RICOH Ri 4000

User Manual

For safe and correct use, be sure to read the Safety Information in Safety Information and Quick Installation Guide before using the machine.

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How to Read the Manuals

Before You Begin...

Only appropriately trained users should operate the machine.

Disclaimer

Contents of this manual are subject to change without prior notice.

To the maximum extent permitted by applicable laws, in no event will the manufacturer be liable for any damages whatsoever arising out of failures of this machine, losses of the registered data, or the use or non-use of this machine and operation manuals provided with it.

Make sure that you always copy or have backups of the data registered in this machine. Documents or data might be erased due to your operational errors or malfunctions of the machine.

In no event will the manufacturer be responsible for any documents created by you using this machine or any results from the data executed by you.

Notes

Read this manual carefully before you use the machine and keep it handy for future reference.

For safe and correct use, be sure to read Safety Information before using the machine.

The manufacturer will not be responsible for any damage or expense that might result from the use of parts other than genuine parts from the manufacturer with your products.

For good output quality, the manufacturer recommends that you use genuine ink from the manufacturer.

Some illustrations in this manual may be slightly different from the machine.

Certain options may not be available in some countries. For details, please contact your local dealer. Depending on which country you are in, certain units may be optional. For details, please contact your local dealer.

The Meanings of the Safety Symbols Used with This Machine

The meanings of the safety symbols for this machine are as follows:

	Prohibition
	Caution
	Warning; Pinch Point
	Caution, risk of electric shock
	Caution, risk of having hands or arms caught
	Keep out of reach of children
	Prohibition of disassembly
	See operating instructions For details about the precautions in each location with this graphic symbol, see "Safety Labels of This Machine" in Safety Information and Quick Installation Guide.
	Do not touch
	Caution, hot surface
	Wear eye protection
	Wear protective gloves

Notes for Using This Machine Safely

To use this machine, it is recommended you take the following measures, which include:

- Installing this machine in a network protected by a firewall.
- Specifying your private IP address.

Using a Private IP Address

An IP address is a numerical label assigned to devices connected to the network. An IP address that is used for Internet connection is a "global IP address", and an IP address that is used for network connection in a local environment such as a company is a "private IP address". If an IP address that is specified for a machine is a global IP address, unspecified numbers of Internet users can access this machine, so that there is higher risks of information leakage through illegal access outside from the environment where this machine is located. If a private IP address is specified for a machine, however, only users within a local network such as a company LAN can access the machine. Unless there is any specific reason, specify a private IP address for a machine. A private IP address can be selected from the following address ranges:

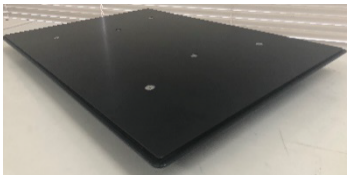
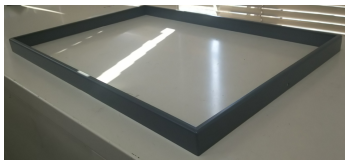
Private IP address ranges

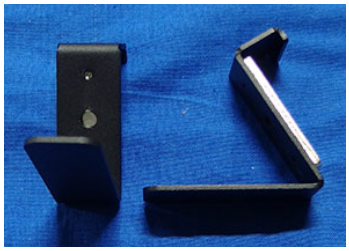
- 10.0.0.0-10.255.255.255
- 172.16.0.0-172.31.255.255
- 192.168.0.0-192.168.255.255

If you are concerned about the network environment, you can use the machine without a network connection by printing from a USB memory containing print data.

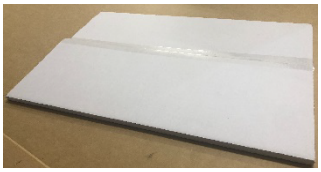
1. Before You Begin

1.1. Checking the Contents of the Product

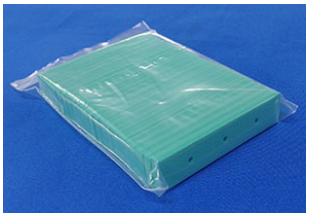
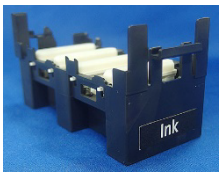
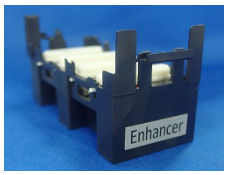
Item	Number
This machine	1
Power cord	1
Ethernet cable	1
Platen (Medium) 	1
Frame (Medium) 	1

Item	Number
Platen Frame Hook 	2
Waste Bottle (Waste Ink bottle,Waste Enhancer bottle)	2

Item	Number
Waste tube for waste ink	1 set (2 tubes)
Waste tube for waste enhancer	1set (1 tube)

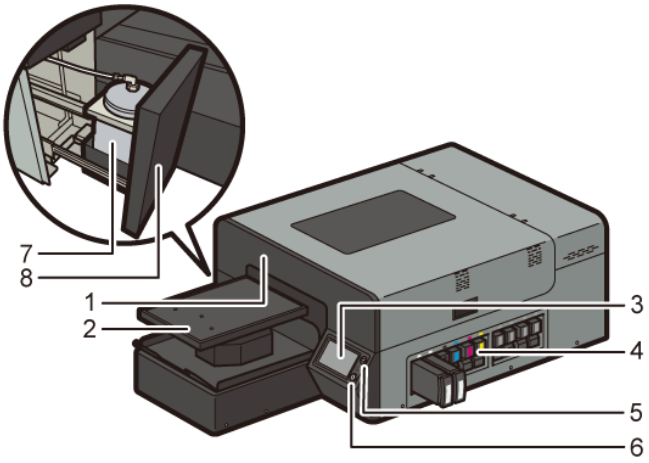
Item	Number
Waste bottle band	1
Heat press paper 	1
ColorGATE Productionserver License card	1
Safety Information and Quick Installation Guide	1
User Maintenance Precautions	1
Precaution sheet of installing the machine	1

Maintenance Supplies	Number
Bottle for Cleaning Liquid (with dropper)	1
Cleaning applicators	1 set
Lint free wipes	1 set
Grease	1
Polyethylene gloves	5 sets

Maintenance Supplies	Number
Absorbers (Type P1) 	1 set
Head Cleaning JIG II	1
Rubber Cap (for the front carriage)* *This is attached to the main unit. 	1
Rubber Cap (for the rear carriage) 	1

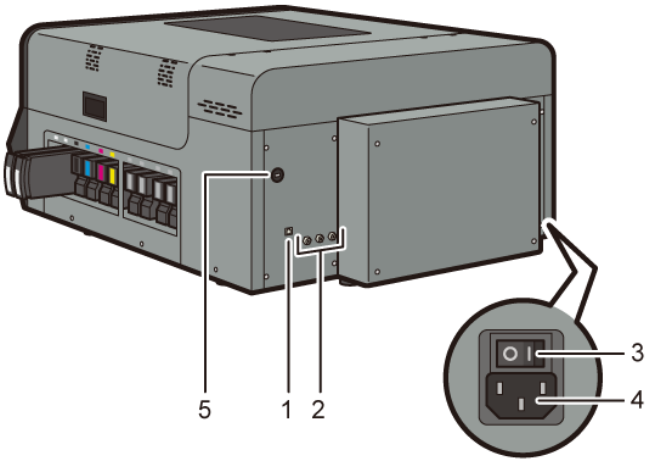
1.2. Guide to Components

Front and Right View



1. Front cover
2. Platen
3. Touch panel
4. Ink cartridges/Enhancer cartridges
5. USB-A port (2.0)
6. Sub power button
7. Cleaner tank
8. Cleaner tank cover

Rear View



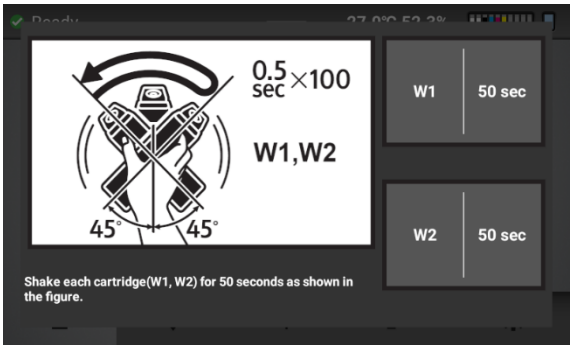
1. Ethernet port
2. Waste bottle connector
3. Main power switch
4. Power connector
5. USB-A port (2.0)*

* If the USB-A port on the front cannot be used, the USB-A port on the back can be used instead. For USB connection, insert a USB memory stick into only one of the ports.

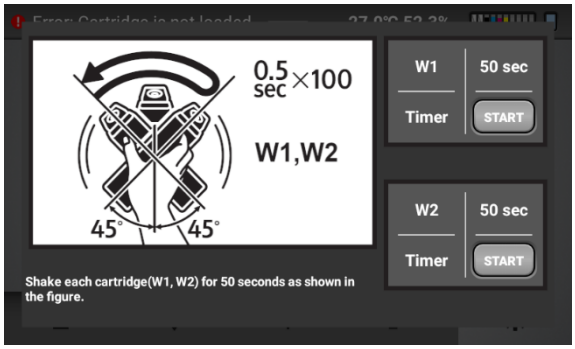
1.3. Important

Prevent Print Heads from Clogging

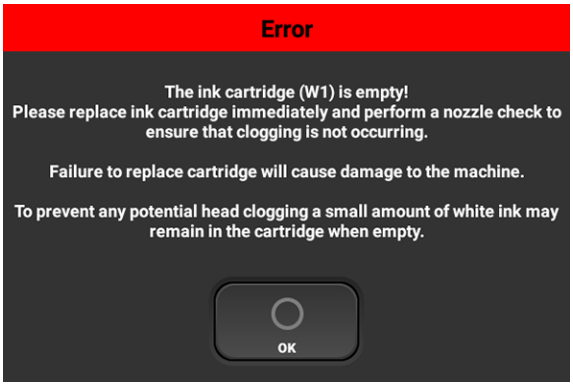
- Shake the ink cartridge when either of these pop-ups shows up.



or



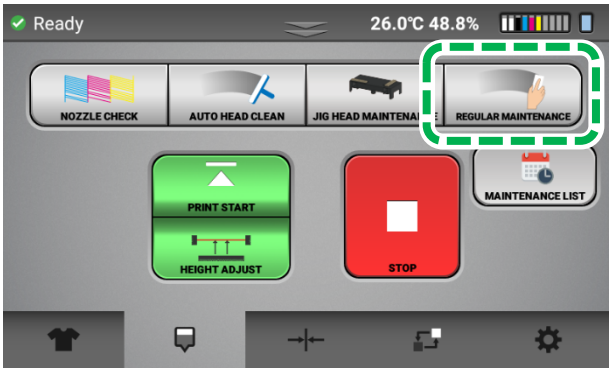
- Replace a used ink cartridge with new one immediately to prevent print heads from clogging.



Basic Maintenance Items for Comfortable Printing

- Perform maintenance as outlined in the maintenance schedule

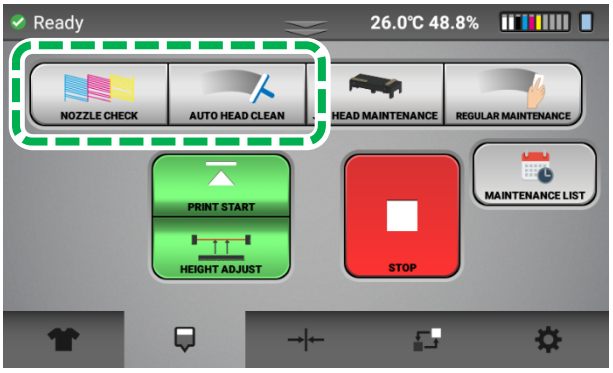
  The printer will perform automatic maintenance periodically. But if you do not perform maintenance periodically, the ink in the cartridge may settle and/or coagulate, causing poor image quality or printer failure.



- Clean print heads to prevent them from clogging.

  For details, see page 129 "NOZZLE CHECK".

  For details, see page 133 "AUTO HEAD CLEAN".



- Clean the path of carriages with grease so that they can move smoothly and print precisely.

  For details, see page 163 "How to Clean the Guide Rod".

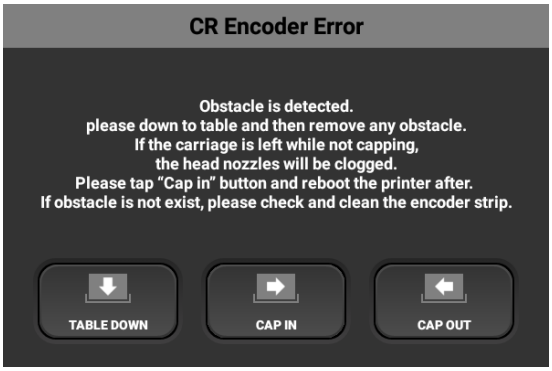
Other Cautions

- Do not turn off the power of the printer.

  This printer periodically circulates ink internally and automatically performs head cleaning. If the printer is left powered off for 12 hours or more, attach a rubber cap to the carriage to protect the print head.

- Do not leave an error.

  This might cause some kind of problem.
  Please resolve an error shortly after the pop-up shows up.



- Some parts require periodical replacement

  This printer includes parts that require replacement due to usage.

  Parts must be replaced by a service representative.

  NOTE - If a part has reached the end of its service life, as outlined in section, it will not be replaced under warranty as it is considered a consumable. Although the machine might still operate even if you use a part with expired service life, doing so could cause quality deterioration and malfunction. Therefore, we strongly recommend that you replace the part as soon as it reaches the end of its service life.

- If the printer encounters an error message, be sure to resolve the issue before continuing use as the self-maintenance functions will not work if there is a current error being experienced by the printer.

Need to know – Follow these steps to keep your printer in optimum working condition

WARNING! Failure to follow these steps may cause printer damage and possibly void the warranty

7 Essential Tips for Keeping Your RICOH Ri 4000 in Top Shape

As part of our commitment to your success, we want to make sure that you are getting optimal performance from your RICOH Ri 4000 while also minimizing any issues that can easily be prevented by following a few simple tips:

1. **Always leave your printer on to allow the machine's automated maintenance sequences to run.**

   This is necessary to keep the printer in optimal condition and avoid potential damage that can be easily prevented. If the printer is left powered off for 12 hours or more, attach a rubber cap to the carriage to protect the print head. For more information, see page 240, "Attaching the rubber cap".

   For long-term storage (powered off for 2 weeks or longer) or shipping, replace the ink and enhancer with cleaning solution and attach a rubber cap to the carriage. For more information, see page 217, "Preparing Your Printer for Storage/Shipping".

2. **Always shake new white ink cartridges thoroughly before installing them in your printer.**

   Adequately shaking your new white ink cartridges can ensure that your prints will come out bright and vibrant. For details, see page 20, "Machine Installation". Also, shake the white ink cartridges each day as prompted by the printer.

3. **Make sure your ink is 5% or more when you are done printing for the day or plan on leaving your printer idle for a few hours.**

   While you can continue to print using cartridges with less than 5% remaining, the machine's vital automated maintenance sequences require at least 5% or more in order to complete. If you do not have replacement ink available, you can fill your printer with cleaning fluid. For details, see page 217, "Preparing Your Printer for Storage/Shipping".

4. **Perform a nozzle check daily, so you can spot and quickly address potential issues with the printer.**

5. **Check the following websites to ensure that your printer and software firmware are completely up to date.**

   Firmware: Ricoh website of the country that you are in

   Software: Use latest dated version of the following.

   ColorGATE products support page (https://www.colorgate.com/support/)

   Please check the latest date in the Web site.

   For details about download procedure, see page 57, "Download software of ColorGATE RIP/MIM files".

6. **Exercise care when changing platens.**

   This is a precision machine. When you replace or adjust the platen, handle it carefully.

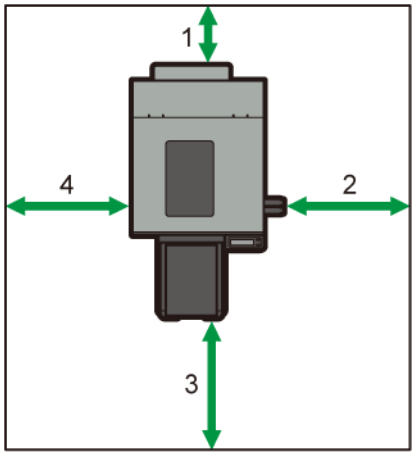
7. **Do not leave the machine in the error status.**

   If an error is displayed on the screen, try to resolve it immediately. Also, if the error is not resolved, contact your service representative.

1.4. Machine Installation

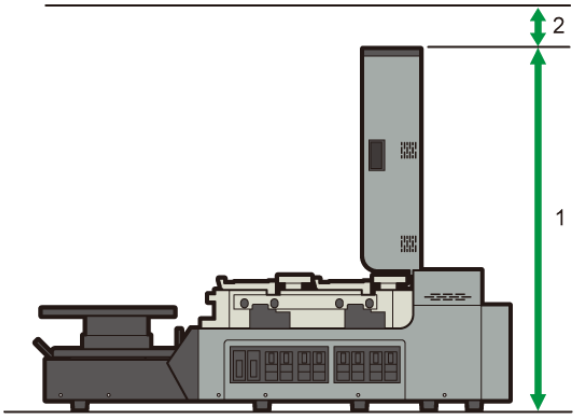
Space Needed for the Printer

◆ Installation Space: Top View



1. Rear: 5 cm (approx. 2.0 inches) or more
2. Right: 60 cm (approx. 23.6 inches) or more
3. Front: 60 cm (approx. 23.6 inches) or more
4. Left: 60 cm (approx. 23.6 inches) or more

◆ Installation Space: Side View



1. Max. height: 128 cm (approx. 50.4 inches)
2. Above: 4 cm (1.6 inches) or more

Unpacking

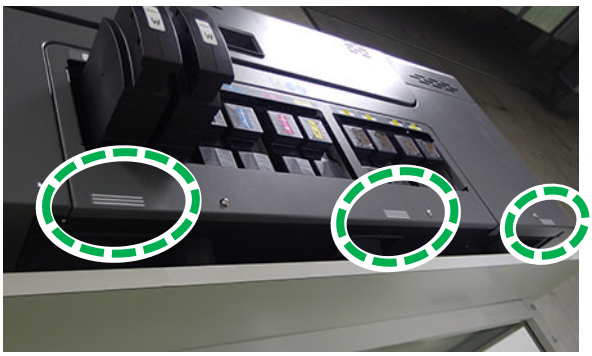
⚠CAUTION

- The machine weighs around 145 kg (320 lb.).
- Six or more people are required to lift the printer. When moving the printer, lift it slowly so that you do not strain yourself. Lifting the printer forcibly or handling it roughly to drop it will risk injury.

1. **Keep the shipping box in the proper orientation (see arrows on the shipping box).**
2. **Remove the poly wrap and strapping.**
3. **Remove the top lid, upper foam, and separator sleeve.**
4. **Remove the cushioning material.**
5. **Place the printer on your table.**

IMPORTANT! Do not lift by the platen or platen base, lift from box with the help of 6 people.

Grip the indentations for lifting at the base of the machine's sides with six people or more, as shown. Lift and carry the machine slowly and carefully.



Installing the Waste Bottles, Ink Cartridges, and Enhancer Cartridges

There are 2 waste bottles and 2 waste tubes supplied. Use 1 waste bottle and waste tube for the waste ink and the other waste bottle and waste tube for the waste enhancer.

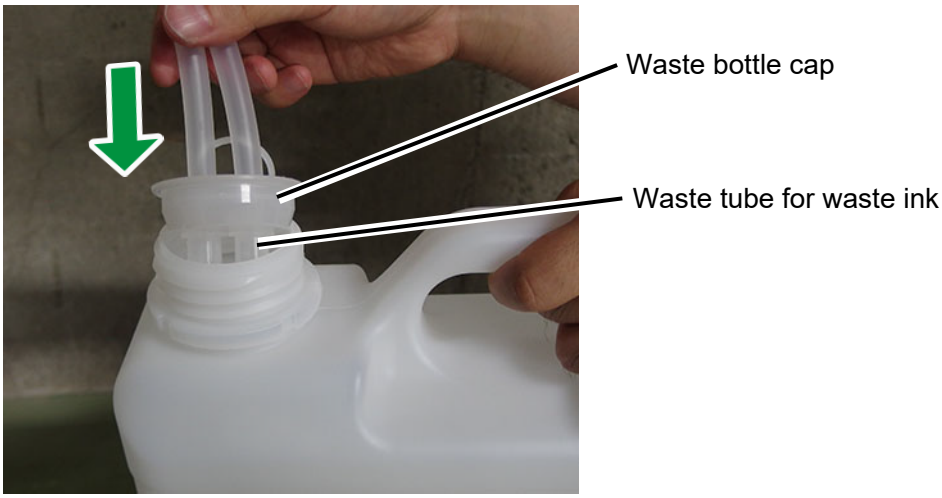
There is no difference in the specifications of the waste bottles, so either one of the two supplied can be used for either usage.

However, there is a waste tube for the waste ink and a waste tube for the waste enhancer. A different waste tube is used for each waste liquid. Refer to the following to distinguish between the waste tubes.

- Waste tube for waste ink: Tube set with 2 tubes threaded through the cap.
- Waste tube for waste enhancer: Tube set with a tube threaded through the cap.

IMPORTANT! The printer cannot determine if the waste bottles is connected. Make sure the waste bottles is connected properly.
If the waste ink and waste enhancer mix, the liquid may solidify, causing the waste bottle and waste tube to become unusable. Be careful not to mix them.

1. **Open the waste bottle cap.**
2. **Insert the waste tube for waste ink into the waste bottle.**



3. **Push the waste bottle cap to close.**

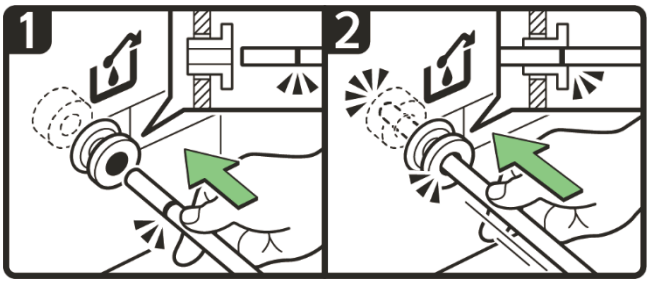
Close the waste bottle cap tightly and make sure that there is no gap between the waste bottle cap and the waste bottle.

4. **Perform Steps 1 to 3 for the waste tube for waste enhancer.**

5. **Remove the tape and towel from each waste bottle connector on the right side located on the back of the printer, and then connect the corresponding waste tubes to the waste bottle connectors.**

Connect the connectors and waste tubes that have matching labels on them.

IMPORTANT! There is a marking on each waste tube. Insert each waste tube until the marking disappears into the waste bottle connector.



6. Secure the waste bottles in an upright position with tape.

When securing the waste bottle with a waste bottle band, use the waste bottle band as shown below:

The shape and color of the waste bottle band is subject to change.

IMPORTANT! Install the waste bottles vertically. If installed horizontally, the waste ink and waste enhancer inside could leak out.

IMPORTANT! Connect the waste tubes straight to the waste bottles. If any waste tube is bent or twisted, ink could become clogged inside the waste tube and thus could cause a malfunction.

Attach the waste tubes in a way that the ink flows vertically from the printer on top to the waste bottles at the bottom. If the top-to-bottom orientation is reversed at any point along the way, the waste ink and waste enhancer may not flow smoothly and cause a malfunction.

7. Agitate the new white cartridges.

For details about agitating a new white cartridge, see page 36, “Agitating New White Cartridge”.

8. Insert the ink cartridges and enhancer cartridges.

IMPORTANT! When installing the ink cartridges and enhancer cartridges, do not touch the inside of the machine.

Carefully install a cartridge in the correct position.

During the initial ink charging, do not lift the front cover. Also, do not pull out the ink cartridges and enhancer cartridges.

During the initial ink charging, if you lift the cover, the procedure will pause. To resume, hold the power button down to reboot the printer.

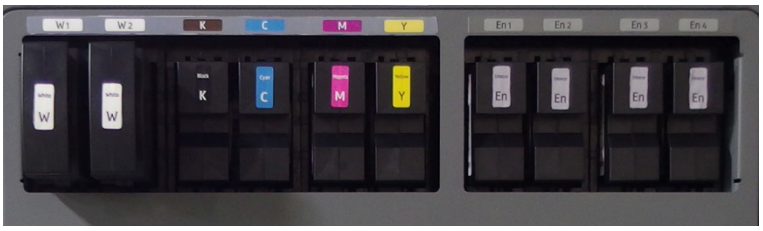
Agitate all the white cartridges before inserting them into the printer, and then begin the fill process.

For white ink, insert two white ink cartridges.

For the enhancer, insert four enhancer cartridges.

You can insert each ink cartridge and enhancer cartridge into either of their designated slots.

Supply the ink as follows:



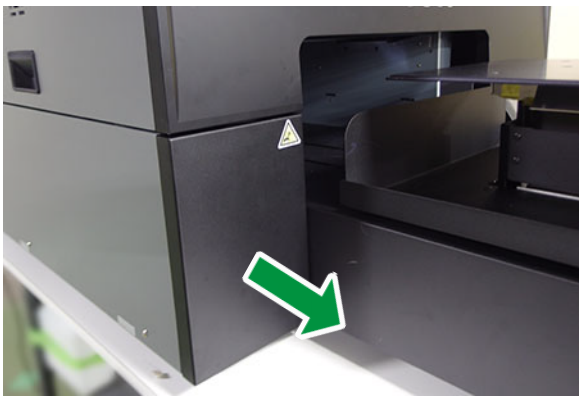
NOTE - Push the cartridges all the way through until they stop.

Be sure not to insert cleaning cartridges. The cleaning cartridges have the following labels affixed to them:

Pour the Cleaning Liquid

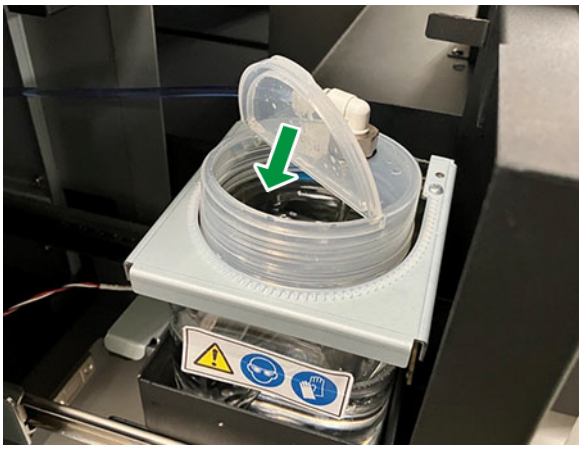
IMPORTANT! Be sure to use Ricoh's genuine cleaning liquid. Using other cleaning liquids may cause nozzle clogging or other problems related to printer malfunction.

1. **Open the cleaner tank cover.**



2. **Open the cleaner tank cap, and then pour the cleaning liquid up to the level indicated by the line.**

3. **Close the cleaner tank cap.**



4. **Close the cleaner tank cover.**

Turning On the Power

⚠WARNING

- Avoid taking the following actions because doing so can result in fire or electric shock:
  - Using any power supply voltage or frequencies other than those that match the specifications shown
  - Using multi-socket adaptors
  - Using extension cords
  - Touching the prongs of the power cable's plug with anything metallic

- Avoid applying the following actions to power cords because doing so can result in fire or electric shock:
  - Damaging them
  - Bundling them
  - Modifying them
  - Putting heavy objects on them
  - Pulling them forcibly
  - Bending them forcibly

- Do not handle the power cord plug with wet hands. Doing so can result in electric shock.

- The supplied power cord or cords are for use with this machine only. They cannot be used for appliances other than this machine. Also, do not use power cords other than the power cord or cords supplied with this machine. Doing so can result in fire or electric shock.

- To prevent fire or electric shock, disconnect the plug and the power cord from the wall outlet at least once a year and check them. If any of the following conditions exist, do not use the plug and the power cord continuously, and consult your dealer or service representative.
  - There are burn marks on the plug
  - The prongs on the plug are deformed
  - The power cord's inner wires are exposed or broken
  - The power cord's coating is cracked, dented, or damaged
  - When the power cord is bent, the power turns off and on
  - Part of the power cord becomes hot

⚠CAUTION

- Be sure to push the power cord plug fully into the wall outlet. Also, do not push it into loose and unstable wall outlets likely to cause a contact failure. Doing so can result in heat generation.

1. Connect the power cord to the power connecter.

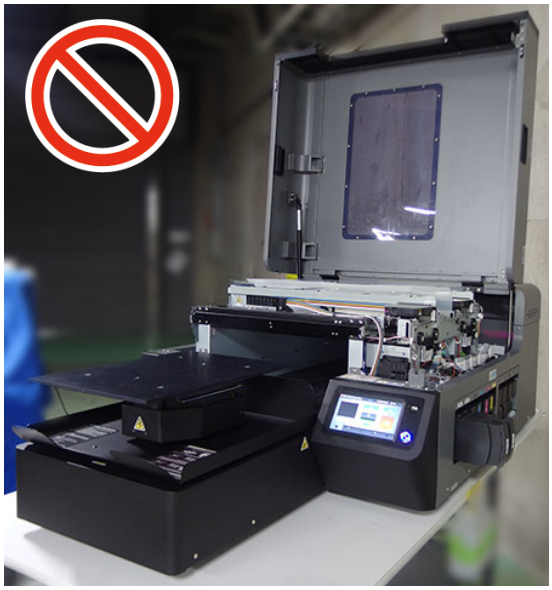
2. Turn ON the main power switch.

3. Hold down the sub power button for more than 2 seconds.

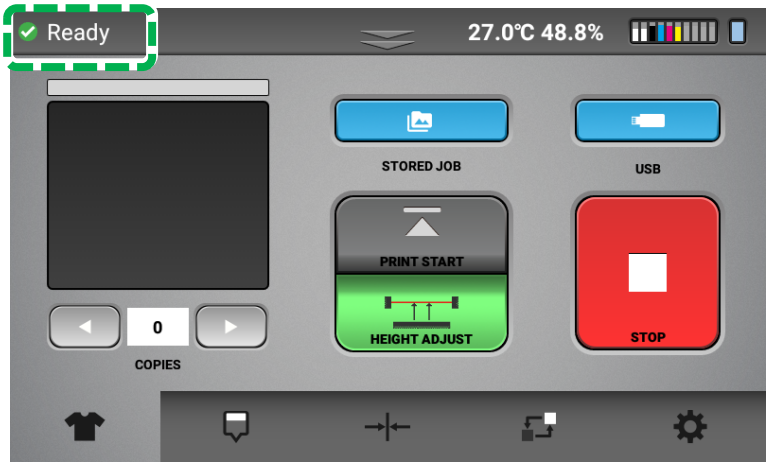
4. After booting, the printer will perform initial ink charging if the ink is not charged.

Initial ink charging takes about 20 minutes.

NOTE – During the initial ink charging, do not lift the front cover. Also, do not pull out the ink cartridge. During initial ink charging, if it is paused by lifting the front cover, hold down the sub power button to reboot printer.



Once the initial ink charge is completed, the printer shows "Ready" in the upper left-hand corner of the touch screen.



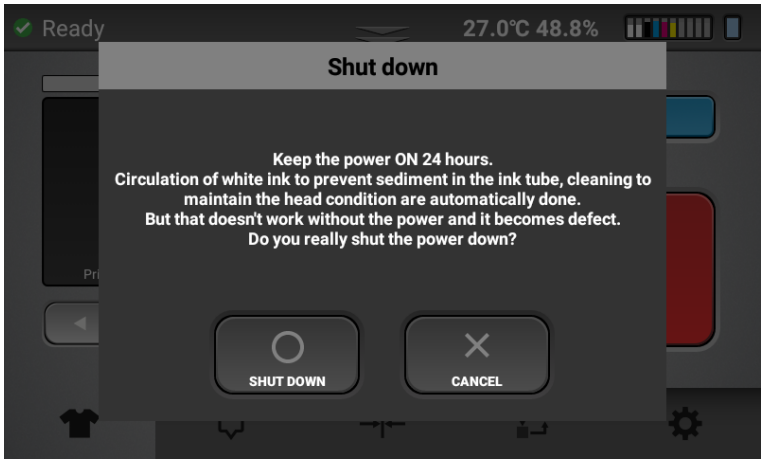
After completing the initial ink charging, proceed to the next step.

5. Perform a Nozzle check.

For details, see page 129 "NOZZLE CHECK".

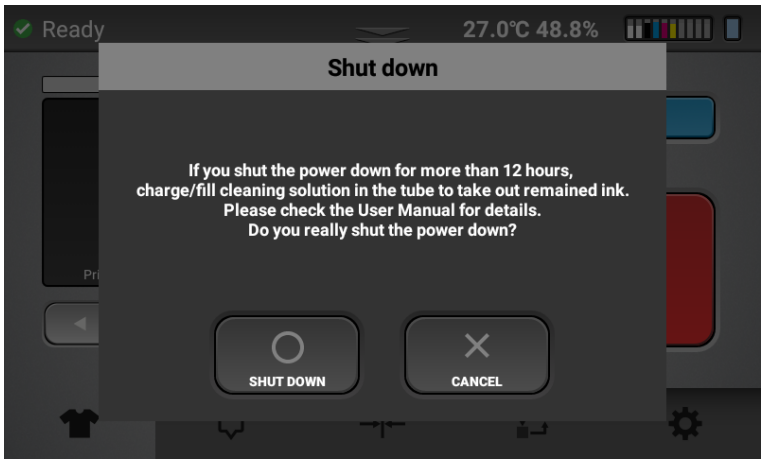
◆ Turning Off the Power

1. To turn off the power, hold down the sub power button for more than 3 seconds, which is located at the front near the touch panel.
   IMPORTANT! When you press the sub power button, the following screen warning appears.



   Turning off the power for 12 hours or more may clog the heads because the auto maintenance routines are not being performed. So, if turning off the power is required for more than 12 hours, then the printer must be flushed with cleaning fluid per section.

2. Press [SHUT DOWN].
   IMPORTANT! After pressing [SHUT DOWN], the following additional warning appears.



3. Press [SHUT DOWN].
4. Press the main power switch to Off.

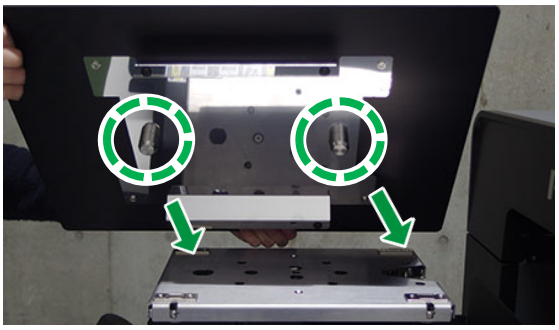
Attaching the Platen

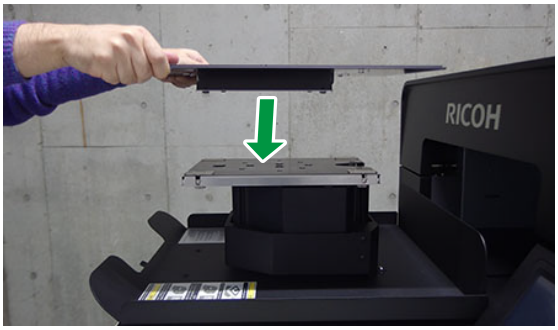
1. Attach the platen.

The two protrusions on the back of the platen should be set correctly into the holes in the platen base.

There is a hole on the back side of the platen base that has a guide shape.

When setting the platen, it is easier to insert the pin to the back side when viewed from the front of the machine.





Network Connection

1. Insert the ethernet cable into the Ethernet port.

2. Configure the network settings.

For details about configuring such settings, see page 47, “The setting of IP address for the machine”.

Handling the Ink Cartridge

⚠WARNING

- The following explains the warning messages on the plastic bag used in this product's packaging:
  - Do not leave the polythene materials (bags, etc.) supplied with this machine close to babies and small children. Suffocation can result if polythene materials are brought into contact with the mouth or nose.

⚠CAUTION

- When handling ink, cleaning solution, or pretreatment liquid, follow the instructions in the manual for the correct usage.

- If ink, cleaning solution, or pretreatment liquid is swallowed, inhaled, or gets in the eyes, follow the guidance in the appropriate safety data sheet (SDS). Download the SDS from the following website:
  - https://www.ricoh.com/environment/msds/

- To prevent being stained by ink or cleaning solution, wear protective gear (protective gloves, protective glasses/goggles, protective clothing). Also take care not to stain your surroundings while agitating the ink.

- Place ink, cleaning solution, and pretreatment liquid in a cool, well-ventilated place out of the reach of children.

- Keep waste liquid, containers for ink, cleaning solution, and pretreatment liquid, and components that have been in contact with ink out of the reach of children.

- When handling ink, cleaning solution, or pretreatment liquid, avoid getting anything on your clothing. If you do, wash the stained area with cold water.

- When replacing a cartridge containing ink, cleaning solution, or pretreatment liquid, avoid getting anything on your clothing. If you do, wash the stained area with cold water.

- When replacing a cartridge containing ink, cleaning solution, or pretreatment liquid, avoid getting anything on your skin. If you do, wash the affected area thoroughly with soap and water.

- When removing a cartridge containing ink, cleaning solution, or pretreatment liquid, avoid putting your hand near the location in which the cartridge is installed (such as the ink supply nozzle and its surrounding areas). If you get anything on your hands, wash them thoroughly with soap and water.

⚠CAUTION

- The ink cartridge surface may have ink on it, so be careful to avoid ink stains.

- Do not remove the cartridge while operating the machine. Doing so may cause the ink to spray, staining clothes and surroundings. If you get anything on your hands, wash them thoroughly with soap and water.

- Do not disassemble a cartridge containing ink, cleaning solution, or pretreatment liquid. Doing so may leave ink stains or cleaning solution on your hands and fingers.

- When shaking a cartridge containing ink, cleaning solution, or pretreatment liquid, be careful about safety of your surroundings and ink stains. Otherwise, injury or stains on household items may result.

- Do not hit or drop it when agitating. It may cause injury, cartridge damage, or ink leakage.
- Do not excessively agitate/shake. It may cause ink leakage.
- Agitate/shake as instructed. Other methods may cause ink leakage.

- Be sure to wear commercially available protective glasses, gloves, and clothing when replacing or handling cartridges.

IMPORTANT! If the ink cartridge has been empty for a long time, you will not be able to perform the maintenance for the print head. This may cause a printer malfunction. Make sure you always have a new ink cartridge. Install it soon after the message about replacement appears.

About ink cartridges

- Ink cartridges comply with the manufacturer's safety specifications. To ensure safety and reliability, use genuine ink cartridges.
- Do not reuse the ink cartridges.

Using ink cartridges

- Do not open the package of an ink cartridge until the cartridge will be installed in the machine.
- Do not touch the ink cartridges' ink inlets or chip contacts.
- Do not take apart ink cartridges.
- Always confirm the color of an ink cartridge before installing it.
- Do not remove an ink cartridge once it has been installed unless necessary.
- Do not remove an ink cartridge while printing is being performed. Printing will stop.

- The warranty period after opening the ink cartridge is 90 days or running out the ink, whichever comes first. If you print 50 sheets a month or less, it is recommended to use the standard type ink cartridges.

◆ Agitating New White Cartridge

Please agitate the white ink before attaching a new white cartridge to the printer.

Be sure to agitate the white ink daily. A message prompting you to agitate the white ink appears every 12 hours. When this message appears, immediately shake the white ink cartridge according to the instructions.

White ink is prone to ink precipitation (the tendency for the ink to accumulate at the bottom of the ink solution). Ink precipitation may decrease the print density or cause nozzle clogging. Be sure to agitate the white ink when you unpack the ink cartridge and once a day after it has been unpacked.

IMPORTANT! Failure to follow these procedures may cause print head nozzle issues.
Do not shake the cartridge too quickly or too hard.

The agitating method should be as follows:

- To prevent being stained by ink or cleaning solution, wear protective gear (protective gloves, protective glasses/goggles, protective clothing). Also take care not to stain your surroundings while agitating the ink.

1. Prepare

Use a lint free wipes to wipe off any dirt on the white ink cartridge and cartridge slot. For details on how to clean the cartridge and cartridge slot, see page 194 “Cleaning the Cartridges and Cartridge Slots". Make sure there are no tears or cracks on the white ink cartridge.

2. Agitate the ink

- Hold the cartridge as shown in Figure 1.
- Hold the white ink cartridge with the ink supply port face up.
- Shake the ink cartridge by tilting it side to side at 45°degree angles, as shown below.
- Shake the cartridge for 50 seconds at a speed of 2 back-and-forth shakes per second.

Figure 1

3. After agitating the ink, wipe off any ink stains on the ink supply port

◆ Disposal of Used Cartridge

Dispose of depleted ink cartridges, enhancer cartridges, and cleaning cartridges in accordance with applicable laws and ordinances.

If you are uncertain about disposal, consult with your local dealer.

Handling the waste bottle

⚠CAUTION

- If the waste ink and waste enhancer gets into contact with your eyes, wash them immediately with running water. Consult a doctor if necessary.
- Keep the waste bottle out of reach of children.
- Keep waste ink, waste enhancer, containers for ink, cleaning solutions, pretreatment liquids, and components that have been in contact with ink out of reach of children.
- When replacing a waste bottle, avoid getting anything on your clothing. If otherwise, wash the stained area with cold water.
- When replacing a waste bottle, avoid getting anything on your skin. If otherwise, wash the affected area thoroughly with soap and water.
- Be sure to wear commercially available goggles and gloves when replacing the waste bottle.
- When disposing of the waste ink, clean the waste tube if there is dirt or buildup such as lumps of ink on the tip of the tube. Otherwise, clogging the waste tube and the defective discharging of waste ink could result.
- When disposing of the waste enhancer, clean the waste tube if there is dirt or buildup such as lumps of enhancer on the tip of the tube. Otherwise, clogging the waste tube and the defective discharging of waste enhancer could result.

About waste bottles

- Do not open a waste bottles unless necessary.
- Install the waste bottles vertically. If installed horizontally, the waste ink and waste enhancer inside could leak out.
- Be sure to secure the waste bottles.

