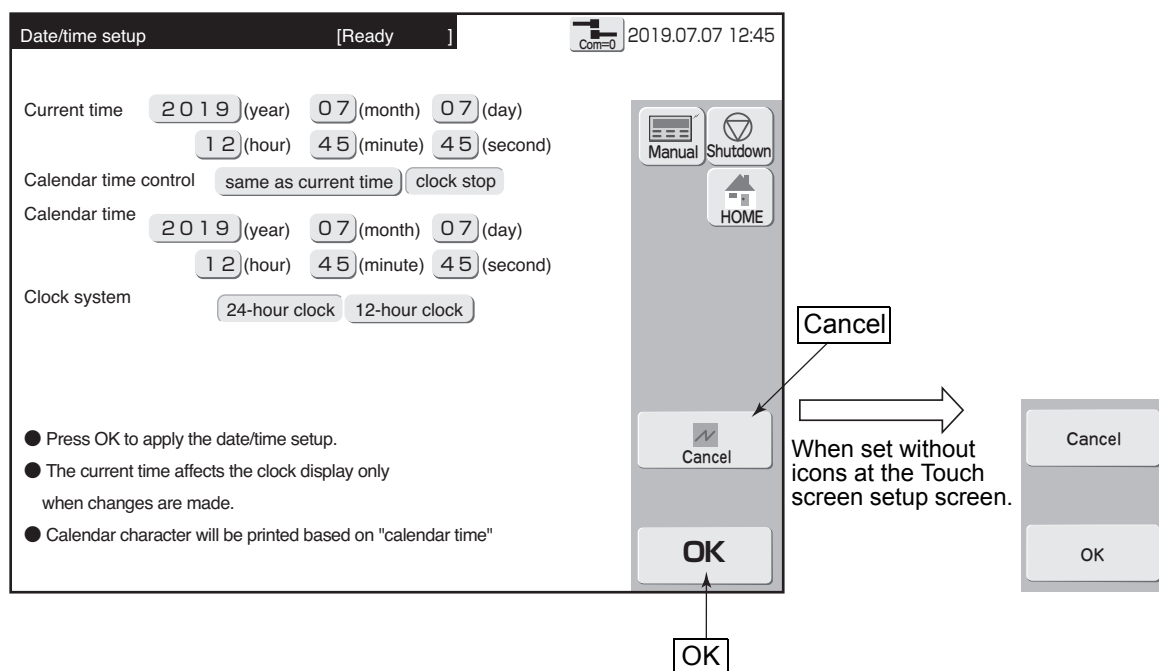
No.	Classification	Contents
1	Screens with OK and Cancel	- When OK is pressed, the set contents are accepted and the display returns to the previous screen. - When Cancel is pressed, the set contents are canceled and the display returns to the previous screen. Apply is not displayed.
2	Screens with Back	- When Back is pressed, the display returns to the previous screen. - When Apply is pressed, the set contents are accepted. - When Back was pressed in the state in which Apply is not pressed, a confirmation window is displayed and action is requested.

- When "Apply" was performed during editing of the current message and at the User environment setup screen, the set contents are reflected in printing.
- For the setup of whether or not to show some buttons as icon, refer to "6.3 Set up the touch screen".

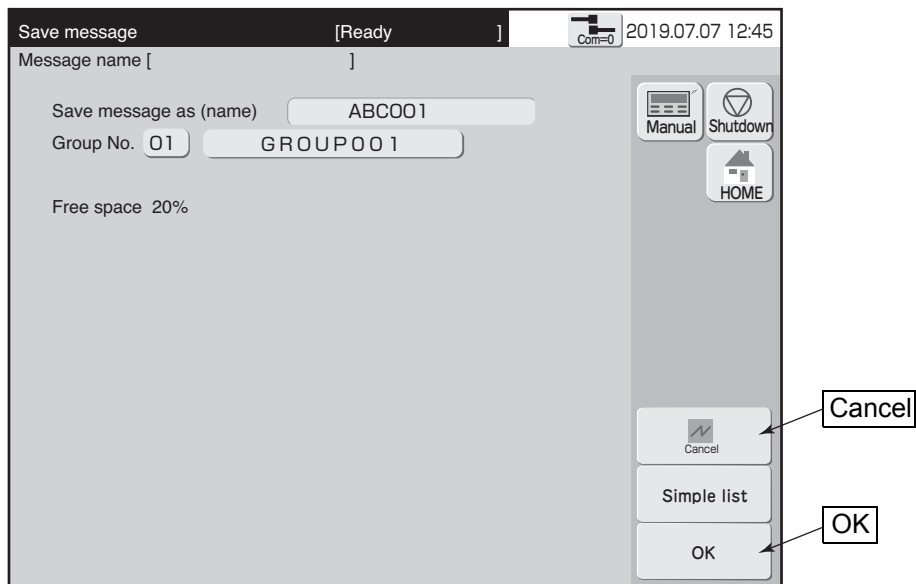
(2) Screen examples

① Screen with **OK** and **Cancel**

[Example of Date/time setup screen]

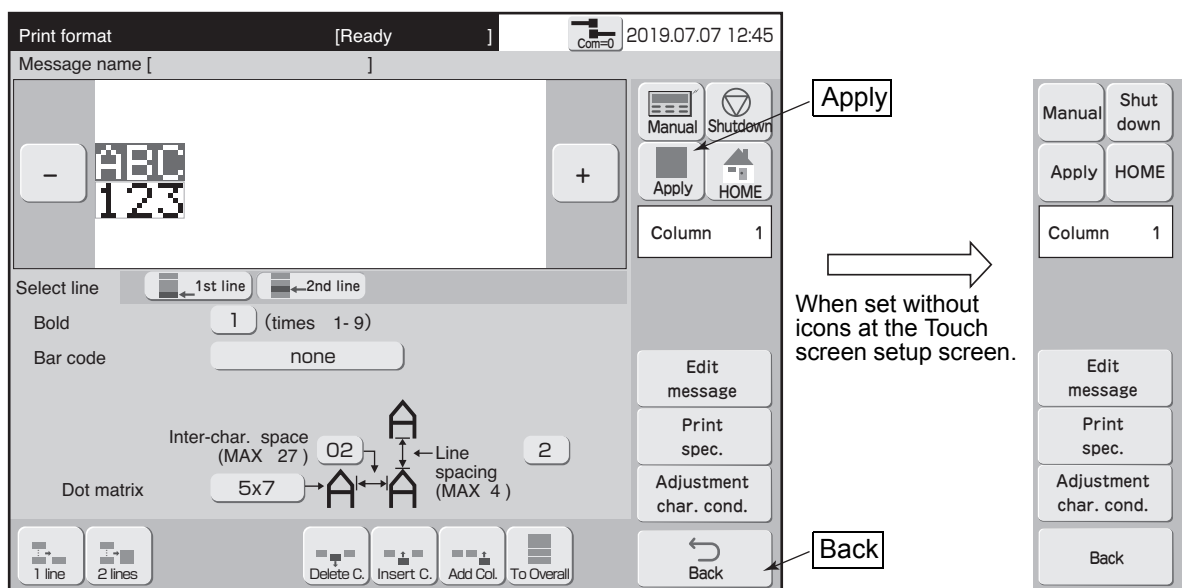


[Example of Save message screen]

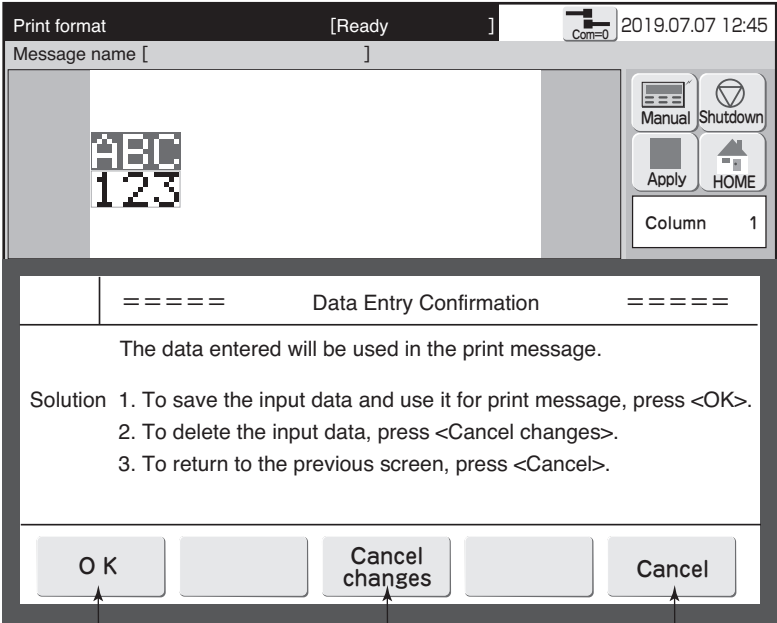


② Screen with Back button

[Example of Print format screen]



[Example of confirmation message when **Back** was pressed]



Accepts the
set contents.

Return from set
contents to original
contents.

Closes the message window with the
set contents remaining displayed.

4. CREATION AND PRINTING OF MESSAGES

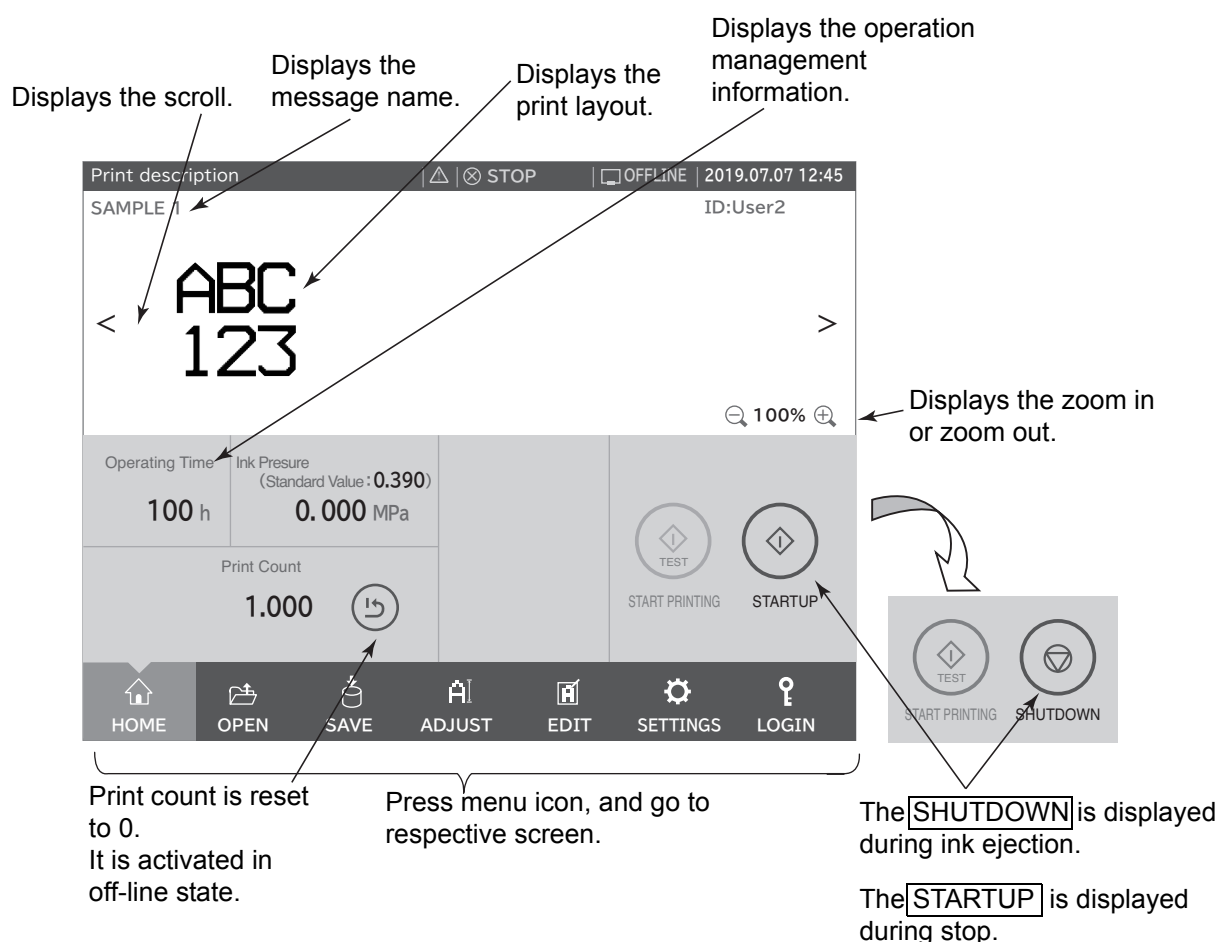
4.1 Print description screen (initial screen)

(1) Overview

- The display is shifted to the screens for message edit and Maintenance, Auxiliary function, and Environment setup menu screens by pressing each button.
- The print image can be confirmed at the "Print layout" area.
- The operational items in Print description screen (New HMI) are different from those in Print description screen (Previous HMI).

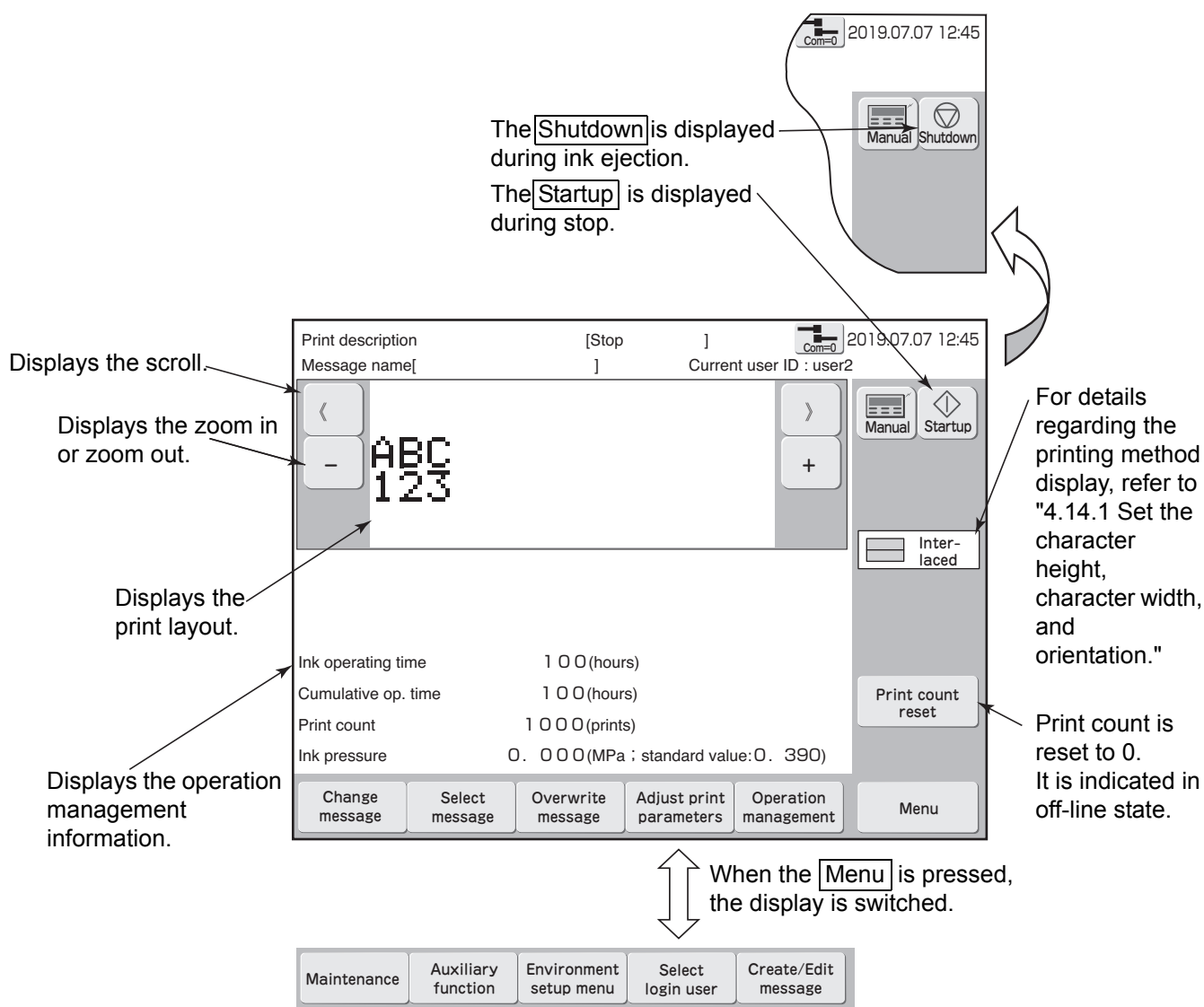
(a) New HMI

Item	Description	Reference
STARTUP / SHUTDOWN	• Start/stop ink ejection.	3
START PRINTING	• The current print data will be printed.	5.3
Operating information	• The ink pressure or the filter replacement time is displayed. • For the display item of operating information, please select it on the Touch screen setup screen.	Technical Manual 4.13
Print count reset	• Reset the print count to zero (0).	4.1
Count reset	• Reset the count value to a preset value. • To show the Count reset button, please set on the Touch screen setup screen.	4.3 Technical Manual 4.13



(b) Previous HMI

Item	Description	Reference
Change message	● Edits and corrects current message.	4.2
Select message	● Calls and prints saved messages.	4.3
Overwrite message	● Overwrites the current message.	4.4
Adjust print parameters	● Creates and edits messages different from the current message.	4.14.4
Operation management	● Displays operation status.	5.2
Maintenance	● Displays the maintenance menu.	5
Auxiliary function	● Displays the auxiliary functions menu.	7
Environment setup menu	● Displays the environment setup menu	6
Select login user	● Logs in again as a different user from currently logged in user.	6.4
Create/Edit message	● Creates and edits messages different from the current message.	4.5
Print count reset	● Reset the print count to zero (0).	4.1

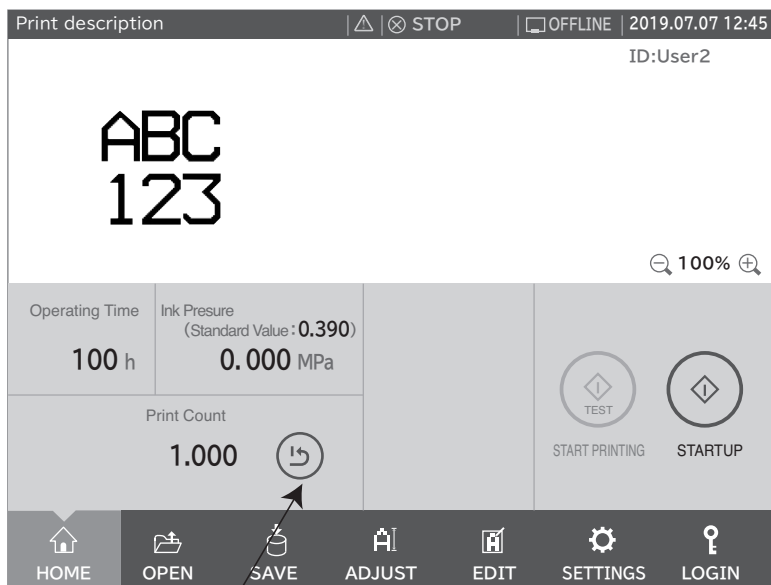


(2) Reset the print count

(a) New HMI

1 Press menu **HOME**.

The Print description screen will be displayed.



Print count reset

2 Press the **Print count reset** button.

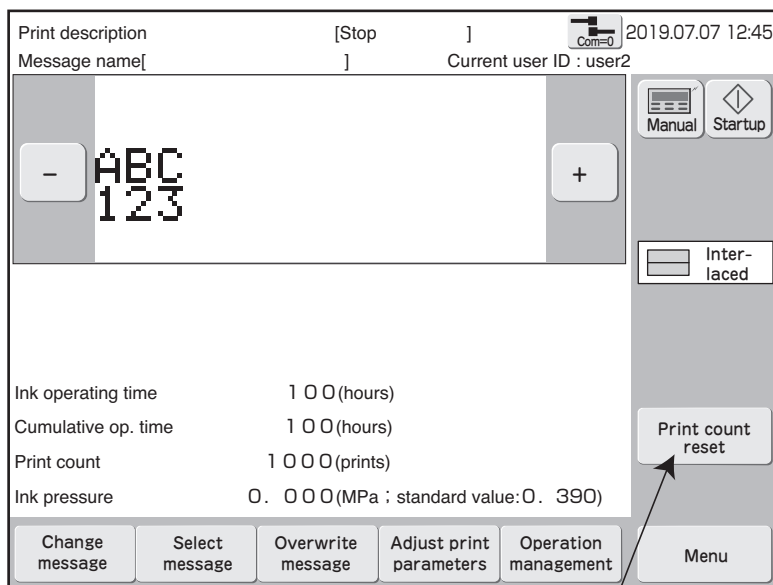
Confirmation message of "Print count reset" will be displayed.

3 Press **OK** on the confirmation message window.

Print count will be reset to zero(0).

(b) Previous HMI

The Print description screen is displayed.



Print count reset

1 Press the **Print count reset** on the Print description screen.

Confirmation message of "Print count reset." will be displayed.

2 Press **OK** on the confirmation message window.

Print count will be reset to zero (0).

(3) Current message and saved message

- There are 2 types of messages; current messages and saved messages.

Types of messages

Type	Features
Current message	• The message currently being printed is called "current message". • When the power is turned on, the last current message is memorized. • The print layout of the current message is displayed on the Print description screen. • The contents of the current message can be changed by calling the message from the saved messages.
Saved message	• Messages can be given a message name. Multiple messages can be saved beforehand.

4.2 Edit messages to be printed (Change message screen)

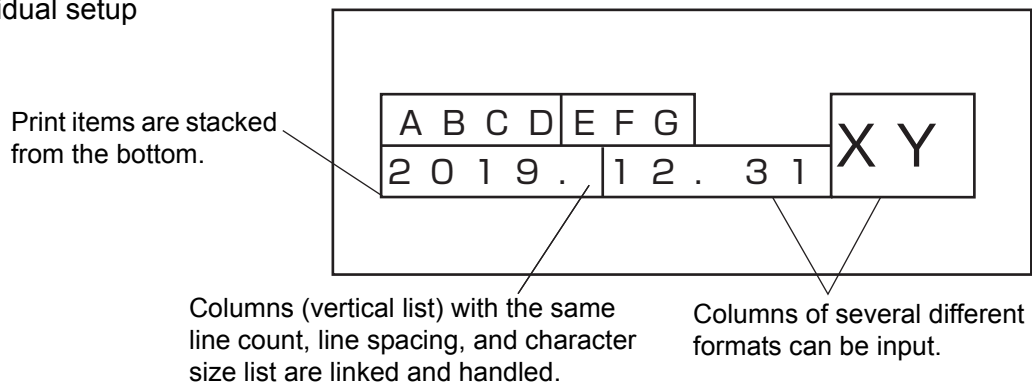
(1) Overview

- Edits the current message (message currently being printed).
- There are 3 types of print format.
- Style displayed in the Details mode of the message name list display of the Select message screen shows the type of print format.

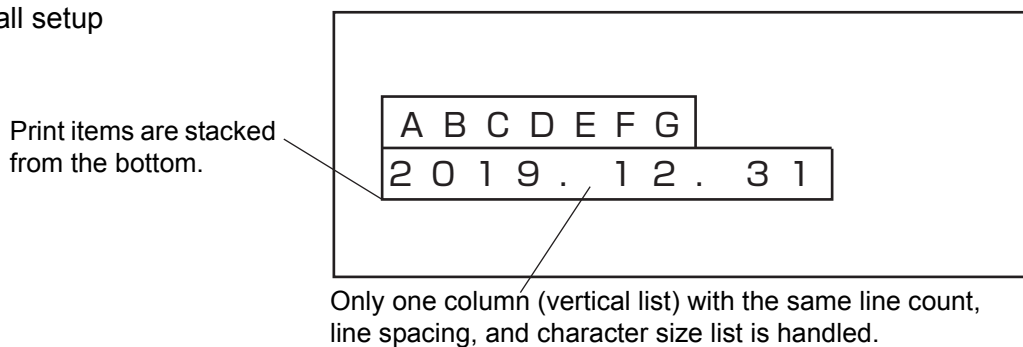
Types of Style

Type of Style	Meaning	Features
(a) Individual	Individual setup of fixed layout	Multiple character sizes can be mixed.
(b) Overall	Overall setup of fixed layout	Character size and inter-character space set value are matched at all lines. Only 1 column can be input.
(c) Free layout	Setup of free layout	An arbitrary position can be set for each print item.

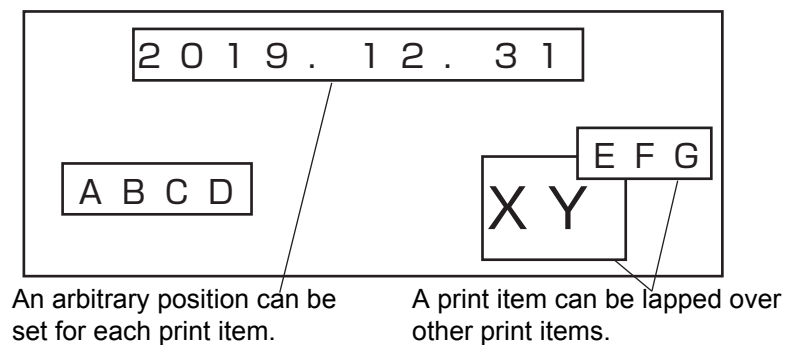
(a) Individual setup



(b) Overall setup



(c) Free layout



- The background of the current message edit screen is colored.

Edit screen background color

Editing objective	Background color
Current message	Light green
Saved message	Gray

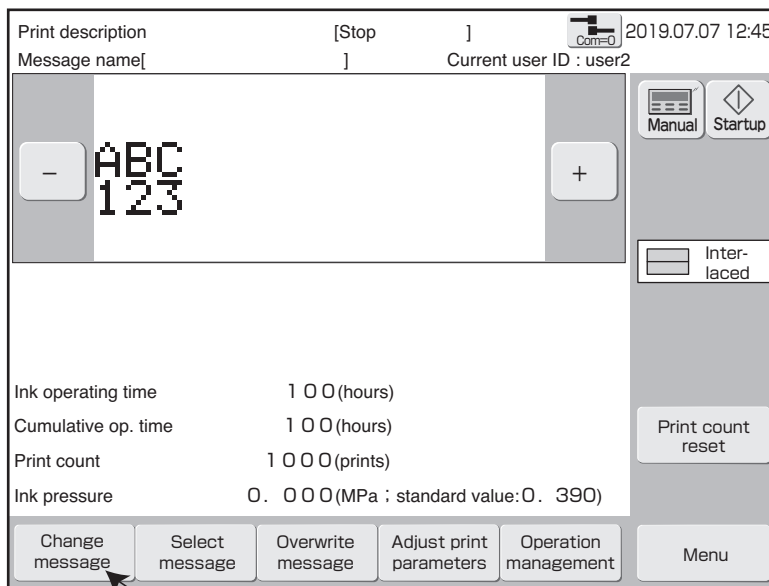
- When the **Apply**  is pressed during editing, the input value is applied and reflected in printing. The input value is also applied when returning to the Print description screen by pressing the **Back**  .
- When the **Back**  is pressed at the Print format, Print specifications, and Edit message, various print setup screens, the confirmation message "Data Entry Confirmation" is displayed.

Functions of confirmation message "Data Entry Confirmation"

Button	Contents
OK	Applies the message by input value and switches to the Print description screen.
Cancel changes	Cancels the input value and returns to the state before the change.
Cancel	Returns to the original screen with the input data as it was.

(2) Operation

The Print description screen is shown below.



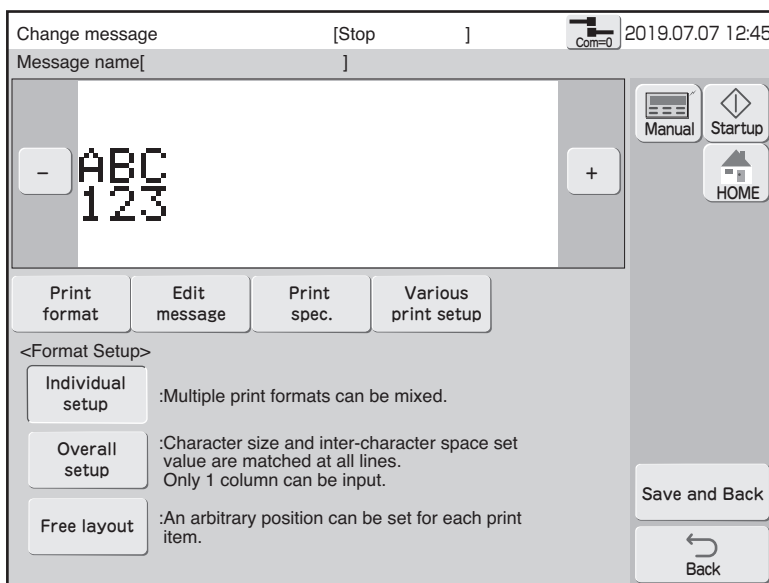
The Print description screen displays the following information:

- Print description [Stop]
- Message name[]
- Current user ID : user2
- 2019.07.07 12:45
- Manual Startup
- Inter-laced
- Print count reset
- Ink operating time 1 0 0 (hours)
- Cumulative op. time 1 0 0 (hours)
- Print count 1 0 0 0 (prints)
- Ink pressure 0. 0 0 0 (MPa ; standard value:0. 390)
- Change message Select message Overwrite message Adjust print parameters Operation management Menu

Change message

1 Press the **Change message** on the Print description screen.

The Print format screen is displayed.



The Print format screen displays the following information:

- Change message [Stop]
- Message name[]
- 2019.07.07 12:45
- Manual Startup HOME
- Print format Edit message Print spec. Various print setup
- <Format Setup>
- Individual setup :Multiple print formats can be mixed.
- Overall setup :Character size and inter-character space set value are matched at all lines. Only 1 column can be input.
- Free layout :An arbitrary position can be set for each print item.
- Save and Back
- Back

2 Press **Individual setup** , **Overall setup** or **Free layout** to modify <Format setup>.

3 Change the display contents using the group, search, sort, and select page functions so that the desired message name is displayed.

4 Press the **Back** .

To save as a registered print data ,press **save and back**.

4.3 Call and print saved messages

(1) Overview

- Calls and prints saved messages.
- The message currently being printed is called "Current message".
- When a message is called during printing, the Print description display changes to the called message and printing continues to print the previous contents. The printed result changes from the next printing.
- The desired message can be efficiently found by changing the display contents of the message name list.
- A print image of the registered print data can be checked.

Method of changing the message name list display (a)Previous HMI

Item	Contents
Group	• Press the group No. button. • Only the messages belonging to the selected group are displayed. • When "0:All message names" is selected, the message names of all the groups are displayed.
Previous display, next display	• Switches the message name list display screen.
Select page	• Selects the message name list page.
Sort	• The sort order can be switched by pressing the heading part of the message name list display.
Search	• The first several characters of a message name are input and only the message names beginning with those characters are displayed. • If the Search conditions are not input, all the message names in that group are displayed.
Display All	• Defines Group No. as "00" and the search condition as space, then displays message name list.
Details, Simple list	• Details displays the "Update date/time", "Style", and "Group No.", as well as the "No." and "Message name". • Simple List displays the "No." and "Message name".
Free number	• By pressing Free number, all the registered numbers will be displayed. • Message name will be sorted and displayed in ascending sequence of Registration numbers. • Search by Group No. or Search condition input or Display all is NOT available.
Preview	• A print image of the registered print data can be checked by Preview. • The print contents currently being printed are not affected.

Method of changing the message name list display (b) New HMI

Item	Contents
Group	● Press the group No. button. ● Only the messages belonging to the selected group are displayed. ● When "0:All message names" is selected, the message names of all the groups are displayed.
Scroll up, Scroll down	● Switches the message name list display screen.
Sort	● The sort order can be switched by pressing the heading part of the message name list display.
Display All	● Defines Group No. as "00" and the search conditions as space, then displays message name list.
Details, Simple List	● Details displays the "Update date/time", "Style" and "group No.", as well as the "No." and "Message name". ● Simple List displays the "No." and "Message name".
Preview	● When the message name is selected, the print image of the registered print data can be checked. ● The print contents currently being printed are not affected.

- Style displayed in the Details mode shows the type of print format.

Types of Style

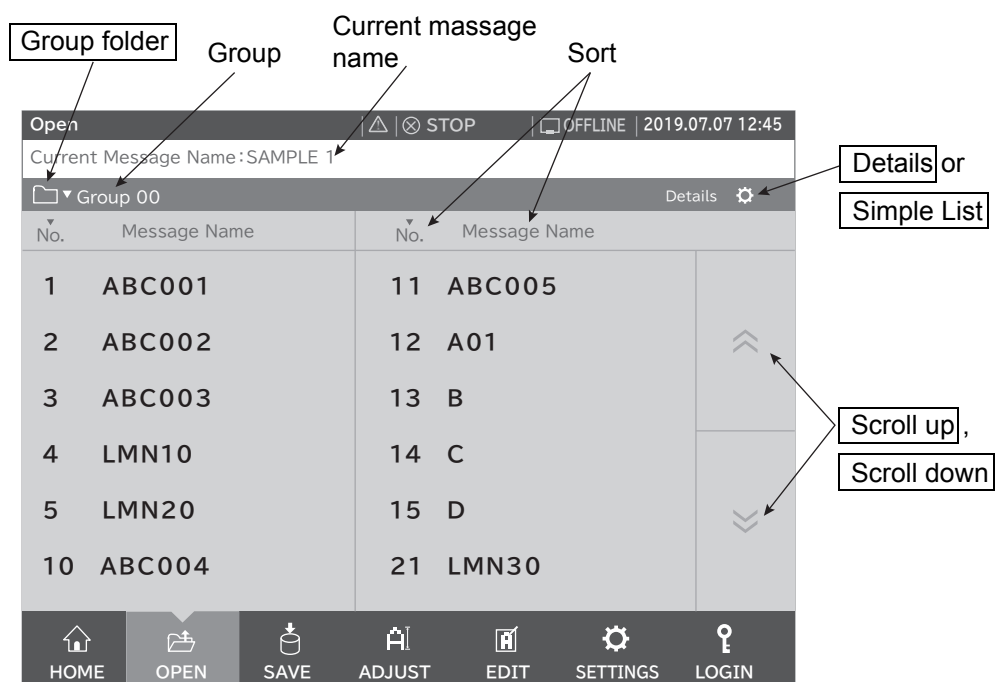
Type of style	Meaning
Individual	Individual setup of fixed layout.
Overall	Overall setup of fixed layout.
Free	Set up of free layout.

(2) Operation

(a) New HMI

1 Press menu **OPEN**.

The Open screen will be displayed.



Example of Details screen

Sort

No.	Message Name	Update Date/Time	Style
1	ABC001	2019.06.01 12:00	OVERALL
2	ABC002	2019.06.02 12:00	OVERALL
3	ABC003	2019.06.03 12:00	OVERALL
4	LMN10	2019.06.04 12:00	INDIV.
5	LMN20	2019.06.05 12:00	INDIV.
10	ABC004	2019.06.06 12:00	INDIV.

2 Change the display contents using Group, Sort, Scroll up / Scroll down, Display All, so that the desired message name is displayed.

3 Select the message.

Confirmation message of "Select message confirmation" will be displayed.

A print image can be checked by preview.

4 Press **OK** on the confirmation message window.

The selected message is called and the display returns to the Print description screen.

(b) Previous HMI

1 Press the **Select message** on the Print description screen.

The Select message screen is displayed.

- Preview is not displayed on the following screens.

Search conditions input

Group

Sort

Select message

Message name []

Group No. [00] Group name []

Search condition []

No.△	Message name
1	ABC001
2	ABC002
3	ABC003
4	LMN10
5	LMN20
10	ABC004
11	ABC005
12	A01
13	B
14	C

No.△	Message name
15	D
21	LMN30
22	LMN40
23	LMN50
24	LMN60
30	E01
31	E02
32	E03
33	E04
34	E05

Free number

Details

Free number

Details or Simple list

Manual

Startup

HOME

Prev.Dsp. Next Dsp.

Select page 1/3

Cancel

Preview

Display All

OK

Previous display

Next display

Select page

Preview

Display All

OK

Example of Details screen

Select message [Stop] Com=0 2019.07.07 12:45

Message name[]

Group No. 00 Group name []

Search condition []

No△	Message name	Update Date/Time	Style	GrNo
1	ABCO01	2019.06.01 12:00	OVERALL	1
2	ABCO02	2019.06.02 12:00	OVERALL	1
3	ABCO03	2019.06.03 12:00	OVERALL	1
4	LMN10	2019.06.04 12:00	INDIV.	3
5	LMN20	2019.06.05 12:00	INDIV.	3
10	ABCO04	2019.06.06 12:00	INDIV.	5
11	ABCO05	2019.06.07 12:00	INDIV.	5
12	A01	2019.06.08 12:00	INDIV.	5
13	B	2019.06.09 12:00	FREE	5
14	C	2019.06.10 12:00	FREE	5

Manual Startup HOME

Prev.Dsp. Next Dsp.

Select page 1/3

Cancel

Display All

Free number Simple list OK

By pressing **Free number**, the screen shown below will be displayed.

Select message [Stop] Com=0 2019.07.07 12:45

Message name[]

Group No. 00 Group name []

Search condition []

No	Message name	No	Message name
1	ABCO01	11	ABCO05
2	ABCO02	12	A01
3	ABCO03	13	B
4	LMN10	14	C
5	LMN20	15	D
6		16	
7		17	
8		18	
9		19	
10	ABCO04	20	

Manual Startup HOME

Prev.Dsp. Next Dsp.

Select page 1/100

Cancel

Free number Details OK

By pressing **Preview**, the screen shown below will be displayed.

Select message [Stop] Com=0 2019.07.07 12:45

Message name[]

- ABC 123 +

2	ABCO02	21	A01
3	ABCO03	22	B
4	LMN10	23	C
5	LMN20		
10		31	
11		32	
12		33	
13		34	
14	ABCO04		

Preview

Manual Startup HOME

Cancel

OK

2 Change the display contents using Group, Search, Sort, Select page function, Display All, so that the desired message name is displayed.

3 Select the message name and press the **OK** .

The selected message is called and the display returns to the Print description screen.

4.4 Overwrite messages to be printed

(1) Overview

- Overwrites the current message by the same name.
- If the message is saved using the overwrite message function when updating the count value, the same print description can be selected later.
- Message name cannot be changed.

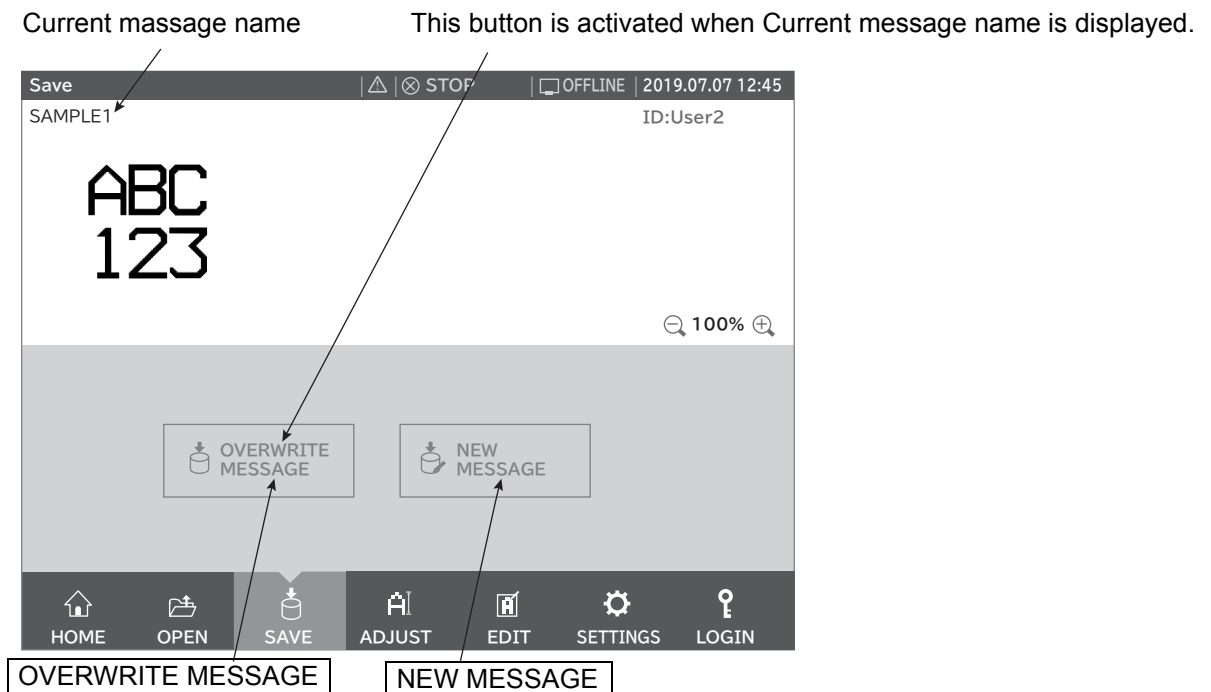
See "4.6 Save created messages" for message save.

(2) Operation

(a) New HMI

1 Press menu **SAVE**.

The Save screen will be displayed.

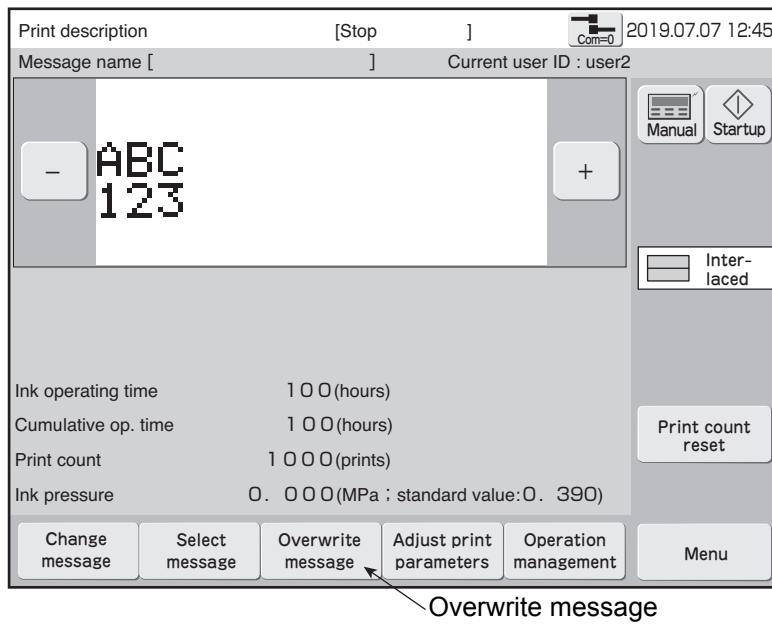


2 Press **OVERWRITE MESSAGE**.

Save is performed. When save is completed, it will return to the Print description screen (HOME).

(b) Previous HMI

The Print description screen is displayed.



1 Press Overwrite message.

"Same Print Data Found" message is displayed.

2 Press Enter .

Save is performed.

4.5 Edit messages different from the current message

(1) Overview

- Edits and saves a specific saved message or a new message.
- Since a message different from the current message (message currently being printed) is edited, the contents currently being printed are not affected.
- When the **Back** button is pressed at the Edit message screen or other edit screen, the display returns to the Select message screen. Before pressing the **Back** button, always save the created and edited message. If returned to the Select message screen without saving the message, the edited message is lost.
- The desired message can be efficiently found by changing the display contents of the message name list.
- A print image of the registered print data can be checked.

Method of changing the message name list display

Item	Contents
Group	• Press the group No. button. • Only the messages belonging to the selected group are displayed. • When "0:All message names" is selected, the message names of all the groups are displayed.
Previous display, next display	• Switches the message name list display screen.
Select page	• Selects the message name list page.
Sort	• The sort order can be switched by pressing the heading part of the message name list display.
Search	• The first several characters of a message name are input and only the message names beginning with those characters are displayed. • If the Search conditions are not input, all the message names in that group are displayed.
Display All	• Defines Group No. as "00" and the search condition as space, then displays message name list.
Details	• Details displays the update date/time, Style, and group No., as well as the No. and message name. • Simple list displays the No. and message name.
Free number	• By pressing Free number, all the registered numbers will be displayed. • Message name will be sorted and displayed in ascending sequence of Registration numbers. • Search by Group No. or Search condition input or Display all is NOT available.
Preview	• A print image of the registered print data can be checked by Preview. • The print contents currently being printed are not affected.

- Style displayed in the Details mode shows the type of print format.

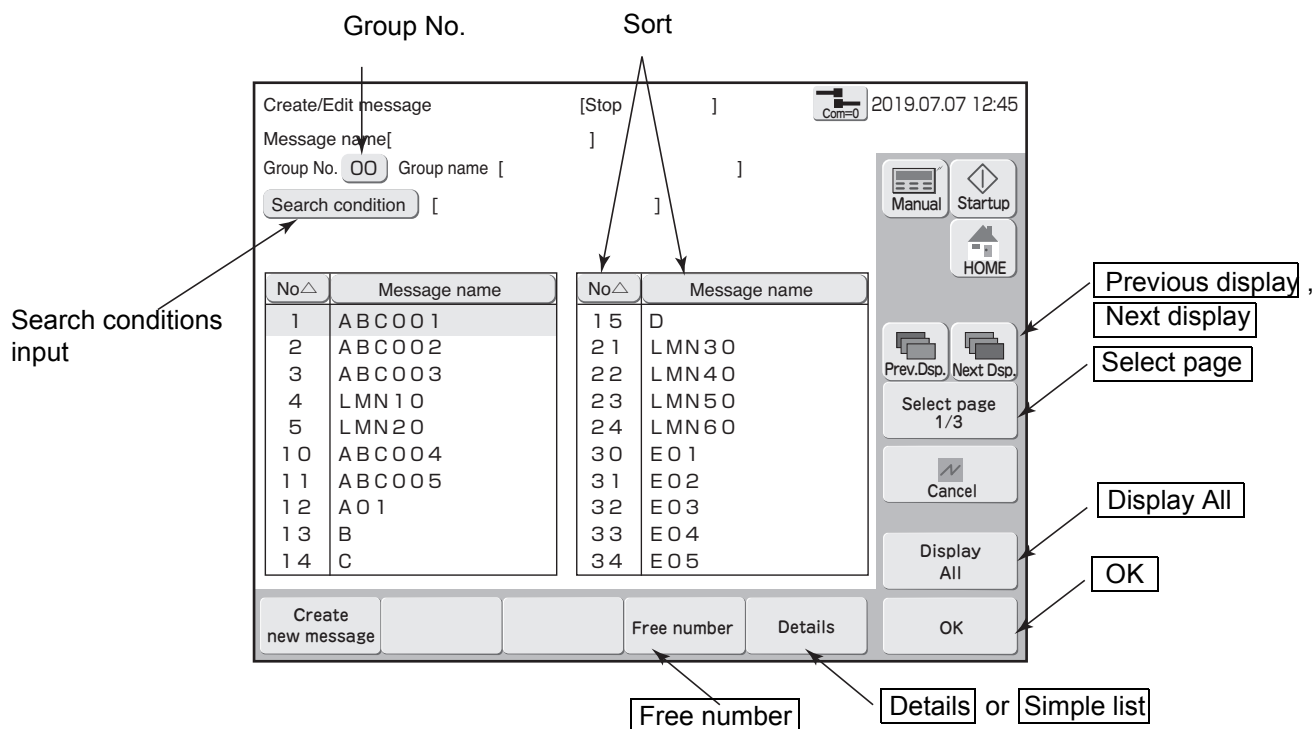
Types of Style

Type of style	Meaning
Individual	Individual setup of fixed layout.
Overall	Overall setup of fixed layout
Free	Set up of free layout.

(2) Operation

1 Press the **Create/Edit message** on the Print description screen.

The Create/Edit message screen is displayed.



2 Change the display contents using Group, Search, Sort, Select page function, Display All, so that the desired message name is displayed.

3 Select the message name and press the **OK**.

To create a new message, press the **Create new message**.

The change message screen is displayed.

4.6 Save created messages

(1) Overview

- Saves created messages.
- A save No. is automatically assigned.
- The same message name cannot be assigned.
- Saving to a selected group is possible.
- Free spaces are displayed (ONLY Previews HMI screen).

Item	Contents
Free space	Proportional of save area which is vacant.

- If the number of input characters is small, the capacity necessary to save the message decreases. A lot of small capacity messages can be saved. When there are many large capacity messages, the number of messages which can be saved decreases.

Maximum message save count

Model type	Maximum save count	Remarks
UX-H	2,000 messages	2,000 messages can be saved without regard to their capacity.

Maximum message save count

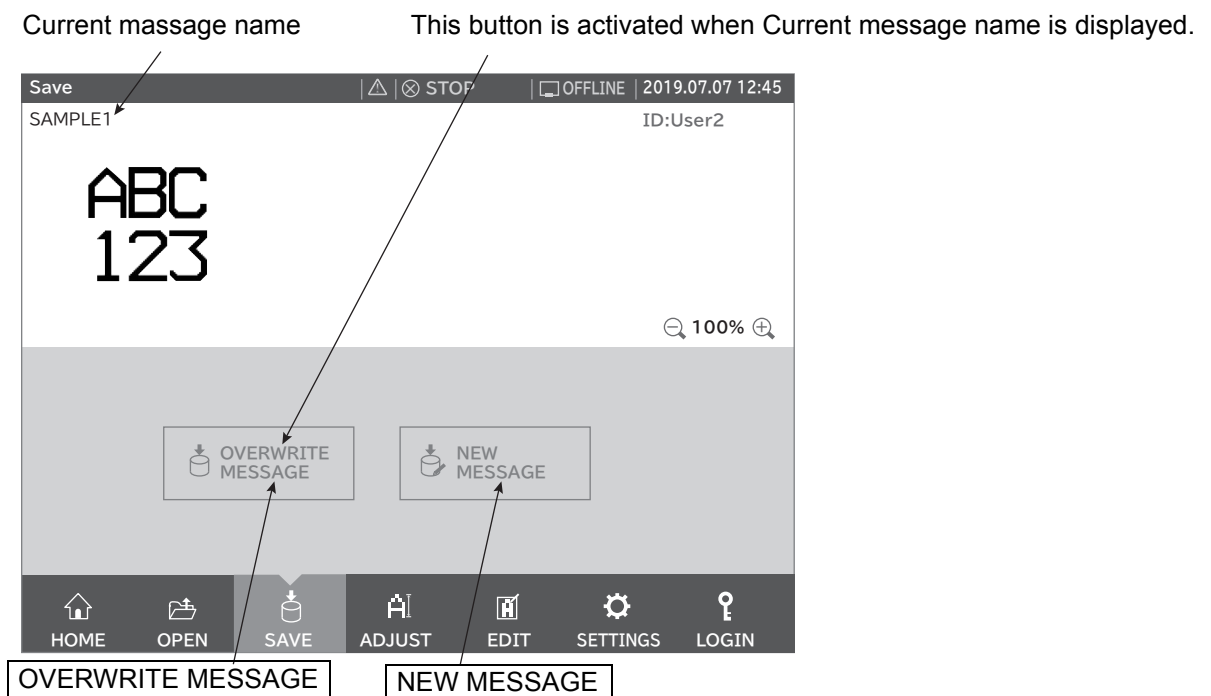
Conditions example	Message save count
Characters 70 chars	2,000 messages
Characters 20 chars, calendar 1, count 1	Approx. 1,900 messages
Characters 240 chars	Approx. 800 messages
Characters 240 chars, calendar 8, count 8	Approx. 300 messages

(2) Operation

(a) New HMI

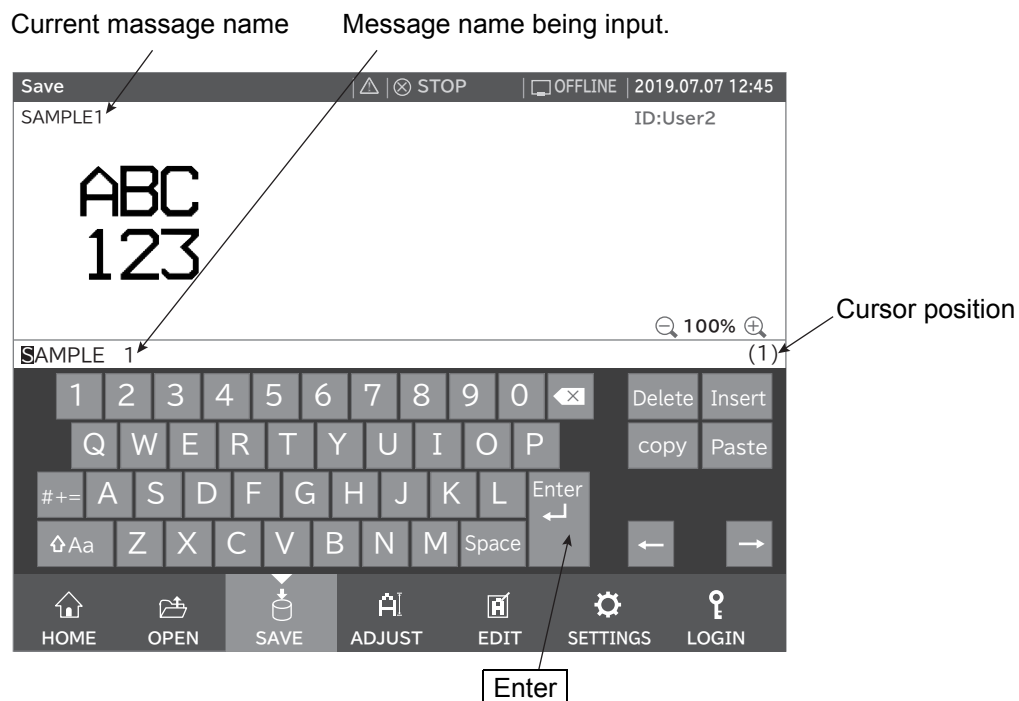
1 Press menu **SAVE**.

The Save screen will be displayed.



2 Press **NEW MESSAGE**.

The keyboard is displayed.



3 Input the message name and press the Enter .

Save is performed. When save is completed, it will return to the Print description screen (HOME).

(b) Previous HMI

The Change message screen is displayed.

Change message [Stop] Com=0 2019.07.07 12:45

Message name[]

- ABC +
123

Manual Startup
HOME

Print format Edit message Print spec. Various print setup

<Format Setup>

Individual setup :Multiple print formats can be mixed.

Overall setup :Character size and inter-character space set value are matched at all lines. Only 1 column can be input.

Free layout :An arbitrary position can be set for each print item.

Save and Back Back

Save and Back

1 Press the **Save and Back** .

The Save message screen is displayed.

Save message [Stop] Com=0 2019.07.07 12:45

Message name []

Save message as (name) ABCO01

Group No. 01 GROUP001

Free space 20%

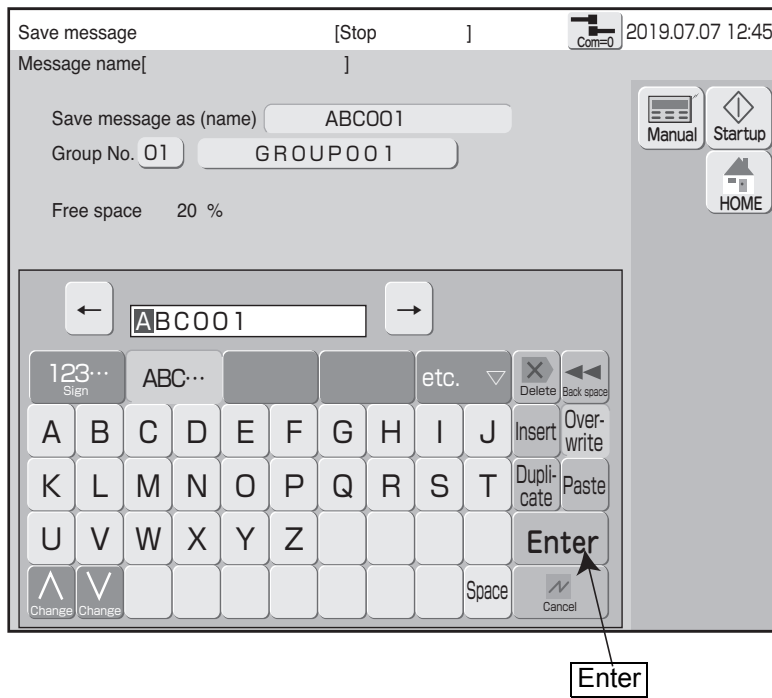
Manual Startup
HOME

Cancel Simple list OK

OK

2 Press Message name.

A keyboard is displayed.



3 Input the message name and press the **Enter** **Enter** .

4 Press the **OK**.

The message is saved.

4.7 Set the print format (Fixed layout)

4.7.1 Select the print items to be edited

(1) Selecting one print item

- Sets and changes the print format including the character size for the print item to be edited.
- There are 3 methods of selecting the print item to be edited.

Methods of selecting the print item to be edited

Type	Features
Directly touching the print item	The touched item becomes the editing objective.
Previous column, next column	The topmost line of the previous column or the next column becomes the editing objective.
Select line	The print item of the specified line in the editing objective column becomes the editing objective.

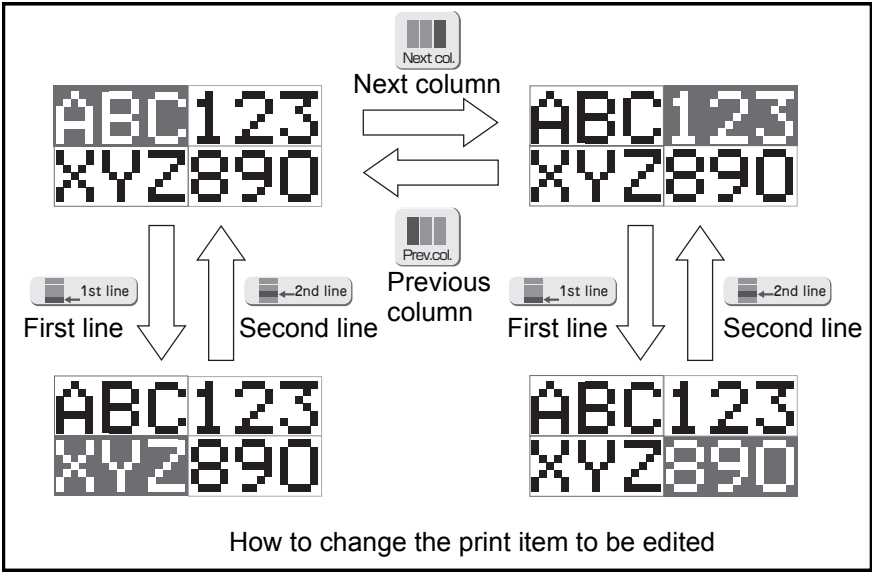
The editing objective can be changed by directly touching a print item.

The colored print item is the editing objective.

Previous column

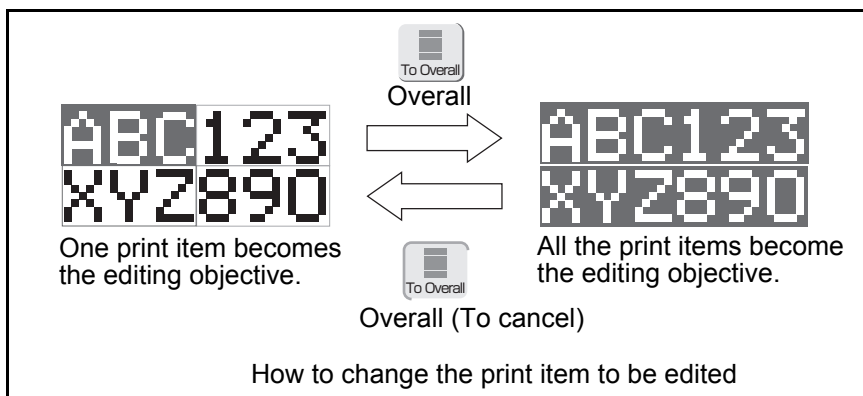
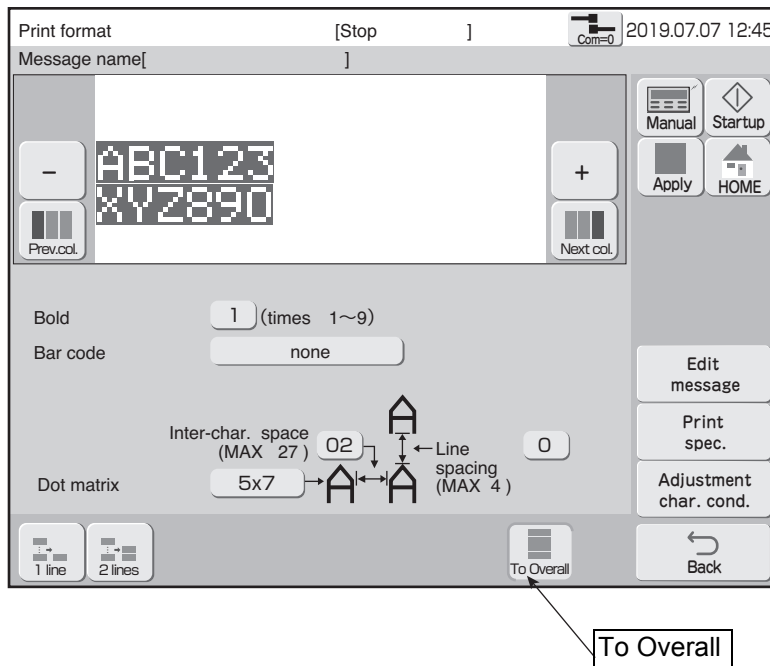
Next column

The selected line in the editing objective column becomes the editing objective by Select line button.