◆ Disposing of the Waste Ink, Waste Enhancer, and Waste Bottle

Dispose of the waste ink, waste enhancer, and waste bottle in accordance with applicable laws and ordinances.

If you are uncertain about how to dispose of these items, consult with your local dealer.

Do not mix waste ink and waste enhancer when disposing.

When you dispose of the waste bottle, replace the waste bottle, or empty the waste liquid in it. If ink deposits are noticeable in the waste bottle, replace the waste bottle. Take care that, depending on the amount of ink deposits, the waste liquid may overflow before the waste bottle becomes full.

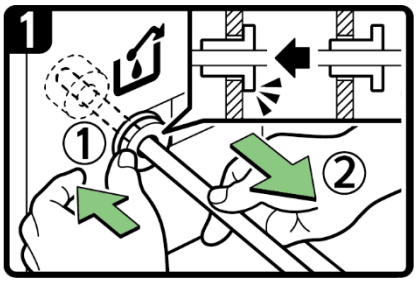
◆ Removing the Waste tube

It is recommended to keep the waste tube installed unless absolutely necessary.

If it is necessary to remove the waste tube, use the below instructions.

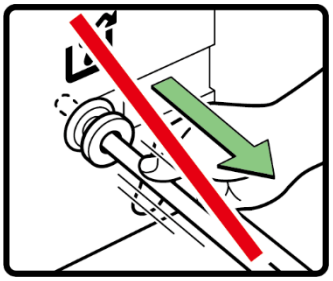
IMPORTANT! The waste tube should not be removed unless doing so is required for the movement of the equipment or for replacement.

1. Gently push the plastic ring using either your fingers or a small flathead screwdriver.



2. Gently pull the waste tube away from the plastic ring.

IMPORTANT! Do not pull the waste tube without pushing the plastic ring.



NOTE: The waste tube should come out with minimal force.

Handling the Front Cover

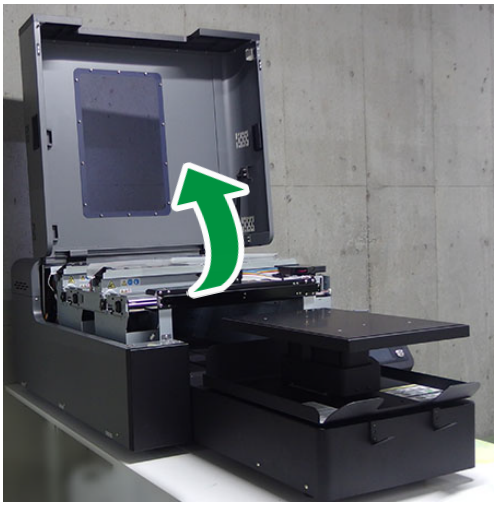
◆ Opening the Front Cover

⚠CAUTION

- When lifting and lowering the front cover, be sure to hold it by the part shown below. Be careful to ensure that your hand or any other part of your body does not get caught in the front cover.

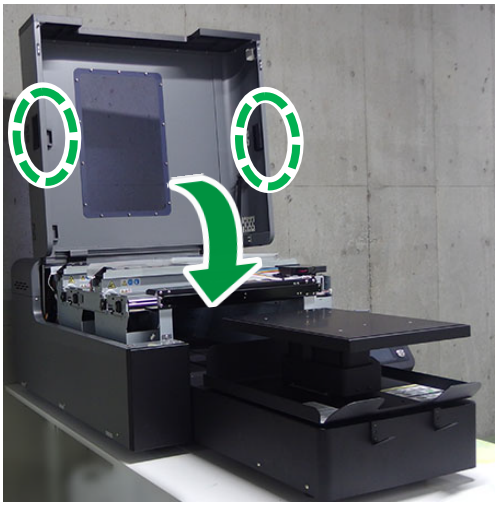
1. **Hold the center of the front cover as shown below.**

2. **Open the front cover until it stops.**



◆ Closing the Front Cover

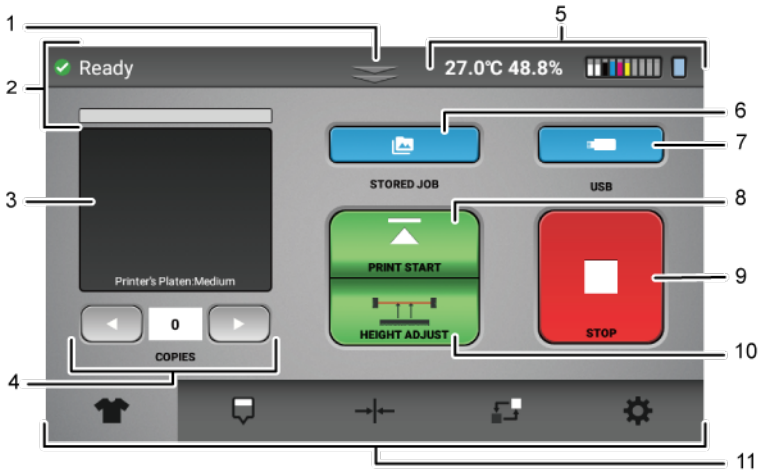
1. **Use the handles on the sides of the front cover to close the front cover.**



NOTE – Printer will not function if the front cover is open.

1.5. Control Panel Functions

Print Tab



1. Status bar
Press/Drag down the status bar to open the status screen menu.

2. Machine status
- There are 4 possible colors.
  Green: The printer is fully functional.
  Yellow: The printer is fully functional, but there is a warning on the status screen.
  Red: The printer is in an error state where printing and auto maintenance are not functional, which may lead to damage of the printer.
  White: The printer is busy with some function such as printing or maintenance.
- Displays the print progress during printing. For details, see page 116, "Checking the Print Progress".

3. Printing the image preview
Displays the printing image preview and the selected platen type.

4. Number of prints
When printing the same image multiple times, specify the number of prints.
Displays the number of prints if it has been specified on Productionserver.

5. Machine information
Displays the printer temperature and humidity, the amount of ink remaining in the ink cartridges, the amount of enhancer remaining in the enhancer cartridges, and the amount of cleaning liquid remaining in the cleaner tank.

6. [STORED JOB]
You can check the recent images used for printing and print directly from the stored folder or from jobs sent via network cable.

7. [USB]
You can choose a print job from a USB device.
Supported file type: Files with the extension ".prn"

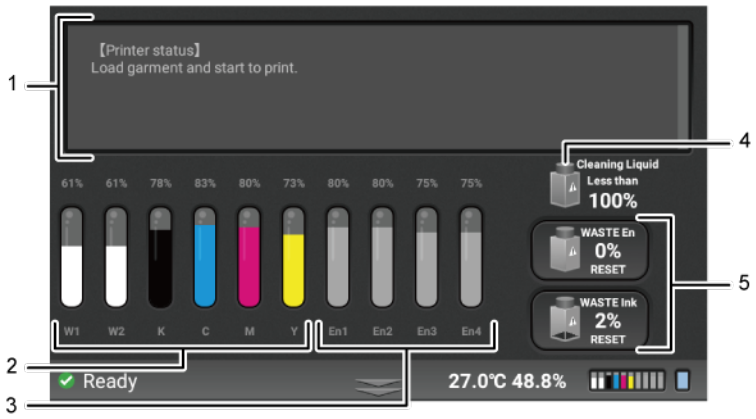
8. [PRINT START]
Starts printing.

9. [STOP]
Stops any current movement of the platen and allows you to cancel the print job.

10. [HEIGHT ADJUST]
Starts the height adjustment of the platen.

11. Function Tabs
Switches the menu displayed on the touch screen.

Status



1. Status details
Displays the printer status in detail and shows any warnings or errors.

2. Ink status
Displays the current ink percentage levels for each installed cartridge. Each type of ink appears as their respective color. Cleaning cartridges are displayed as being clear. If no cartridge is installed, X and NC appear.

3. Enhancer status
Displays the current enhancer percentage levels for each installed cartridge. Cleaning cartridges are displayed as being clear. If no cartridge is installed, X and NC appear.

4. Cleaner tank status
Displays the amount of cleaning liquid remaining in the cleaner tank.

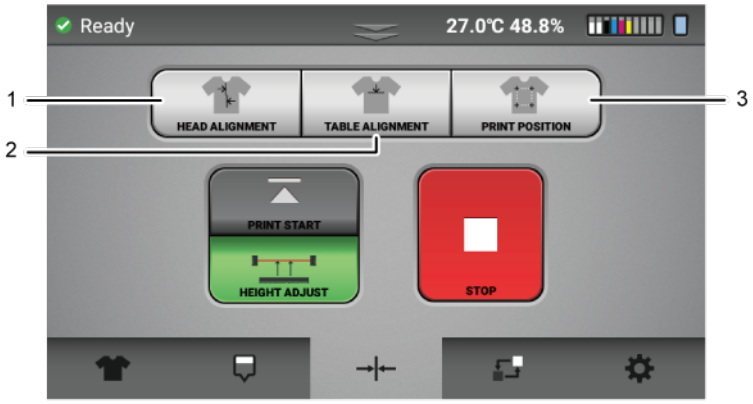
5. Waste bottle status
Resets the waste bottle duty cycle counter. After emptying the waste liquid in the waste bottles, press the reset button to return the counter to 0%.

IMPORTANT! Resetting the waste liquid without actually emptying the waste bottles can cause the waste liquid to overflow from the waste bottles. If the waste bottles are full (100%), the machine enters an error state, and auto maintenance is not performed. This can cause damage to the machine.

Maintenance Tab

1. [NOZZLE CHECK]
   Prints a nozzle check pattern result. It is recommended that this is performed daily to monitor the printer.
2. [AUTO HEAD CLEAN]
   Performs head cleaning automatically using systems components.
3. [JIG HEAD MAINTENANCE]
   Performs head maintenance using a jig.
4. [REGULAR MAINTENANCE]
   Allows the carriage to be released. The front cover can be opened in order to manually clean the print heads (during maintenance or troubleshooting) and the maintenance station.
5. [MAINTENANCE LIST]
   You can check the status of [REGULAR MAINTENANCE] and [JIG HEAD MAINTENANCE].

Alignment Tab

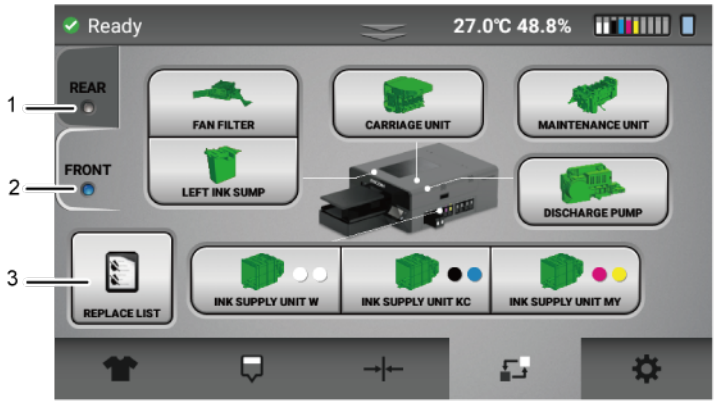


1. [HEAD ALIGNMENT]
   Prints an adjustment pattern for the print head alignment so that print heads can be aligned to each other.

2. [TABLE ALIGNMENT]
   Prints an adjustment pattern to the platen to check and tune the platen indexing.

3. [PRINT POSITION]
   Prints an adjustment pattern to determine the print start position.

Service Part Status Tab



1. Displays the current usage (wear status) of each periodic replacement part of the rear unit.
   For details, see page 212, “Service parts”.

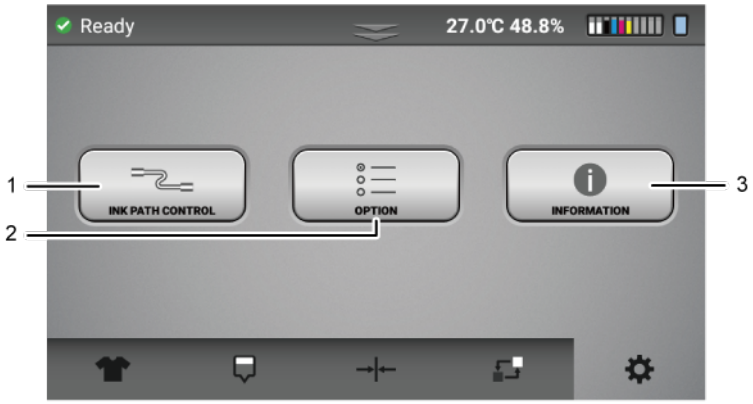
2. Displays the current usage (wear status) of each periodic replacement part of the front unit.
   For details, see page 212, “Service parts”.

3. [REPLACE LIST]
   Allows you to check the part replacement history.

   The layer counter displayed on [REPLACE LIST] is the counter used for making rough estimates for replacing parts. The counter indicates the total number of layers created from the time the printer was initially used. It differs from the number of sheets of garments printed.

   The total number of print jobs indicates the total number printed from the time the printer was initially used.

Settings Tab



1. [INK PATH CONTROL]
Performs the ink path control. If you press this button, you can flush the printer. For details, see page 224, "Ink Path Guide".

2. [OPTION]
You can change the following settings via the Option screen.

Setting	Description
[IP ADDRESS]	Set print IP address.
[DRYING TIME]	Specify the drying wait time. To specify the drying time between enhancer printing and ink printing, enter the number of seconds in [DRY TIME] in [En -> Ink]. To specify the drying time between printing in white and printing in color, enter the number of seconds in [White -> Color], and to specify the drying time between printing in color and printing in white, and enter the number of seconds in [Color -> White]. If [DRY TIME BASED ON JOB DATA] is checked, [DRY TIME] is not displayed because the setting specified on the ColorGATE Productionserver takes precedence.
[HEIGHT SETTING]	Set the gap between the print head and the platen for HEIGHT ADJUSTMENT. When set to "Normal", the gap is narrowed and the image quality is improved, but the detection for the unevenness of the garment is more sensitive. The gap becomes wider in the order of "rough" and "very rough", and the image quality deteriorates, but the detection for the unevenness of the garment becomes less sensitive.
[FACTORY RESET]	Set Head, Table, and print alignment to original settings.
[TEMPERATURE]	Can display temperature in Celsius or Fahrenheit.

[HIGH SPEED MODE]	You can switch ON/OFF the high speed mode for white layer printing. If set to ON, the white carriage operates at high speed. The time required for printing in this mode with white and full color is approximately 60-70%* of that for the OFF mode. However, the image quality may be affected because the carriage operates at a higher speed. *The effect to reduce the printing time varies depending on the print job.
[WHITE CLEAN FREQ.]	See page 183, "White Clean Freq.".
[LANGUAGE]	Select the display language.
[STORED JOB]	If selected, jobs in internal memory will be deleted after a selected # of days, the default is this is tuned off so jobs are not deleted.
[VOLUME]	Set volume of buzzer.
[AGITATE SETTING]	Select display format when agitating white cartridges.
[USB UPDATE]	Update firmware using USB drive. If run it, you need to save latest firmware to USB drive in advance. For details, see page 249, "Update the firmware".
[TIME SHIFT]	Configure the time zone applied to the time displayed on the machine in units of one hour within the range of "-24" to "+24". As the default, this is set to the UTC time zone.
[SCHEDULE SET]	See page 136, "Specifying the Maintenance Schedule".
[OPTIONAL PLATEN]	Select whether you are using standard platen or option platen. If you want to use option platen, please use a valid genuine platen.
[VIDEO]	See page 125, "Watching the Procedure on Video".
[WHITE AMOUNT ADJ.]	Press to adjust the amount of white ink to apply. If the white in the print image is faint, you can increase the amount of white ink to make the white thicker. If uneven density occurs in the white image, you can make the white ink thicker to reduce the unevenness.

3. [INFORMATION]
Displays the general information of the printer such as Serial #, Control panel firmware version, Engine (CTL) firmware version, and Sub control board firmware version.

1.6. Printer Setup

The setting of IP address for the machine

The setting method of IP address for this machine are two patterns.

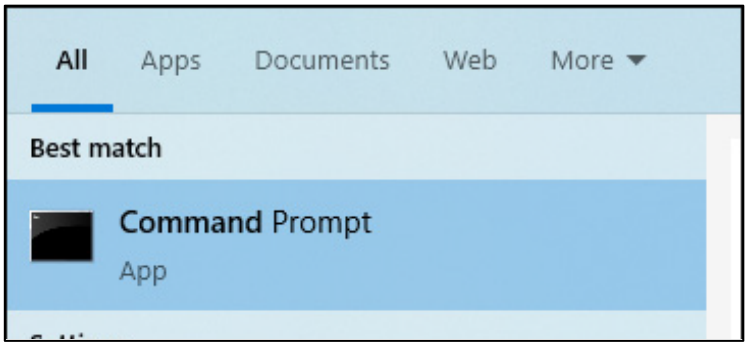
Case1: For connecting directly to the printer from a PC that is not parts of a network

Case2: For DHCP setup

Case1: For connecting directly to the printer from a PC that is not parts of a network

[Confirming IP address of your PC]

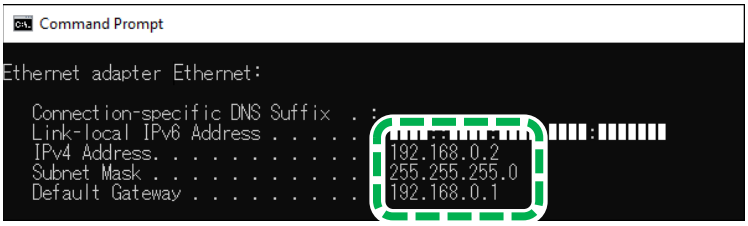
1. Open the command prompt dialogue box on your PC.



2. Type “ipconfig” in the first line in the command prompt.

3. In the “Ethernet adapter Ethernet” section, check the address of “IPv4 Address”, “Subnet Mask”, and “Default Gateway”. For the IP address, use the “IPv4 Address” but change the last three digits to a number that will be unique to the printer. For subnet mask and default gateway, use them for the printer.

Example: The procedure for changing the IP address of the printer from 192.168.0.2 to 192.168.0.3 is shown below.



4. Proceed to Step 1 in [Configuring the IP address of the machine].

[Configuring the IP address of the machine]

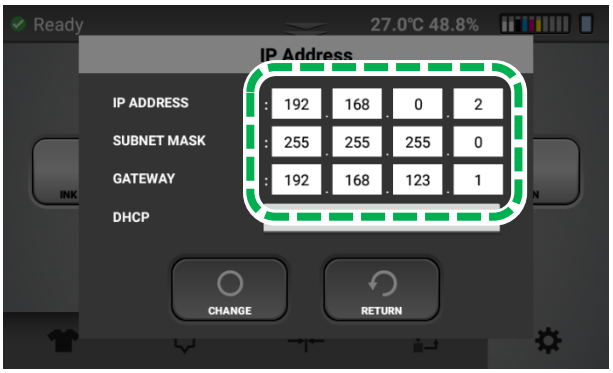
1. Press the Setting tab on the touch panel of this machine.

2. Press [OPTION].

3. Press [IP ADDRESS].

4. If DHCP setting is “ENABLE”, change to “DISABLE”.

5. Enter the new IP address, subnet mask, and default gateway.



6. Press [CHANGE].

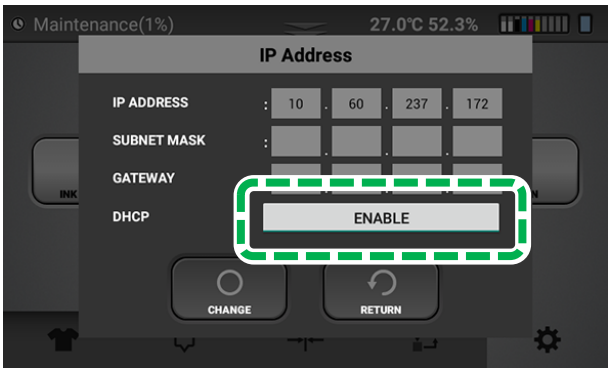
Case2: For DHCP setup

1. **Press the Setting tab on the touch panel of this machine.**

2. **Press [OPTION].**

3. **Press [IP ADDRESS].**

4. **Setting DHCP to [ENABLE] to add the printer to an existing network.**



Check the assigned IP ADDRESS.

1.7. Usage of ColorGATE Productionserver

This machine uses ColorGATE Productionserver for printing. ColorGATE Productionserver must be installed on your PC.

The productionserver23 system requirements are as follows.

For the system requirements for the latest version, see the ColorGATE web site (https://www.colorgate.com/).

◆ System Requirement

Operating systems (64-Bit):

- Microsoft Windows 10 (Pro, Enterprise)
- Microsoft Windows 11 (Pro, Enterprise)
- Microsoft Windows Server 2016
- Microsoft Windows Server 2019
- Apple macOS with Parallels Desktop

  Apple Mac devices with ARM-based processors (M1 chips) are not supported. On Intel-based Macs, Productionserver can be used in conjunction with a hardware dongle (Single Host License / Hardware) and Parallels Desktop. (The hardware dongle is not supplied with the machine.)

Minimum hardware requirements:

- CPU: Intel Core i3-2100 / Athlon II X2 340
- RAM: ≥4 GB
- Free disk space: 120 GB
- Display resolution: 1280 x 1024

Recommended for using one printer:

- CPU: Intel i5-7500 or newer / AMD Ryzen 5 1600 or newer
- RAM: ≥8 GB
- Free disk space: 120 GB SSD
- Display resolution: 1920 x 1080

Recommended for using multiple printers:

- CPU: Intel i9-9900K or newer / AMD Ryzen 7 3800X or newer
- RAM: ≥16 GB
- Free disk space: 512 GB NVME
- Display resolution: 1920 x 1080

Installation and operation:

LAN adapter, TCP/IP for network access required; software-based license requires Internet access.

Interfaces:

Ethernet, TCP/IP, FireWire

Software based licenses:

Operation of the ColorGATE software on virtual machines is not permitted with software based licenses.

Please check (https://www.colorgate.com/requirements/) for the latest supported OS.

The supported OS for each version can be found on the ColorGATE support site (https://www.colorgate.com/support/).

See the 2.2 system requirements in the Productionserver Manual. This document is located when ColorGATE Support site > [LOGIN / REGISTER] > Entry of login details > [LOGIN] > [DOWNLOAD AREA] > [DOCUMENTATION] and with [Software Manuals] checked in [Filter Results:].

Follow the steps below to install ColorGATE Productionserver.

Register as a user and product on the ColorGATE Service & Support website

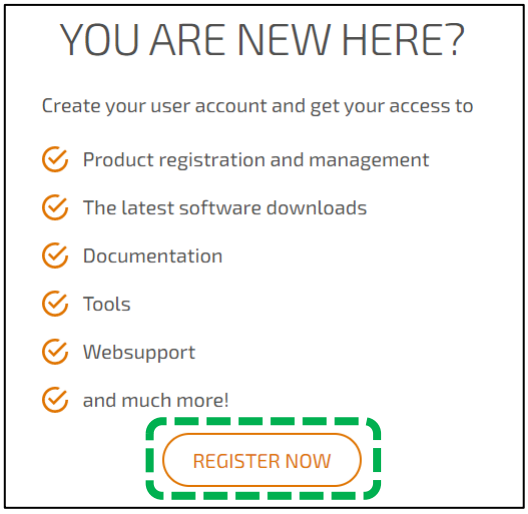
NOTE - ColorGATE Service & Support website is available in English and German.
For details about system requirements, see ColorGATE web site. (https://colorgate.com/)

1. **Start your web browser.**
2. **In the address bar of your web browser, enter the following URL and press the Enter key.**

   https://www.colorgate.com/support/

3. **Click [LOGIN / REGISTER].**

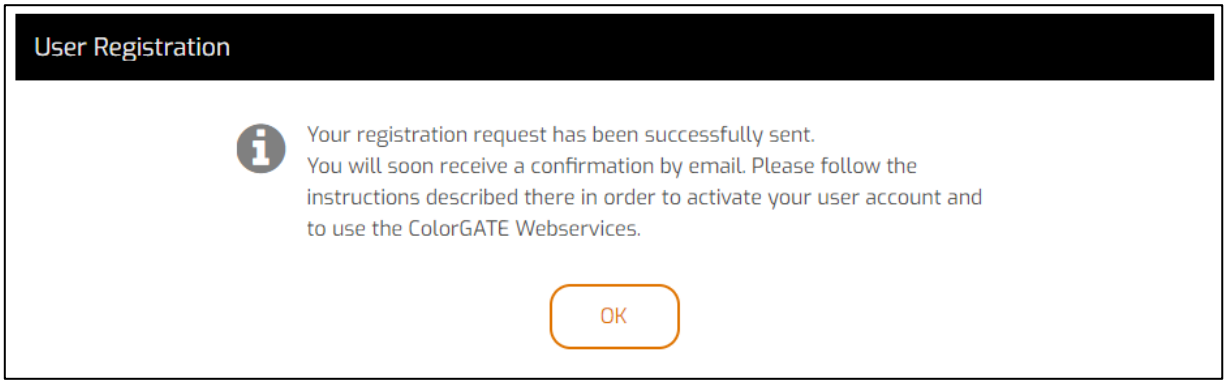
4. **Click [REGISTER NOW].**



5. **Enter “Email address”, “Password”, and “Confirm password”.**
6. **Click [Next].**

   An assistant will guide you through the next steps.

7. When registration is complete, the following message will be displayed.

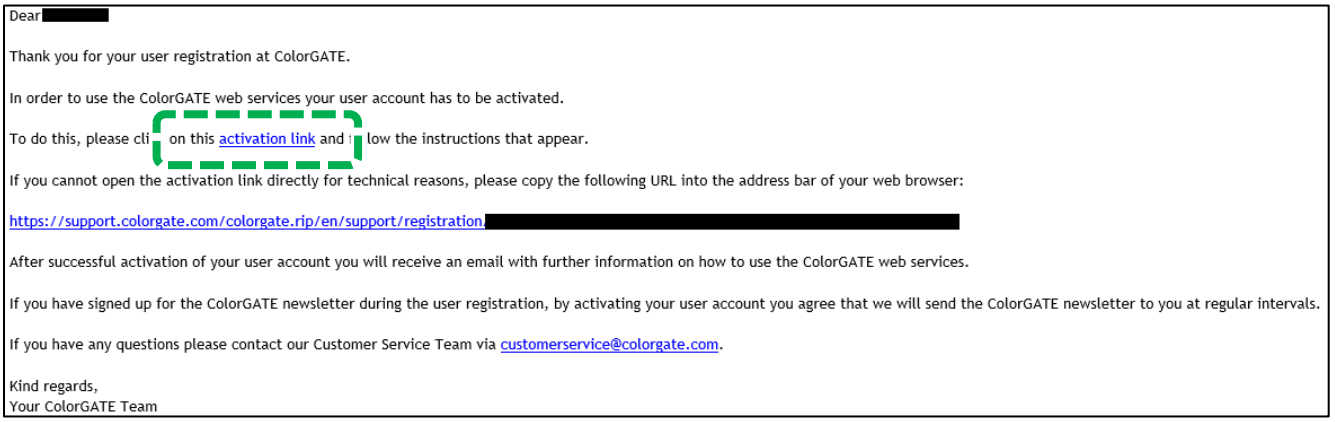


Important!

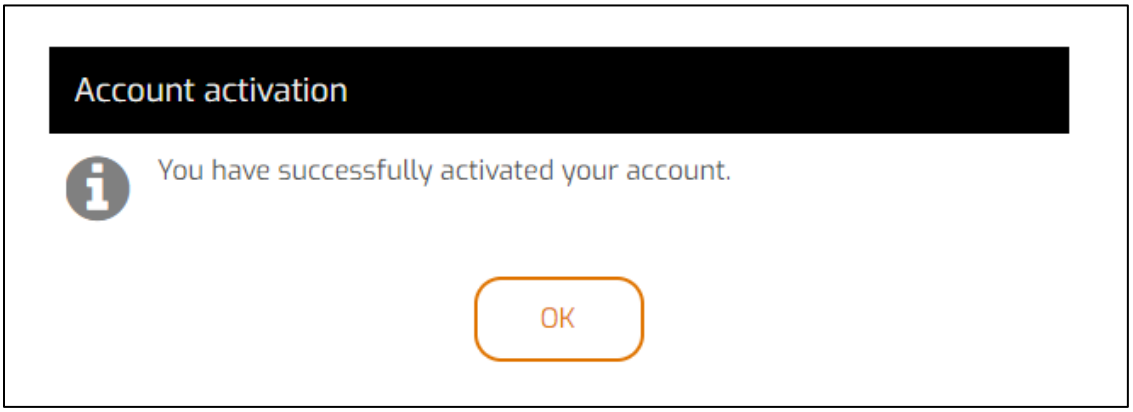
At this point, registration has not been completed yet.

You can use the service by activating the user account by following the steps below.

8. Activate the user account. You will receive a guide to activate your user account to the email address you registered. Click [activation link] in the text of the received email.

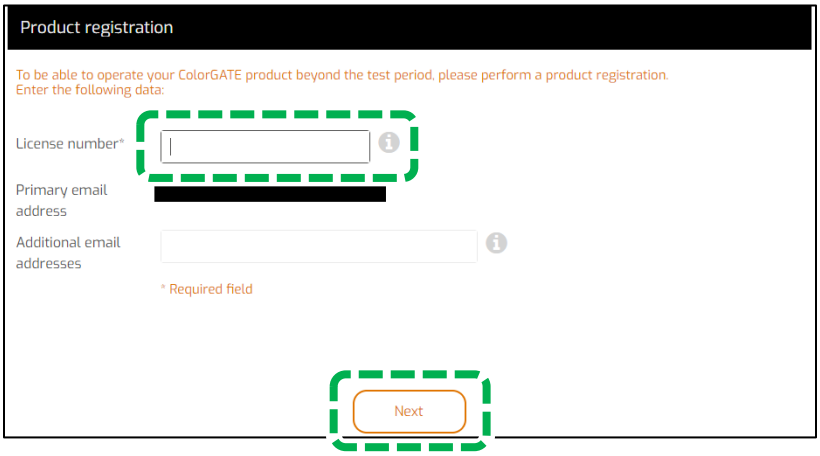


9. The following screen will be displayed and user registration will be completed.

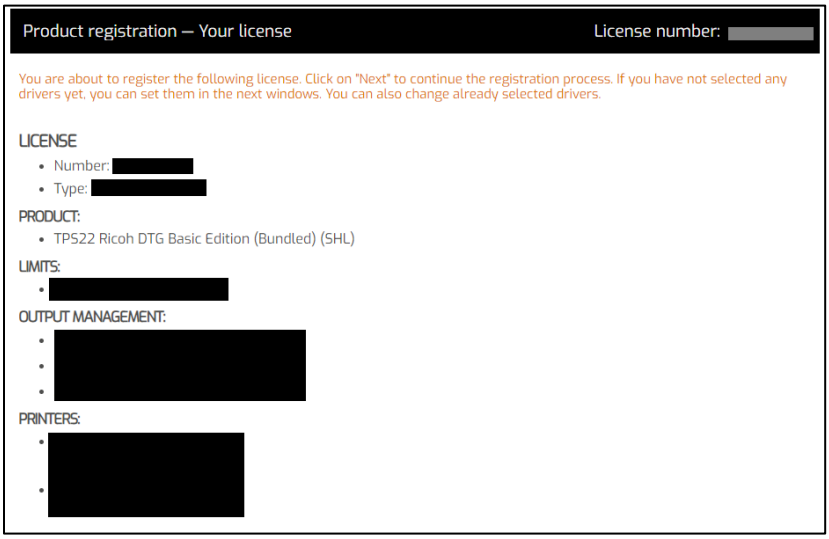


10. **Next, click [REGISTER PRODUCT] for product registration. (If you are not logged in, please log in.)**

11. **Enter the license number of the license card included with the RICOH Ri 4000 and click [Next].**

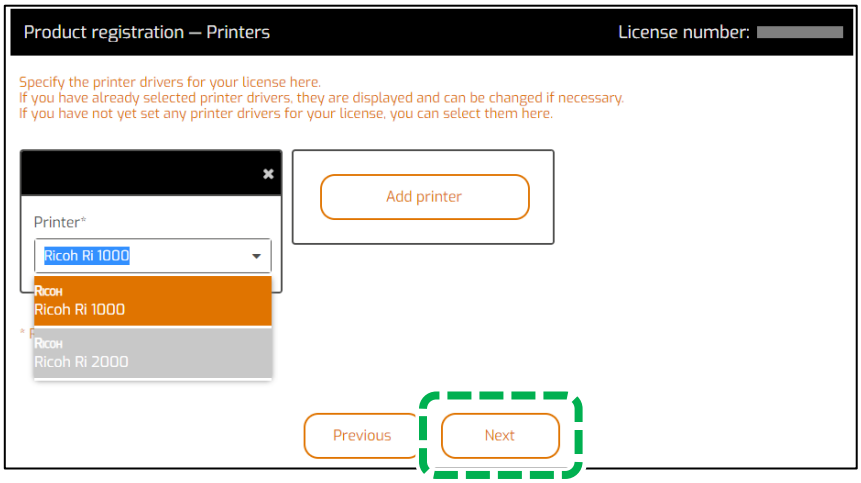


12. **Check the contents of the license, and if there are no problems, click [Next].**

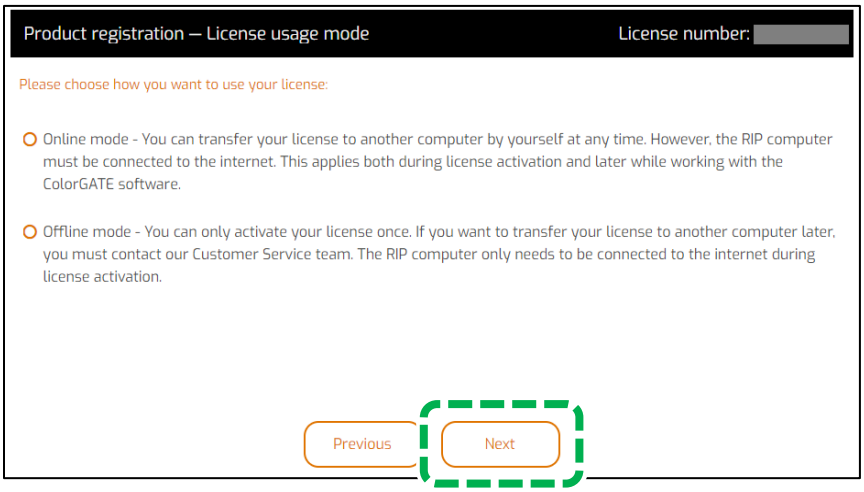


13. The printer selection screen is displayed. Select “Ricoh Ri 4000” and click [Next].

The image below is when Ri 4000 is selected.

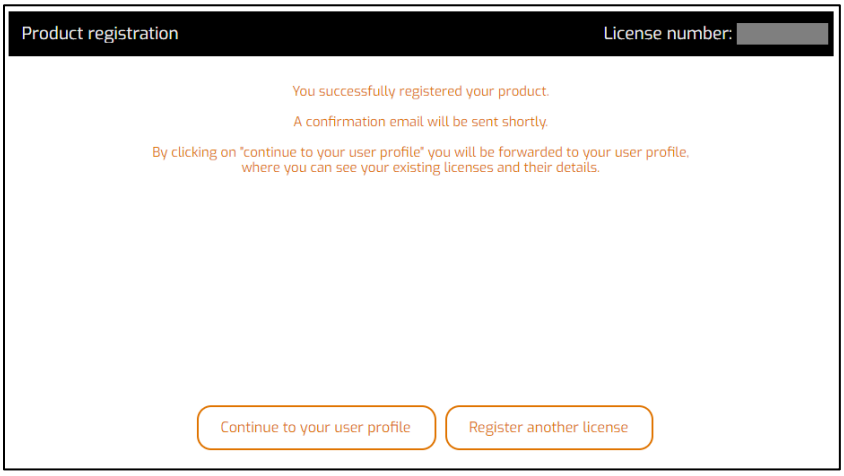


14. Select the mode in which you want to use the license and click [Next].



15. **Make a final review of your product registration information and click [Register now] if you are satisfied.**

16. **When the following screen is displayed, product registration is complete.**



Download software of ColorGATE RIP/MIM files

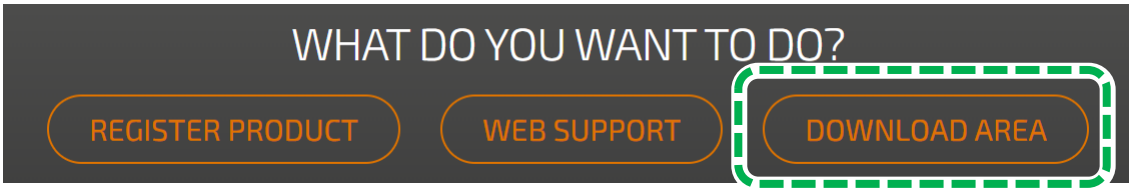
Note - If the email you received when you execute “User registration” contains a download link for the Productionserver and MIM, download it from that download location.

1. **Access to the ColorGATE service & Support website again. (https://www.colorgate.com/support/)**

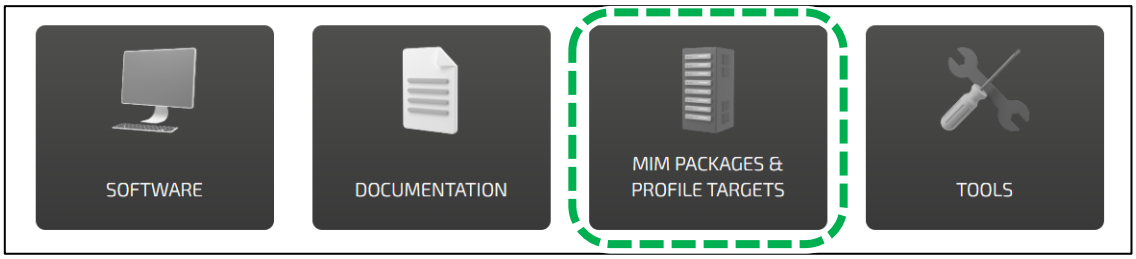
2. **Click [LOGIN / REGISTER].**

3. **Enter the registered email address and password, and then click [LOGIN].**

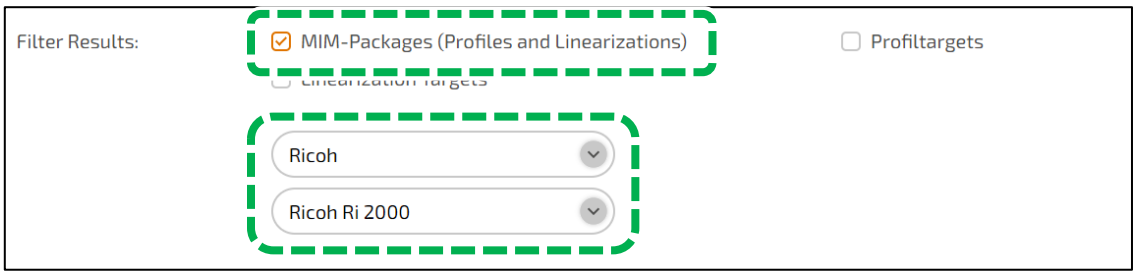
4. **Click [DOWNLOAD AREA].**



5. **Click [MIM PACKAGES & PROFILE TARGETS].**

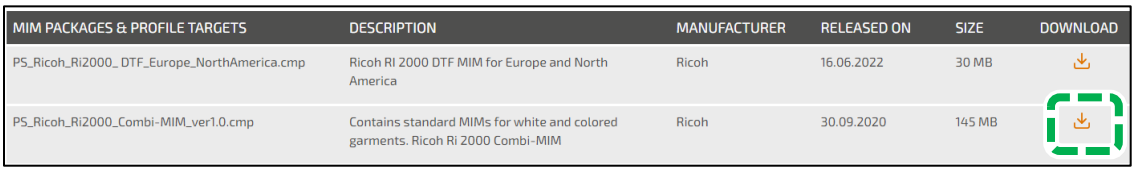


6. **Check [MIM-Packages (Profiles and Linearizations)] in "Filter Results:" and select [RICOH] and [Ricoh Ri 4000].**



7. Click the icon of [DOWNLOAD] of "PS_Ricoh_Ri4000_Combi-MIM_ver*.cmp", and then save the file in your local PC.**

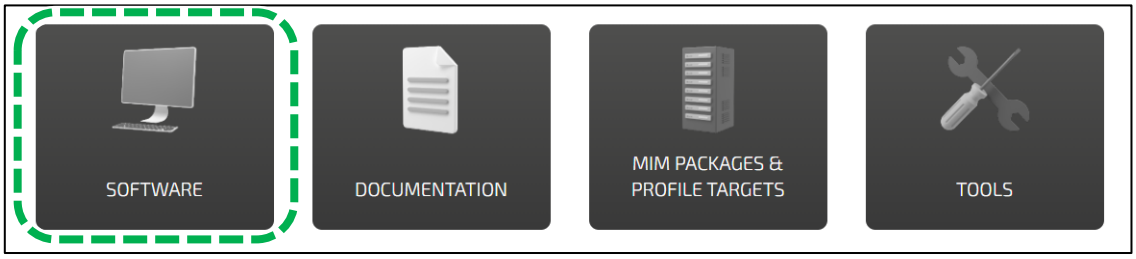
The file name is subject to change.



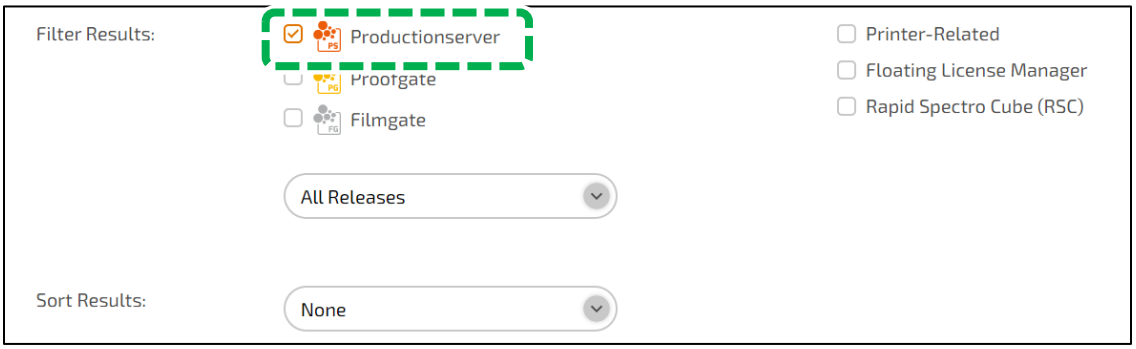
MIM PACKAGES & PROFILE TARGETS	DESCRIPTION	MANUFACTURER	RELEASED ON	SIZE	DOWNLOAD
PS_Ricoh_Ri2000_ DTF_Europe_NorthAmerica.cmp	Ricoh RI 2000 DTF MIM for Europe and North America	Ricoh	16.06.2022	30 MB	
PS_Ricoh_Ri2000_Combi-MIM_ver1.0.cmp	Contains standard MIMs for white and colored garments. Ricoh Ri 2000 Combi-MIM	Ricoh	30.09.2020	145 MB	

8. Download the latest version of ColorGATE Productionserver.

9. Click [SOFTWARE].



10. Check [Productionserver] in "Filter Results:".



11. Click icon of [DOWNLOAD] for the latest "PS SetupV**.**.****.exe", and then save the file in your local PC. The latest files are displayed at the top of the screen by default. (modified by Sort Results:)**

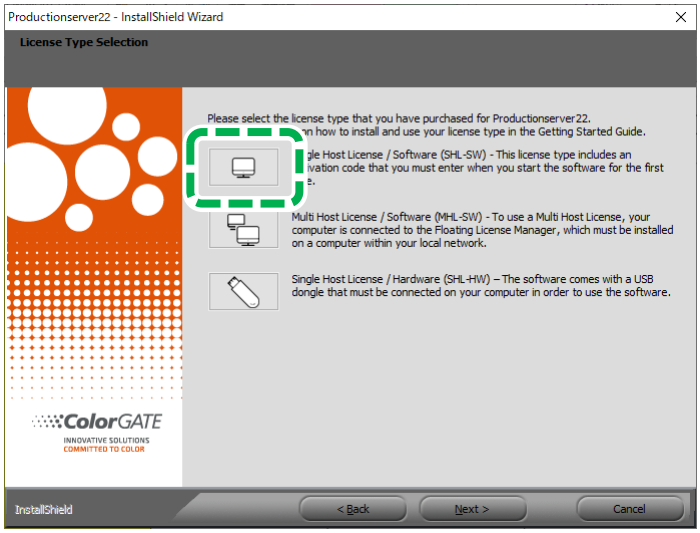
The latest version name is entered in ********.

SOFTWARE	DESCRIPTION	VERSION	RELEASENOTES	RELEASED ON	SIZE	DOWNLOAD
PS22SetupV22.02.12082.exe	Productionserver 22 [22.02 Build 12082] Setup (requires Value Pack that is vaild till at least Apr. 22nd, 2022)	22		04.07.2022	1 GB	
CutServerSetupV2.2.12082.exe	Cutserver 2.2.12082 Setup	22		01.07.2022	66 MB	
PS22SetupV22.01.12053.exe	Productionserver 22 [22.01 Build 12053] Setup (requires Value Pack that is vaild till at least Apr. 22nd, 2022)	22		27.05.2022	1 GB	
CutServerSetupV2.2.12053.exe	Cutserver 2.2.12053 Setup	22		27.05.2022	66 MB	

12. Double-click "PS SetupV**.**.****.exe".**

13. Follow the install wizard to install ColorGATE Productionserver.

NOTE1 – If you are using a bundled license, on the "License Type Selection" screen displayed in the wizard, Select [Single Host License/Software (SHL-SW)].

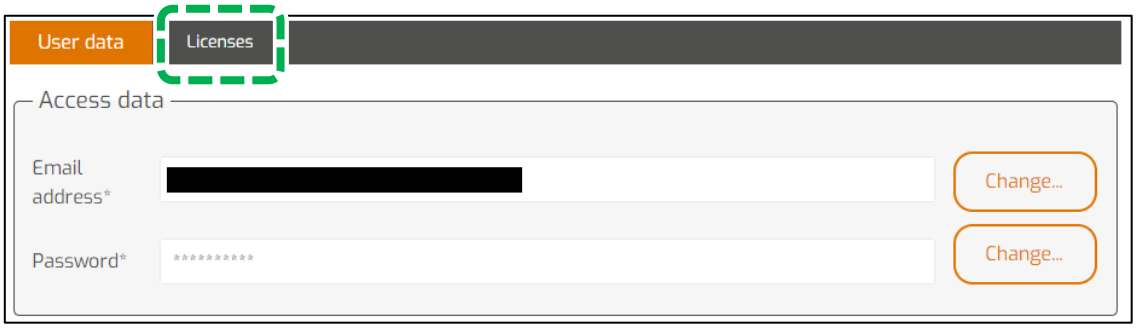


NOTE2 – When updating from an older version, back up the ColorGATE Productionserver settings ([Options] > [System Configuration] > [Backup]) before updating.
For details, refer to the ColorGATE Productionserver help or user manual.

Start Software

1. Go to https://www.colorgate.com/support/.
2. If you are not logged in to your user profile, click Login to log in using your email address and password.
3. Click the [MENU] button in the upper right corner of the browser, and click [Account&Licenses].

4. Click the [Licenses] tab.

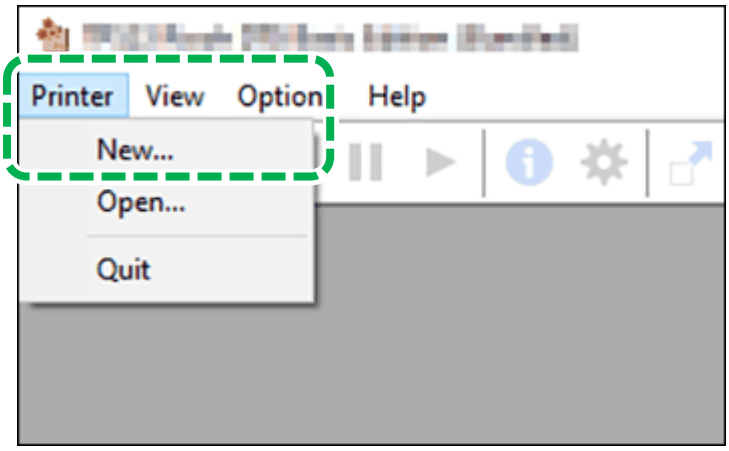


5. Select the desired license number.
6. In the License section you will find the corresponding activation code.

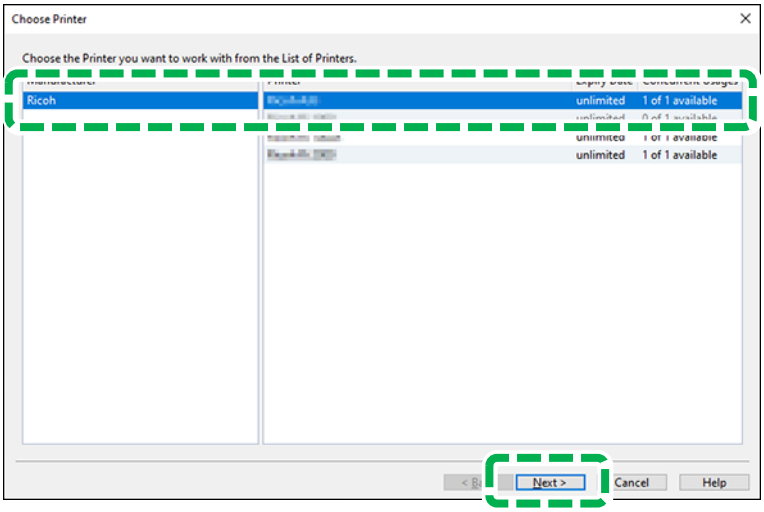
7. Start the Productionserver. A dialog will open.
8. Enter your activation code and confirm by clicking on Activate.

Setup Driver

1. Click [Printer], and then click [New].



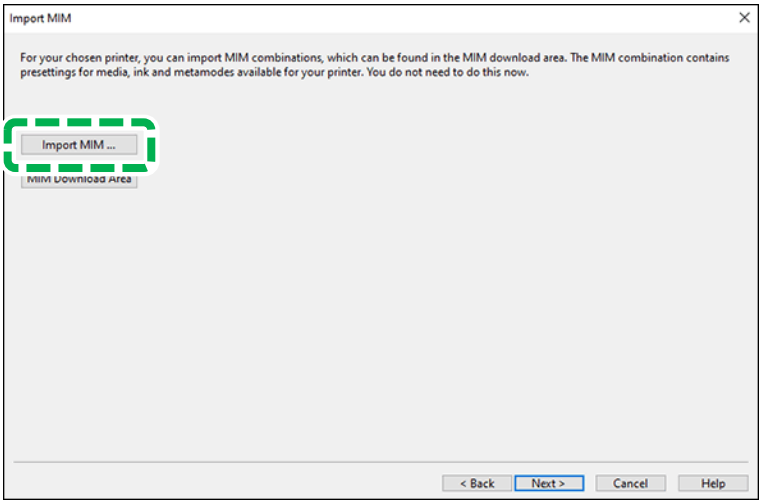
2. Select [Ricoh] and [Ricoh Ri 4000], and then click [Next].



3. Click [Import MIM…].

If the message on the window is not displayed properly, read the following sentences.

For your chosen printer, you can import MIM combinations, which can be found on ColorGATE Service & Support website. The MIM combination contains presettings for media, ink and metamodes available for your printer. You do not need to do this now.

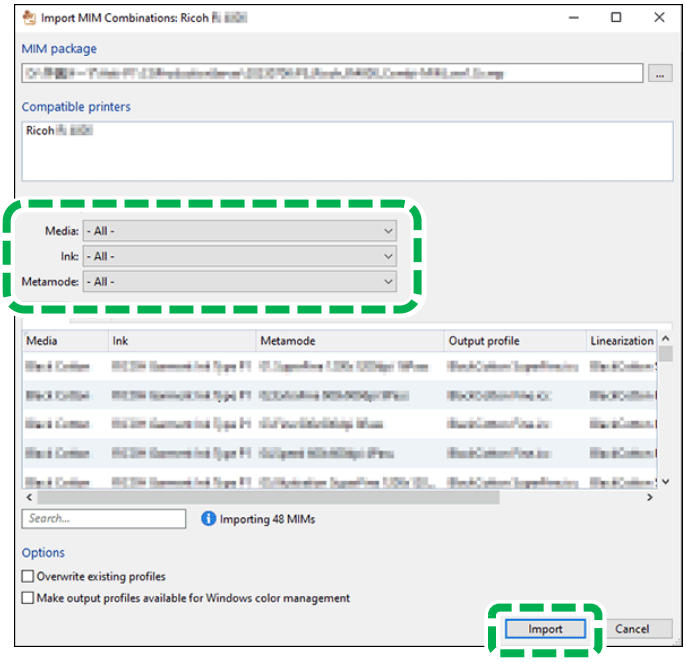


4. Select the MIM file*, and then click "Open".

*Example: Filename of “PS_Ricoh_Ri4000_Combi-MIM_ver**.cmp”

5. Click [Import].

Make sure "Media", "Ink" and "Metamode" are set to "All".

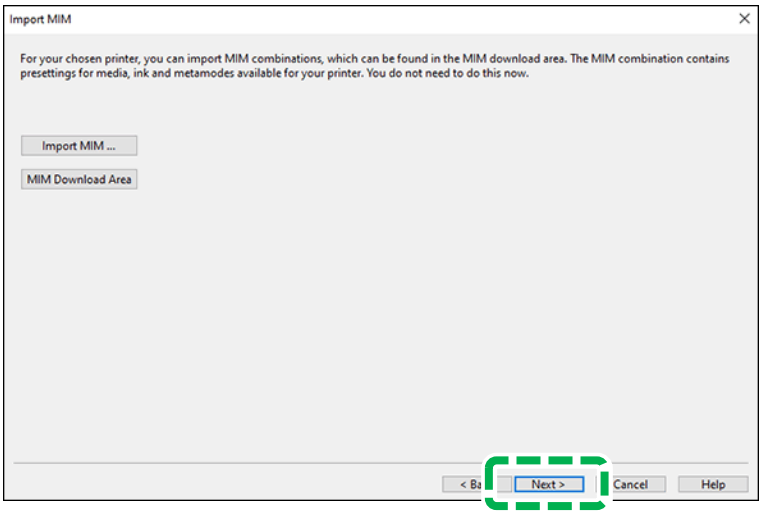


6. Click [OK].

7. Click [Next].

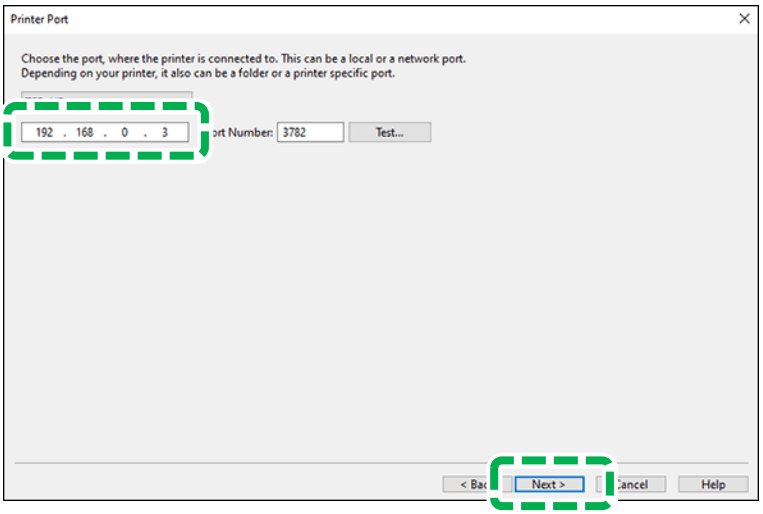
If the message on the window is not displayed properly, read the following sentences.

For your chosen printer, you can import MIM combinations, which can be found on ColorGATE Service & Support website. The MIM combination contains presettings for media, ink and metamodes available for your printer. You do not need to do this now.



8. Enter the IP address of the printer, and then click [Next].

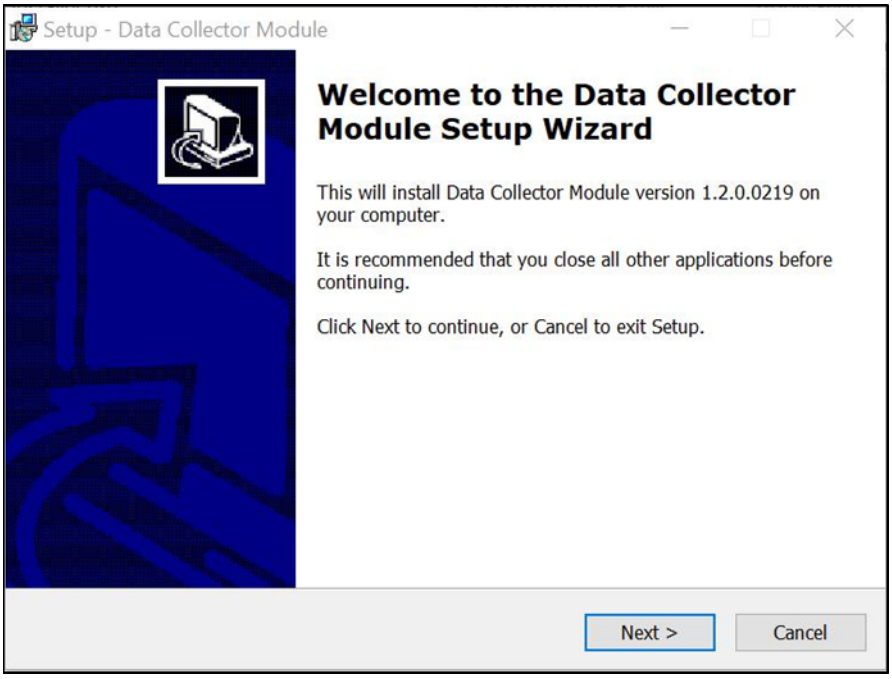
Do not change the port number, displayed as "3782".



If Data Collector Module has not been installed, the installer will be started after clicking [Next].

The Data Collector Module allows you to see key usage statistics for your printer over time.

When the install window is displayed, follow the instructions displayed to install Data Collector Module.



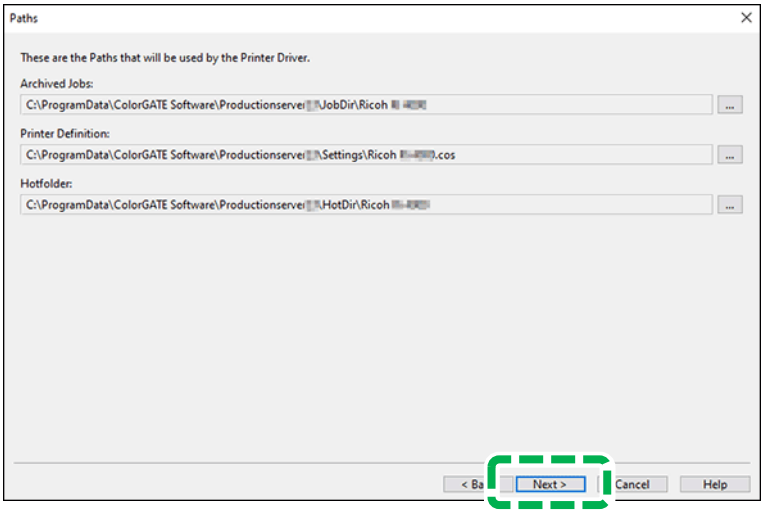
When the installation of Data Collector Module is finished, double-click the icon of Data Collector Module created on the desktop to complete the printer and user registration to use it.

For details about how to setup and operate the Data Collector Module, see the Data Collector Module manual.

You can view the manual from the following URL:

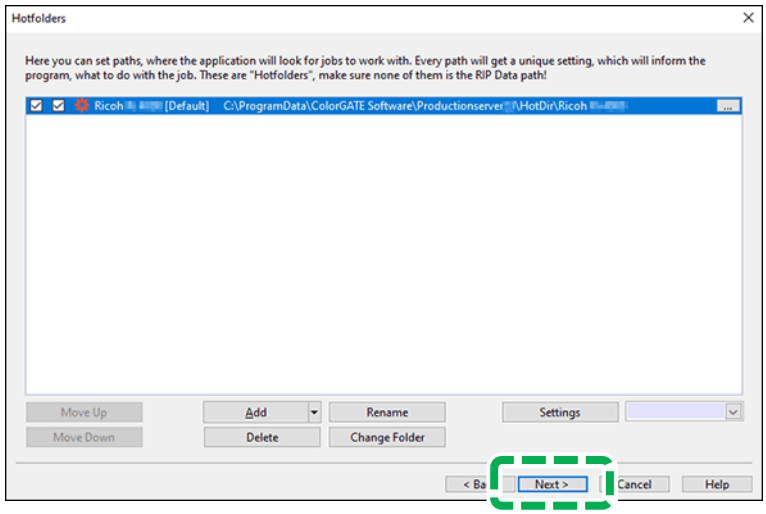
- https://contents-usstage.supervisori.ricoh.com/manual/supervisor-i.manual.pdf

9. Click [Next].

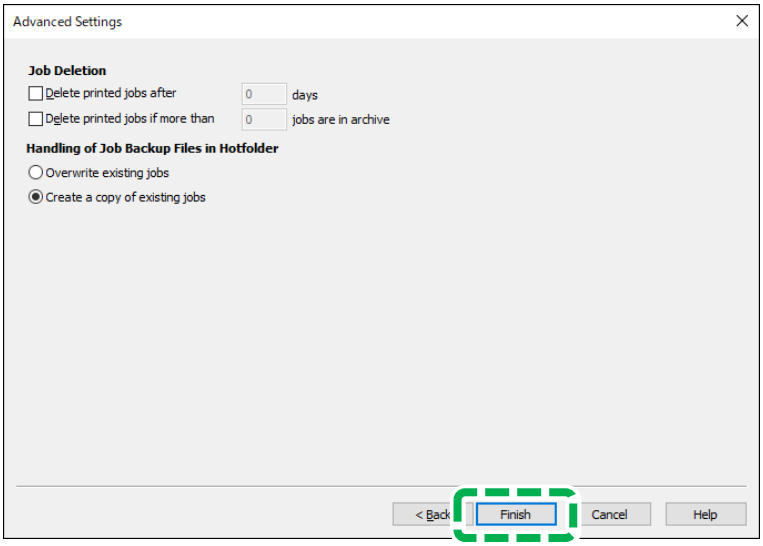


10. Click [Next].

You can edit and add hot folders later.



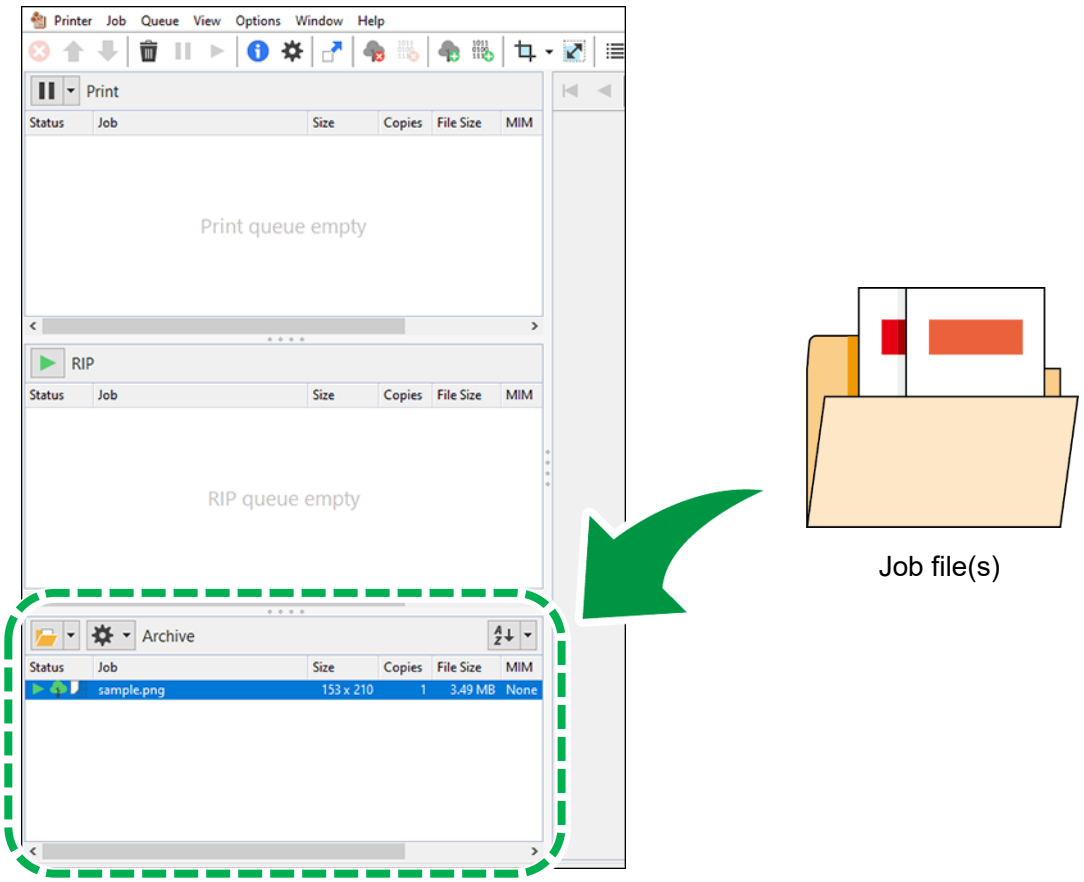
11. Click [Finish].



Print method

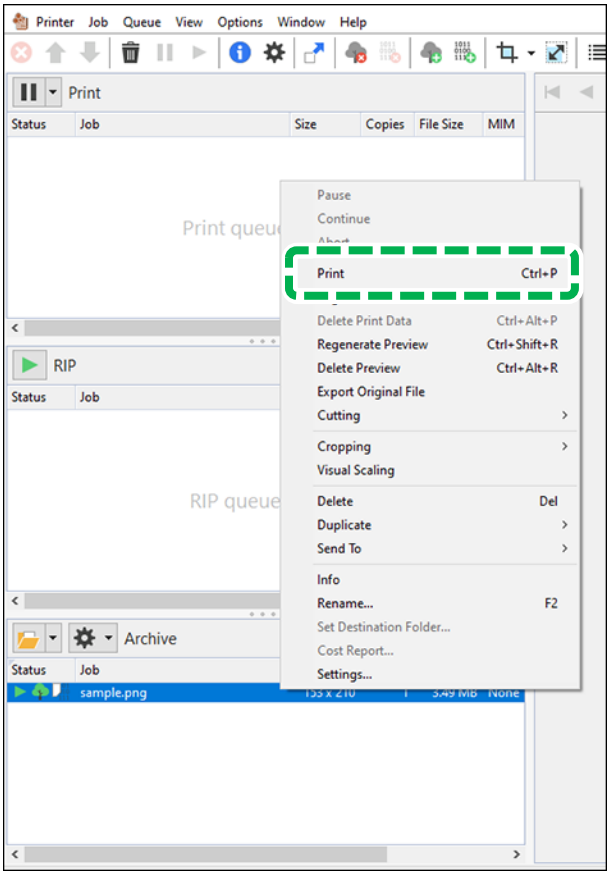
1. Drag & drop your job file(s) from Windows Explorer into the “Job” queue.

Supported file type: BMP, JPEG, TIFF, PNG



2. Select the job in the “Job” archive, and then right-click the selected job.

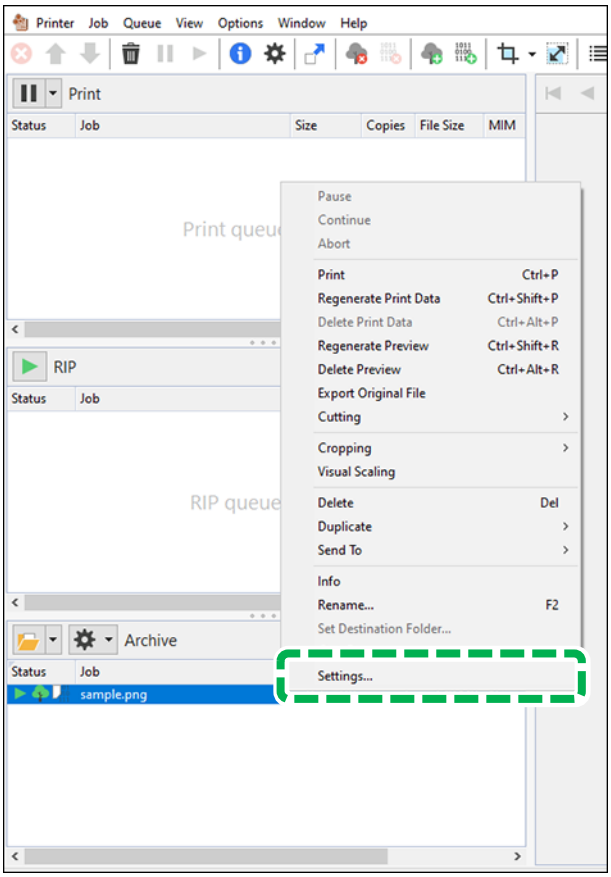
3. Click [Print].



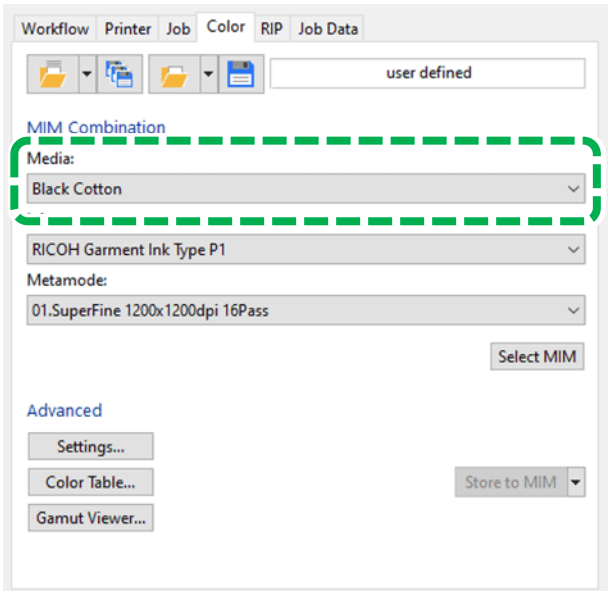
For details about loading jobs, see the manual or help file of ColorGATE Productionserver.

Setting of print mode

1. **Select the job in the “Job” archive, and then right-click the selected job.**
2. **Click [Settings].**

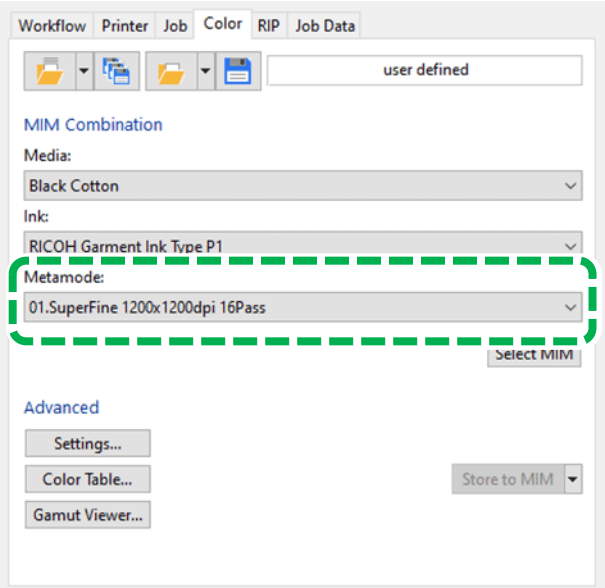


3. **Click [Media] on the [Color] tab, and then select the garment type and color.**



Media	Description
Black Cotton	Use this for printing on black cotton garments. Ink for use : **W / C / M / Y** **NOTE -** Black is expressed using the garment color. Not recommended for use other than black T-shirt.
Black Polyester	Use this for printing on black polyester garments. Ink for use : **W / C / M / Y** **NOTE -** Black is expressed using the garment color. Not recommended for use other than black T-shirt.
Dark Cotton	Use this for printing on dark-color cotton garments. Ink for use : **W / C / M / Y / K** **NOTE -** Washing fastness of [Dark ***] mode is higher than [Black ***] mode. If you want to improve the washing fastness, recommended to use [Dark ***] mode even with black T-shirt.
Dark Polyester	Use this for printing on dark-color polyester garments. Ink for use : **W / C / M / Y / K** **NOTE -** Washing fastness of [Dark ***] mode is higher than [Black ***] mode. If you want to improve the washing fastness, recommended to use [Dark ***] mode even with black T-shirt.
White Cotton	Use this for printing on white or light-color cotton garments. Ink for use : **C / M / Y / K**
White Polyester	Use this for printing on white or light-color polyester garments. Ink for use : **C / M / Y / K**

4. Click the [Metamode], and then select the print mode.

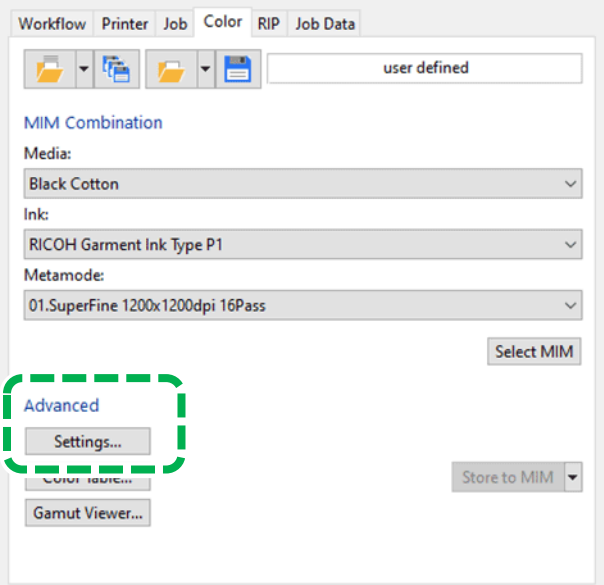


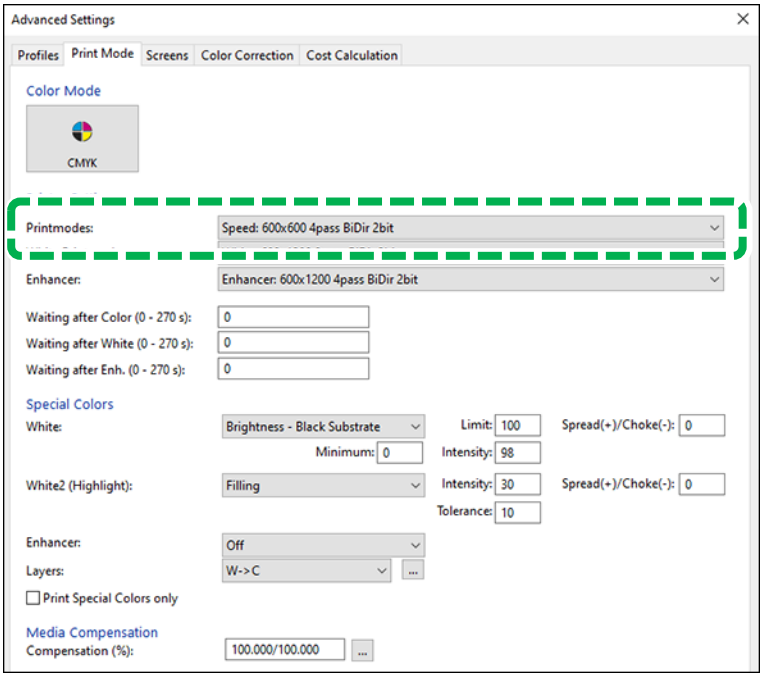
<Metamode>

- 01.SuperFine 1200x1200dpi 16Pass
  High definition print mode.
  Recommended image : photograph
- 02.ExtraFine 600x600dpi 9Pass
  More stable mode.
  Recommended image:Images with banding
- 03.Fine 600x600dpi 8Pass
  Standard print mode, recommended as default.
- 04.Speed 600x600dpi 4Pass
  Fastest print mode.

5. Click [OK].

NOTE – Selecting unidirectional printing may help reduce tonal variation in some colors - gray for example. However, doing so also reduces throughput.
If you want to select Uni-directional printing, click the [Settings] under Advanced in [Color] tab.
And, select UniDir for the same print mode as the Metamode in [Print Mode] tab.

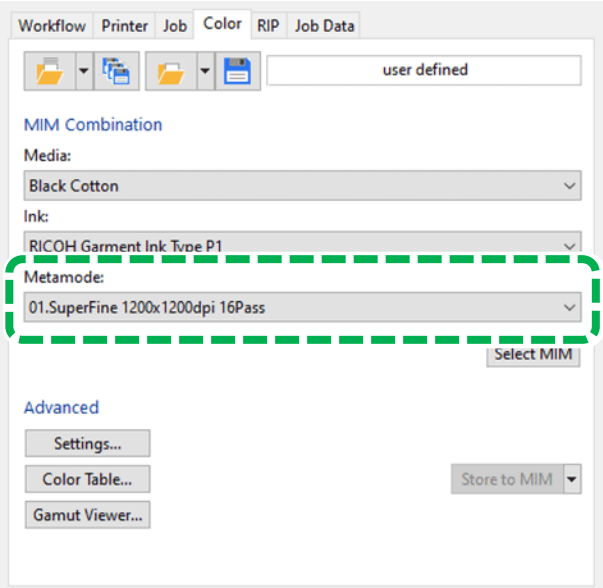




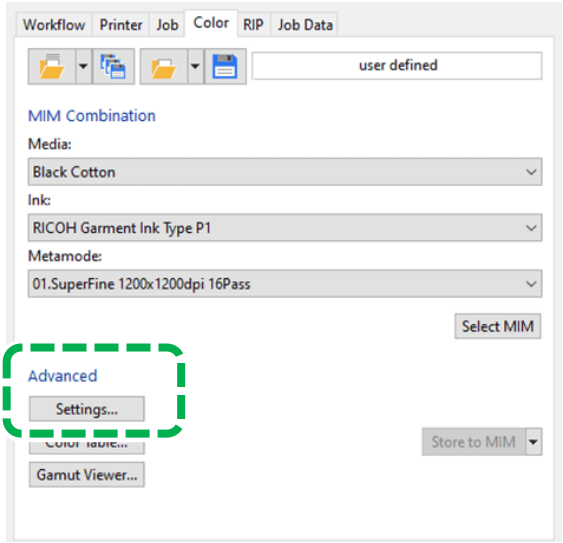
◆ Additional Tips (Improvement of whiteness)

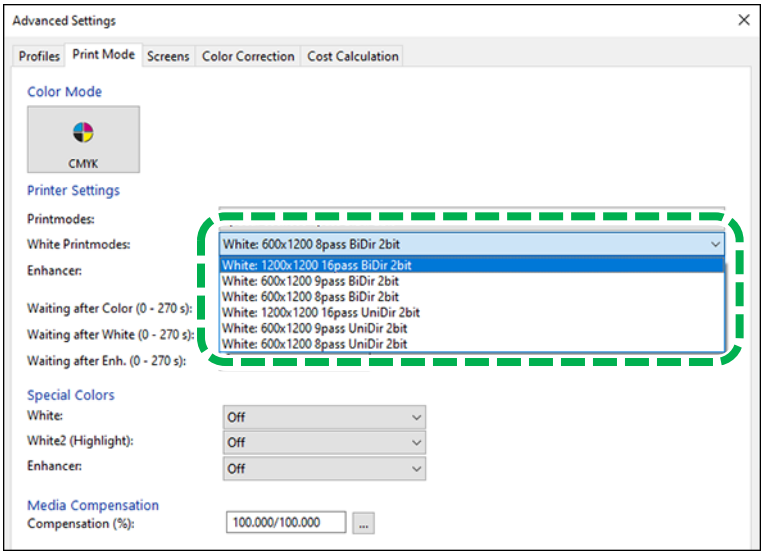
If you want to print more whiteness, you can increase the whiteness by following the steps below.

1. Click the [Metamode], and then select the print mode.

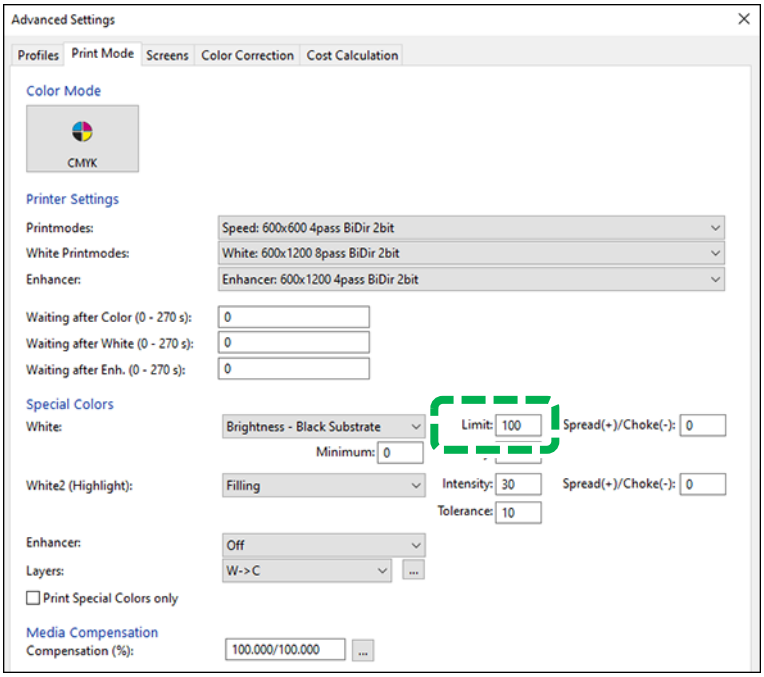


2. Click [Settings] under "Advanced" on the [Color] tab. And, select white print mode [White: 1200x1200 16pass BiDir 2bit] or [White: 1200x1200 16pass UniDir 2bit].





3. Set the Limit value.



4. Click [OK].

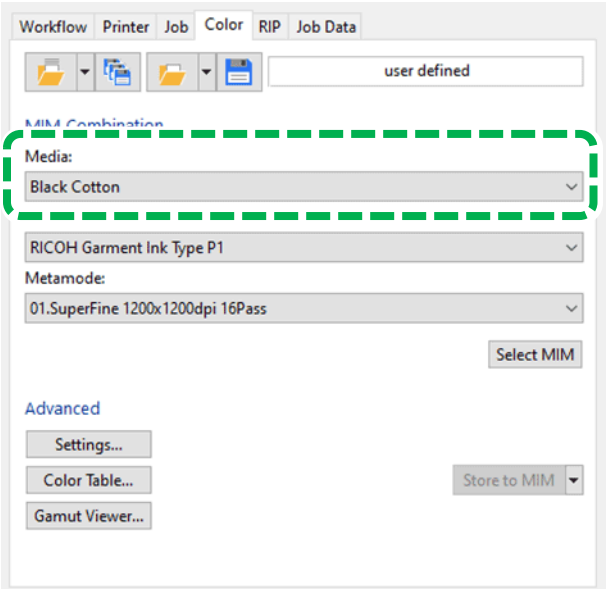
NOTE –

- This setting will increase the consumption of white ink.
- If ink bleeding occurs, adjust the drying time on the printer. For details, see page 45, "[DRYING TIME]" in Settings Tab. Or adjust the drying time on the ColorGATE Productionserver. For details, see page 85, "Specifying the Drying Time after Printing".
- When returning the white print mode to [White: 600x1200 8pass BiDir 2bit], also return the Limit value to the original value.
- By selecting [Filling] in [White2 (Highlight):], you can increase the amount of white ink used as the undercoat to increase the whiteness.

◆ Additional Tips (Improvement of washing fastness)

If the washing fastness is weak when printing with [Black ***] mode, you can improve the washing fastness by following the steps below.