(2) Selecting all print items

- All the print items become the editing objective.
- When placed into the Overall mode, first matching to the format information of the 1st line is performed.
- Overall mode is cancelled after closing the Change message screen.



4.7.2 Set the number of print lines

(1) Function

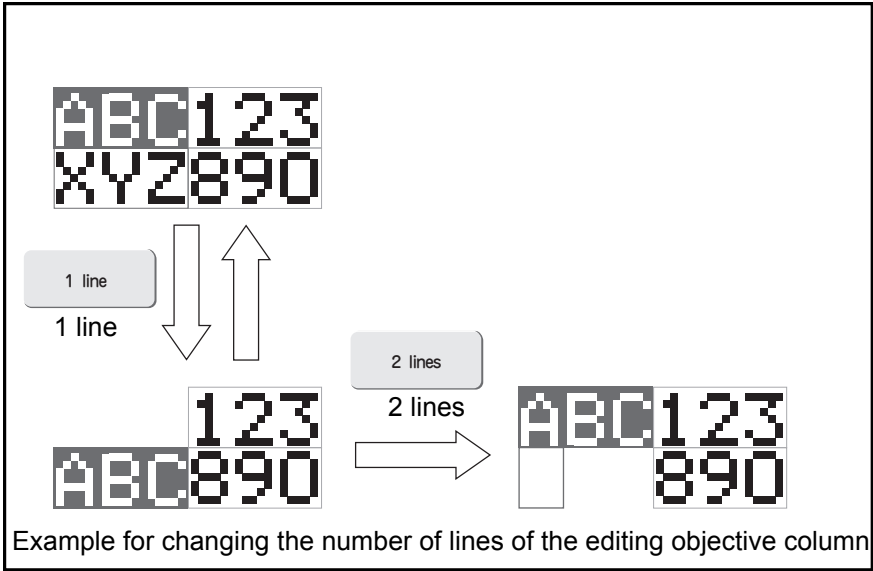
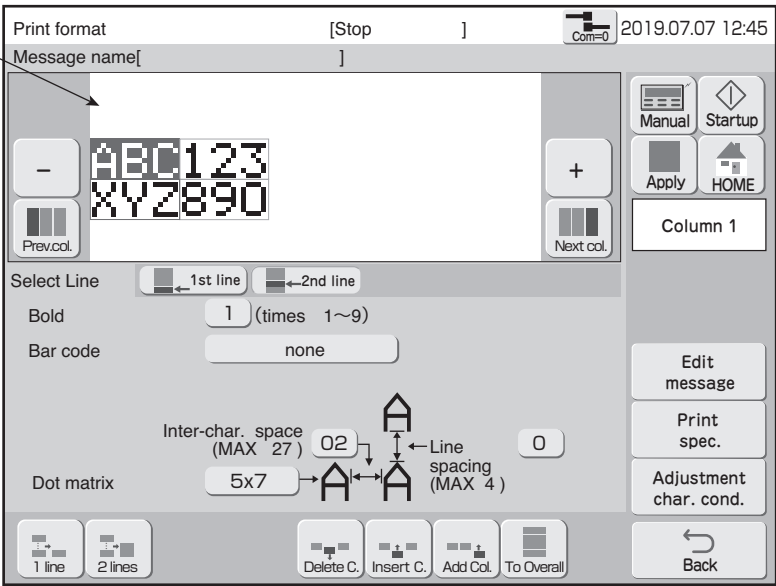
- Sets the number of lines of the selected column.
- The number of lines which can be set is "1 to 2".

Maximum line count

Model type	Maximum line count
UX-H	2 lines

- When the number of vertical dots exceeds the maximum number of dots, the characters size becomes 5×8(5×7).

The colored print item is the editing objective.



4.7.3 Add and delete print items

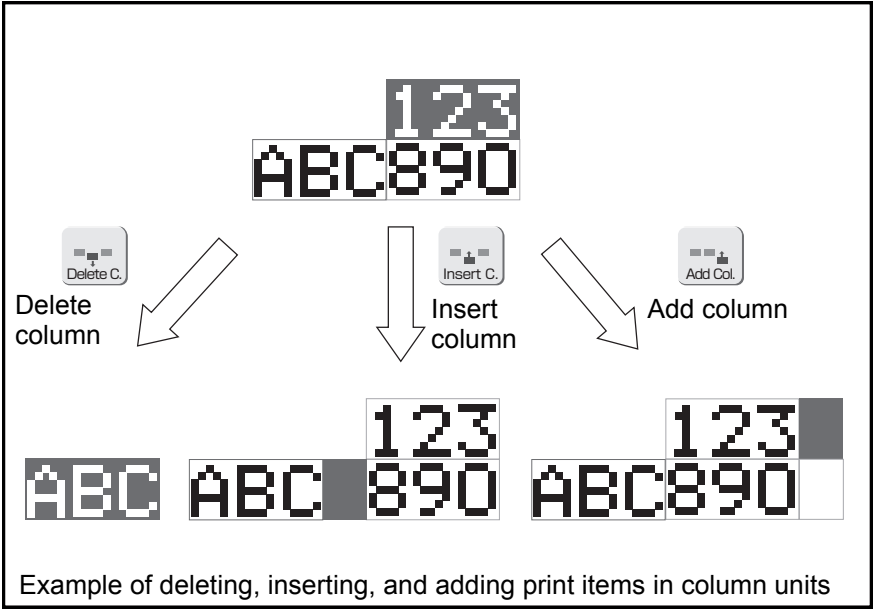
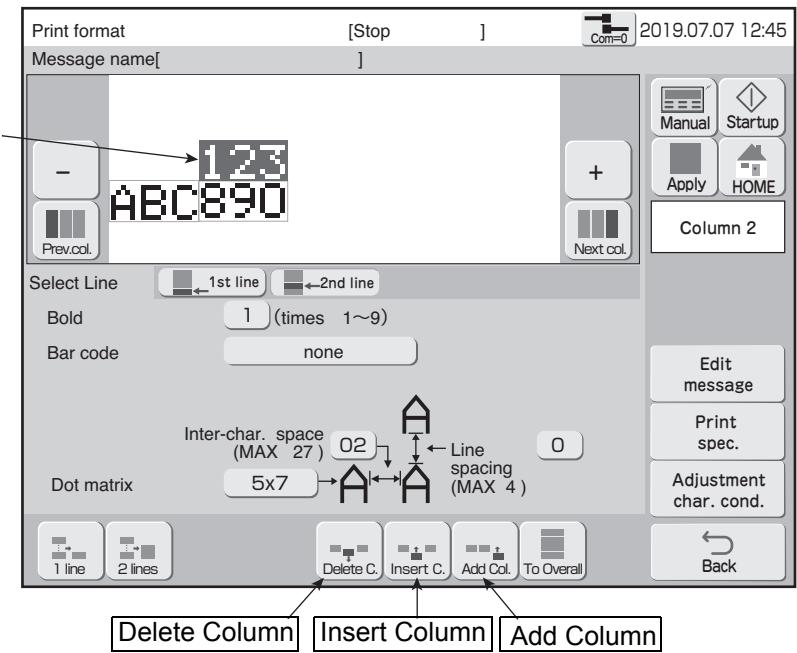
(1) Function

- Deletes, inserts, and adds print items in column units.

Methods of adding and deleting print items

Type	Features
Delete column	Deletes all the print items of the editing objective column.
Insert column	Adds a column directly before the editing objective column.
Add column	Adds a column at the end.

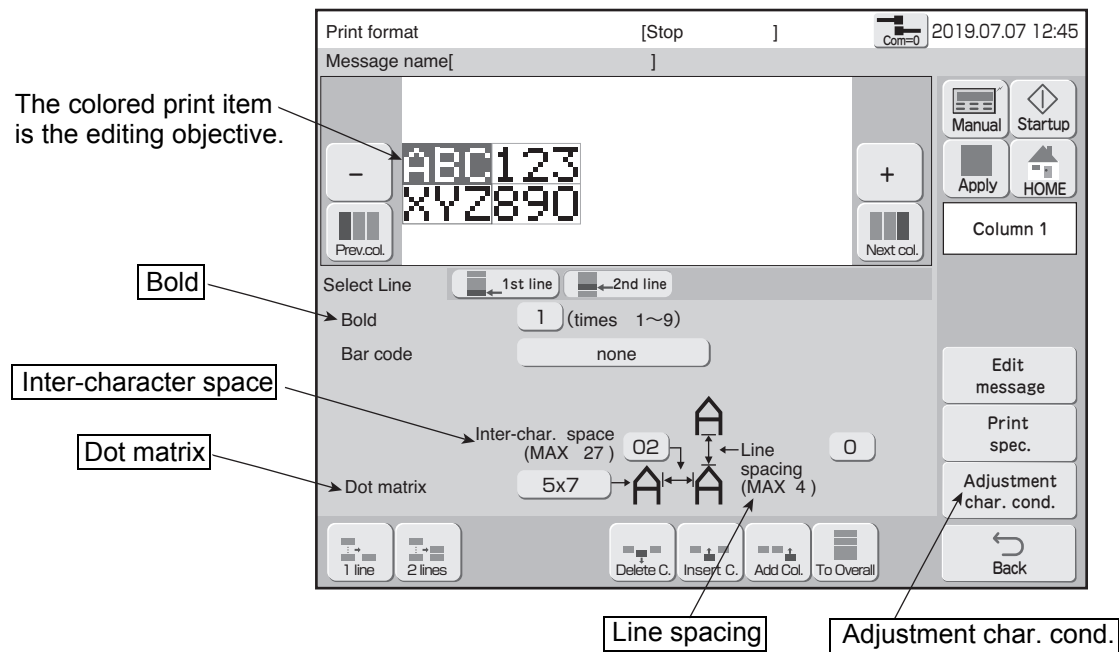
The colored column is the editing objective.



4.7.4 Set dot matrix, inter-character space, and other parameters

(1) Function

- Sets the line spacing, dot matrix, inter-character space, bold font, and bar code.



① Bold

- Sets the character to bold.
- The magnification which can be set is "1 to 9".

② Line spacing

- Adjust the spacing with the line above.
- Set for each column.
- Can be set up to a maximum of 4 dots.

Model type	Maximum line spacing
UX-H	4 dots

③ Dot matrix

- Sets the character size.

Settable sizes (horizontal dots × vertical dots)

4×5,	5×5,	5×8(5×7),	9×8(9×7),	7×10,	10×12,
11×11,	12×16				
5×3 (chimney), 5×5 (chimney), 7×5 (chimney),					

Character size

Character size Model type	4×5	5×5	5×8 (5×7)	9×8 (9×7)	7×10	10×12	11×11	12×16	5×3 (Chimney)	5×5 (Chimney)	7×5 (Chimney)
UX-H	○	○	○	○	○	○	○	○	○	○	○

- See "6.1 Set the user environment" for 5×8, 5×7 and 9×8, 9×7 switching. However, for special characters, accent characters, Russian characters, Arabic numbers, and Arabic letters, select character size with vertical 8 dots since the pattern is designed with vertical 8 dots.
- The kinds of characters which can be input are defined for each character size. A space is entered when there is no corresponding character for the changed character size.

Kinds of characters which can be input by character size

Character kind	4×5	5×5	5×8 (5×7)	9×8 (9×7)	7×10	10×12	11×11	12×16	Chimney 5×3	Chimney 5×5	Chimney 7×5
Chinese character	×	×	×	×	×	×	○	○	×	×	×
Kana	×	×	○	×	○	○	×	○	×	×	×
Alphabet letters, numeric, symbols	○	○	○	○	○	○	×	○	○	○	○
Space	○	○	○	○	○	○	×	○	○	○	○
User pattern	○	○	○	○	○	○	○	○	○	○	○
Punct. character	○	○	○	○	○	○	×	○	×	×	×
Dedicated character	×	×	○	×	○	×	×	×	×	×	×
Accent character	×	×	○	○	○	○	×	○	×	×	×
Greek character	×	×	○	○	○	○	×	○	×	×	×
Russian character	×	○	○	○	○	○	×	○	×	○	○
Arabic numeric	×	○	○	○	○	○	×	○	×	×	×
Arabic letter	×	×	○	×	×	○	×	○	×	×	×

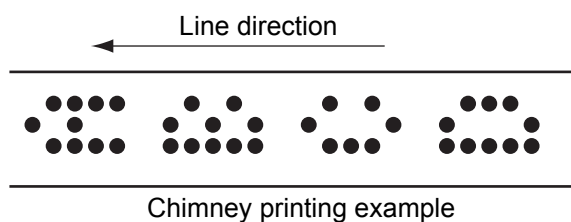
- Communication is unsupported for Russian characters of 5×5, 5×5(chimney) and 7×5(chimney).
- Multiple character sizes can be freely combined. However, there is a limit on the total number of vertical dots.

Total vertical dots limit

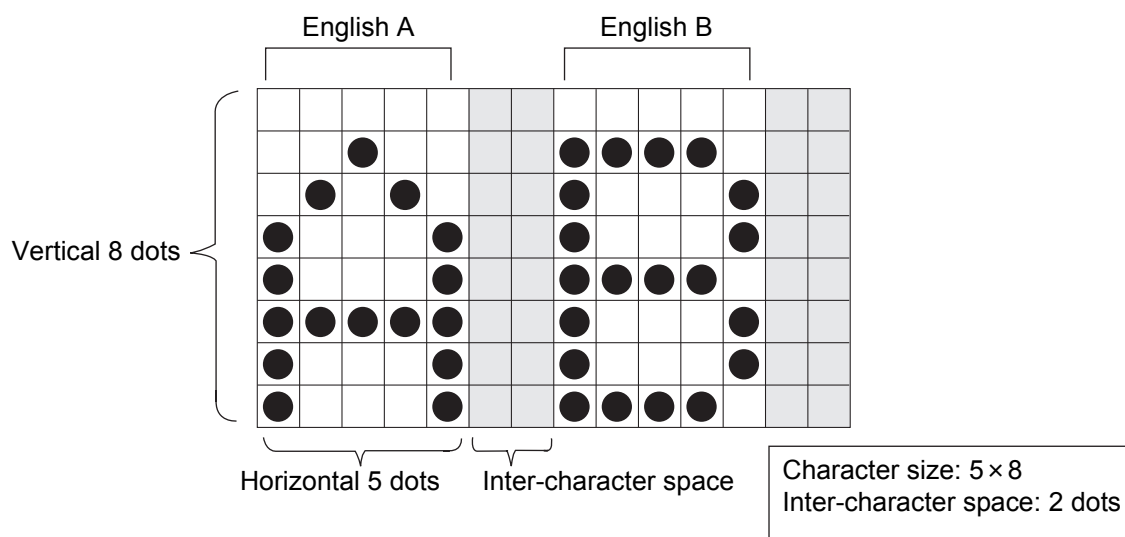
Model type	Total vertical dots
UX-H	16 dots

Character sizes having 8 or less vertical dots are calculated as 8 dots.

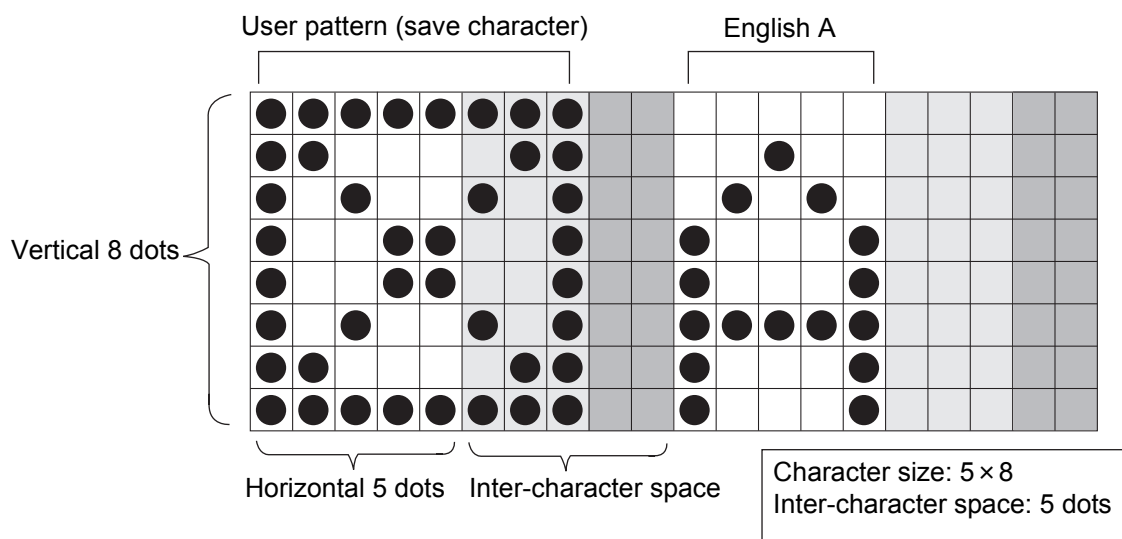
- Chimney characters consist of characters which can be written vertically.



- ④ Inter-character space
- Sets the spacing between character and character.



Relationship between character and inter-character space



Relationship between user pattern and inter-character space

- For user pattern, patterns can be designed at the inter-character space part.
- For special characters also, a pattern can be designed at the inter-character space. Set an inter-character space the same as the values shown in the table below.
- When "Print quality first" is enabled, minimum "Inter-character space" will be "1".

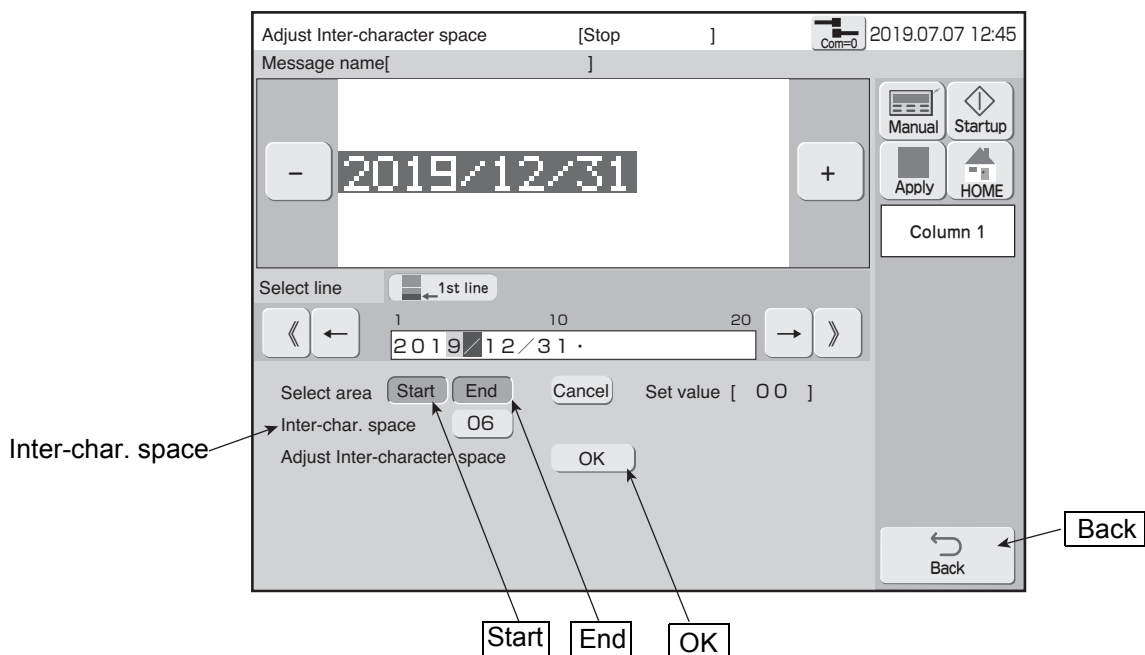
Inter-character space minimum set value

Character kind	5×5	5×8 (5×7)	9×8 (9×7)	7×10	10×12	11×11	12×16
Chinese character	-	-	-	-	-	0	4
Kana	-	0	-	0	2	-	4
Dedicated character	-	1	-	1	-	-	-
Arabic numeric	0	2	0	0	0	-	2
Arabic letter	-	2	-	-	0	-	2

Character size inter-character space

Character size (horizontal × vertical)	① Number of horizontal dots of character	② Inter-character space which can be input by user pattern creation	Maximum inter-character size which can be set
4×5	4	4	28
5×5	5	3	27
5×8(5×7)	5	3	27
9×8(9×7)	9	7	23
7×10	7	1	25
10×12	10	6	22
11×11	11	5	21
12×16	12	4	20
5×3 chimney	5	0	27
5×5 chimney	5	0	27
7×5 chimney	7	0	25

- Inter-character space can be set in character units using the **Adjustment char. cond.**.
Select the character column where the inter-character space will be set using **Start** and **End**, input the inter-character space set value, and press the **OK**.



- When the inter-character space of the print format screen changed, the value set in character units changes to the same value.
- The display value of the inter-character space of the print format screen displays the inter-character space of the first character.

4.7.5 Print a bar code

(1) Kinds of bar codes

- Different kinds of bar codes can be set for each print item.

Kinds of bar codes

Bar code	Kinds of characters which can be input	Remarks
Code 39	0 to 9 A to Z Space + - (minus) / . (period) \$ %	
ITF	0 to 99	Input of two-digit numbers
NW-7	0 to 9 + - (minus) / . (period) : (colon) \$	
EAN-13	0 to 9	
EAN-13 Add-On 5	0 to 9	
EAN-8	0 to 9	
UPC-A	0 to 9	
UPC-E	0 to 9	
Code 128 (code set B)	0 to 9 A to Z a to z Space FNC1 Code B Code C Symbols	Input numeric of two-digit numbers
Code 128 (code set C)	0 to 9 FNC1 Code B Code C	
Data matrix (DM)	0 to 9 A to Z a to z Space FNC1 Symbols	
Micro QR	Same as above.	
DotCode	Same as above.	
GS1 DataBar	0 to 9	Limited, Omnidirectional and Stacked

- When a bar code of the same kind was set at adjacent print items, only the continuous series bar code is assumed. However, fixed length bar codes such as EAN-13, EAN-8, UPC-A, UPC-E, EAN-13 Add-On 5 and GS1 DataBar become independent bar codes.
- For multiple settings, provide a print item for which a bar code is not set between the print items with a bar code set.
- Up to a maximum of 4 DM (Data Matrix), code 128, Micro QR and GS1 DataBar can be set respectively. Micro QR can be collectively set up to 4.
- DotCode can be set up to 2.
- Since the number of horizontal dots is uniquely determined for bar codes, an inter-character space cannot be set.
- A bar code can be set even for print items with a calendar and count set. However, when calendar substitution, zero suppression, or an invalid character is set, for the bar code setting, the relevant character is deleted.
- Neither the calendar nor the count set can be set to the country code.
- When code set C of code 128 was set when the English alphabet is set for the count upper limit, the relevant character is deleted.
- Since start and stop codes are automatically generated, input as print description is unnecessary.
- A barcode with the identification numbers can be set in 1 line or 2 lines setting.
When in 2 lines setting, the barcode with the identification numbers can only be set to either upper or lower line.
If the barcode is set to the upper line, it cannot be set to the lower line or vice versa.
- For GS1 DataBar, neither the calendar nor the count can be set to 1st, 2nd and 3rd digit.
- When "Print quality first" is enabled, Barcode and 2d-code are NOT available.

See the Technical Manual "9. APPENDIX" for details.

(2) Examples

① Example of EAN-13

Sets barcode type.

Sets "Disable" or character size of identification code when EAN-13, EAN-8, UPC-A, UPC-E, EAN-13 Add-On 5 or GS1 DataBar is selected.
(When character size is 12 x 16.)

Sets an EAN Prefix code when EAN-13, EAN-8 or EAN-13 Add-On 5 is selected (the EAN Prefix code can also be set at the Edit message screen (See "4.14.3 Set various printing".)).

② Example of Data Matrix

Sets barcode type.

Displays maximum input digits for DM (Data Matrix)

Selectable matrix size depends on the character size.

③ Example of ITF

Sets barcode type.

Sets the wide bar/space width when ITF is selected.

4.8 Set the print format (Free layout)

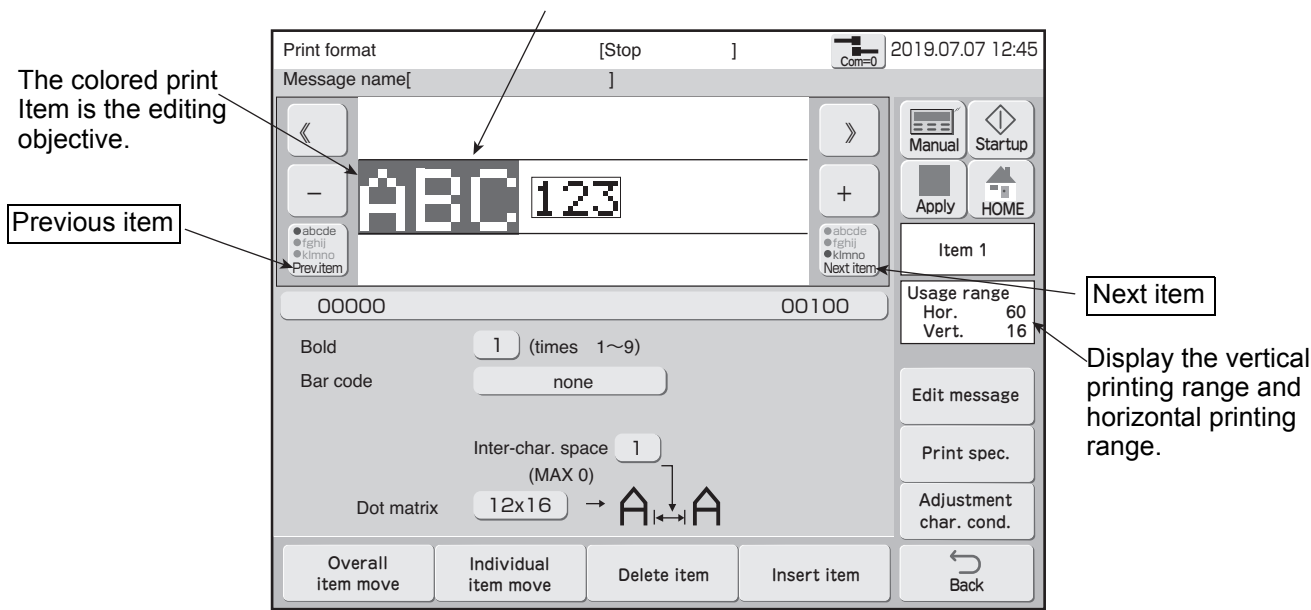
4.8.1 Select the print items to be edited

- Set and change the print format including the character size for the print item to be edited.
- There are 2 methods of selecting the print item to be edited.

Methods of selecting the print item to be edited

Type	Features
Directly touching the print item	The touched item becomes the editing objective.
Previous item, next item	The previous item or the next item becomes the editing objective.

The editing objective can be changed by directly touching a print item.



4.8.2 Set the print items to be edited

(1) Function

- Set the "horizontal (X) coordinate" and "vertical (Y) coordinate" of the selected item at the bottom-left.
- The total number of vertical dots and limit of the coordinate are as follows;

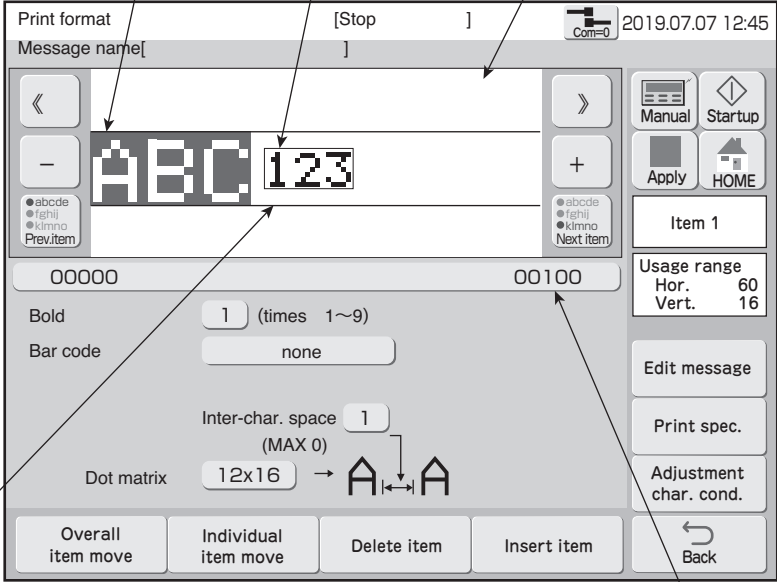
Total vertical dots and limit of coordinate

Model type	Total vertical dots	Horizontal (X) coordinate	Vertical (Y) coordinate
UX-H	16 dots	0 to 31999	0 to 15

Horizontal (X) coord. = 0
Vertical (Y) coord. = 0

Horizontal (X) coord. = 42
Vertical (Y) coord. = 4

Display the upper limit line of the vertical dots.
(The line position is changed by the display magnification)



Display the lower limit line of the vertical dots.
(The line position is changed by the display magnification)

Display the Horizontal (X) coordinate

(2) Set the coordinate of one print item

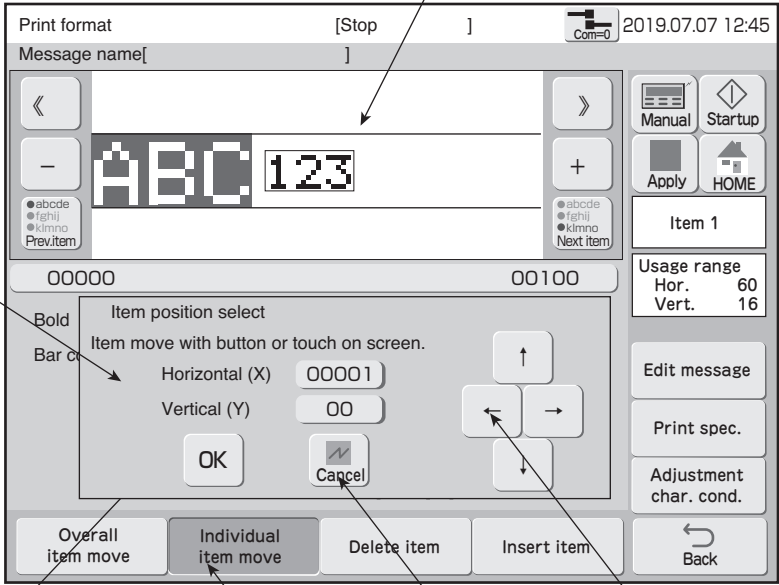
- Set and change the "horizontal (X) coordinate" and "vertical (Y) coordinate" of the print item to be edited, at the bottom-left.
- Press **[Individual item move]**, and set the coordinate of the print item to be edited.
- There are 3 methods of setting the horizontal (X) coordinate and vertical (Y) coordinate.
- The horizontal (X) coordinate and vertical (Y) coordinate cannot be set over the range of [Table of (1)].

Methods of setting the horizontal (X) coordinate and vertical (Y) coordinate

Type	Features
Directly touching the screen	The print item to be edited can be moved by directly touching the screen within the limit of vertical dots.
Set the value of the coordinate	The print item to be edited can be moved by setting the value of the "horizontal (X) coordinate" and "vertical (Y) coordinate" on the screen.
Set the position by cursor button	The print item to be edited can be moved dot by dot one by means of     buttons.

The editing objective can be moved by directly touching the screen.

The horizontal (X) coordinate and vertical (Y) coordinate of editing objective can be moved by directly touching the screen.



Press the **[OK]** if the print item has been moved.

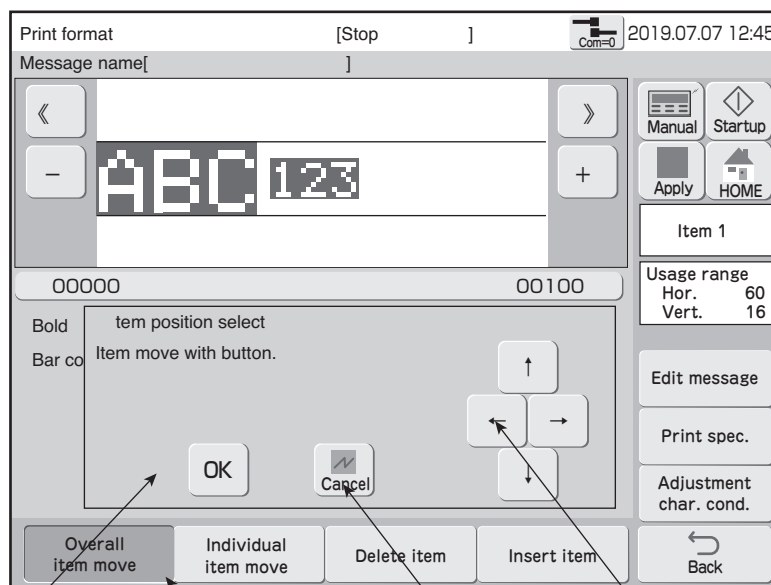
Press the **[Cancel]** if canceling the moving the coord..

Individual item move

Cursor button

(3) Set the coordinate of all print items

- All print items can be moved collectively.
- Press **Overall item move**, and move all items.
- All print items can be moved dot by dot by means of     buttons.
- The horizontal (X) coordinate and vertical (Y) coordinate cannot be set over the range of Table of item (1).



Press the **OK** if the print item has been moved.

Overall item move

Press the **Cancel** if canceling the moving the coord.

Cursor button

4.8.3 Add and delete print items

(1) Function

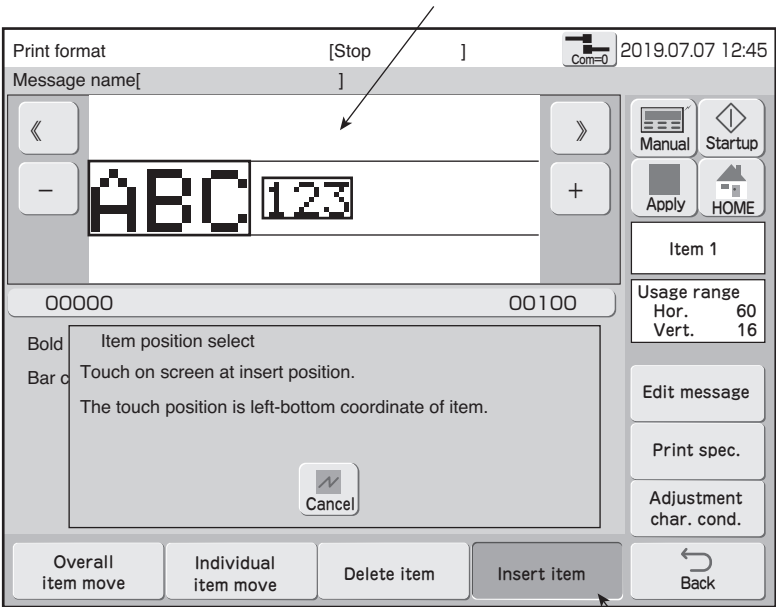
- Add or delete print items one by one.

Methods of adding and deleting print items

Type	Features
Insert item	Add the print item at the selected position.
Delete item	Delete the print item to be edited.

- Press **Insert item** and touch the print layout screen, then the print item (character size is 5 × 7 or 5 × 8) will be created.
When the print item is created, if the horizontal (X) coordinate or vertical (Y) coordinate is over the limit of range of the coordinate, the horizontal (X) coordinate or vertical (Y) coordinate will be adjusted automatically.
- When there is only one print item, if **Delete item** is pressed and the print item is deleted, a print item (character size is 5 × 7 or 5 × 8) will be created at the horizontal (X) coordinate = 0, vertical (Y) coordinate = 0.

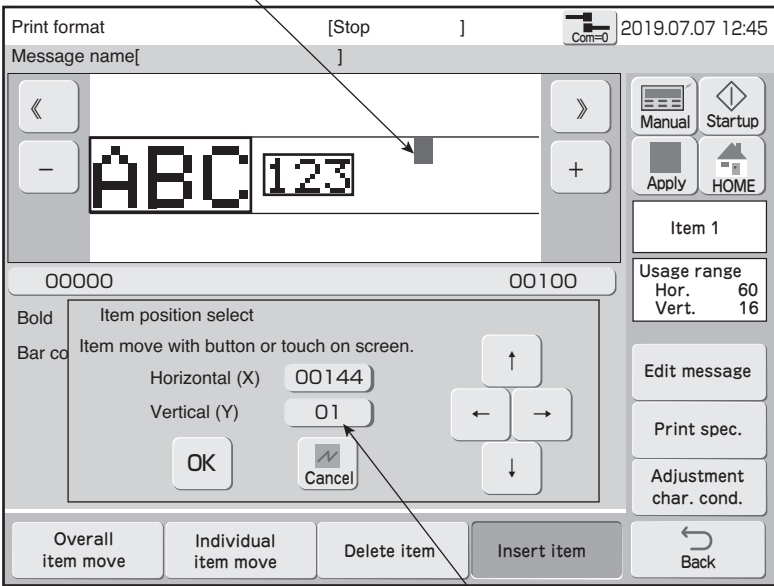
A print item can be created by directly touching the print layout screen.



A print item (character size is 5 × 7 or 5 × 8) will be created.



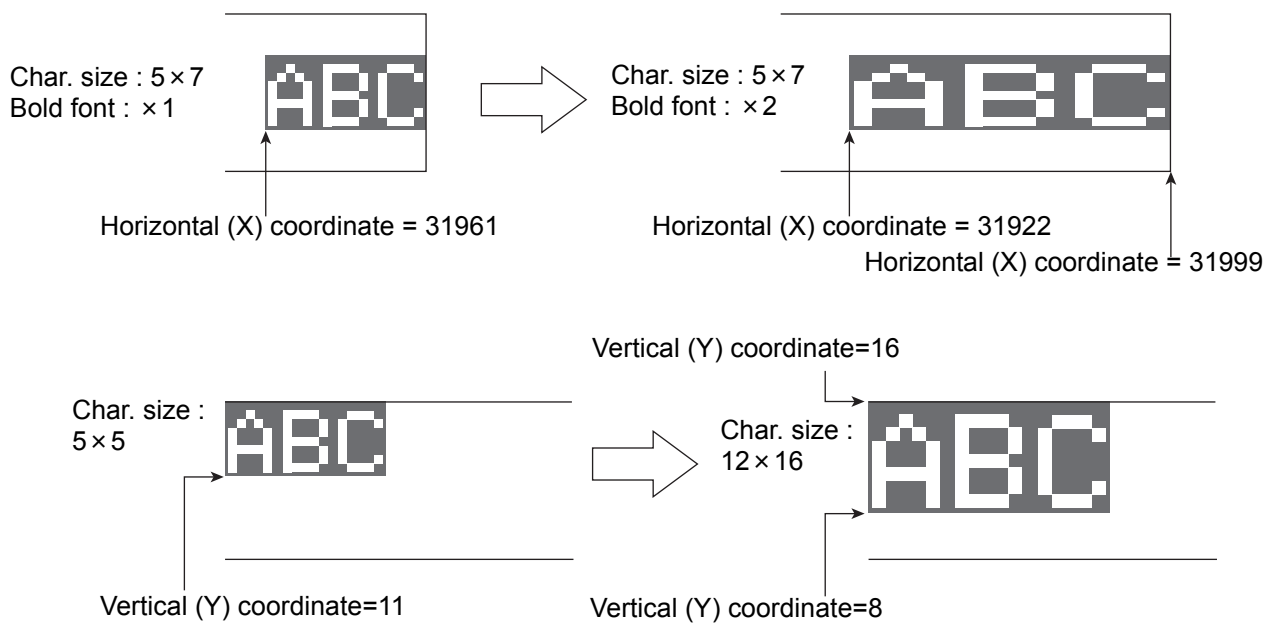
Insert item



The method of setting the horizontal (X) coordinate and vertical (Y) coordinate is as same as "Individual item move".

4.8.4 Set dot matrix, inter-character space, and other parameters

- Set the dot matrix, inter-character space, bold font, and bar code.
- The methods of setting is the same as fixed layout. See "4.7.4 Set dot matrix, inter-character space, and other parameters" for details.
- The bottom-left coordinate of the selected print item is first fixed and adjust as follows:
When changing the dot matrix, inter-character space, etc..., the top-right coordinate of the print item can be over the limit of coordinate.
Should the top-right of the print item go beyond the limit of horizontal (X) coordinate, it will be automatically adjusted to horizontal (X) coordinate = 31999.
Should the top-right of the print item go beyond limit of vertical (Y) coordinate, it will be automatically adjusted to vertical (Y) coordinate = 15.



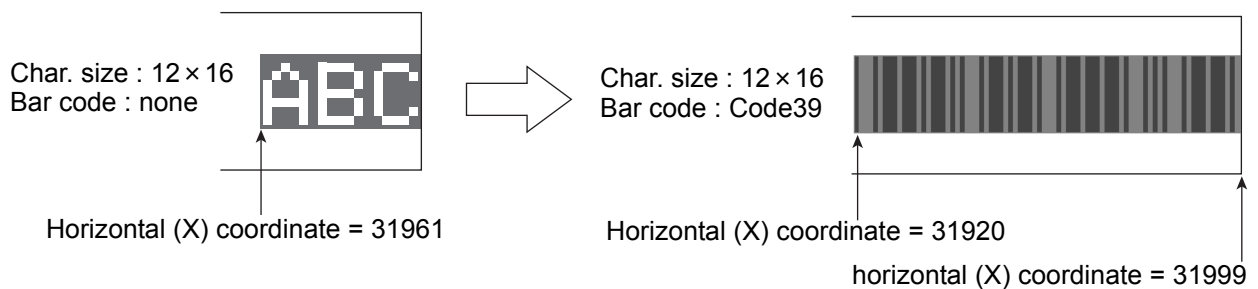
4.8.5 Print a bar code

- Set bar code for free layout.
- Basic method of the setting bar code is the same as the method for the fixed layout. See the "4.7.5 Print a bar code" for details.
- There are some restrictions for setting the bar code for free layout. The restrictions are described as follows;
- When "Print quality first" is enabled, Barcode is NOT available.

The restrictions of the setting bar code for free layout

Bar code	Restriction
Data Matrix (DM)	Up to maximum of 1 DM, per one message.
Micro QR	QR code and Micro QR can be collectively set up to 1, per one message.
GS1 DataBar	Up to maximum of 1 GS1 DataBar, per one message.
Code 128	Up to maximum of 1 Code 128, per one message.
In case that a bar code of the same kind was Set at adjacent print items	Two of the bar code are not handled a series of barcode. Each bar code is handled as an independent bar codes.

- When changing the bar code, the top-right coordinate of the print item can go over the limit of coordinate. Should the top-right of the print item go beyond the limit of horizontal (X) coordinate, it will be automatically adjusted to horizontal (X) coordinate=31999.



4.8.6 Cautions for printing overlapped some print items

- If multiple numbers of print items are overlapped, the printing may be aborted depending on the number of print items or characters because it requires time to create the print data while printing is in process. In this case, the alarm "Free Layout Printing Disabled" occurs.
- Please first conduct print test at the free layout setting, and if the alarm "Free Layout Printing Disabled" occurs, delete some print items which are overlapped, or decrease the value of ink drop use setting.

4.9 Print characters

Lines and Message length (Characters)

Model type	1 line	2 lines
UX-H	1,000 char. × 1 line	500 char. × 2 lines

- There are no limits on the number of digits which can be input at one print item.

4.9.1 Print fixed characters

(1) Function

- Inputs the characters to be printed.
- The kinds of characters which can be input are defined for each character size. Moreover, there is an appropriate inter-character space depending on the kind of character. (See "4.7.4 Set dot matrix, inter-character space, and other parameters".)
- There is an "Insert" mode and an "Overwrite" mode when inputting.
- "Duplicate" by selecting the start and end of the character string and "Paste" at an arbitrary position are possible.
- The characters which can be set as dedicated characters are shown below.
For dedicated characters, single words are handled collectively at input and deletion.

Ex. Dedicated character (Simple Chinese)

制造	生产	批号	供货		合格	年	月	日	
					期至	时			
品名	名称	食用	饮用		期限	日期			
使用	有效	保质			个	元	g	有限	公司

- Inputting an Arabic character will move the cursor to the left.
- Use the Insert mode to input Arabic characters.
- Alphanumeric characters and symbols can be input on the Edit screen (New HMI).
If the characters other than Alphanumeric characters or symbols are needed, use Edit message screen (Previous HMI).
- When "Print quality first" is enabled, only alphanumeric characters are available for input.

(2) Operation

(a) Previous HMI

The Edit message screen is displayed. (See "3.3.1 Operating Scheme".)

1 Touch the print item which is to be the objective of message editing.

Prev. Item and **Next Item** may also be pressed.

The print description of the selected print item is displayed at the print description edit area.

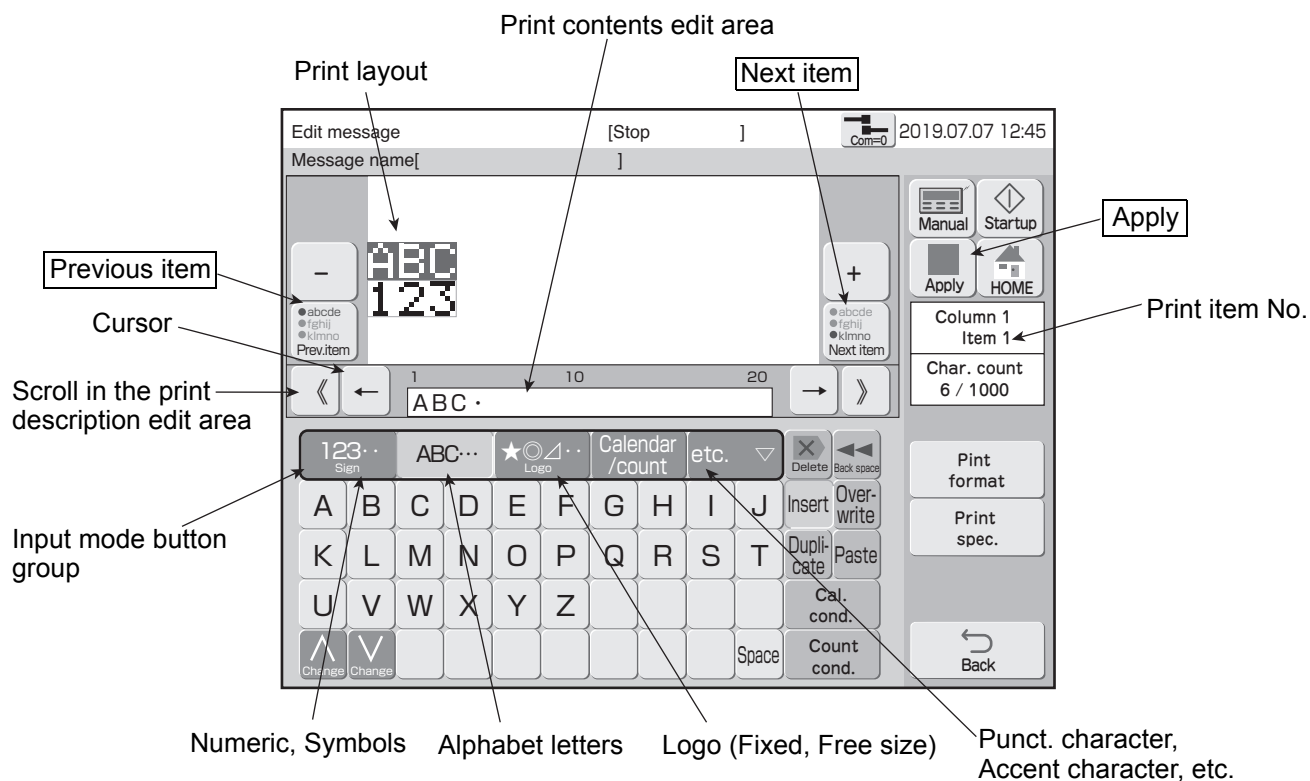
2 Touch the position at which input in the print description edit area is to begin and move the cursor.

The cursor button may also be pressed.

The cursor is displayed at the selected position.

3 Press the input mode button.

The kind of keyboard is changed.



4 Input the characters and press the **Apply** button.

The character string of the print contents edit area is displayed at the print layout.

(b) New HMI

1 Press menu EDIT.

The Edit screen will be displayed.

2 Touch the print item which is to be the objective of message editing.

The print description of the selected print item is displayed at the print description edit area.

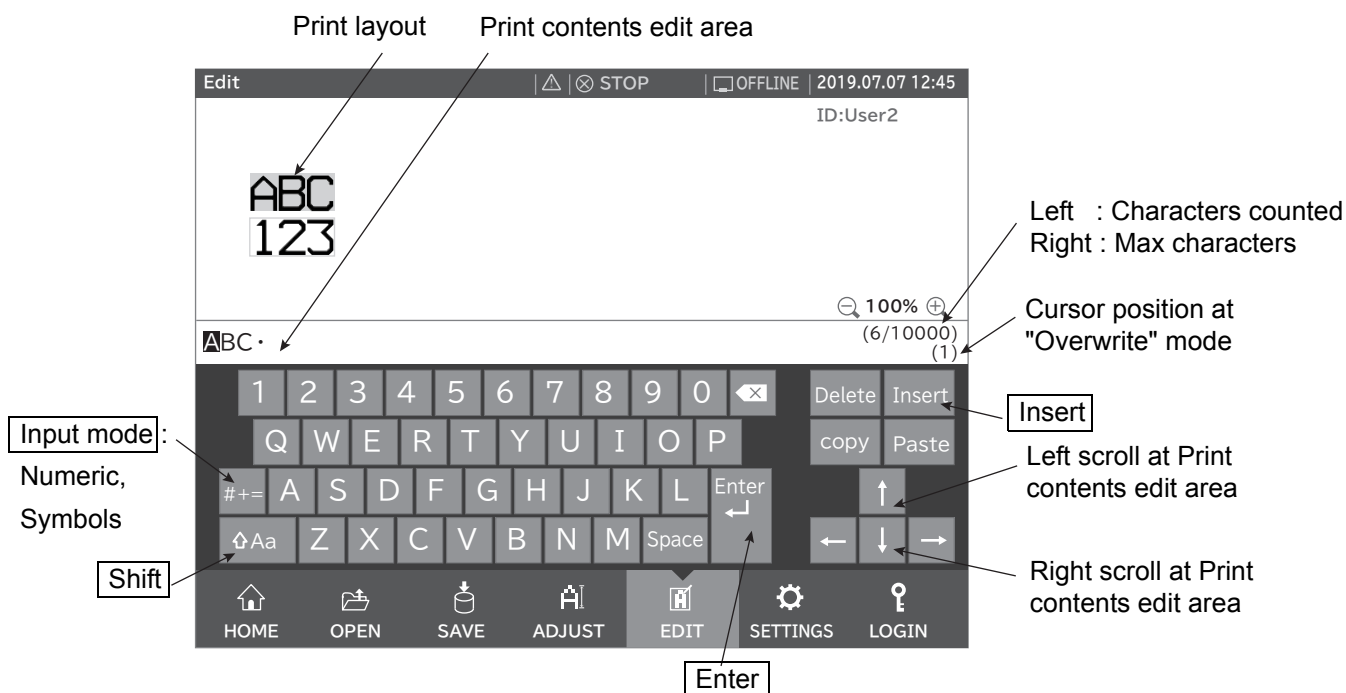
3 Touch the position at which input in the print description edit area is to begin and move the cursor.

The cursor button   or the scroll button   may also be pressed.

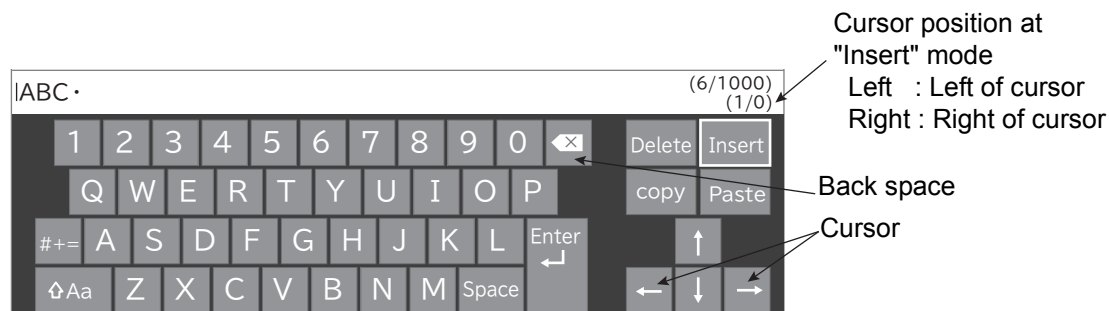
The cursor is displayed at the selected position

4 Press the input mode button or the shift button.

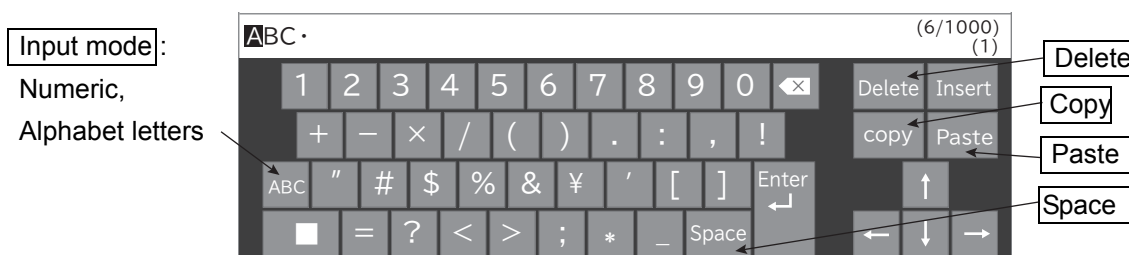
The kind of keyboard is changed



By pressing Insert, the screen shown below will be displayed.



By pressing Input mode, the screen shown below will be displayed.



5 Input the characters and press the Enter .

The character string of the print contents edit area is displayed at the print layout.

4.10 Use the calendar function

4.10.1 Print calendar characters

(1) Calendar characters

- When set as calendar characters, the year, month, day, hour, minute, and second are matched to the current date/time and printed each time the calendar time is changed.
- When "clock stop" is selected for calendar time control at the Date/time setup screen, the inputted calendar time is referenced and printed.

Kinds of calendar characters

Item	Displays in "Print layout area"	Number of digits which can be input	Substitution rules	Reference
Year	Y	4	Yes	
Month	M	3	Yes	
Day	D	3	Yes	
Hour	h	2	Yes	
Minute	m	2	Yes	
Second	s	2	-	
Total number of days	T	3	-	4.10.1(2)
Week No.	W	3	Yes	4.10.1(4)
Day of week	7	3	Yes	4.10.1(5)
Shift code	E	10	-	4.11
Time count	F	3	-	4.12
JAN, FEB, ---- (Month 3 digits)	-	3	-	4.10.1(3)

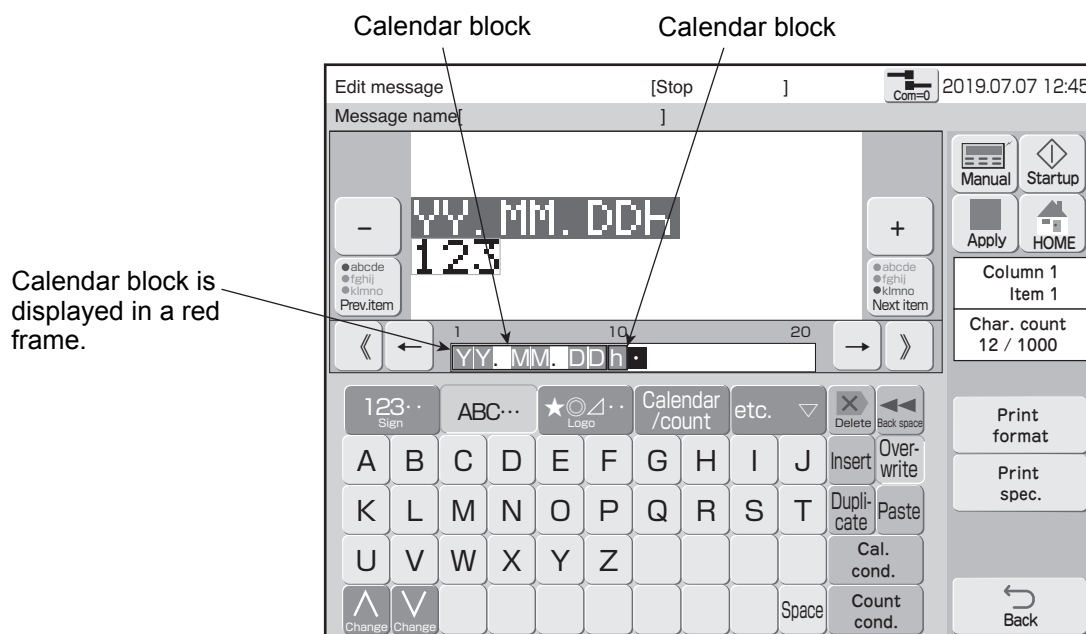
- A group of calendar characters is called "Calendar block".

Maximum Calendar block count

Model type	Maximum Calendar block count
UX-H	8

(Maximum digit : 20 digits/Calendar block)

- Calendar conditions are set for each calendar block.
- Calendar characters cannot be input at the same calendar block as shift code characters and time count characters.



(2) Total number of days

- Use when setting up to print the total number of days from the first of January.
- When set as total date character, it is linked to the calendar time and the print description is changed to match the current total number of days.
- Leap year and ordinary year are shown in the table below.
- There is no zero-suppression function.

Total number of days

	1/1	1/2	----	2/28	2/29	3/1	----	12/31
Ordinary year	1	2	----	59	-	60	----	365
Leap year	1	2	----	59	60	61	----	366

(3) Alphabet month 3 digits (JAN, FEB, ----)

- Use when printing the month in alphabet 3 digits representation.
- For printing in other than English, it is defined by the month 3 digits "Substitution rules" screen.
- When month 3 digits are corresponded to new substitution rules, the English representations shown below are set beforehand.

English representation

JAN	FEB	MAR	APR	MAY	JUN
JUL	AUG	SEP	OCT	NOV	DEC

(4) Week number

- Use week number when printing the week of the year.
- One week begins on Monday and ends on Sunday.
- The week including January 4 of that year shall be week one. Making the week including the first Thursday of the year week one is also another way of saying it.
- The beginning of a year not included in week one becomes the last week of the previous year.

Example of counting week number of end and beginning of year

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Week No.
December	21	22	23	24	25	26	27	52
	28	29	30	31				53
January					1	2	3	53
	4	5	6	7	8	9	10	1
	11	12	13	14	15	16	17	2

(5) Day of the week

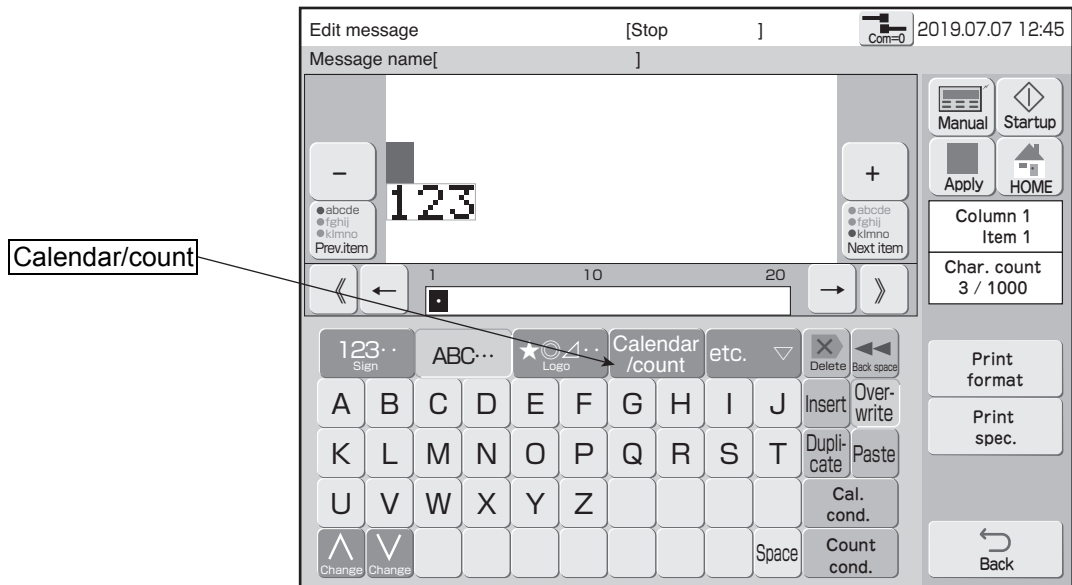
- Use when representing and printing the day of the week using a 1 digit character.
- One week begins on Monday and ends on Sunday.
- When the calendar characters "Day of week" are input, the numbers 1 to 7 are printed. When printing other representations, set the appropriate substitution rules.