1. Click [Media] on the [Color] tab, and then select [Dark Cotton] or [Dark Polyester].



2. Click [OK].

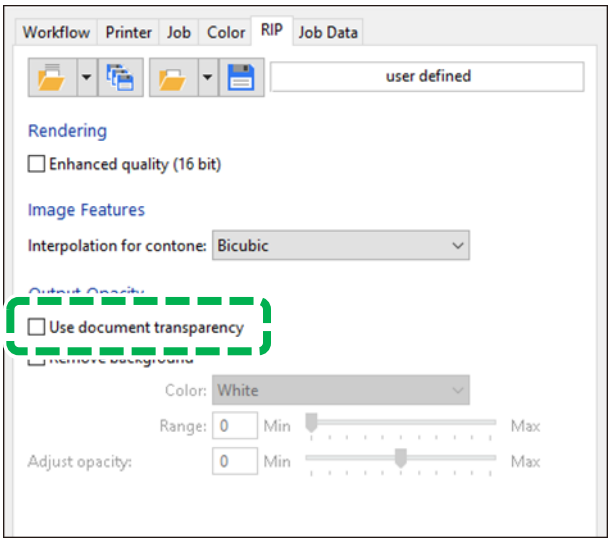
NOTE –

- In [Black ***] mode, there are small amount of white ink areas to express black with fabric color, and the washing fastness may be weak.
- In [Dark ***] mode, you can increase white ink even in small amount of white ink areas in [Black ***] mode.

Image transparency setting

If your image contains transparency information and you want to use that setting, follow the steps below.

1. Click [RIP] tab and check [Use document transparency].



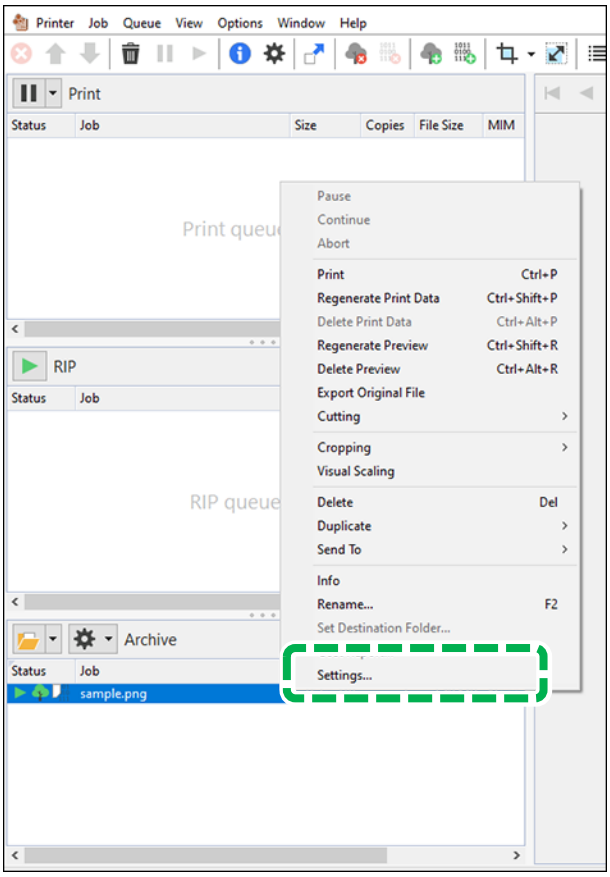
Displayed only for file formats that allow transparency information (such as PNG).

Adjusting Special Colors: White

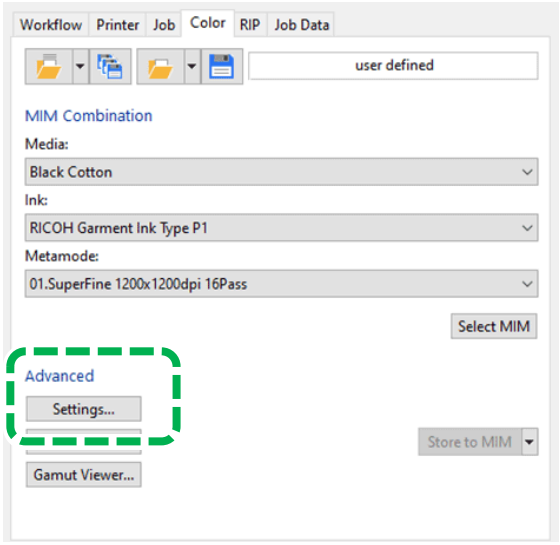
Specify this when you adjust the mode to print white.

1. **Select the job in the “Job” archive, and then right-click the selected job.**

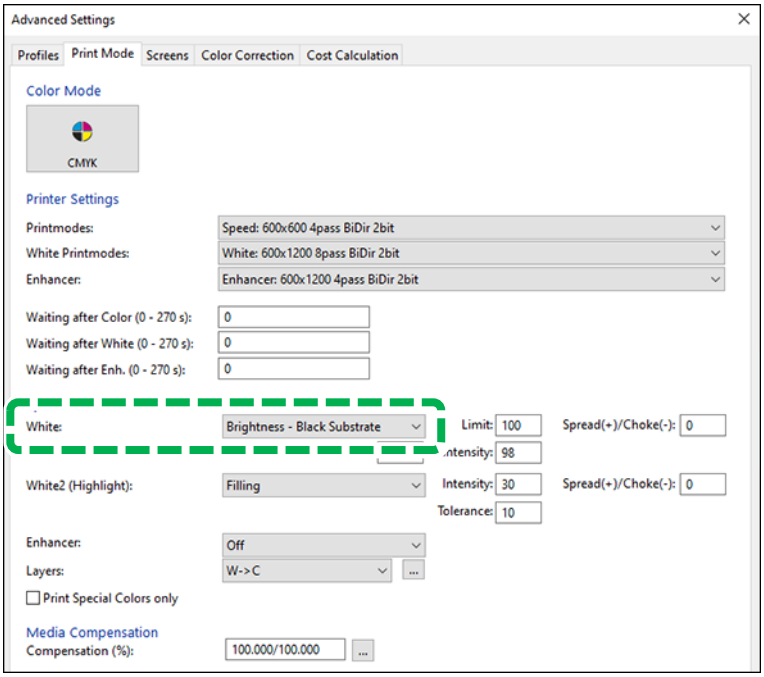
2. **Click [Settings].**



3. **Click [Settings] under “Advanced” on the [Color] tab.**



4. Click on the [Print Mode] tab, and then specify [White:] in [Special Colors].



< White: >

- Off

  Not printing white.

- Brightness - Black Substrate

  Select this when using the black color on black materials for printing.
  The black material is used for the black part of the image data, so neither the white nor black ink is discharged as the undercoat. Thus, you can save on white and black ink consumption.

- Brightness

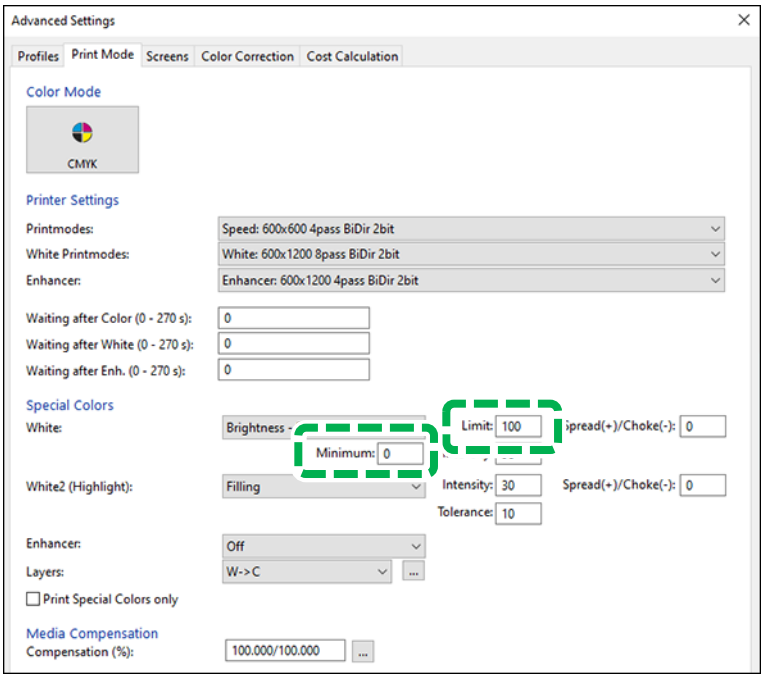
  Select this when not using the color of the material for printing when printing on red, blue or other deep color materials. Black ink is discharged for the black part of the image data. To prevent the influence of the material's color, it is required to apply white ink as the undercoat. If applying white ink, enter the value in [Minimum:]. (Recommended value: 30)
  * The optimal value depends on the type of material. Adjust the value as required.

- Other settings, such as Pixel, Pixel invert, Selective, Filling, Flood, and Spot

  See the operation manual for ColorGATE Productionserver or the help file. (Help file: Processing Print Jobs > White and special colors > Printing Special Colors: Introduction)

5. Set the [Limit:] and [Minimum:].

It is required to specify this setting only if [Brightness - Black Substrate] or [Brightness] is selected in [White:].



< Limit: >

Specify (by %) the maximum limit for white ink consumption. (Recommended value：100)

< Minimum: >

Specify (by %) the minimum limit for white ink consumption.

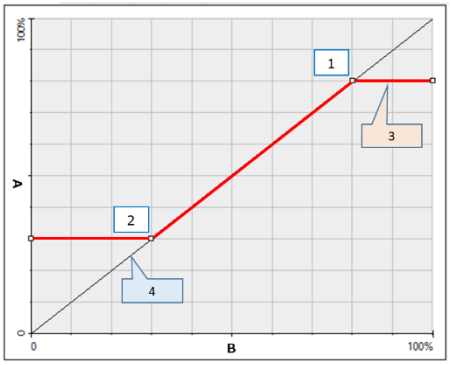
Recommended consumption when [White:] is set to [Brightness – Black Substrate]: 0

Recommended consumption when [White:] is set to [Brightness]: 30

If you enter a value below "100" in [Limit:], white ink consumption is reduced for images that consume more white ink than the specified value but not for images that consume less.

If a value above 0 is entered as the minimum value, white ink consumption increases for images that consume less white ink than the specified value but not for images that consume an equal amount or more.

Example: A diagram indicating the amount of ink applied when white is set to [Brightness], [Limit:] to 80, and [Minimum:] to 30



A: Amount of ink applied

B: Image to print

1: [Limit:]: 80%

2: [Minimum:]: 30%

3: After the change (red line)

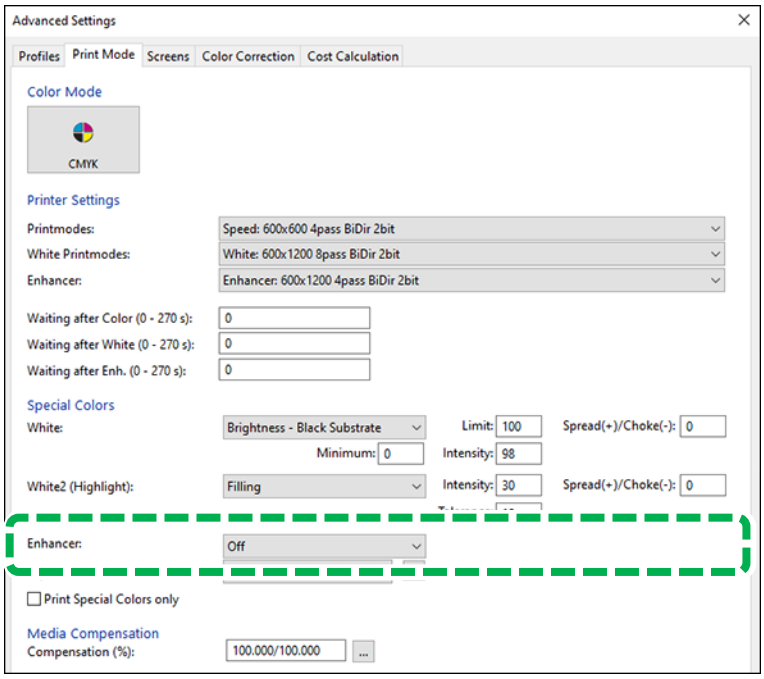
4: Before the change (black line)

6. **Click [OK].**

Adjusting Special Colors: Enhancer

Specify the enhancer printing method.

For how to display the Special Colors section on the [Print Mode] tab, see page 76 "Adjusting Special Colors: White".



Setting Items	Description
Off	Prints without applying the enhancer.
Constant	Enhancer is applied as the underbase only to the areas included in the color information in the print job. Specify the density of the enhancer in [Intensity:]. For example, set [Intensity:] to “100” to apply the enhancer at a density of 100%.

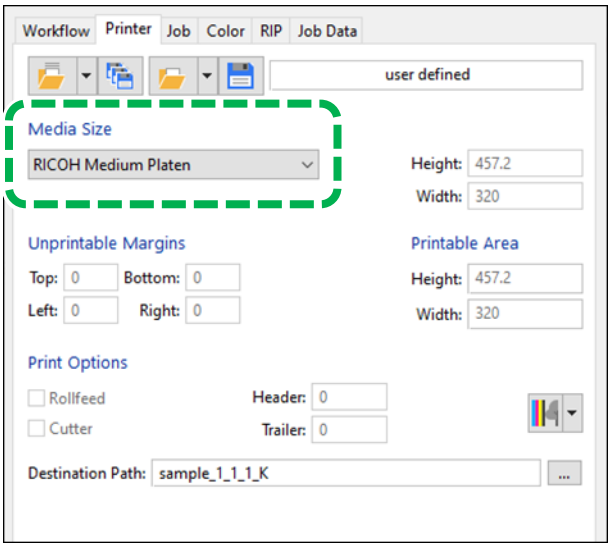
Setting Items	Description
Gradient	The print job color information determines the density of the enhancer applied to the underbase. Example 1: In the case of a print job with Cyan:10%, Magenta:10%, Yellow:20%, and Black:40%, data for enhancer application at a density of 80% that is equivalent to the total CMYK value, is generated and applied. Example 2: In the case of color information including white color data in the print job, the data for the enhancer is generated and applied based on the white color data. The minimum volume of enhancer applied (minimum density) can be specified in [Minimum:]. The maximum volume (maximum density) can be specified in [Intensity:]. Example 3: • If set to [Minimum:]: 0% and [Intensity:]: 73% In the case of a print job with Cyan: 10%, Magenta: 10%, Yellow: 20%, and Black: 40%, the data for the enhancer is generated and the enhancer is applied at the density of 73% set in [Intensity:] instead of the total CMYK value of 80%. In [Minimum:], you can specify 0, 10, 20, 30, 40, or 50 as the volume of enhancer to apply. The larger the [Minimum:] value, the larger the volume of enhancer applied to the area where the Bk gradation is close to 0 (≈ color close to black).

Change of Media size

1. **Select the job in the “Job” archive, and then right-click the selected job.**
2. **Click [Settings].**
3. **Click the [Media Size] in [Printer] tab, and then select the platen type.**

   Be sure to select platen type matched printer’s platen type.

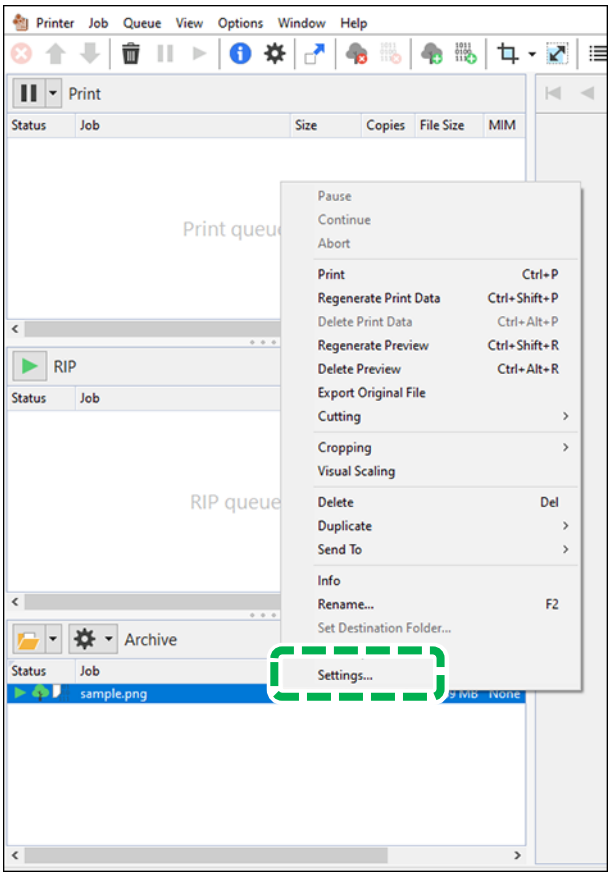
   For details about optional platen, see “Option Platen User Guide”.



Specifying the Image Position/Size and Number of Prints

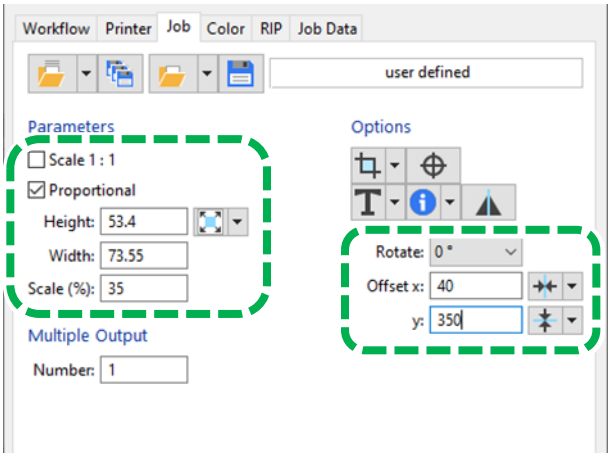
1. **Select the job in the "Job" archive, and then right-click the selected job.**

2. **Click [Settings...].**



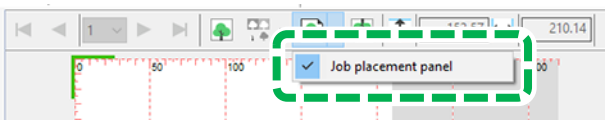
3. **On the [Job] tab, set the position and size of the image.**

On the screen, the size is displayed in units of “cm”. It can be changed to units of “inch” by configuring the setting on the ColorGATE Productionserver. For details, see the ColorGATE Productionserver instruction manual or help file.

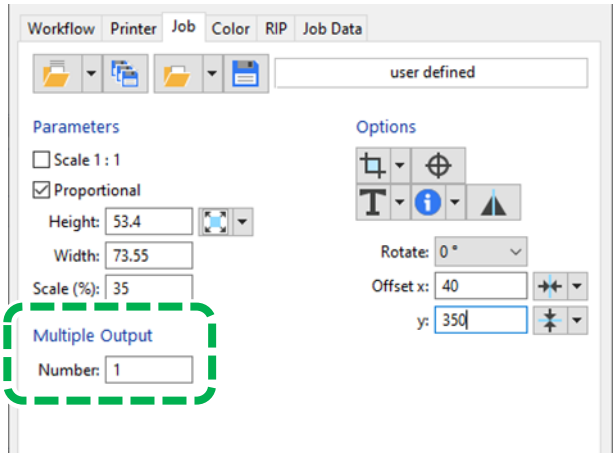


Parameter	Description
Scale 1:1	If you want to print the job with no scaling.
Proportional	If you want to retain the proportions of the job when entering the height or width.
Height/Width:	Enter the required values.
Fit to Page	Fit Single Copy to Page: Activate this option if you want to adjust your individual job to the format set on the Printer tab or the size entered there. Fit All to Page: Activate this option if you want to adjust your job with multiple output or a multi-page job to the format set on the Printer tab or the size entered there. This works only with sheet paper. Fit Single Copy to Page (reduce only): Activate this option if you want to reduce your individual job to the format set on the Printer tab or the size entered there. Fill Single Copy to Page: The Feature sizes the graphic to fit the entire page without unproportional scaling. If the graphic is then over the edges of the media the rest is cropped.
Scale (%):	Enter the required scaling value here in percent.
Rotate:	0°- 270°: Here you have the option of specifying any rotation of the job required. Auto: The job is rotated so that it is automatically positioned to save as much space on the media as possible.
Offset x/y:	Enable this function if you want to center your print image on the media horizontally (x) or vertically (y). Enter the required values. The point of origin is in the left upper corner. The job will be shifted with the entered distance.
Horizontal Alignment	Specify you to select the Offset x position. Left/Center/Right: Specifies where to move the image relative to the media. Reset: Specify 0
Vertical Alignment	Specify you to select the Offset y position. Top/Center/Bottom: Specifies where to move the image relative to the media. Reset: Specify 0

If ”Job placement panel” is checked in Media Preview, you can also change the position and size of the image by drag and drop it.



4. **On the [Job] tab, enter the number of sheets to print in [Number:] for [Multiple Output].**



Specifying the Drying Time after Printing

Specify the drying time after each color printing, white color printing and enhancer printing session. You can specify the drying time from 0 to 270 seconds.

1. **Select the job in the "Job" archive, and then right-click the selected job.**
2. **Click [Settings].**
3. **Click [Settings] under "Advanced" on the [Color] tab.**
4. **Click the [Print Mode] tab.**
5. **Enter the drying time in [Waiting after Color (0 - 270 s):], [Waiting after White (0 - 270 s):], and [Waiting after Enh. (0 - 270 s):].**

   If set to 0 seconds, a drying time is not specified. Enter a number of seconds only for the items for which you wish to specify the drying time.

   - [Waiting after Color (0 - 270 s):]

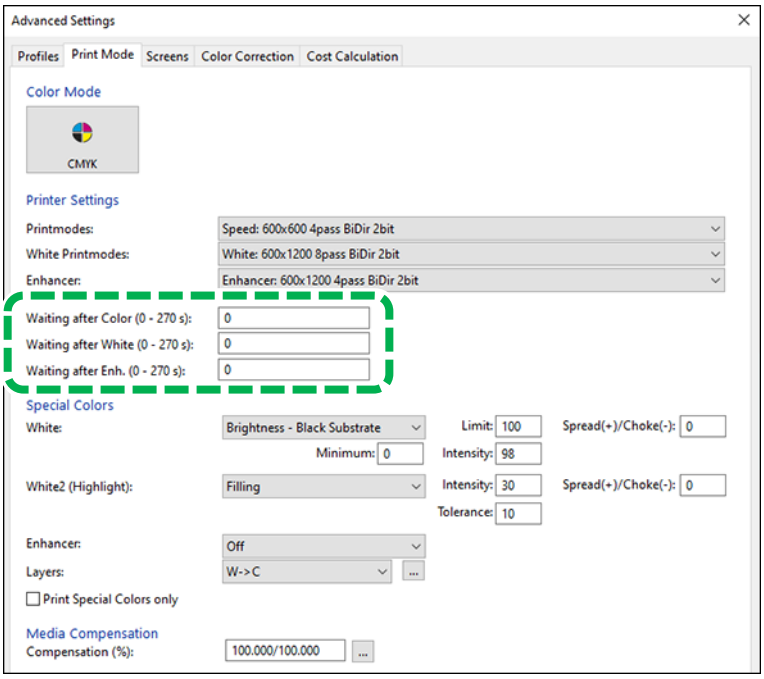
     Enter a value to specify the drying time after color printing.

   - [Waiting after White (0 - 270 s):]

     Enter a value to specify the drying time after white color printing.

   - [Waiting after Enh. (0 - 270 s):]

     Enter a value to specify the drying time after enhancer printing.



Note – When printing image data containing multiple sets of print data for enhancer printing, white color printing, and color printing, the wait time for drying is executed after each type of printing is completed.

For example, in [Layers:], you can specify the enhancer printing, white color printing, and color printing in this order, and specify 15 seconds for the enhancer printing, 10 seconds for the white color printing, and 5 seconds for the color printing drying times. If the print image data contains 2 sets of print data for enhancer printing, 2 sets of print data for white color printing, and 1 set of print data for color printing, the operation proceeds in the following order: enhancer printing is executed twice followed by a drying time of 15 seconds, white color printing is executed twice followed by a drying time of 10 seconds, and color printing is executed once followed by a drying time of 5 seconds.

For information on the layer function, see page 87 "Specifying the Layer Function".

Specifying the Layer Function

Specify this function if you wish to change the order of printing and the number of times to print each layer for color printing, white color printing, and enhancer printing. Printing multiple times can increase the density.

If any item other than [Off] is selected in [White:], [White2 (Highlight):], or [Enhancer:], [Layers:] is displayed.

1. **Select the job in the "Job" archive, and then right-click the selected job.**
2. **Click [Settings].**
3. **Click [Settings] under "Advanced" on the [Color] tab.**
4. **Click the [Print Mode] tab.**
5. **In [Layers:], select the order of printing.**

   The items displayed in [Layers:] vary depending on the setting. The items that are displayed are as follows.

Setting Items	Description
W->C	Prints in white ink, and then prints in color inks over it.
C->W	Prints in color ink, and then prints in white inks over it.
E->C	Prints in enhancer, and then prints in color inks over it.
E->W	Prints in enhancer, and then prints in white inks over it.
E->W->C	Prints in 3 layers: enhancer, white ink, and color inks.
User defined	The user can specify the order freely.

6. **Click [...].**

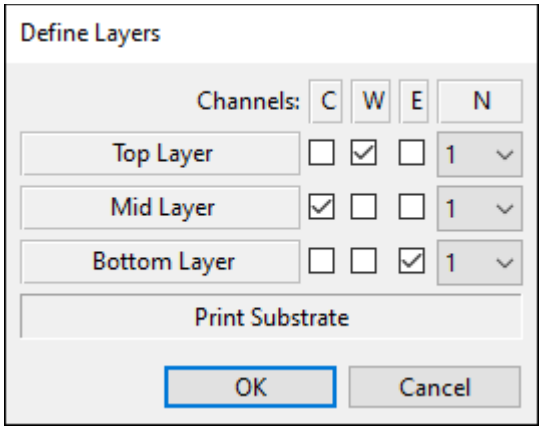
   The “Define Layers” screen is displayed.

7. **In the “N” field, select the number of times to print each type of printing.**

   You can execute each type of printing up to 5 times.

   The Bottom Layer is printed first, the Mid Layer is printed second, and the Top Layer is printed last.

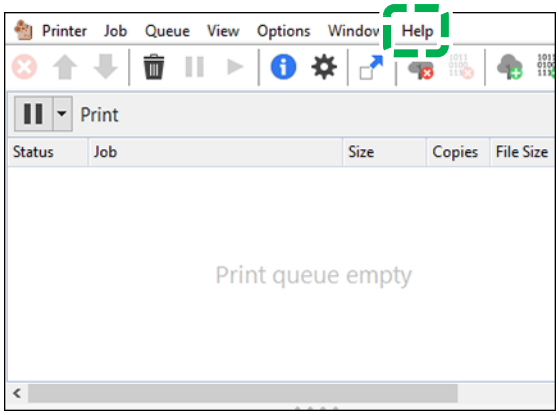
Note – If [User defined] is selected when specifying the order of printing, check the printing types in “Channels” in the Define Layers window. For example, to print in the order of E>C>W, specify the settings as follows.



About Operating ColorGATE Productionserver

HELP

For details about how to operate ColorGATE Productionserver, refer to the help file for ColorGATE Productionserver.



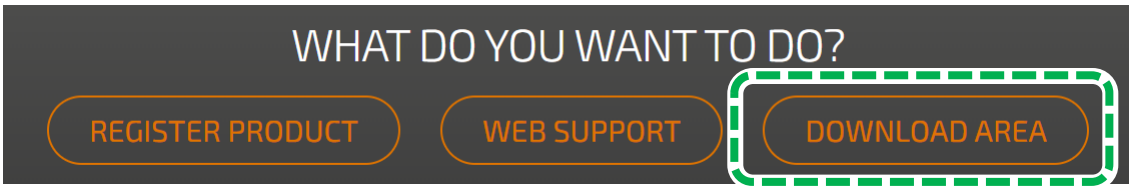
Manual

You can also check the manual for ColorGATE Productionserver via the ColorGATE website.

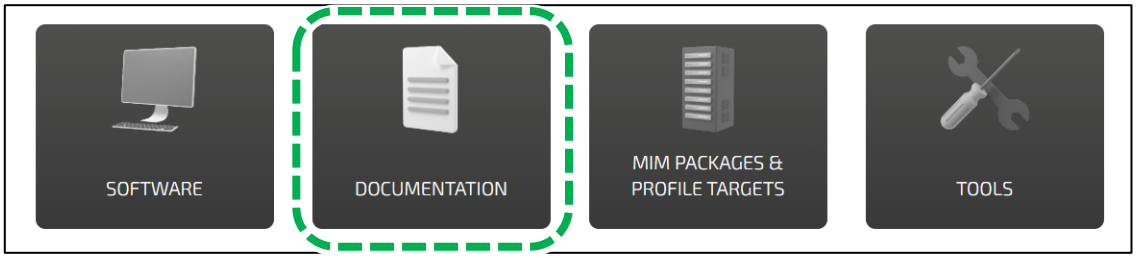
User registration is required in advance. For details, see page 52, “Register as a user and product on the ColorGATE Service & Support website”.

1. **Access to the ColorGATE service & Support website again. (https://www.colorgate.com/support/)**
2. **Click [LOGIN / REGISTER].**

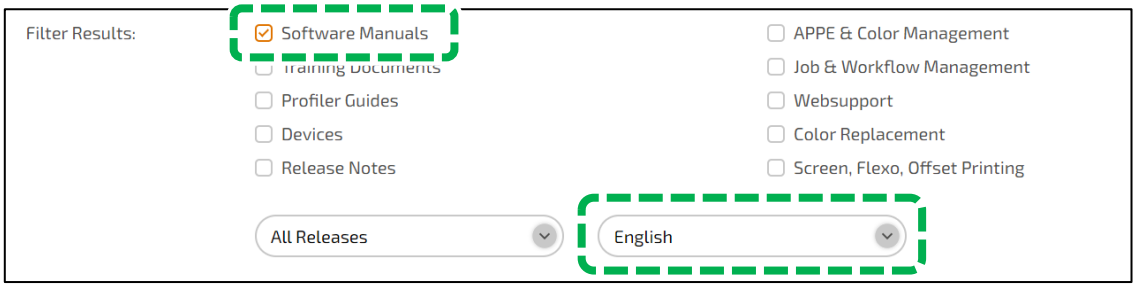
3. **Enter the registered email address and password, and then click [LOGIN].**
4. **Click [DOWNLOAD AREA].**



5. **Click [DOCUMENTATION].**

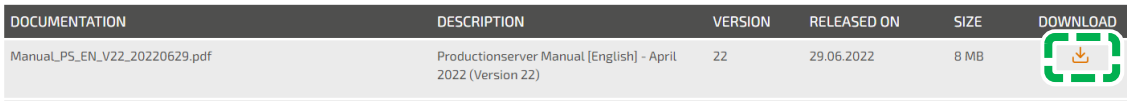


6. **Check [Software Manuals] in "Filter Results:" and select a language.**



7. **Click the icon of [DOWNLOAD] of "Manual_PS_EN_V**.**_***.pdf", and then save the file in your local PC.**

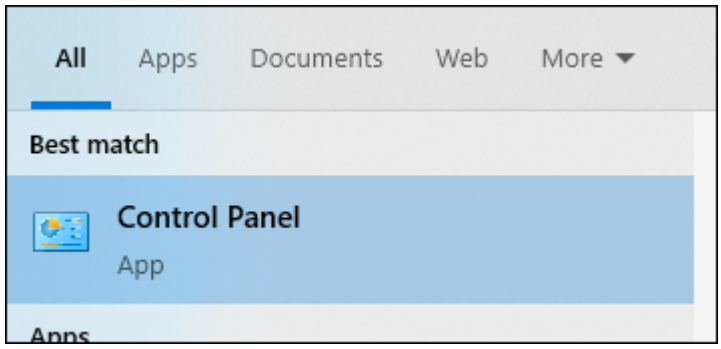
The latest version name and release date are entered in ********.



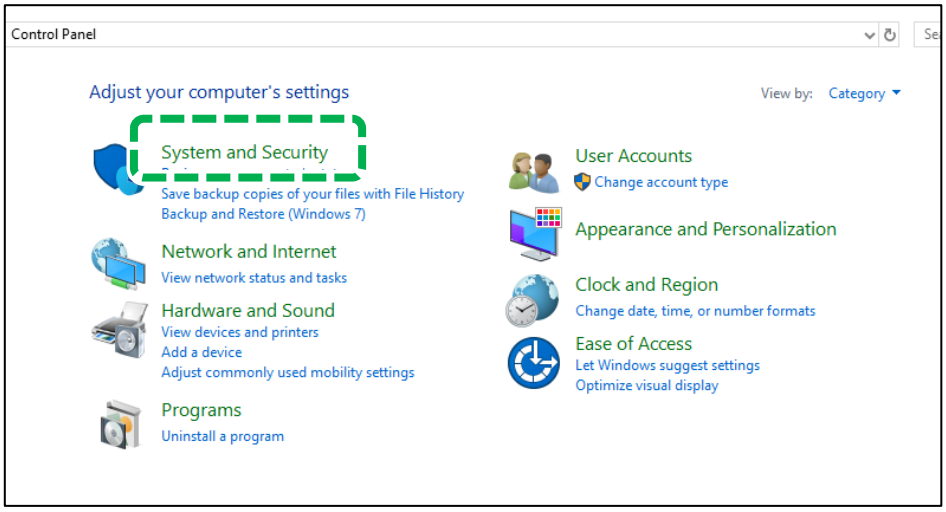
Firewall Settings

If you need to change the firewall settings to communicate between ColorGATE Productionserver and the printer, follow the procedure below to change the settings.

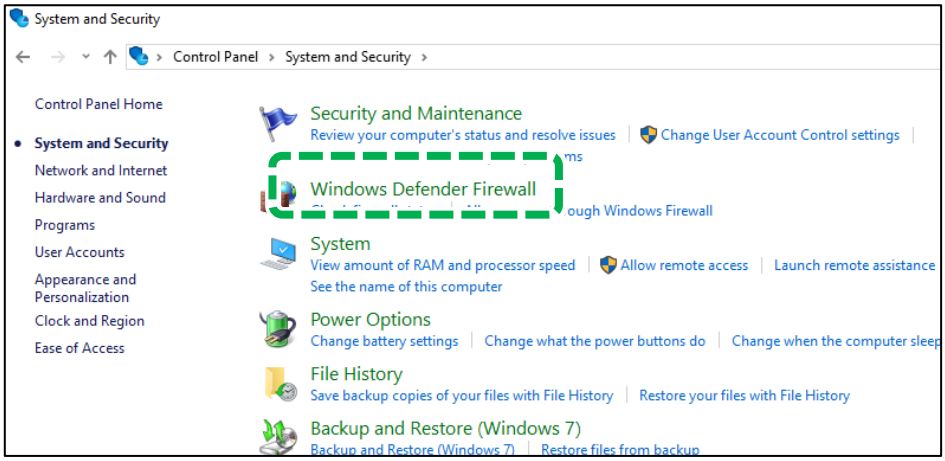
1. **Open the Control Panel window on your PC.**



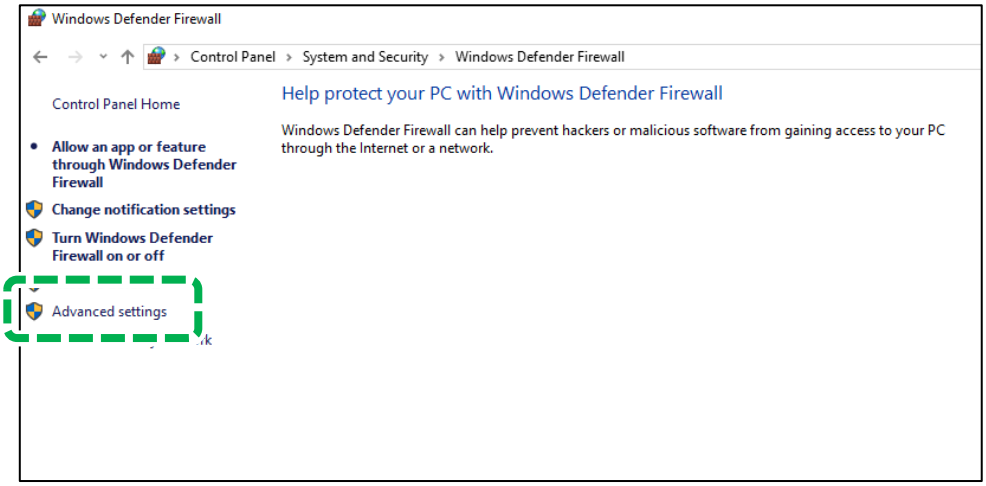
2. Click [System and Security].



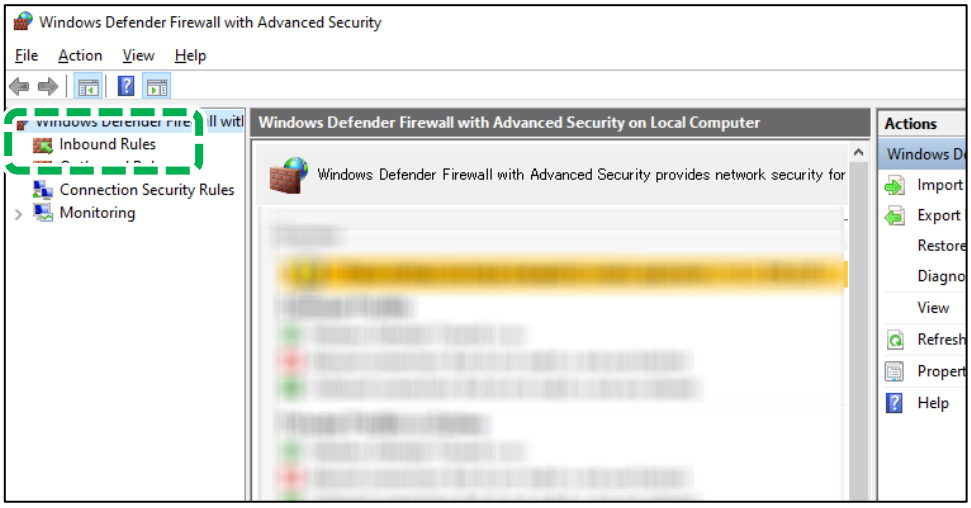
3. Click [Windows Defender Firewall].



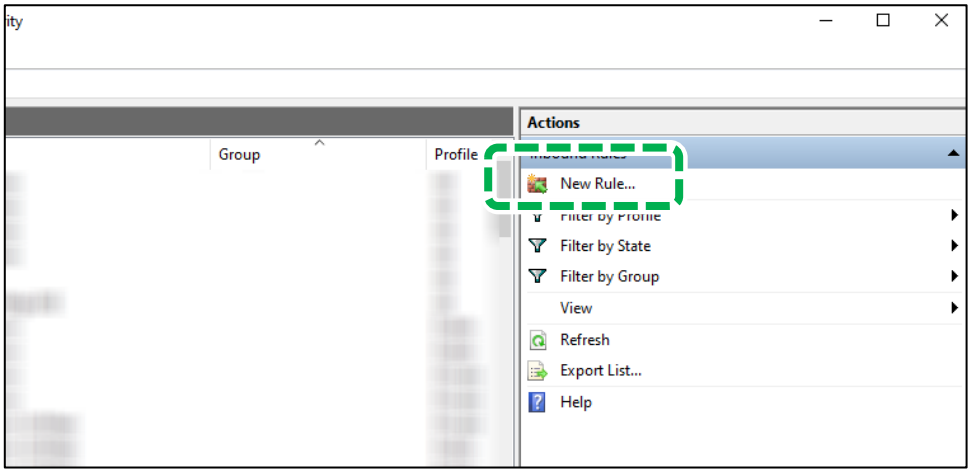
4. Click [Advanced settings].



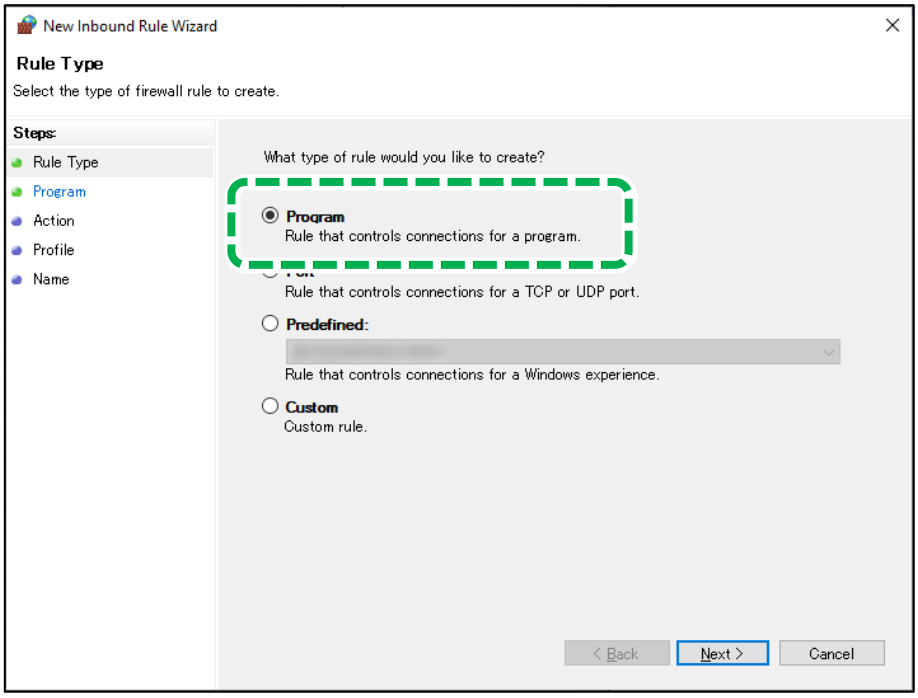
5. Click [Inbound Rules].



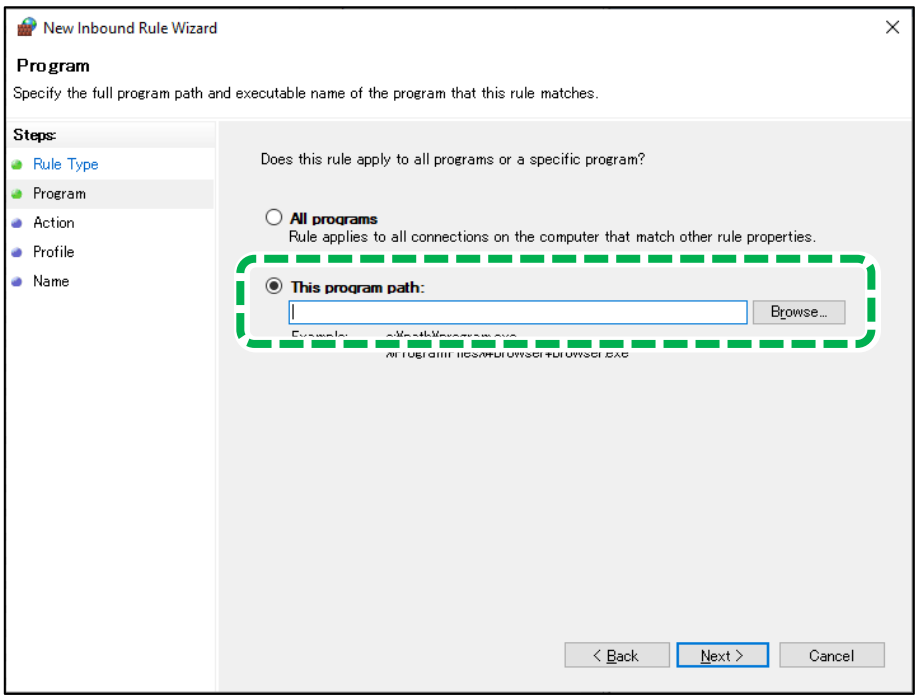
6. Click [New Rule...].



7. **Select the [Program] radial button, and then click [Next].**

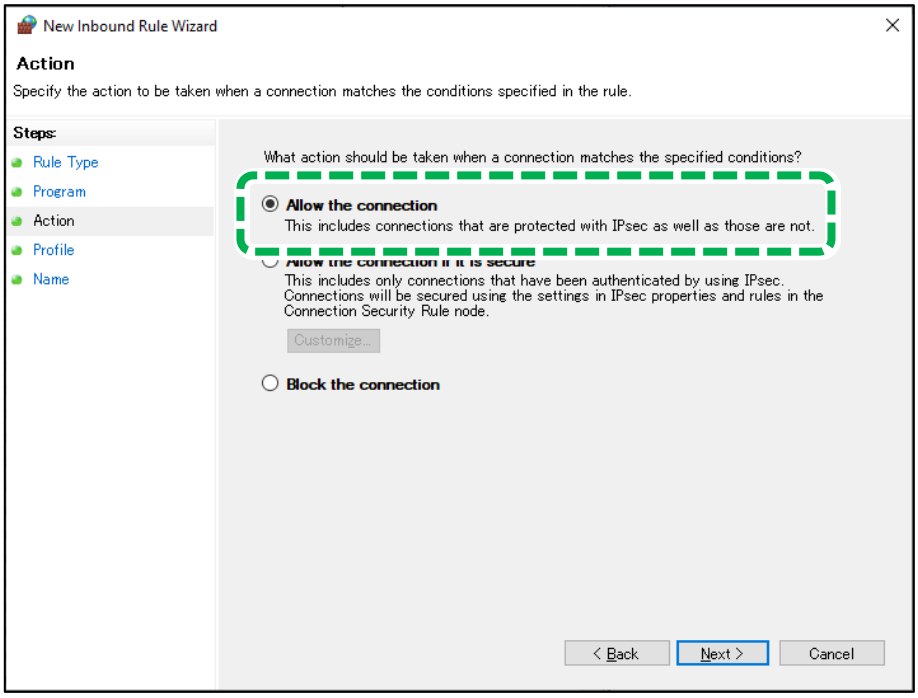


8. **Type the path of the ColorGATE Productionserver program file, or browse to it via the [Browse] button.**



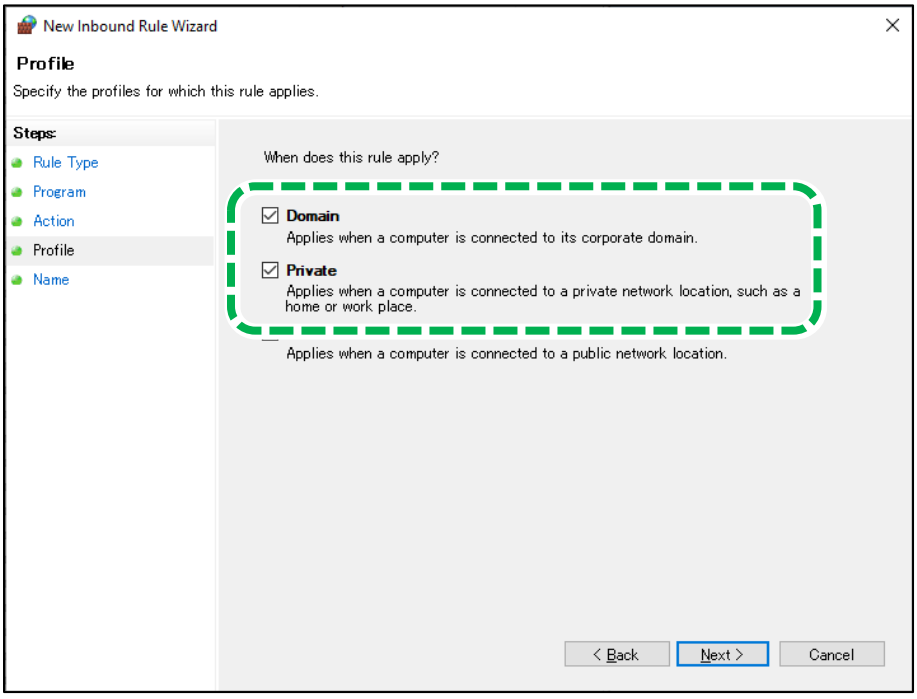
9. **Select [Next] once the file path is selected.**

10. Select the [Allow the connection] radial button, and then click [Next].



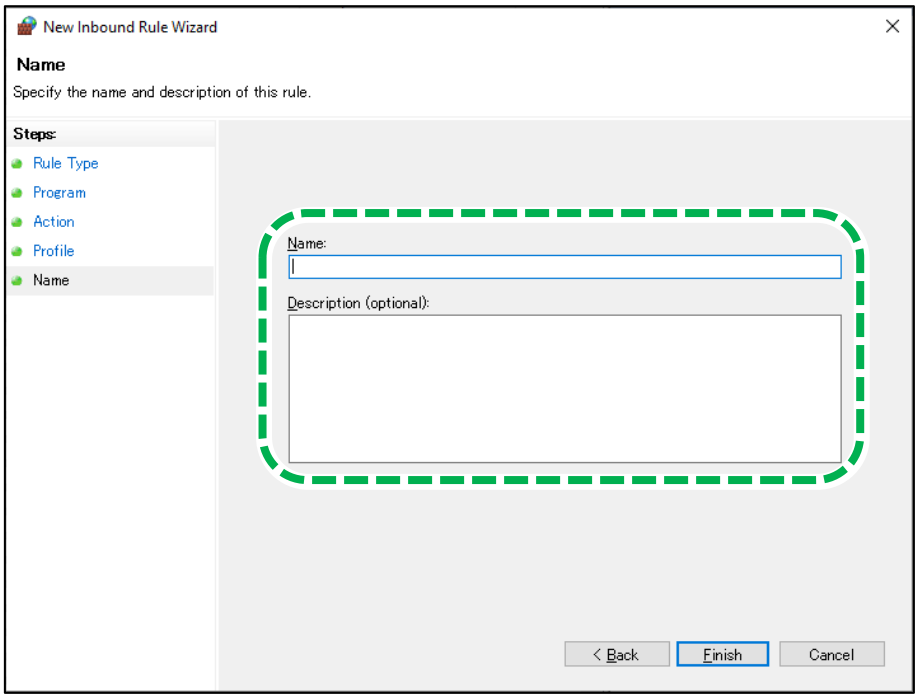
11. Select the box of the correct "Profile" of when this rule should apply.

It is suggested to select [Domain] and [Private].



12. Click [Next].

13. Name the rule and add a description (optional), and then click [Finish] when complete.



2. Printing

2.1. Printing Flow

The basic printing flow is as follows.

Adjust the image or printer settings as necessary.

Prepare the print image.
See the ColorGATE Productionserver manual.

↓

Flatten the garment using a heat press.
See page 99, “Flatten the garment by using a heat press”.

↓

Set the garment on the platen.
See page 100, “Setting the Garment onto the Platen”.

↓

Adjusting the Height.
See page 103, “Adjusting the Height of the Platen”.

↓

Send the print job to the printer.
See page 109, “Sending the Print Image”.

↓

Print the garment.
See page 114, "Printing Your Image”.

↓

Fix the ink with heat treatment.
See page 120, “Set the Image with Heat Treatment”.

2.2. Before Printing

Things to Prepare

◆ Things to prepare for printing

Purpose	Items
To wear	Polyethylene gloves
	Protective glasses or goggles (commercially available)
For use	Garment (commercially available)
	Platen (with platen frame)
	Heat press paper
	Heat press (commercially available)

Checking Garments

Check the color of the garment that you want to use.

White garments

To print on white fabrics or light-colored fabrics that do not require a white underbase, use enhancer and color inks.

- Set the temperature of the heat press device to 320˚F or 160˚C.

Light-color garments

When producing colors that are true to the design or when the design uses white, perform the following:

- Use the dark-color (black) garments method.
- Specify not to use the black from the garment via ColorGATE Productionserver.

When prioritizing softness to the touch, perform the following:

- Use the white garments method.

Dark-color (black) garments

To print on dark (black) fabric, use enhancer, white ink, and color inks. Normally, the machine prints first with the enhancer before printing with white ink and then color inks.

If you want to print in dark-color garment mode after printing in light-color garment mode (only the color head is used), perform NOZZLE CHECK to check the nozzles of the white ink, and then perform AUTO HEAD CLEAN if necessary. Then, start printing.

For details about NOZZLE CHECK, see page 129, “NOZZLE CHECK”.
For details about AUTO HEAD CLEAN, see page 133, “AUTO HEAD CLEAN”.

- To improve the quality of the printed image, it is recommended that you change the dry time for drying white ink before printing with color ink starts. Set the value in [Drying Time] on the OPTION screen to “20 sec”.

  Increasing the “Drying Time” will reduce your productivity.

- Set the temperature of the heat press device to 248˚F or 120˚C.

  This temperature is recommended according to the test results at Ricoh. It may vary depending on the garment and the heat press machine used, so be sure to test it in advance.

2.3. Setting the Garment

Flatten the garment by using a heat press

⚠WARNING

- Read the heat press manual carefully and use the press according to the safety precautions. Otherwise, injury or burns could result.

Use a heat press to lay flat wrinkles and fluff on the garment before setting it on the platen.

1. **Set the new garment onto the heat press.**
2. **Close the heat press and press the garment on the heat press for about 10 seconds.**

   Press down at the set temperature of the printing media.

   For example: White T-shirt (use color ink to print): 320˚F or 160˚C

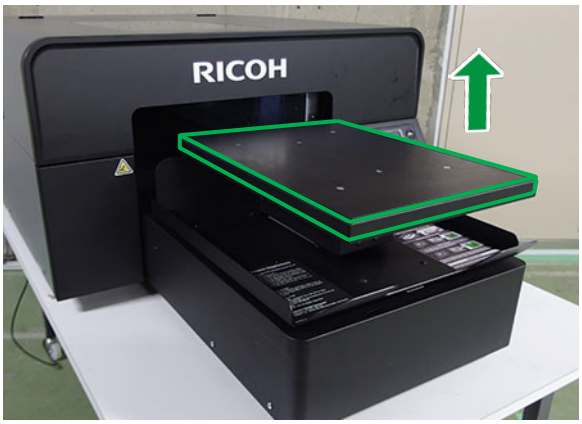
   Dark-color (black) T-shirt (use white and color ink to print): 248˚F or 120°C
3. **Open the top of the heat press, and then remove the garment softly.**

Setting the Garment onto the Platen

Place the garment flattened with a heat press on the platen.

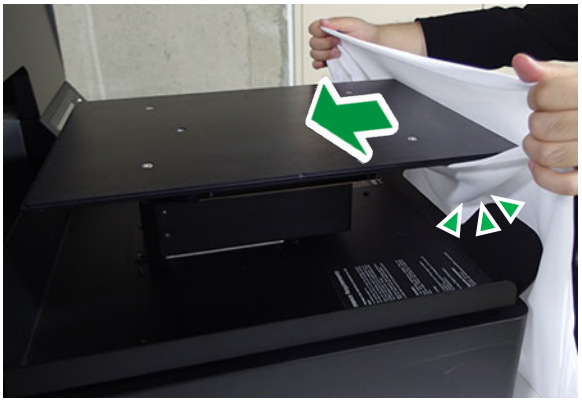
The following explains how to set the T-shirt on the platen as an example.

1. Remove the platen frame from the platen.

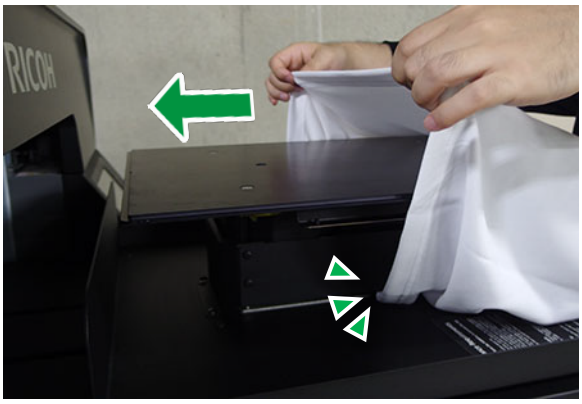


2. With the neckline of the T-shirt facing you, insert the platen into the T-shirt from the hem of the T-shirt.

Set the platen so that it goes inside the T-shirt.



Insert the bottom of the T-shirt into the gap of the platen base.

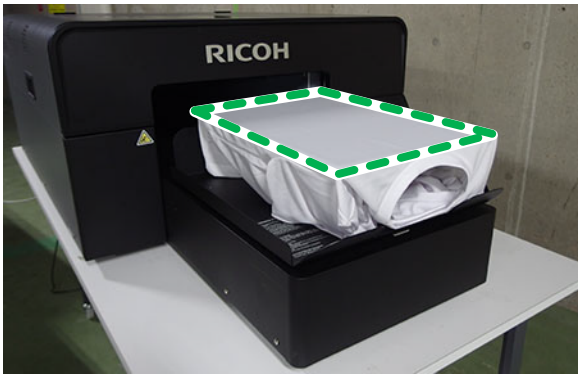


3. Place the hem and sleeves outside the print range under the platen.

Gather the hem and sleeves protruding from the platen as shown below.

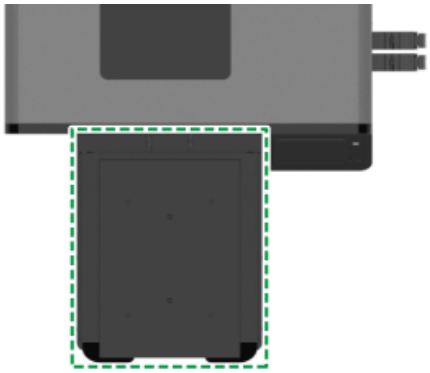
4. Remove wrinkles and distortion on the printed surface.

If there is slack, the GAP becomes wider, so set it horizontally.



5. Set the platen frame.

IMPORTANT! Make sure that the garment does not stick out of the lower frame of the platen.



If you print with the garment protruding, the garment could get caught in the machine and cause a malfunction.

2.4. Adjusting the Height of the Platen

This machine adjusts the height of the platen automatically.

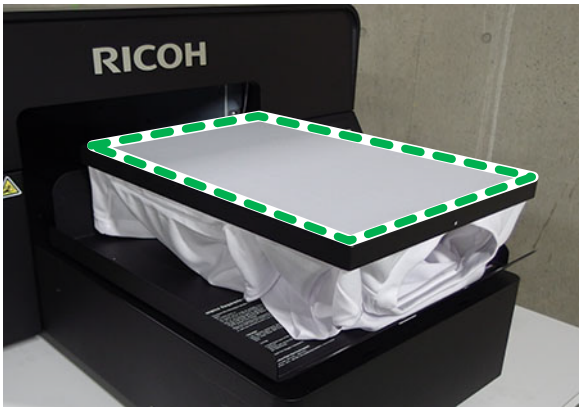
The height adjustment of the platen must be performed before printing a garment. The adjustment result will be reset 2 hours after the last print.

Once height adjustment of the platen is performed, you can print without height adjustment until the height adjustment result is reset.

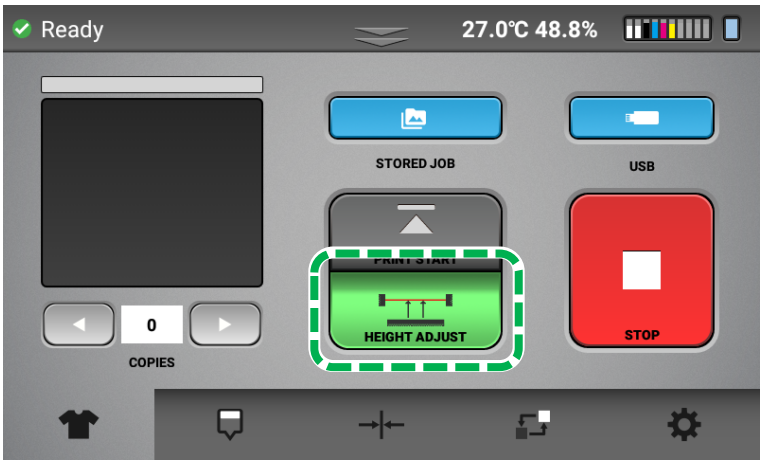
IMPORTANT!

- If the garment is not flat, the platen height will not be set properly and will not print properly. Be sure to flatten the garment.
- Having the head too far away from the printing surface can cause poor prints in addition to interfering with the encoder function, causing an error due to excessive ink mist. This can also cause damage to other components due to excessive ink mist. It is important when changing from a thicker fabric to a thinner fabric that the height adjustment of the platen must be performed.

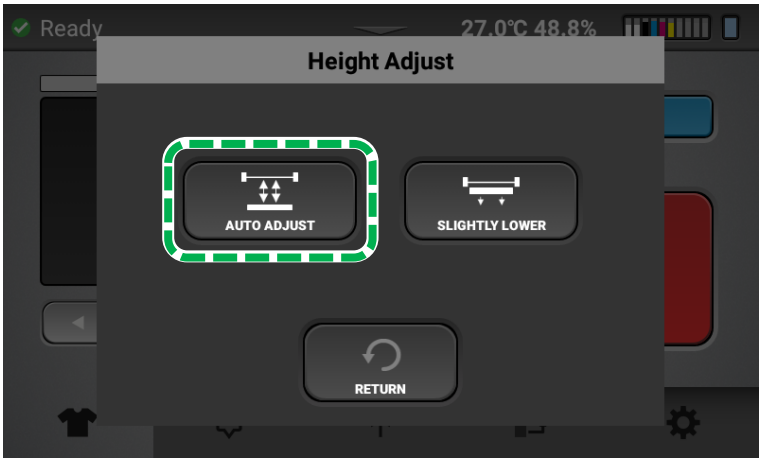
1. Flatten the clothes set onto the platen as much as possible.



2. Press [HEIGHT ADJUST].



3. Press [AUTO ADJUST].



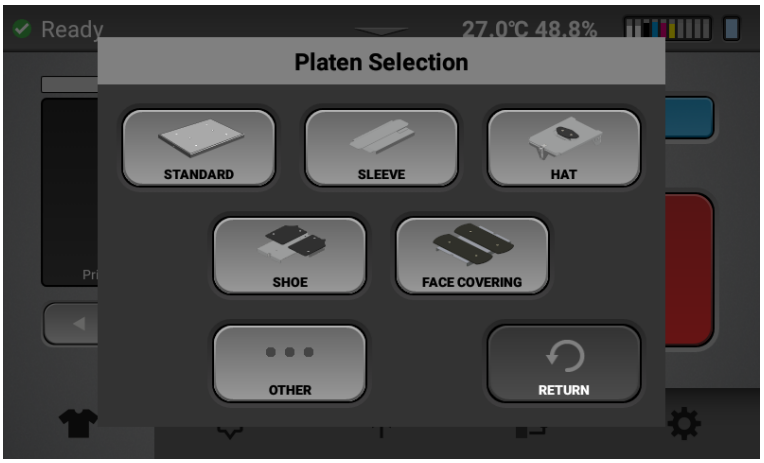
Next step differs depending on “OPTIONAL PLATEN” setting.

If [OPTIONAL PLATEN] is disabled, the platen height adjustment starts automatically. If it is not disabled, go to the next step.

For details about [OPTIONAL PLATEN], see page 46, "[OPTIONAL PLATEN]" under “Settings Tab”.

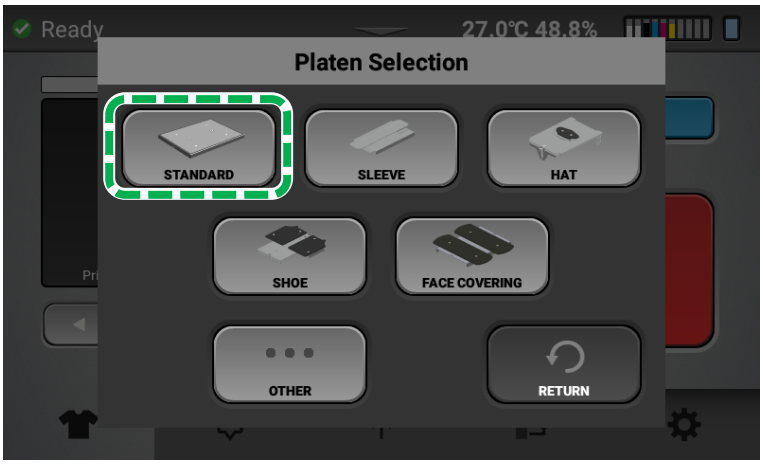
4. Select the platen attached to the printer.

Height adjustment will start automatically according to the selected platen.

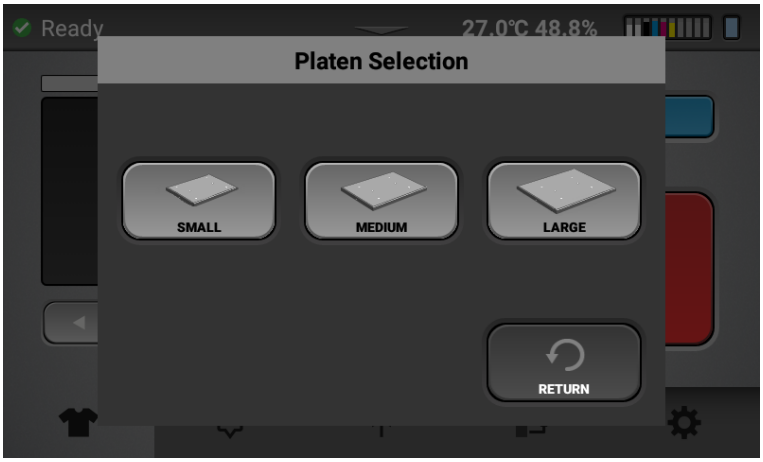


If you attached the following (Small platen / Medium platen / Large platen):

1. Select [STANDARD].

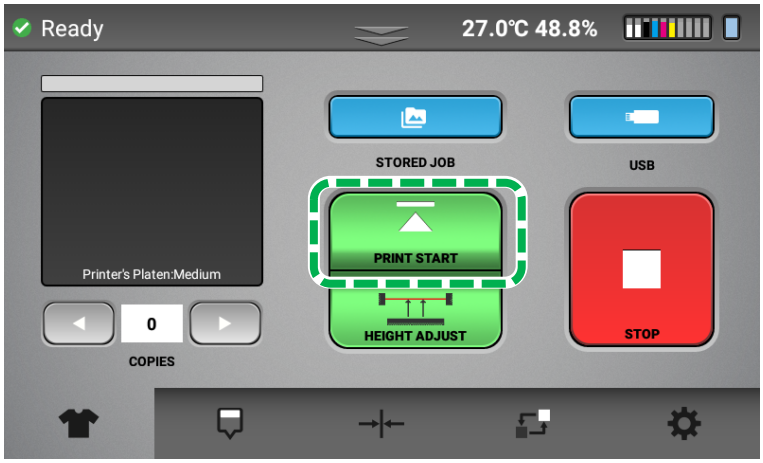


2. Select the platen size attached to the printer.



NOTE - [OTHER] is used only in special cases such as printing on media that rises in the center of the platen. When you select [OTHER], adjusting will be based on the height of the center of Platen.

Printing can be started after the height adjustment of the platen is completed. [PRINT START] turns green.

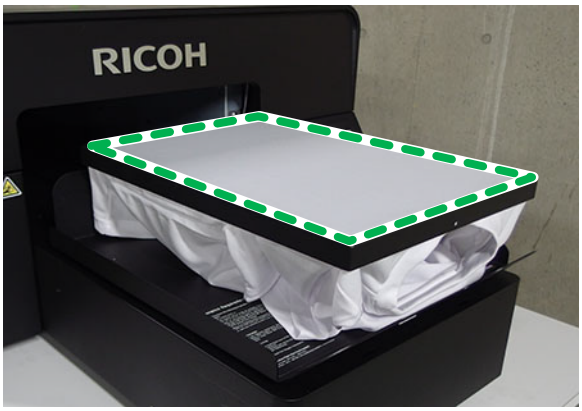


If there is a height difference of 3 mm or more in the set garment, an error will be displayed. Set the garment properly flat, and then perform height adjustment again.

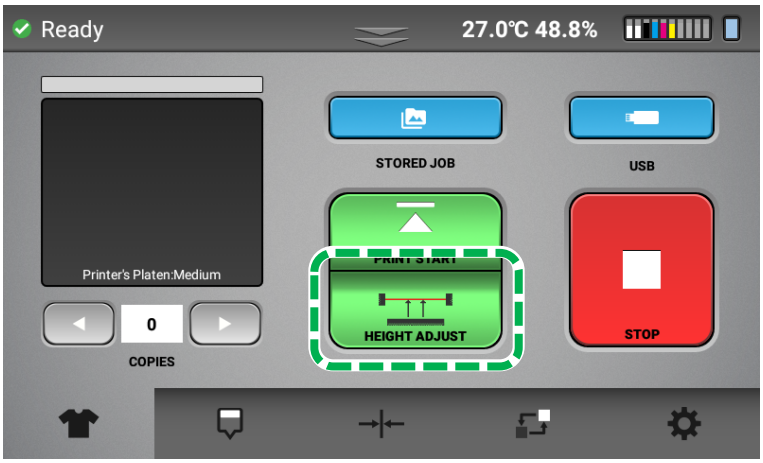
Using [SLIGHTLY LOWER] for Height Adjustment

To readjust the height for the same garment or a garment of similar thickness after adjusting the height by [AUTO ADJUST], you can use the following procedure to adjust the height in the least possible number of steps.

1. Flatten the clothes set onto the platen as much as possible.

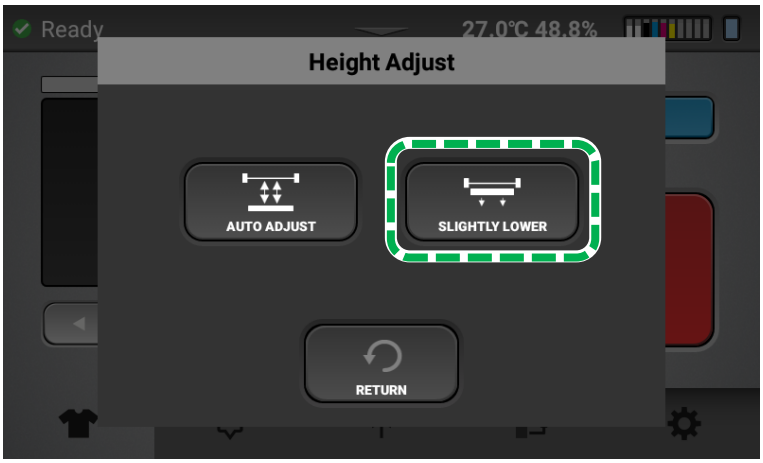


2. Press [HEIGHT ADJUST].



3. Press [SLIGHTLY LOWER].

The platen is lowered 3 mm each time this is pressed. If the platen cannot be lowered any further, it stops being lowered.



If a message appears when [SLIGHTLY LOWER] is pressed, follow the instructions in the message.

After adjustment, press [RETURN] to return to the Home screen. You can print by sending the print job and pressing [PRINT START].

2.5. Sending the Print Image

The following methods are to be employed to send the image file to be printed via the machine.

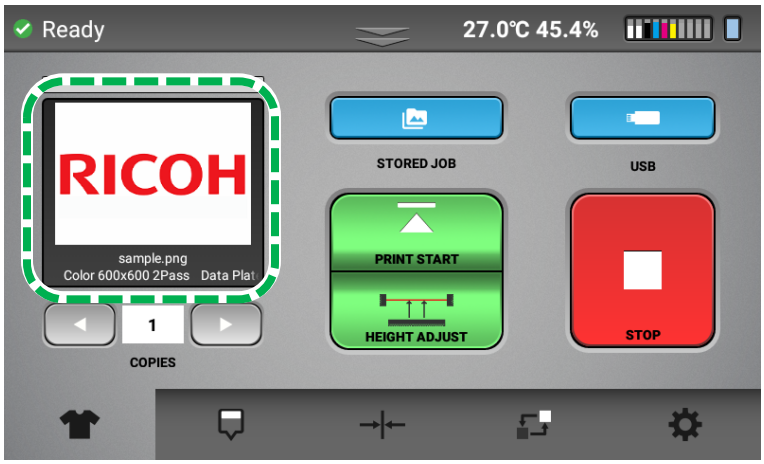
- Send the image file from ColorGATE Productionserver.
- Save the image file to a USB flash drive and read it using the machine.

The image from ColorGATE Productionserver once used can be selected from "STORED JOB" and can be used for repeated printing.

Send the image file from ColorGATE Productionserver

See the ColorGATE Productionserver manual.

The job ready to print is shown in the printing image preview.



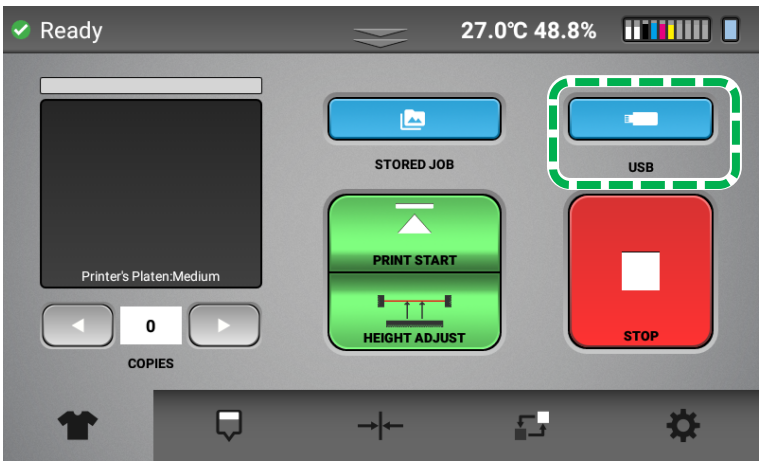
Save the image file to a USB flash drive and read it via the machine

About how convert the image file into print data and save it to USB drive, see the ColorGATE Productionserver manual.

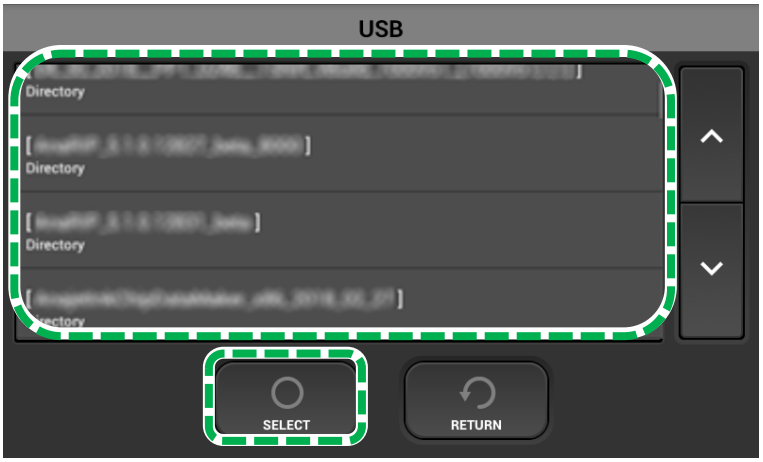
1. Save the image to a USB flash drive.

2. Insert the USB drive into the front USB port.

3. Press [USB].

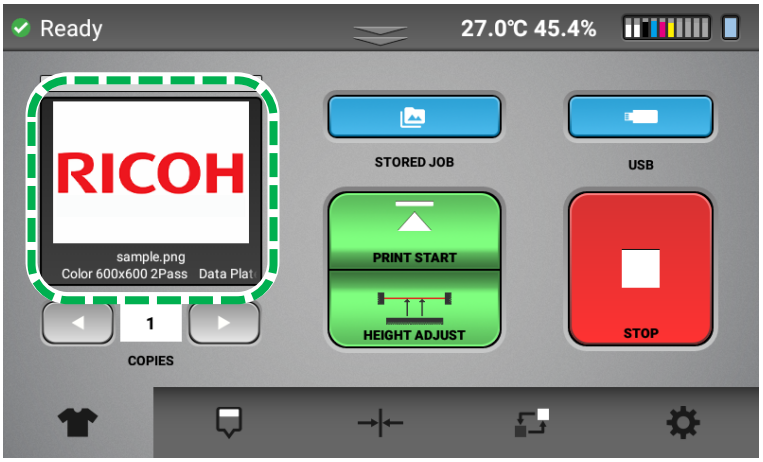


4. **Select the desired file to be printed, and then press [SELECT].**



5. **Press [YES].**

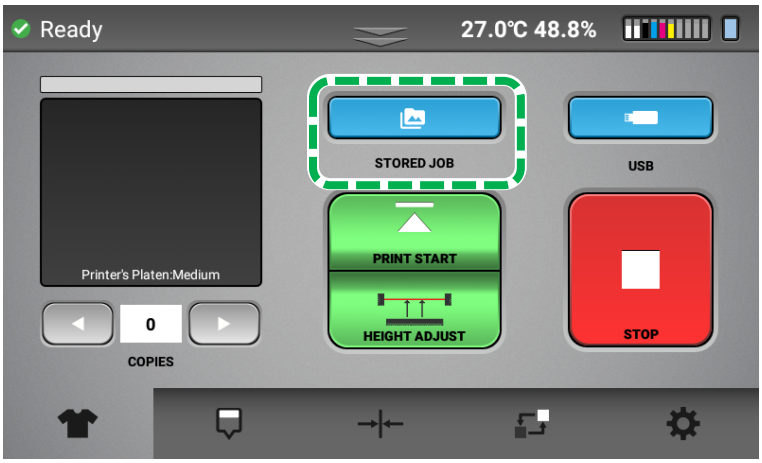
The job ready to print is shown in the printing image preview.



Selecting the image from the internal memory

Jobs previously sent from ColorGATE Productionserver are stored in internal memory.

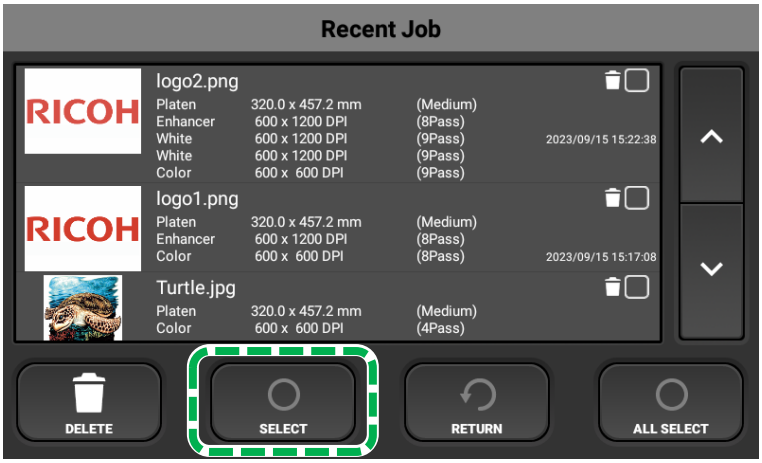
1. Press [STORED JOB].



2. Select the desired file to be printed, and then press [SELECT].

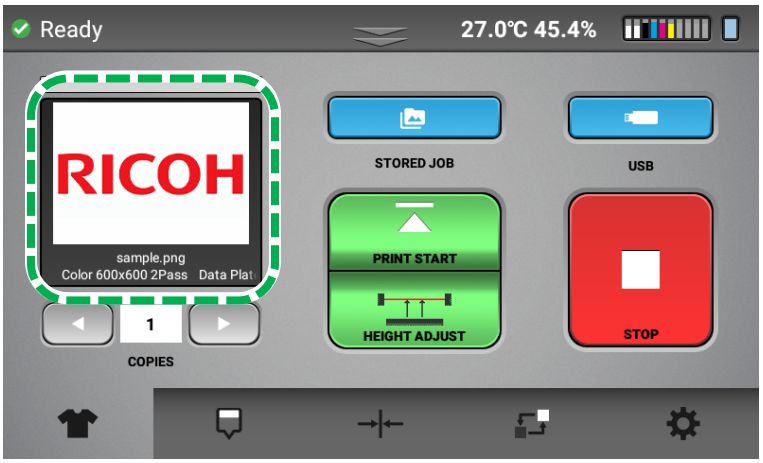
You can also delete jobs in the internal memory by selecting the file or files so that there is a checkmark in the box to the right, and then by pressing [DELETE].

Pressing [ALL SELECT] selects all jobs in the memory.



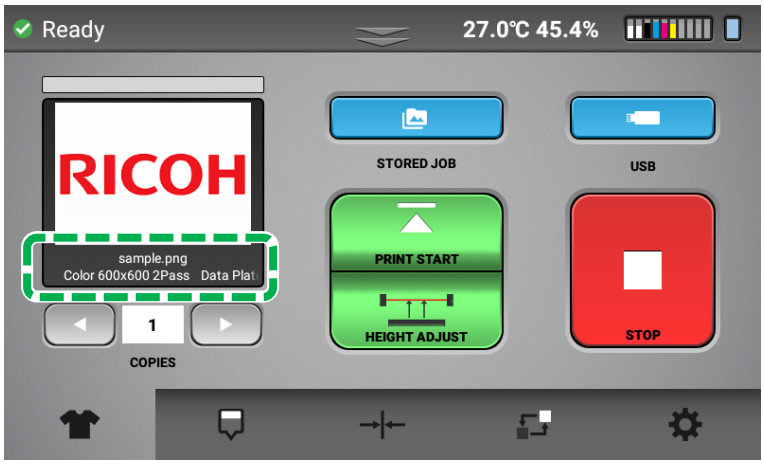
3. Press [YES].

The job ready to print is shown in the printing image preview.



Confirm Media size and Printer's platen type

After sending print data, you can confirm setting of Printer's platen type and Media size. Please confirm both settings are same.



The items displayed in print image preview are following.

- Image file name for print
- Print mode
- Media size (Data Platen)
- Printer's Platen

Each item is displayed in print image preview, scrolling from right to left.

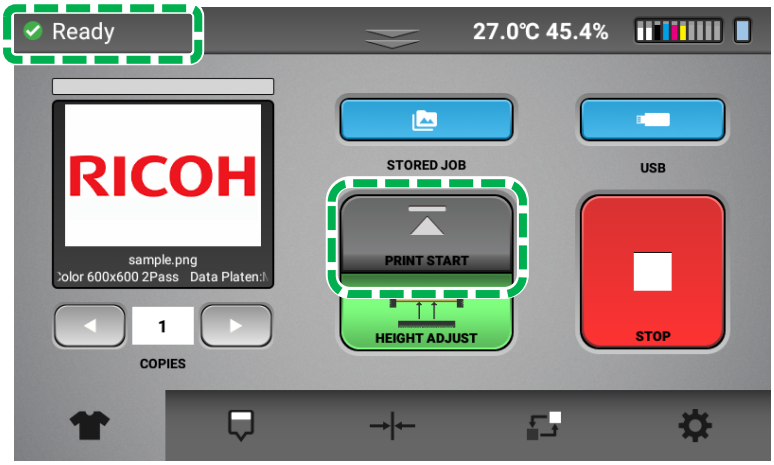
2.6. Printing Your Image

You can start printing after setting the garment, adjusting the platen height, and selecting the print image.

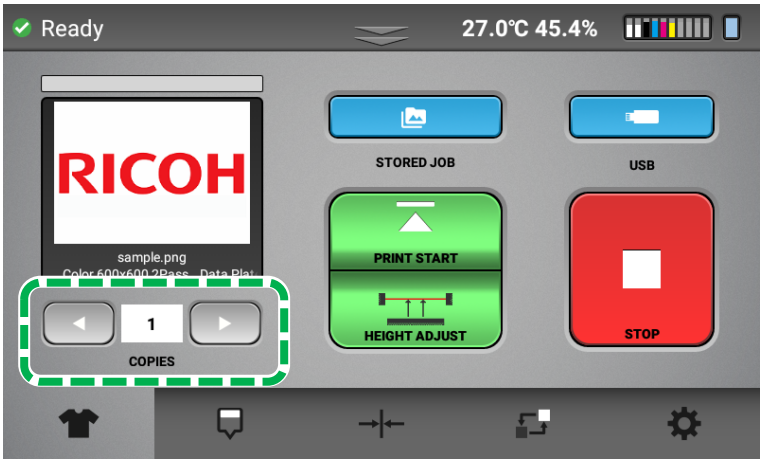
IMPORTANT! If you change the type of garment to be printed since the last time you adjusted the height, be sure to adjust the height again.

NOTE - If the [PRINT START] button is not available to press, you need to perform the height adjustment of the platen. For details, see page 103, "Adjusting the Height of the Platen", to perform height adjustment.