Calendar "Day of the week" printing example

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Standard	1	2	3	4	5	6	7
Substitution rule set by inputting 1 digit.	A	B	C	D	E	F	G
Substitution rule set by inputting 3 digits	MON	TUE	WED	THU	FRI	SAT	SUN

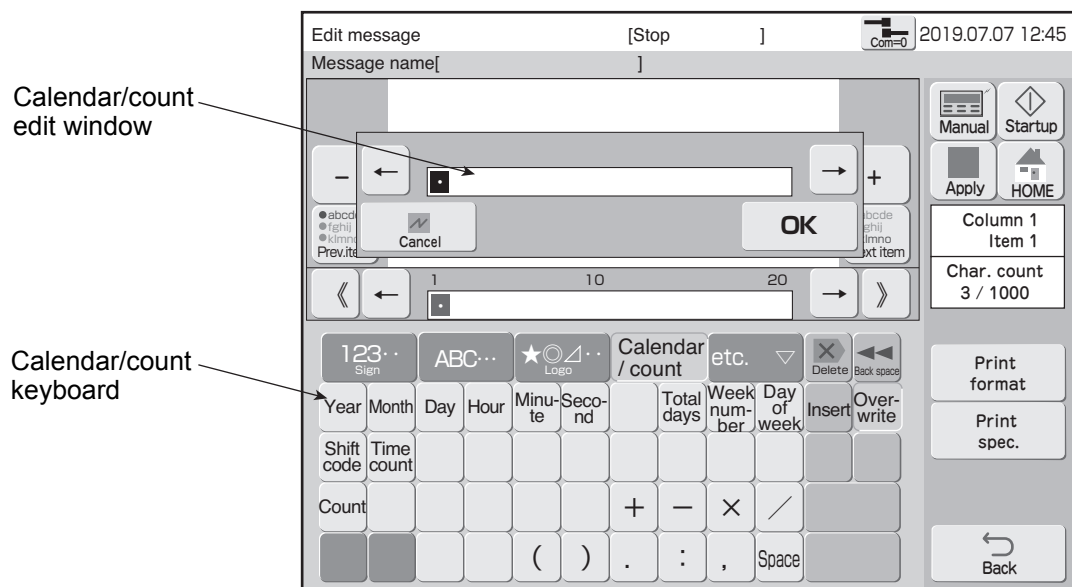
(6) Operation

The Edit message screen is displayed.



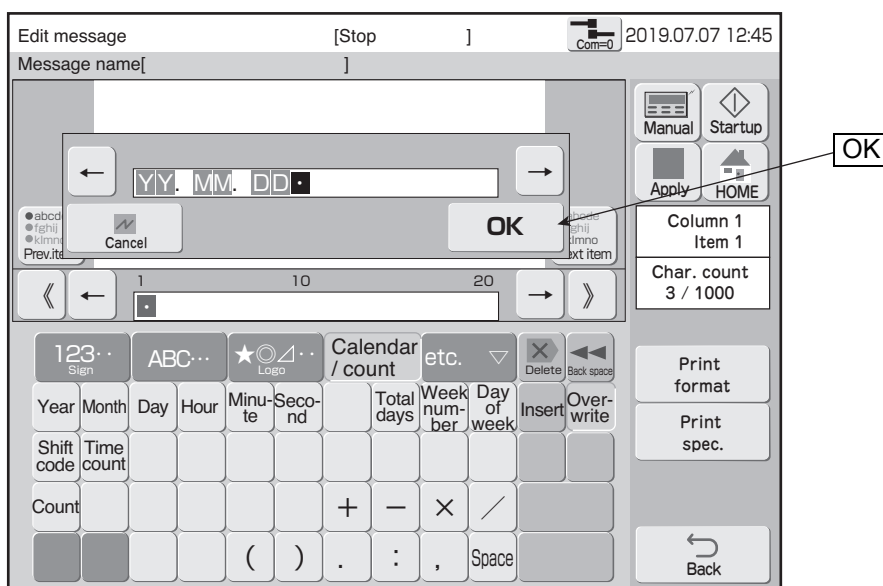
1 Press the **Calendar/count**.

The display changes to the calendar/count keyboard and the calendar/count edit window is displayed.



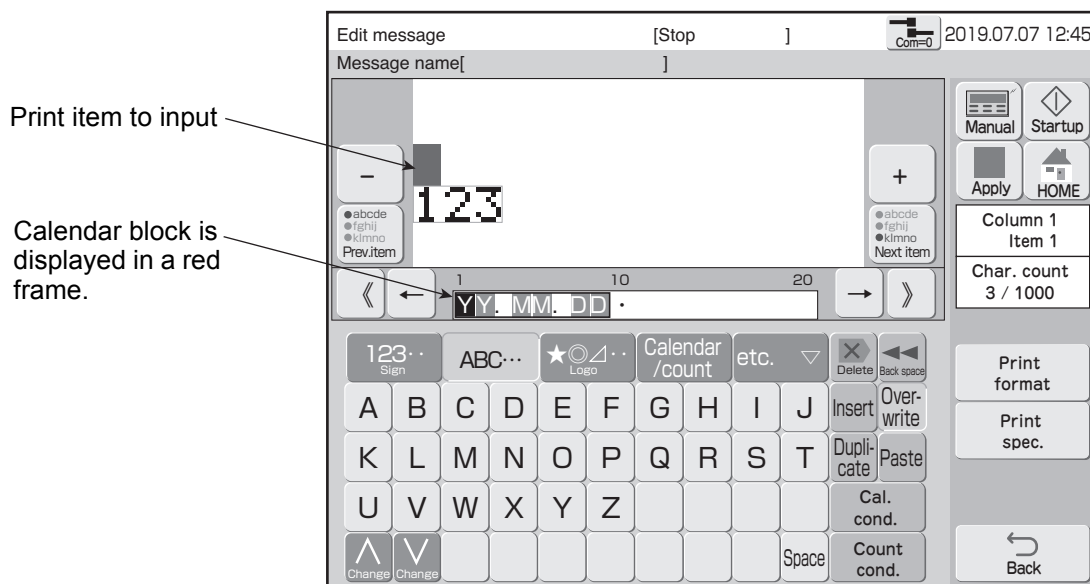
2 Input the calendar characters.

The calendar characters are displayed on the calendar/count edit window.



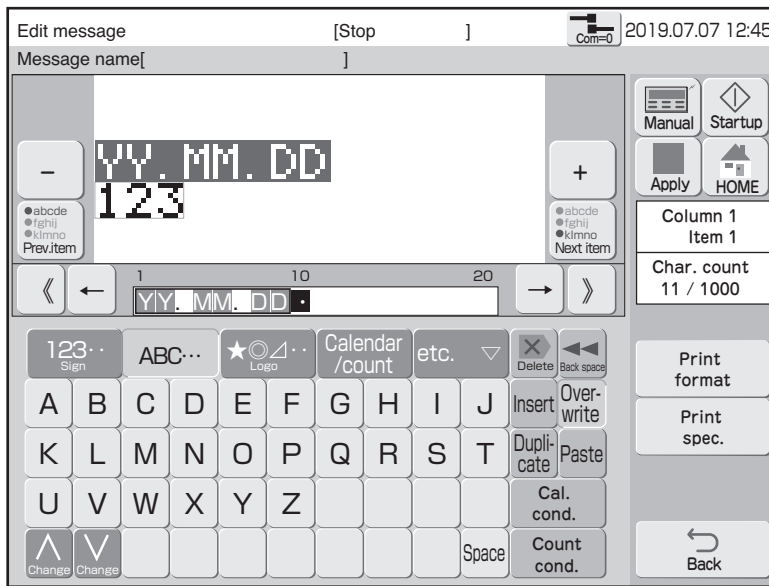
3 Press **OK** .

The calendar characters are displayed at the print description edit area.



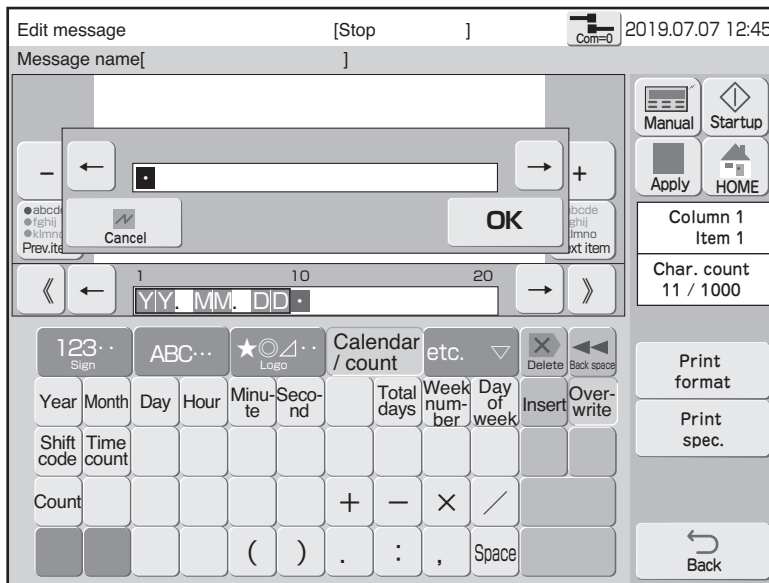
4 Touch the print item to input.

The character string of the print contents edit area is displayed at the print layout.



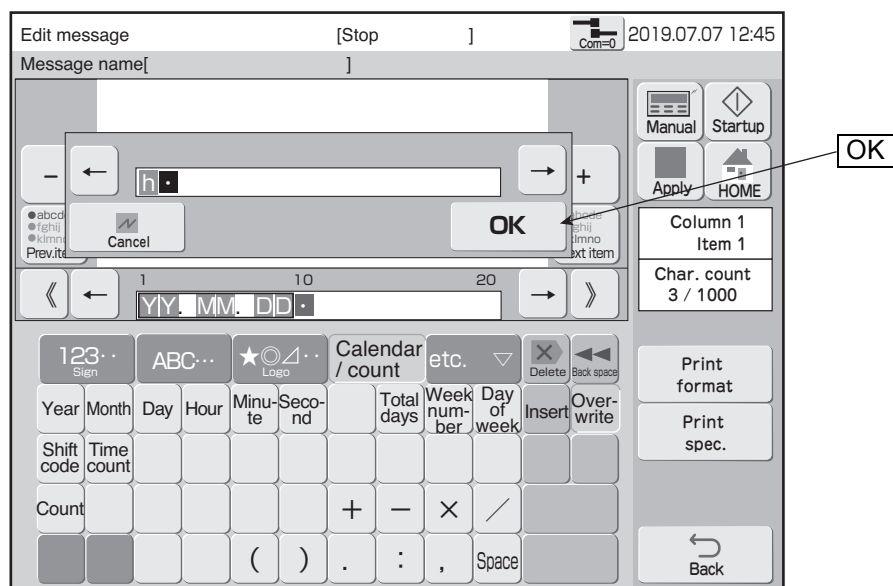
5 To input another calendar, move the cursor to the input position and press **Calendar/count**.

The display changes to the calendar/count keyboard and the calendar/count edit window is displayed.



6 Input the calendar characters.

The calendar characters are displayed in the calendar/count edit window.

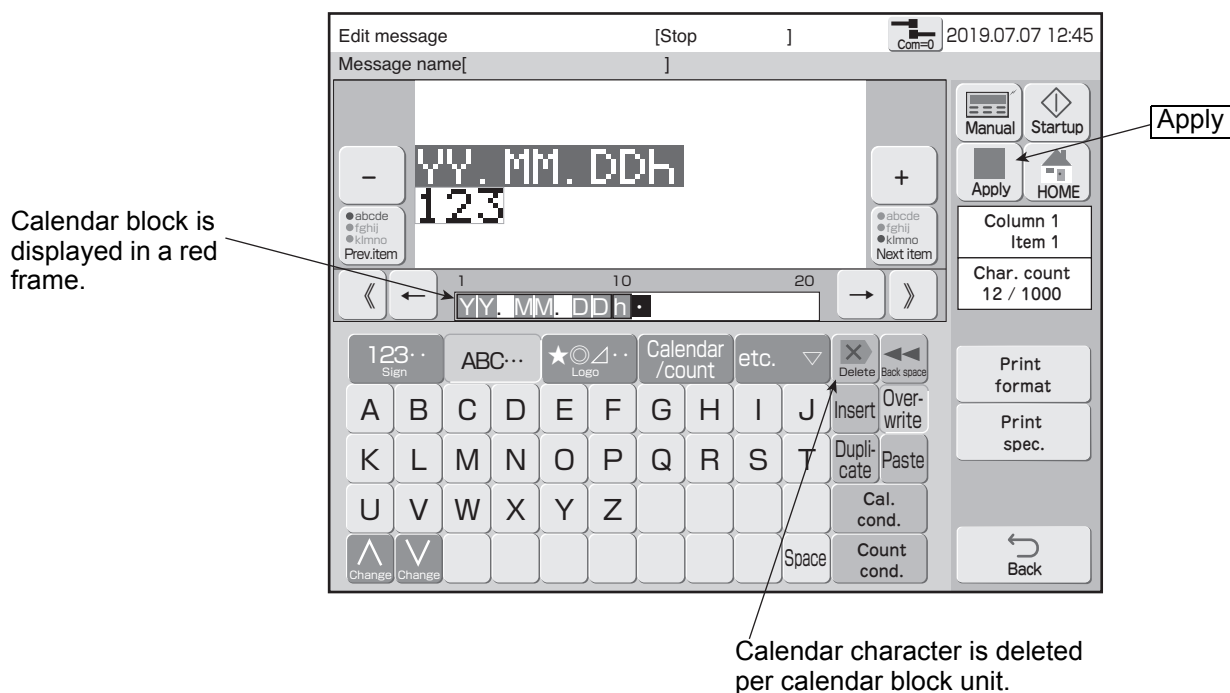


7 Press **OK**.

The calendar characters are displayed at the print description edit area.

8 Press **Apply**.

The character string of the print contents edit area is displayed at the print layout.



4.10.2 Print future date (offset)

(1) Offset function

- Sets the date/time by adding the offset value and the date/time of the internal clock.
- The offset values which can be set are shown in the table below.

	Offset value setting range
Year	0 to 99
Month	0 to 99
Day	0 to 1999
Hour	-23 to 99
Minute	-59 to 99

- There are two offset methods for future date calculations that use Month and/or Year variables, "Offset from yesterday" and "From today".
(See "4.14.3 Set various printing" for "Offset from yesterday" and "From today" setting switching.)

<Example of offset in month units (2020 is a leap year)>

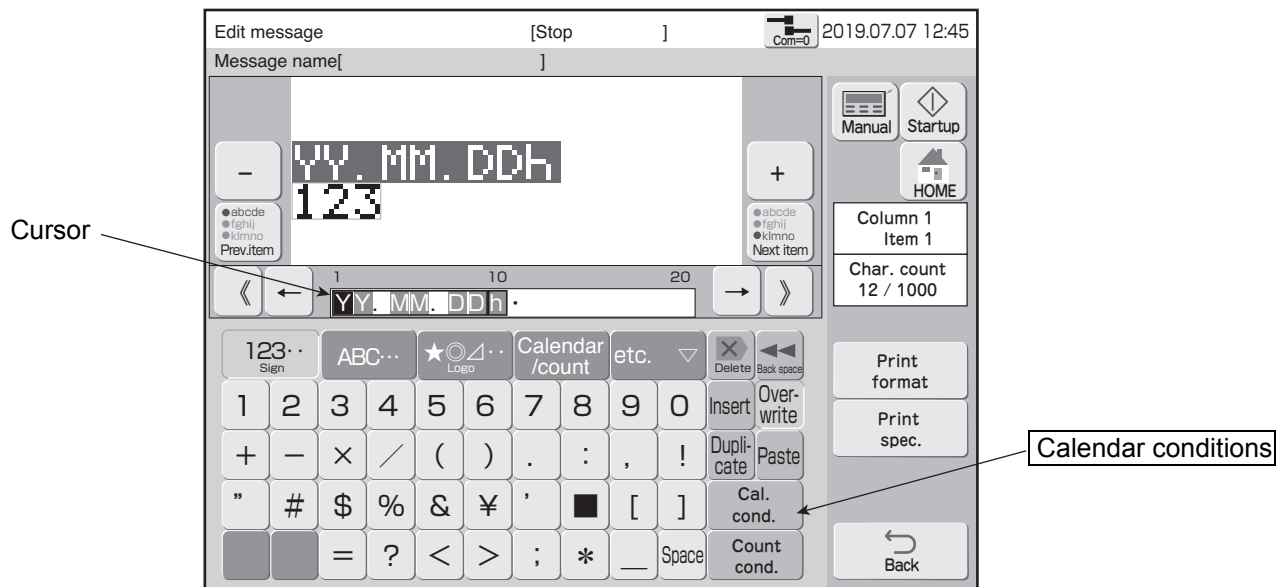
Calendar time	Offset from yesterday		From today	
	Offset value		Offset value	
	1 month	1 month + 1 day	1 month	1 month + 1 day
2019.01.28	2019.02.27	2019.02.28	2019.02.28	2019.03.01
2019.01.29	2019.02.28	2019.02.28	2019.02.28	2019.03.01
2019.01.30	2019.02.28	2019.02.28	2019.02.28	2019.03.01
2019.01.31	2019.02.28	2019.02.28	2019.02.28	2019.03.01
2019.02.01	2019.02.28	2019.03.01	2019.03.01	2019.03.02
2019.02.02	2019.03.01	2019.03.02	2019.03.02	2019.03.03
2019.02.27	2019.03.26	2019.03.27	2019.03.27	2019.03.28
2019.02.28	2019.03.27	2019.03.28	2019.03.28	2019.03.29
2019.03.01	2019.03.31	2019.04.01	2019.04.01	2019.04.02
2020.01.28	2020.02.27	2020.02.28	2020.02.28	2020.02.29
2020.01.29	2020.02.28	2020.02.29	2020.02.29	2020.03.01
2020.01.30	2020.02.29	2020.02.29	2020.02.29	2020.03.01
2020.01.31	2020.02.29	2020.02.29	2020.02.29	2020.03.01
2020.02.01	2020.02.29	2020.03.01	2020.03.01	2020.03.02
2020.02.02	2020.03.01	2020.03.02	2020.03.02	2020.03.03
2020.02.27	2020.03.26	2020.03.27	2020.03.27	2020.03.28
2020.02.28	2020.03.27	2020.03.28	2020.03.28	2020.03.29
2020.02.29	2020.03.28	2020.03.29	2020.03.29	2020.03.30
2020.03.01	2020.03.31	2020.04.01	2020.04.01	2020.04.02

<Example of year offset (2020 is a leap year)>

Calendar time	Offset from yesterday		From today	
	Offset value		Offset value	
	1 year	4 years	1 year	4 years
2020.02.29	2021.02.28	2024.02.28	2021.02.28	2024.02.29

(2) Operation

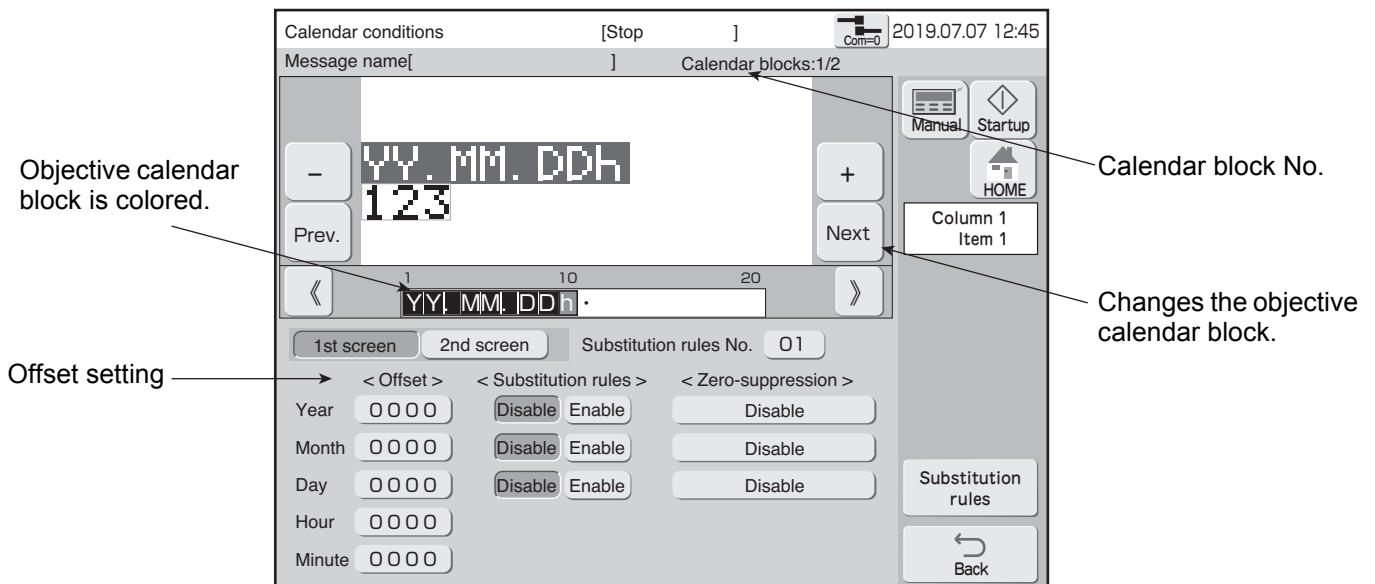
Set offset of 1 month at the "YY.MM.DD" calendar block.
The Edit message screen is displayed.



1 Press **Cal. Cond.**.

The Calendar conditions screen is displayed.

2 Press **Previous** or **Next** and change the objective calendar block.



3 Input "1" at offset "Month".

The character string of the print description edit area is displayed at the print layout.

Offset 1 month

The screenshot shows a 'Calendar conditions' configuration screen. At the top, it displays 'Calendar conditions', '[Stop]', and a timestamp '2019.07.07 12:45'. Below this is a 'Message name[]' field and 'Calendar blocks:1/2'. The main area features a large display showing 'YY.MM.DDh' and '123'. Navigation buttons include 'Prev.', 'Next', and a 'HOME' button. A 'Manual' button is also present. On the right, a 'Column 1 Item 1' label is visible. Below the main display, there are tabs for '1st screen' and '2nd screen', and a 'Substitution rules No. 01' field. The 'Offset' section includes fields for Year (0000), Month (0001), Day (0000), Hour (0000), and Minute (0000). The 'Substitution rules' section has 'Disable' and 'Enable' buttons for each field. The 'Zero-suppression' section has a 'Disable' button. A 'Substitution rules' button and a 'Back' button are located at the bottom right.

	< Offset >	< Substitution rules >	< Zero-suppression >
Year	0000	Disable Enable	Disable
Month	0001	Disable Enable	Disable
Day	0000	Disable Enable	Disable
Hour	0000	Disable Enable	Disable
Minute	0000	Disable Enable	Disable

4.10.3 Print by substituting a different character for the date (substitution rule)

(1) Substitution rule function

- Prints the date and time by replacing it with the selected characters.
- One substitution rule No. is selected for one calendar block.
- The substitution rule No. can be used in common for multiple calendar blocks.

Maximum Substitution rule count

Model type	Maximum Substitution rule count
UX-H	99

- Kana, alphanumeric, and user pattern can be set as substitution characters.
- The substitution character for year is 25 years from the year of the calendar time.

[Note] The substitution character for year omits the substitution character of the previous year each time one year elapses.

At this time, the substitution character after 25 years becomes a space.

Moreover, when the current time "Year" is returned to the past, the substitution character for that year becomes a space.

(2) Zero-suppression function

- Prints by substituting a space for "0" in the high-order digit of the calendar characters.
Also deletes the "0" and prints left-justified.

Example of zero-suppression (time 2009.01.02 03:04)

Set contents	Print result		
	Zero-suppression disabled	Enabled (space)	Enabled (character justification)
YY.MM.DD	09.01.02	□9.□1.□2	9.1.2□□□
HH.MM	03:04	□3:□4	3:4 □□

(□ =space)

(3) Operation

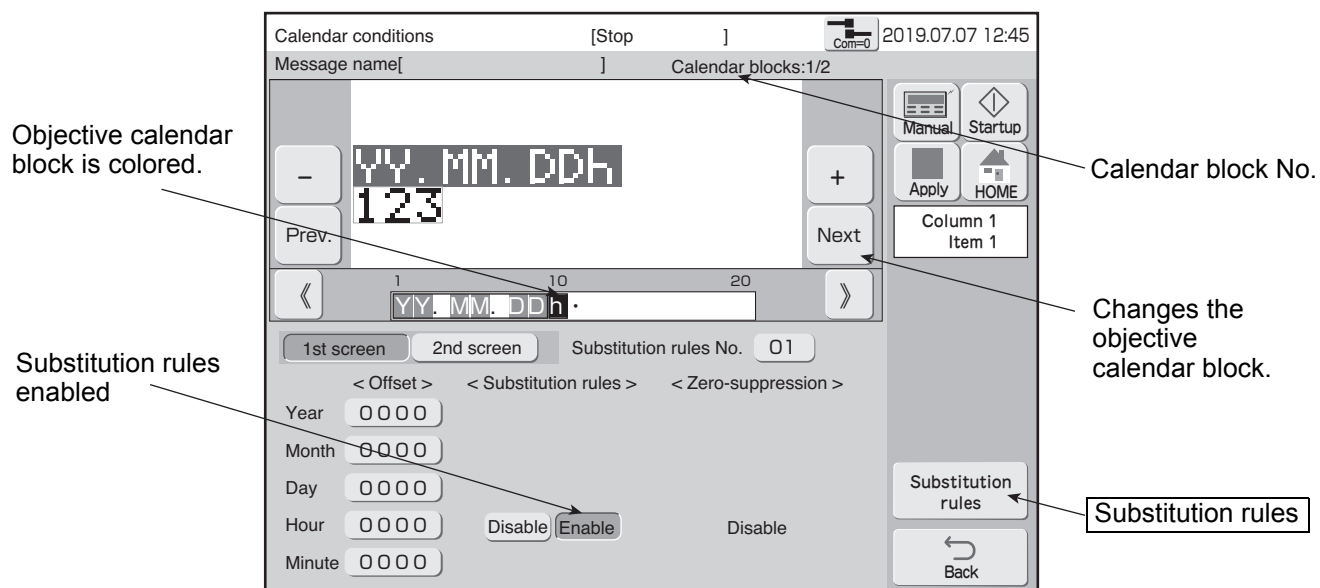
Set the substitution rule for the "Hour" calendar character.
The Edit message screen is displayed.

1 Press **Cal. Cond.**.

The Calendar conditions screen is displayed.

2 Press **Previous** or **Next** and change the objective calendar block.

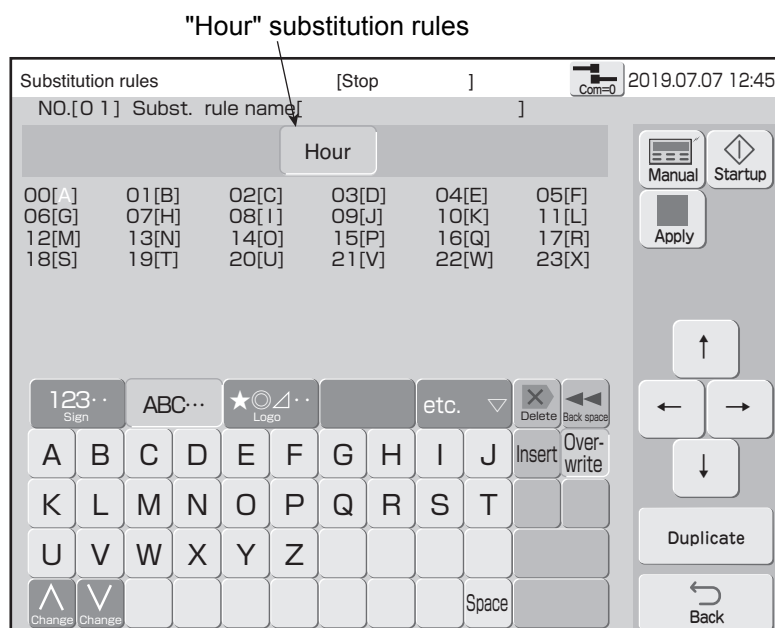
3 Set "Hour" substitution rule to "Enable".



4 Press **Substitution rules**.

The Substitution rules screen is displayed.

5 Input **Hour** the substitution rule for "Hour".



4.11 Print shift code

(1) Overview

- Divides one day into multiple work shifts and prints a different code for each work shift.

(Example) Example of one day divided into 3 work shifts

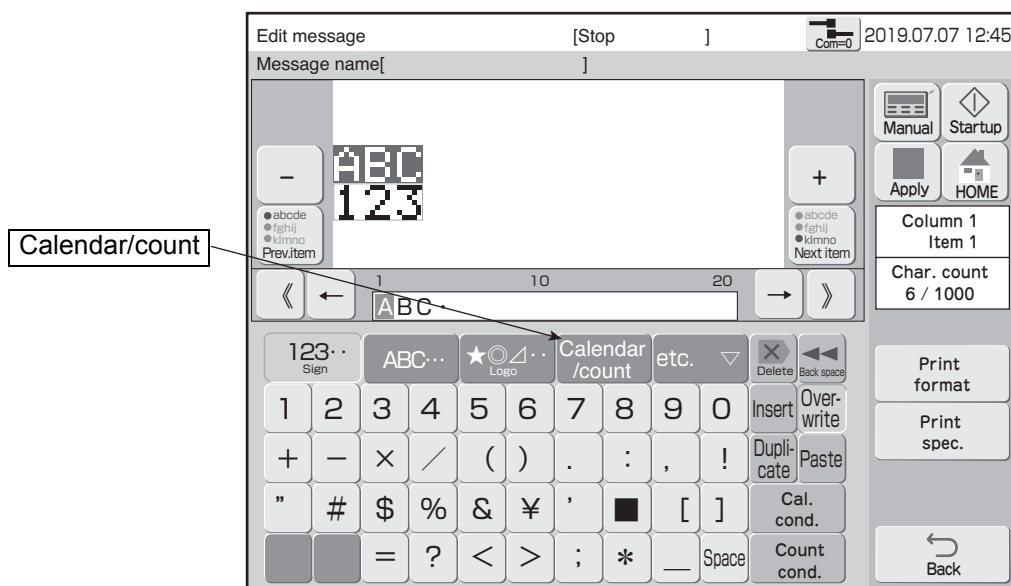
No.	Range	Print result
1	0:30 to 8:14	A1
2	8:15 to 16:44	A2
3	16:45 to 0:29	A3

(See "(2) Operation" for the shift code setup procedure of this example.)

- Shift code character can be set at only one place in one message. Up to a maximum of 10 digits can be input.
- Shift code rules are set at the Shift code setup screen.
- For work shift, the start time is specified in hour/minute units. Up to a maximum of 48 shifts can be specified.
- One shift code rule is held for each message. To input the same shift code at another message, use the "Duplicate" and "Paste" function. Input the shift code rules, memorize them by pressing **Duplicate**, and press **Paste** at the Shift code setup screen of the other message.
- Shift code characters cannot be input at the same calendar block as another calendar.

(2) Operation

The Edit message screen is displayed.

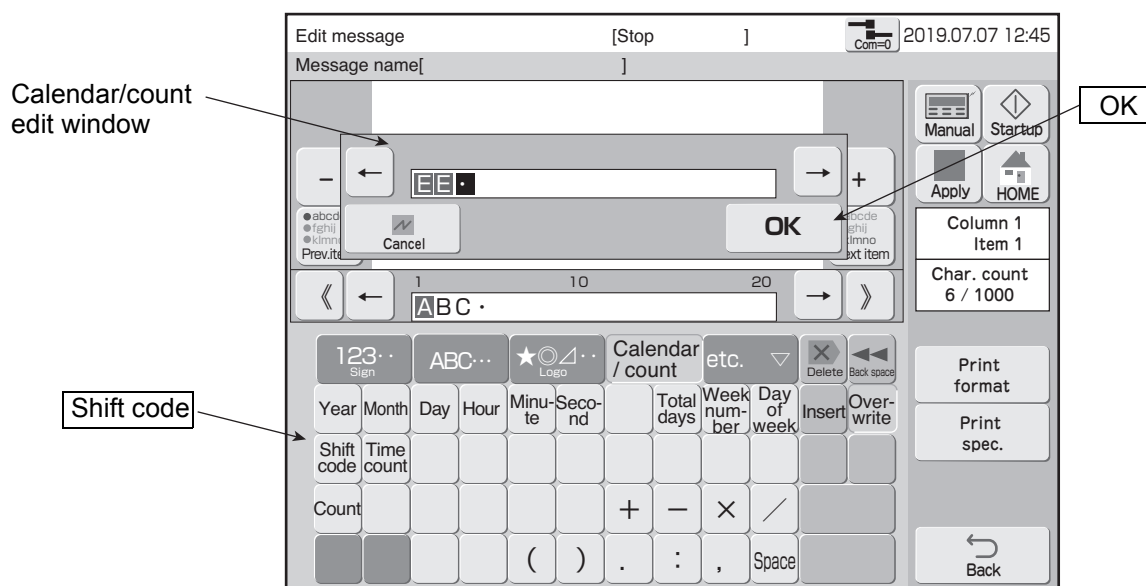


1 Press **Calendar/count**.

The display changes to the calendar/count keyboard and the calendar/count edit window is displayed.

2 Press **Shift code**.

"EE" meaning shift code is displayed at the calendar/count edit window.

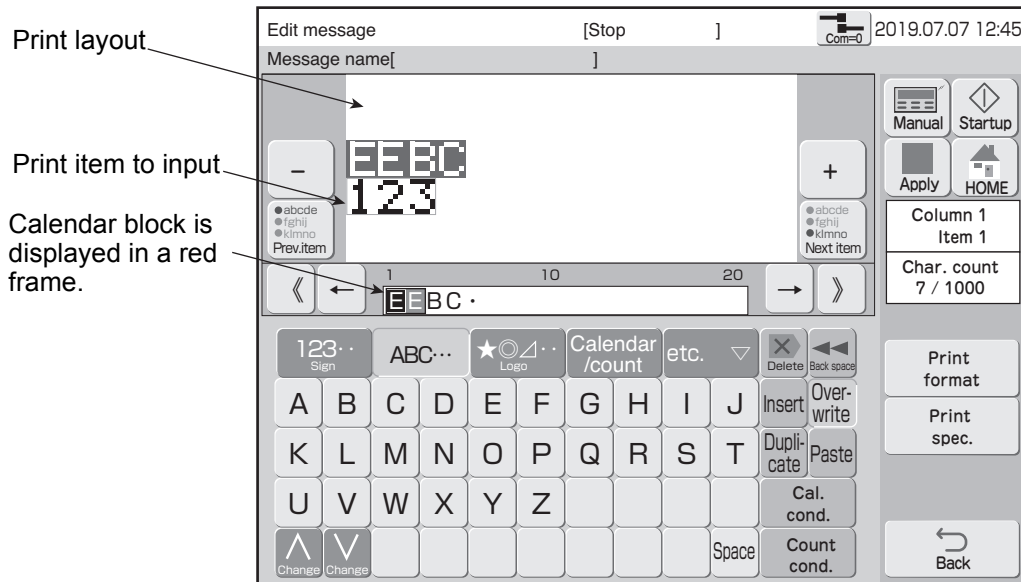


3 Press OK OK .

The calendar characters are displayed in the print contents edit area.

4 Touch the print item to input.

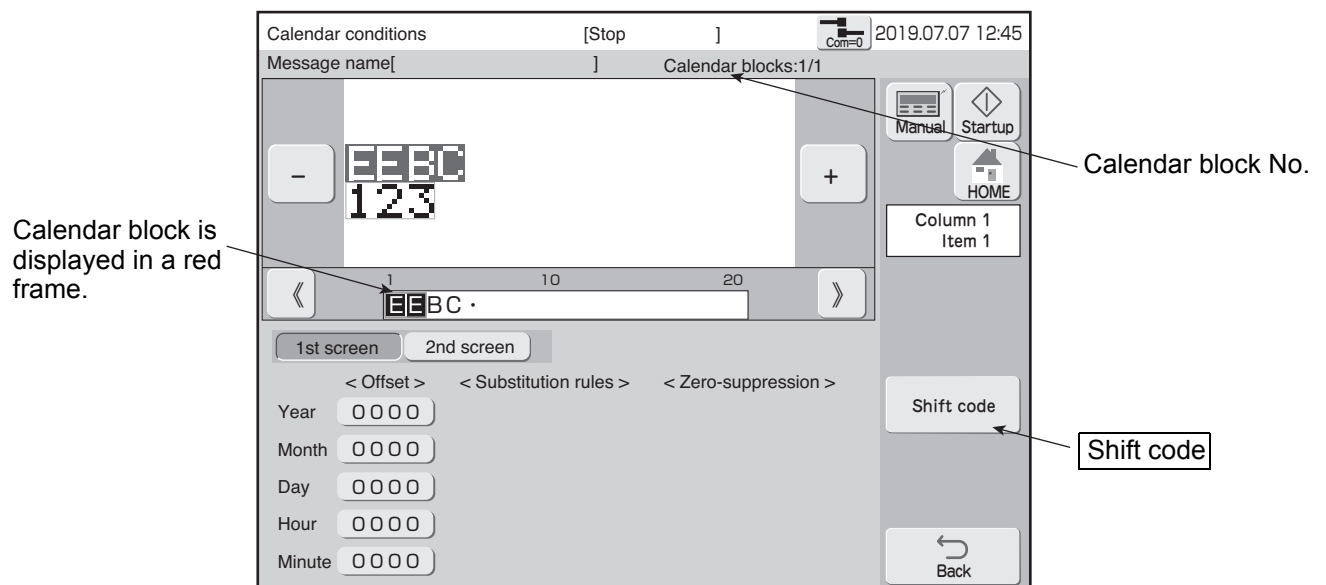
The character string of the print contents edit area is displayed in the print layout.



5 Press Cal. Cond..

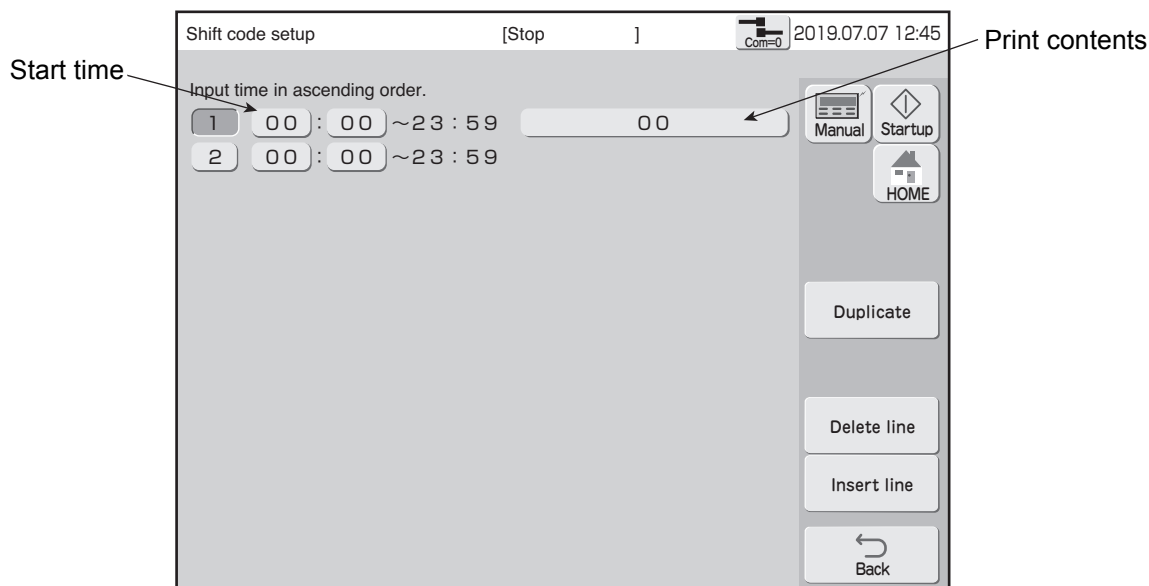
The Calendar conditions screen is displayed.

6 Press Previous or Next and change the objective calendar block.



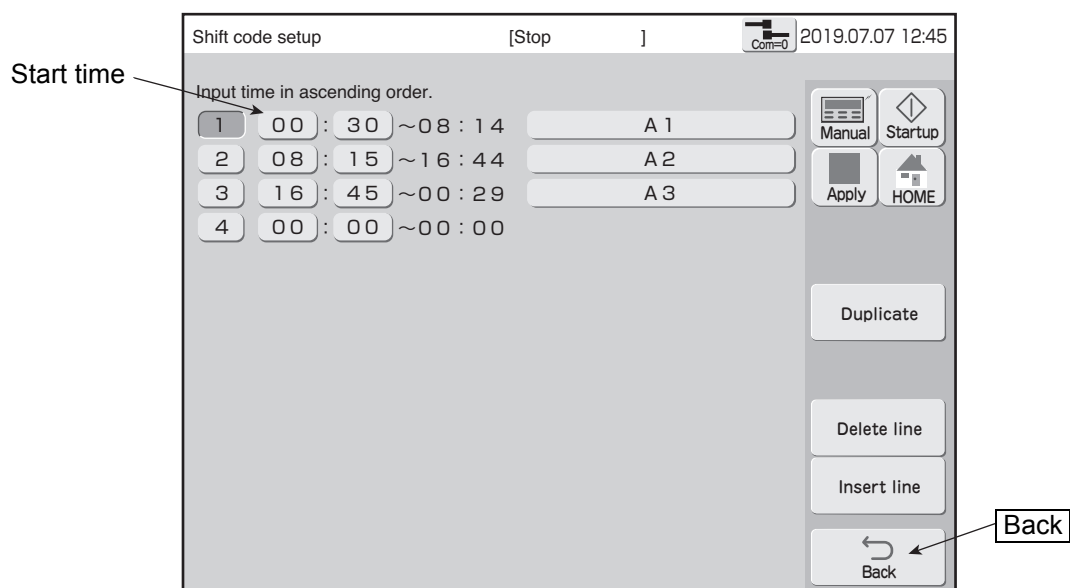
7 Press **Shift code**.

The Shift code setup screen is displayed.
The last line is for addition.



8 Input the start time and print contents for each shift.

When start time is input, the finish time which is 1 line above changes.



When the work shifts exceeded 12 classes, switch using **Prev. Dsp.**  or **Next Dsp.**  .
Insertion or deletion can be performed in line units.

9 Press **Back** .

Returns to the Calendar conditions screen.

4.12 Update the print contents at a fixed interval (Time count)

(1) Overview

- The print contents are updated at a preset update interval (minutes) timing.
- When the time that becomes the standard is set one time a day, the print contents are updated to a preset value when that time arrives.
- The time count characters can be set at only one place in one message. Up to a maximum of 3 digits can be set.
- The time count conditions are set at the Time count conditions screen.
- Range, reset value, reset time, and renewal period can be set as conditions.
- Updating of the print contents is always increment + 1.
- One time count condition is held for each message. To input the same time count condition at another message, use the "Duplicate" and "Paste" functions. Input the time count conditions, memorize them by pressing **[Duplicate]**, and press **[Paste]** at the Time count conditions screen of the other message.
- The time count characters cannot be input at the same count block as another count.

(Example) Range AA to GG, renewal period 30 minutes, reset time 05:00, reset value "AA"

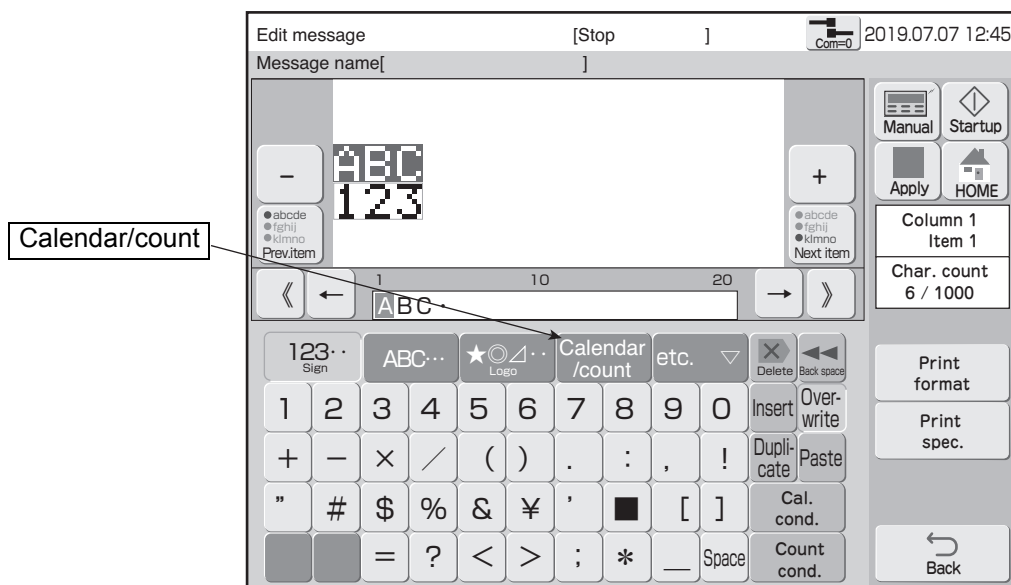
Time and count value

Time	Value	Time	Value	Time	Value	Time	Value	Time	Value	Time	Value
00:00	FD	04:00	GE	08:00	AG	12:00	CA	16:00	DB	20:00	EC
00:30	FE	04:30	GF	08:30	BA	12:30	CB	16:30	DC	20:30	ED
01:00	FF	05:00	AA	09:00	BB	13:00	CC	17:00	DD	21:00	EE
01:30	FG	05:30	AB	09:30	BC	13:30	CD	17:30	DE	21:30	EF
02:00	GA	06:00	AC	10:00	BD	14:00	CE	18:00	DF	22:00	EG
02:30	GB	06:30	AD	10:30	BE	14:30	CF	18:30	DG	22:30	FA
03:00	GC	07:00	AE	11:00	BF	15:00	CG	19:00	EA	23:00	FB
03:30	GD	07:30	AF	11:30	BG	15:30	DA	19:30	EB	23:30	FC

(See "(2) Operation" for the time count conditions setup procedure of this example.)

(2) Operation

The Edit message screen is displayed.

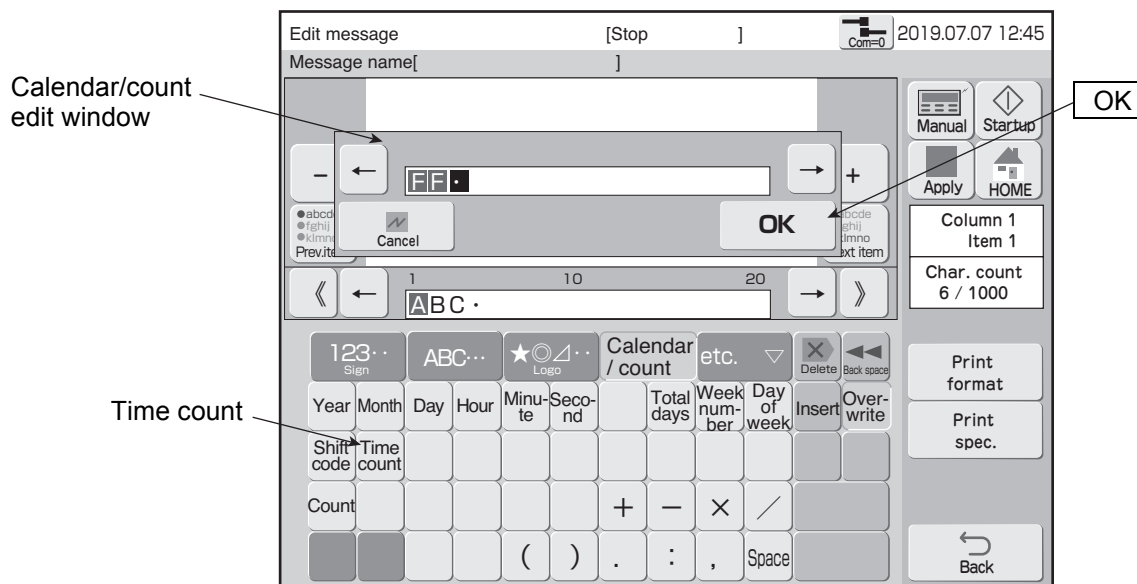


1 Press **Calendar/count**.

The display changes to the calendar/count keyboard and the calendar/count edit window is displayed.

2 Press **Time count**.

"FF" meaning time count is displayed at the calendar/count edit window.

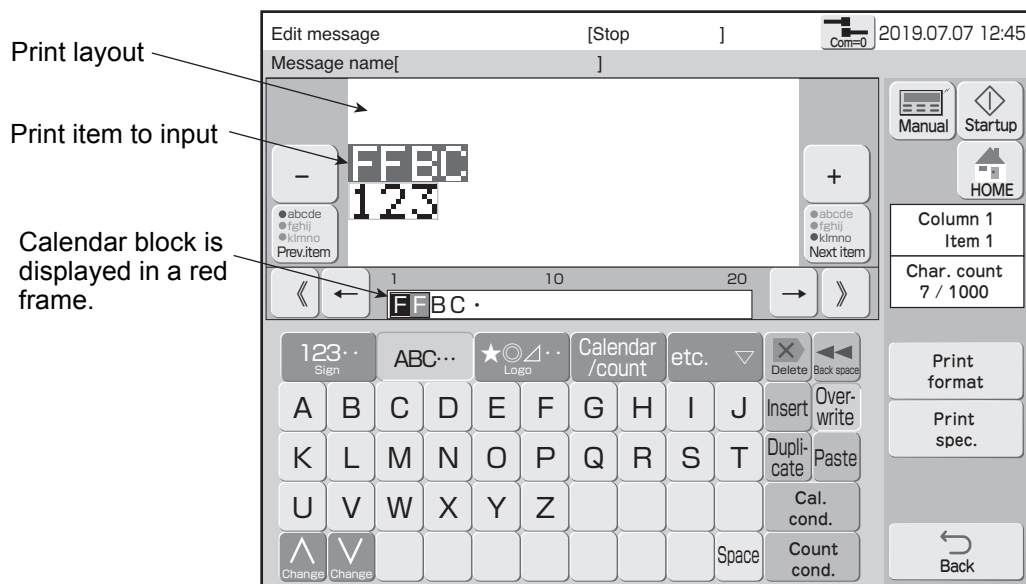


3 Press OK OK.

The calendar characters are displayed at the print contents edit area.

4 Touch the print item to input.

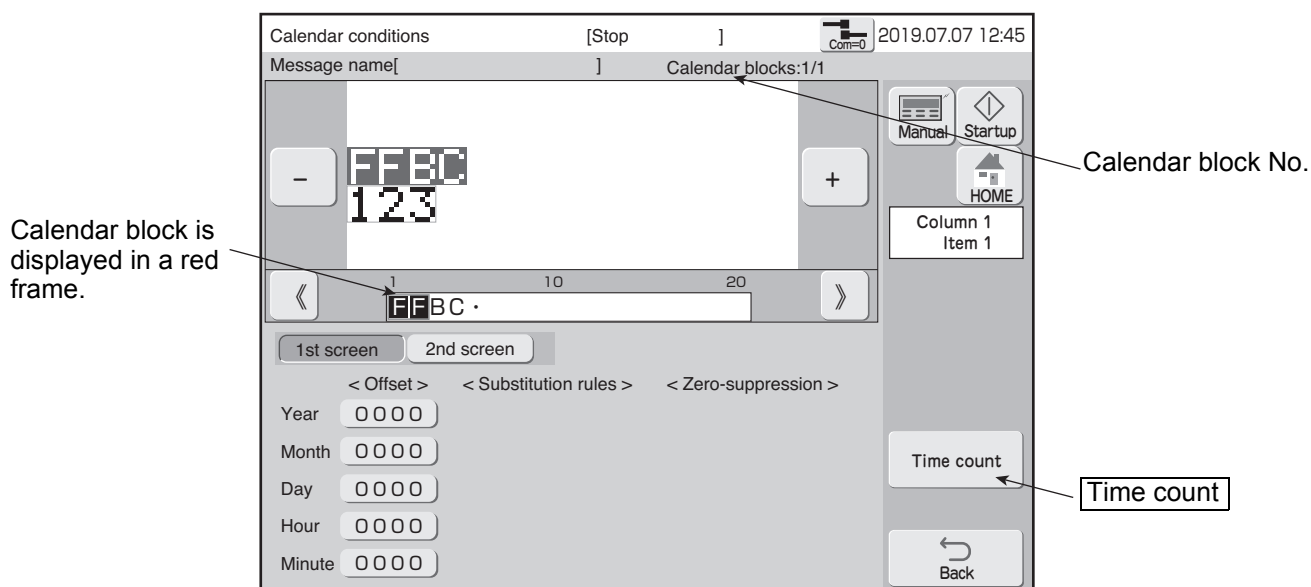
The character string of the print contents edit area is displayed at the print layout.



5 Press Cal. Cond..

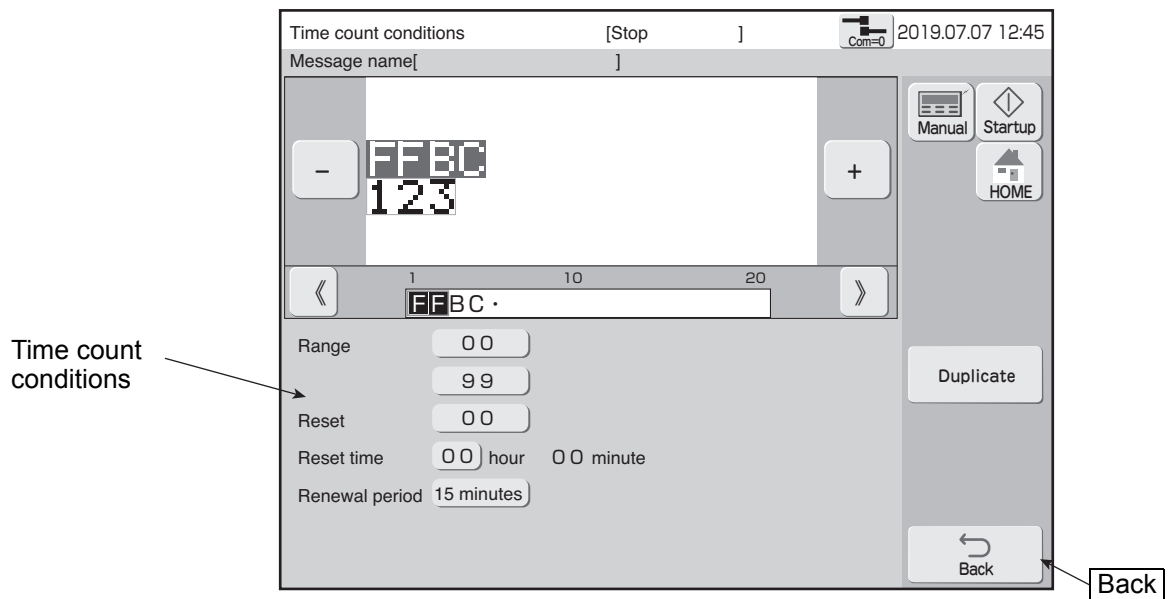
The Calendar conditions screen is displayed.

6 Press Previous or Next and change the objective calendar block.



7 Press Time count.

The Time count conditions screen is displayed.



8 Input the range, reset value, reset time, and renewal period.

9 Press Back .

Returns to the Calendar conditions screen.

4.13 Use the count function

4.13.1 Print count characters

(1) Count characters

- Prints by changing the count value in the specified increments at each printing.

Count conditions screen setup items

Setup item	Contents
Value	Count value to be printed next.
Range (minimum, maximum)	Range of count value. Set for each digit.
Update (In progress)	Number of printings after the last count update.
Update (Units)	Count update printing cycle. Count is updated each printing the number of update units.
Increment	Change value of count value at count update.
Direction	Selects whether counted up or counted down at count update.
Jump (Jump from, Jump to)	After the count value matches the "Jump from:", the next count value is made the "Jump to:".
Reset	When [Count reset] of the Print description screen is pressed, the count value is changed to the specified value.
Count skip	Set capital alphabetical characters, small alphabetical characters or user patterns to skip in count block.
Zero-suppression	Selects whether or not leading 0 except the rightmost end is to be replaced by a space.
Multiplier	The value input here is multiplied by the count value and the result is made the print contents.

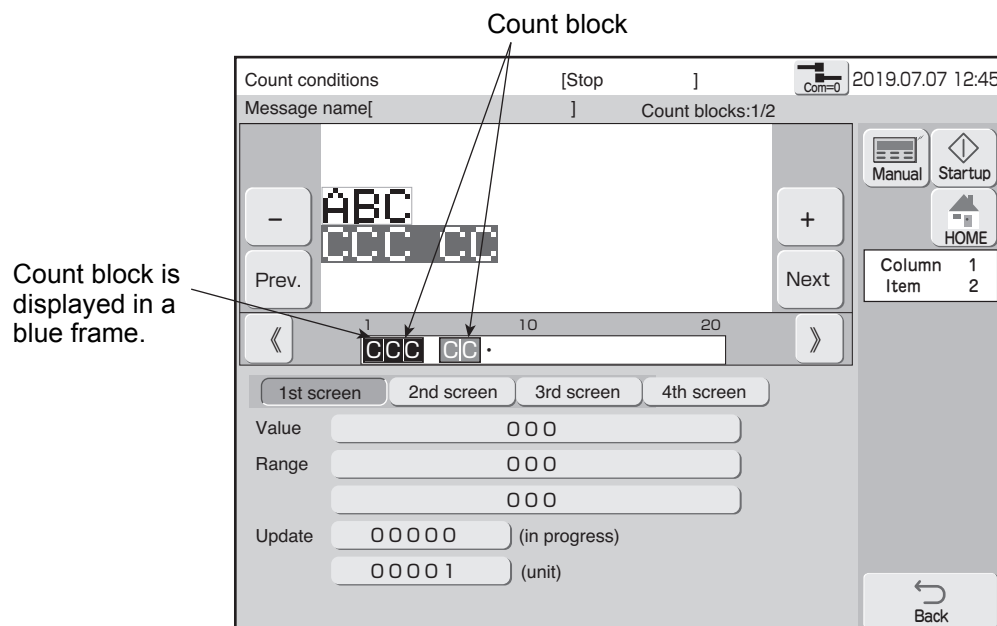
- A series of count characters is called a "Count block".

Maximum Count block count

Model type	Maximum Count block count
UX-H	8

(Maximum digit : 20 digits/count block)

- The count conditions are set for each count block.
- When there are multiple count blocks, the count conditions are set for each count block and each is updated independently. There is no carry from another count block.



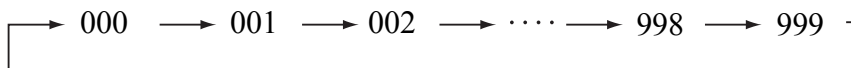
- A range button is not displayed at the Count conditions screen corresponding to a print item with bar code set.
- When a jump digit was set at the right side of a count digit and jump occurred, the count of the digit at the left of the jump digit is updated.

(2) Count conditions setting examples

① Number by +1 from "000" to "999".

Value	0 0 0		
Range	0 0 0		
	9 9 9		
Update	0 0 0 0 0	(in progress)	
	0 0 0 0 1	(unit)	
Increment	01	Direction	up down
Jump	from:	. . .	
	to:	. . .	
Reset	. . .		
Count skip	.	.	.
Zero-suppression	Disable	Enable	
Multiplier			

Count result

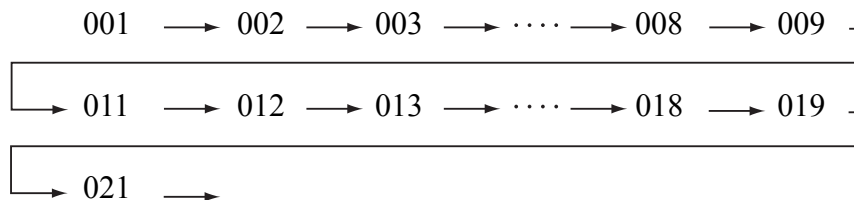


(Note) Range is set for each digit.

When range is set to "001" to "999", since it means setting with "0" excluded at the 1 position, the count result becomes as follows :

Value	0 0 1
Range	0 0 1
	9 9 9

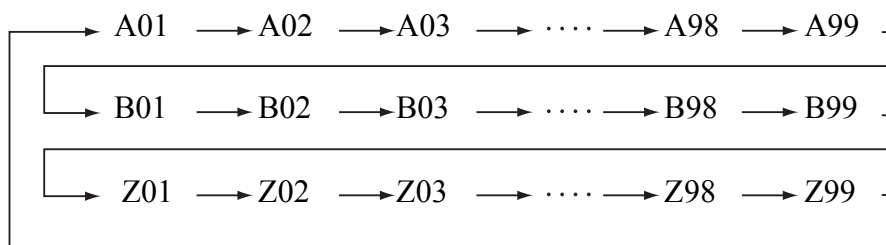
Count result



② Number by +1 from "A01" to "Z99".

Value	A 0 1	
Range	A 0 0	
	Z 9 9	
Update	0 0 0 0 0	(in progress)
	0 0 0 0 1	(unit)
Increment	01	Direction <input checked="" type="button" value="up"/> down
Jump	from:	· 9 9
	to:	· 0 1
Reset	· · ·	
Count skip	· · · · ·	
Zero-suppression	<input checked="" type="button" value="Disable"/> Enable	
Multiplier	· · · · ·	

Count result



(Note) Since the count value skips in increments when an increment is input, always choose a count value for jump setting which is not skipped.

③ Set user pattern as count value

Value

Range

Update (in progress)

(unit)

Increment Direction

Jump from:

to:

Reset

Count skip

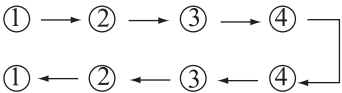
Zero-suppression

Multiplier

[Example] User pattern is defined as follows:

User pattern code	<u>00</u>	<u>01</u>	<u>02</u>	<u>03</u>	<u>04</u>	<u>05</u>	<u>06</u>	<u>07</u>
Definition pattern	①	②	③	④	④	③	②	①

When printing one way 4 times and backwards 4 times by both ways printing, the same column can be printed by the same numbers (① to ④).
The count result becomes as shown below.