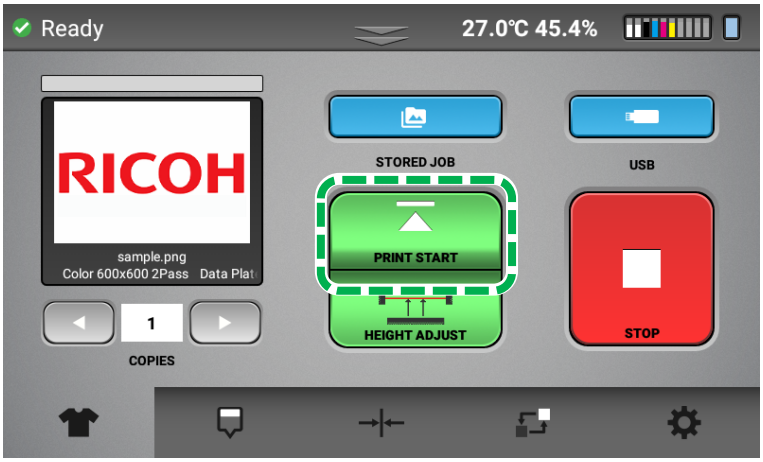
If it is possible to print, the message "Ready" appears at the upper left corner of the touch panel. If the touch panel shows anything else such as maintenance or ink error etc., you are not able to print.



1. **Check that the garment is properly flat.**
2. **Specify the number of prints.**



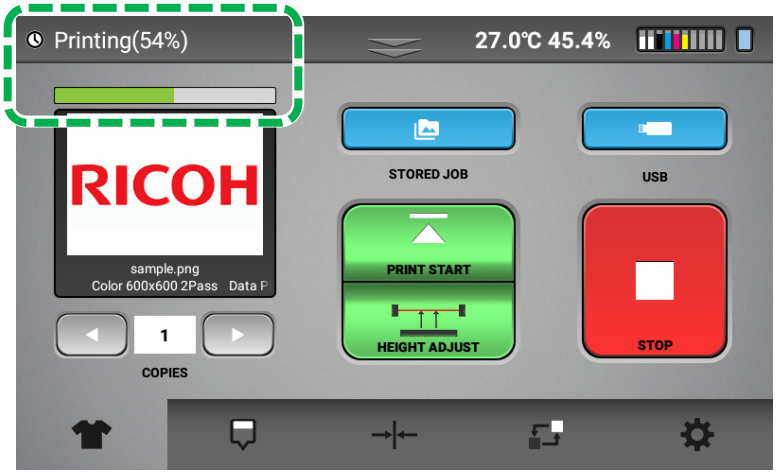
3. Press [PRINT START].



The platen moves into the machine, and printing starts.

Checking the Print Progress

You can check the print progress on the touch panel.



Removing the Garment from the Platen

When printing is complete, the platen returns to the front side of the machine.

1. **Remove the platen frame.**

2. **Grasp the front side of the garment and remove it horizontally from the platen.**

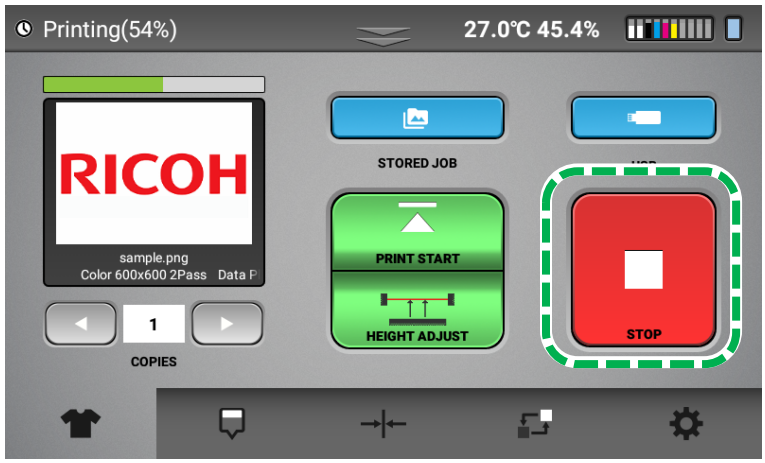
IMPORTANT! Do not touch the print side of the garment.

3. **Proceed to fixing the ink with heat treatment.**

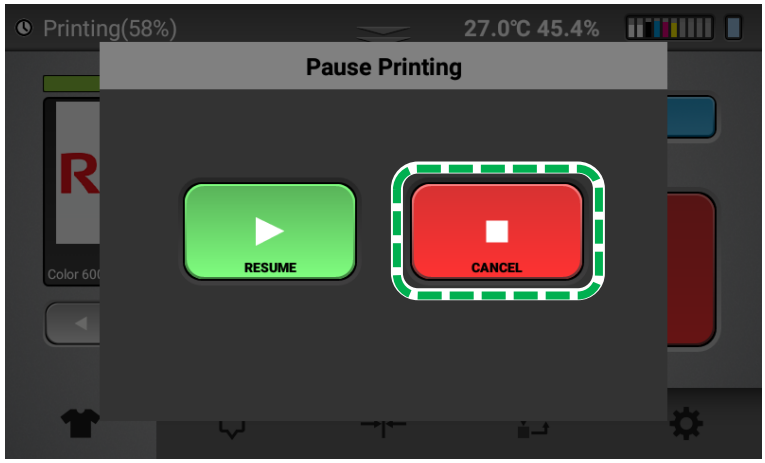
See page 120, “Set the Image with Heat Treatment”.

To cancel a print job

1. Press [STOP] during printing.



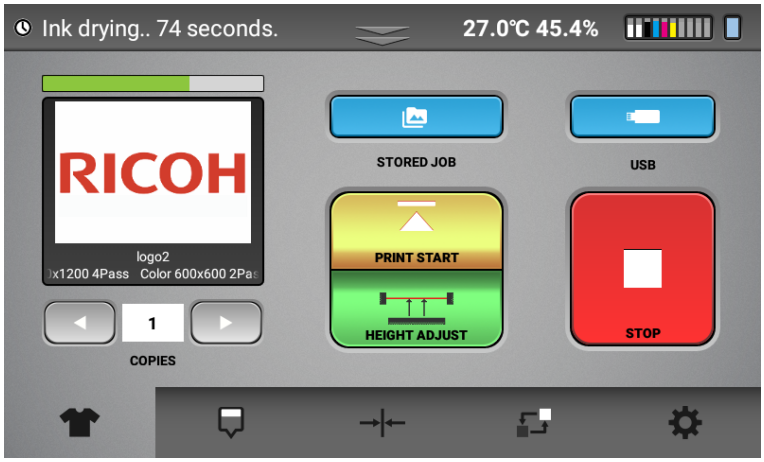
2. Press [CANCEL] to stop the current print job.



Canceling the Wait Time for Drying

While the printer is waiting for the ink to dry, the [PRINT START] button flashes. Pressing [PRINT START] during this wait time to cancel the wait time for drying.

If the confirmation message appears, press [YES]. The next printing job will begin immediately.



2.7. Set the Image with Heat Treatment

NOTE - For information about how to use the heat press device, see the heat press manual.
In order to fix the ink so that your images can be color-fast when washing, it is necessary to heat treat the image so that the image bonds with the garment.

This temperature is recommended according to the test results at Ricoh. It may vary depending on the garment and the heat press machine used, so be sure to test it in advance.

1. **Place the garment in your heat press machine image side up set to the correct settings found below.**

Garment	Temperature	Time
White T-shirt (use color ink to print)	320˚F or 160˚C	120 seconds
Dark-color (black) T-shirt (use white and color ink to print)	248˚F or 120˚C	120 seconds

2. **Bring the top down to within 2.5 cm (1 inch) of being closed and hover the heat press over the image for 15 seconds.**

   This hovering step prevents the mixing of the white and color layers. Both layers are still wet and need to set up a little before applying pressure.

   This step is needed to produce the best final result when using a heat press.

3. **Re-open the heat press and cover the image with heat press paper.**

   Instead of heat press paper, a Teflon sheet or a Kraft Paper Cover Sheet can be used. If you use a Teflon pad, it may leave a semi-glossy look on the prints.

4. **Close the heat press and let the ink fix for the prescribed time.**

5. **When the time is completed, open the heat press, and then remove the heat press paper.**

   Your printed garment is complete.

NOTE - If you are using a textile oven or conveyor dryer, make sure to test the temperature of the printed image when it exits the dryer to ensure that it has reached the following temperature. Also, make sure to do a wash test of your first attempts to be sure that the inks have cured properly and that washing capability is attained.

Garment	Temperature	Time
White T-shirt with Conveyor Dryer (use color ink to print)	Printed image must reach 320˚F or 160˚C	Varies
Dark-color (black) T-shirt with Conveyor Dryer (use white and color ink to print)	Printed image must reach 248˚F or 120˚C	Varies

3. Maintenance

Your printer performs automatic maintenance routines based on time and use. Because of this, your machine is almost always ready to print when you need it. However, it is also a best practice to perform a nozzle check prior to printing.

It is also possible to specify the maintenance schedule (AUTO HEAD CLEAN only). For details, see page 136, “Specifying the Maintenance Schedule”.

It is also necessary for the user to perform maintenance on a regular basis. Be sure to follow the instructions described for maintenance and do not use other methods. It may cause the printer failure.

Below is a list of maintenance procedures and frequency for those that are time based.

Maintenance frequency		Maintenance item	Reference
Auto Maintenance	Every 1 hour	White ink circulation	-
	Every 3 hours	White channel cleaning	-
	Every 12 hours	All channel cleaning	-
Regular Maintenance	Every 12 hours	Agitating a white cartridge	page 185
	Daily	Refilling the cleaning liquid	page 28
	Every 3 days	Cleaning the maintenance unit and the left ink sump	page 139
		Perform JIG HEAD MAINTENANCE (CLEANING)	page 153
	Monthly	Cleaning the guide rod	page 163
		Perform JIG HEAD MAINTENANCE (NOZZLE CAPPING)	page 159
Maintenance When Needed	Clean the encoder sheet only in the following cases: • Grease or ink drops on encoder strip. • Vertical stripes appear in the printed image.	Cleaning the encoder sheet	page 174
	Perform cleaning when the cartridge is removed, such as when replacing the cartridge or when agitating the white ink cartridge.	Cleaning the cartridges and cartridge slots	page 194

IMPORTANT! Auto maintenance fails to be performed if the following conditions occur. Failure to perform Auto maintenance can result in a clogged print head. These conditions need to be cleared ASAP before auto maintenance is performed.

- Printer is powered off (always keep the printer powered on).
- Ink cartridge is missing or reading 0%.
- Waste ink tank is full.
- Encoder error and other errors.
- Any Service call message (see page 225, "Troubleshooting Guide")
- Front cover is open.
- The ink bay is opened for maintenance.

If the auto maintenance is not being performed, then the print heads can be clogged.
If Auto maintenance is prevented from happening for any reason, the messages appear. When you acknowledge by pressing [YES], the message appears again in 5 minutes if the condition that prevented auto maintenance is not cleared (empty cartridge, full waste tank etc.).

IMPORTANT! Failure to address the underlying condition that is preventing auto maintenance in a timely manner can result in head clogging. If you do not know how to clear the condition, contact technical support immediately for assistance.

There are several warning messages that pop up to alert you of conditions that need to be addressed or need to be addressed soon.

Message	Solutions
Low ink	**IMPORTANT!** If the remaining amount of white ink cartridge is less than 1%, printing will not be possible. Replace the relevant cartridge and perform a nozzle check to make sure the head is not clogged. Pressing [OK] removes the message. It reappears in 12 hours if the condition is the same.
Ink empty	**IMPORTANT!** Once an ink cartridge is empty, auto maintenance does not occur, and head clogging may occur. Pressing [OK] clears the message. It reappears in 12 hours if the cartridge is not replaced.
Waste ink bottle almost full	**IMPORTANT!** Once the waste ink bottle is full, auto maintenance does not occur, and head clogging may occur. Pressing [OK] clears the message. It reappears in 12 hours if the waste ink bottle is not emptied and reset on the control panel.
Waste ink bottle full	

Message	Solutions
Waste En bottle almost full	**IMPORTANT!** Once the waste en bottle is full, auto maintenance does not occur, and head clogging may occur.
Waste En bottle full	Pressing [OK] clears the message. It reappears in 12 hours if the waste en bottle is not emptied and reset on the control panel.
Low Cleaning liquid	**IMPORTANT!** Refill the Cleaning Liquid. If you do not have the Cleaning Liquid ready for refilling, please prepare it before the remaining amount is empty. Pressing [OK] removes the message. It reappears in 12 hours if the condition is the same.
Cleaning liquid empty	**IMPORTANT!** Refill the Cleaning Liquid. Top up with Cleaning Liquid. If you do not have cleaning liquid for replenishment, please do NOZZLE CAPPING and turn off the power until the cleaning liquid arrives.

Parts with service life warnings:

Similar messages can appear for the parts listed in the parts replacement screen. "Warning" when the life of the part is near its end and "Attention" when the part has reached its end.

IMPORTANT! Only the left ink sump and right ink sump can stop printer operation and auto maintenance when the service life count is reached. Not the other parts such as the fan filters, maintenance station, carriage unit, and ink supply units. Printer operation and auto maintenance continues when the service life is reached for these parts. A part that reaches its service life count is considered to be out of warranty.

Watching the Procedure on Video

You can watch the maintenance instruction video.

- Daily Maintenance: Agitating a White Cartridge

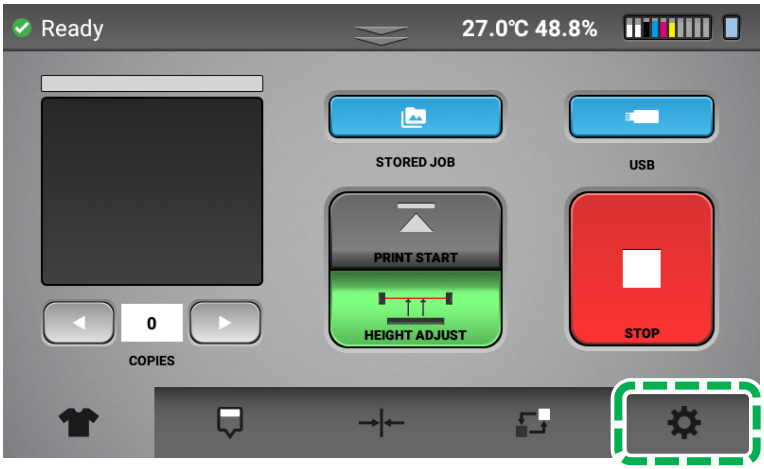
  https://vimeo.com/827424768
- Every 3 days Maintenance: Cleaning the Maintenance unit and the Left ink sump

  https://vimeo.com/827423099
- Monthly Maintenance: Cleaning the guide rods

  https://vimeo.com/827427332

To display the QR code for the maintenance instruction video, follow the steps below.

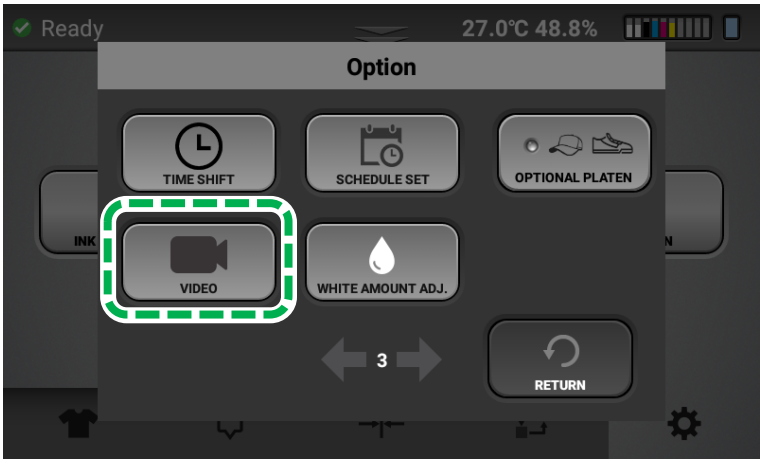
1. Press the Settings tab.



2. Press [OPTION].

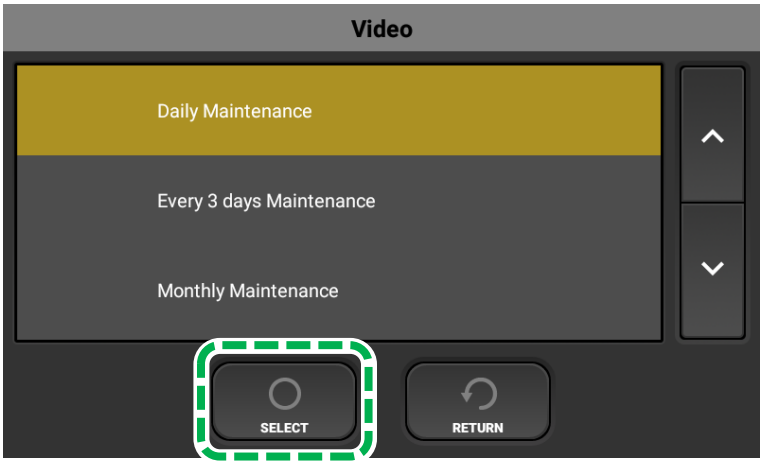
3. Press [ ] twice.

4. Press [VIDEO].



5. Select the maintenance instruction video from among [Daily Maintenance], [Every 3 days Maintenance], and [Monthly Maintenance] and then press [SELECT].

The QR code is displayed on the screen.

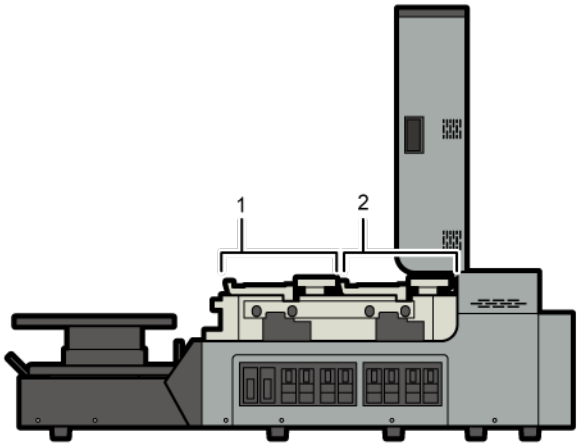


6. Start the application on the smart device, and then read the QR code.

Follow the instructions on the screen.

NOTE - To dismiss the QR code from the screen, touch the QR code. The QR code cannot be dismissed by touching other parts of the screen.

Unit Names



1. Front Unit
2. Rear Unit

3.1. Maintenance Schedule

Daily

- The machine will prompt you to agitate white cartridges every 12 hours.

  When the message appears, the white cartridges should be agitated.

  For details, see page 185, “Agitating a White Cartridge”.

- Check the cleaner tank daily. If the machine is running low on cleaning liquid, refill it.

  For details, see page 28, “Pour the Cleaning Liquid”.

Every 3 days

The machine will prompt you with the message every 3 days.

Perform maintenance after finishing all the printing for the day.

When prompted, you should perform the following:

- Clean the Maintenance unit and the Left ink sump.

  For details, see page 139, “How to Clean the Maintenance Unit and the Left Ink Sump”.

- Perform JIG HEAD MAINTENANCE (CLEANING) for the front unit.

  For details, see page 153, “JIG HEAD MAINTENANCE (CLEANING)”.

Monthly

- Grease the guide rails.

  Depending on use, once a month is OK unless using 5 days a week, 7 to 8 hours a day.

  Frequency depends on use - clean weekly if printing 30 hours or more per week.

  For details, see page 163, “How to Clean the Guide Rod”.

- Perform JIG HEAD MAINTENANCE (NOZZLE CAPPING) for the front unit.

  The ink used for this machine is prone to drying out, so leave Head Cleaning Jig II on the head nozzle for 12 hours once a month.

  For details, see page 159, “JIG HEAD MAINTENANCE (NOZZLE CAPPING)”.

3.2. NOZZLE CHECK

◆ Things to prepare

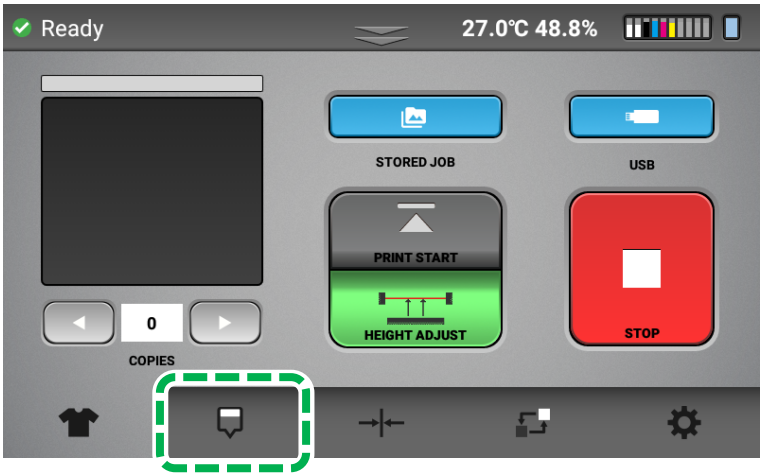
Purpose	Items
For use	Transparent A4 media

IMPORTANT! Make sure to perform a nozzle check before printing. If a nozzle is clogged, perform head cleaning until the clog is removed and reflected on the nozzle check.
You should also perform a nozzle check daily as this is a good indicator of the printing conditions and can allow any clogging issues to be address while they are minor and easily resolved.

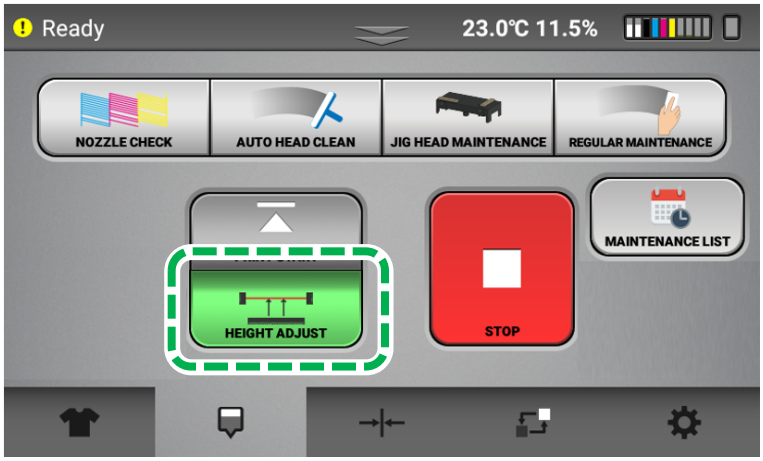
NOTE - Nozzle checks must be performed on transparent A4 media.
If any part of the transparent A4 media is curled, tape it down to avoid an obstruction detection.

NOTE - The medium sized platen (included with the printer, optional small and large tables available) must be used to perform the nozzle check.

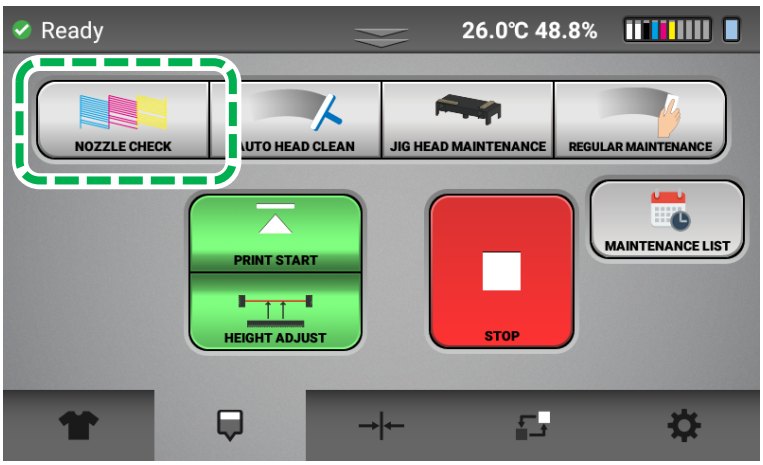
1. Press the Maintenance tab.



2. Set the transparent media, and press [HEIGHT ADJUST].



3. Press [NOZZLE CHECK].

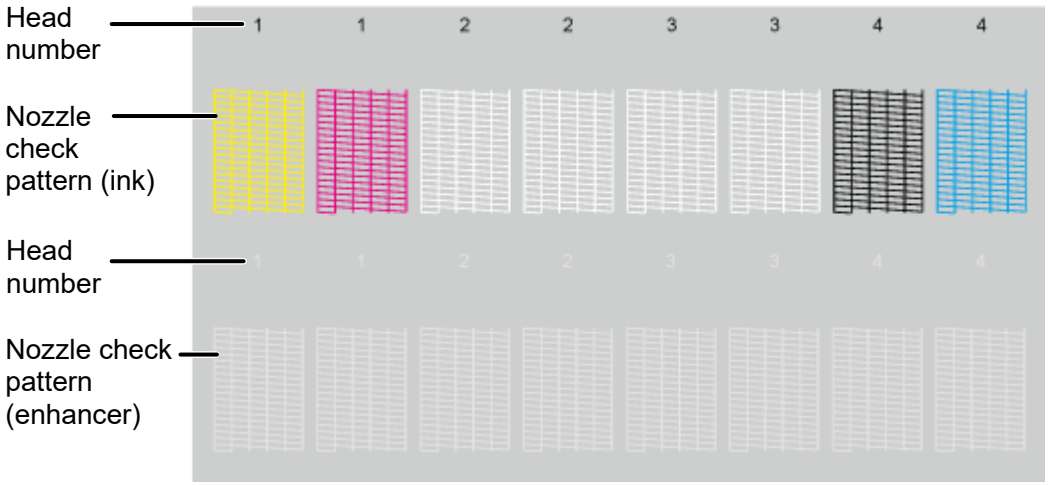


4. Press either [ENHANCER] or [INK] or both.

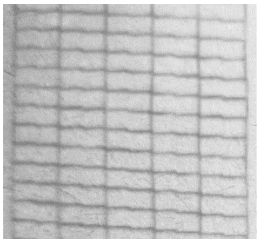
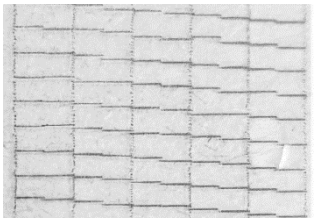
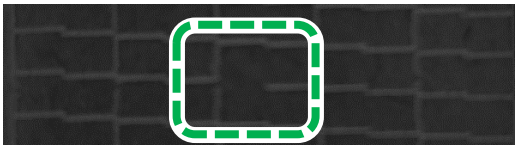
5. Press [PRINT].

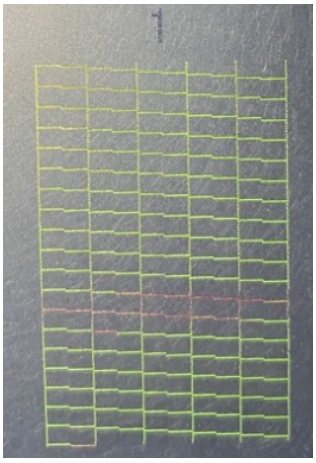
The nozzle check pattern of the selected printer head is printed.

6. Check the results of the printed nozzle check pattern.



In your nozzle check please check for the following and take the appropriate steps:

Nozzle Check Pattern	Description
	Perfect Nozzle Check
	Nozzle Deflection: When horizontal lines are uneven
	Clogged Nozzle: When the horizontal lines have small or minor gaps

Nozzle Check Pattern	Description
	Color mixture error: Other colors are mixed in the nozzle. (In the photo, magenta is mixed in the yellow nozzle.) If a color mixture error occurs, clean the inside of the suction cap on the maintenance unit with a cleaning applicator thoroughly dampened with cleaning liquid. For details, see page 143, “Cleaning the Maintenance Unit and the Left Ink Sump”.

As a general rule: A missing nozzle in the CMYK channels may show in some prints while a few missing nozzles in the white channels does not affect the prints.

7. If there is a problem with the nozzle check pattern, check the head number for that nozzle check pattern. Then, perform AUTO HEAD CLEAN for the head of that number.

For details about the AUTO HEAD CLEAN, see page 133, “AUTO HEAD CLEAN”.

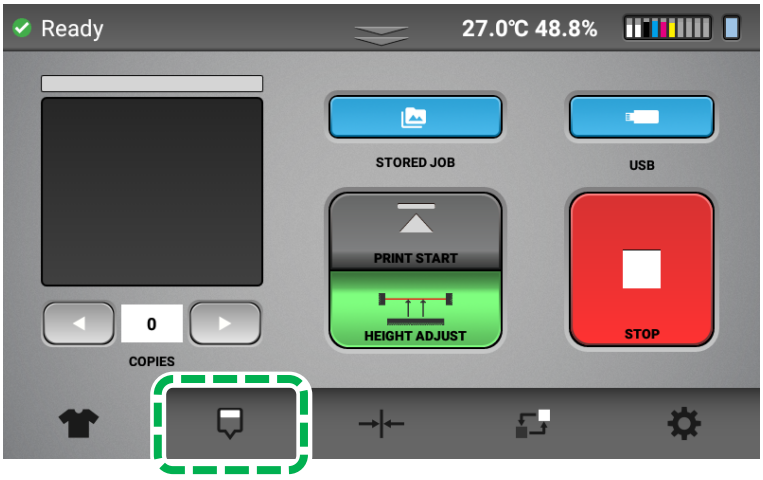
3.3. AUTO HEAD CLEAN

⚠WARNING

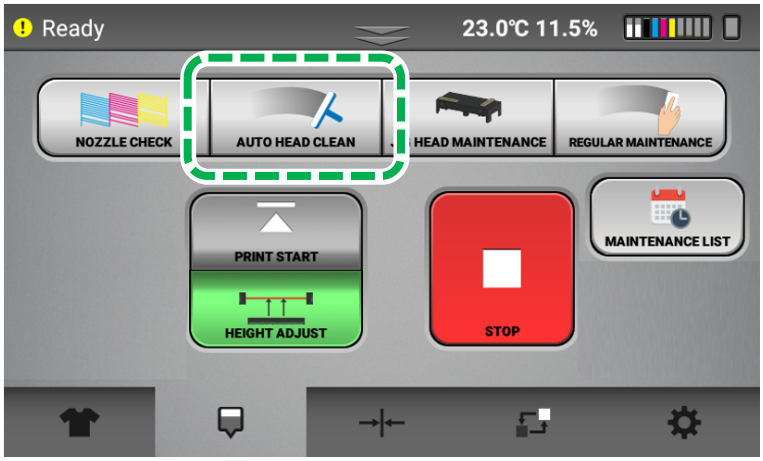
- "STRONG" head cleaning will use more ink than the "NORMAL" head cleaning. Use only as needed.

IMPORTANT! Waste liquid may get caught in the waste tube due to the drooping of the waste tube. When this is the case, AUTO HEAD CLEAN cannot be executed properly, so make in advance sure that the waste tube is not drooping.

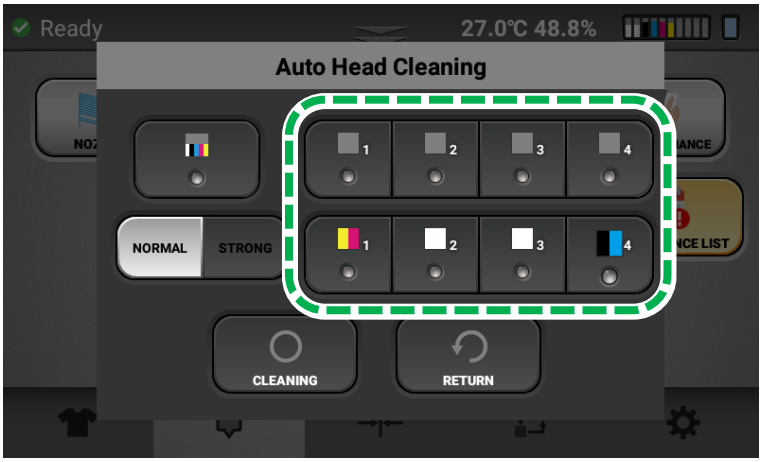
1. Press the Maintenance tab.



2. Press [AUTO HEAD CLEAN].

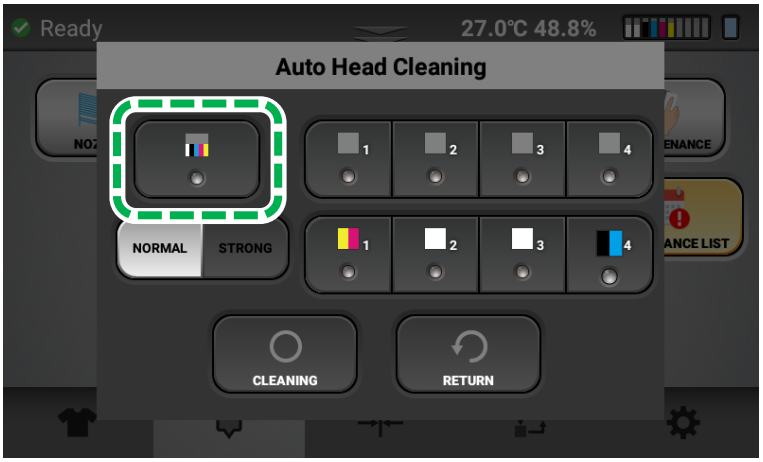


3. Press the head number to clean.

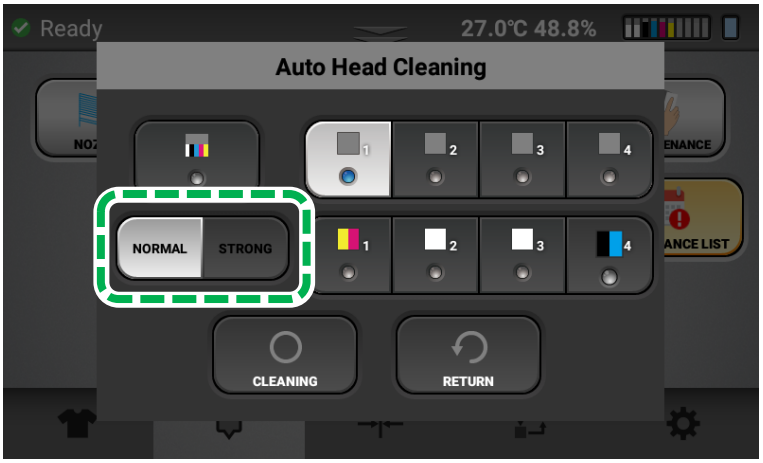


You can select multiple heads.

To clean all heads, press the button for all heads.



4. Press [NORMAL] or [STRONG].



NORMAL: For small or minor missing nozzles in the nozzle check.

STRONG: For large missing nozzles in the nozzle check.

NOTE - After performing the normal cleaning, if the nozzle condition is not recovered, proceed to using the "STRONG" head cleaning option.

"STRONG" head cleaning is the best to resolve deflection.

5. Press [CLEANING].

6. Perform a nozzle check.

If you perform a nozzle check and discover nozzle clogging persisting in any print head, check the number of that print head.

7. In accordance with Steps 1 to 5, select the head still affected by nozzle clogging and perform the cleaning again.

If the problem persists even by using [NORMAL], execute [STRONG] cleaning.

If nozzle clogging persists even after you execute [STRONG] cleaning multiple times (3 to 5 times), execute JIG HEAD MAINTENANCE (CLEANING).

If nozzle clogging persists even after you execute JIG HEAD MAINTENANCE (CLEANING), execute JIG HEAD MAINTENANCE (NOZZLE CAPPING).

NOTE -

- As a rule, most missing nozzle issues can be resolved by "NORMAL" head cleaning.
- Nozzles tend to drop out more in dryer environments. This is why it is best to keep the humidity levels at 45% or more.
- If the problem persists, see page 225, “Troubleshooting Guide”.

Specifying the Maintenance Schedule

Specify the schedule to execute automatic maintenance.

Although the printer periodically executes automatic maintenance, you can specify the schedule to execute it when not using the printer in order to reduce loss of time caused by automatic maintenance executed during printer operation.

You can specify up to 3 sets of schedules.

This machine is set to UTC time zone by default, so the date and time for scheduling must also be specified in UTC time. It is also possible to specify the local time in [TIME SHIFT]. For details, see page 46, "[TIME SHIFT]" in Settings Tab.

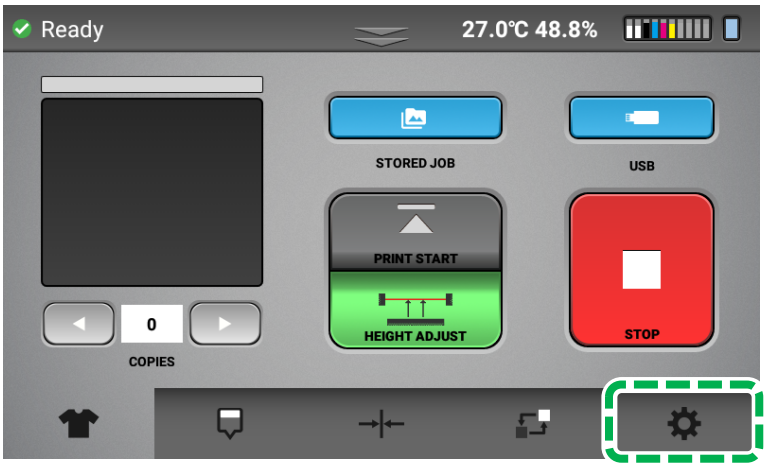
Setting time is maintenance start time and it takes 2 to 3 minutes to finish, and after that, the following automatic maintenance will periodically execute.

Every 1 hour White ink circulation

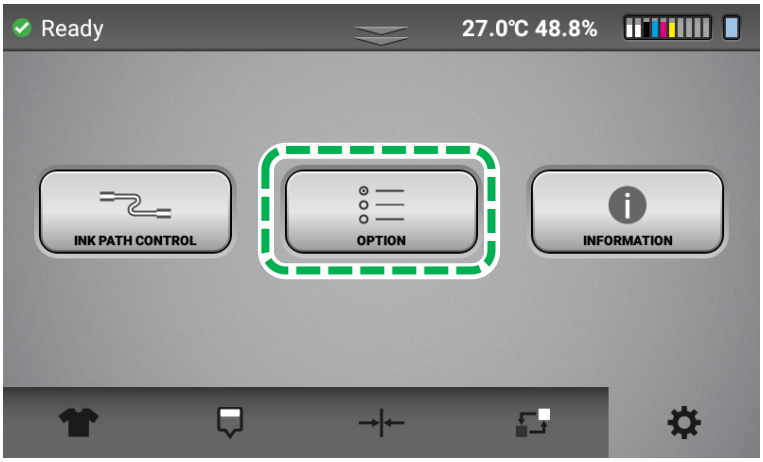
Every 3 hours White channel cleaning

Every 12 hours All channel cleaning

1. Press the Settings tab.

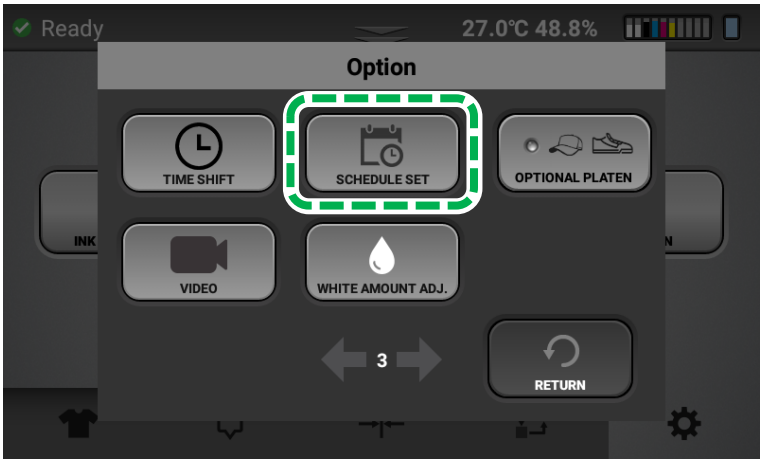


2. **Press [OPTION].**



3. **Press [▶] twice.**

4. **Press [SCHEDULE SET].**



5. **Select the list on which to register the schedule.**

6. **Press [DAILY] or [DATE].**

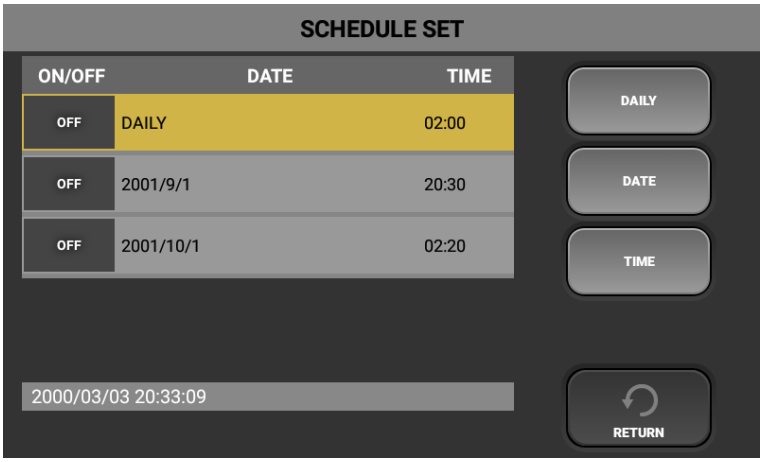
   If you have selected [DAILY], proceed to Step 8.

7. **Specify the date, and then press [OK].**

8. **Press [TIME].**

9. **Specify the time, and then press [OK].**

10. Set [ON/OFF] for the specified schedule to [ON] in order to enable it.



11. Press [RETURN].

Keep pressing [RETURN] to reach the page you want to return to.

NOTE - In case of executing maintenance according to a specified schedule between the regular auto maintenance cycle, the machine starts counting the time until the next scheduled auto maintenance after the maintenance is completed.

3.4. How to Clean the Maintenance Unit and the Left Ink Sump

Clean only the front unit. The rear unit does not need to be cleaned.

IMPORTANT! Do not clean the rear unit with an ink-stained cleaning applicator or clean the front unit with an enhancer-stained cleaning applicator. Doing so may cause the printer to malfunction.

◆ Things to prepare

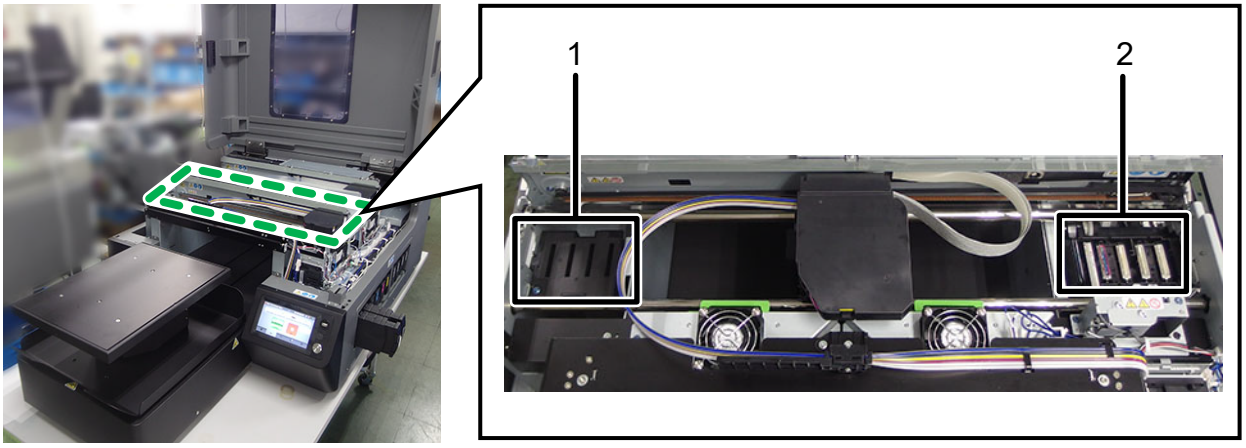
Purpose	Items
To wear	Polyethylene gloves
	Protective glasses or goggles (commercially available)
For use	Cleaning Applicator
	Cleaning Liquid*
	Dropper

* Move the cleaning liquid to use to the bottle for cleaning liquid.

◆ Cleaning times

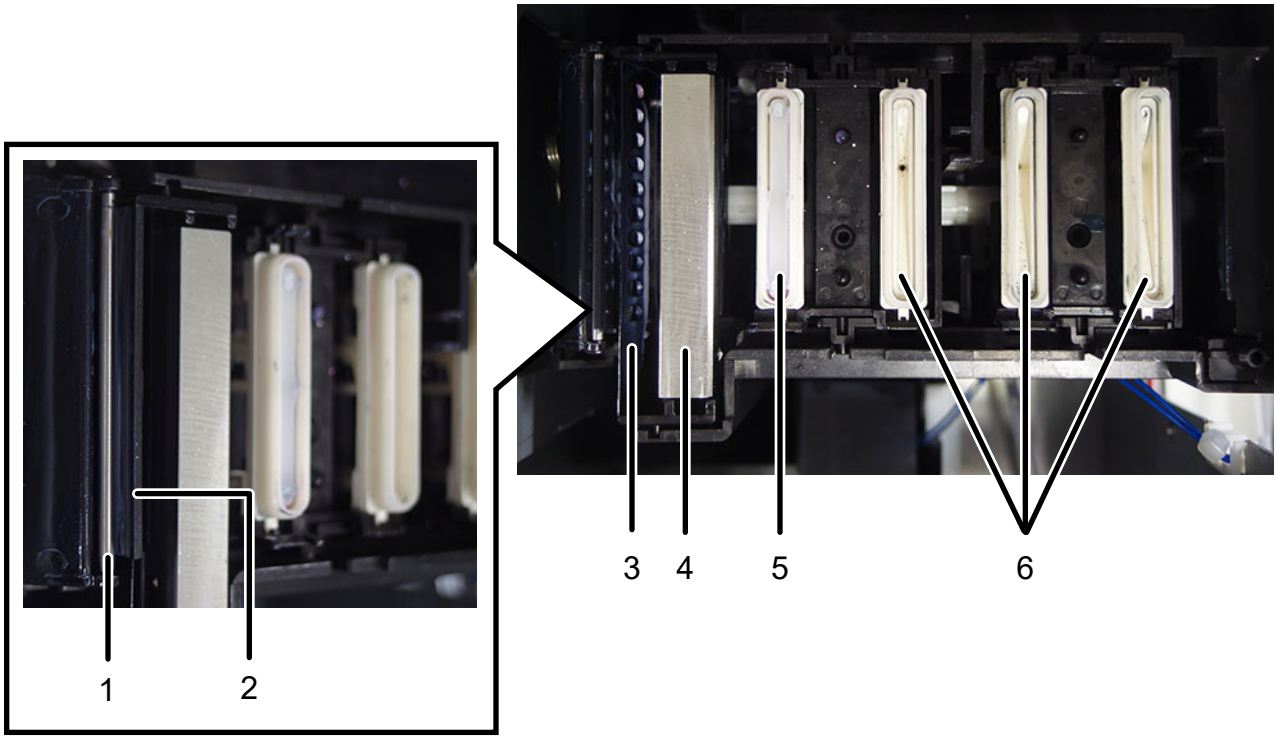
About 10 minutes

◆ Guide to parts



1. Left ink sump
2. Maintenance unit

Maintenance unit



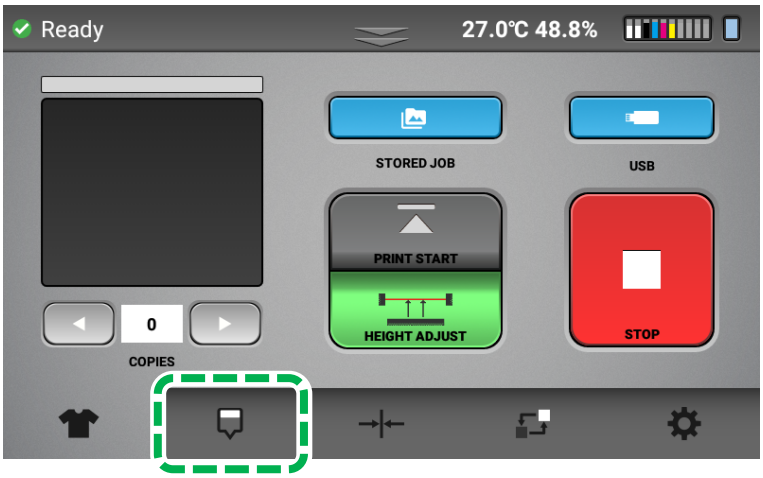
1. Roller
2. Wiper
3. Scraper
4. Wiper cleaner
5. Suction cap
6. Moisturizing cap

◆ Video instruction

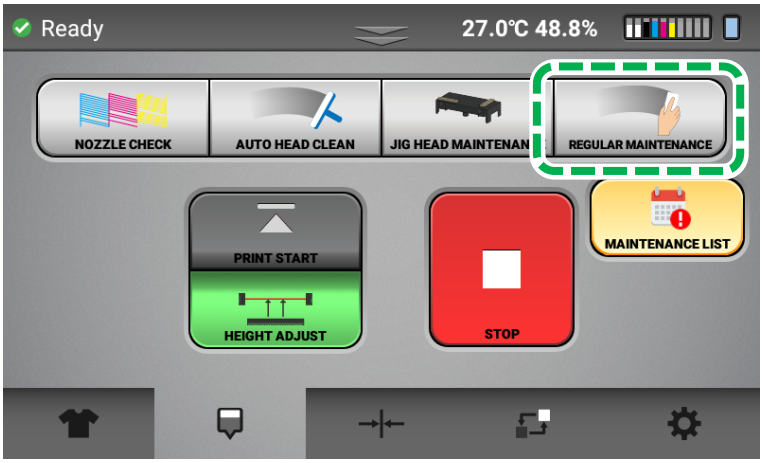
You can watch the maintenance instruction video. For details, see page 125, “Watching the Procedure on Video”.

Start REGULAR MAINTENANCE

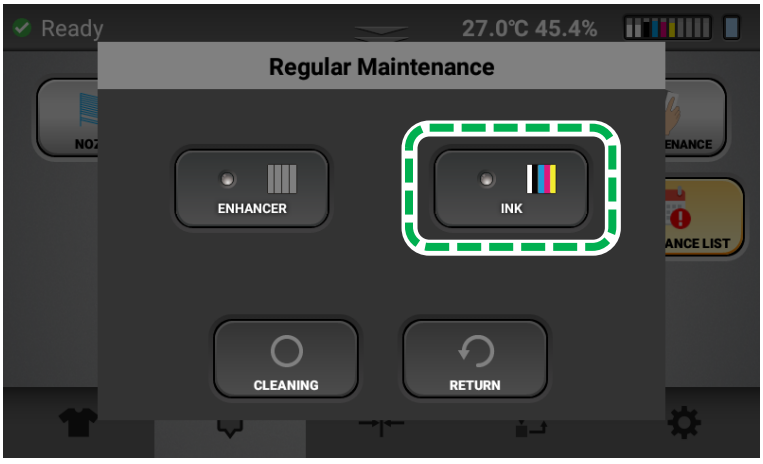
1. Press the Maintenance tab.



2. Press [REGULAR MAINTENANCE].



3. Press [INK].



4. **Press [CLEANING].**

The carriage moves to the center position.

Cleaning the Maintenance Unit and the Left Ink Sump

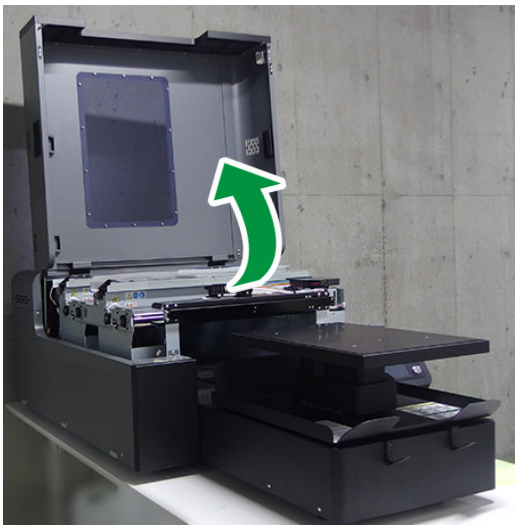
⚠CAUTION

- Do not rub too strongly. Do not wipe in areas other than indicated.

  There is a possibility that parts may become damaged, deformed, or detached.

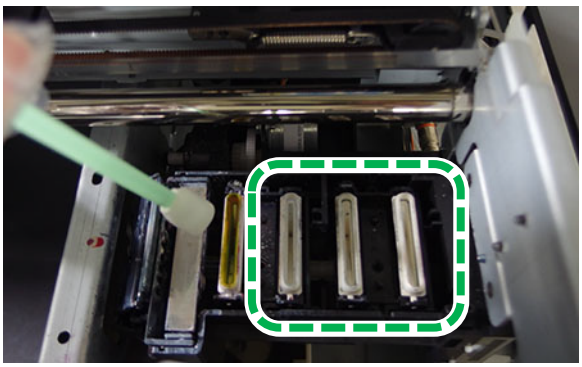
  If there are parts breakage, deformation, or detachment occurs, it may cause a machine failure.
- If the Maintenance unit is not cleaned sufficiently, it may cause nozzle clogging. Be sure to remove the clogging toner and lint.

1. Open the front cover.



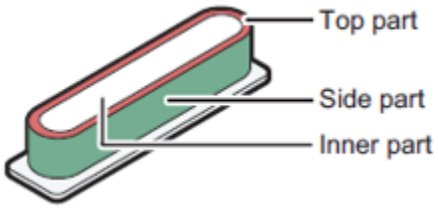
2. Clean the Moisturizing Caps.

Clean with cleaning applicators thoroughly dampened with cleaning liquid.

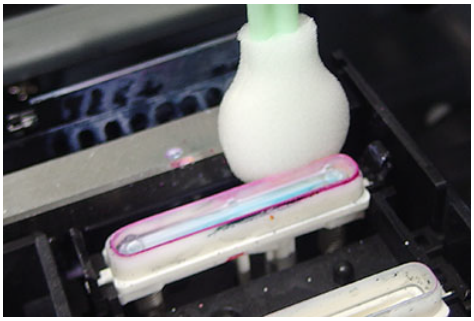


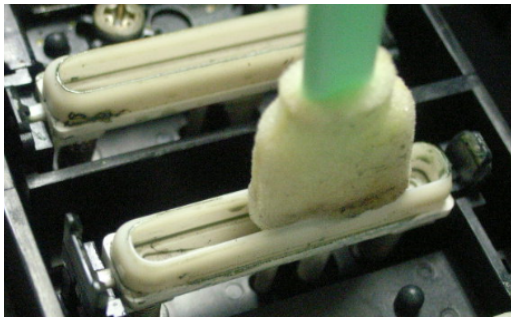
IMPORTANT! Do not deform or scratch the caps. Deformation and scratches may cause troubles.

Especially, wipe the top part gently and carefully.

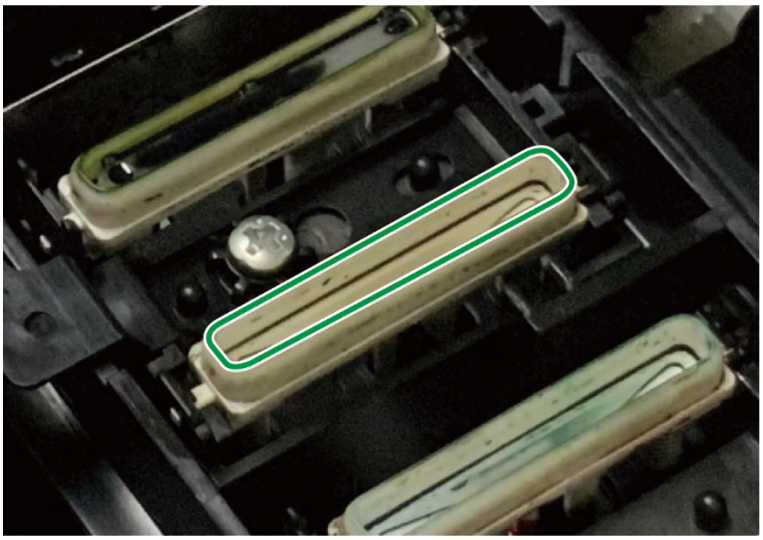


Example of how to apply the Cleaning Applicator:

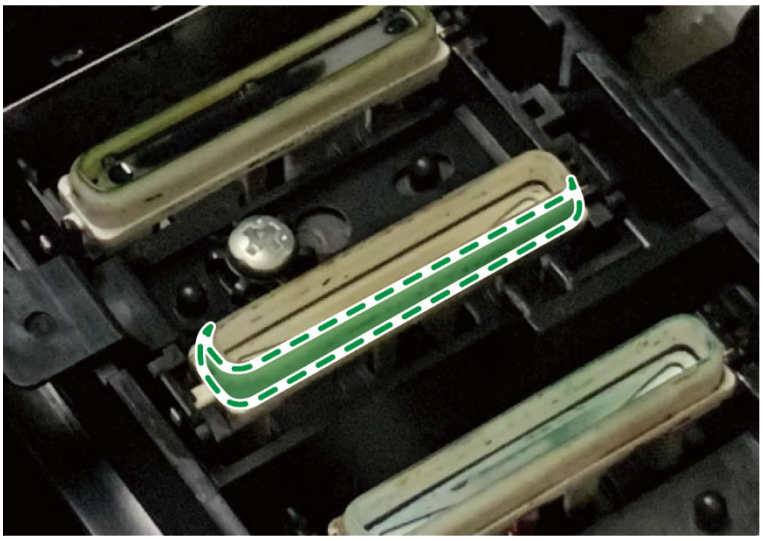




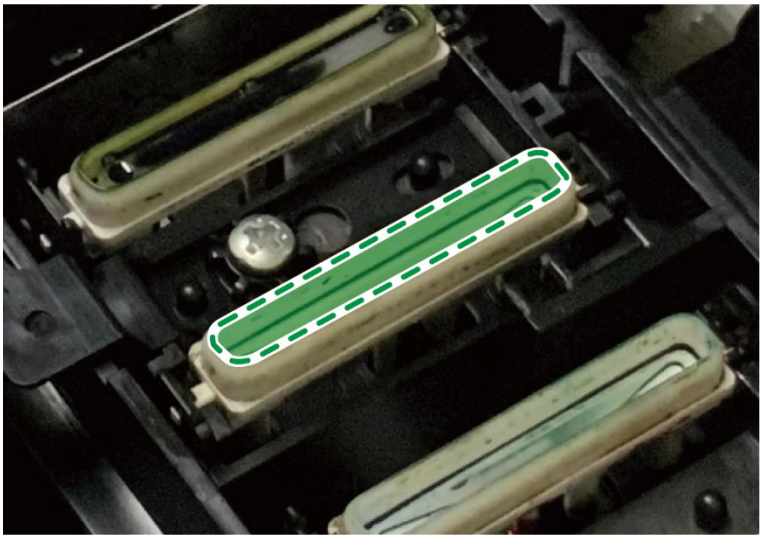
1. Gently wipe off the top part.



2. Gently wipe off the side part.

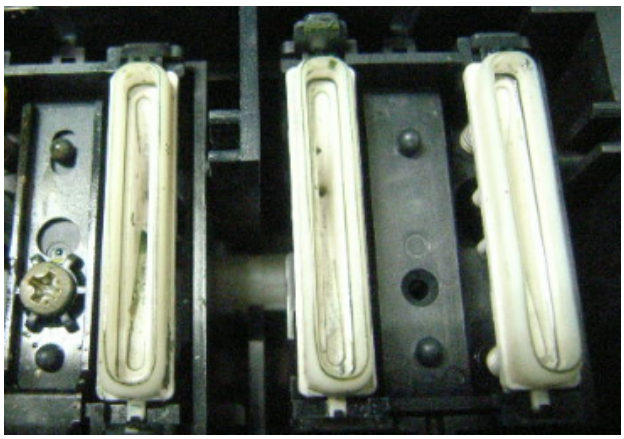


3. Gently wipe off the inner part.

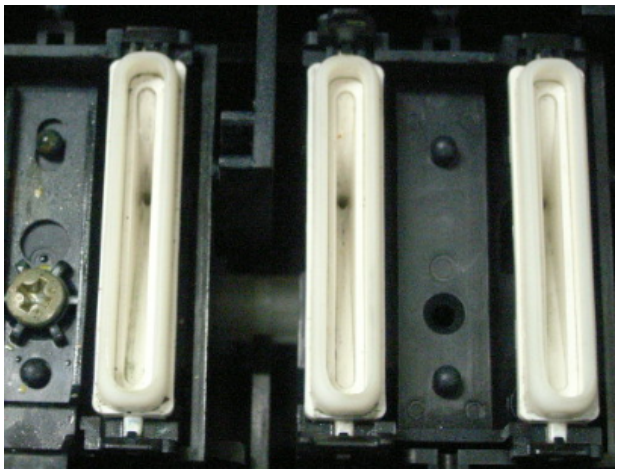


Example of the dirt level after cleaning.
Following pictures shows an example before and after cleaning.

Before



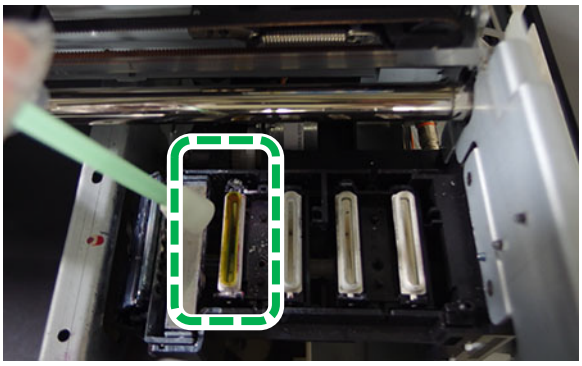
After



- Make sure that the solidified ink has not accumulated at the rim of the cap.

3. Clean the Suction Cap.

Clean with cleaning applicators thoroughly dampened with cleaning liquid.



1. The method of cleaning the Suction Cap is the same as the cleaning method for the Moisturizing Caps.

   However, there is a vacuum cap inset inside the cap. Clean it carefully so as not to shift or detach this part. Be sure to return the parts when the parts inside the cap are displaced or removed. Press down until the spring bottoms out. If parts are not returned properly, nozzle clogging could occur.

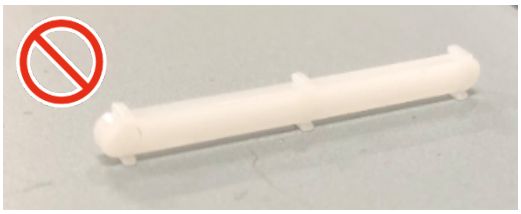
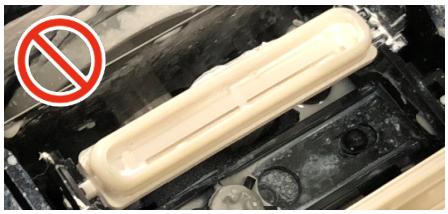
   If the suction part comes off

   While being careful of the following points, fit the suction part inside the suction cap.

   - Suction parts have specific orientations.

     Protrusions point upward:

Protrusions point sideways:

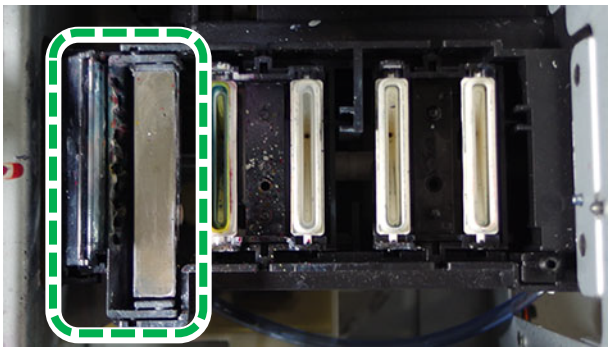



- Insert inside the cap.

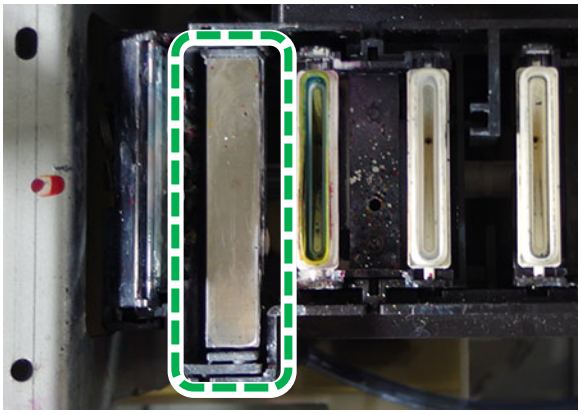
2. Wipe off any excess cleaning liquid with a dry applicator if necessary.

   For parts inside the Suction Cap, it is necessary that the solid ink or the stuck ink is removed.

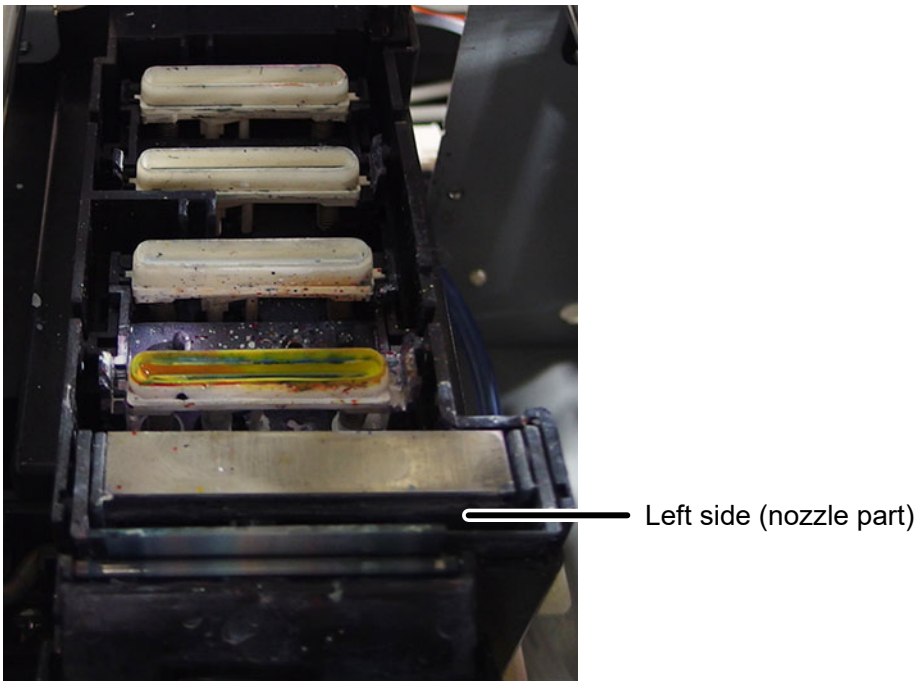
4. Clean the Wiper and Wiper Cleaner.



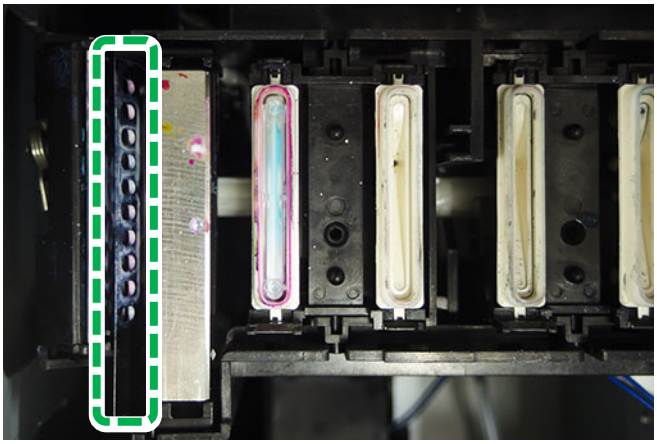
1. Clean the top of the Wiper Cleaner.



2. Clean the left side (nozzle part) of the wiper cleaner.

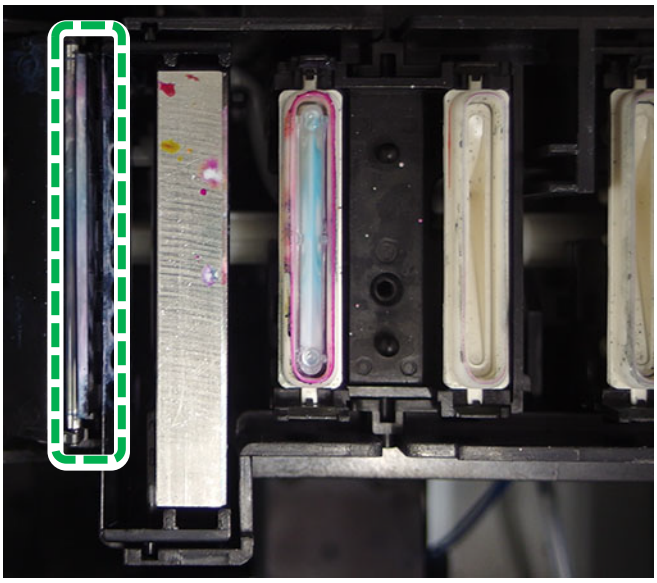


3. Clean the top part and right sides (nozzle parts) of the scraper.



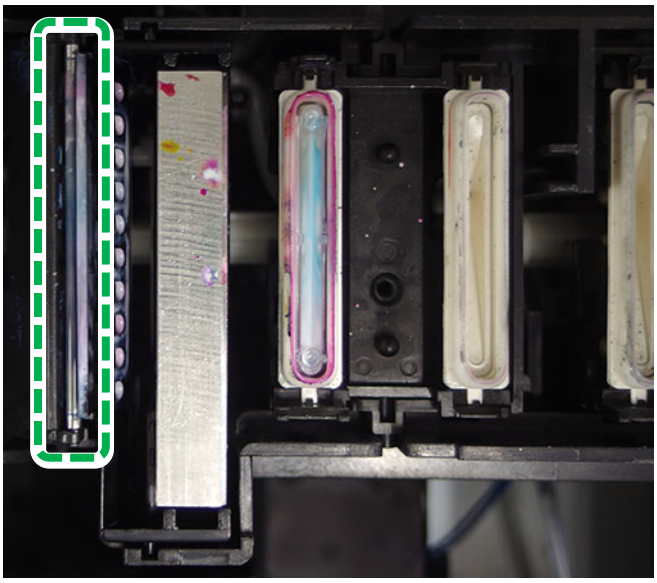
4. Clean the Wiper.

Clean the front and back surfaces and the upper surface of the Wiper (rubber plate part surrounded).

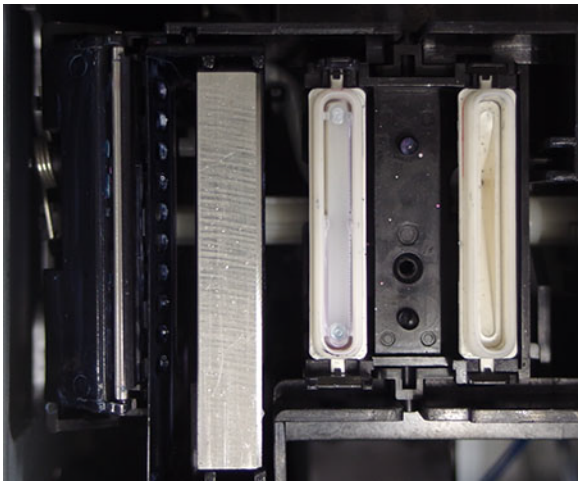


5. Clean up the Roller.

Rotate the roller, move the Cleaning Applicator back and forth, and then wipe the entire circumference.

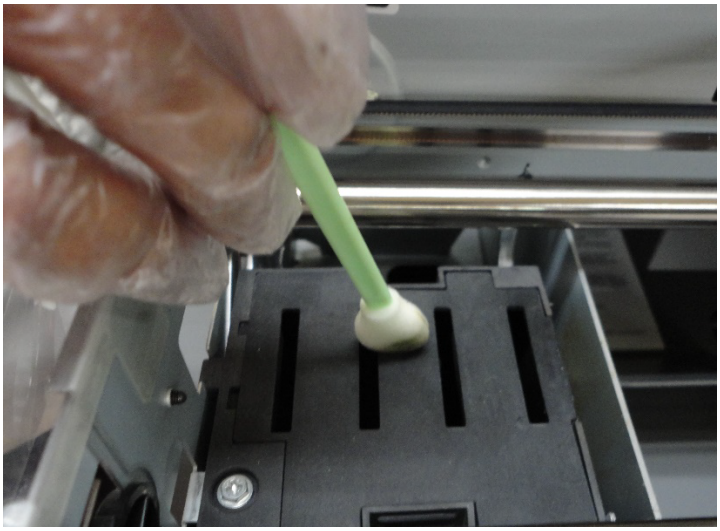


Following picture shows the removal of dirt at this level after cleaning of the Wiper and the Wiper Cleaner as described above.



- Clean until the surface of the roller, wiper, and wiper cleaner are completely visible.

5. Clean the left ink sump.



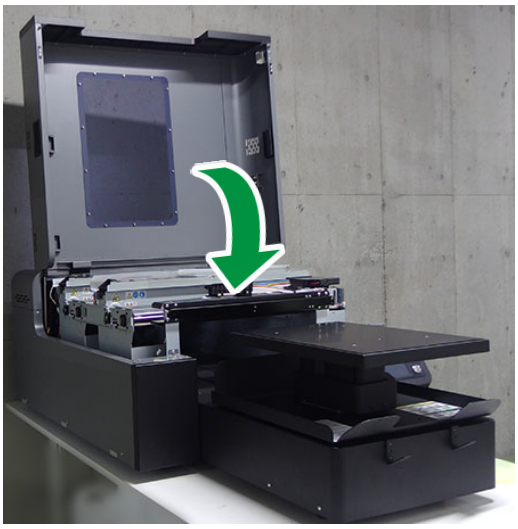
If the top of the left ink sump or left ink sump is dirty with ink, clean it with a cleaning applicator.

After wiping off, do not leave ink on the top of the Left ink sump.

NOTE - Do not put the cleaning liquid remaining after use into the machine's cleaner tank or back into the cleaner bottle.

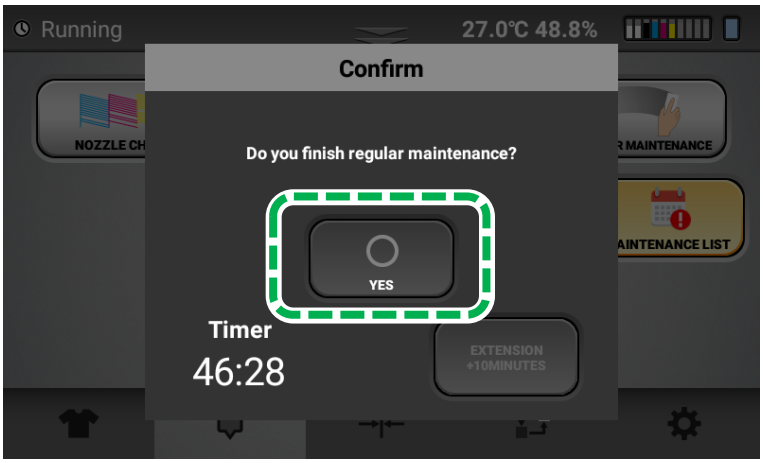
Ending the maintenance

1. Close the front cover.



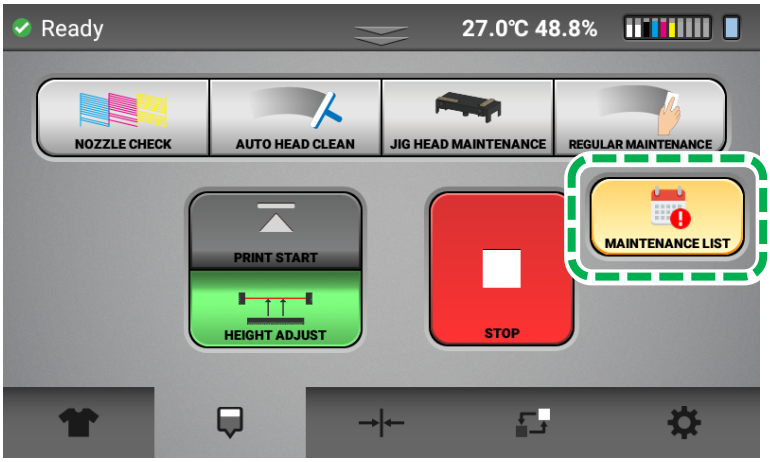
2. Press [YES].

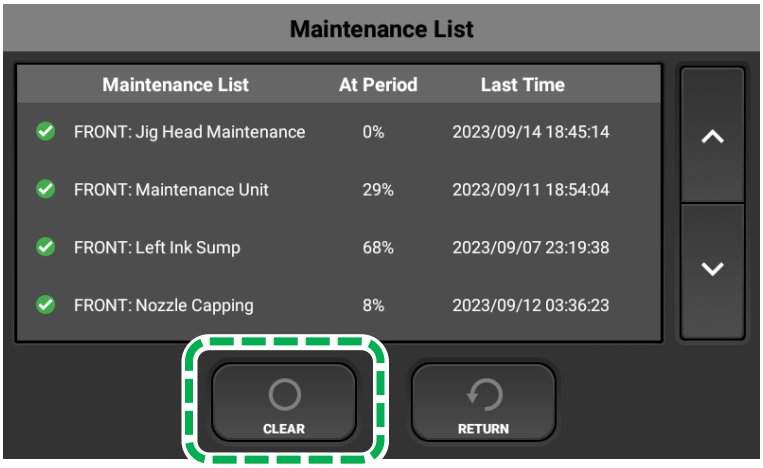
The carriage moves to the right end, and the Head is capped.



IMPORTANT! If encoder errors are frequent and require cleaning often, the encoder may need more thorough cleaning. Contact technical support for guidance on how to clean the encoder more thoroughly.

3. **Press [MAINTENANCE LIST], select the cleaned item, and press [CLEAR].**





4. **After completion of cleaning, perform AUTO HEAD CLEANING (recommended).**

This prevents the ink from drying out and clogging the nozzles.

For details about AUTO HEAD CLEAN, see page 133, “AUTO HEAD CLEAN”.

After completion, it is recommended to print the Nozzle Check and check that the ink discharge is normal.

3.5. JIG HEAD MAINTENANCE

JIG HEAD MAINTENANCE (CLEANING)

Use a jig to clean the head automatically.

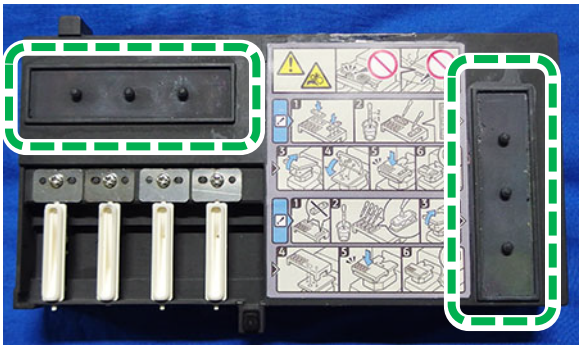
◆ Things to prepare

Purpose	Items
To wear	Polyethylene gloves
For use	Head Cleaning JIG II
	Absorbers (Type P1) (2)
	Cleaning liquid*
	Dropper
	Cleaning cloth

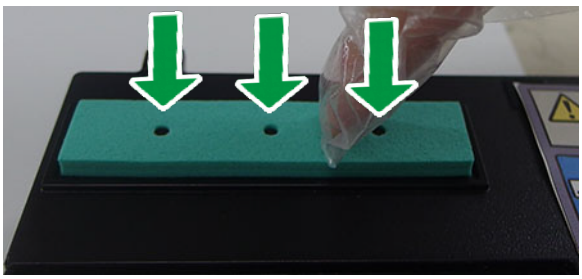
* Move the cleaning liquid to use to the bottle for cleaning liquid.

1. Place the Head Cleaning JIG II on a flat desk.

2. Set the 2 absorbers (Type P1) to the Head Cleaning JIG II.



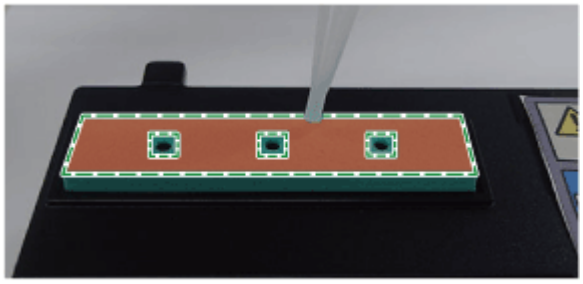
3. Push in the three holes on the absorber (Type P1) by finger.



The absorber (Type P1) can be either side up.

4. Soak up the cleaning liquid up to the 2 scales of the dropper.

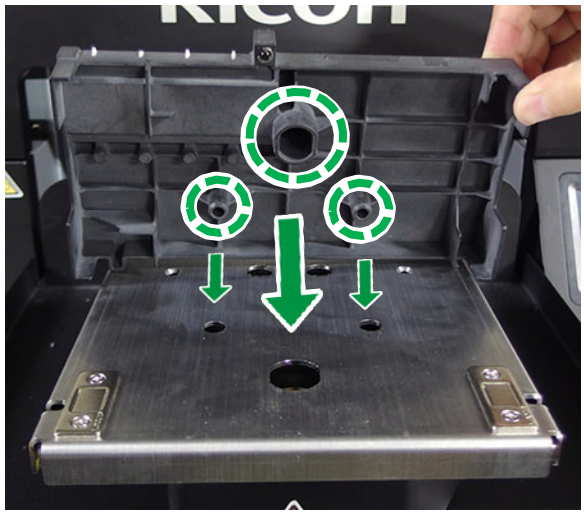
5. Apply 2 scales of cleaning liquid to the area shown below on the absorber (Type P1).



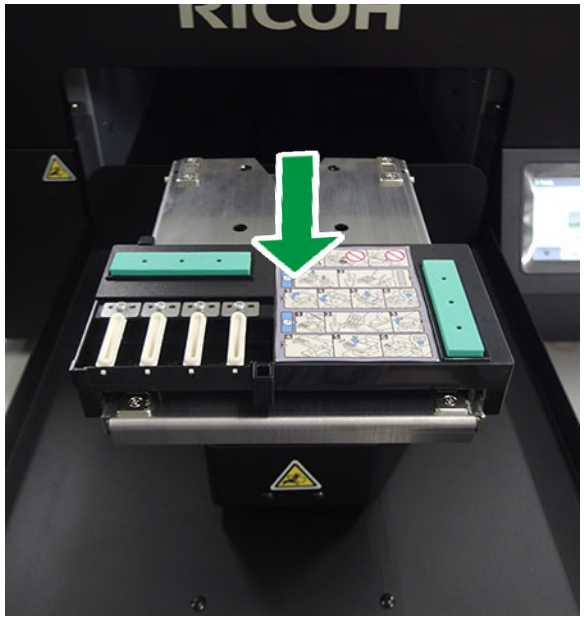
6. Repeat Step 4 and 5 to apply cleaning liquid to another absorber (Type P1).