- The user pattern which can be used in count are 48 kinds up to code 47. Always use from top 00.
- Numeric and save characters can be combined.

[Example] Range

④ Reset the count value to a preset value.

Value

Range

Update (in progress)
 (unit)

Increment Direction

Jump from: to:

Reset

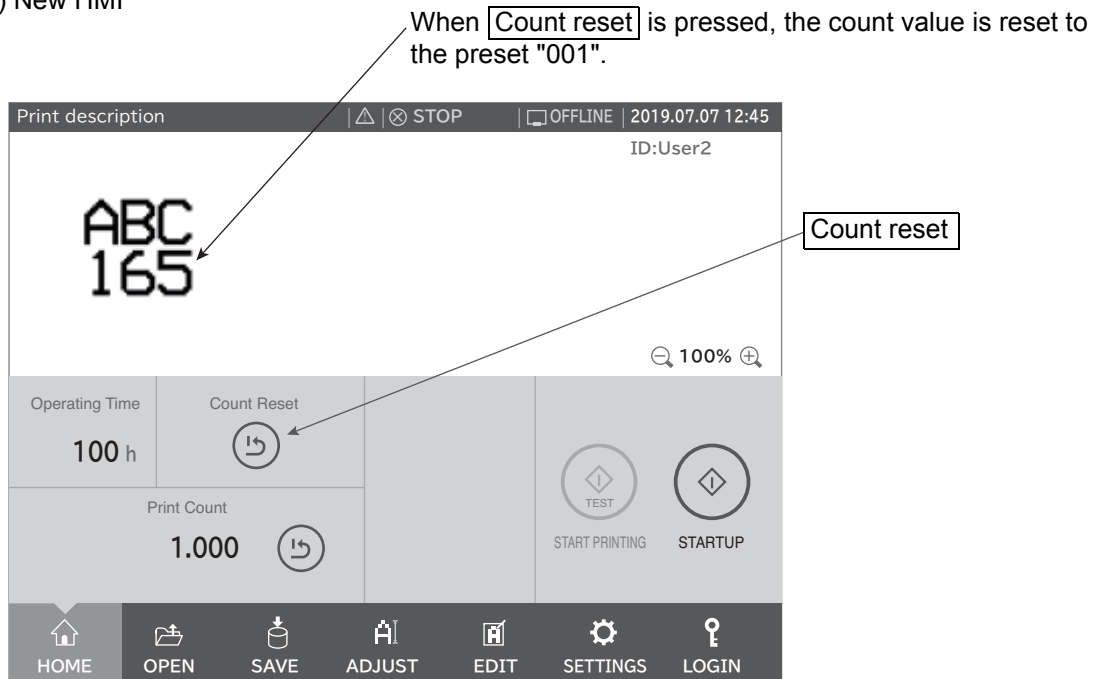
Count skip

Zero-suppression

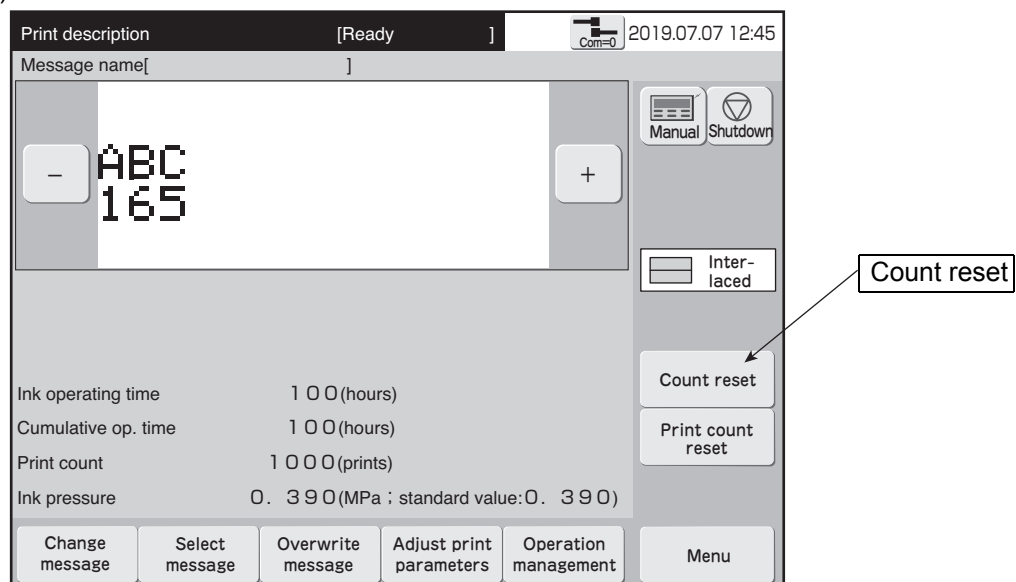
Multiplier

Reset value "001" is set beforehand.

(a) New HMI



(b) Previous HMI



⑤ Print by replacing 0 of the count value with a space.

The image shows a configuration window for a count function. It includes fields for Value (0 0 0 0), Range (0 0 0 0 to 9 9 9 9), Update (0 0 0 0 0 in progress, 0 0 0 0 1 unit), Increment (01), Direction (up/down), Jump (from/to), Reset, Count skip, Zero-suppression (Disable/Enable), and Multiplier. An arrow points to the 'Enable' button under Zero-suppression.

Zero-suppression "Enable" is set.

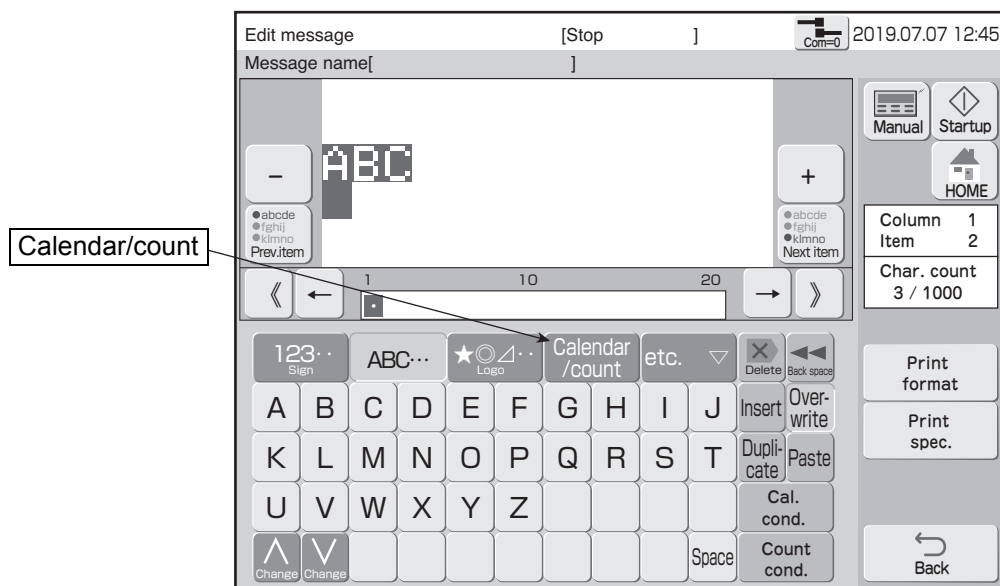
- "0" at the leading digit of the count character is replaced by a space and printed using the zero-suppression function.

Count value “12” print comparison

Count conditions	Print result
Zero-suppression disabled	0012
Zero-suppression enabled	12

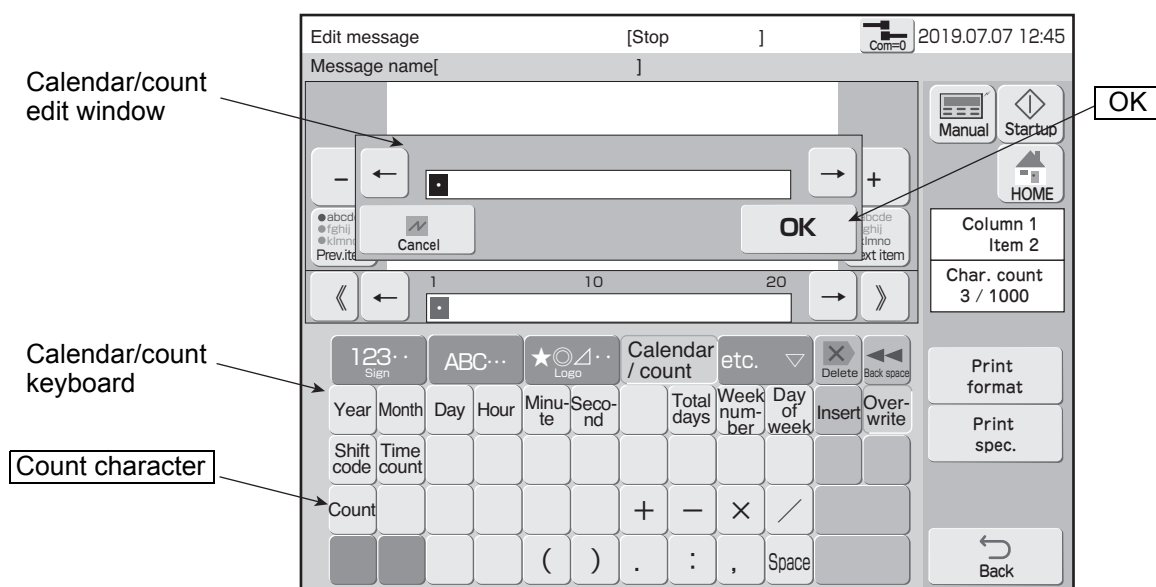
(3) Operation

The Edit message screen is displayed.



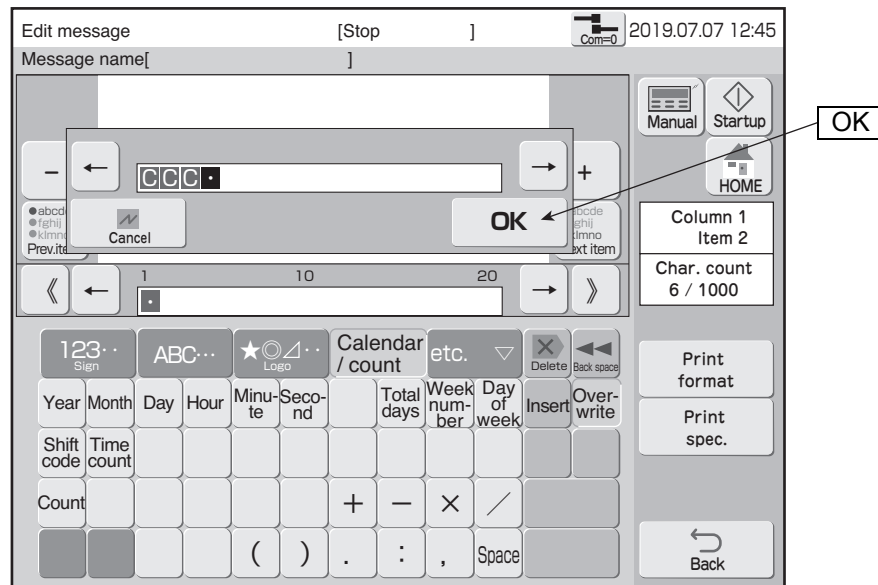
1 Press **Calendar/count**.

The display changes to the calendar/count keyboard and the calendar/count edit window is displayed.



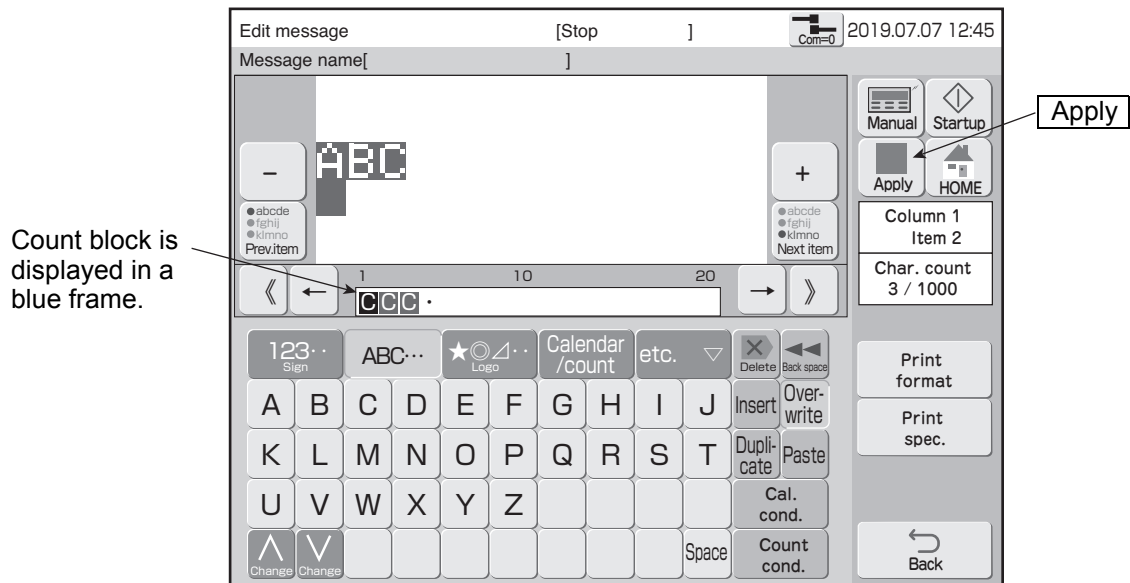
2 Input **Count C** (count character).

The count character is displayed on the calendar/count edit screen.



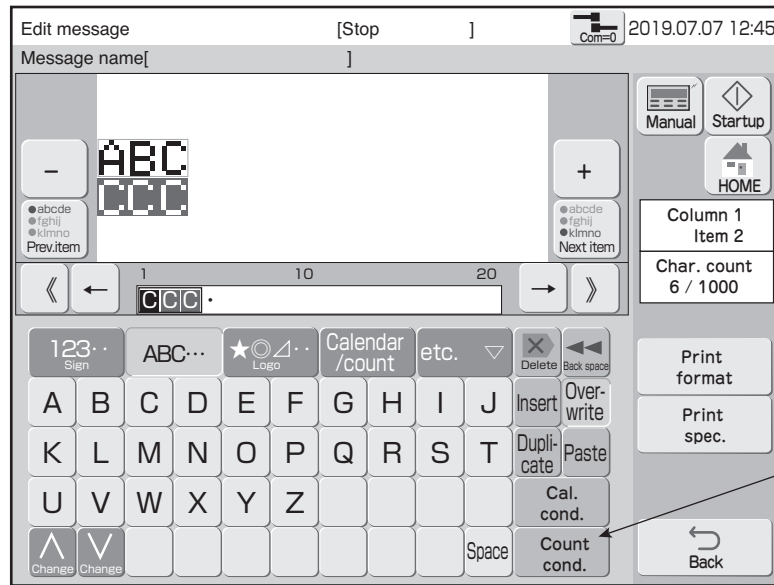
3 Press **OK** .

The count character is displayed at the print contents edit area.



4 Press Apply .

The character string of the print contents edit area is displayed in the print layout.
The count character input is applied.

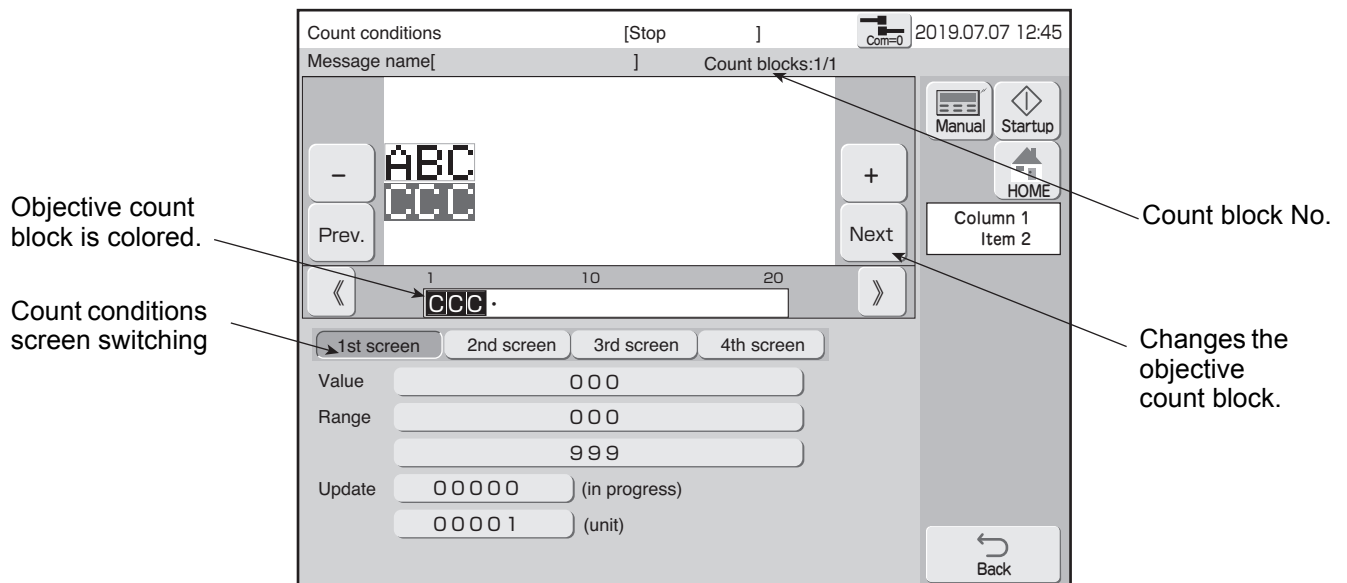


5 Press Count cond. .

The Count conditions screen is displayed.

6 Press Previous or Next and change the objective calendar block.

7 Press 1st screen , 2nd screen or 3rd screen and switch the count conditions screen.



(2nd screen)

Count conditions
screen switching

Count conditions [Stop] Com=0 2019.07.07 12:45

Message name[] Count blocks:1/1

ABC

CCC

1st screen 2nd screen 3rd screen 4th screen

Increment 01 Direction up down

Jump from: to:

Reset

Back

(3rd screen)

Count conditions
screen switching

Count conditions [Stop] Com=0 2019.07.07 12:45

Message name[] Count blocks:1/1

ABC

CCC

1st screen 2nd screen 3rd screen 4th screen

Zero-suppression Disable Enable

Multiplier

Back

(4th screen)

Count conditions
screen switching

Count conditions [Stop] Com=0 2019.07.07 12:45

Message name[] Count blocks:1/1

ABC

CCC

1st screen 2nd screen 3rd screen 4th screen

Millimeter count Disable Enable

Back

Back

8 Press Back

•Update the print contents at a fixed interval (Time count) 4-68

4.13.2 Use count multiplication printing

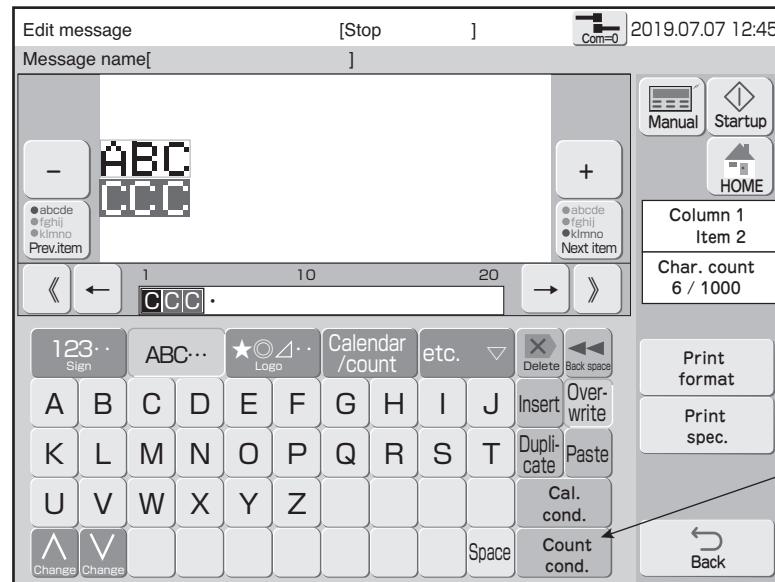
(1) Function

- Prints by changing the count value in the specified increments at each printing.
- Multiplies the count value by a predetermined value and prints the result.
- Prints left-justified.
- Matches the decimal part of the product to the number of count digits by rounding off.
- Enables zero-suppression setting for the last 0 after the decimal point.
(Example: 1.230 → 1.23)
- When the number of digits of the integer part of the product exceeds the number of digits of the input count character, a "Count Overflow" error is generated.
- When an integer value is set for the count multiplier, the zero-suppression setting is not reflected.

(2) Operation

Shows the operation sequence when 0.3048 is set for the count multiplier and feet → meter converter (1 foot → 0.3048 m) is performed and the result is printed.

1 Input **Count C**.



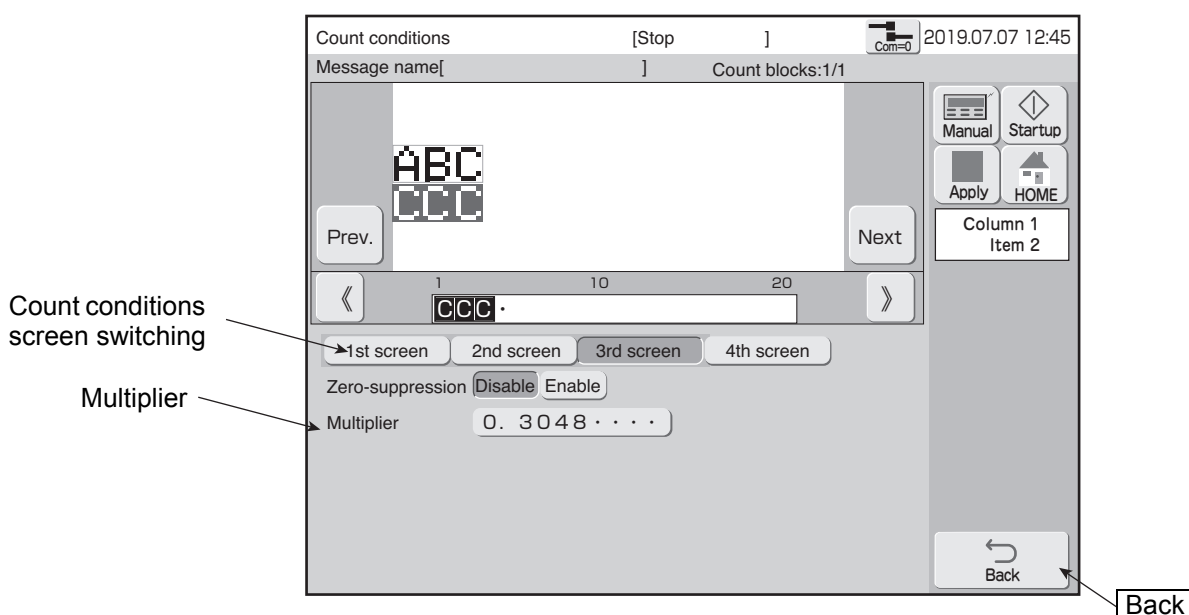
2 Press **Count cond.** .

The Count conditions screen is displayed.

3 Press **Previous** or **Next** and change the objective calendar block.

4 Press **3rd screen** and switch the count conditions screen.

5 Display the 3rd screen of the count condition screens and input 0.3048 at the count multiplier.



6 The count value is multiplied by the input count multiplier and the result is printed.

A printing example is shown in the table.

(When both Disable and Enable are set at zero-suppression)

Printing example of count multiplication printing (zero-suppression disabled)

Input characters	C C C C C C		
Count multiplier	0 . 3 0 4 8		
Zero-suppression	Disabled		
Initial value	Product	Printed result	Remarks
0 0 0 0 0 1	0. 3 0 4 8	0. 3 0 4 8	-
0 0 0 0 0 2	0. 6 0 9 6	0. 6 0 9 6	-
...	...	...	-
0 0 0 0 1 0	3. 0 4 8 0	3. 0 4 8 0	-
0 0 0 0 1 1	3. 3 5 2 8	3. 3 5 2 8	-
...	...	...	-
3 2 8 0 8 2	9 9 9 9 9 . 3 9 3 6	9 9 9 9 9△	Digits which cannot be printed are rounded off.
3 2 8 0 8 3	9 9 9 9 9 . 6 9 8 4	1 0 0 0 0 0	Digits which cannot be printed are rounded off.
...	...	...	...
9 9 9 9 9 8	3 0 4 7 9 9 . 3 9 0 4	3 0 4 7 9 9	Digits which cannot be printed are rounded off.
9 9 9 9 9 9	3 0 4 7 9 9 . 6 9 5 2	3 0 4 8 0 0	Digits which cannot be printed are rounded off.

Printing example of count multiplication printing (zero-suppression enabled)

Input characters	C C C C C C		
Count multiplier	0 . 3 0 4 8		
Zero-suppression	Enabled		
Initial value	Product	Printed result	Remarks
0 0 0 0 0 1	0. 3 0 4 8	0. 3 0 4 8	-
0 0 0 0 0 2	0. 6 0 9 6	0. 6 0 9 6	-
...	...	...	-
0 0 0 0 1 0	3. 0 4 8 0	3. 0 4 8△	Last decimal digit is zero-suppressed.
0 0 0 0 1 1	3. 3 5 2 8	3. 3 5 2 8	-
...	...	...	-
3 2 8 0 8 2	9 9 9 9 9 . 3 9 3 6	9 9 9 9 9△	Digits which cannot be printed are rounded off.
3 2 8 0 8 3	9 9 9 9 9 . 6 9 8 4	1 0 0 0 0 0	Digits which cannot be printed are rounded off.
...	...	...	...
9 9 9 9 9 8	3 0 4 7 9 9 . 3 9 0 4	3 0 4 7 9 9	Digits which cannot be printed are rounded off.
9 9 9 9 9 9	3 0 4 7 9 9 . 6 9 5 2	3 0 4 8 0 0	Digits which cannot be printed are rounded off.

*Count characters are represented by C and spaces are represented by △ .

Precautions when using count multiplication printing

- When you want to return to normal count, input an invalid character at the count multiplier to make the multiplier invalid.
- When a bar code is set for a count print item, a mask is applied to the count multiplier input area and count multiplier cannot be input.
- Integer values can be input at the count multiplier.
- Alphabet, symbols, and saved characters cannot be input at the count multiplier.

4.13.3 Skip specified character and print (Count skip)

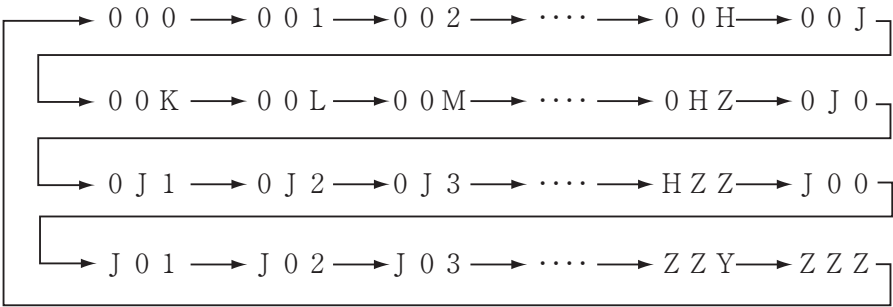
(1) Function

- Skip the character which was set and move to the next count value to print.
- "Count skip" characters is either one kind of capital alphabetical character, small alphabetical character or user pattern.
- Up to 5 characters can be input as "Count skip" characters.
- The range of each digit to which count character is input may vary, however, the "Count skip" character may not exceed the range of each digit.

(2) "Count skip" setting examples

Skip the alphabet "I" and count up by an increment of 1 from "000" to "ZZZ".

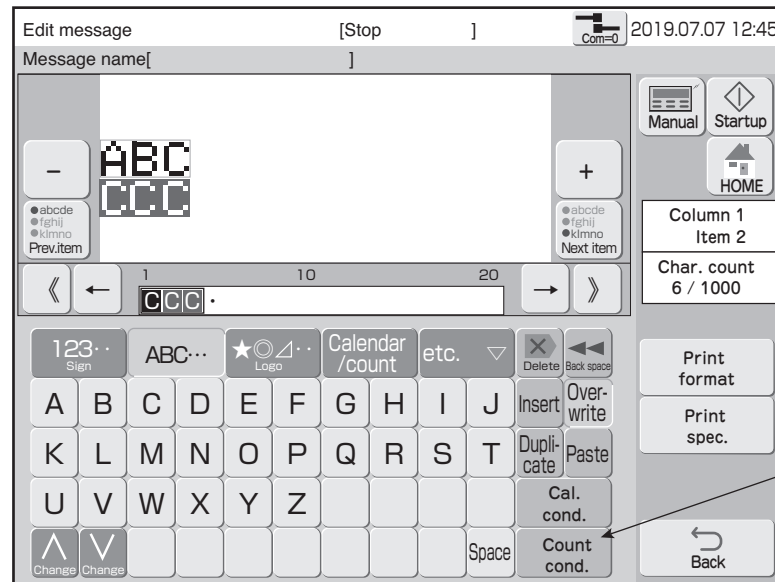
Value	0 0 0				
Range	0 0 0				
	Z Z Z				
Update	0 0 0 0 0 (in progress)				
	0 0 0 0 1 (unit)				
Increment	01		Direction <input checked="" type="button" value="up"/> down		
Jump	from:	. . .			
	to:	. . .			
Reset	. . .				
Count skip	I 				
Zero-suppression	<input checked="" type="button" value="Disable"/> Enable				
Multiplier					



(3) Operation

The procedures to skip the alphabets "I" and "Q", which are inputted to "Count skip" are shown below.

1 Input **Count C**.

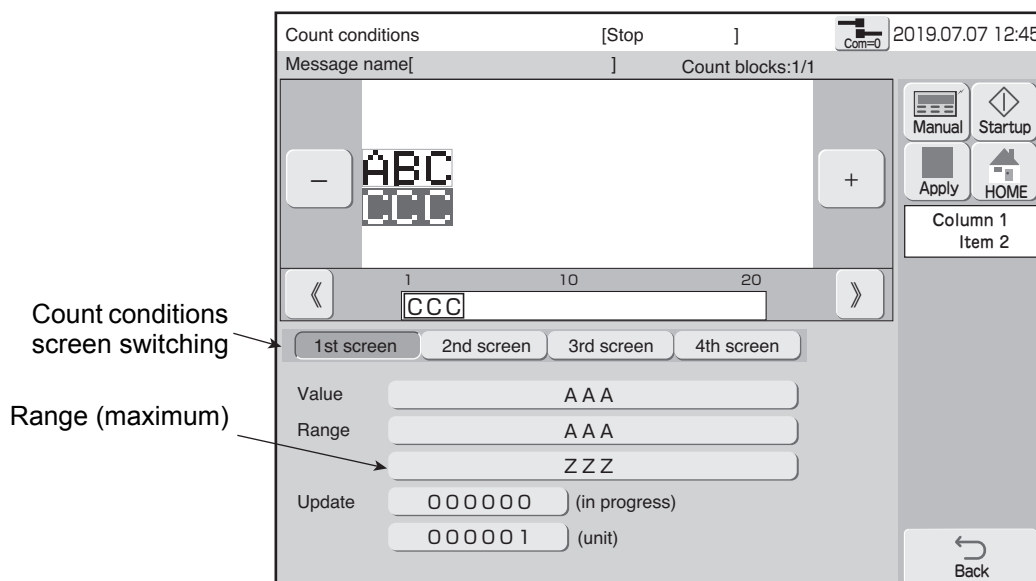


2 Press **Count cond.** .

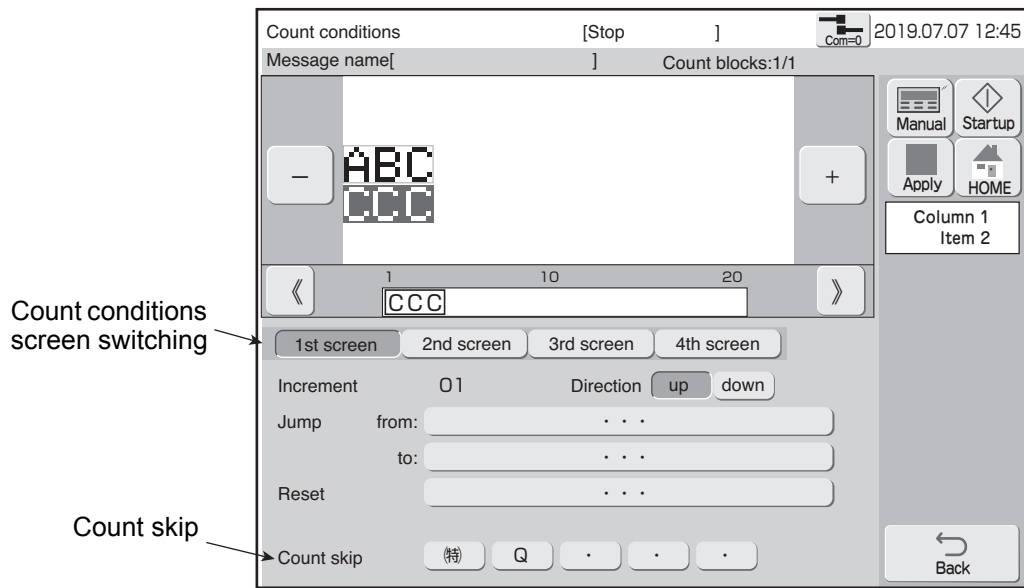
The Count conditions screen is displayed.

3 Press **Previous** or **Next** and change the objective count block.

4 Set Range using numeric, capital alphabetical character, small alphabetical character or user pattern. Numeric cannot be set to Range (maximum) when count skip is used. Open the 1st screen of Count conditions screen and input Value and Range.



- 5** Press **2nd screen** and switch Count conditions screen.
Input "I" and "Q" at "Count skip" on the 2nd screen of Count conditions.



- 6** Skip the characters inputted to "Count skip", then print the next count value.
See the figure below for print example.



Precautions when using count skip printing

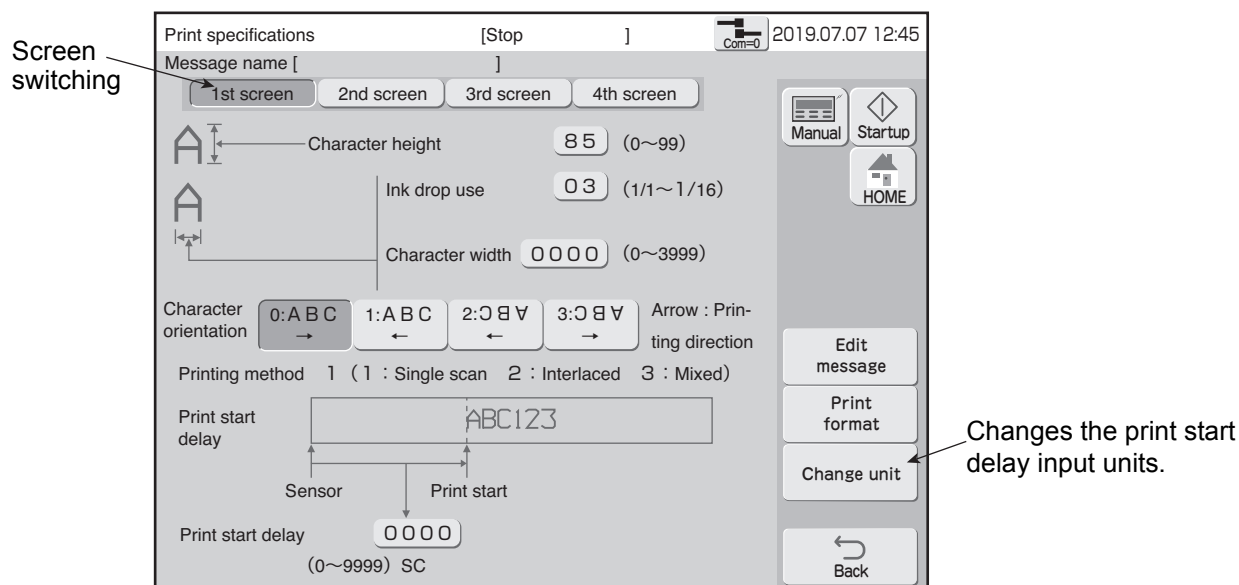
- When the "Count character" is added, overwritten or deleted, the confirmation message "Changed skip condition" shows up on the screen and "Count skip" character becomes invalid.
- As to Range (maximum), input either one kind of capital alphabetical character, small alphabetical character or user pattern.
In addition, all "Count skip" characters must be included in the smallest range.
- Characters which were set as Value, Range, Jump or Reset cannot be input to "Count skip".
- When the "Count skip" is set, the incremental value is 1=fixed.

4.14 Set the print specifications

4.14.1 Set the character height, character width, and orientation

(1) Function

- Sets the character height, character width, character orientation, and print start.



① Character height

- The character height can be specified.

② Ink drop use percentage

- Sets the ratio of drops used in printing. For example, ink drop use 1/3 prints at a ratio of 1 in 3 ink drops. The 2 ink drops are recovered from the gutter.

Setting range of ink drop use percentage

Model type	1 line	2 lines
UX-H	1/1 to 1/16	1/1 to 1/16

- When ink drop use is 1/1 or 1/2, high speed printing is possible. For ink drop use 1/16, low speed printing is performed and the print quality improves.
- When "Print quality first" is enabled, "Ink drop use" is set to "1/1" and fixed.

③ Character width

- The character width can be specified.

(1) When the product matching speed function is NOT USED:

- Set the character width within the range from 0 to 3999.
- When "Print quality first" is enabled, "character width" can be set to the value from "2" to "14".

(2) When the product matching speed function is USED: (Rotary encoder is connected)

- Character width is set by Ink drop use percentage as indicated below.

Table 4.14.1 Setting of character width

Ink drop use percentage setting	Character width setting
1/1	002 or larger *
1/2	001 or larger
1/3 to 1/16	000 or larger

* The conditions where "Character width" can be set to "0" are described in Table below.

No.	Setup screen	Items	Setting
1	Print specification	Product speed matching	Encoder
2		Ink drop use	1
3		High speed print mode	"HM"
4	User environment setup	Print data changeover error	"Enable"

When "Character width" is set to "0" and "Product speed matching" is set to "Encoder".

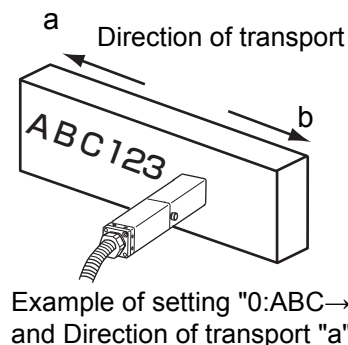
- The conveyor speed is detected by the encoder and the character width is set and fixed by that speed detected. If the print object is slipped on the conveyor or its transfer speed fluctuates substantially while the print object is passing the object sensor and the printing is completed, the print start delay variation or the character width variation is expected. Please be sure to conduct test printing and confirm whether there is any variation of print start delay or the character width. If the substantial variation is observed, please set the Character width to 2 or more.
- The item on "Adjust printer parameters" screen are not available.
- The conveyor speed is calculated print by print. Therefore "Print start delay".
- The conveyor speed is calculated print by print. Therefore "Print start delay" will become longer by 30 scans than that of "Encoder" due to its calculation time.
- The number of print formats will be four (4) or less.

- For rotary encoder wiring and setup, see the Technical Manual "4.3.2-1 Rotary encoder specifications, wiring and switch setting".

④ Character orientation

- Printing direction of characters can be set.
- Settings and print results are as shown below.

Setting	Direction of transport	Printing results
0 : A B C →	a←	A B C 1 2 3
	→b	ε S T C B A
1 : A B C ←	a←	ε S T C B A
	→b	A B C 1 2 3
2 : C B A ←	a←	A B C 1 2 3
	→b	ε S T C B A
3 : A B C →	a←	A B C 1 2 3
	→b	A B C 1 2 3



- When "Print quality first" is enabled, "character orientation" can be set to either "1" or "2".

⑤ Printing method

- Three printing methods are selectable: "single scan", "interlaced" and "mixed".
- A printing method will be automatically selected in accordance with the print format setup and the ink drop charge rule.

Display of Printing method

Icon	Ink Drop Charge Rule Classification	Printing method
 Single scan	Standard (Single scan)	When there are multiple printing lines, multiple lines are printed in turn.
 Inter-laced	Standard (Interlaced), Dot mixed interlaced	Multiple lines are printed at the same time.
 Mixed	Mixed single scan and interlaced	Printing is done while switching between single scan and interlaced for each column.

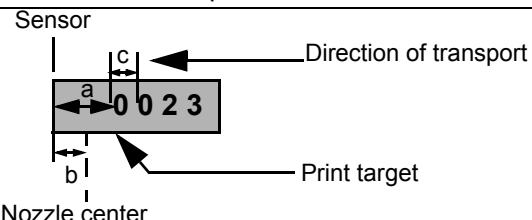
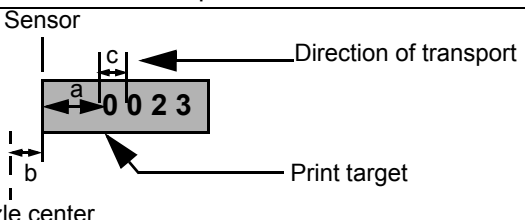
- When making interlaced prints, perform the following setup.
 - Ensure that the same print format is employed for all items.
 - Ensure that the same line count setting is employed for all columns.
 - The ink drop use percentage is 1/1 to 1/4.

Perform overall column setup. The format for the first item is then applied to all the other items so as to provide interlaced setup. When making a 1-line print, the single scan predominates even if you perform steps (i) through (iii).

- In the case of free layout, printing method is single scan fixed.

⑥ Print start delay

- The printing start position can be specified.
- After setting in character units or mm units, fine adjust in scan units.
- When you want to input in mm units, input "Line speed".
- The positional relationship between the sensor and nozzle is as indicated below.

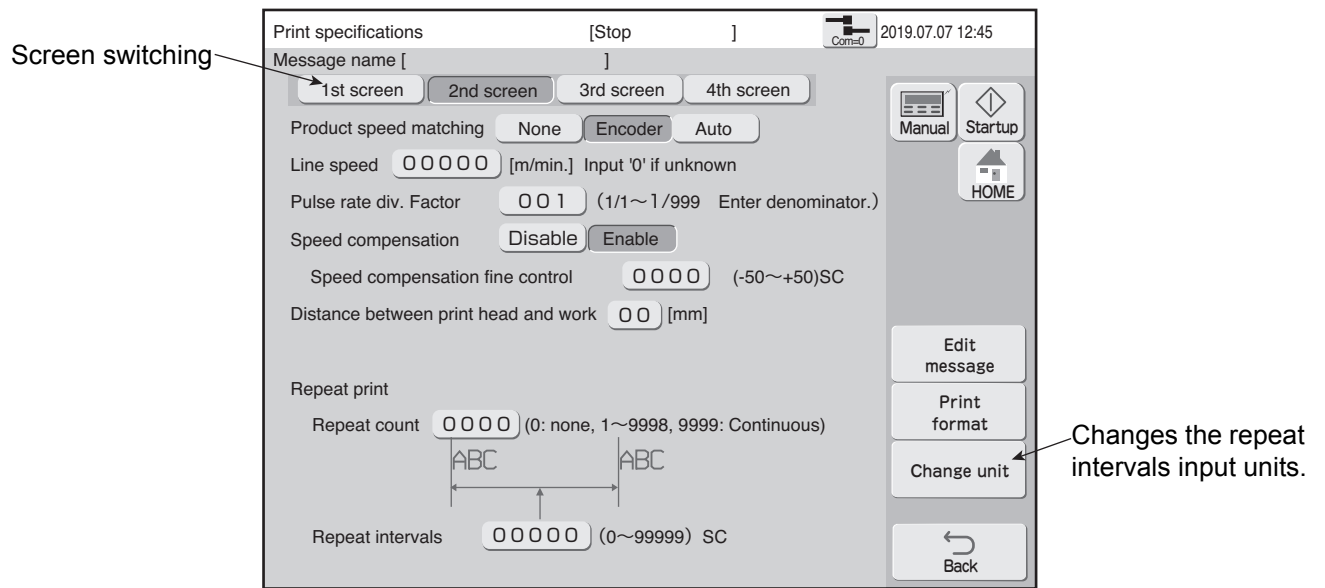
When the nozzle is positioned before the sensor	When the nozzle is positioned after the sensor
 Print start delay=a-b (mm)	 Print start delay=a+b (mm)

- Specify the print start delay (printing start position) as suggested below.
 - Measure the length of the print start delay.
 - Measure the inter-character distance (C).
 - Divide the value obtained in (i) by the value obtained in (ii). Enter the resulting value.

$$\frac{a \pm b}{c} : \text{Setting value}$$

- When a product speed matching function is not provided, if the ink drop use percentage (High-speed print mode), character width, character size or number of lines is changed, the set value of the print start delay can be adjusted so that the time until printing starts will not change.
- When a product speed matching function is provided, if the pulse rate division factor is changed, the set value of the print start delay can be adjusted so that the time until printing starts will not change.

2nd screen of "Print specifications" screen



⑦ Product speed matching

- When printing is conducted with this feature activated, the character width is maintained irrespective of the print target transport speed changes.
 - The Printing by "Auto" method is performed according to the change of speed without a rotary encoder.
 - Enter "Print Target width" and "Actual Print width" in mm for "Auto".
 - "Repeat count" and "Target sensor filter: Until end of printing" on "Print specifications" can not be used when setting "Auto".
- Refer to "4.3.5 Product speed matching function without a rotary encoder" of the Technical Manual for "Auto" method.

Difference between product speed matching setting

None	Encoder	Auto
Prints per individual scan for an interval of a definite period of time.	Printing is performed scan by scan at each encoder pulse.	Printing is performed according to the change of speed.

Refer to "4. Electric signal connection" of the Technical Manual for details.

⑧ Line speed

- Inputs the line speed.
- When the line speed was input, the print start delay and repeat intervals set values can be input in mm units by pressing change unit.
- The selectable setting ranges from 0 to 999.9 m/minutes.
- This feature cannot be activated if the product speed matching feature is enable.

⑨ Pulse rate division factor

- Specifies the pulse rate division Factor that determines the intervals at which the encoder signal is to be recognized.
- The selectable setting ranges from 1/1 to 1/999.
- When a setting of 1/1 is selected, no pulse rate division Factor is effected.
- This feature cannot be activated if the product speed matching feature is disabled.

⑩ Speed compensation

- Set to prevent changes in the print position.
- Cannot be set when a Product speed matching feature is not specified.
- Adjusts print start delay according to the set value of "Distance between print head and work".
- Cannot be used when Repeat print is specified.
- Note that a Print Overlap Fault may be generated when the printing interval is extremely short when the Speed compensation setting is changed from "Disable" to "Enable".
- Fine adjusts the print start delay from the setting value of the Speed compensation fine control. However, the following condition must be satisfied.

$$0 \leq [\text{Print start delay}] + [\text{Speed compensation fine control}]$$
- Set values for "Speed compensation" and "Speed compensation fine control" are not memorized per print date but held as a common value.

⑪ Distance between print head and work.

- Inputs the distance between the print head and the print target.
- When product speed matching is "encoder" and "Speed compensation" was set to "Enable", the print start delay is adjusted by considering the distance between the print head and the print target. When "Speed compensation" is set to "Disable", the distance between the print head and the print target is not referenced, even if set.

The screenshot shows the 'Print specifications' screen with the following elements:

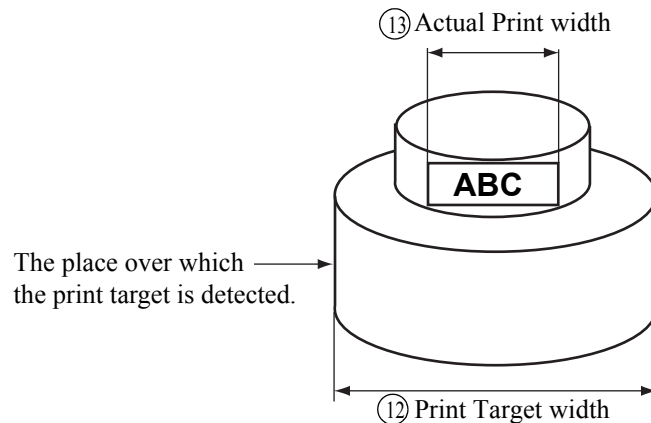
- Top status bar: [Stop] and 2019.07.07 12:45.
- Message name: []
- Screen selection: 1st screen, 2nd screen (selected), 3rd screen, 4th screen.
- Product speed matching: None, Encoder, Auto (selected).
- Print Target width: 0060 (mm 0~9999).
- Actual Print width: 0030 (mm 0~9999).
- Speed compensation: Disable, Enable (selected).
- Right sidebar: Manual, Startup, HOME buttons.

⑫ Print Target width

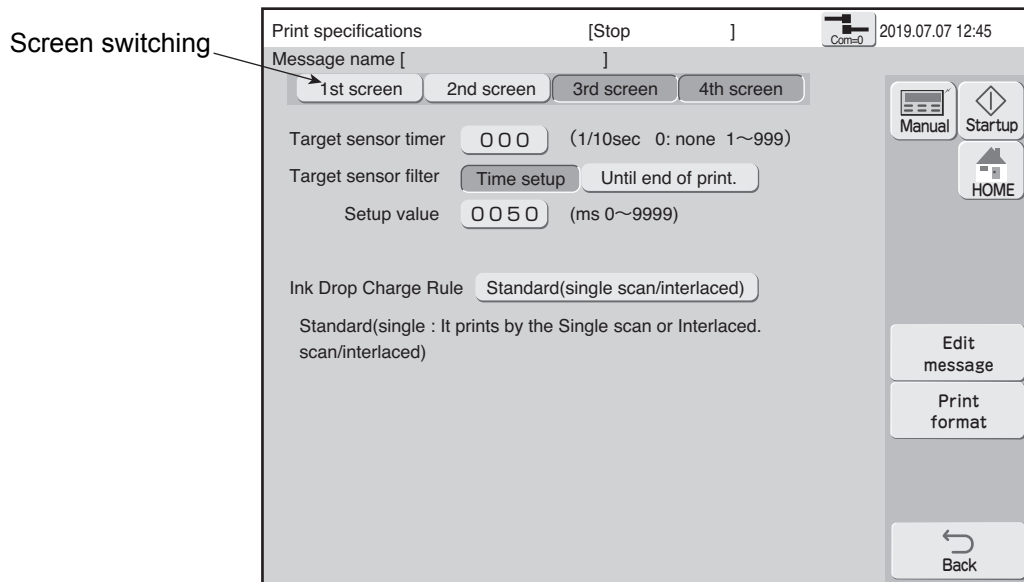
- Enter "Print Target width" in mm for "Auto".
Input the length of the place over which the print target is detected.
- The Print Target width setting range is from 0 to 9999.
- If "Print Target width" is not entered, the print is made with the same interval as when the Speed matching function is not used.

⑬ Actual Print width

- Enter "Actual Print width" in mm for "Auto".
- The Actual Print width setting range is from 0 to 9999.
- The value for "Actual Print width" must be smaller than "Print Target width".
- If "Actual Print width" is not entered, the print is made with the same interval as when the Speed matching function is not used.



3rd screen of "Print specifications" screen



⑭ Target sensor timer

- You can specify the time for displaying a fault message when the sensor is continuously ON.
- When the sensor on time exceeds a set value, the message "Target Sensor Fault" is displayed.
- If the "Target sensor timer" feature is not needed, select a setting of 0.
- The selectable setting is from 0.0 to 99.9 seconds.

⑮ Target sensor filter

- Perform this setup when you intend to maintain operation normality even in the event of chattering.
- The time for ignoring chattering is set for when a sensor signal chatters when printed matter shields the sensor from light.
- When a fault occurs due to chattering, the message "Print Overlap Fault" is displayed.
- If the target sensor filter feature is not needed, select a setting of 0.
- The selectable setting ranges from 0 to 9999 milliseconds.
- "Target sensor filter: Until end of printing" can not be used when setting "Auto" on "Product speed matching".

• The term "chattering" refers to a state where signal voltage instability occurs when the sensor signal starts or ends.

⑩ Ink drop charge rule

- There are three rules of Standard, Mixed single scan and interlaced, and Dot mixed interlaced in the Ink Drop Charge Rule.
- With this function, print quality will be better than the case that dot mixture data is printed by the single scan especially when ink drop use is from 1/1 to 1/4.

Differences of each rule of the Ink drop charge rule

Method	Print sample										
Standard (Single scan)	(Column 1) (Column 2) (Column 3) (Column 4) (Column 5)										
	<table><tr><td></td><td></td><td></td><td></td><td>5×8</td></tr><tr><td>5×8</td><td>12×16</td><td>12×16</td><td>7×10</td><td>5×8</td></tr></table>					5×8	5×8	12×16	12×16	7×10	5×8
					5×8						
5×8	12×16	12×16	7×10	5×8							
All the columns are printed by single scan.											
Standard (Interlaced)	(Column 1) (Column 2) (Column 3) (Column 4) (Column 5)										
	<table><tr><td>5×8</td><td>5×8</td><td>5×8</td><td>5×8</td><td>5×8</td></tr><tr><td>5×8</td><td>5×8</td><td>5×8</td><td>5×8</td><td>5×8</td></tr></table>	5×8	5×8	5×8	5×8	5×8	5×8	5×8	5×8	5×8	5×8
	5×8	5×8	5×8	5×8	5×8						
5×8	5×8	5×8	5×8	5×8							
All the columns are printed by interlaced.											
Mixed single scan and interlaced	(Column 1) (Column 2) (Column 3) (Column 4) (Column 5)										
	<table><tr><td>5×8</td><td>5×8</td><td></td><td>5×5</td><td></td></tr><tr><td>5×8</td><td>5×8</td><td>12×16</td><td>5×5</td><td>5×5</td></tr></table>	5×8	5×8		5×5		5×8	5×8	12×16	5×5	5×5
	5×8	5×8		5×5							
5×8	5×8	12×16	5×5	5×5							
Interlaced Single scan Single scan Interlaced Single scan Rules are changed by column.											
Dot mixed interlaced	(Column 1) (Column 2) (Column 3) (Column 4) (Column 5)										
	<table><tr><td></td><td>5×8</td><td>5×8</td><td></td><td>5×8</td></tr><tr><td>12×16</td><td>5×8</td><td>5×8</td><td>12×16</td><td>5×8</td></tr></table>		5×8	5×8		5×8	12×16	5×8	5×8	12×16	5×8
		5×8	5×8		5×8						
12×16	5×8	5×8	12×16	5×8							
All the columns are printed by interlaced.											

- When the conditions in the following table are met during mixed single/interlaced control, printing that mixes single scan and interlaced is possible.

Conditions for interlaced printing at Mixed single scan and interlaced

No.	Conditions	Example of print data		
1	Barcodes are not set.	(Column 1) (Column 2) (Column 3)		
2	When number of line is two or more, all fonts of items in each column are the same.	12×16 5×5 5×5	5×5 5×5	5×8 5×8
3	Ink drop use is from 1/1 to 1/4.	Single scan	Interlaced	

- When the conditions in the following table are met during dot mixed interlaced, interlaced printing with mixed dots is possible.

Conditions for interlaced printing at Dot mixed interlaced

No.	Conditions	Print example						
1	All fonts of items in each column are the same.	(Column 1) (Column 2) (Column 3) <table><tr><td></td><td>5×5</td><td>5×8</td></tr><tr><td>12×16</td><td>5×5</td><td>5×8</td></tr></table> Interlaced		5×5	5×8	12×16	5×5	5×8
	5×5		5×8					
12×16	5×5		5×8					
2	Barcodes are not set.							
3	Following (1) or (2) is satisfied in all columns. (Interlaced printing is also possible when all columns are configured only with the condition (2).) (1) When number of line is two or more All fonts of items in each column are the same. (2) When number of line is one The font of items is 12×16.							
4	Ink drop use is from 1/1 to 1/4.							

- 1-line columns with 12×16 font at Dot mixed interlaced will be split into 2-line in the IJP and printed. As a result of a split 1-line of 12×16 , borders of characters might look being pushed down, and set the Line spacing only for the case.
But, uneven printing happens when product speed matching is used at low speed .
- The number of print formats that can be set with dot mixture is up to eight at all ink drop charge rules. And the ink drop use can not be mixed.

• Ink Drop Charge Rule Precautions

Precautions

No.	Precautions	Conditions
1	The higher the speed the bigger misalignment of lines at high speed without product speed matching.	Dot mixed interlaced only
2	Uneven printing happens at divided positions when product speed matching is used for 1-line printing at low speed.	Dot mixed interlaced only

⑰ Leading character width control

- Set to prevent shrinking of the leading print character width at high speed line printing.
- Can be set when product speed matching is "None" or "Enhance".
- As a means of preventing shrinking of the leading character width, unprinted particles are inserted at the "First line width" and "Second line width" of the leading print character.
- The number of unprinted characters that can be inserted is 0 to 32.
- When "Print quality first" is enabled, you can add non-printed dot up "Third row width" of "Leading character width control".

Page 4 of "Print specifications" screen

- When all the necessary conditions of 1 to 4 below are satisfied, leading character print control is enabled.

Necessary conditions for leading character width control

No.	Item	Conditions
1	Product speed matching	Set to None or Enhance.
2	The number of lines	[Print format: Individual setup, Overall setup] Set the number of rows to 1 row or 2 rows. [Print format: Free layout] Not special setting.
3	Ink drop use	[Product speed matching: None] Set Ink drop use to 1/1 or 1/2. [Product speed matching: Enhance] Set Ink drop use to 1/1.
4	Character size	[Ink drop use: 1/1] All character sizes can be used. [Ink drop use: 1/2] Set the character size 4×5, 5×5, 5×8(5×7), 9×8(9×7), 7×10, 5×3 (chimney), 5×5(chimney), or 7×5(chimney).

- The recommended value when setting by leading character width control depends on the number of vertical dots.

<Vertical dots calculation method>

- Print format: Individual setup, Overall setup
Vertical dots=First line character size + Second Line character size
- Print format: Free layout
Vertical dots=Item Y coordinate+ character size

Leading character width control recommended values

Vertical dots	Ink drop use: 1/1			Ink drop use: 1/2		
	First row width	Second row width	Third row width	First row width	Second row width	Third row width
3	6	5	5	0	0	0
5	3	3	3	0	0	0
7	4	3	3	0	0	0
8	4	3	3	0	0	0
10	3	1	0	0	0	0
11	2	1	0	0	0	0
16	2	1	0	0	0	0

4.14.2 Set repeat printing

(1) Overview

- This is set to print the same print description continuously.
- Set the "Repeat intervals" and "Repeat count" for repeat printing.
- Repeat printing can not be used when setting "Auto" on "Product speed matching".

① Repeat intervals

- The print target size can be specified.
- This setup is to be performed when the print target is transported while it is in close contact.
- After setting in character units or mm units, fine adjust in scan units.
- When you want to input in mm units, input "Line speed".
- Perform the following calculations for repeat intervals setup purposes.

(i) On an individual scan basis

$$(1\text{-digit character width} \times \text{number of digits} - \text{trailing character correction value}) \times (\text{print target size/all-digit print width})$$

(ii) On an individual character basis

$$\text{Number of digits} \times (\text{print target size/all-digit print width})$$

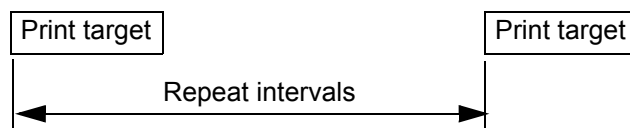
- 1-digit character width = (horizontal character size + inter-character space) × character width increase setting
- Trailing character correction value = inter-character space × character width increase setting + 1

(Example) Print target size: 64 mm; all-digit print width: 25 mm;

number of digits: 6; character size: 5 × 7 dots; inter-character space: 2 dots

- On an individual scan basis
 $((5+2) \times 1 \times 6 - (2 \times 1 + 1)) \times (64/25) = 99.84 \rightarrow 100$
- On an individual character basis
 $6 \times (64/25) = 15.36 \rightarrow 15$

- Round off the calculation results to the nearest whole number.



② Repeat count

- You can preset the number of repeats.
- If repeat printing is not needed, set the number to "0".
- Printing is performed in accordance with the repeat printing mode setup.
- The relationship between the repeat printing mode and the count is as stated below.

Mode	Setting	
	2 to 9998	9999
Signal ON period	Printing is repeated a preselected number of times at predefined intervals while the print target is detected.	Repeat printing is performed while the print target is detected.
OFF - ON transition	Printing is repeated a preselected number of times at predefined intervals once the print target is detected.	Once the print target is detected, repeat printing is performed until it is aborted.

4.14.3 Set various printing

(1) Function

"Various print setup" screen

Various print setup [Stop] 2019.07.07 12:45

Message name [] Makeup Ink

Calendar offset Offset from yesterday From today

DIN print Disable Enable

EAN Prefix Edit message Print format

Barcode printing Normal Reverse

QR Error correction level M (15%) Q (25%)

Revers scan print Disable Enable

Print quality first Disable Enable

<Millimeter conut>

Encoder pitch 001 (1/100mm)

Count-up interval 000026 (mm 26~999999)

Cutting margin interval 0000 (0:none, 1~1000)

Cutting margin 0026 (mm 26~9999)

Output time 2 (ms)

Output interval 000026 (mm 26~999999)

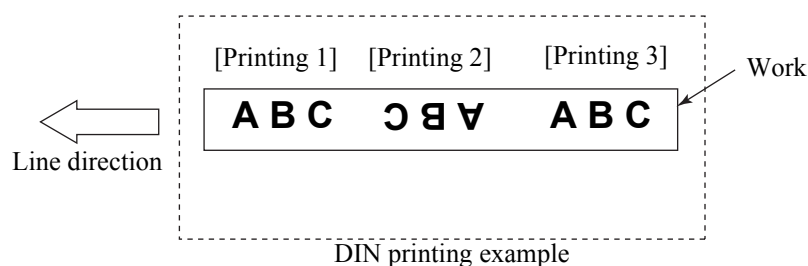
Manual Startup HOME Back

① Calendar offset

- Sets whether to make it today or yesterday when finding whether the calendar month or year offset is set.

② DIN print

- Rotated 180° and printed at each printing so that characters can also be read by viewing from the top or bottom.
- At repeat print setup, printing is rotated 180° at the end of one printing.



- Following shows conditions to execute DIN print.

Conditions for DIN print

No.	Condition
1	All print items are a 1 line setting.
2	The character size of all the print items is the same.
3	No barcode item.
4	No Calendar item.
5	Format setup is not free layout.

③ EAN Prefix

- Whether to set bar code EAN-13, EAN-8 country code by character input or print format is selected.

Number of digits of bar code

	Country code	Data	Check digit	Total number of digits
EAN-13	2	10	1	13
EAN-8	2	5	1	8

EAN Prefix

	Set value	
	Character input	Print format
Handling of country code	Country code is input at the head of the data.	Set by print format without including country code in the data.
Print format screen	Country code is not displayed.	Set the country code.
Edit message screen	For EAN-13, input 12 digits and for EAN-8, input 7 digits, all including the country code. However, check digit is excluded.	For EAN-13 input 10 digits and for EAN-8, input 5 digits, without including the country code. However, check digit is excluded.

- When the country code is changed at the Print format screen, the country code for all the bar code items in that message is changed to the same value.
- For UPC-A, input 11 digits including the prefix code at the edit message screen.

④ Barcode print

- Set the barcode print system.

Normal	The barcode dot data will be printed as is. (With yellow ink, a yellow bar is created.)
Reverse	The barcode dot data will be reversed and printed. (The work color will become the color of the bar. The ink color will be that of background.)

Normal



Reverse



Quiet zone

- The white areas (quiet zone) are necessary at both ends of barcode for the barcode to be recognized. Input one or two characters with all dots marked out (provided on numeric keyboard screen) to the previous column and next column items.
- For DM codes, QR codes and DotCode printing will be performed in normal mode even if reverse is selected.
For DM codes, QR codes and DotCode process data to reverse mode at reader side before reading.
- When adding Human Readable code, the barcode dot data is printed as is, even if set "Reverse".

⑤ QR Error correction level

- Choose an error correction level from "M" or "Q".

Error correction level	Data restoration percentage
M	Approx. 15%
Q	Approx. 25%

See the Technical Manual "9. APPENDIX" for details.

⑥ Reverse scan printing

- Selects whether or not reverse scan control which deflects the particles in the reverse order of the conventional order is to be used.
- The printing tilt when the print target is transported at high speed becomes smaller than the conventional control system.
Refer to "9. Appendix" of the Technical Manual for more information.

⑦ Print quality first

- You can get the higher print quality than normal.
However each row width of "Leading character width control" shall be set to either "2" or "3".
- Please note that the character size becomes bigger than usual.

4.14.4 Fine adjust the print specifications (Adjust print parameters)

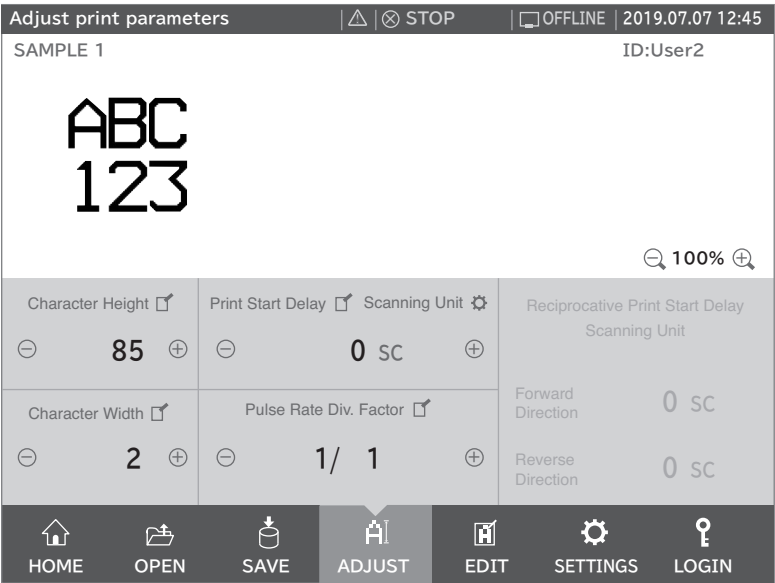
(1) Function

- Starts from the Print description screen.
- Current message print specifications "character height", "character width", "print start delay" and "Pulse rate div. Factor" settings are easily set.
- Since changes to the set value are immediately reflected in the printing, the changes be easily confirmed while printing.
- After setting in character units or mm units, fine adjust in scan units.
- When you want to input in mm units, input "Line speed" in the print specifications screen.

(a) New HMI

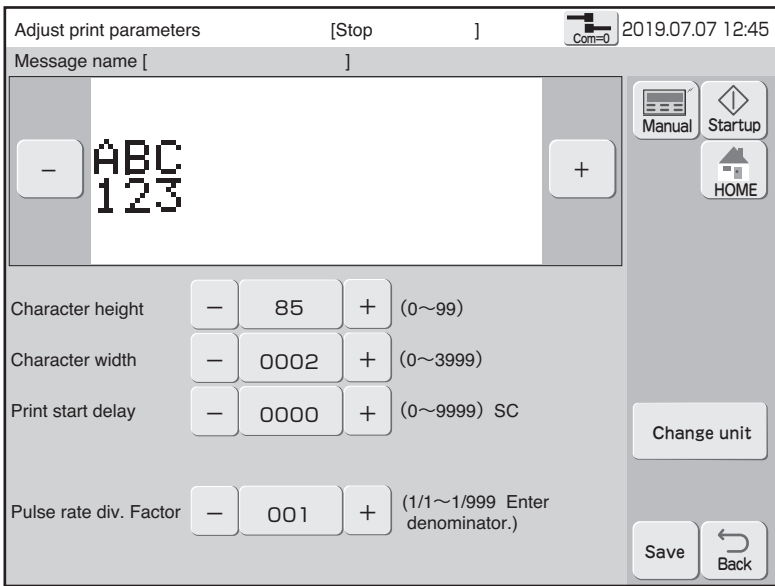
1 Press menu **ADJUST**.

The Adjust print parameters screen will be displayed.



(b) Previous HMI

"Adjust print parameters" screen



(Note) If various settings are changed when the printing is performed frequently, the faults such as "Print Overlap fault", "Print Data Changeover In Progress V" or "Invalid Print Start Timing" may occur.

4.15 Using the AI code input support function

(1) Function

- "AI code" is the abbreviation for "Application Identifier".
AI code is an identification code that manages the data items attached to the head of a product code, expiration date, quantity, lot No., and various other data, and is represented by a 2 to 4 digit number.
- AI code is used with barcode standards established by GS1.
"GS1" is the abbreviation for "Global Standard One". It is an international organization that designs and proposes international standards.
- Items set by 4 kinds of barcodes (Code128, DM, QR or micro QR) can use the AI code input support function.
- The following AI codes can be input by AI code input support function.

AI code	Data item	Data length		Character types that can be input
01	GTIN	Fixed	14	Numeric
10	Batch or Lot Number	Variable	20	Alphanumeric/ASCII symbols
11	Production Date	Fixed	6	"YYMMDD" fixed or numeric
15	Best Before Date	Fixed	6	"YYMMDD" fixed or numeric
17	Expiration Date	Fixed	6	"YYMMDD" fixed or numeric
21	Serial Number	Variable	20	Alphanumeric/ASCII symbols
30	Variable Count	Variable	8	Numeric
91	Company Internal Information	Variable	30	Alphanumeric/ASCII symbols
310*	Net Weight - Kilograms - Trade	Fixed	6	Numeric characters
320*	Net Weight - Pounds - Trade	Fixed	6	Numeric characters

→ *Indicates the number of digits after the decimal point.
(0 to 6 can be input.)

→ Variable length is the maximum number of characters.

- "FNC1" code must be added at the end of "Variable" data length items.
("FNC1" indicates the end of the variable length code.)
If "FNC1" is not input, the system will add it automatically
- If even one of the following conditions is satisfied, "Invalid Barcode" will be displayed.

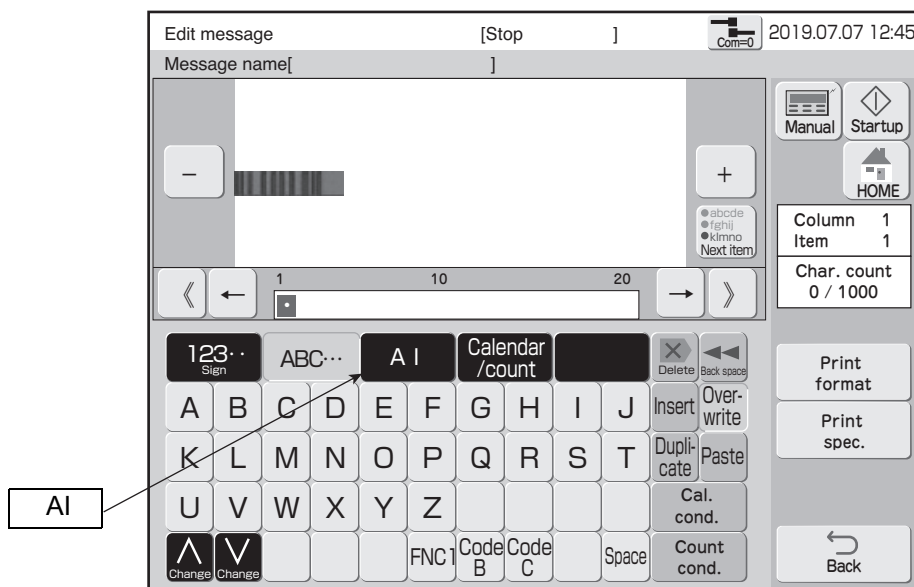
No.	Data length	Condition
1	Fixed	Number of input characters does not match the data length.
2		A character other than an input able character was input.
3		Seven or more characters were set at the * part of AI code (310*) and (320*).
4	Variable	Number of input characters exceeds the data length.
5		A character other than an input able character was input.
6		"FNC1" code was input at other than the beginning or end of an item.

*The AI code itself (2 to 4 digits) is not included in the input character count.

*The "FNC1" code at the end of a data length "Variable" item is not included in the input character count.

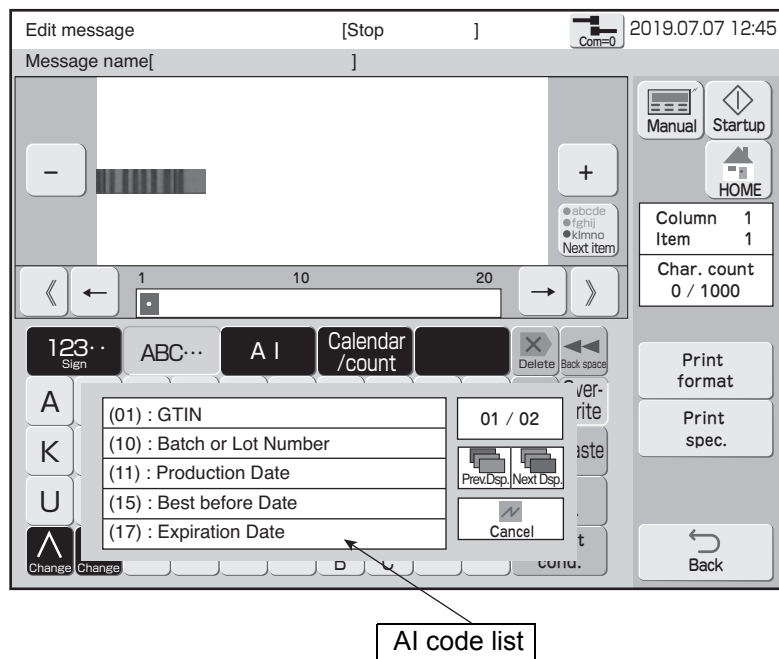
(2) Operation

The Edit message screen is displayed.



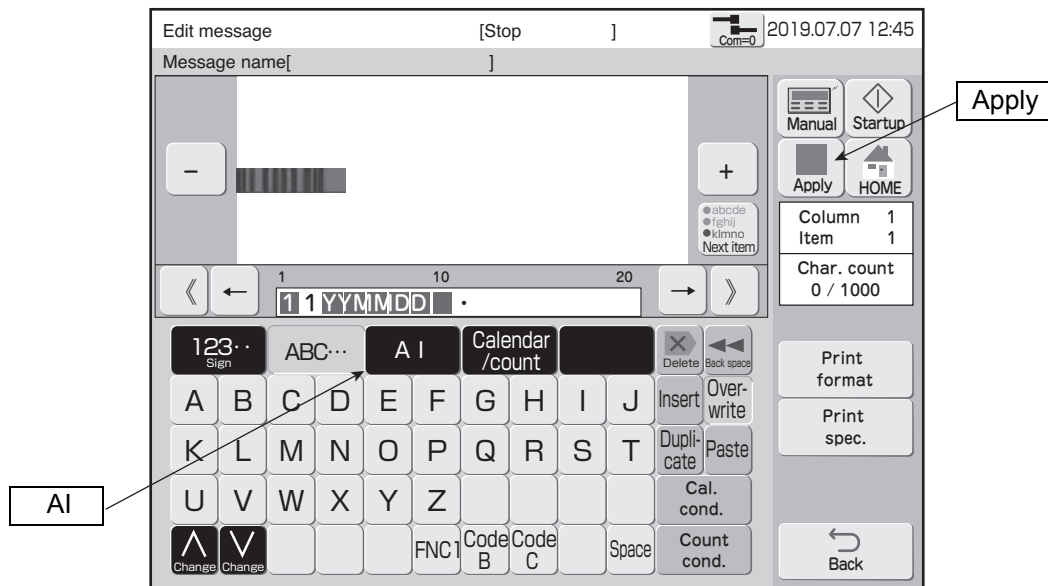
1 Select **AI** from the input mode.

AI code list is displayed.



2 Select (11): Production Date from the AI code list.

[11 YYMMDD] is automatically input at the barcode item.



3 Press Apply.

The character string of the print content edit area is displayed on the print layout.

5. MAINTENANCE

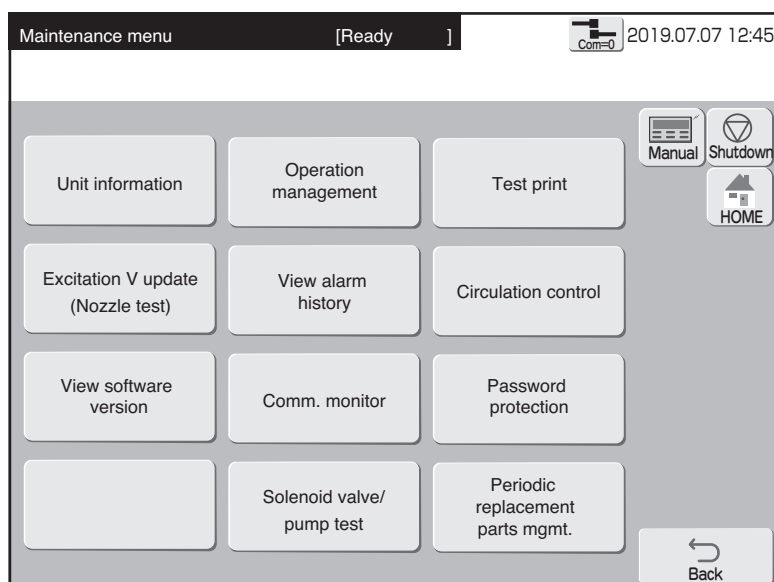
(1) Functions

Item	Description	Reference
Unit information	Displays the unit TYPE-FORM, serial number, etc.	5.1
Operation management	Displays the operational status.	5.2
Test print	Prints without any start print signal input.	5.3
Excitation V update (Nozzle test)	Finds the optimum excitation V-ref. value to maintain good print quality.	Technical Manual 6.10
View alarm history	Displays the generation status of error and alarm messages.	9.3
Circulation control	Controls the ink and makeup circulation system.	Technical Manual 6.1
View software version	Displays the name of the registered software.	5.4
Comm. monitor	Displays the description of the serial communications between an external device and the IJ printer.	Technical Manual 5.6
Password protection	Displays the functions that can be executed.	5.5
Solenoid valve / pump test	Checks the operation of the solenoid valve and pump.	Technical Manual 6.13
Periodic replacement parts mgmt.	When the exchange time in periodic replacement parts comes, the message to inform them of the exchange can be displayed.	Technical Manual 6.14

(2) Operation

1 Press **Maintenance** in the Print description screen.

The maintenance menu screen is displayed.



5.1 Confirm the Unit information

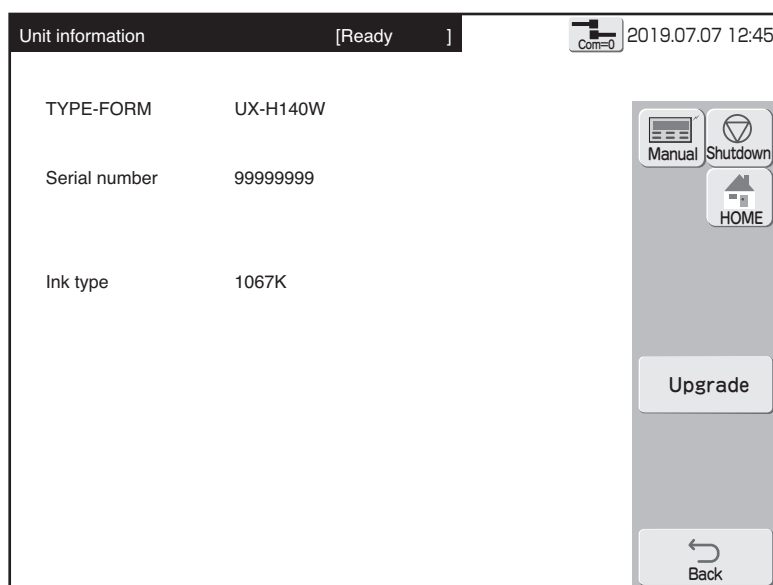
(1) Functions

- Displays the unit TYPE-FORM, serial number, login information, and ink type.

Item	Description
TYPE-FORM	• Displays the TYPE-FORM of the unit.
Serial number	• Displays the serial number of the unit.
Ink type	• Displays the type of ink used.
Upgrade	• The Upgrade condition can be confirmed by pressing Upgrade .

(2) Operation

Press **Unit information** in the Maintenance menu.



5.2 Monitor operational status

(1) Functions

- Displays the operational status of the IJ printer.
- Saves the Ink operating time and Print count once an hour (1 minute each hour).
When there was a power failure, returns to the previously saved state.
- The following items are also displayed in the Print description screen (initial menu).
(Items displayed in Print description screen: Ink operating time, Cumulative op. time, Print count, Ink pressure.)

Item	Description
Ink operating time (variable value)	• Displays the operating time from the last ink replacement. • At ink replacement, set to “0”. Displays up to 9,999 hours. • When the Ink alarm time is exceeded, displays an ink replacement alarm message.
Ink alarm time	• Displays the time which becomes the ink replacement standard. • Always displays the standard value.
Cumulative op. time	• Displays the cumulative operating time. The value cannot be changed. • Displays up to 999,999 hours.
Print count (variable value)	• Displays the number of printings. • A value of 0 to 999,999,999 can be set.
Ink name	• Displays the type of ink used.
Makeup name	• Displays the type of makeup used.
Ink viscosity	• Displays the ink viscosity. • Standard value is 100.
Ink pressure	• Displays the ink pressure. • The standard value is always displayed.
Ambient temperature	• Displays the ambient temperature and allowable ambient temperature.
Deflection voltage	• Displays the deflection voltage in the Ready state.
Excitation V-ref.	• Displays the set excitation V-ref. value.
Excitation frequency	• Displays the nozzle excitation frequency.
Ink levle (It depends on ink type. *1)	• A current selected ink level is displayed. The ink level is automatically selected depending on changes of ambient temperature. • It is displayed only on the Previous HMI screen. (It isn’t dispalyed on the New HMI screen.)

*1 Refer to the handling guidance of each ink for details.

(2) Operation

(a) New HMI

1 Press menu **SETTINGS**.

The Operation management screen is displayed.

Operation management			STOP	OFFLINE	2019.07.07 12:45
Ink Operating Time	Ink Alarm Time (Standard Value : 600)	Cumulative Op. Time			
0 h	600 h	0 h			
Ink/Makeup	Ink Viscosity (Standard Value : 100)	Ink Pressure (Standard Value : 0.390)			
1067K/S100A	100	0.390 MPa			
Deflection Voltage	Excitation V-ref (Range : 0-19)	Excitation Frequency			
5.7 kV	11	125.0 kHz			
Ambient Temperature (Correct Range : 0-40)					
20 °C					
Print Count	Calibrate touch screen coordinates				
0					
HOME	OPEN	SAVE	ADJUST	EDIT	SETTINGS
				LOGIN	

For details of

Calibrate touch screen coordinates, refer to "7.4 Touch screen coordinate correction".

(b) Previous HMI

1 Press **Operation management** in the Maintenance menu.

Operation management		[Ready]	COM=0	2019.07.07 12:45
Ink operating time	0000	(hours)		
Ink alarm time	600	(hours; standard value: 600)		
Cumulative op. time	000000	(hours)		
Print count	0000000000	(prints)		
Ink, makeup	1067K, S100A			
Ink viscosity	100 (standard value:100)			
Ink pressure	0. 390 (MPa; standard value: 0. 390)			
Ambient temperature	20 (°C; range: 0~40)			
Deflection voltage	5. 7 (kV)			
Excitation V-ref.	11 (0~19)			
Excitation frequency	125. 0 (kHz)			
Ink level	1 (1~3)			
			Manual Shutdown	
			HOME	
			Back	

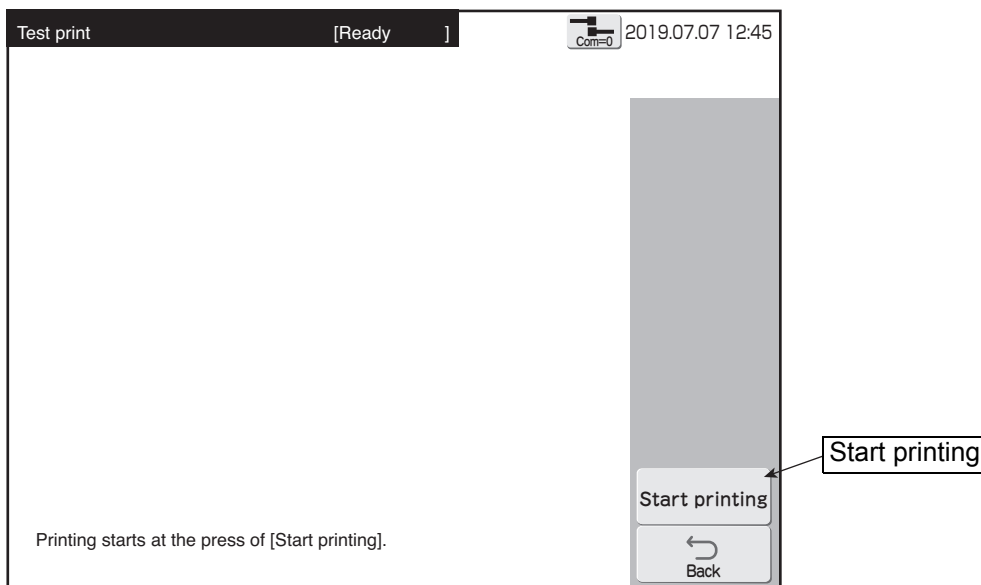
5.3 Print without any sensor signal (Test print, Start printing)

(1) Functions

- This function prints by button operation without a print start signal being input.
- In Previous HMI screens, print can also be performed by pressing **Start printing** from the manual control menu when in print ready status.
- In New HMI screens, print can also be performed by pressing **START PRINTING** in print description screen (New HMI) when in print ready status.

(2) Operation

- 1** Verify that the printer is in "Standby" state.
Press **Test print** in the Maintenance menu.



- 2** Press **Start printing**.

Printing starts.

(Note) Prints repeatedly when the Repeat sensor mode of the User environment setup screen is "OFF-ON transition" and repeat print is set.
To stop during repeat printing, press the **Stop**.

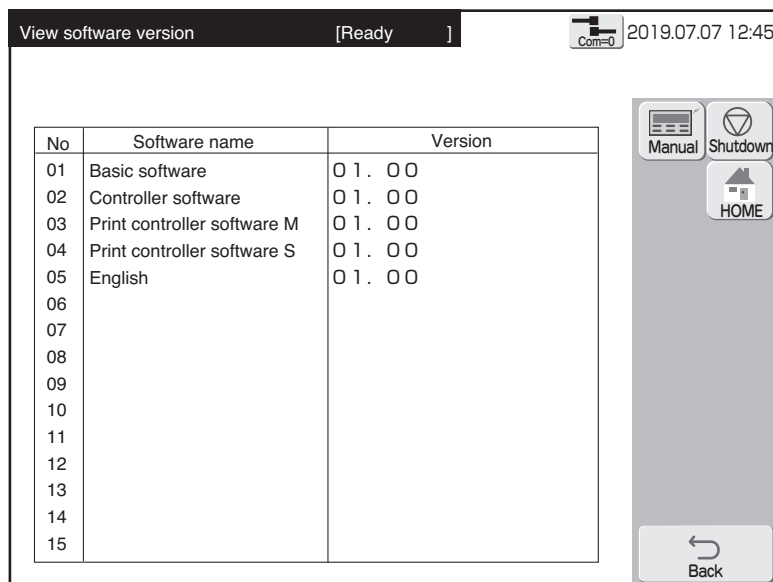
5.4 Confirm the registered software

(1) Functions

- Displays the name and version of the registered software.

(2) Operation

- 1** Press **View software version** in the Maintenance menu.



5.5 Checking the functions that can be performed

(1) Functions

- Checks if each function is accessible or protected.
- When protected, the administrator sets protection using the login function beforehand.
- For protected functions, the corresponding operation buttons are not displayed or the corresponding screens cannot be entered.
- If executable functions are restricted, the names of the corresponding screens will be shaded.

Protected functions

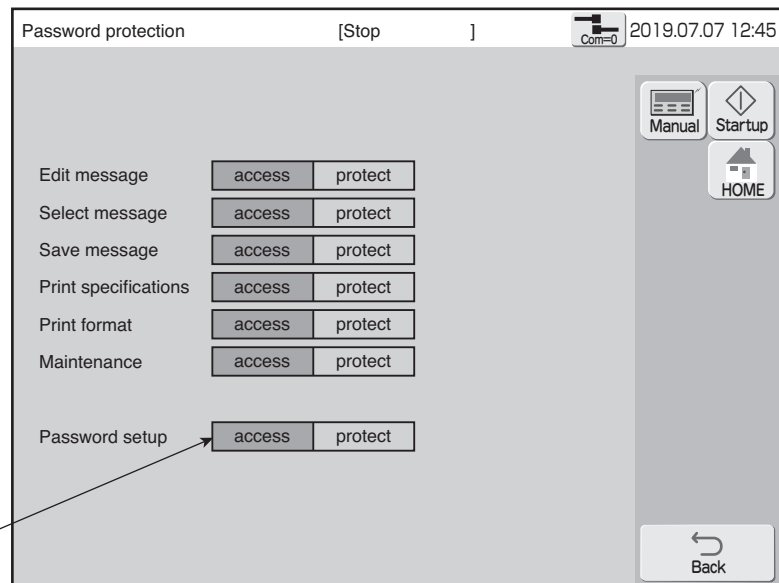
Item	Protected function name	
Edit message	• Edit message • Calendar conditions • Substitution rules setting • Count conditions	
Select message	• Select message	
Save message	• Save message	
Print specifications	• Print specifications • Various print setup • Adjust print parameters	
Print format	• Print format • Adjust inter-character space	
Maintenance	[Auxiliary functions] • Manage messages/group • Create user pattern • Calibrate touch screen coordinates • Copy data (IJP→USB) • Copy data (USB→IJP) • Edit standard pattern • Edit substitution rules • Select languages	[Environment setup] • User environment setup • Date/time setup • Communication environment setup • Touch screen setup [Maintenance work] • Operation management • Excitation V update • Circulation control • Solenoid valve/pump test • Periodic replacement parts mgmt.
Password setup	• Password setup	

(2) Operation

1 Press **Password protection** in the maintenance menu.

The Password protection screen is displayed.

The yellow items are the setting contents.





6. ENVIRONMENT SETUP

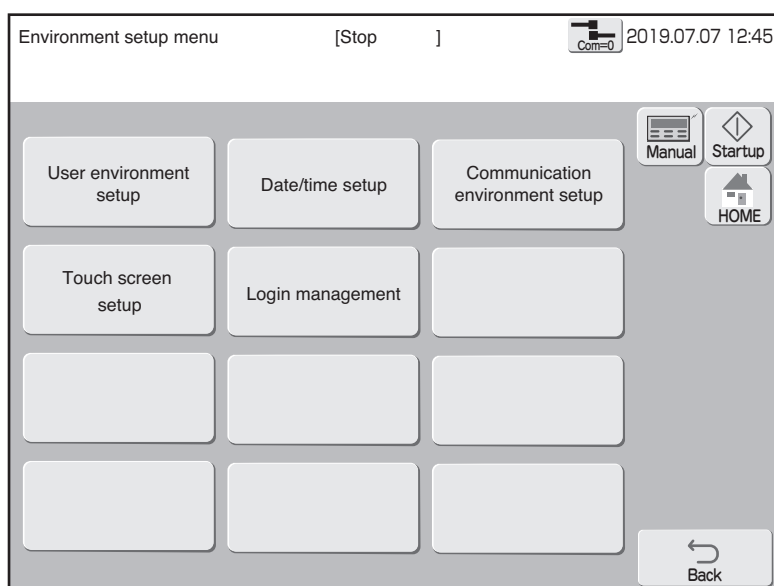
(1) Functions

Item	Contents	Reference
User environment setup	• Sets the print values.	6.1
Date/time setup	• Sets the current time, calendar time and other time information.	6.2
Communication environment setup	• Sets the serial communication values between external device and IJ printer.	Technical Manual 5.2
Touch screen setup	• Sets the touch screen values.	6.3
Login management	• Changes the user and sets the password for each user.	6.4, 6.5

(2) Operation

1 Press **Environment setup menu** in the Print description screen.

The Environment setup menu screen is displayed



6.1 Set the user environment

(1) Functions

- Sets the user environment values.

① Repeat print sensor mode

- Sets the conditions that print the specified number of times at the specified interval.

signal ON	While print target detect sensor signal is ON.
OFF-ON transition	When print target detect sensor signal is turned ON once.

- Disabled when Repeat count is "0".

② Change Character orientation (switching signal mode)

- Sets the forward and reverse character orientation method when performing reverse direction printing.
- The "Change mode" selection menu is different depending on the "Change Character Orientation" set value.
- When "Print quality first" is enabled, "Change Character Orientation (switching signal mode)" is NOT available.

Character orientation by "Change Character Orientation" and "Change mode" combination

Change Character Orientation	Change mode	Character orientation	
		Reciprocatve printing signal : OFF	Reciprocatve printing signal : ON
Reverse direction printing	OFF = forward	0:ABC(→)	1:ABC(←)
		3:↶ABC(→)	2:↶ABC(←)
	OFF = reverse	1:ABC(←)	0:ABC(→)
		2:↷ABC(←)	3:↷ABC(→)
Normal or inverted	OFF=normal	0:ABC(→)	2:↶ABC(←)
		3:↶ABC(←)	1:ABC(←)
	OFF=Inverted	2:↷ABC(←)	0:ABC(→)
		1:ABC(←)	3:↷ABC(→)
Character orientation 0 or 3	OFF=normal and forward	0:ABC(→)	3:↶ABC(→)
		1:ABC(←)	2:↶ABC(←)
	OFF=inverted and reverse	3:↶ABC(→)	0:ABC(→)
		2:↶ABC(←)	1:ABC(←)

(Example) Assume that the Change Character Orientation is "Reverse direction printing".

- If Change mode is "OFF = forward"

When the reciprocative printing signal is OFF, prints in the forward direction and when the signal is ON, prints in the reverse direction.

- f Change mode is "OFF = reverse"

When the reciprocative printing signal is OFF, prints in the reverse direction and when the signal is ON, prints in the forward direction.

For more detail, see "(3)change character orientation (change mode) supplement".

- When the Various print setup item "DIN print" is set to "Enable", reciprocative print signal is not received.

③ Reverse print

- Set for the print position at character orientation 1 and 3 setting.
- When "Print quality first" is enabled, "Revers print" is set to "right-justified" and fixed.

right-justified	Aligns the print position along the right margin when printing line 2 and subsequent lines. (The print position is different for character orientation settings 0 and 2.)
left-justified	Aligns the print position along the left margin when printing line 2 and subsequent lines. (The print position is the same for character orientation settings 0 and 2.)

(Example)

Results when print contents of

[1 2 3 4 5 6 7 8 9 0]

[ABC]

are printed in character orientation 1.

right-justified	1 2 3 4 5 6 7 8 9 0 A BC
left-justified	1 2 3 4 5 6 7 8 9 0 ABC

- Columns with items with double width size 5 to 9 set are always printed right-justified.
- This setting functions the same as reciprocating printing reverse direction printing.
- Format setup is free layout, it is printed as set the print items.

④ Print signal type

- Sets whether the IJ printer print output signal is made print.complete or print.-in-progress.

print.complete	Output for a fixed time after printing is complete.
print.-in-progress	Output while the IJ printer is printing.

⑤ Print Data Changeover In Progress error

- Sets whether to issue an error or not at print timing while Print data changeover is in progress.
- Error is not issued when set value is "Disabled", setup of Print data recall or Character input are modified and overlaps print timing.
- If the print target sensor data is input before the print data changeover in communication is complete, and error is not issued and the data prints before the changeover.

Specification of Print Data Changeover In Progress error

Function	Set value of Print Data Changeover In Progress	
	Disabled	Enabled
Print format, Character input(*1), Calendar condition, Print specification(*2), Print data recall	No error and changeover	Fault "Print Data Changeover In Progress"
Count condition, Character input (Character data in count block)	Fault "Invalid Count Data Change Timing"	
Adjust print parameters, Save message, Count reset, Operation management, Date/time setup(Current time)	No error and changeover	
User environment setup, Date/time setup (except current time), Communication environment setup, Excitation V update, Print specification(Speed compensation, Speed compensation fine control)	Fault "Invalid Data Change Timing"	

(*1) Except character data in count block.

(*2) Except Speed compensation and Speed compensation fine control.

- When in Ready status, user pattern can not be saved to existing pattern number.
- When in Ready status, the edit standard pattern function can not be run.

⑥ Char. Size menu

- Sets the size of the characters used.
- The following can be set:

Char. Size menu 1	5×8, 5×7
Char. Size menu 2	9×8, 9×7

- When "Print quality first" is enabled, "character size" is set to "5×7" and fixed.

⑦ Excitation V-ref. warning

- When the current ambient temperature and the standard ambient temperature (ambient temperature when Excitation V-ref. value was updated) exceeds a certain level, the alarm "Excitation V-ref. Review" occurs.
This setting enables/disables that function.
- Setup of enable/disable differs depending on the ink type.

⑧ QR Code printing

- When "Print quality first" is enabled, "QR code printing" is set to "180-degree rotation" and fixed.
- The direction of the print of the Micro QR code is set. Please refer to Technical Manual "9. APPENDIX Barcode, 2-dimensional code" (👉 9-4) for details.

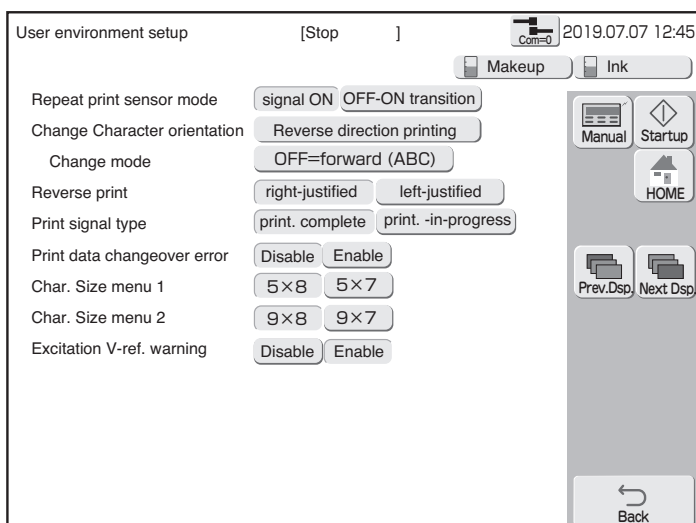
⑨ Month 3-digit code handling

- Sets the content to be printed when transmitting the Month 3-digit code by print contents transmission. Please refer to Technical Manual "5.4 Code Tables, (7) Calendar character code" (👉 5-46) for details.

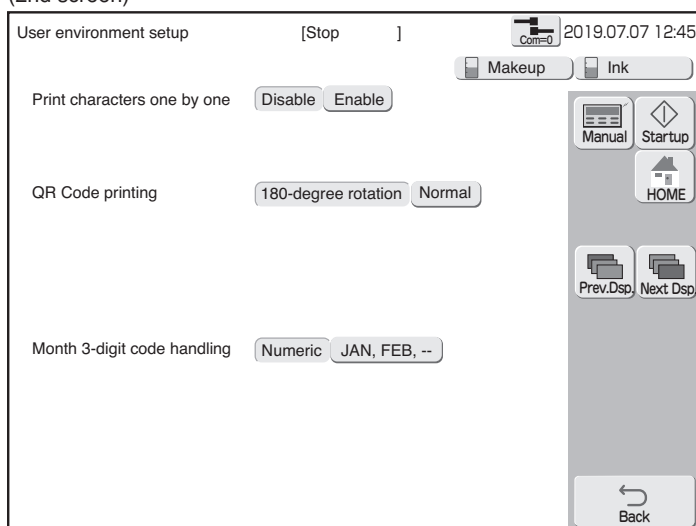
Numeric	Print with numbers. (001, 002, 003···)
JAN,FEB,--	Substitute with alphabetic characters and print. (JAN, FEB, MAR···)

(2) Operation

- 1 Press **User environment setup** in the environment setup menu.



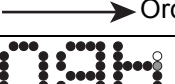
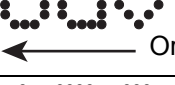
(2nd screen)



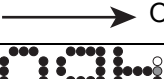
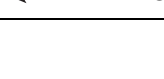
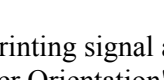
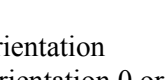
(3) Change character orientation (Change mode) supplement

- The character orientation at reciprocative printing signal input is different depending on the "Change Character orientation" and "Change mode" set values. See the table below.

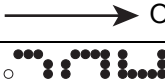
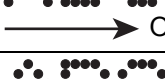
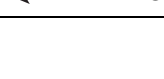
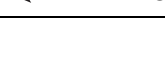
Reciprocative printing signal and character orientation
(When "Change Character orientation" = "Reverse direction printing")

Change mode	Character orientation	Reciprocative printing signal	
		OFF	ON
OFF = forward	0:ABC(→)		
	1:ABC(←)		
	2:CBV(←)		
	3:CBV(→)		
OFF=reverse	0:ABC(→)		
	1:ABC(←)		
	2:CBV(←)		
	3:CBV(→)		

Reciprocal printing signal and Character orientation
(When "Change Character Orientation" = "Normal and inverted")

Change mode	Character orientation	Reciprocal printing signal	
		OFF	ON
OFF=normal	0:ABC(→)		
	2:CBV(←)		
	1:ABC(←)		
	3:CBV(→)		
OFF=inverted	0:ABC(→)		
	2:CBV(←)		
	1:ABC(←)		
	3:CBV(→)		

Reciprocal printing signal and Character orientation
(When "Change Character Orientation" = "Character orientation 0 or 3")

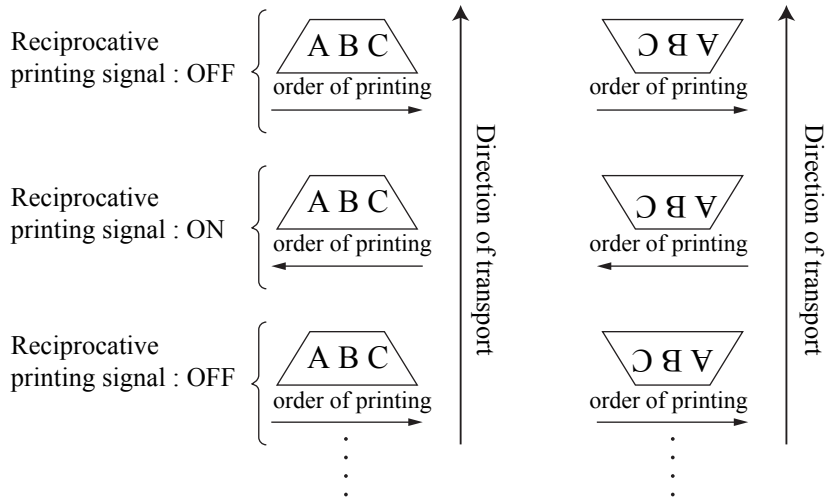
Change mode	Character orientation	Reciprocal printing signal	
		OFF	ON
OFF=normal and forward	0:ABC(→)		
	3:CBV(→)		
	2:CBV(←)		
	1:ABC(←)		
OFF=inverted and reverse	0:ABC(→)		
	3:CBV(→)		
	2:CBV(←)		
	1:ABC(←)		

- Operation examples

(Example) Examples of printing "ABC" onto trapezoidal print material

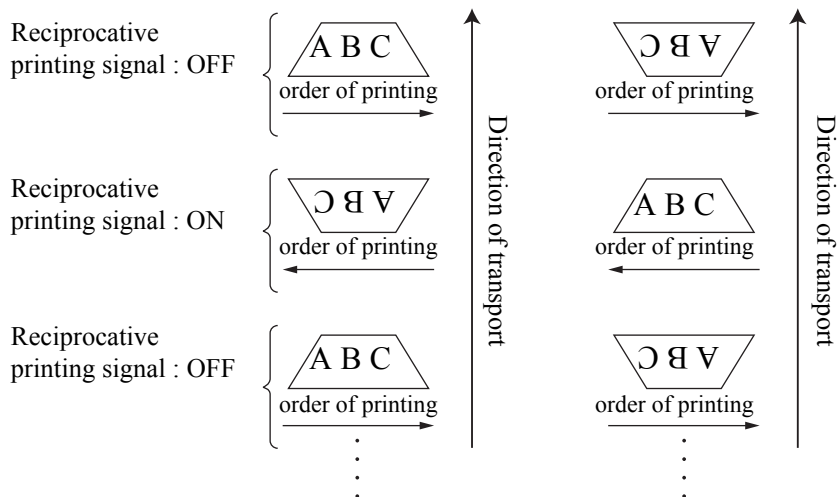
① Change Character Orientation : "Reverse direction printing"

Change mode : "OFF = forward"



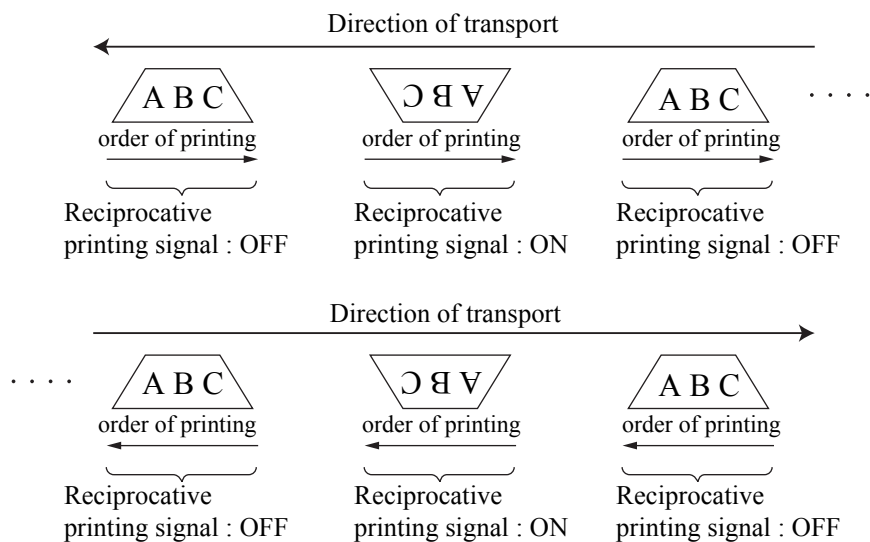
② Change Character Orientation : "Normal or inverted"

Change mode : "OFF = normal"



③ Change Character Orientation : "Character orientation 0 or 3"

Change mode : "OFF = normal and forward"



6.2 Set the date and time

(1) Functions

- Sets the date and time values.

Setting item	Contents	Default				
Current time	● Changes the current time (clock function).	-				
Calendar time control	● Sets whether the calendar time is the same as the current time or is stopped. <table><tr><td>same as current time</td><td> ● Makes the time of "Clock" displayed at the upper right-hand corner of the screen to the calendar time. </td></tr><tr><td>clock stop</td><td> ● Makes an arbitrarily set time to the calendar time. ● The "Clock" (current time) at the upper right-hand corner of the screen is not stopped. ● A time ahead of the current time cannot be set. </td></tr></table>	same as current time	● Makes the time of "Clock" displayed at the upper right-hand corner of the screen to the calendar time.	clock stop	● Makes an arbitrarily set time to the calendar time. ● The "Clock" (current time) at the upper right-hand corner of the screen is not stopped. ● A time ahead of the current time cannot be set.	same as current time
same as current time	● Makes the time of "Clock" displayed at the upper right-hand corner of the screen to the calendar time.					
clock stop	● Makes an arbitrarily set time to the calendar time. ● The "Clock" (current time) at the upper right-hand corner of the screen is not stopped. ● A time ahead of the current time cannot be set.					
Calendar time	● Sets the calendar time ● Calendar character will be printed based on "calendar time". ● This can be set only when Calendar time control is "clock stop".	-				
Clock system	● Sets 24-hour clock or 12-hour clock. <table><tr><td>24-hour clock</td><td>00:00 to 23:59.</td></tr><tr><td>12-hour clock</td><td>A.M. 00:00 to 11:59 P.M. 00:00 to 11:59</td></tr></table>	24-hour clock	00:00 to 23:59.	12-hour clock	A.M. 00:00 to 11:59 P.M. 00:00 to 11:59	24-hour clock
24-hour clock	00:00 to 23:59.					
12-hour clock	A.M. 00:00 to 11:59 P.M. 00:00 to 11:59					

(Note) When setting the substitution rules to year, select "clock stop" and do not set the past year instead of the current year. When set, a space is substituted for year.

(2) Operation

- 1 Press **Date/time setup** in the environment setup menu.

Date/time setup
[Stop]
2019.07.07 12:45

Current time
2019 (year) 07 (month) 07 (day)
12 (hour) 45 (minute) 45 (second)

Calendar time control
same as current time clock stop

Calendar time
2019 (year) 07 (month) 07 (day)
12 (hour) 45 (minute) 45 (second)

Clock system
24-hour clock 12-hour clock

Manual Startup
Apply HOME

Cancel

OK

- Press OK to apply the date/time setup.
- The current time affects the clock display only when changes are made.
- Calendar character will be printed based on "calendar time".

6.3 Set up the touch screen

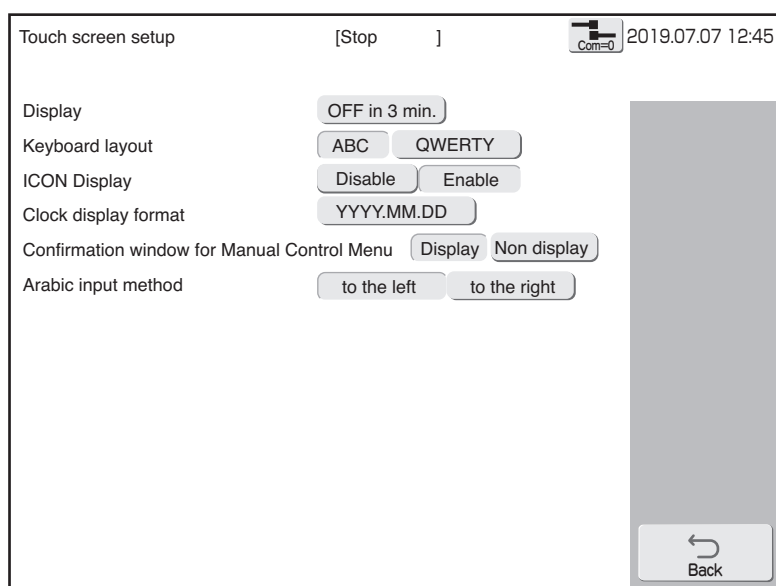
(1) Functions

- Sets the touch screen environment values.

Setting item	Contents	Default																																																																
Display	● Specifies the time the touch screen is turned on. <table><tr><td>OFF in 3 min.</td><td>Touch screen is turned off if there is no panel input within 3 minutes.</td></tr><tr><td>OFF in 30 min.</td><td>Touch screen is turned off if there is no panel input within 30 minutes.</td></tr><tr><td>Always on</td><td>Always on</td></tr></table> [Note] When turn "OFF in 30 min." and "Always on" were set, the brightness will decrease as the on time accumulates.	OFF in 3 min.	Touch screen is turned off if there is no panel input within 3 minutes.	OFF in 30 min.	Touch screen is turned off if there is no panel input within 30 minutes.	Always on	Always on	OFF in 3 min.																																																										
OFF in 3 min.	Touch screen is turned off if there is no panel input within 3 minutes.																																																																	
OFF in 30 min.	Touch screen is turned off if there is no panel input within 30 minutes.																																																																	
Always on	Always on																																																																	
Keyboard layout	● Changes the keyboard layout. <table><tr><td>ABC</td><td>ABC layout</td></tr><tr><td>QWERTY</td><td>Layout generally used with PC, etc.</td></tr></table> <table><tr><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td></tr><tr><td>K</td><td>L</td><td>M</td><td>N</td><td>O</td><td>P</td><td>Q</td><td>R</td><td>S</td><td>T</td></tr><tr><td>U</td><td>V</td><td>W</td><td>X</td><td>Y</td><td>Z</td><td></td><td></td><td></td><td></td></tr></table> ABC layout <table><tr><td>Q</td><td>W</td><td>E</td><td>R</td><td>T</td><td>Y</td><td>U</td><td>I</td><td>O</td><td>P</td></tr><tr><td>A</td><td>S</td><td>D</td><td>F</td><td>G</td><td>H</td><td>J</td><td>K</td><td>L</td><td></td></tr><tr><td>Z</td><td>X</td><td>C</td><td>V</td><td>B</td><td>N</td><td>M</td><td></td><td></td><td></td></tr></table> QWERTY layout	ABC	ABC layout	QWERTY	Layout generally used with PC, etc.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z					Q	W	E	R	T	Y	U	I	O	P	A	S	D	F	G	H	J	K	L		Z	X	C	V	B	N	M				ABC
ABC	ABC layout																																																																	
QWERTY	Layout generally used with PC, etc.																																																																	
A	B	C	D	E	F	G	H	I	J																																																									
K	L	M	N	O	P	Q	R	S	T																																																									
U	V	W	X	Y	Z																																																													
Q	W	E	R	T	Y	U	I	O	P																																																									
A	S	D	F	G	H	J	K	L																																																										
Z	X	C	V	B	N	M																																																												
Icon display	● For some buttons, icon display or non-icon display is set.	Enable																																																																
Clock display format	● Selects the date format of the clock (current time) displayed at the upper right-hand corner of the screen. ● This can be set only when Calendar time control is "clock stop". <table><tr><td>YYYY. MM. DD</td><td>Display in year.month.day order</td></tr><tr><td>DD. MM. YYYY</td><td>Display in day.month.year order</td></tr><tr><td>MM. DD. YYYY</td><td>Display in month.day.year order</td></tr></table>	YYYY. MM. DD	Display in year.month.day order	DD. MM. YYYY	Display in day.month.year order	MM. DD. YYYY	Display in month.day.year order	YYYY. MM. DD																																																										
YYYY. MM. DD	Display in year.month.day order																																																																	
DD. MM. YYYY	Display in day.month.year order																																																																	
MM. DD. YYYY	Display in month.day.year order																																																																	
Confirmation window for Manual Control Menu	● When the Startup  and Shutdown  button or a button in the Manual Control menu  was pressed, confirmation message display or non-display is set. However, a confirmation message is never displayed even if the Start Printing button in the Manual Control menu is pressed. <table><tr><td>Display</td><td>Displays a confirmation window.</td></tr><tr><td>Non display</td><td>Does not display a confirmation window.</td></tr></table>	Display	Displays a confirmation window.	Non display	Does not display a confirmation window.	Display																																																												
Display	Displays a confirmation window.																																																																	
Non display	Does not display a confirmation window.																																																																	
Arabic input method	● Sets the direction of cursor movement when in Arabic input mode.	To the left																																																																

(2) Operation

- 1 Press **Touch screen setup** in the environment setup menu.



6.4 Changing the login user

(1) Functions

- Logs in again as a different user from currently logged in user.
- When logging in, selects the user and inputs the password.
- The administrator defines the user name and password and password protection setting in advance.
The password protection setting can be changed for each user beforehand. See the Technical Manual.
"3.2 Setting functions which can be performed".
- When the administrator sets the login procedure necessary at power-on, the login user is selected at power-on.
- The login history for the last 30 times is displayed on the login history screen.

Please change the password periodically.

(2) Operation

(a) Previous HMI

1 Press menu **LOGIN**.

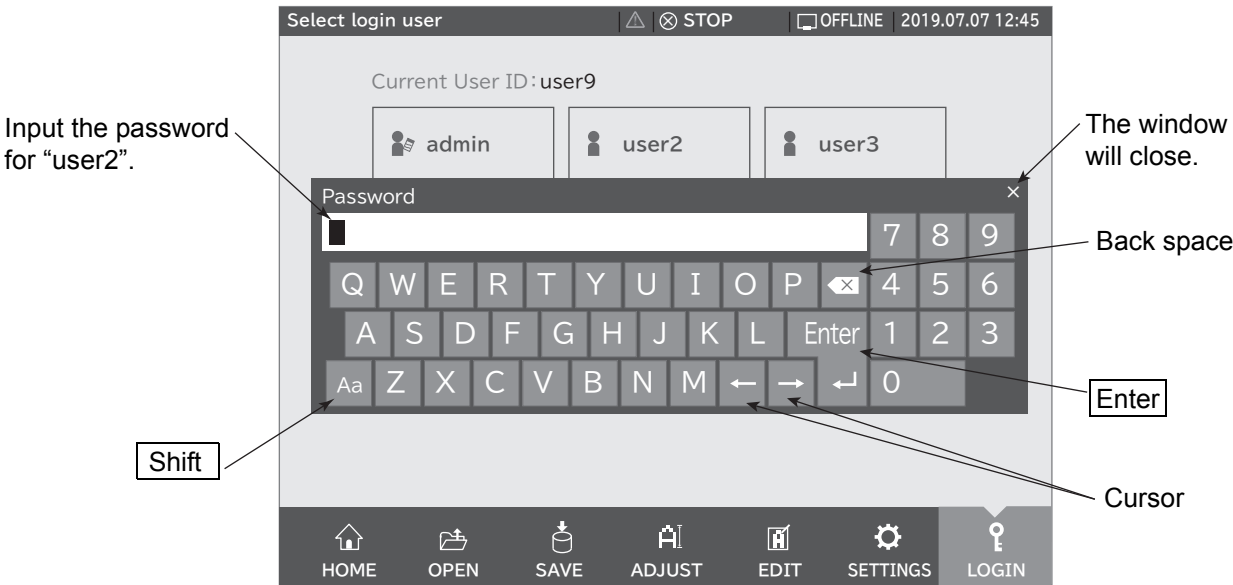
The Select login user screen is displayed.

This icon shows "Administrator". This icon shows "User".



2 Press user name **user2**.

A password input window opens.



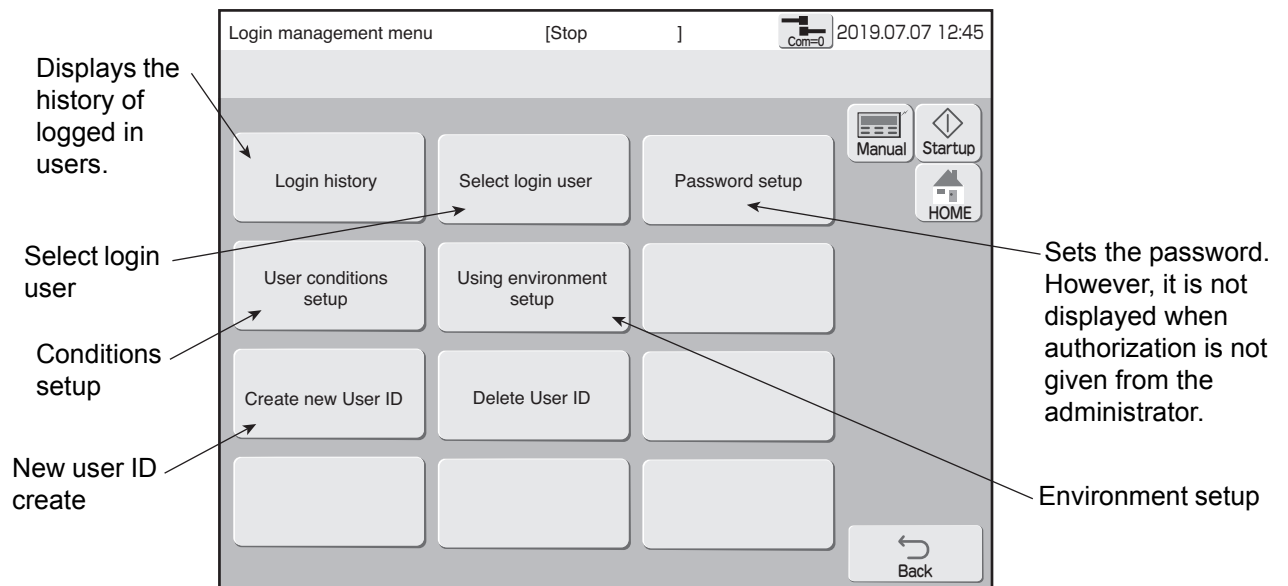
3 Input the password for user name "user2" and press **Enter**.

Logs in again using user name "user2" and the touch screen return to the Print description screen (HOME).

(b) Previous HMI

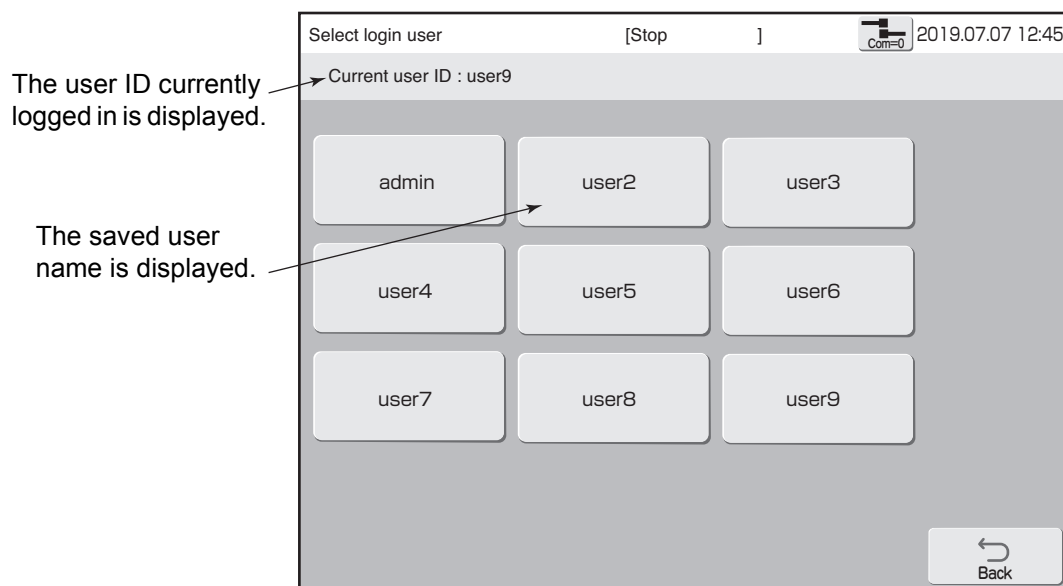
1 Press **Login management** in the environment setup menu.

The Login management menu is displayed.



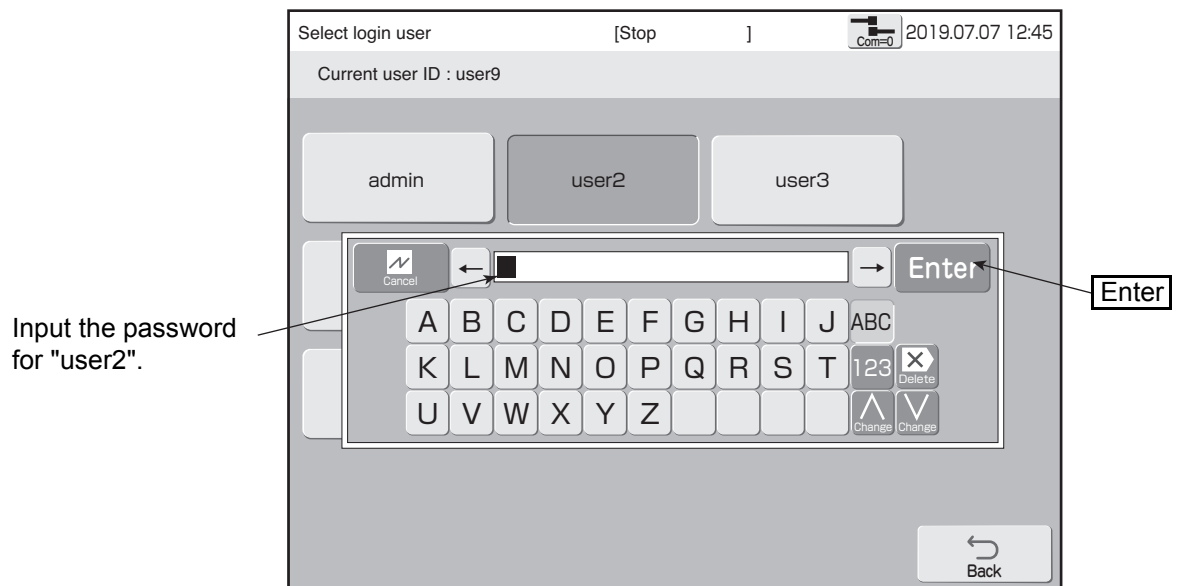
2 Press **Select login user**.

The Select login user screen is displayed.



3 Press user name **user2.**

A password input window opens.

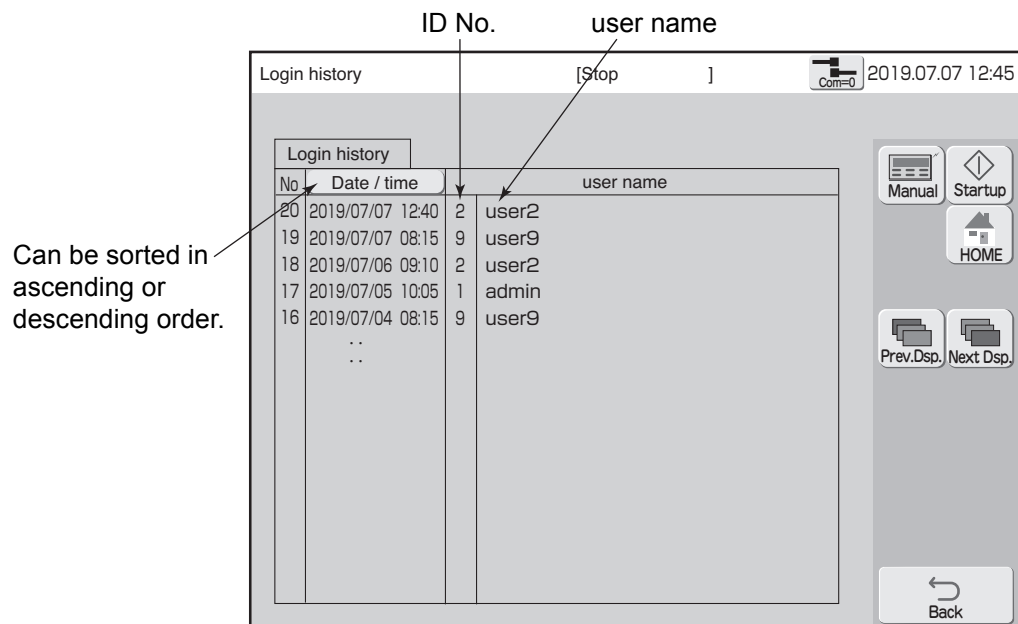


4 Input the password for user name "user2" and press **Enter .**

Logs in again using user name "user2" and the touch screen returns to the Login management menu.

5 Press **Login history in the Login management menu.**

A history of logged in users is displayed.



6.5 Setting password for each user

(1) Functions

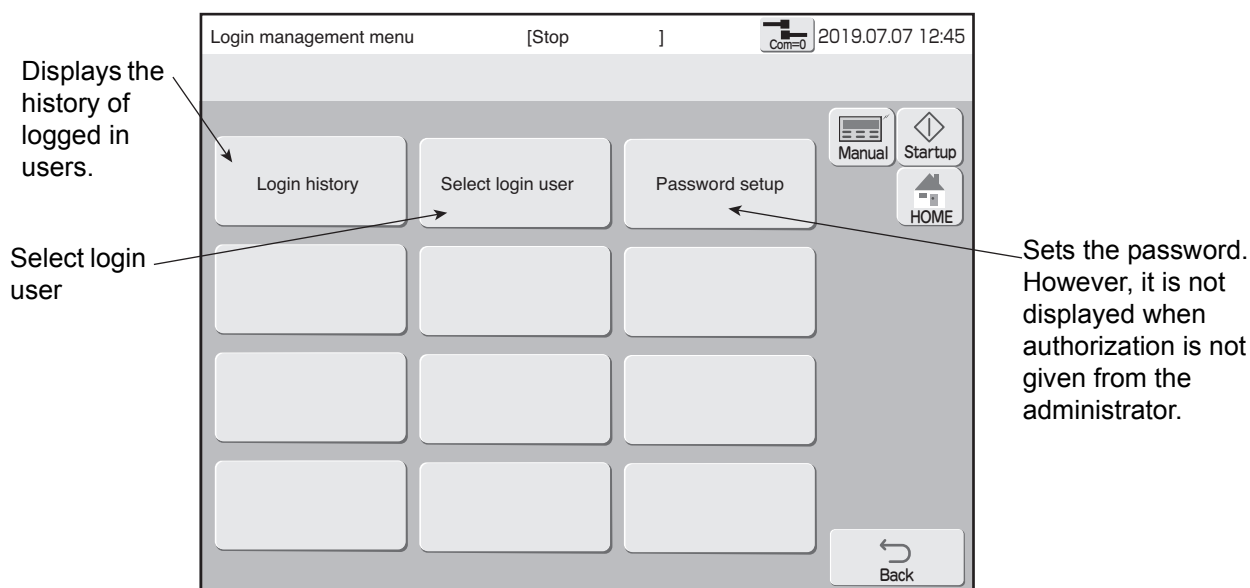
- User sets their own password.
- However, when the user was defined by the administrator, and the password setting is protected, the password change screen is not displayed.
- A password must be entered when logging in.
- Make the password 12 characters or less.

Please change the password periodically.

(2) Operation

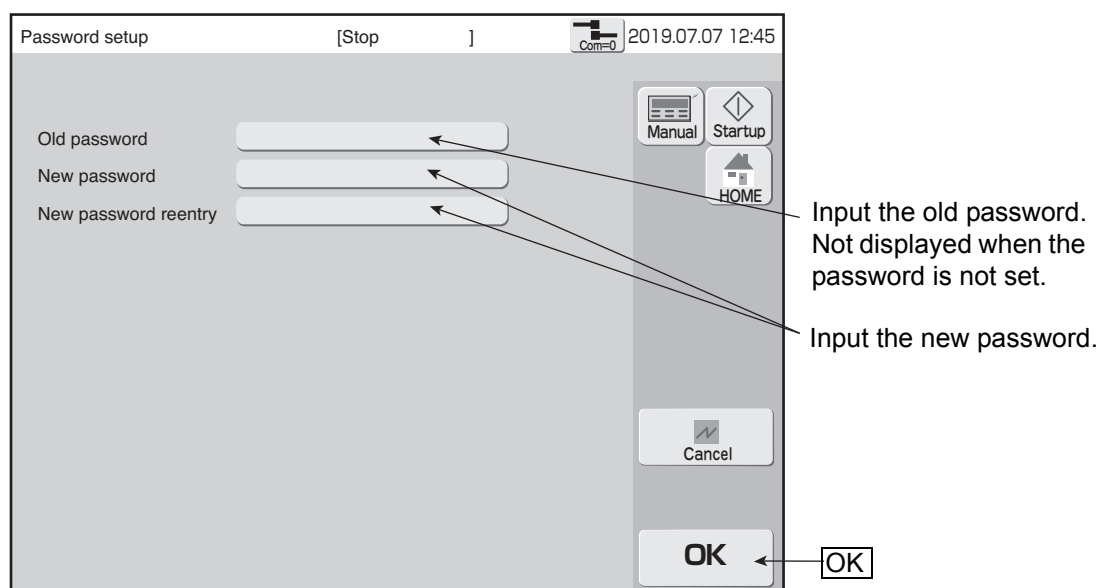
1 Press **Login management** in the environment setup menu.

The Login management menu is displayed.



2 Press **Password setup**.

The Password setup screen is displayed.



3 Enter "Old password", "New password", and "New password reentry".

4 Press **OK**.

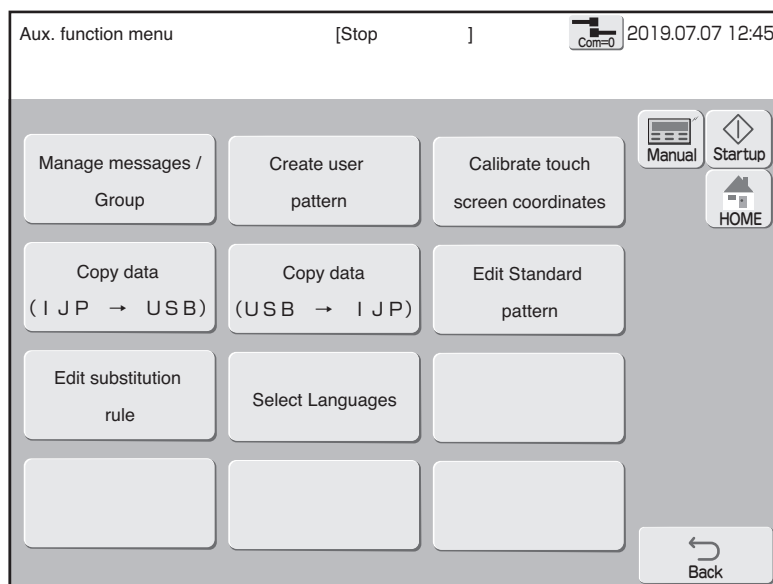
7 AUXILIARY FUNCTIONS

(1) Functions

Item	Contents	Reference
Manage messages	Performs message name change, deletion, stored number change, and group change of stored messages.	7.1
Manage group	Performs group name change, group deletion and group number change of group which classifies and manages messages.	7.2
Create user pattern	Creates and edits user patterns (saved characters).	7.3
Calibrate touch screen coordinates	Corrects touch screen and screen coordinate position offset.	7.4
Copy data (IJP→USB)	Backs up message and user pattern to USB.	7.5
Copy data (USB→IJP)	Copies backed up data to IJ printer.	7.5
Edit standard pattern	Edits standard patterns.	7.6
Edit substitution rules	Edits calendar substitution rules.	7.7
Selecting languages	Changes the display language.	7.8

(2) Operation

- Press **Auxiliary function** in the Print description screen.
The Auxiliary function menu screen is displayed



7.1 Manage messages

7.1.1 Managing stored messages

(1) Functions

Message management functions

Item	Contents	Reference
Change message name	• Changes the message name of stored messages.	7.1.2
Delete Stored message	• Deletes stored messages.	7.1.3
Change message number	• Changes the stored number of stored messages.	7.1.4
Change group	• Changes the group of stored messages.	7.1.5
Preview	• The print image of the registered print data can be checked.	7.1.6

- Do not turn off the printer during the Message management procedure.

Message selection methods

Item	Contents
Normal	• One message can be selected.
Multiple	• Multiple messages can be selected.
Area	• Two items in the message name list can be specified and the messages within that area can be selected.

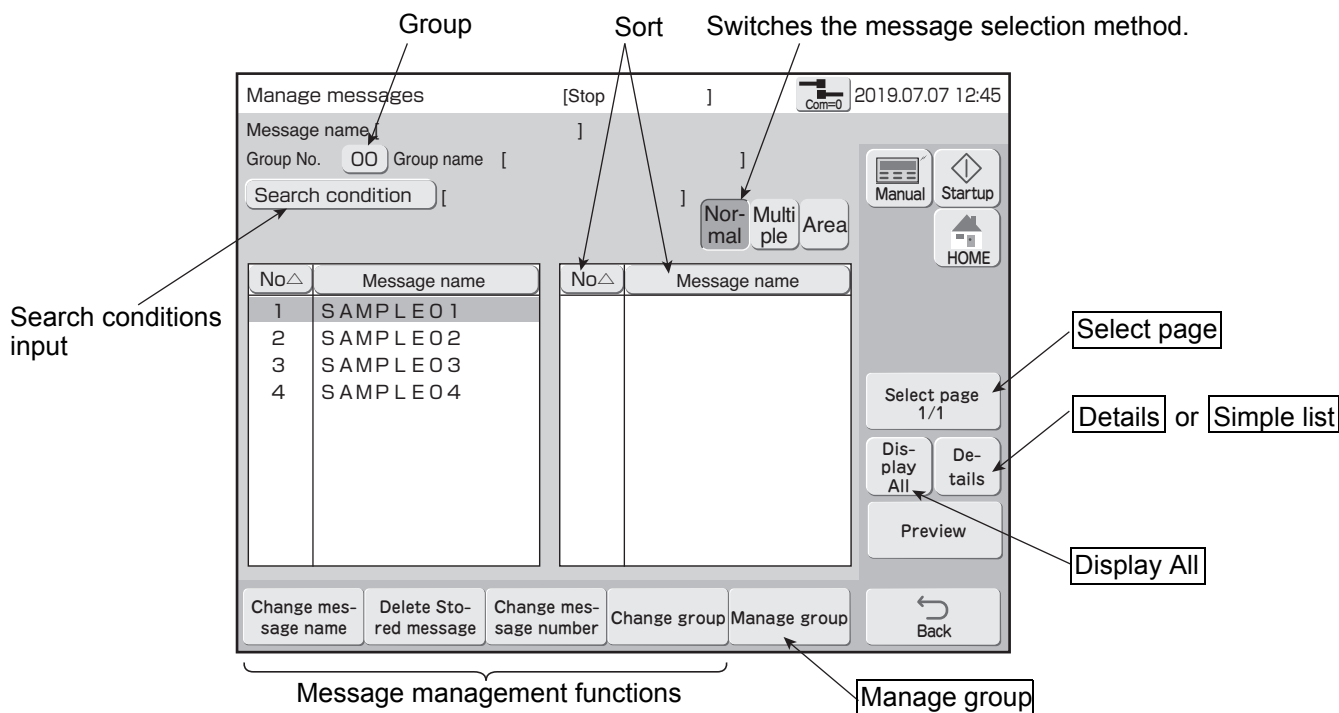
- For "Multiple" and "Area", the Change message name and Change message number functions cannot be started.

(2) Operation

1 Press **Manage messages / Group** in the auxiliary functions menu.

The Manage messages screen is displayed.

- Preview is not displayed on the following screens.



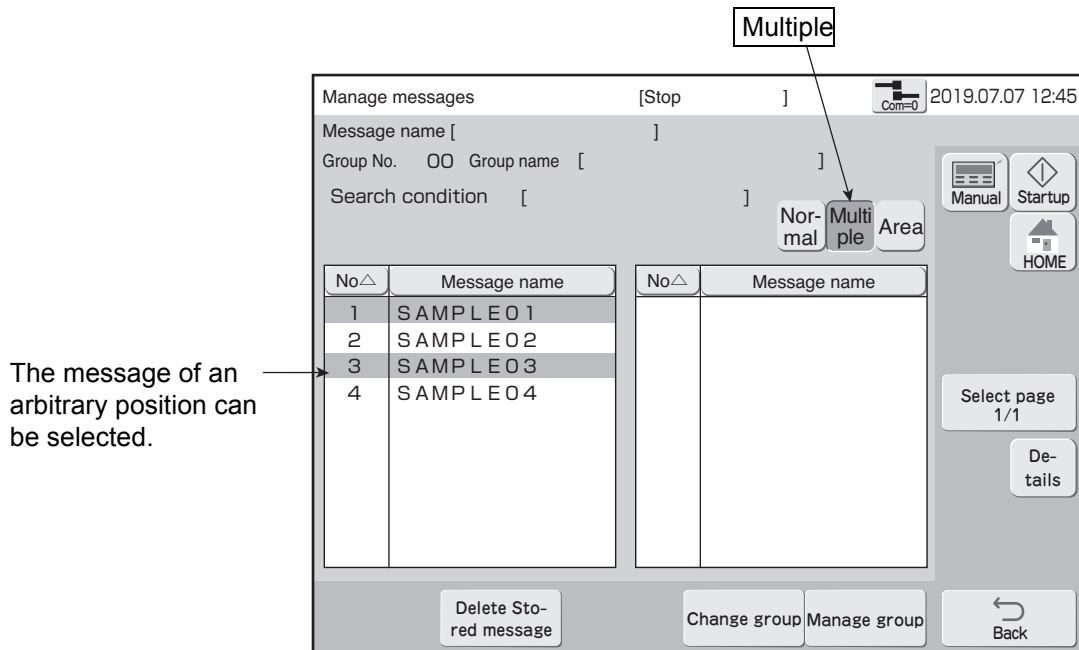
2 Switch the selection method of the objective message.

3 After selecting the message name of the objective message, press **Change message name**, **Delete Stored message**, **Change message number**, or **Change group**.

The screen of each function is displayed.

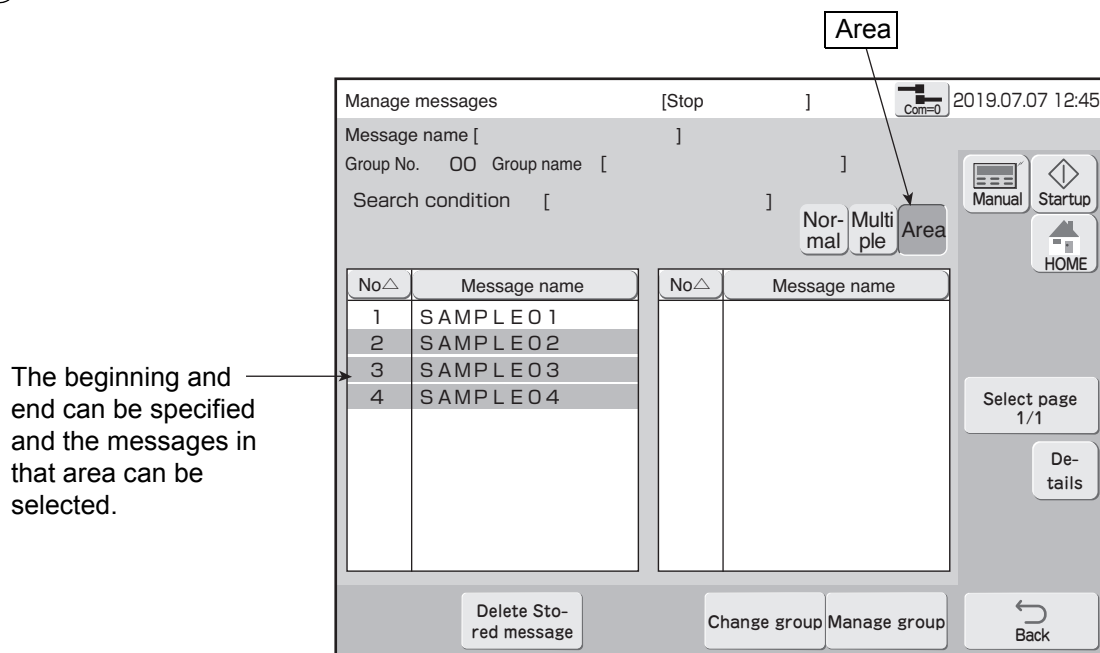
(3) Message selection method

- ① Normal
See the previous item for a screen example.
- ② Multiple



The Delete Stored message and Change group functions can be started.

- ③ Area



The Delete Stored message and Change group functions can be started.

7.1.2 Changing the message name

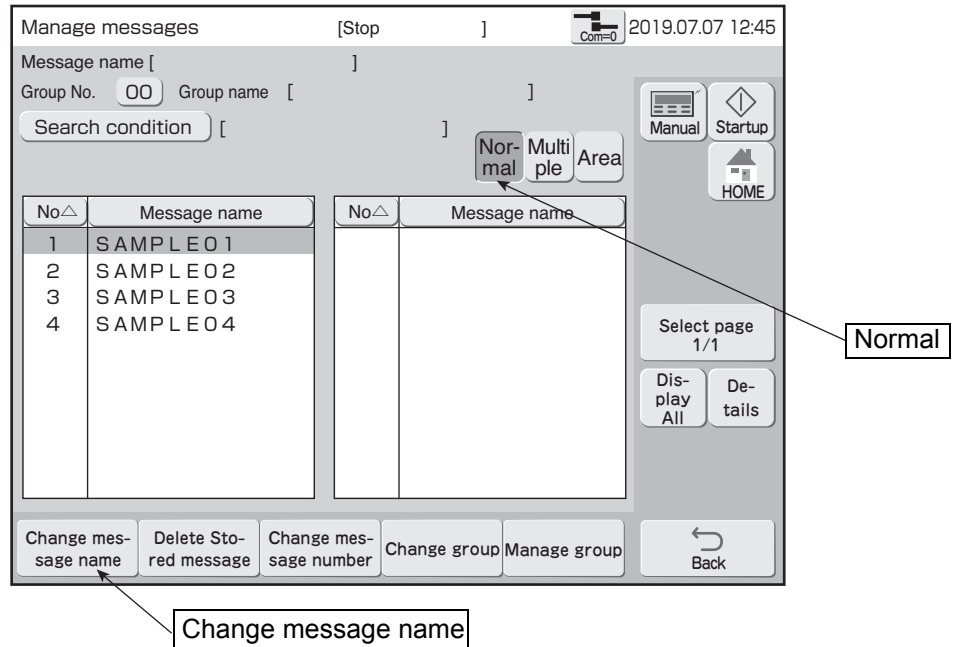
(1) Functions

- Changes the message name of a stored message.

(2) Operation

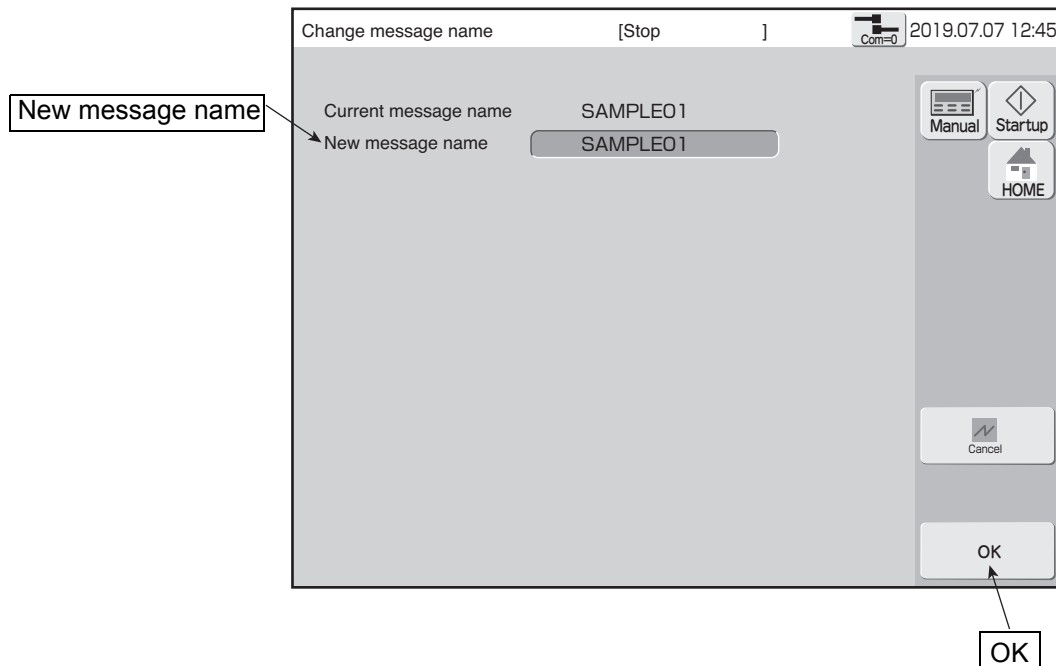
The Manage messages screen is displayed.

1 Set Normal selection mode and select the message.



2 Press Change message name.

The Change message name screen is displayed.



3 Press New message name.

A keyboard is displayed.

4 Input the new message name and press Enter.

5 Press OK.

The message name is changed.

7.1.3 Deleting stored messages

(1) Functions

- Deletes stored messages.

(2) Operation

The Manage messages screen is displayed.

1 Select the message.

Switches the message selection method.

No△	Message name
1	SAMPLE01
2	SAMPLE02
3	SAMPLE03
4	SAMPLE04

Delete Stored message

2 Press **Delete Stored message**.

A Delete Saved Message Confirmation message is displayed.

==== Delete Stored Message Confirmation ====

Print data "SAMPLE01" will be deleted.

OK Cancel

OK

3 Press **OK**.

The message is deleted.

7.1.4 Changing message number

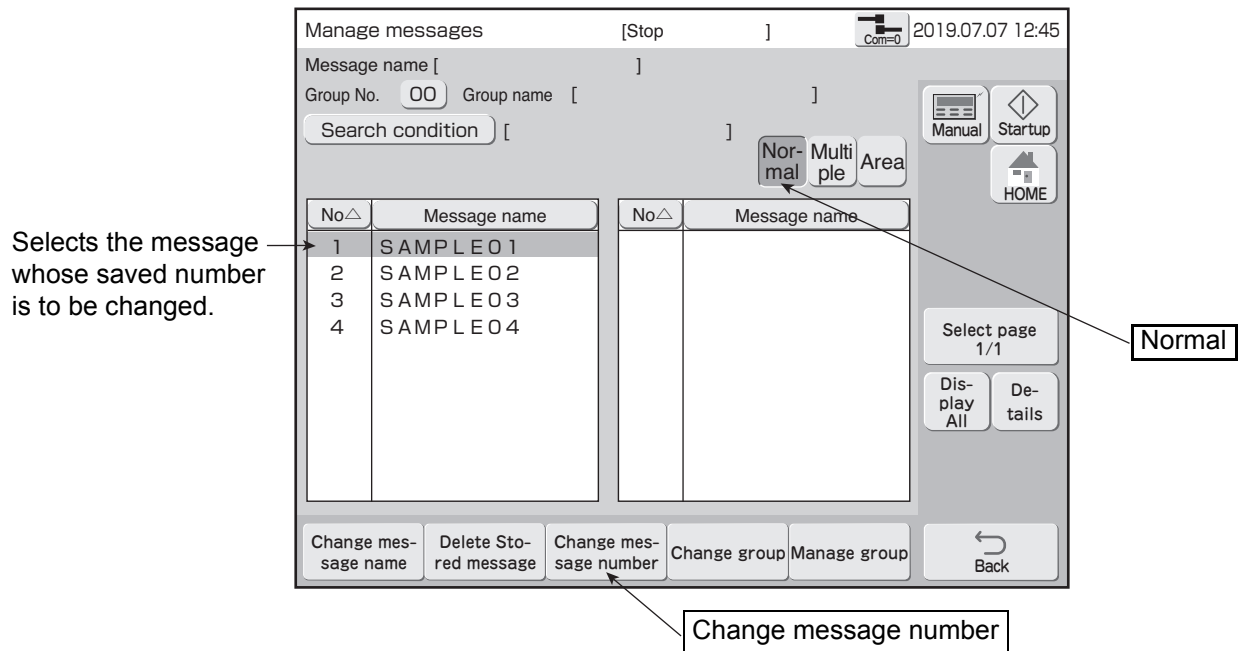
(1) Functions

- Changes the stored number of a stored message.
- Specifies two messages and exchanges stored numbers.
- Group number is assigned to a message name.

(2) Operation

The Manage messages screen is displayed.

1 Set Normal selection mode and select the message name.



2 Select the first message and press **Change message number**.

The screen that selects the 2nd message is displayed.

At this time, all the messages are displayed.

The screenshot shows the 'Manage messages' screen. At the top, it says 'Manage messages' and '[Stop]' with a 'Com=0' indicator and the date/time '2019.07.07 12:45'. Below this are input fields for 'Message name []', 'Group No. OO Group name []', and 'Search condition []'. A 'Normal' button is next to the search condition. On the right side, there are buttons for 'Manual', 'Startup', 'HOME', 'Select page 1/1', 'De-tails', 'Free number', and 'Cancel'. At the bottom, there is a 'Change message number' button. The main area is titled 'Select the move destination' and contains two tables. The first table has columns 'No△' and 'Message name' and lists messages 1 through 4. The second table is empty. An arrow points to the first row of the first table with the label '1st message'. Another arrow points to the second row with the label 'Selects the 2nd message.'.

No△	Message name
1	SAMPLE01
2	SAMPLE02
3	SAMPLE03
4	SAMPLE04

To select a number without a message saved, press **Free number**.

All the numbers are displayed.

The screenshot shows the 'Manage messages' screen with the same header as the previous one. The 'Search condition' is now 'Normal'. The 'Select the move destination' section now contains two tables. The first table has columns 'No' and 'Message name' and lists messages 1 through 10. The second table has columns 'No' and 'Message name' and lists numbers 11 through 20. The 'Free number' button is highlighted. The 'Change message number' button is at the bottom.

No	Message name
1	SAMPLE01
2	SAMPLE02
3	SAMPLE03
4	SAMPLE04
5	
6	
7	
8	
9	
10	

No	Message name
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	

3 Select the 2nd message.

Manage messages [Stop] 2019.07.07 12:45

Message name []

Group No. OO Group name []

Search condition [] Normal

Tow message number will be swapped.

No△	Message name	No△	Message name
1	SAMPLE01		
2	SAMPLE02		
3	SAMPLE03		
4	SAMPLE04		

1st message →

2nd message →

Manual Startup HOME

Select page 1/1

De-tails

Free number

Cancel

Change mes-sage number

OK OK

4 Press **OK**.

The message stored number is changed.

Manage messages [Stop] 2019.07.07 12:45

Message name []

Group No. OO Group name []

Search condition [] Normal Multi Area

No△	Message name	No△	Message name
1	SAMPLE03		
2	SAMPLE02		
3	SAMPLE01		
4	SAMPLE04		

Manual Startup HOME

Select page 1/1

Dis-play All De-tails

Change mes-sage name Delete Sto-red message Change mes-sage number Change group Manage group Back

7.1.5 Changing the group to which a message belongs

(1) Functions

- Changes the group to which a stored message belongs.

(2) Operation

The Manage messages screen is displayed.

1 Select the message.

Switches the message selection method.

Manage messages [Stop] Com=0 2019.07.07 12:45

Message name []

Group No. 00 Group name []

Search condition []

Normal Multiple Area

No△	Message name
1	SAMPLE01
2	SAMPLE02
3	SAMPLE03
4	SAMPLE04

Manual Startup

HOME

Select page 1/1

Display All Details

Change message name Delete Stored message Change message number Change group Manage group Back

Change group

2 Press **Change group**.

A group list window opens.

3 Specify the group.

The specified group is displayed in yellow.

Group	Group name
0	undefined
1	GROUP001
2	GROUP002
3	GROUP003
4	GROUP004
5	GROUP005
6	GROUP006
7	GROUP007
8	GROUP008
9	GROUP009

Prev.Dsp. Next Dsp.

OK Cancel

Group after change

Group before change

OK

4 Press **OK**.

The group is changed.

7.1.6 Checking the print image of registered print data

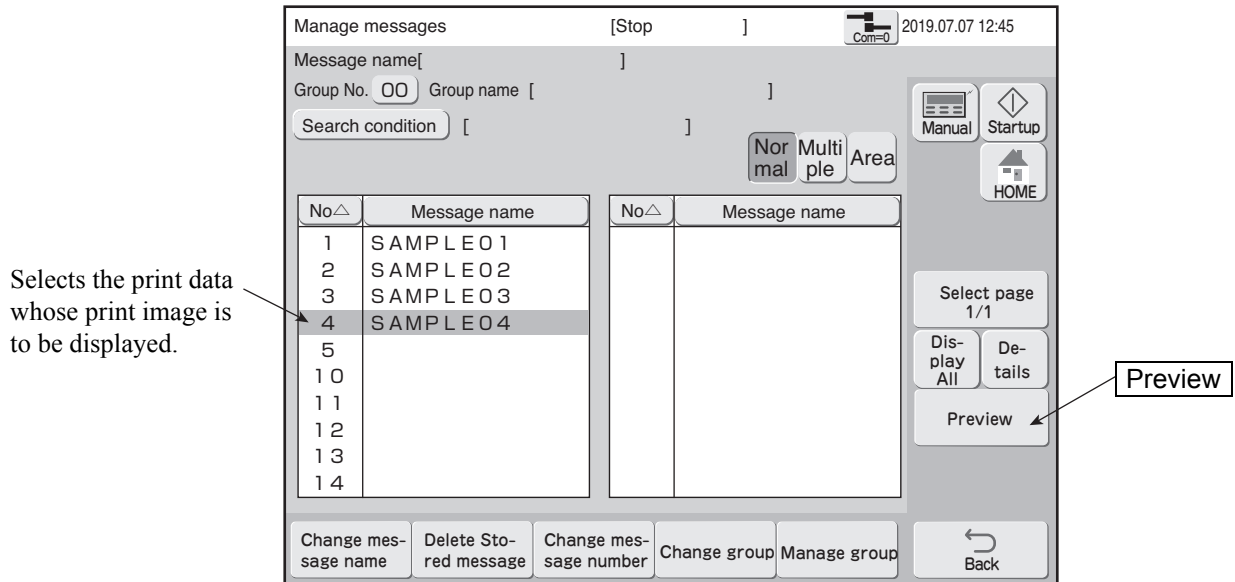
(1) Functions

- The print image of registered print data can be checked.
- The print content currently being printed is not affected.

(2) Operation

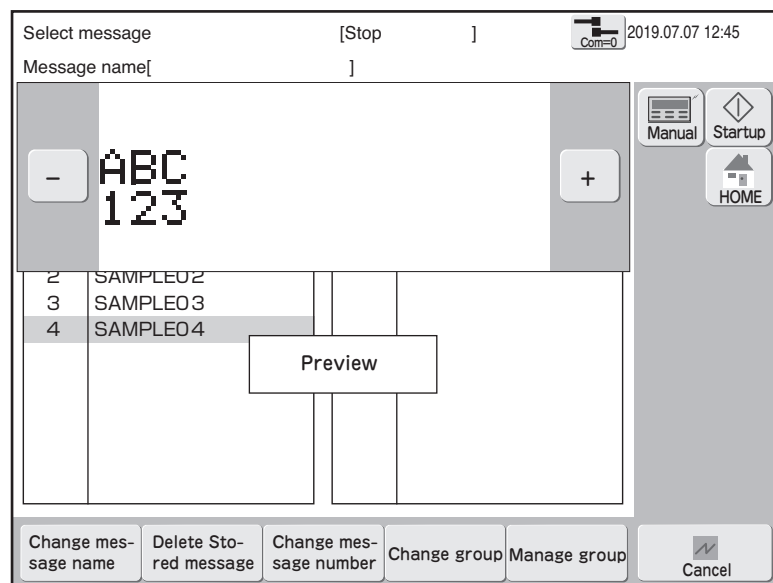
The Manage messages screen is displayed.

1 Set Normal selection mode and select the message.



2 Press **Preview**.

The print image of the selected print data is displayed.



7.2 Manage group

7.2.1 Manage group

(1) Functions

Message management functions

Item	Contents	Reference
Change/create group name	- Changes a group name. - Inputs a new group name.	7.2.2
Delete group	Deletes a group and the messages belonging to that group.	7.2.3
Change group number	- Changes the group number. - As to the messages belonging to that group, the group number is changed and the group name is not changed.	7.2.4

Group selection methods

Item	Contents
Normal	One group can be selected.
Multiple	Multiple groups can be selected.
Area	Two items of the group list can be specified and the groups within that area can be selected.

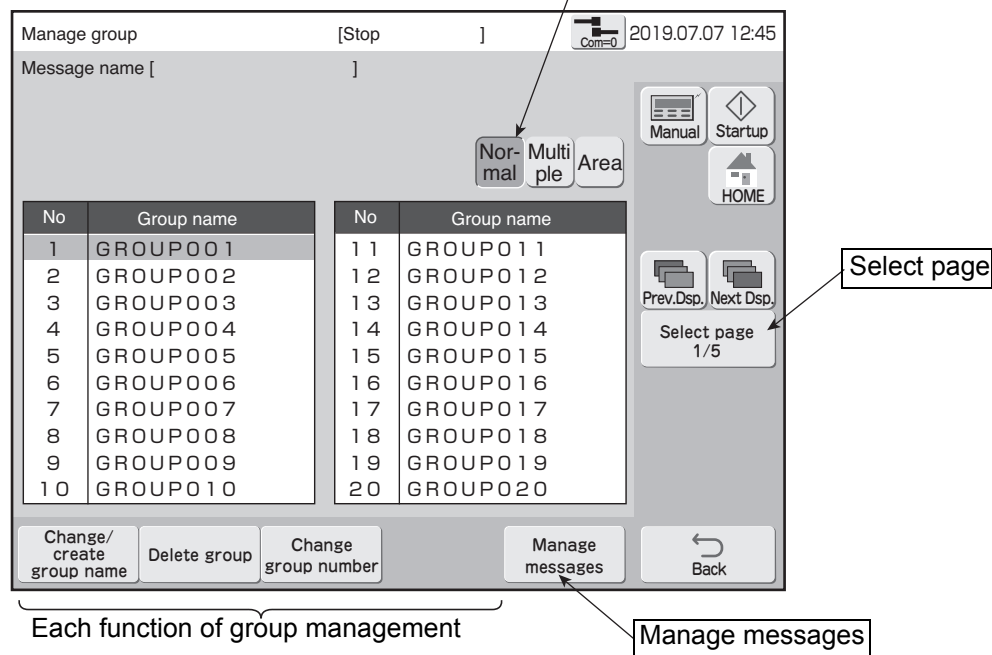
- For "Multiple" and "Area", the Change/create group name and Change group number functions cannot be started.

(2) Operation

1 Press **Manage group** in the Manage messages screen.

The Manage group screen is displayed.

Switches the message selection method.



2 Switch the selection method of the objective group.

3 After selecting the objective group, press **Change/create group name**, **Delete group**, or **Change group number**.

The screen of each function is displayed.

7.2.2 Change group name

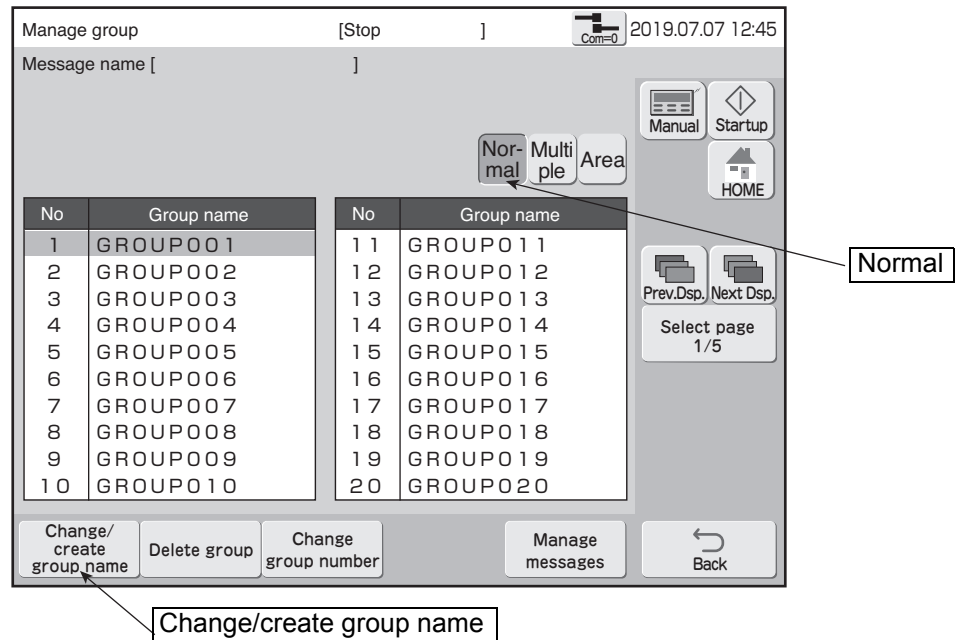
(1) Functions

- Changes a group name.
- Inputs a new group name.

(2) Operation

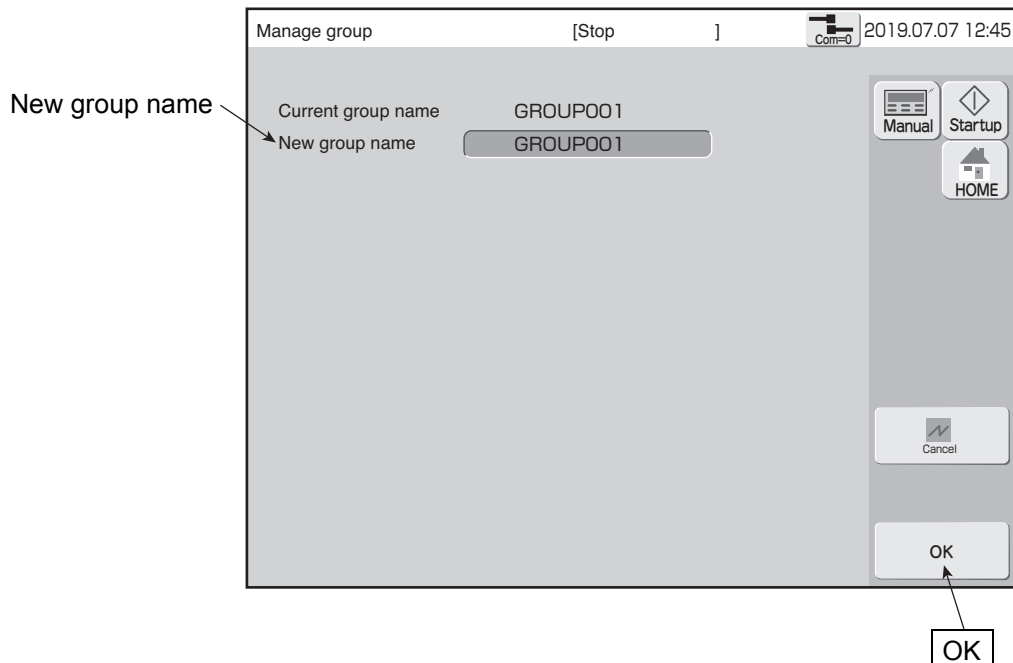
The Manage group screen is displayed.

1 Set the Normal selection mode and select the group.



2 Press **Change/create group name**.

Change group name screen is displayed.



3 Press **New group name**.

A keyboard is displayed.

4 Input the new group name and press **Enter** **Enter** .

5 Press **OK**.

The group name is changed.

7.2.3 Delete a stored group

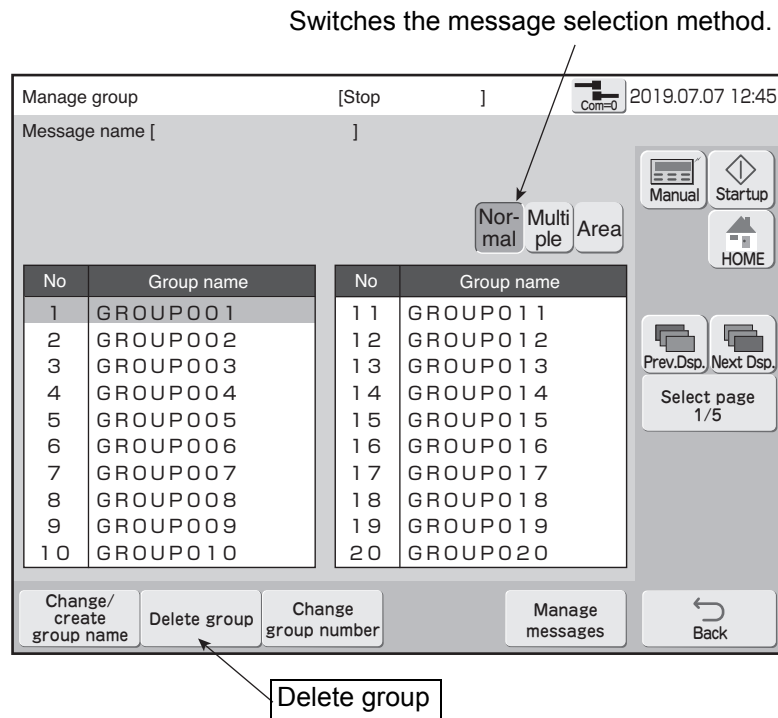
(1) Functions

- Deletes a group and the messages belonging to that group.

(2) Operation

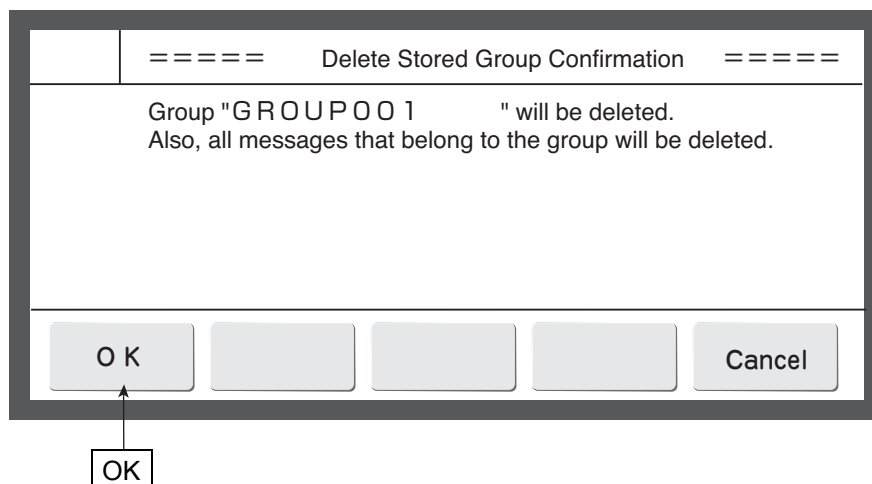
The Manage group screen is displayed.

1 Select a group.



2 Press **Delete group**.

A Delete Stored Group Confirmation message is displayed.



3 Press **OK**.

The group and the messages belonging to that group are deleted.

7.2.4 Change group number

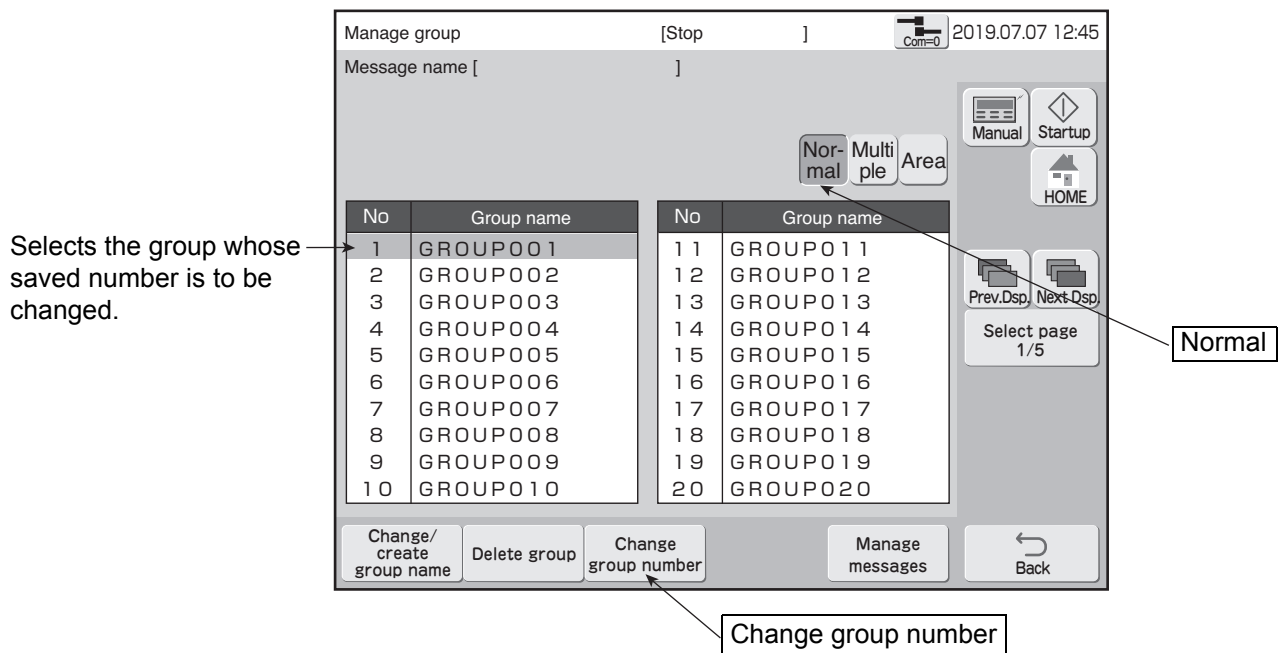
(1) Functions

- Changes a group number.
- Specifies 2 groups and exchanges the group numbers.
- As to the messages belonging to that group, the group number is changed and the group name is not changed.

(2) Operation

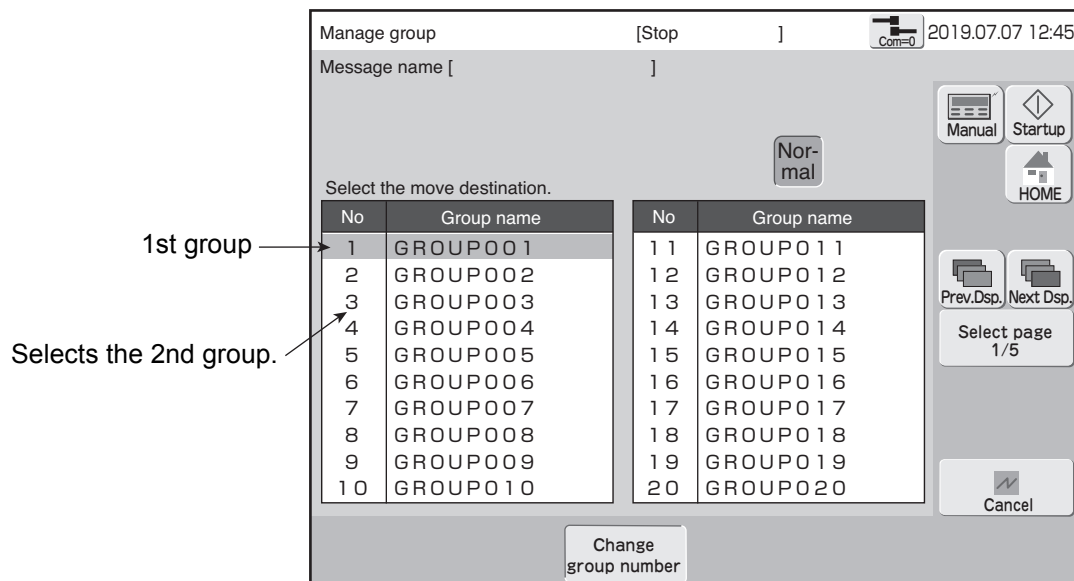
The Manage group screen is displayed.

1 Set Normal selection mode and select a group.

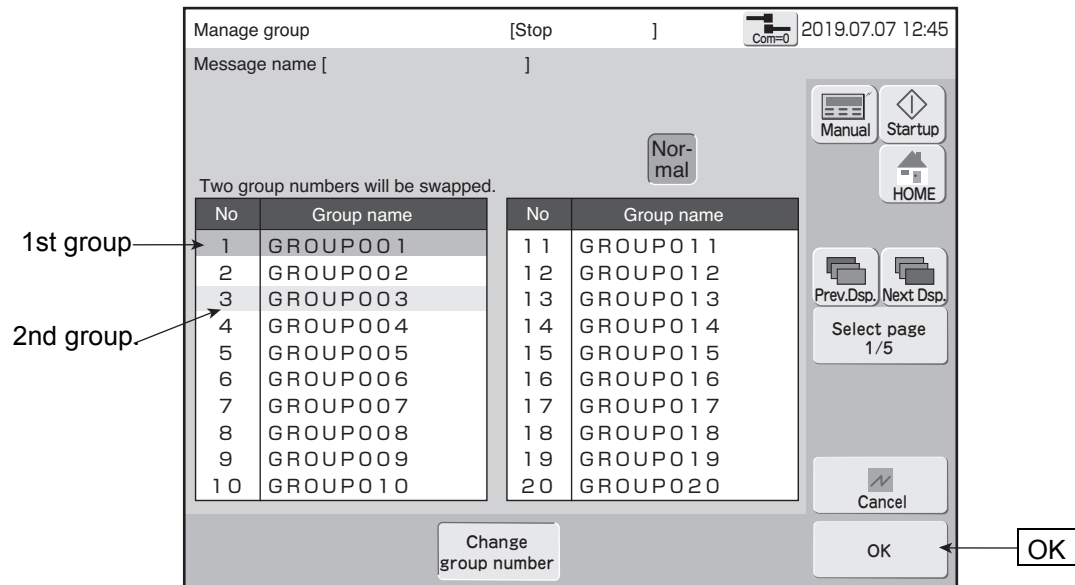


2 Select the 1st group and press **Change group number**.

The screen that selects the 2nd group is displayed.

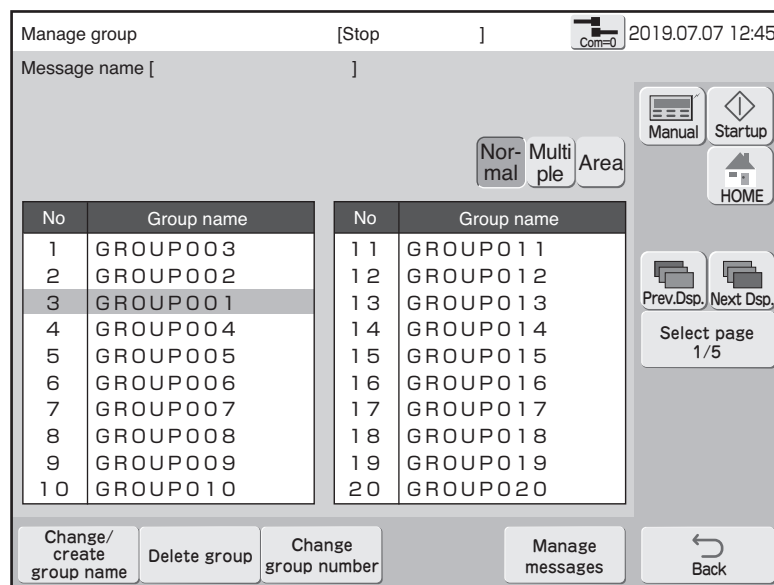


3 Select the 2nd group.



4 Press **OK**.

The saved number of the group is changed.



7.3 Creating a user pattern

7.3.1 Creating and saving user pattern

(1) Functions

- Creates a user pattern.
- Fixed size decides the horizontal dots and vertical dots according to the dot matrix.
- Free size allows creation of an arbitrarily sized pattern within horizontal 320 dots x vertical 16 dots.
- Shows the number of characters which can be created.

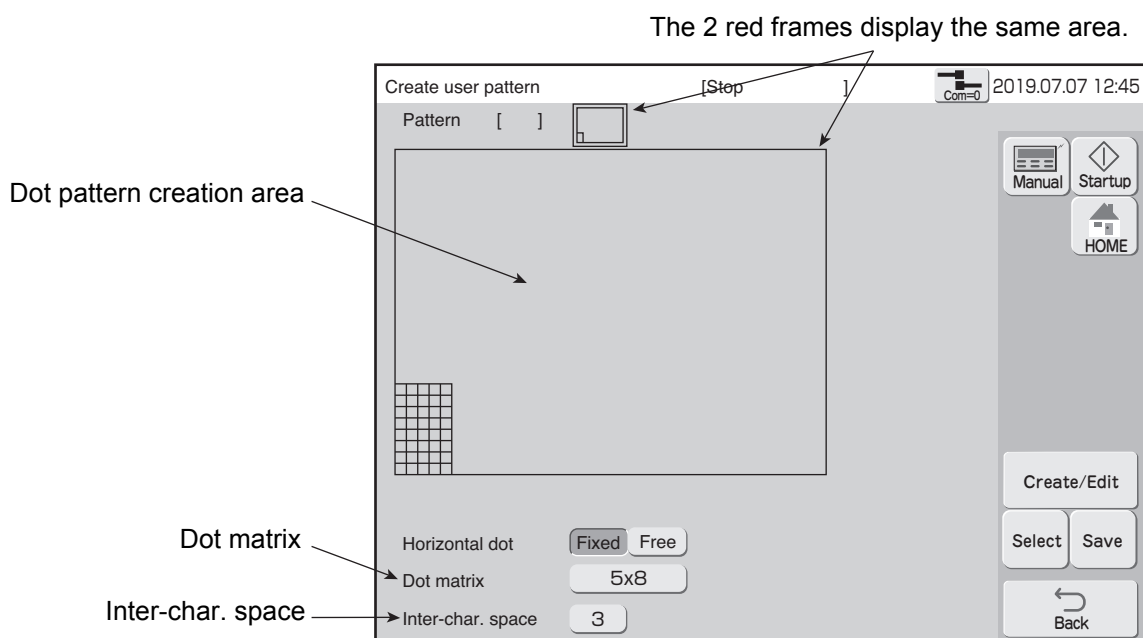
	UX-H
Fixed size	200 messages (each dot matrix)
Free size	50 messages

- In the case of character sizes 30 x 40 and 36 x 48, up to 50 fixed sizes each can be created.
- When "Print quality first" is enabled, you can create the user pattern but it is NOT available for printing.

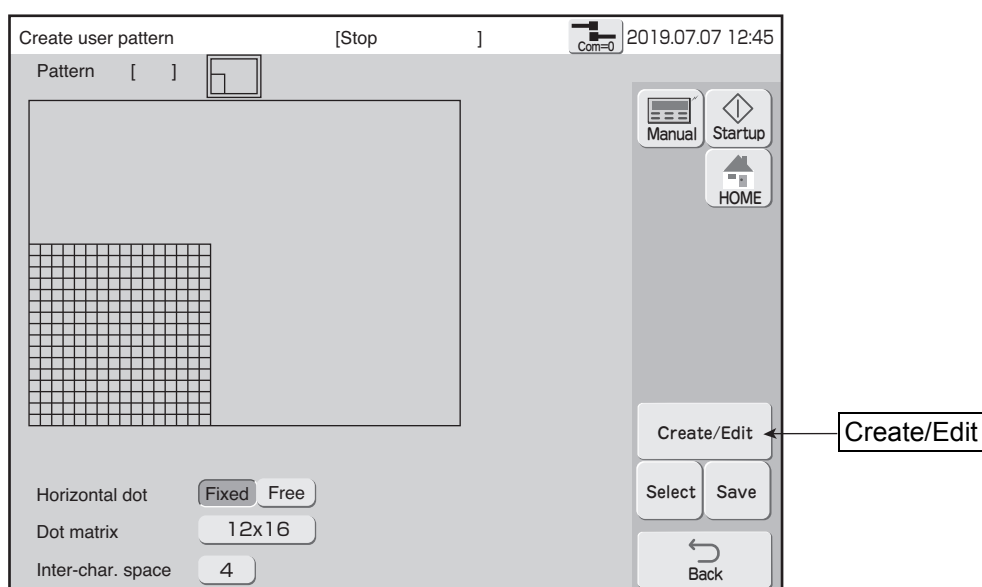
(2) Operation

1 Press **Create user pattern** in the auxiliary functions menu.

The Create user pattern screen is displayed.

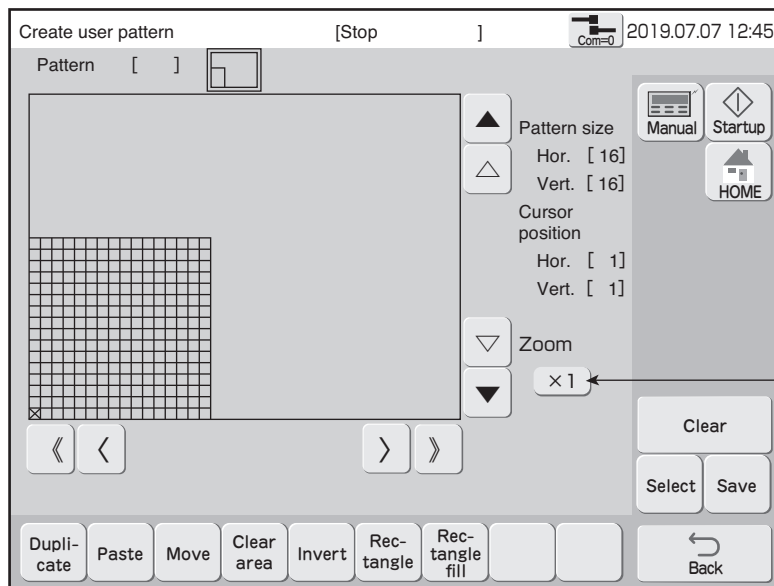


2 Set the dot matrix and inter-character space.



3 Press **Create/Edit**.

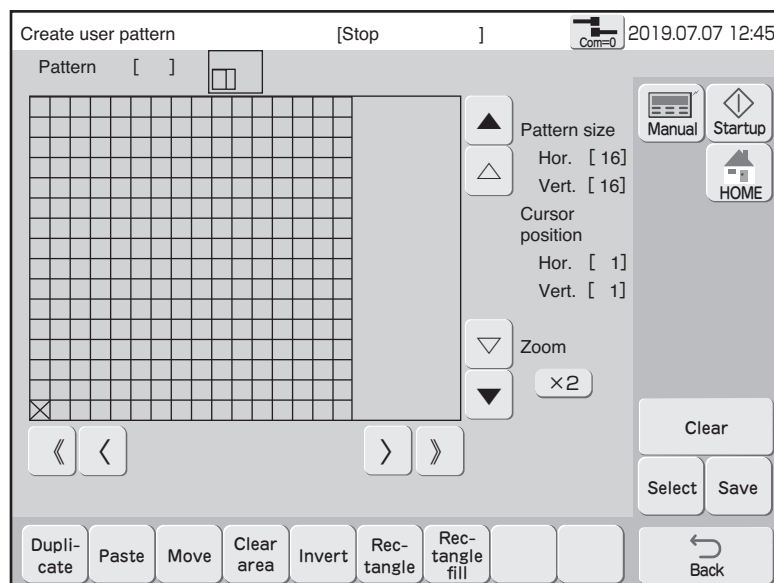
The Create/Edit screen is displayed.



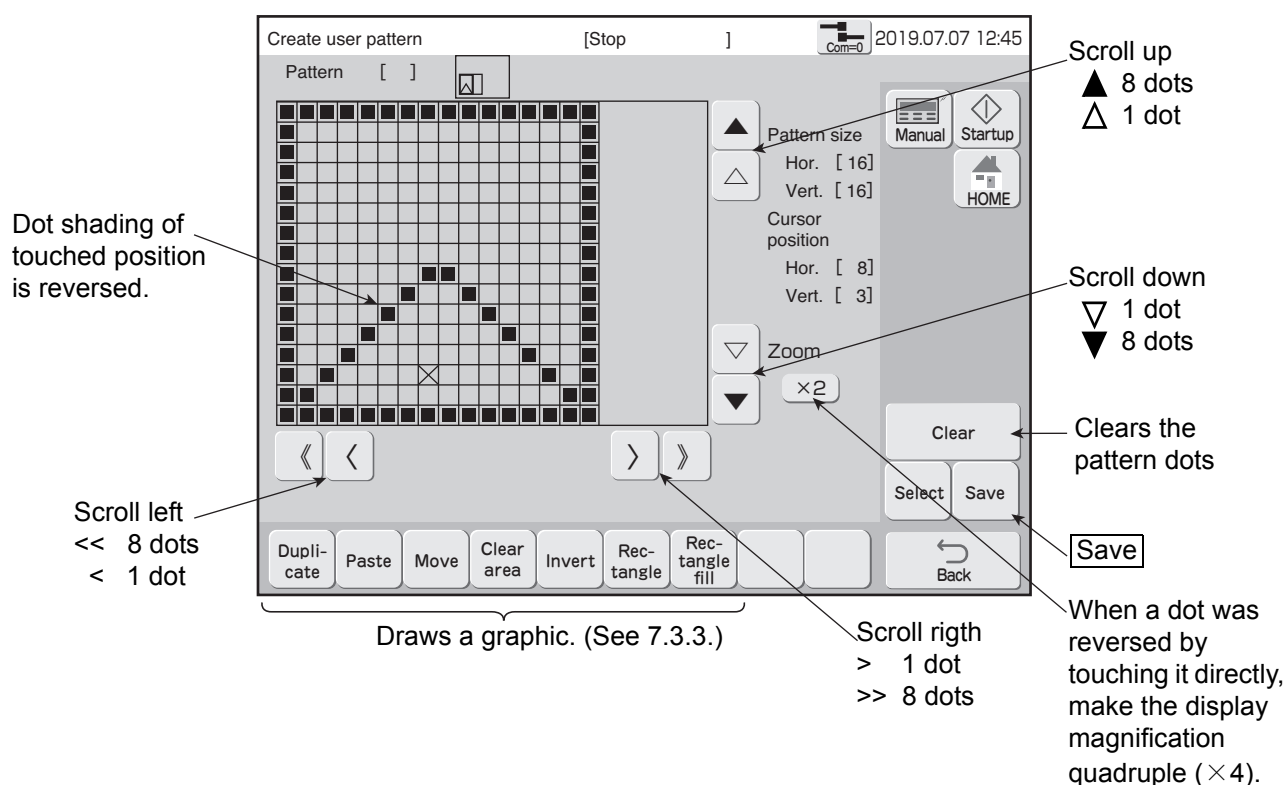
Changes the display magnification (X1, X2, X4).

4 Set Zoom and change the display magnification of the dot pattern creation area.

The display magnification of the dot pattern creation area changes.



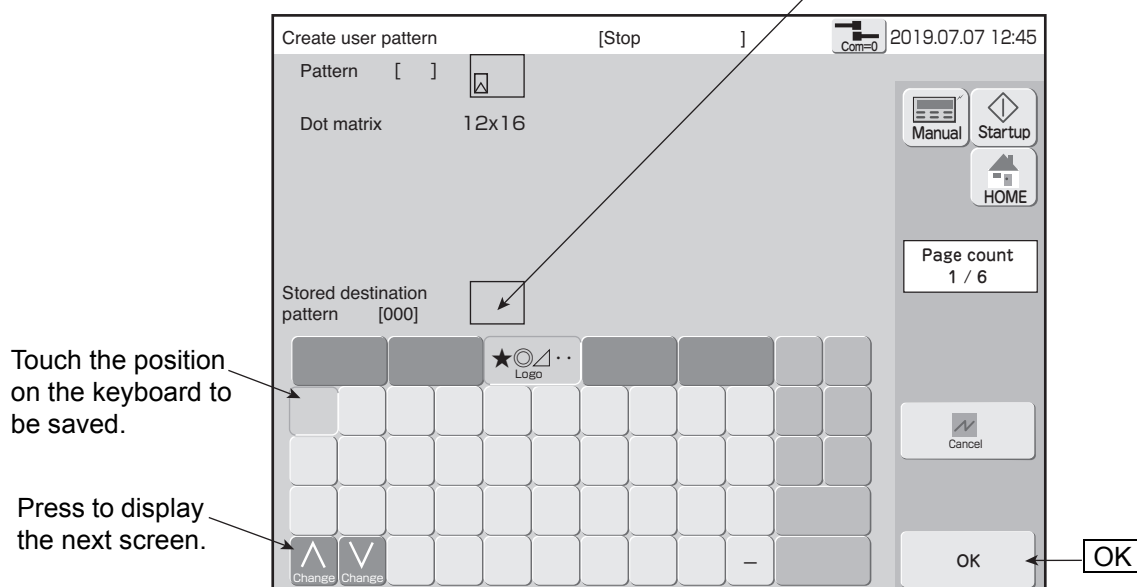
- 5** Create a pattern at the dot pattern creation area. When touched directly, the dot shading is reversed.



- 6** Press **Save**.

The save screen is displayed.

When the save destination is specified the saved destination code and pattern are displayed.



- 7** Press **OK**.

The pattern is saved.

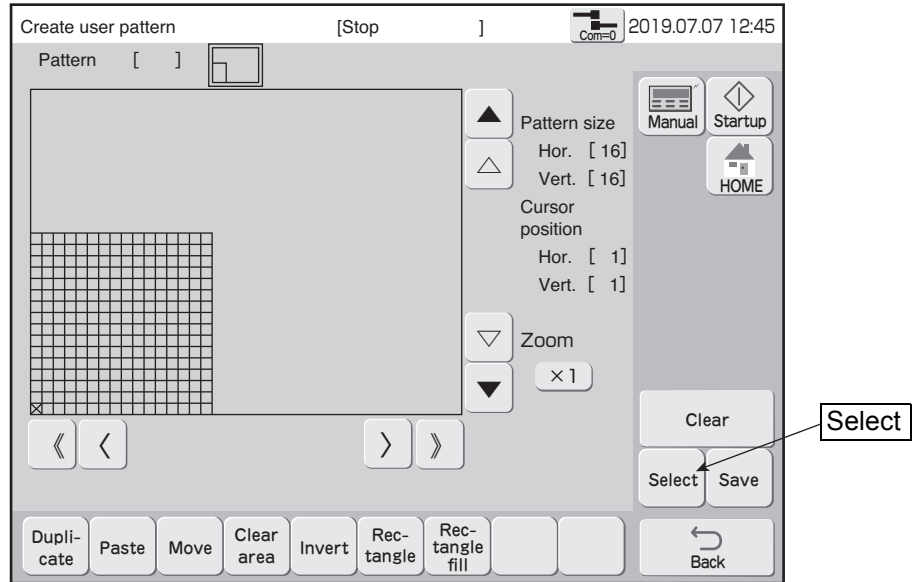
7.3.2 Selecting a user pattern

(1) Functions

- Selects a saved user pattern at the "Create user pattern" screen.

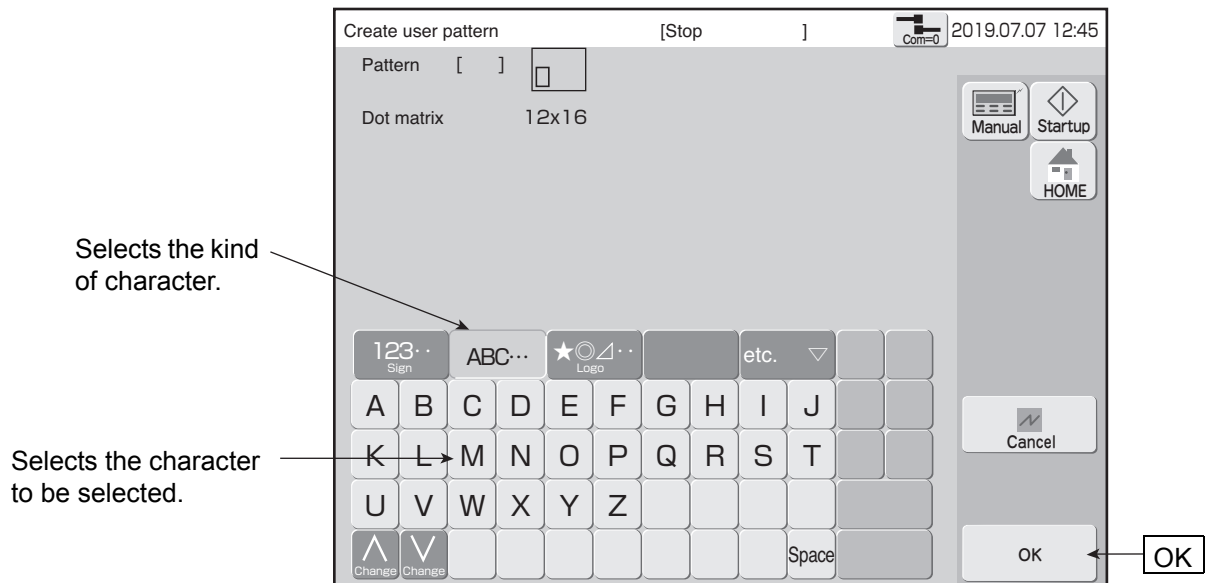
(2) Operation

The Create user pattern screen or Create/edit screen is displayed.



1 Press **Select**.

The select screen is displayed.



2 Select the character from user pattern, letters, numbers, and symbols, and press **OK**.

The pattern is selected.

7.3.3 Editing a pattern

(1) Functions

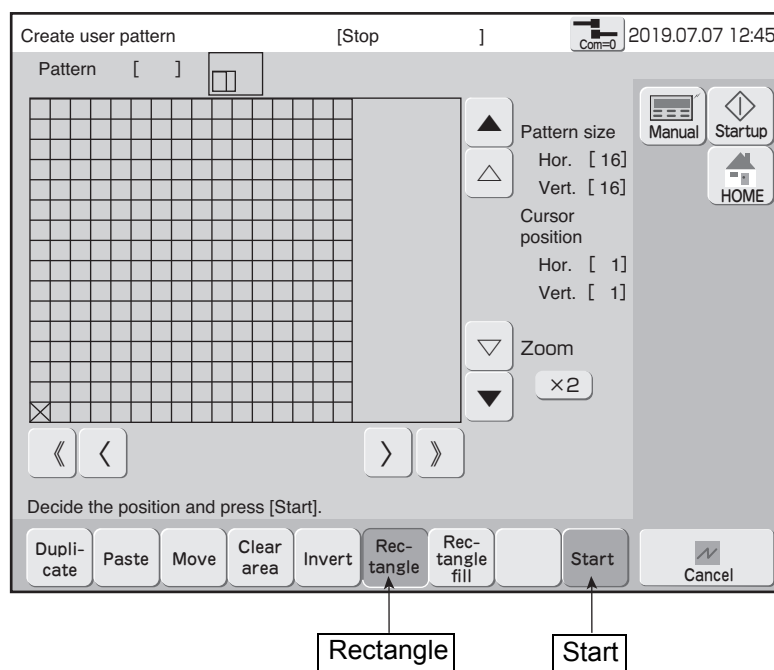
Name	Function
Duplicate, Paste	• Duplicates the pattern of the selected range and pastes it to an arbitrary position.
Move	• Moves the pattern of the selected range.
Clear area	• Clears the pattern of the selected area.
Invert	• Inverts the pattern of the selected area.
Rectangle	• Draws a rectangle at the selected position.
Rectangle fill	• Draws a rectangle at the selected positions and fills its interior.
Paste pattern (When editing free size)	• Duplicates the user pattern, pattern of alphabetic, numeric or symbol and pastes it to an arbitrary position.

(2) Operation

The Create/Edit screen is displayed.

1 Press **Rectangle**.

The screen that selects the start point is displayed.



2 Touch the point from which drawing of the rectangle is to start.

The X mark moves to the touched position.

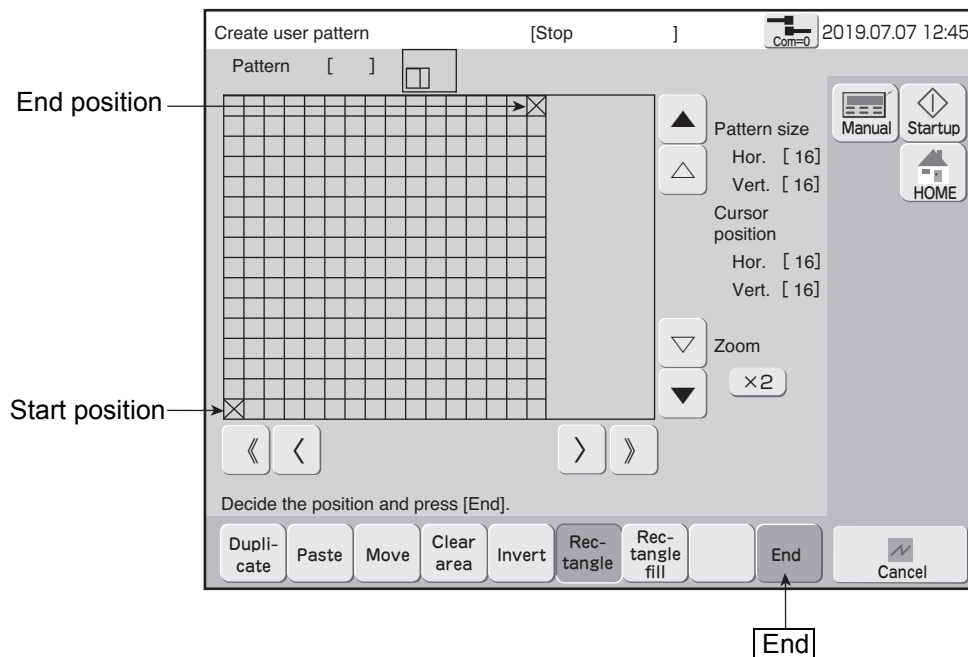
3 Press **Start**.

The start position is indicated by a red X.

The screen that specifies the end point is displayed.

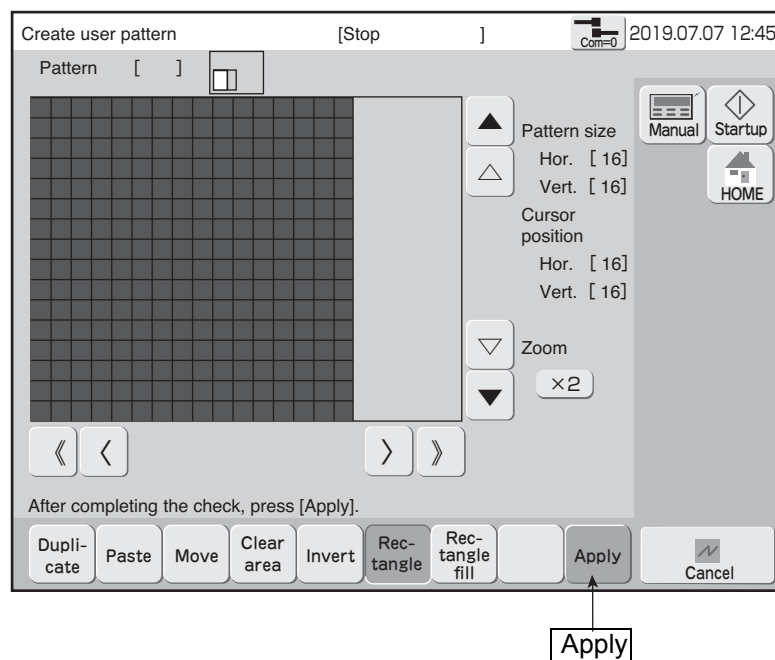
4 Touch the point at which drawing of the rectangle is to end.

The X mark moves to the touched position.

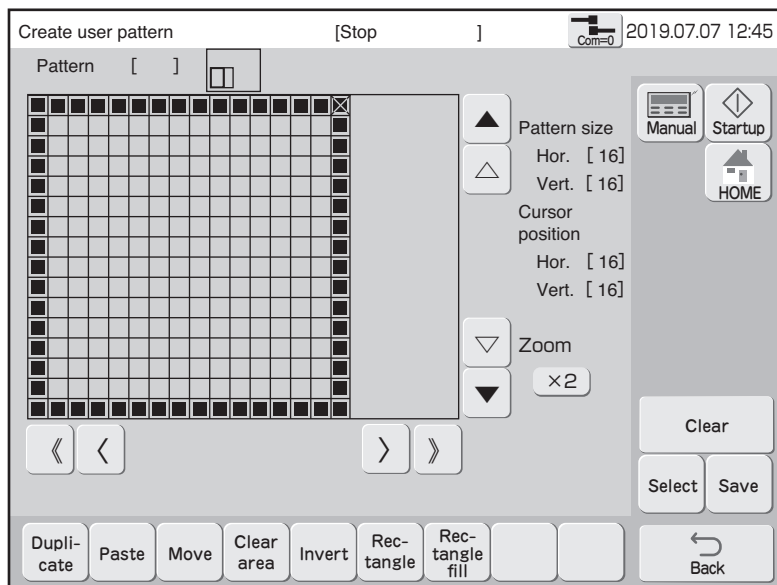


5 Press **End**.

The Area of the rectangle with the start position and end position at opposing corners is displayed in red. The screen that selects the end point is displayed.



- 6** Press **Apply**.
A rectangle pattern is drawn.



7.3.4 Creating a user pattern of a free size

(1) Functions

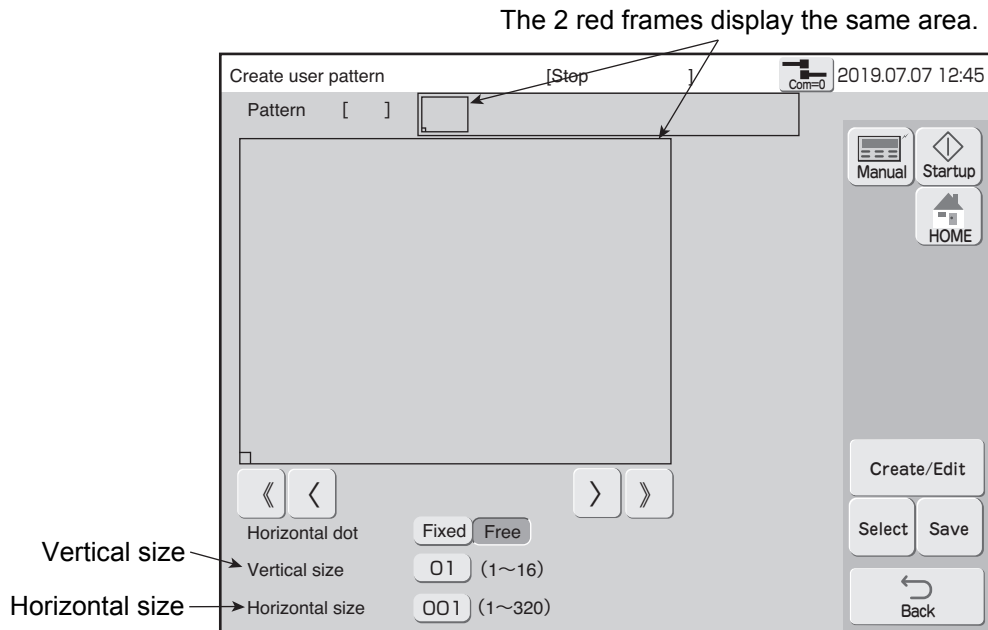
- Creates a user pattern of an arbitrary size.
- The maximum size is horizontal 320 dots x vertical 16 dots.

(2) Operation

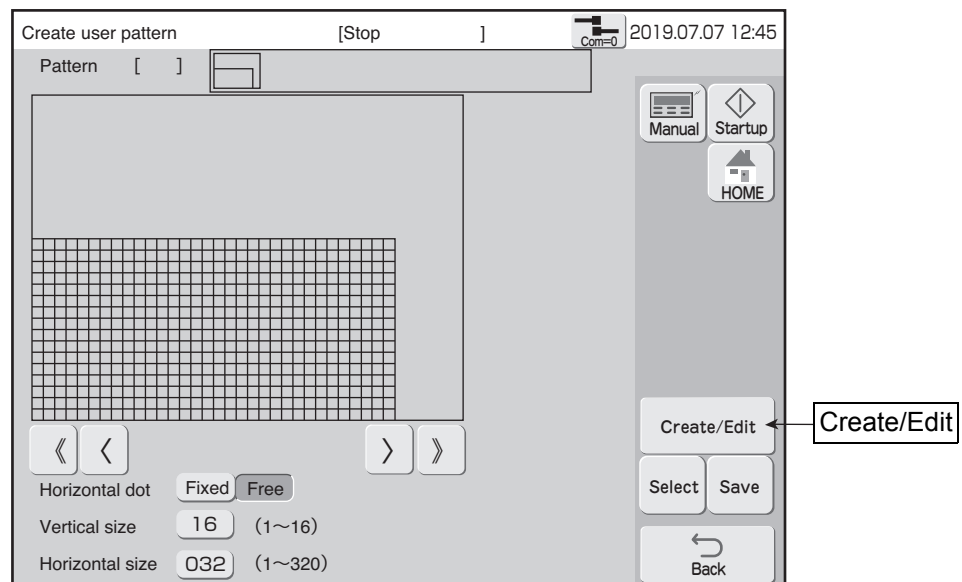
The Create user pattern screen is displayed.

1 Select Horizontal dot "Free".

A free size Create user pattern screen is displayed.



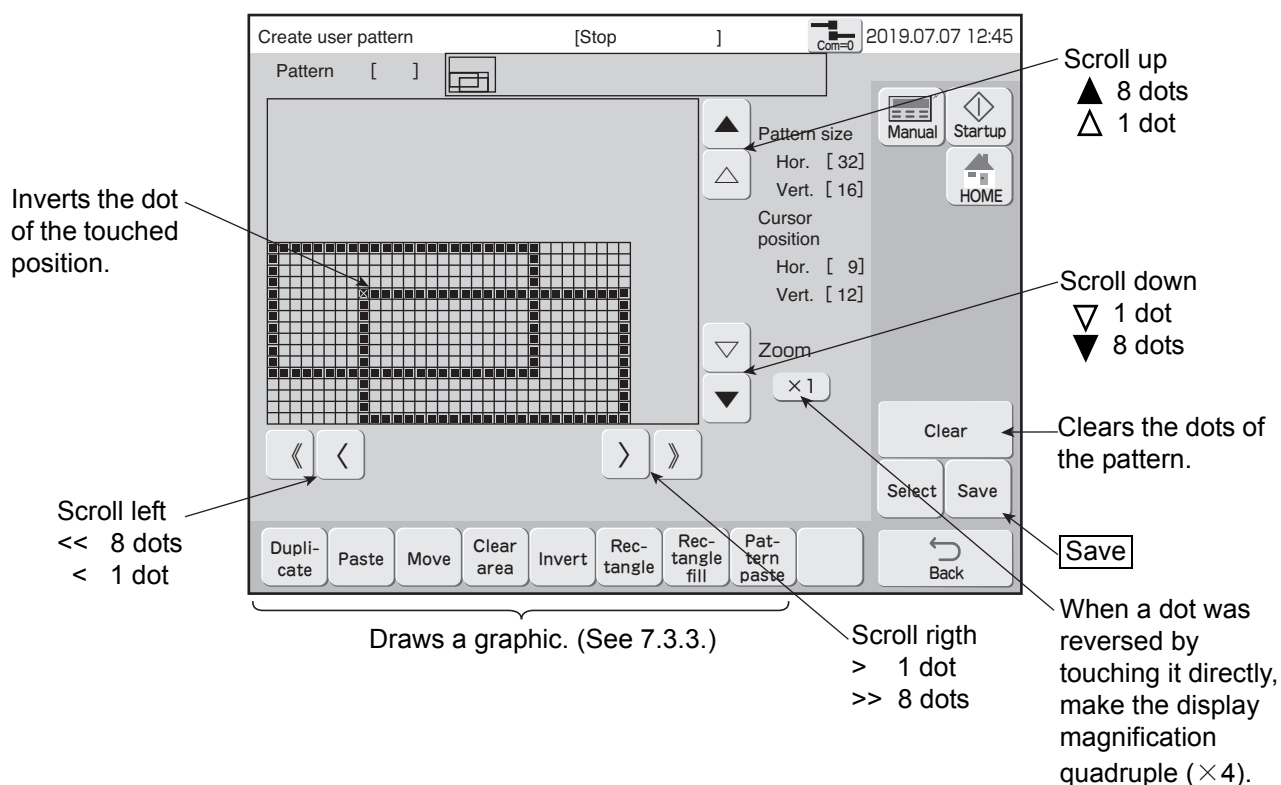
2 Input the vertical dot size and horizontal dot size.



3 Press **Create/Edit**.

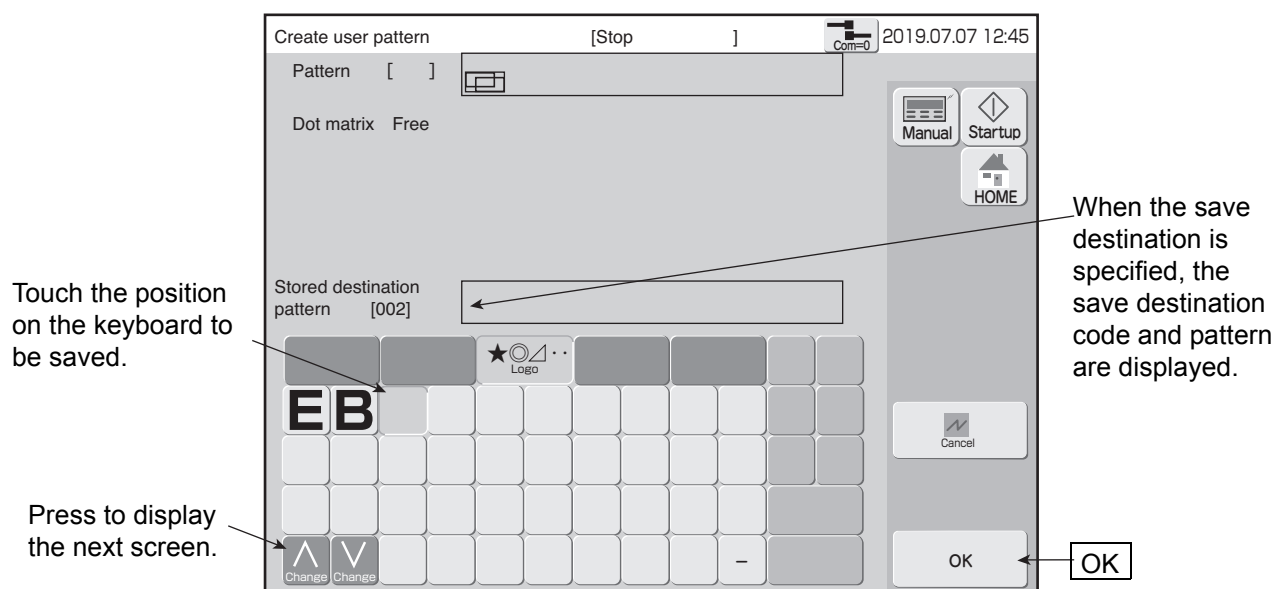
The Create/Edit screen is displayed.

- 4 Create a pattern at the dot pattern creation area. When touched directly, the dot is inverted.**



- 5 Press **Save**.**

The save screen is displayed.



- 6 Press **OK**.**

The pattern is saved.

7.3.5 Selecting a bitmap file (BMP)

(1) Functions

- The bitmap file stored in the USB memory is called up as a user pattern.
- This can be called up by the select bitmap data screen and pattern paste screen of the free size pattern being edited.
- Use the following conditions to create the bitmap file.

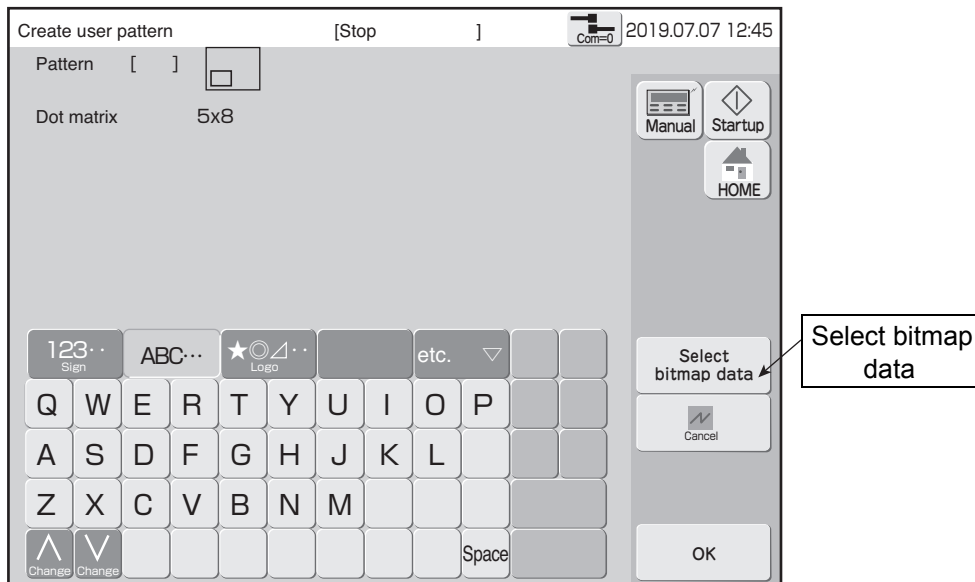
Conditions of bitmap file

Item	Essential conditions
Size	Width 1-320 pixels × Height 1-16 pixels
Color	Monochrome (Monochrome bitmap)
File name	*****.bmp (*****must be within 8 digit alphanumeric or less)

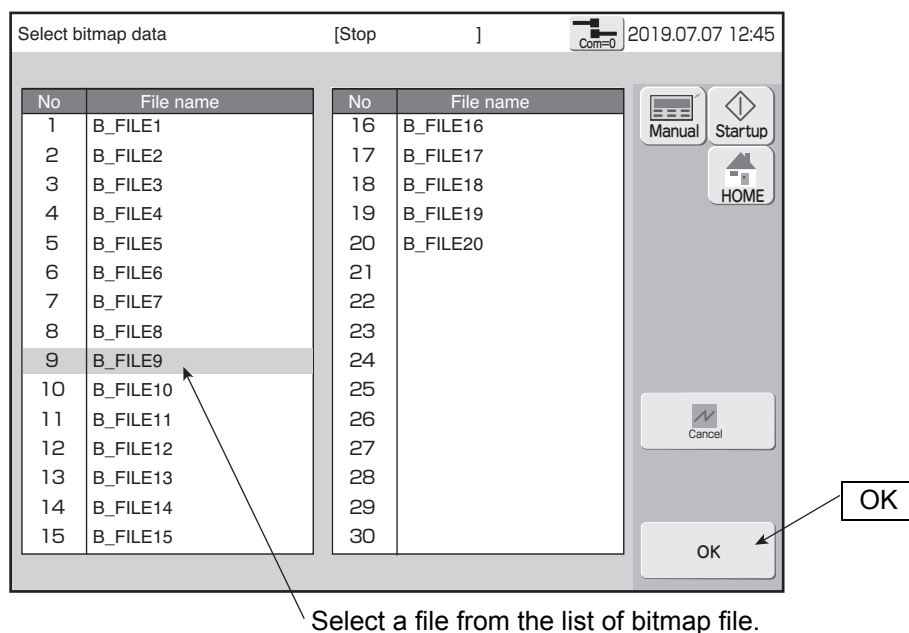
- 1 pixel in the bitmap corresponds to 1 dot in the user pattern.

(2) Operation

- 1** Create a "BITMAP" folder directory under USB memory, then copy the bitmap file created earlier.
- 2** Insert the USB memory in the IJP.
- 3** Press **Create user pattern** and **Select** next in the auxiliary function menu.
The select screen is displayed.



4 Press Select bitmap data.



5 Select any file name from the list of bitmap file on the screen. Press OK (Maximum of 30 file names is displayed).

The display returns to the Create user pattern screen.



6 Press OK on the select screen.

The pattern is selected.

7.4 Touch screen coordinate correction

(1) Functions

- Corrects touch screen and screen coordinate position offset.

(2) Operation

(a) New HMI

1 Press menu **SETTINGS**.

The Operation management screen is displayed.



Calibrate touch screen coordinates

2 Press **Calibrate touch screen coordinates**.

The Touch screen coord. screen is displayed.

3 Press the **+** at the top left and bottom right of the screen until the Touch Screen Coordinate Correction message is displayed.

The Touch Screen Coordinate Correction message is displayed.

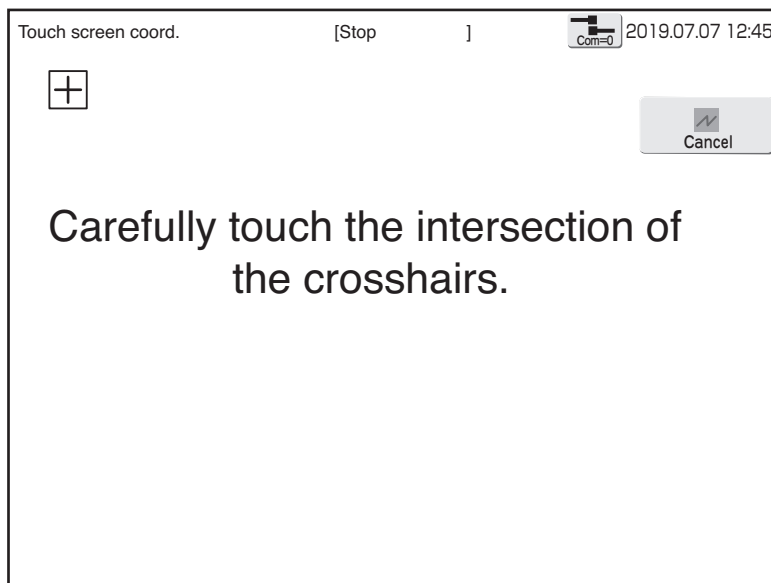
4 Press **OK**.

The coordinates are corrected and the touch screen returns to the Operation management screen.

(b) Previous HMI

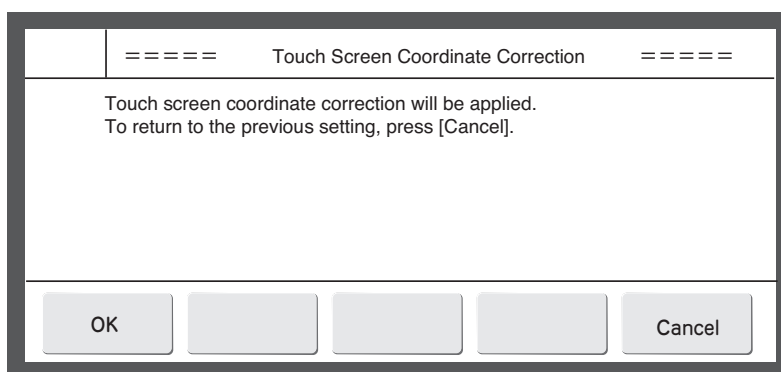
1 Press Calibrate touch screen coordinates in the auxiliary functions menu.

The Touch screen coord. screen is displayed.



2 Press the + at the top left and bottom right of the screen until the Touch Screen Coordinate Correction message is displayed.

The Touch Screen Coordinate Correction message is displayed.



3 Press OK.

The coordinates are corrected and the touch screen returns to the auxiliary functions menu.

7.5 Backing up data to USB memory

7.5.1 Copy data all at once

(1) Functions

- Backs up print data and user patterns to USB memory.
- Backed up data can be copied to an IJ printer.
- When copying to an IJ printer, the type of data can be selected.

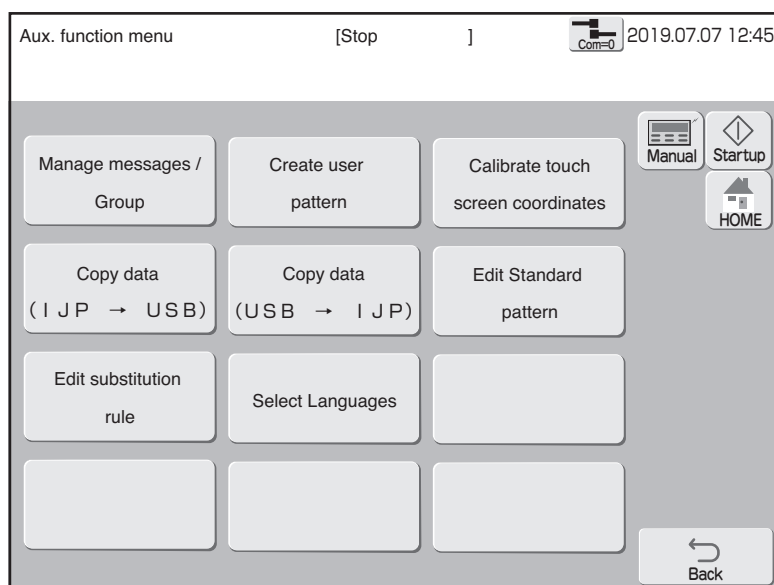
Data type	Contents
Print data	• Includes the print description, print format, and print specifications set contents. • Saved print data is the backup target. Print target data is not a target. • When backing up print target data, save the data and back it up as saved print data.
Standard characters	• Includes all dot matrix standard character patterns.
User pattern	• Includes all dot matrix saved characters.

- One USB memory can backup the data of multiple IJ printers.
- The same folder is created as the serial number in the USB memory.
- When copying backed up data from the USB memory to the IJ printer, select the folder to be copied.
- One USB memory can store the data for up to 100 IJ printers. However, the data size cannot exceed the capacity of the USB memory.
- Use the auxiliary function menu to remove and insert the USB memory.
- Do not often repeatedly remove and insert the USB memory.
- When data copying standard patterns, start the copy data function in the stopped state.

- Use a USB Memory with interface 3.0/2.0/1.1 and FAT16 or FAT32 file system.
- When performing Backup operation (IJP→USB) and Data copy operation (USB→IJP), if "USB memory error" occurs or USB cannot be recognized, format the USB on a PC by FAT16 or FAT32.
- Please periodically back up print data and user patterns.

(2) Backup operation

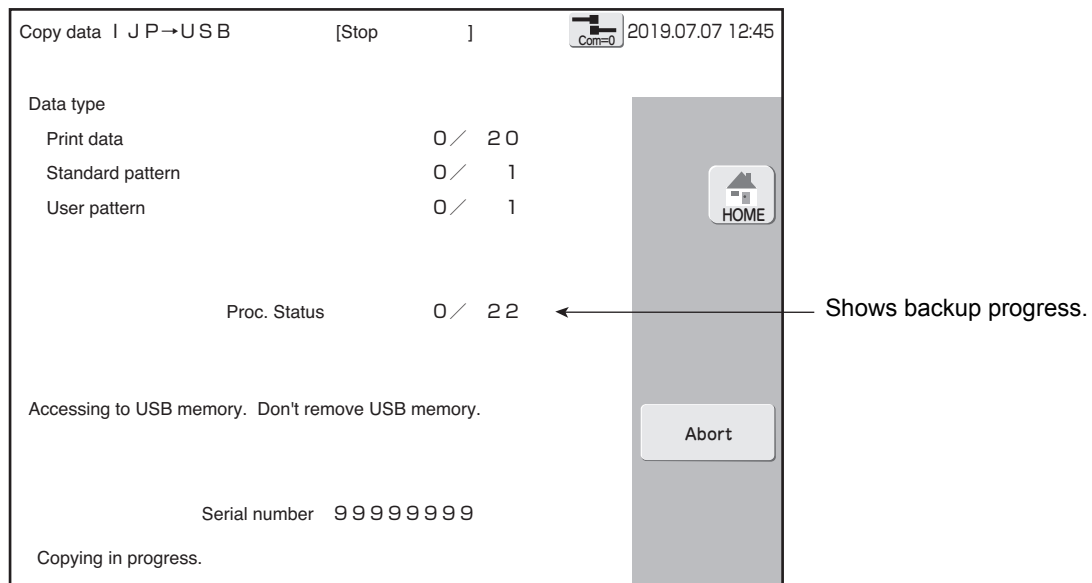
The auxiliary function menu is displayed.



1 Insert the USB memory.

2 Press **Copy data (IJP→USB).**

The Backup screen is displayed and the data is written to USB memory.

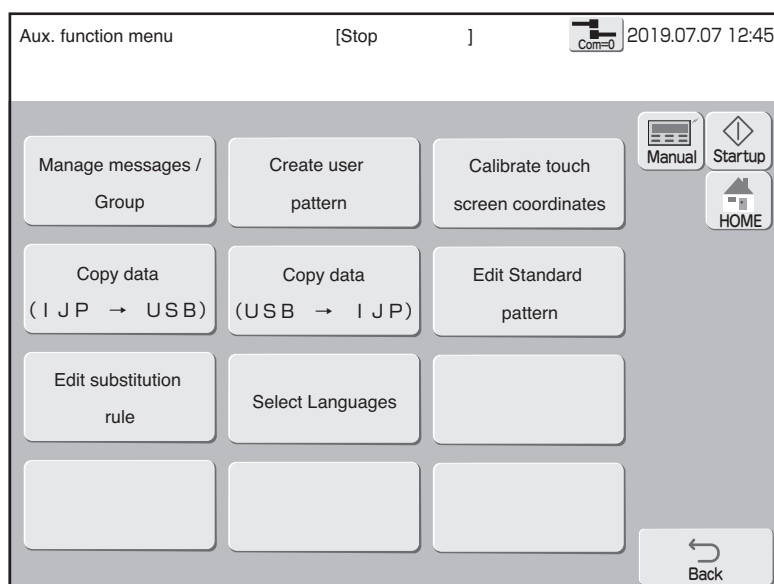


After backup is complete, the screen returns to the auxiliary function menu.

3 Remove the USB memory.

(3) Data copy operation

The auxiliary function menu is displayed.



1 Insert the USB memory.

2 Press **Copy data (USB→IJP)**.

The copy data screen is displayed.

Selects the type of data to be copied.

Selects the folder to be copied.

Copy data USB → IJP [Stop] 2019.07.07 12:45

Data type

	Copy data
Print data	Enable Disable
Standard pattern	Enable Disable
User pattern	Enable Disable

Proc. Status

Folder to be copied 99999999

Serial number 99999999

Select the copy target and then press <Start copy>.

HOME

Individual copy

Cancel

Start copy

3 Select the folder (serial number) to be copied.

4 Select the type of data to be copied.

5 Press **Start copy**.

A copying in progress screen is displayed.

Copy data USB → IJP [Stop] 2019.07.07 12:45

Data type

	Copy data	Progress
Print data	Enable Disable	0 / 20
Standard pattern	Enable Disable	0 / 15
User pattern	Enable Disable	0 / 4

Proc. Status 0 / 39

Accessing to USB memory. Don't remove USB memory.

Folder to be copied 99999999

Serial number 99999999

Copying in progress.

HOME

Shows the data copying progress.

After data copying is complete, the screen returns to the auxiliary function menu.

6 Remove the USB memory.

(4) Data copy operation from other models

- You cannot use the print data of the models other than UX-H.

7.5.2 Copy data individually

(1) Functions

- Print data and User pattern which are backed-up in USB memory can be copied separately.
- When copying data, a separate copying operation is required for Print data and User pattern respectively.
- There are two (2) copy methods: "Add column to end" and "Overwrite". "Add column to end" is to copy data next to the number of already-registered. "Overwrite" is to copy data onto already-registered number(s).
- There are three (3) Copy source selections: "Normal", "Multiple" and "Area". "Normal" selects one data. When "Overwrite" is selected as Copy method, Copy data can be made onto any number. "Multiple" can select the print data which are NOT in consecutive numbers. "Area" can select a plural print data which are in consecutive numbers. In case "Multiple" or "Area" is selected, Copy data to any number is NOT available.
- When the plural print data are added to the end and the number of data goes beyond the maximum: The empty data space is searched from the first number and the data will be copied there. If there is NO space available, the data will NOT be copied.
- When the print data with the message name which is the same as that of already-existing message is copied to the end, the message name will be renamed based on that of the source, replacing the last four (4) digits with the registration number.
- Upon copying data, when Substitution rules is NOT registered, Substitution rules will be assigned at the same number.
- Upon copying data, if Substitution rules is already registered, Substitution rules will be assigned/saved at the empty number. The new number will be also assigned for Substitution rules of the print data.
- Upon copying data, if there is NO space available for Substitution rules, "Substitution Rules Confirmation" will be displayed and Substitution rules for the print data will NOT be available.

(2) Individual Copy data operation for Print data

1 Insert backed-up USB memory into IJP.

2 Press **Copy data (USB → IJP)**.

Copy data USB → IJP [Stop] 2019.07.07 12:45

Data type

	Copy data
Print data	Enable Disable
Standard pattern	Enable Disable
User pattern	Enable Disable

Proc. Status

Folder to be copied 99999999

Serial number 99999999

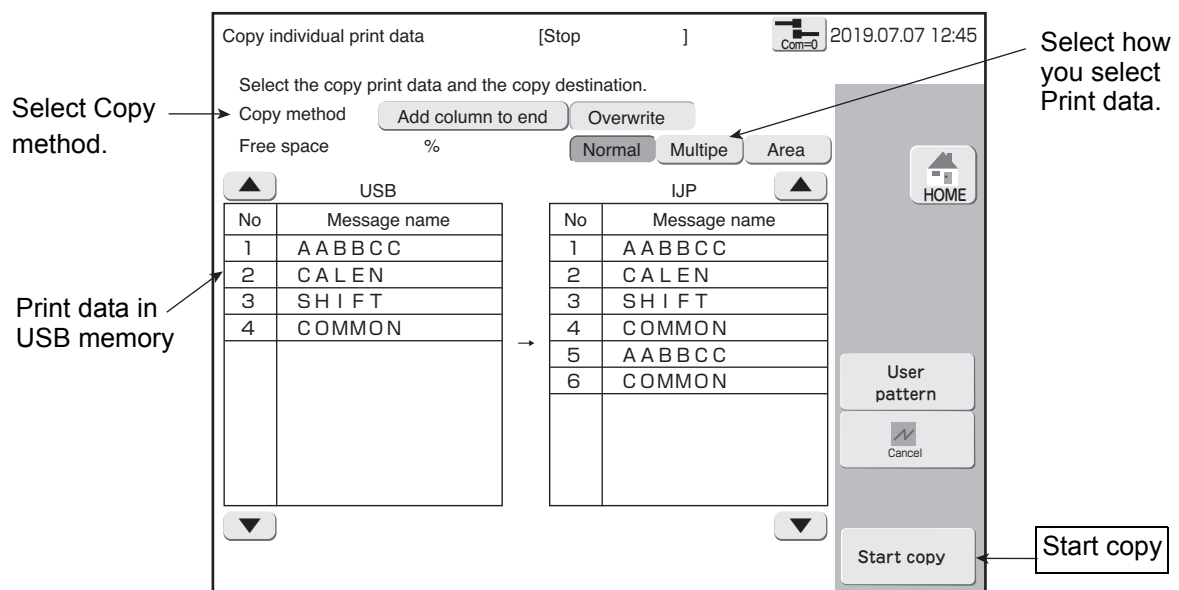
Select the copy target and then press [Start copy].

Individual copy

3 Select the folder (serial number) to be copied.

4 Press Individual copy.

"Copy individual print data" screen is displayed.

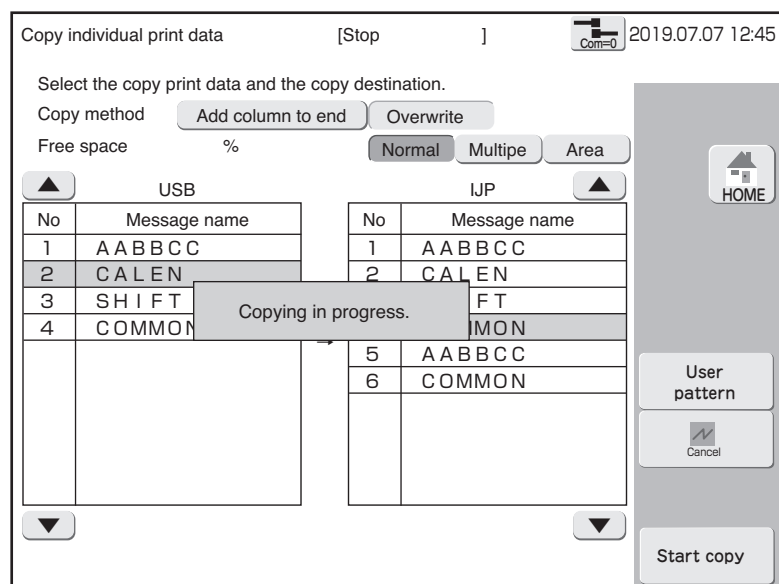


5 Select Copy method and press how you select Print data.

6 Select Print data to be copied from USB memory.

7 Press Start copy.

The message "Copying in progress" will be displayed.



8 Press HOME and return to Print description screen, then remove USB memory.

(3) Individual Copy data operation for User pattern

1 Insert USB memory into IJP.

2 Press **Copy data (USB → IJP)**.

Copy data USB → IJP [Stop] 2019.07.07 12:45

Data type

Print data

Standard pattern

User pattern

Copy data

Proc. Status

Folder to be copied 99999999

Serial number 99999999

Select the copy target and then press [Start copy].

HOME

Individual copy

Cancel

Start copy

3 Select the folder (serial number) to be copied.

4 Press **Individual copy**.
"Copy individual print data" screen is displayed.

Copy individual print data [Stop] 2019.07.07 12:45

Select the copy print data and the copy destination.

Copy method

Free space %

USB

No	Message name
1	A A B B C C
2	C A L E N
3	S H I F T
4	C O M M O N

IJP

No	Message name
1	A A B B C C
2	C A L E N
3	S H I F T
4	C O M M O N
5	A A B B C C
6	C O M M O N

HOME

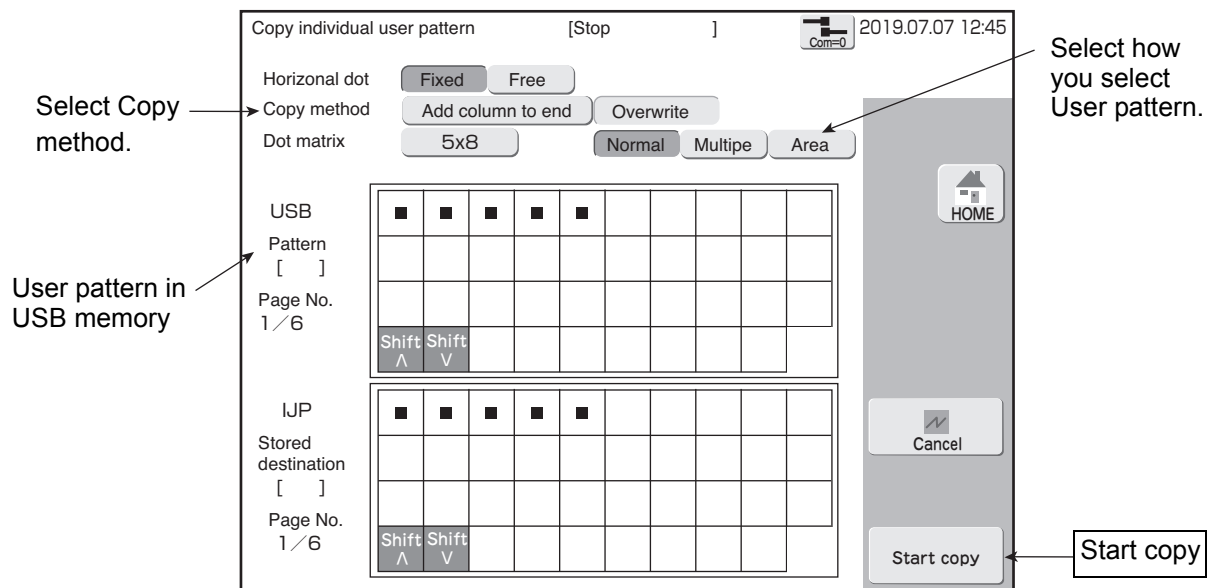
User pattern

Cancel

Start copy

5 Press User pattern.

"Copy individual user pattern" screen is displayed.

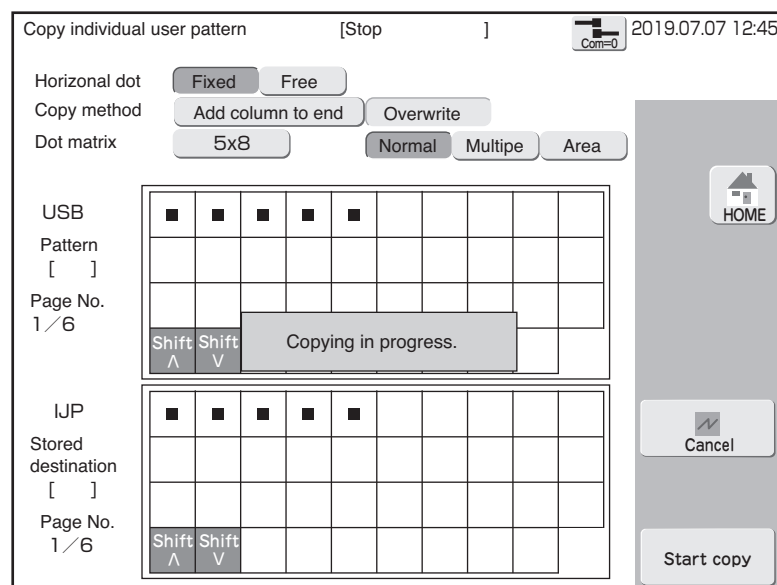


6 Select Copy method and press how you select User pattern.

7 Select User pattern to be copied from USB memory.

8 Press Start copy.

The message "Copying in progress" will be displayed.



9 Press HOME and return to Print description screen, then remove USB memory.

7.6 Editing standard pattern

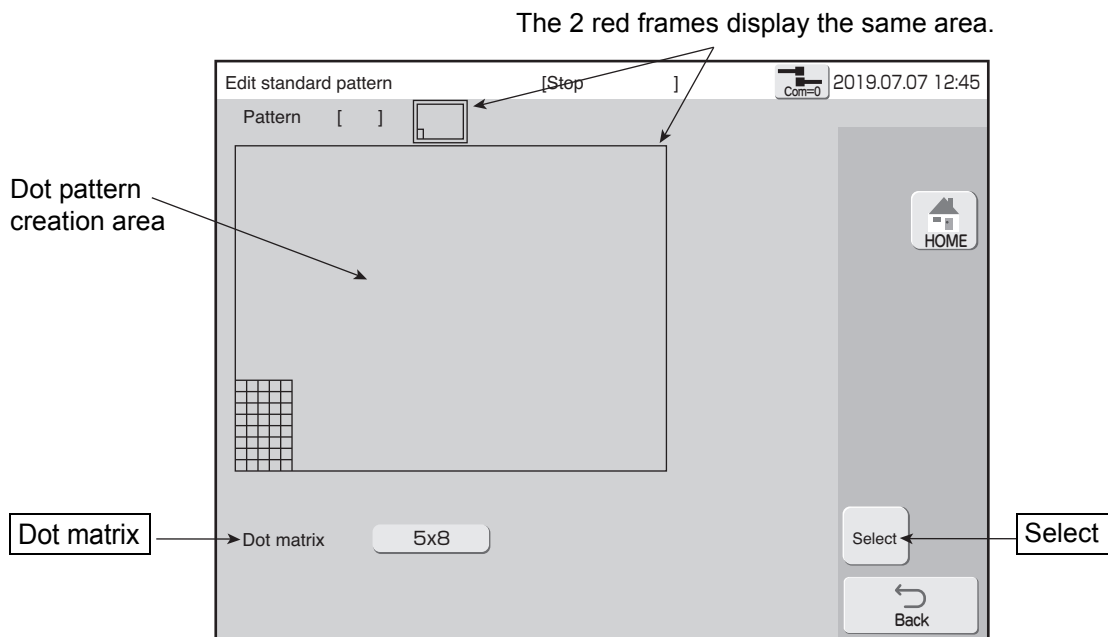
(1) Functions

- Edits the print pattern in dot units.
- Punct. symbols are edited as patterns separate from full-width symbols.
- Pattern editing operation is the same as the user pattern creation function.
- Pattern-edited characters are displayed in blue on the keyboard.
- Create patterns while printing with the user pattern creation function. After applying the pattern design, use the edit standard character pattern function.
- The original pattern before the change can be recovered.
- When "Print quality first" is enabled, you can edit the standard pattern but it is NOT available for printing.

(2) Operation

1 Press **Edit standard pattern** in the auxiliary function menu.

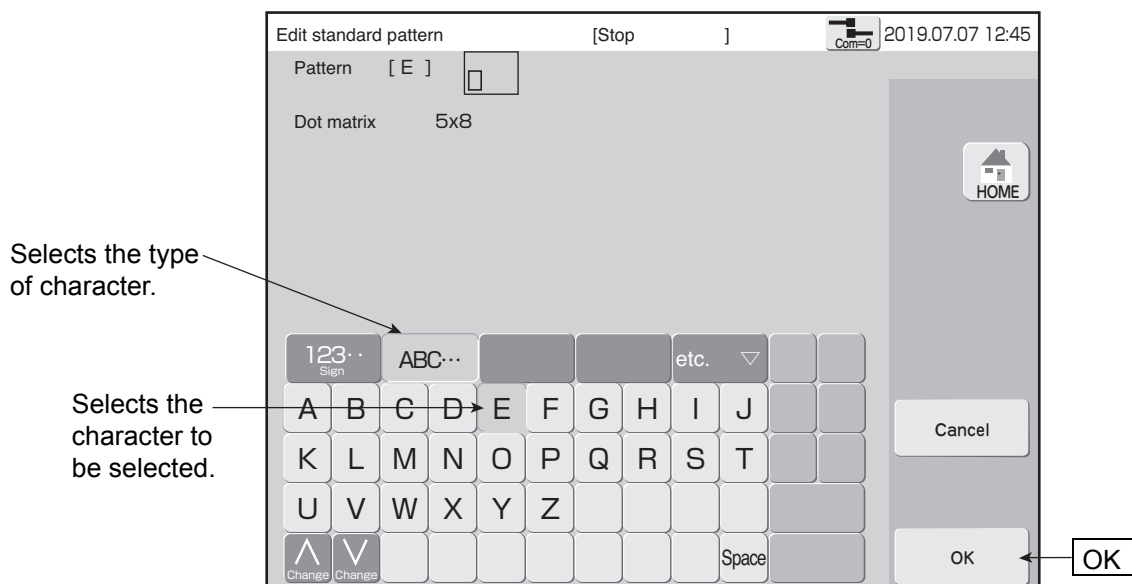
The Edit standard pattern screen is displayed.



2 Press **Select**.

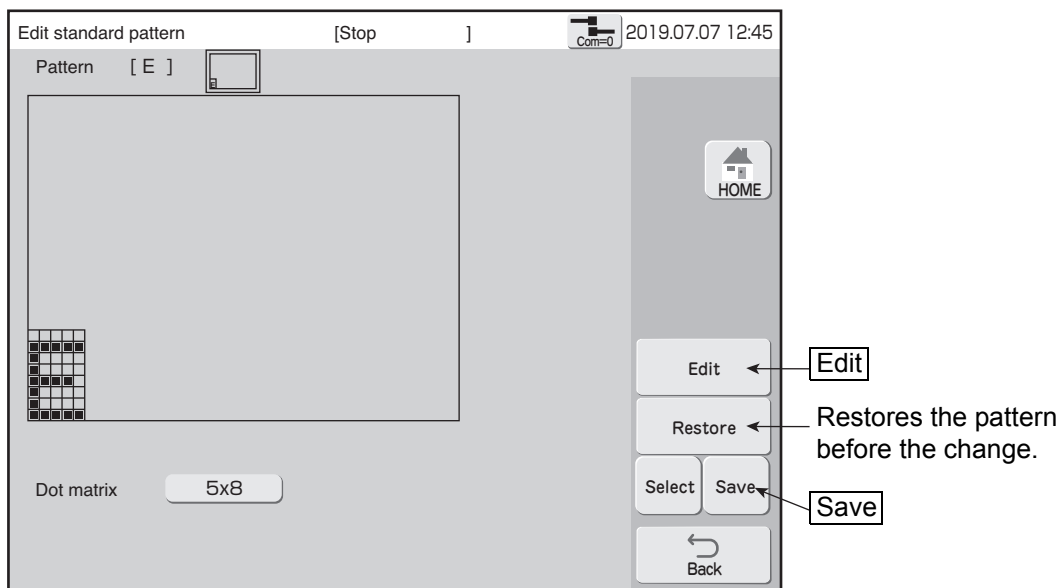
The select screen is displayed.

3 Select characters to call.



4 Press OK.

The pattern is selected.



**5 Create a pattern at the dot pattern creation area.
When directly touched, the shading of the dot is reversed.**

When a dot was reversed by touching it directly, make the display magnification quadruple.

6 Press Save.

The save message screen is displayed.

7.7 Editing Substitution Rules

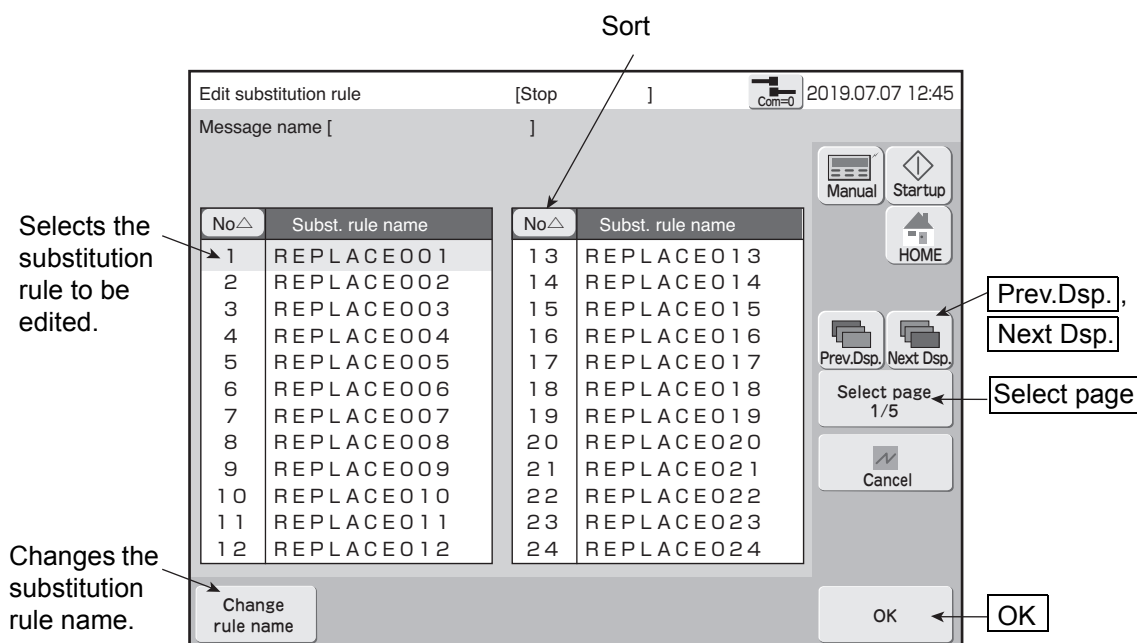
(1) Functions

- Selects the substitution rule [Year], [Month], [Day], [Hour], [Minute], [Week number], and [Day of week] and inputs and edits the selected substitution rule.
- Inputs and changes the name of the selected substitution rules.
See "4.10.3 Print by substituting a different character for the date (substitution rule)".

(2) Operation

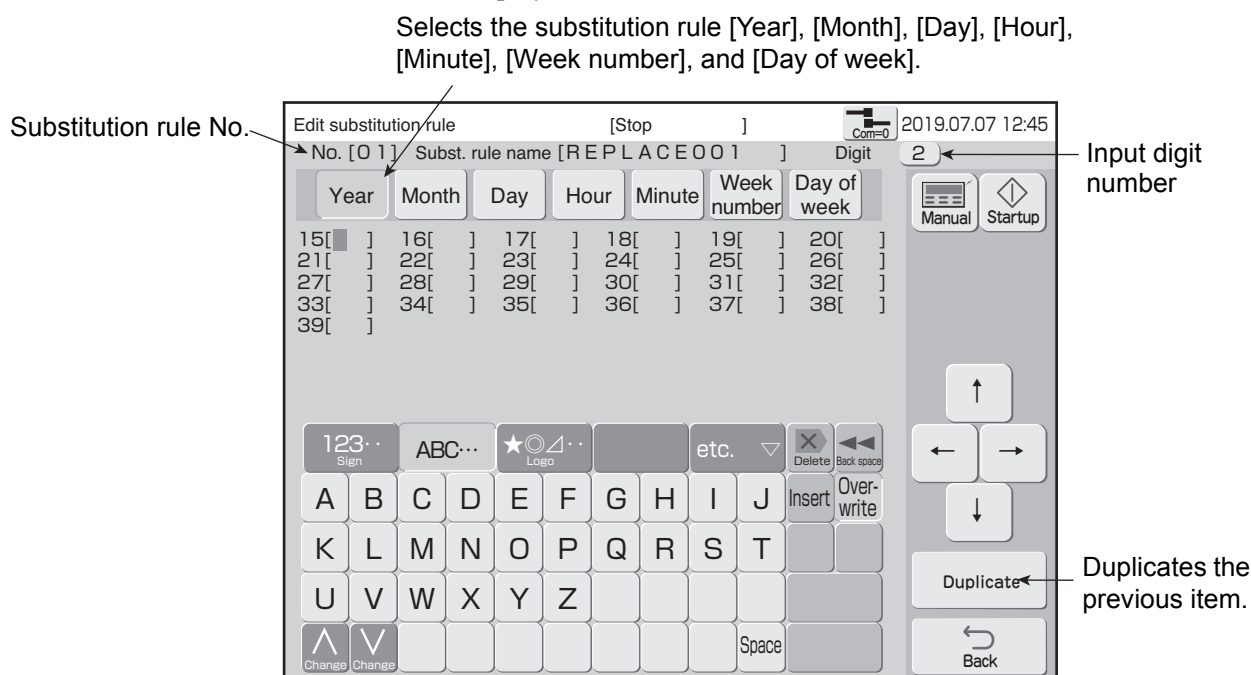
1 Press **Edit substitution rule** in the auxiliary function menu.

The Edit substitution rule screen is displayed.



2 Select the substitution rule to be edited and press **OK**.

The Edit substitution rule screen is displayed.



3 Select the kind [Year], [Month], [Day], [Hour], [Minute], [Week number], [Day of week] of substitution rule, and input and edit.

4 Press **Back**.

The display returns to the substitution rule selection screen.

7.8 Selecting Languages

(1) Functions

- You can change the screen language from English to another language.

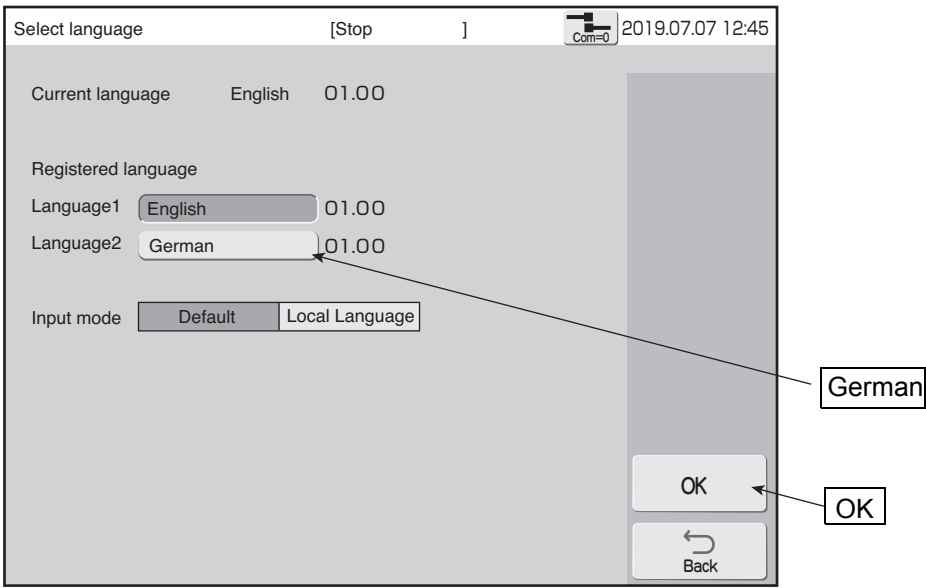
Input mode	
Set value	Contents
Default	•You can input Accent marks, Greek, Russian and Arabic characters.
Local Language	•You can input Chinese characters. (Language1 : English, Thai, Vietnamese only)

(2) Operation

The Auxiliary function menu screen is displayed.

1 Press **Select languages** in the auxiliary functions menu.

The Select language screen is displayed.



2 Select **German** ,and press **OK**.

The display language is changed.



8. INK AND MAKEUP REPLENISHMENT

WARNING

- Never pour the ink and makeup waste into a sewer, etc.
Have the ink and makeup drainage processed by an industrial waste processor as special control industrial waste and used wiping papers and the empty container as industrial waste.
- Do not remove, apply unreasonable force to, or bend the piping tubes unnecessarily. Since high pressure is applied to parts of the ink and solvent inside the piping tube, the ink and solvent may spurt out and get into your eyes and mouth or soil your hands and clothing.
If any ink or makeup enters your eyes or mouth, immediately flush with warm or cold water and consult a physician.



- When replenishing the ink and makeup, changing the ink, or performing other work in which the ink and makeup are handled, be sure not to spill the ink and makeup. If the ink and makeup is accidentally spilled, quickly wipe it off with wiping paper, etc. Do not close the maintenance cover until you verify that the wiped parts are completely dry.
Since the ink and makeup vapor will collect inside the printer especially in the state in which the ink and makeup was spilled inside the printer and was not wiped off completely, it will cause ignition and fire.
When wiping is difficult in the energized state, perform shutdown processing with the maintenance cover remaining open and turn off the power, then perform wiping again.
- If leaking of the ink and makeup inside the printer was detected during printer operation or maintenance, quickly wipe it with wiping paper, etc. and perform shutdown processing with the maintenance cover remaining open and turn off the power, then repair the leak.
If operation is continued when the ink and makeup is leaking, it will cause trouble and prevent normal printing will become.
In addition, since the ink and makeup are combustible, they may cause a fire.
- The ink and makeup, their waste solution, used wiping papers and empty containers are flammable. Waste disposal must comply with appropriate regulations.
Consult the appropriate regulatory agency for further information.
- When the ink particles are caught in a beaker during test printing, etc., use a conductive beaker and securely connect the beaker to a ground.
In addition, be sure that the print head is not inserted into the beaker.
Since the ink particles used in printing are electrically charged, if the beaker is not connected to a ground, the charge load will gradually increase and cause a fire.



CAUTION

- Pay careful attention to the following items regarding handling of the ink and makeup:
 - ① Wear gloves and goggles so that the ink and makeup will not directly contact your skin.
If the ink or makeup gets on your skin, wash it off with soap and warm water.
 - ② When taking the bottle from the printer, be careful that the ink does not get on the printer or surroundings. If the ink or makeup gets on the equipment or surroundings, immediately wipe it off with makeup.
 - ③ Since the vapor pressure of the makeup is generally high, if the ambient temperature is high such as in the summer, etc., the internal pressure will rise and makeup could spurt out when the outside cover is removed. Therefore, when unplugging,
 - do not hold the bottle near your face
 - place the can on a level surface
 - open while covering the opening with a rag, etc.



8.1 Replenishing the ink

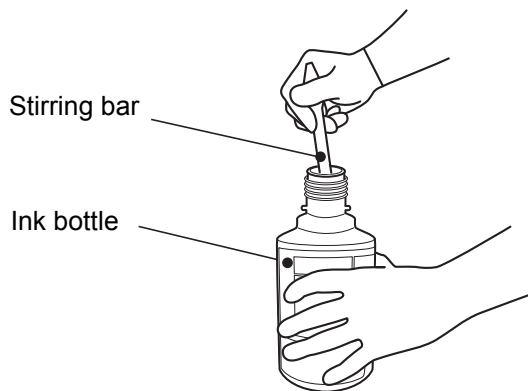
(1) Overview

- While the printer is operated, the ink is automatically transferred at fixed intervals from the ink reservoir to the main ink tank for replenishment purposes.
- If the Ink Low Warning is issued, add ink to the ink reservoir within 60 minutes. If such a replenishment procedure is not completed within 60 minutes, the printer comes to a stop.
- Ink can be added to the ink reservoir without regard to the IJ printer power ON/OFF status or operating status. Upon ink replenishment, the alarm is automatically cleared.

(2) Operation

1 When you use the pigment ink stir ink in the ink bottle.

Stir pigmented ink components that have settled inside ink bottle using stirring bar before replenishment.

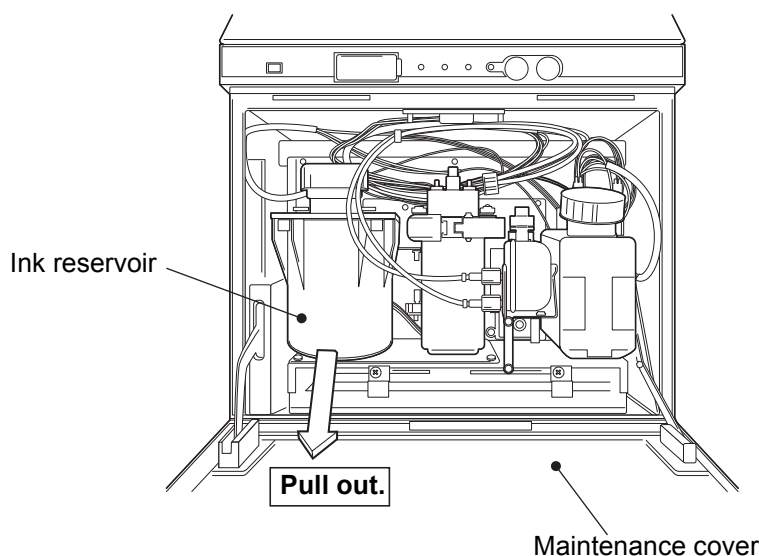


Refer to "1.1 (1) Ink and makeup replenishment" for <Stirring point>.

- Stir ink until you can confirm that there is no settled substance at the bottom of the ink bottle.
- If replenishment is performed without stirring ink, printing density may become thin and print will be uneven.
- Clean stirring bar after using it.

2 Open the maintenance cover and then pull out the ink reservoir.

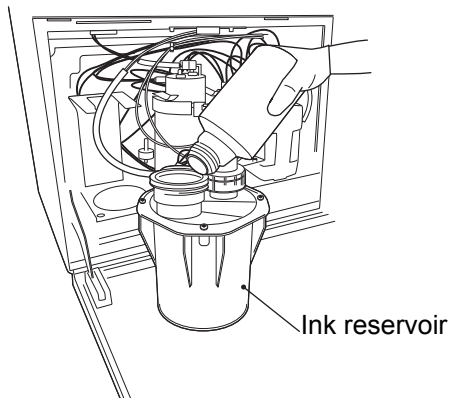
Hold the ink reservoir and pull it forward.



- When moving the ink reservoir, move it gently.

3 Uncap the ink reservoir and then add ink.

- Adjust the amount of replenishment in accordance with the ink consumption. Exercise care to avoid excessive replenishment.



CAUTION

- If ink is accidentally spilt, wipe it up promptly with wiping paper or something similar.
In addition, do not close the maintenance cover until you are sure that the wiped portion has completely dried.

4 Fasten the cap of the ink reservoir.

- Fasten it securely. Solvent components may evaporate.

5 Return the ink reservoir to its original position.

6 Close the maintenance cover.

8.2 Replenishing the makeup

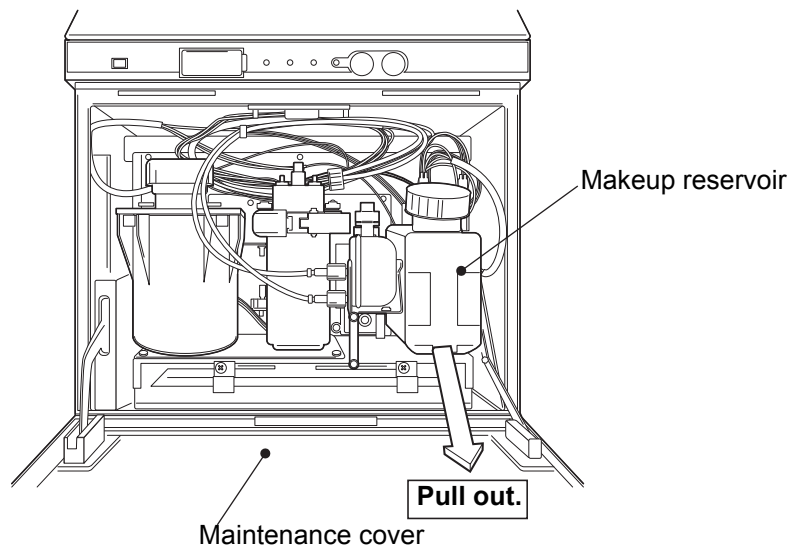
(1) Overview

- While the printer is operated, the makeup is automatically transferred at fixed intervals from the makeup reservoir to the main ink tank for replenishment purposes.
- If the makeup low warning is issued, add makeup to the makeup reservoir within 60 minutes. If such a replenishment procedure is not completed within 60 minutes, the printer comes to a stop.
- The makeup can be added to the makeup reservoir without regard to the IJ printer power ON/OFF status or operating status. Upon makeup replenishment, the alarm is automatically cleared.

(2) Operation

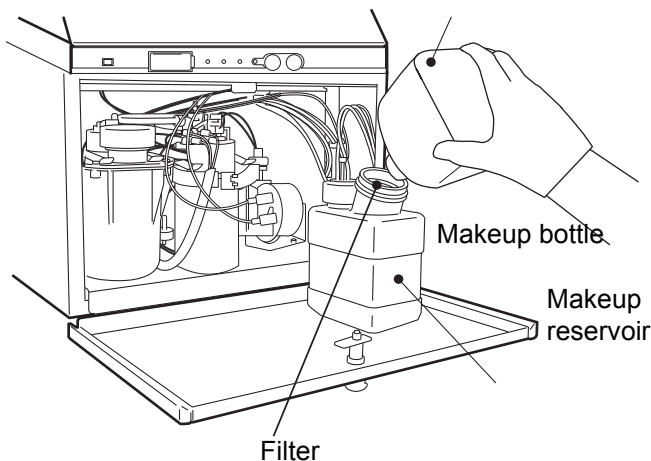
1 Open the maintenance cover and then pull out the makeup reservoir.

Hold the makeup reservoir and pull it forward.



- When moving the makeup reservoir, move it gently.

2 Uncap the makeup reservoir and then add makeup.



⚠ CAUTION

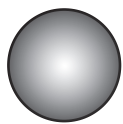
- If makeup is accidentally spilt, wipe it up promptly with wiping paper or something similar. In addition, do not close the maintenance cover until you are sure that the wiped portion has completely dried.

4 Fasten the cap of the makeup reservoir.

- Fasten it securely. Solvent components may evaporate.

5 Return the makeup reservoir to its original position.

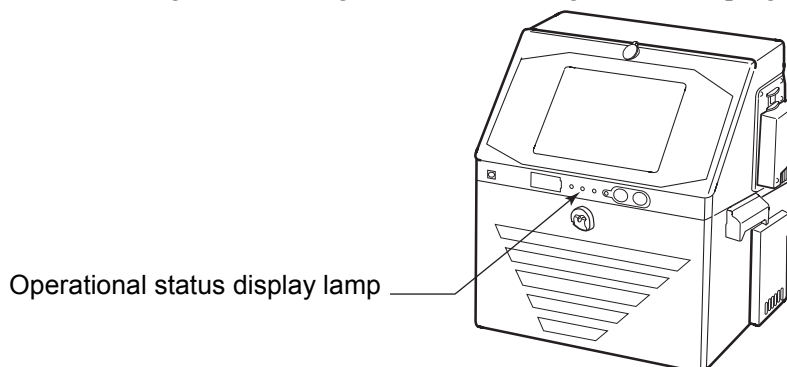
6 Close the maintenance cover.



9. WHEN WARNING OR FAULT WAS GENERATED

9.1 Display when warning or fault was generated

- When a warning or fault was generated, a warning or fault lamp lights.



- When an operation mistake is made and processing judgment is prompted, a confirmation message is displayed.
- When a "Fault state" which hinders printing was generated while the liquid crystal screen backlighting was off or when a "Warning state" which does not hinder printing but requires maintenance was generated, a fault message or warning message is displayed in a window.

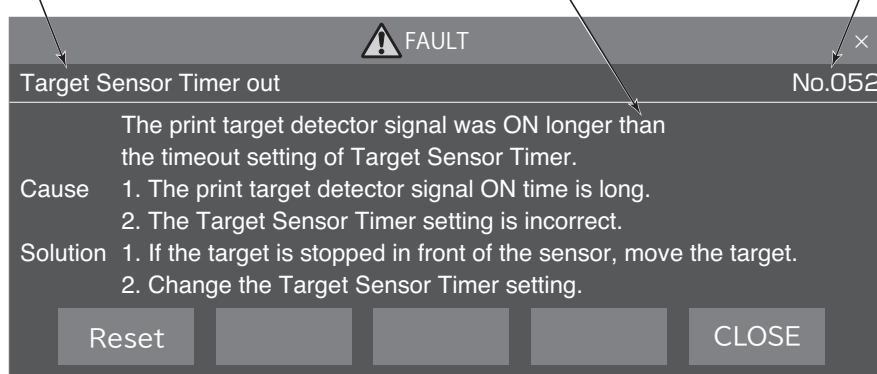
(1) When a fault was generated

(a) New HMI

The name of the fault message is displayed.

The description, cause, and solution are displayed.

Message No.

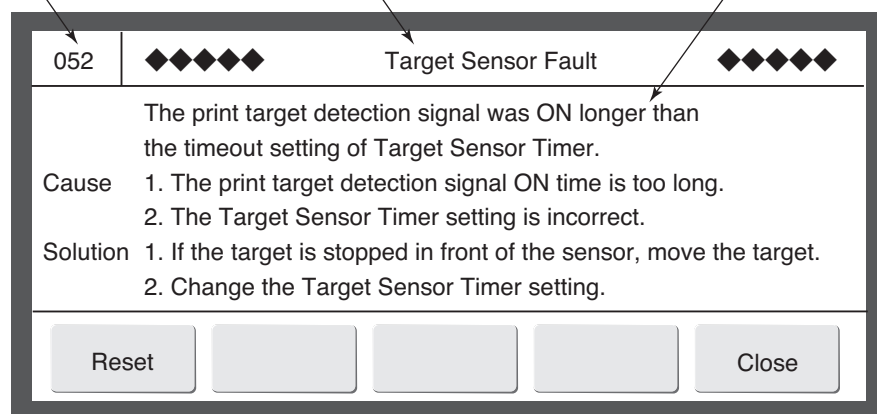


(b) Previous HMI

Message No.

The name of the fault message is displayed.

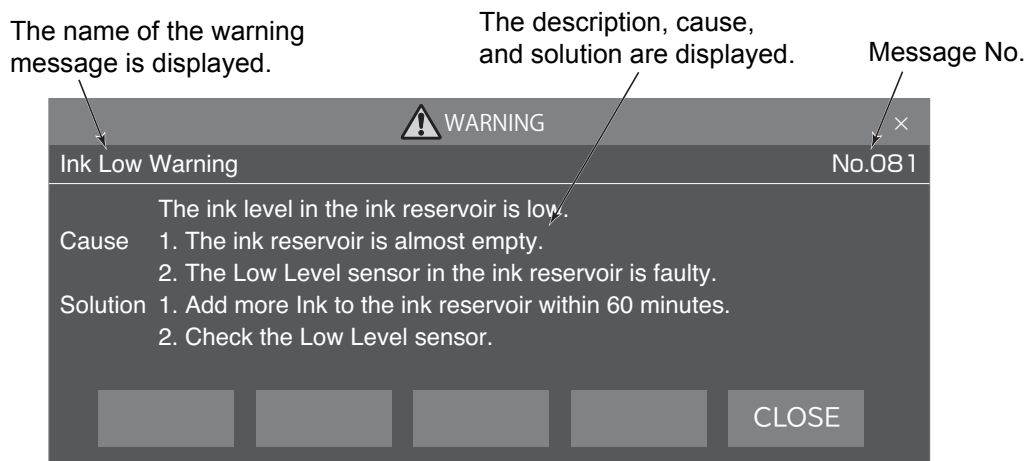
The description, cause, and solution are displayed.



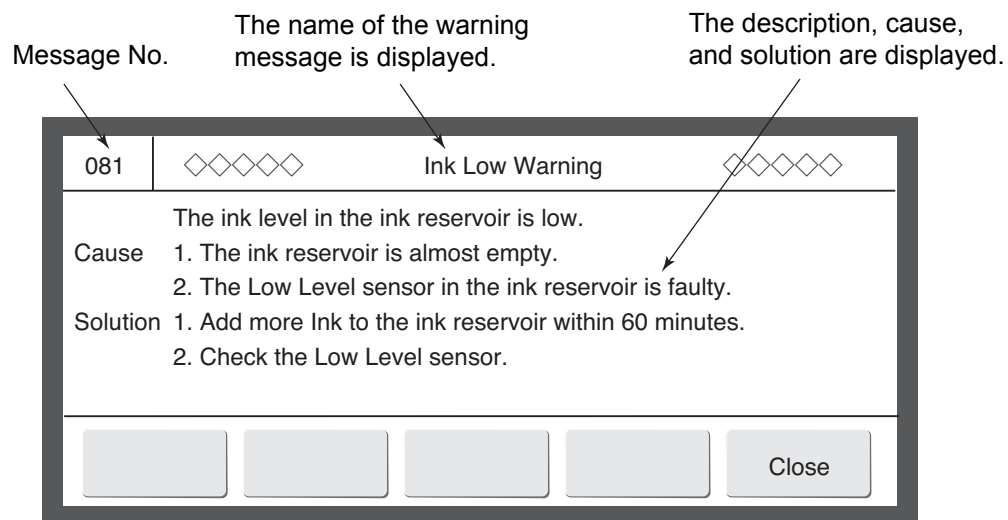
- When **Reset** is pressed after removing the cause, the fault state is cleared and the message is also closed.
- When **Close** is pressed, the fault window is closed, but the fault state is not cleared. When **Fault** in state area, the fault message is displayed again.
- However, when the fault state is already cleared, it is cleared by **Close**.

(2) When warning was generated

(a) New HMI



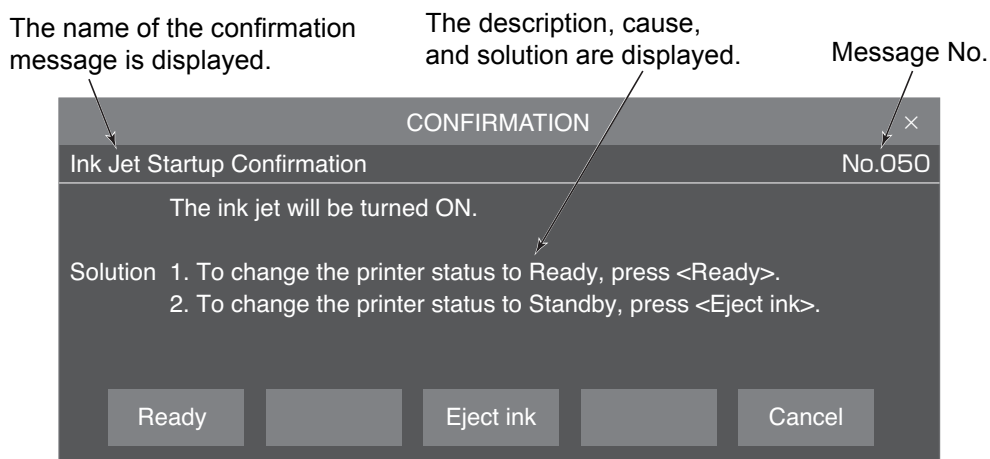
(b) Previous HMI



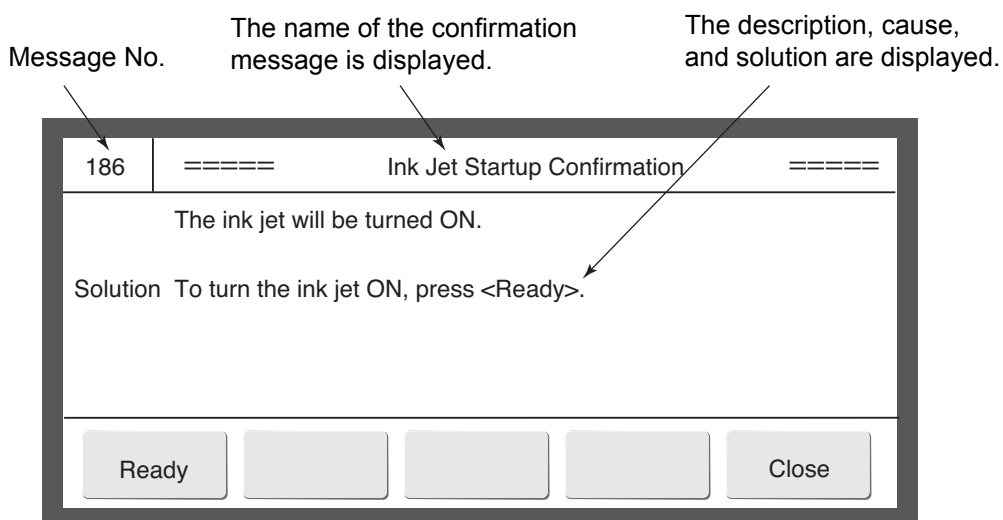
- When **Close** is pressed, the warning window is closed, but the warning state is not cleared. The warning name is displayed in the warning display area (see the figure above).
- If the warning state is cleared, the warning display is automatically closed.

(3) When a mistake was generated or when processing judgment is prompted

(a) New HMI



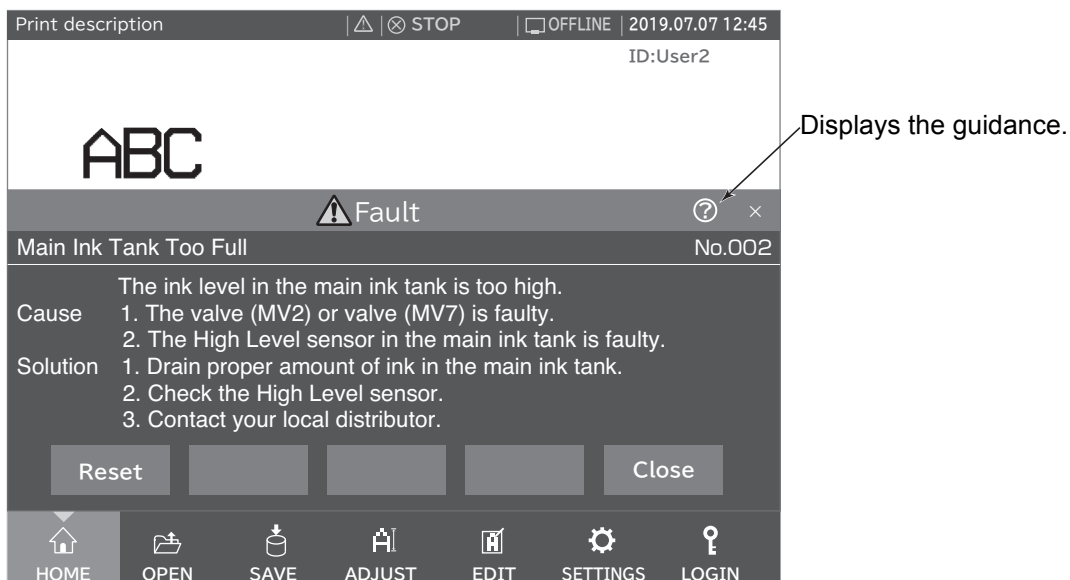
(b) Previous HMI



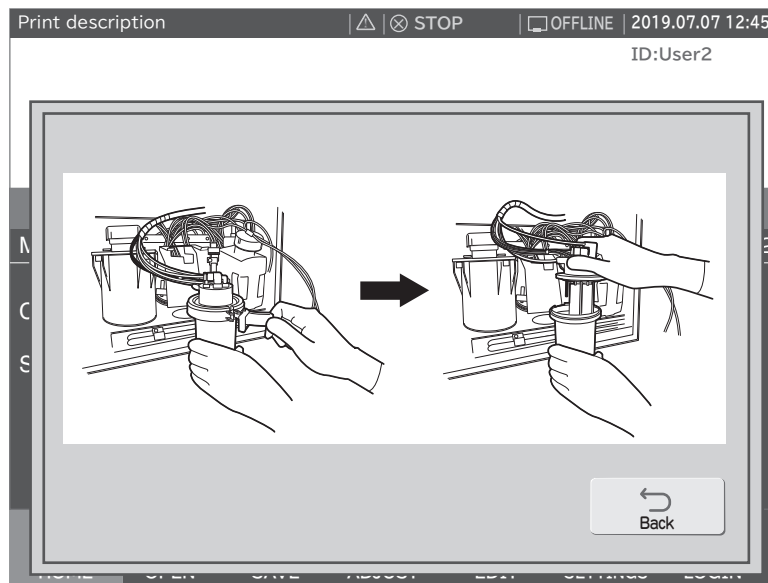
- The contents of the confirmation message are described at the place of each operation.

(4) Guidance for Fault / Waring

(a) New HMI



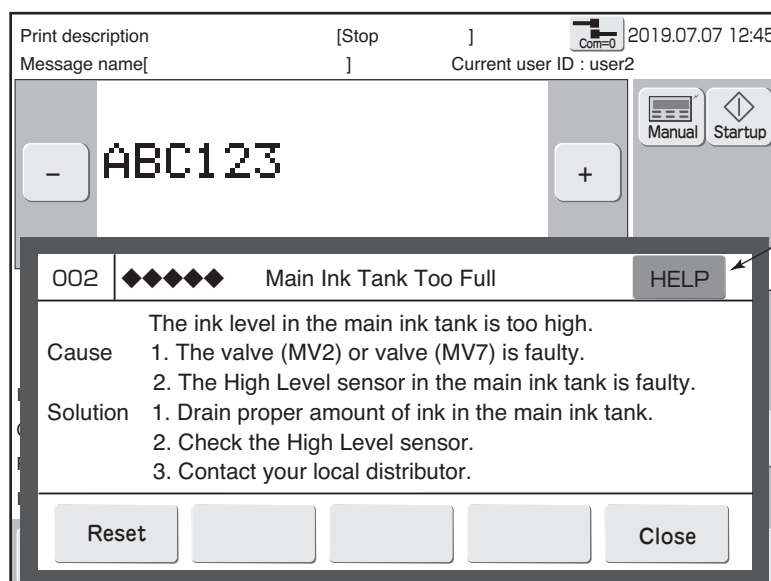
- If the message prompts the guidance, **HELP** will be shown on upper right corner.
- When **HELP** is pressed, the guidance for the fault/warning will appear.



- When **Back** is pressed, the guidance will be closed and the message will be shown again.
- The messages listed below have guidance.

No.	Type	Message
1	Fault	Main Ink Tank Too Full
2		Ink Drop Charge Too Low
3		Deflection Voltage Leakage
4		No Ink Drop Charge
5		Ink Drop Charge Too High

(b) Previous HMI



Press **HELP**, then the guidance will appear.

9.2 On-screen message descriptions

9.2.1 Fault messages

(1) Faults that invoke ink stoppage

No.	Message	Meaning of message	Remedy
1	Ink Low Fault	The ink reservoir is almost empty and printing will stop. (If the ink is not added within 60 minutes after warning output, the printer comes to a stop with the warning condition replaced by a fault condition.)	● Add ink to the ink reservoir. ( 8.1).
2	Main Ink Tank Too Full	The ink level in the main ink tank is too high.	● Drain proper amount of ink in the main ink tank. ( Technical manual 6.2, 6.12).
3	Deflection Voltage Fault	The high-voltage power supply output voltage is too low or too high.	● Contact your nearest local distributor.
4	Ink replenishment Time-out	The automatic ink refill process exceeded the time limit.	● Contact your nearest local distributor.
5	Ink Drop Charge Too Low	The ink drops are poorly charged.	● Clean the gutter, deflection electrode, sensor boss, and its surroundings. ● Adjust ink pressure. ( Technical manual 6.9). ● Adjust the excitation setting to make sure that the ink drops are well made. ( Technical manual 6.10).
6	System operation error C	Unexpected error occurred.	● Turn the power OFF and then back ON after 10 seconds.
7	System operation error M	Unexpected error occurred.	● Turn the power OFF and then back ON after 10 seconds.
8	System operation error S	Unexpected error occurred.	● Turn the power OFF and then back ON after 10 seconds.
9	Deflection Voltage Leakage	The deflection electrode voltage is too low.	● Clean and dry the deflection electrode and nearby parts.
10	Makeup replenishment Time-out	The automatic makeup refill process exceeded the time limit.	● Contact your nearest local distributor.
11	Makeup Low Fault	The makeup reservoir is almost empty and printing will stop. (If the makeup is not added within 60 minutes after warning output, the printer comes to a stop with the warning condition replaced by a fault condition.)	● Add the makeup to the makeup reservoir. ( 8.2).
12	Ink Heating Unit Temperature Too High	The temperature of the ink heater in the print head is too high. The heater will be temporarily deactivated.	● Contact your nearest local distributor.
13	Multi DC Power Supply Fan Fault	The cooling fan in the multi DC power supply has a fault. The ink ejection will stop and the printer will be automatically shutdown.	● Contact your nearest local distributor.

No.	Message	Meaning of message	Remedy
14	Charge Voltage Too Low	The charging voltage supplied to the nozzle drive board EZJ125 from the high-voltage power supply unit is too low.	• Contact your nearest local distributor.
15	Charge Voltage Fault	The charge electrode signal is faulty.	• Check that there is no short-circuit with another part.
16	No Ink Drop Charge	The ink drops are not electrically charged.	• Clean the gutter, deflection electrode, sensor boss, and its surroundings. • Check the ink pressure. ( Technical manual 6.9). • Adjust the excitation V-ref. to make sure that the ink drops are well made. ( Technical manual 6.10).
17	Ink Heating Unit Temperature Sensor Fault	The temperature measured at the ink heating unit is out of normal range. The heater will be temporarily deactivated.	• Contact your nearest local distributor.
18	Memory Fault C	The memory data has a fault.	• Execute system setup.
19	Memory Fault op	The memory of the option board EZJ130 has a fault.	• Contact your nearest local distributor.
20	Memory Fault M	The memory data has a fault.	• Execute system setup.
21	Ink Drop Charge Error	Charge control on ink drops has a fault. No print or disordered print may occurs.	• Contact your nearest local distributor.
22	Internal Communication Error S	The internal data processing error.	• Turn the power OFF and then back ON after 10 seconds.
23	System Operation Error S	Unexpected error occurred. Please verify if the work is printed correctly.	• After ink is stopped, turn OFF the power of the printer. • Contact your nearest local distributor
24	Ink Heating Unit Over Current	The ink heating element is shorted. The heater will be temporarily deactivated.	• Contact your nearest local distributor.
25	Ambient Temperature Sensor Fault	The ambient temperature measurement is out of normal range.	• Contact your nearest local distributor.
26	Print Controller Cooling Fan Fault	The cooling fan of the print controller area is faulty.	• Contact your nearest local distributor.
30	Memory Fault S	The memory data has a fault.	• Contact your nearest local distributor.
31	Pump Motor Fault	Pump motor is faulty.	• Contact your nearest local distributor.
32	Inside Temperature Sensor Fault	The inside temperature measurement is out of normal range.	• Contact your nearest local distributor.

No.	Message	Meaning of message	Remedy
34	Ink Heating Unit Temperature Low	The ink heater in the print head is unable to heat the ink enough to reach the correct operating temperature. The heater will be temporarily deactivated.	● Contact your nearest local distributor.
35	Model-key fault	Model-key recognition failed.	● Contact your nearest local distributor.
37	Language key fault	Language-key recognition failed.	● Contact your nearest local distributor.
240	Makeup Route Pressure Is High	Makeup route pressure is getting high.	● Contact your nearest local distributor.
251	Circulation Route Pressure Is High	Circulation route pressure is getting high.	● Contact your nearest local distributor.

(2) Faults that do not invoke ink stoppage

No.	Message	Meaning of message	Remedy
27	Print Data Changeover Error C	The print data change procedure was incomplete.	● Check the data entered
28	Print Data Changeover Error M	The print data change procedure was incomplete.	● Check the data entered
38	Free Layout Printing Failure	The free layout printing was aborted while the message was printing.	● Delete some print items or decrease the setting of the ink drop use. ( 4.8.6)
40	External Communication Error nnn	The serial communication port had a data error.	● Note the error code and see that no more error occurs. ( Technical manual 5.7)
42	Ink Drop Charge Too High	The charge sensor detects a high drop charge.	● Clean the gutter, deflection electrode, sensor boss, and its surroundings. ● Adjust the ink pressure. ( Technical manual 6.9) ● Adjust the excitation V-ref. to make sure that the ink drops are well made. ( Technical manual 6.10)
43	Barcode Short On Numbers	The number of characters for the selected barcode type is insufficient.	● Configure the number of ( 4.8.5) characters for barcode to appropriate value. ( Technical manual 9)
44	Shutdown Fault	The shutdown process failed.	● Turn the printer power OFF by main switch. ● Contact your nearest local distributor.
45	Count Overflow	The calculation result of the count multiplier overflowed.	● Change the count multiplier setting.
46	Invalid Data Change Timing	A print operation was requested while the print data was being changed.	● Change of either data change or print start.

No.	Message	Meaning of message	Remedy
47	Invalid Count Data Change Timing	A print operation was requested while the print data was being changed.	● Change of either data change or print start.
48	Invalid Print Start Timing	The print target detection signal for the next target arrived during the data was being changed.	● Increase the spacing between products.
49	Print Overlap Fault	The print target detector signal for the next target arrived during the print operation for the current target.	● Increase the spacing between products. ● If the target signal is chattering, use sensor filter setting. ( 4.14.1).
50	Print Head Cover Open	The print head cover is open.	● Remove the cover and then hit the Clear key. ● If a magnetic substance is used to fix the cover, it must be replaced with nonmagnetic resin (metal).
51	Detector Position Improper	The print target detector signal turned OFF before print start during printing at repeat print setting.	● Move the print target detector closer to the print head. ● If the target signal is chattering, use sensor filter setting.
52	Target Sensor Time Out	The print target detector signal was ON longer than the timeout setting of Target Sensor Timer.	● If the target is stopped in front of the sensor, move the target. ● Change the Target Sensor Timer setting. ( 4.14.1).
53	Target Spacing Too Close	There are 5 or more print target detector signal turned ON before print start during printing at No repeat print setting.	● Move the print target detector closer to the print head.
54	Print Data Changeover In Progress S	A print operation was requested while the print data was being changed.	● Set to "Disable" for item "Print data changeover" in the User environment setup screen. ● Change of timing either print data change or print start.
55	Ink Shelf Life information	Replacement of ink is recommended.	● Use ink within its expiration date at replacement. ● Confirm ink of number on unit information screen. ● Contact your nearest local distributor.
56	Blank Print Items	The print items are not properly set up.	● Change the print data.
57	Excessive Format Count	A column has more than 8 print format types (the number of lines, line spacing, character size, character spacing, bold character and bar code).	● Perform setup so that the number of print format types does not exceed 8.
58	Print Data Changeover In Progress M	A print operation was requested while the print data was being changed.	● Set to "Disable" for item "Print data changeover" in the User environment setup screen. ● Change timing of either print data change or print start.

No.	Message	Meaning of message	Remedy
59	Print Data Changeover In Progress V	A print operation was requested while the video data was being changed.	● Adjust either the encoder frequency or the pulse rate division factor. ● Change timing of either print data change or print start.
60	Communication Buffer Fault	The print contents are not in the communication buffer.	● Adjust the print and communication timing.
61	Makeup Shelf Life information	Replacement of makeup is recommended.	● Use makeup within its expiration date at replacement. ● Confirm makeup of number on unit information screen. ● Contact your nearest local distributor.
62	Internal Communication Error C	The internal data processing error.	● Ink stop and the printer power OFF are recommend. Turn the printer OFF and then back ON after 10 seconds.
63	Internal Communication Error M	The internal data processing error.	● Ink stop and the printer power OFF are recommend. Turn the printer OFF and then back ON after 10 seconds.

9.2.2 Warning messages

No.	Message	Meaning of message	Remedy
65	Excitation V-ref. Review	The excitation voltage reference needs to be updated.	Perform the Nozzle test and update the Excitation V-ref. setting. ( Technical manual 6.10)
66	Viscosity Reading Instable	The viscometer output readings fluctuated. Setting will be temporarily switched to no use of viscometer.	Contact your nearest local distributor.
67	Viscosity Readings Out of Range	The viscometer is defective. Setting will be temporarily switched to no use of viscometer.	Contact your nearest local distributor.
68	Ink Viscosity High	The ink viscosity is above the proper level.	The ink concentration will be adjusted to normal level. If print quality is still poor, then replace ink. ( Technical manual 6.2)
69	Ink Viscosity Low	Ink viscosity is below the proper level.	The ink concentration will be adjusted to normal level. If print quality is still poor, then replace ink. ( Technical manual 6.2)
71	Battery Low M	The internal battery in engine section is low. The latest print data and operating information may not be saved.	- Contact your nearest local distributor. - Replace the internal battery in engine section and set the data/time. ( 6.2).
72	Calendar Content Inaccurate	Calendar content is inaccurate due to malfunction of the clock.	- Contact your nearest local distributor. - Set the date/time. ( 6.2).
-	External Communication Error nnn	The serial communication port had a date error.	Note the error code and see that no more errors occur. ( Technical manual 5.7)
80	Excitation V-ref. Review 2	Update the excitation voltage reference. Print quality may become poor.	- Perform nozzle test and update the excitation V-ref. setting. ( Technical manual 6.10) - Watch for the print results and the Excitation V-ref. Setting. for about 2 hours after operation is started.
81	Ink Low Warning	The ink level in the ink reservoir is low.	Add Ink within 60 minutes. ( 8.1).
82	Makeup Low Warning	The makeup level in the makeup reservoir is low.	Add the makeup within 60 minutes. ( 8.2).
83	Ink Shelf Life Expired	Ink replacement time has come.	Replace the ink ( Technical manual 6.2).
84	Ambient Temperature Too High	The ambient temperature is above the proper level.	Ensure that the ambient temperature is within the operating temperature limits.

No.	Message	Meaning of message	Remedy
85	Ambient Temperature Too Low	The ambient temperature is below the proper level.	● Ensure that the ambient temperature is within the operating temperature limits.
87	Ink Pressure High	Ink pressure is higher than the recommended value.	● Adjust the pressure-reducing valve to correct the pressure. ( Technical manual 6.9)
88	Battery Low C	The internal battery in controller section is low.	● Contact your nearest local distributor. ● Replace the internal battery in engine section and set the data/time. ( 6.2).
93	Ink Pressure Low	Ink pressure is lower than the recommended value..	● Adjust the pressure-reducing valve to correct the pressure. ( Technical manual 6.9)
95	Product Speed Matching Error	The encoder pulse rate exceeds the available printing speed.	● Slow the print target speed. ● Decrease N in the ink drop use percentage (1/N). ( 4.14.1).
129	Model-key Failure	Model-key recognition failed.	● Contact your nearest local distributor.
130	Language-key Failure	Language-key recognition failed.	● Contact your nearest local distributor.
131	Upgrade-key Fault	Upgrade-key recognition failed.	● Contact your nearest local distributor.
135	Circulation System Cooling Fan Fault	The cooling fan of the circulation system area is faulty.	● Contact your nearest local distributor.
136	Inside Temperature Too High	The temperature inside the printer is increasing.	● Please confirm the ink recovery status. ● Replace the air filter or make the space around printer. ● Contact your nearest local distributor.
148	Stirrer motor M fault	Stirrer motor M is faulty. Ink will not be stirred properly.	● Contact your nearest local distributor. ● Put IJ Printer into a stop state periodically, e.g. once a day and stir the ink in Main Ink Tank by stirring bar until recovered ( 1.1).
149	Stirrer motor S fault	Stirrer motor S is faulty. Ink will not be stirred properly.	● Contact your nearest local distributor. ● Put IJ Printer into a stop state periodically, e.g. once a day and stir the ink in Ink reservoir by stirring bar until recovered ( 1.1).
151	RFID Reader Failure	RFID reader recognition failed.	● Contact your nearest local distributor.
152	Makeup Ejection Pressure Low	Makeup ejection pressure is getting low.	● Contact your nearest local distributor.

9.2.3 Other messages

No.	Message	Meaning of message	Remedy
187	Ink Temperature Correction Notice	The selected setup does not allow ink temperature corrections to be made. ( P1-4)	● Contact your nearest local distributor.
200	No Ink Concentration Control	The current settings have made ink concentration control unavailable. ( P1-5)	● Contact your nearest local distributor.
201	Print Data/Settings Notice	Recent changes to print data and printer settings may have been lost. In the previous session, power was cut OFF suddenly.	● Check print contents and each setting value.
209	Print Start up Failure	Printer startup failed.	● Turn the printer power OFF and then back ON after 10 seconds. ● Contact your nearest local distributor.
210	USB Memory Error	USB memory is not inserted. Or an error was generated when reading USB memory.	● Insert correctly. ● Replace with a new USB memory.

9.3 When checking the warning and fault generation status

(1) Functions

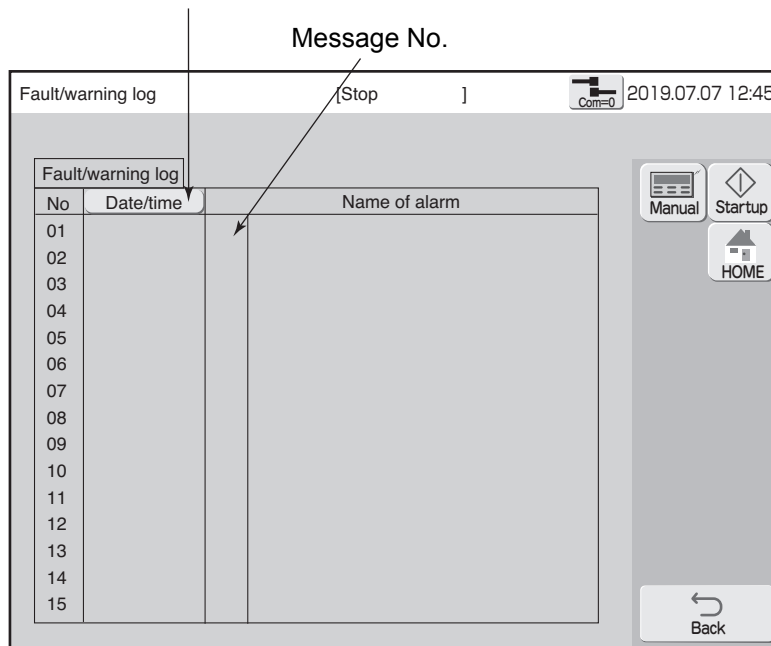
- The warning or fault message generation time and contents can be viewed.
- A maximum of 90 messages can be displayed.
- When messages are exceeded 90, the messages will be deleted from the oldest message.

(2) Operation

- 1** Press **View alarm history** in the Manage messages screen.

The Fault/warning screen is displayed.

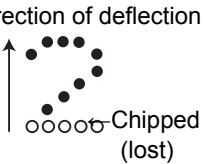
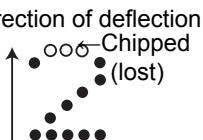
Sorted from generation date.



9.4 Remedial Action to Be Taken in the Event of a Printing Failure

- If a printing failure occurs, perform the associated remedial procedures suggested below.
- If the remedial procedures below do not achieve recovery, it is conceivable that the problem is attributable to a PC board or circulation system failure. In such an instance, contact your nearest local distributor.

(*1) See the Technical Manual

No.	Printing failure description (phenomenon)	Probable cause	Solution	Reference
1	Chipped print (minus deflection electrode side) 	Ink and foreign matter are stuck to the gutter.	• Clean the gutter. • Replace the recovery filter.	6.5 (*1) 6.7 (*1)
		Ink and foreign matter are stuck to the charge and deflection electrodes.	• Clean the charge and deflection electrodes.	3.1.2
		Ink and foreign matter are stuck to the ink ejection port.	• Remove the ink and foreign matter.	-
		The ink stream is improperly positioned.	• Adjust the ink stream.	6.3 (*1)
		The ink pressure is too high.	• Adjust the ink pressure for the standard value.	6.9 (*1)
		The ink has deteriorated.	• Replace the ink.	6.2 (*1)
2	Chipped print (plus deflection electrode side) 	Ink and foreign matter are stuck to the charge and deflection electrodes.	• Clean the charge and deflection electrodes.	3.1.2
		Ink and foreign matter are stuck to the ink ejection port.	• Remove the ink and foreign matter.	-
		The flow within the nozzle is restricted.	• Backwash the nozzle.	6.3 (*1)
		The character height setting is too high.	• Decrease the character height setting.	4.14.1
		The ink pressure is too low.	• Adjust the ink pressure for the standard value.	6.9 (*1)
		The ink has deteriorated.	• Replace the ink.	6.2 (*1)
3	Varying character height	The clearance between the print head and print target has changed.	• Adjust the clearance between the print head and print target.	-
		Ink and foreign matter are stuck to the charge and deflection electrodes.	• Clean the charge and deflection electrodes.	3.1.2
		Ink and foreign matter are stuck to the ink ejection port.	• Remove the ink and foreign matter.	-
		The flow within the nozzle is restricted.	• Backwash the nozzle.	6.3 (*1)
		The ink pressure has changed.	• Adjust the ink pressure for the standard value.	6.9 (*1)
		The ink has deteriorated.	• Replace the ink.	6.2 (*1)

No.	Printing failure description (phenomenon)	Probable cause	Solution	Reference
4	Disordered characters	There are water, oil, or other deposits on the print target surface.	● Make prints with the print target clear of deposits.	-
		The ink pressure has changed.	● Adjust the ink pressure for the standard value.	6.9 (*1)
		Ink and foreign matter are stuck to charge electrode, deflection electrode and sensor boss.	● Clean charge electrode, deflection electrode and sensor boss.	3.1.2
		The flow within the nozzle is restricted.	● Backwash the nozzle.	6.3 (*1)
		The ink has deteriorated.	● Replace the ink.	6.2 (*1)
		The excitation V-ref. value is improper.	● Adjust the excitation V-ref..	6.10 (*1)

10. TROUBLESHOOTING GUIDE

If the printer does not start up normally, perform the following checks before deciding the printer is malfunctioning.

Phenomenon	Check	Solution
The power does not turn ON at the press of the On switch.	Check that the main power switch is turned ON.	Turn ON the main power switch.
	- Check that the power plug is properly connected to a power outlet. - Check that electrical power is supplied to the employed power outlet.	Turn OFF the main power switch. Ensure that power is supplied to the power outlet, and then connect the power plug to the power outlet.
	- Check that Status indicator lamp is not on when On switch is pressed. - Check that On switch is pressed for about 2 seconds.	- Ensure that Status indicator lamp is off when pressing the On switch. - Turn off the main power switch, wait 10 seconds, and then turn back on. Press the On switch. - Ensure that Start switch is pressed for about 2 seconds.
Pressing a key does not invoke its predefined operation. Or the key is not accepted.	See "7.4 Touch Screen Coordinate correction".	
The calendar time is not correctly printed.	Check that "clock stop" is not selected from the date/time setup screen. See "6.2 Set the Date and Time".	Select the "same as current time" option. See "6.2 Set the Date and Time".
The printer does not become ready for printing when [Start up] is pressed.	- Check for an ink stream ejection from the nozzle. - Check whether the ejected ink stream enters the gutter hole.	- Stop the ink ejection sequence by pressing the [Shut down]. - See the Technical Manual "6.3 How to correct ink stream bending and nozzle clogging", and correct the problem.
	Check if the print head is dirty.	See "1.3 Print head cleaning", and perform the operation.
"Print overlap fault" occurs frequently.	See "9. When Warning or Fault was generated".	
A fault message is displayed.		
Residual image of characters, etc. remains on the screen.	-	Because of the characteristics of the liquid crystal panel, when the same pattern is displayed for a long time, a residual image of the pattern may remain. However, the residual image will disappear with the passage of time.

CAUTION

- If the above remedies do not restore the printer to normal, stop using the printer, disconnect the power plug from the power outlet, and contact your Hitachi distributor.



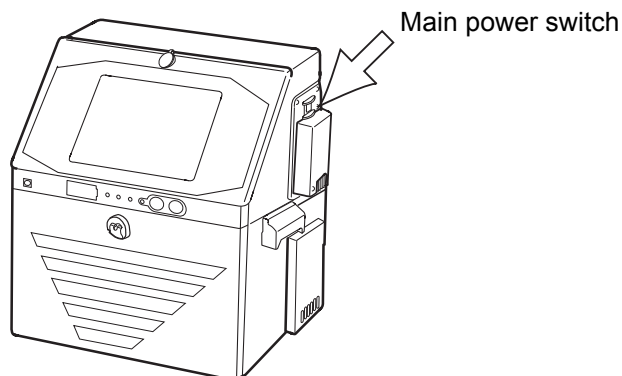
- Report the following to your local source or service company:

- TYPE-FORM (model number) _____ IJ printer (Model UX-□□□□□□)
- SER. No. (serial number) _____ UX □□□□□□□□
- Failure description _____ In detail
- Organization name (department and section names included), name of person in charge, and telephone number.

* The model number and serial number are marked on the nameplate that is attached to the right-hand side of the printer.

11. EMERGENCY PROCEDURES

Press the main power switch to turn OFF the power.



WARNING

- If an earthquake, fire, or other emergency arises while the printer is operating or when its power is on, turn OFF the power by pressing the main power switch.
Never perform this procedure except in case of an emergency.

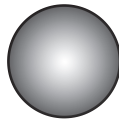


- Immediately after the emergency is cleared, press the main power switch to turn the power back ON and press the **Start up** to initiate ink ejection.
- If the emergency lasts for 5 minutes or longer, open the print head cover and clean the orifice plate and its surrounding parts and gutter section by pouring makeup over them.
When resuming operation, thoroughly clean the orifice plate and its surrounding parts and gutter section by pouring makeup over them, and then initiating ink ejection.
- If the power supply is shut off by a power failure, perform the same procedure as indicated above.

CAUTION

In the event of a power failure

When you use the printer after power restoration, be sure to confirm the printings and other setup data beforehand. If you find any incorrect printings or setup data, correct it.

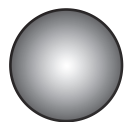


12. SPECIFICATIONS

* : Model Version No.
n : Destination Code

Item		Model
		UX-H14*n
Nozzle diameter		48μm
Max. print line number		Up to 2 lines
Maximum number of print characters		Up to 1,000 characters
Font	4x5	V
	5x5	V
	5x7(8)	V
	7x10	V
	11x11 (Chinese only)	V
	10x12	V
	12x16	V
Character height		Approximately 3.5 mm / 0.04-0.14 inches
Display & input device		WYSIWYG design; Display: TFT LCD (10.4" color), backlight provided; Input device: Touch panel, input sound provided
Maximum print rate (character per second) (Font 5x5, space 1, 1line)		Up to 4,166 (Ink : 1067K)
Standard characters		Alphanumeric (A-Z, a-z, 0-9), symbols (27), space : Total 90 (When "Print quality first" is enabled, only alphanumeric characters are available.)
User pattern		Each dot matrix 200 patterns (When "Print quality first" is enabled, User pattern is NOT available.)
Print functions		Calendar, Count, Font mixture, Passwords security, etc.
Barcode printing		code39, ITF, NW-7, EAN-13, EAN-8, UPC-A, UPC-E, code128/EAN-128, GS1 DataBar (When "Print quality first" is enabled, Barcode is NOT available.)
2D code printing		Data Matrix , Micro QR (When "Print quality first" is enabled, 2D-code is NOT available.)
Message storage capacity		2,000 messages (depends on data content)
Input signal		Print target detection, Rotary encoder pulse, OP:Printing stop, Reciprocatve printing, Remote control (Run, Stop, High-voltage ON/OFF, Reset) (NPN/PNP Selectable)
Output signal		Print ready, Fault, Warning (NPN Only), OP:Print in progress or Print complete, Online (NPN/PNP Selectable)
Data interface	RS-232C	RS-232C at baud rates selectable up to 115,200bps
Ethernet		IEEE802.3, 100BASE-T
External memory		USB for user data storage
Head cable length, angle		3m / 9.84ft, inline / 90 degrees
Operating temperature range *1		0-40°C / 32-104°F (Ink : 1067K)
Humidity range		30-90% R.H. (No condensation)
Power supply (Automatic voltage selection)		AC100-120/220-240V±10% 50/60Hz 120VA (AC Inlet)
Corrosive gas		There must be no corrosive gas
Overall size (Width x Depth x Height)		400x320x527mm / 15.7x12.6x20.8 inches
Approximate weight		27kg / 60lbs

*1 Operating temperature limit differ depending on the ink types.
Refer to the handling guidance of each ink for details.



13. APPENDIX

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