7. Remove the platen and platen frame from platen base.

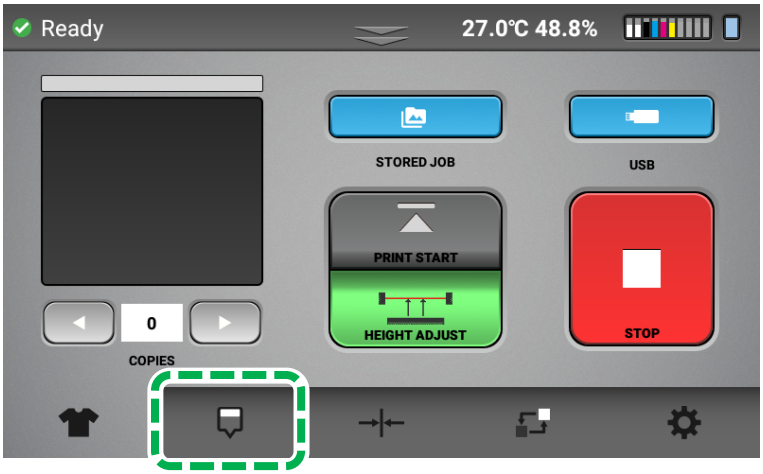
8. **Insert the protrusion on the back of the Head Cleaning JIG II into the hole on the platen base.**



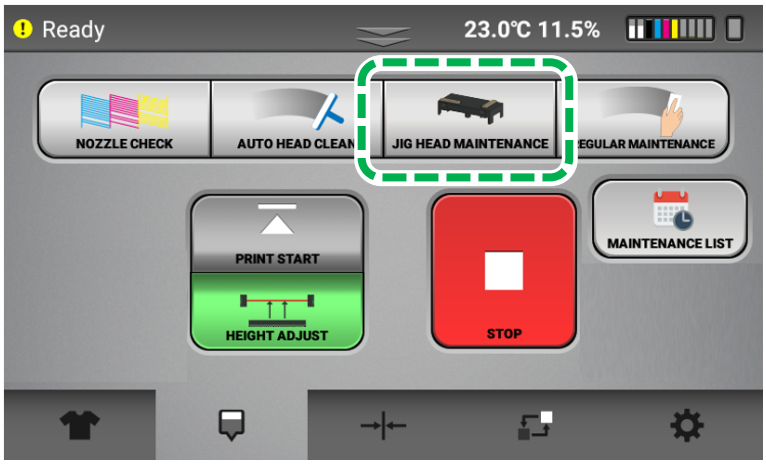
Securely insert it all the way in.



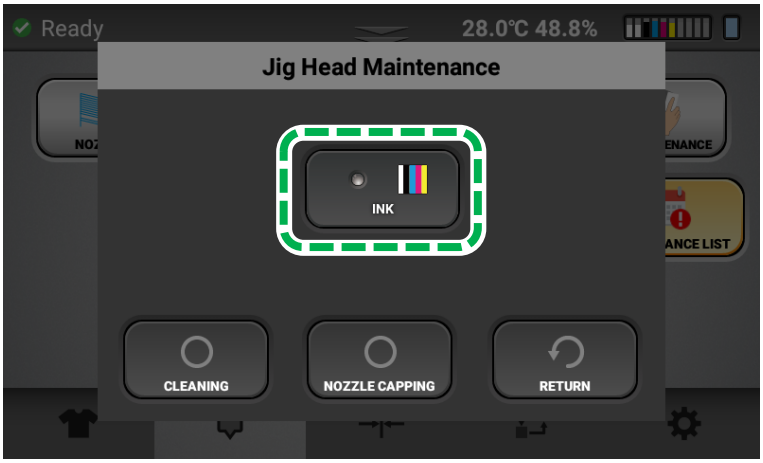
9. Press the Maintenance tab.



10. Press [JIG HEAD MAINTENANCE].



11. Press [INK].



12. Press [CLEANING].

13. Check the message, and then press [START].

The platen, with its Head Cleaning JIG II, moves into the machine and starts cleaning the selected head.

When the first cleaning is completed, a confirmation message will be displayed.

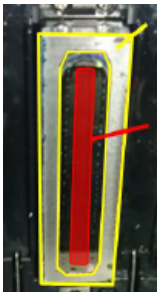
If any ink deposits are hanging from the nozzle cover, remove them with a dry cleaning applicator.

14. Press [OK].

When the cleaning is completed, a confirmation message will be displayed.

If solidified ink or lint is hanging from the nozzle cover, remove it with a dry cleaning applicator. Press [YES] after checking that the nozzle cover is not stained.

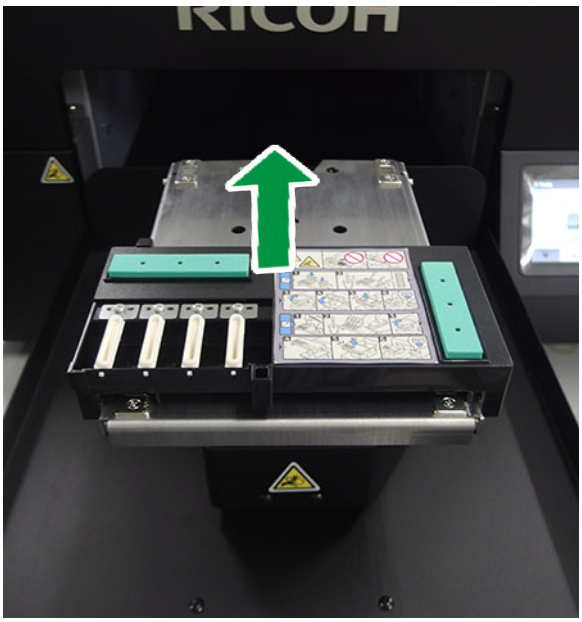
Be careful not to touch the area indicated in red. Doing so may cause nozzle clogging.



IMPORTANT! Use a dry cleaning applicator. If the cleaning applicator is wet, cleaning liquid may enter the print head, causing print head failure.

15. Press [YES].

16. Remove the Head Cleaning JIG II from the platen.



17. **Remove the absorber (Type P1) from the Head Cleaning JIG II.**

    Discard the used absorbers (Type P1)-do not reuse them.

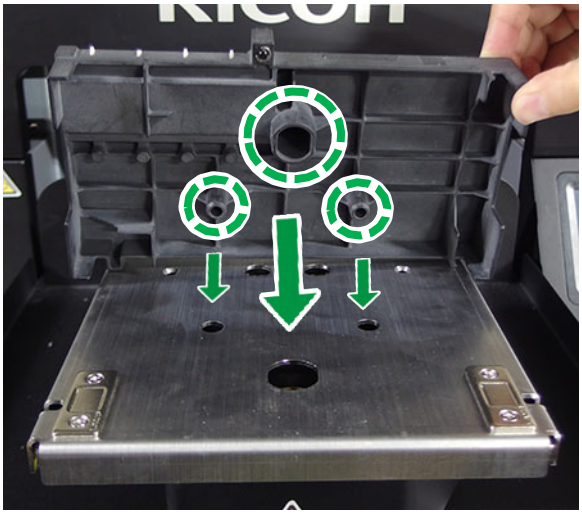
18. **Clean the Head Cleaning JIG II using a cloth.**

19. **Attach the platen and platen frame to the platen base.**

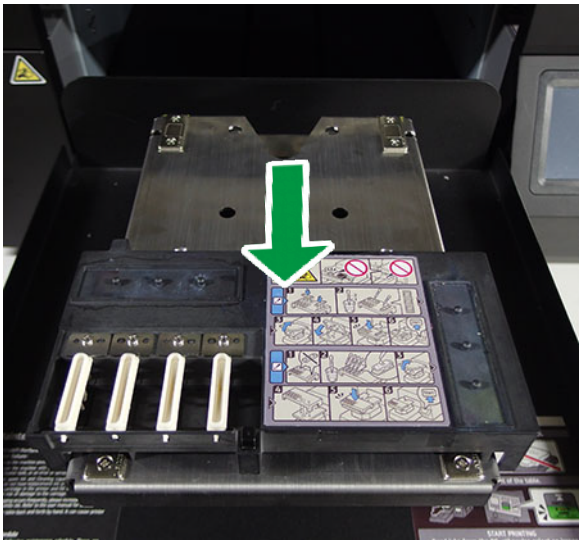
JIG HEAD MAINTENANCE (NOZZLE CAPPING)

The ink used for this machine is prone to drying out, so leave Head Cleaning Jig II on the head nozzle for 12 hours once a month.

1. **Remove the platen and platen frame from platen base.**
2. **Insert the protrusion on the back of the Head Cleaning JIG II into the hole on the platen base.**



Securely insert it all the way in.

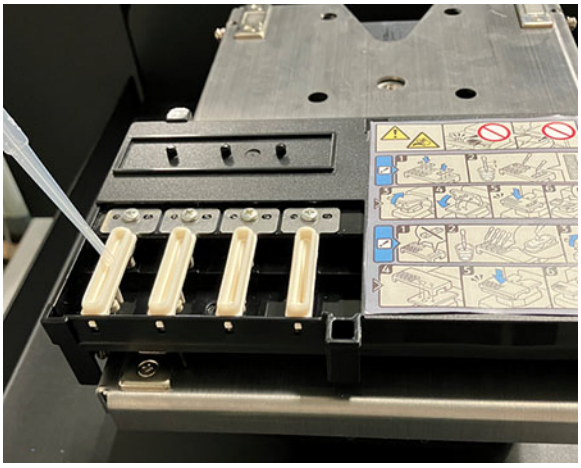


3. Fill all the caps of head cleaning jig II with cleaning liquid using a dropper.

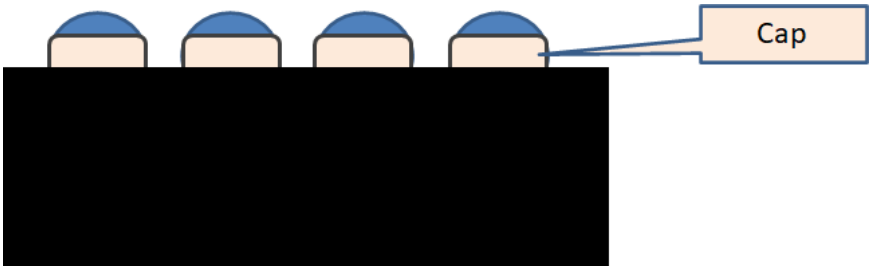
IMPORTANT! Do not place the bottle for cleaning liquid on the platen during operation. If the cleaning liquid spills onto the platen, it will cause machine failure.

1. Draw up approximately 2 ml of cleaning liquid from the bottle for cleaning liquid.

2. Place approximately 1 ml of the cleaning liquid drawn using the dropper into the cap.



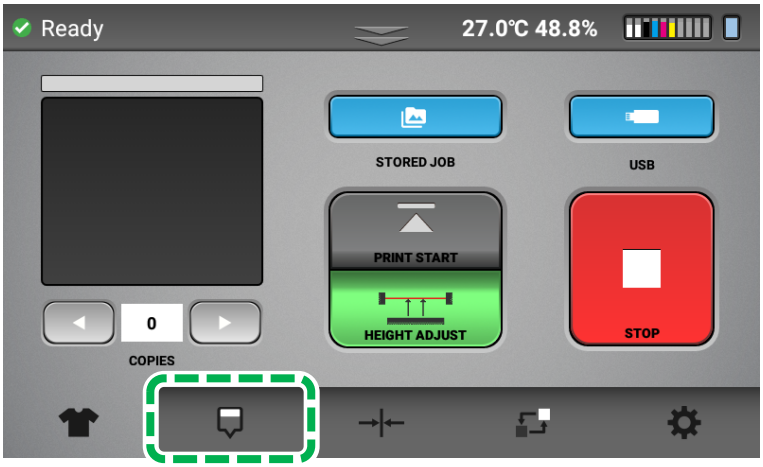
After adding approximately 1 ml of the cleaning liquid, release the remaining liquid from the dropper one drop at a time into the cap until the liquid level is raised slightly above the rim of the cap when viewed from the side, as shown in the illustration below.



This should be done for all caps.

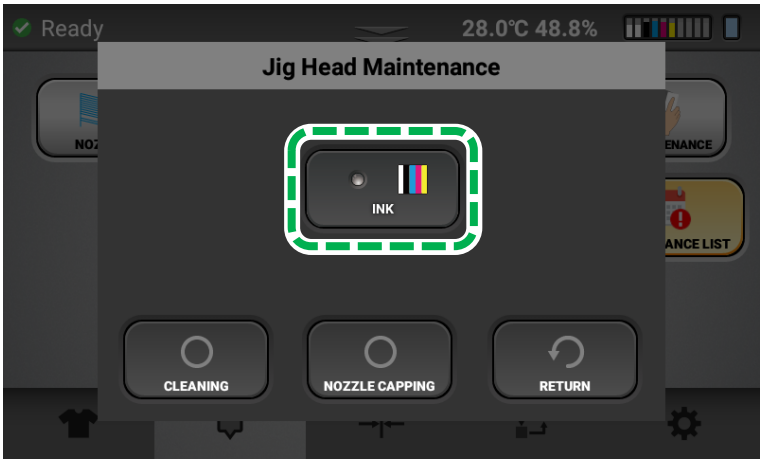
If bubbles are generated, please use a dropper to suck out the bubbles, as they may not protect the head properly.

4. **Press the Maintenance tab.**



5. **Press [JIG HEAD MAINTENANCE].**

6. **Press [INK].**



7. **Press [NOZZLE CAPPING].**

8. **Check the message, and then press [START].**

9. **Clean the Maintenance Unit.**

   For details about how to clean, see page 139, "How to Clean the Maintenance Unit and the Left Ink Sump".

10. **Check the message, and then turn off the power.**

11. **After leaving the machine idle for 12 hours, turn the power on.**

    When the power is turned on, Head Cleaning JIG II automatically comes off, and then Head Cleaning JIG II and the platen return to their original positions.

12. **Remove the Head Cleaning JIG II from the platen.**

13. **Clean inside the cap of the Head Cleaning JIG II by using clean water and wiping it with a cloth, making sure that there is no ink remaining inside the cap. Wipe the Head Cleaning JIG II too with a dry cloth.**

14. **Attach the platen and platen frame to the platen base.**

15. **Perform AUTO HEAD CLEANING.**

    For details about AUTO HEAD CLEAN, see page 133, “AUTO HEAD CLEAN”.

3.6. How to Clean the Guide Rod

Clean both the front unit and rear unit.

IMPORTANT! When you perform maintenance of the front unit and rear unit, do not use the same cleaning applicator or lint free wipe for both of them. Always use a cleaning applicator or lint free wipe separately for each of the front unit and rear unit. It may cause the printer failure.

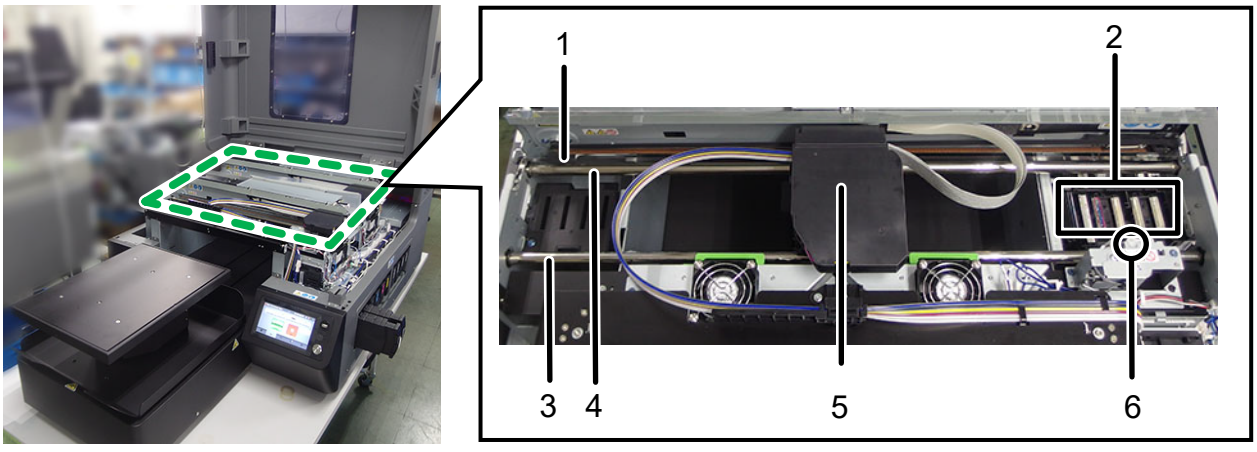
◆ Things to prepare

Purpose	Items
To wear	Polyethylene gloves
	Protective glasses or goggles (commercially available)
For use	Cleaning Applicator
	Dropper
	Grease
	Lint Free Wipes
	Transparent sheets such as OHP transparencies (commercially available)

◆ Cleaning times

About 20 minutes (per carriage)

◆ Guide to parts



1. Encoder sheet
2. Maintenance unit

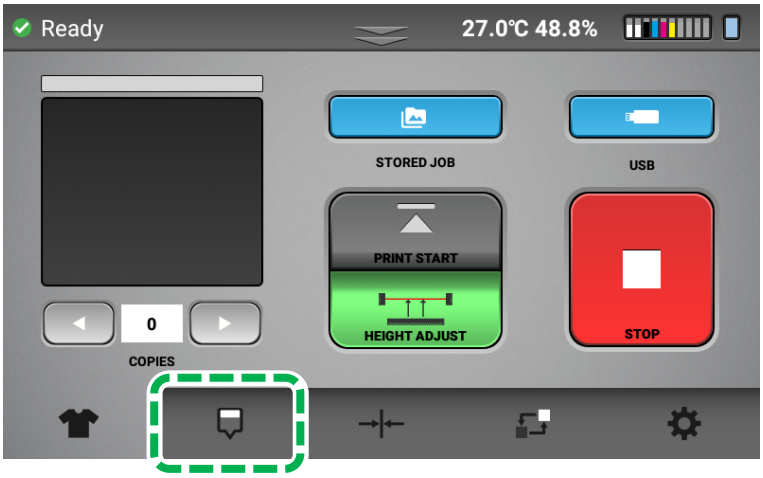
3. Guide rod: front
4. Guide rod: main
5. Carriage
6. Filler sensor

◆ Video instruction

You can watch the maintenance instruction video. For details, see page 125, “Watching the Procedure on Video”.

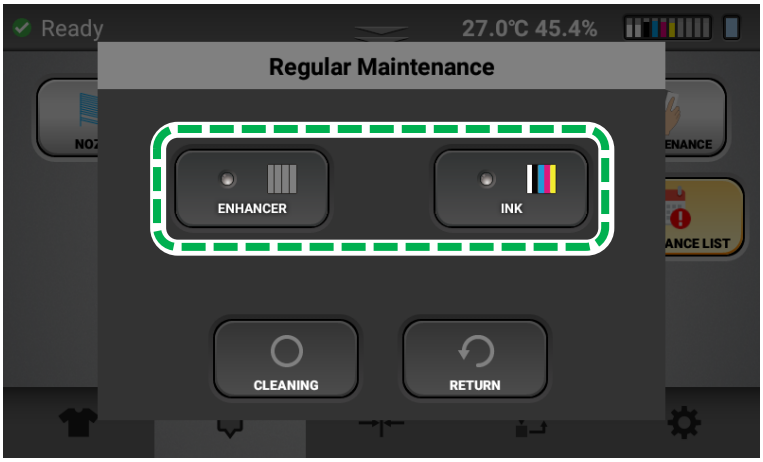
Start REGULAR MAINTENANCE

1. Press the Maintenance tab.



2. Press [REGULAR MAINTENANCE].

3. **Press [ENHANCER] and [INK].**



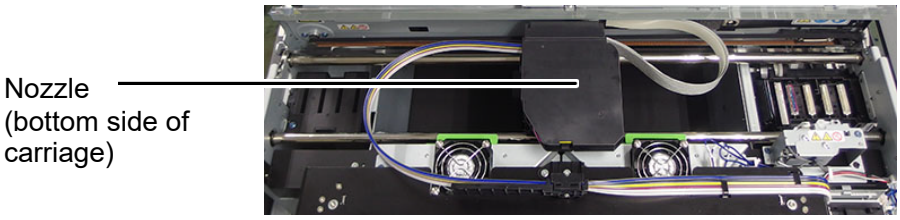
4. **Press [CLEANING].**

The carriage moves to the center position.

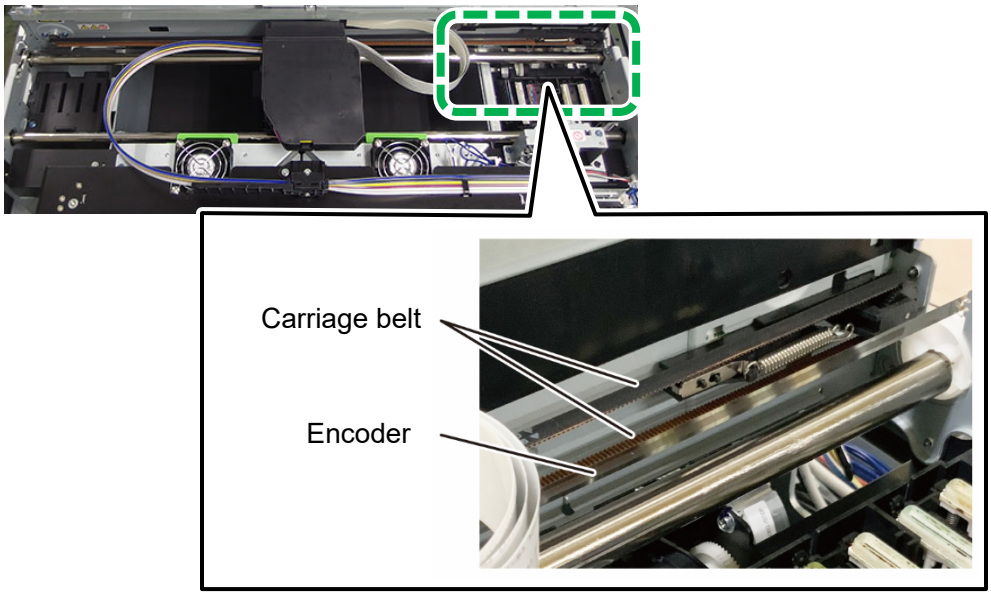
Cleaning the Guide Rods

⚠CAUTION

- Be careful not to touch the nozzle with the Cleaning Applicator. Also, be careful not to adhere the wiped solid ink or lint to the nozzle. Also, be careful to keep the nozzle area dry (no cleaning fluid) while cleaning the side of the print head. All of these can cause the nozzle out.

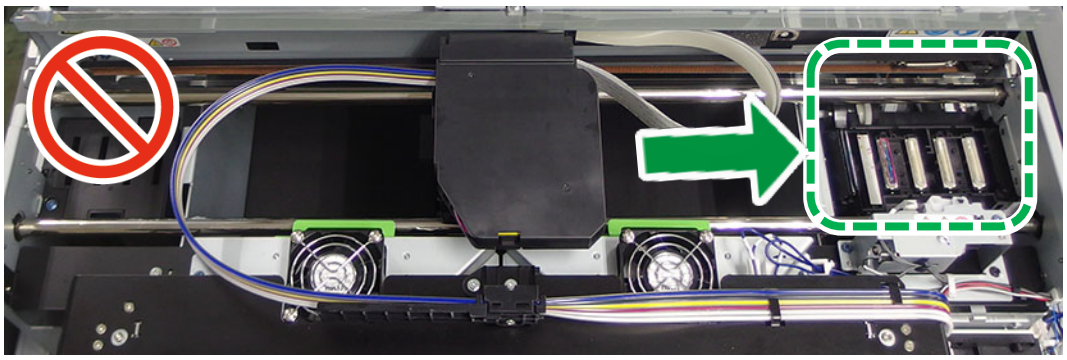


- When cleaning the guide rods, try to avoid touching the encoder or the carriage belt. This may cause the printer to not operate properly.

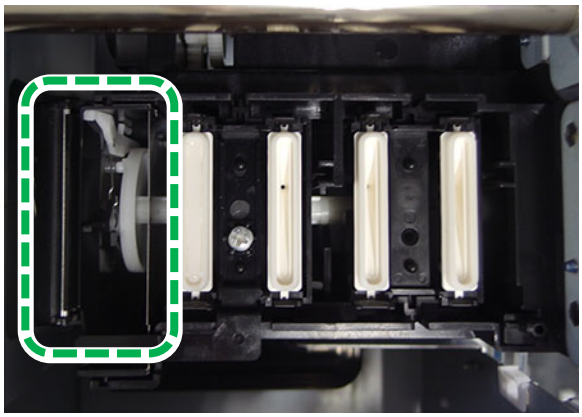


⚠CAUTION

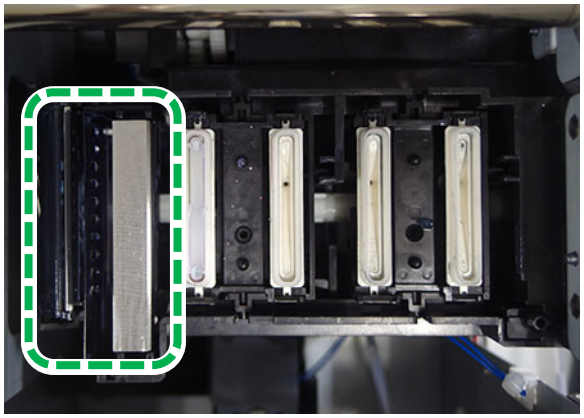
- Do not move the carriage to the prohibited range, which is outside the designated sliding range. Since the wiper of the Maintenance Unit is raised to the Wiper cleaning position and the carriage is moved above the Maintenance Unit, and the Wiper interferes with the Head. This may damage the Head.



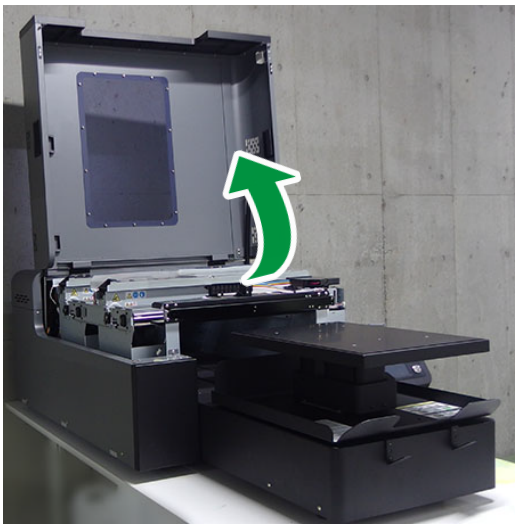
Rear Unit



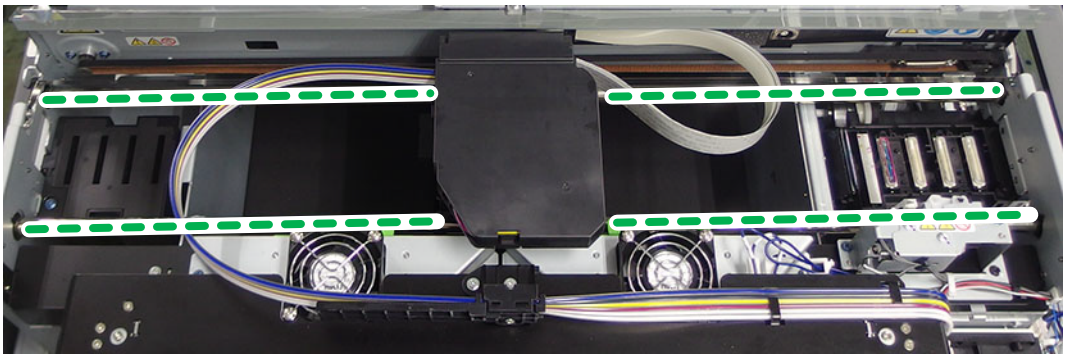
Front Unit



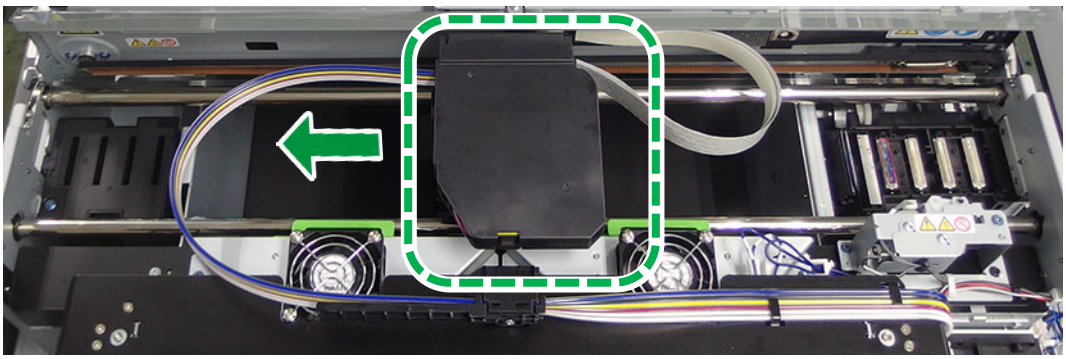
1. Open the front cover.



2. Wipe off any old grease and lint that are stuck on both guide rods with a cleaning applicator.



3. Move the carriage to the left, and then wipe off any old grease and lint on the guide rods where the carriage had stopped.



4. Return the carriage to the center.

5. Apply the dedicated grease to the Guide Rod. Use a new Cleaning Applicator for application.

As shown in the following picture, add the grease.

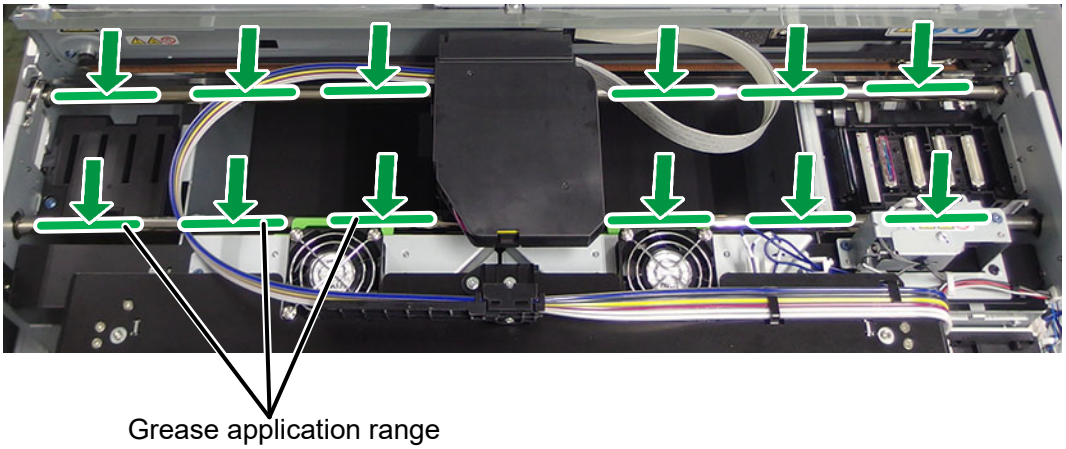
- The Guide Rod: main

  Apply approximately 0.01 ml of grease to each of the six peripheral parts of the arrow.

- The Guide Rod: front

  The six peripheral parts of the arrow.

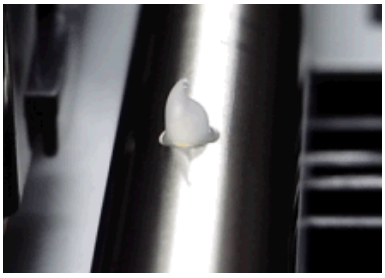
Grease coverage



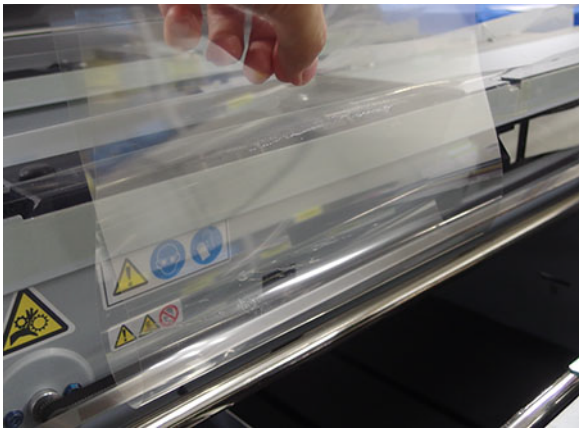
The outer grease should be applied 60 to 80 mm from the end of the rod.

Apply the inner grease 30 to 50 mm from the carriage.

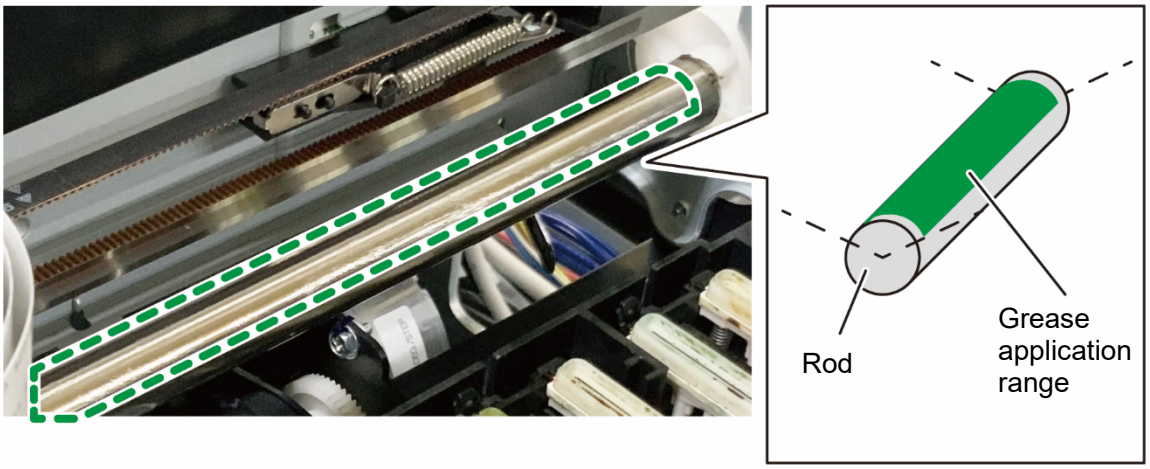
Sample of the amount of grease to be applied to six places on each rod

	After adding	After applying
0.01 ~ 0.02 ml (height: 2 mm)		

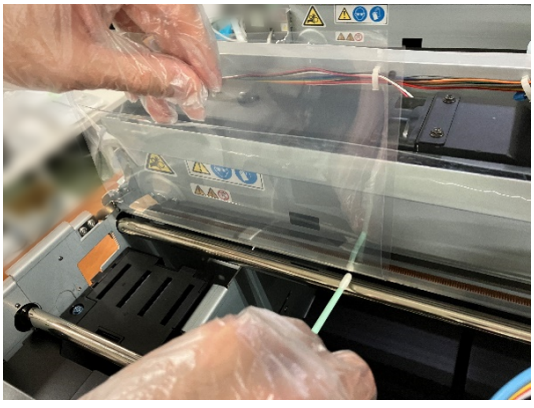
6. **Protect the encoder sheet by holding it between transparent sheets such as OHP transparencies.**

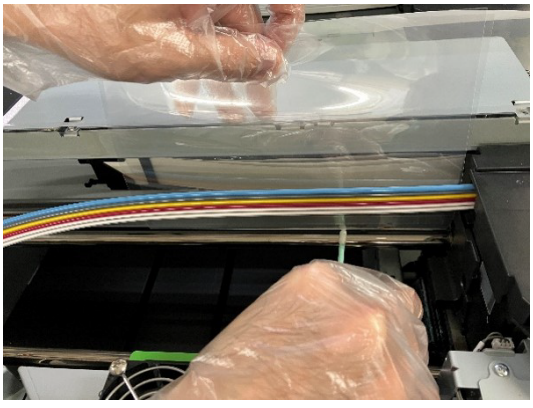


7. **Use a dedicated Cleaning Applicator to spread the grease smoothly on the top portion of the rod (cover about the top third of the circumference of the rod).**



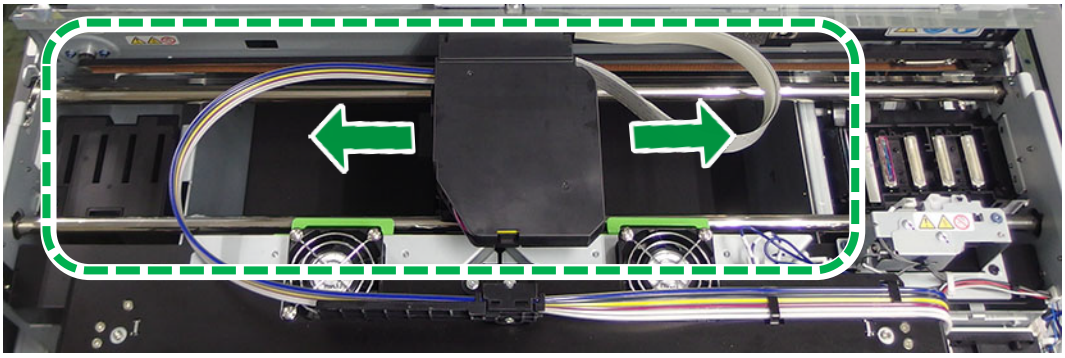
To spread the grease, move the transparent sheet together along the area you are applying the grease.





8. **Move the carriage to the left and right by hand in order to smooth the grease. Then move the carriage slowly over 2 seconds within the carriage designated sliding range.**

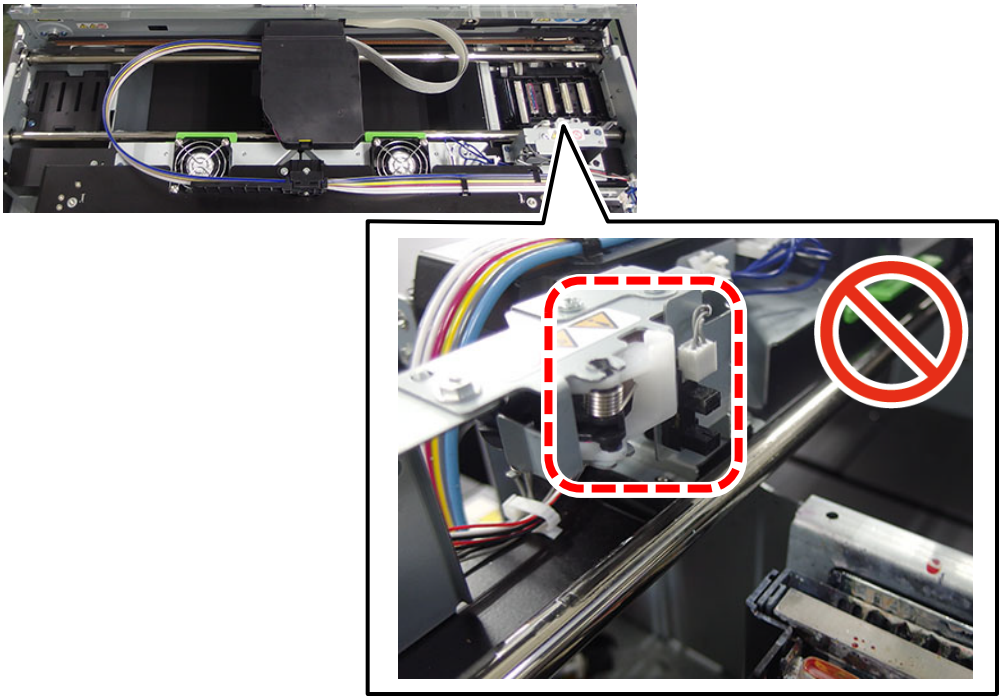
Do this for more than two round trips.



IMPORTANT! When moving the carriage, do not enter the area of the maintenance unit.

9. **Wipe away grease that protrudes far beyond the coverage described in step 5.**

IMPORTANT! Check that grease is not attached to the Filler Sensor.

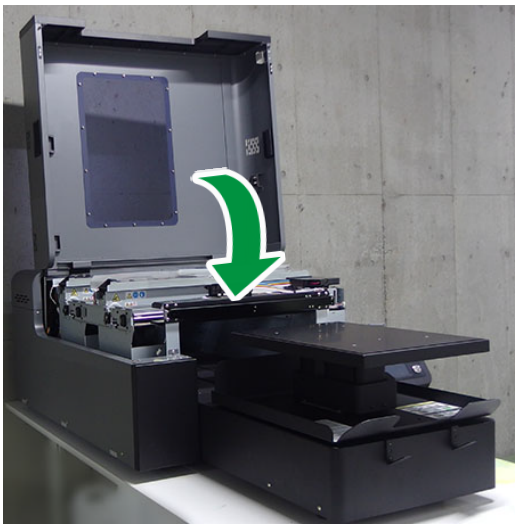


10. **After cleaning the guide rods, move the carriage to the left end by hand.**

The Wiper may damage the Head if it makes it stand by on the right end Maintenance Unit.

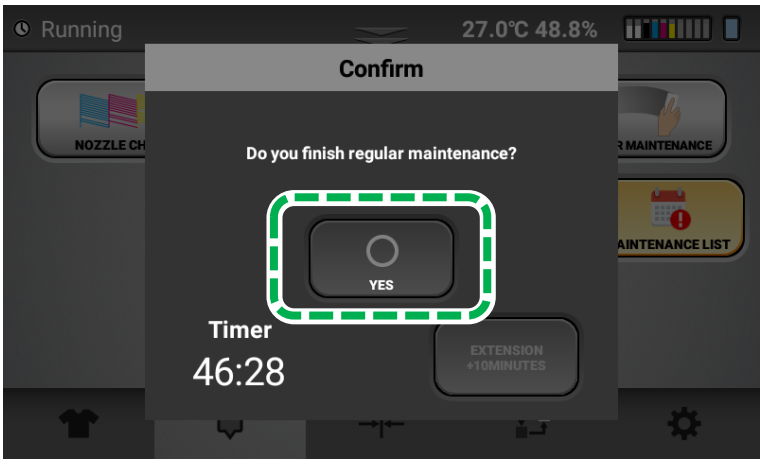
Ending the maintenance

1. Close the front cover.



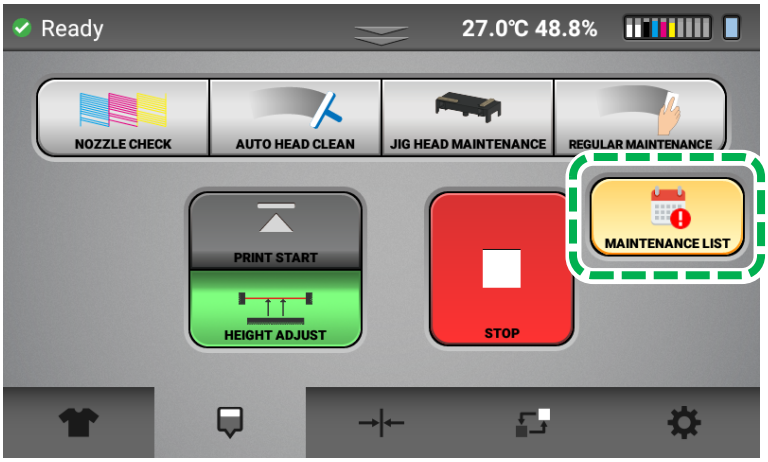
2. Press [YES].

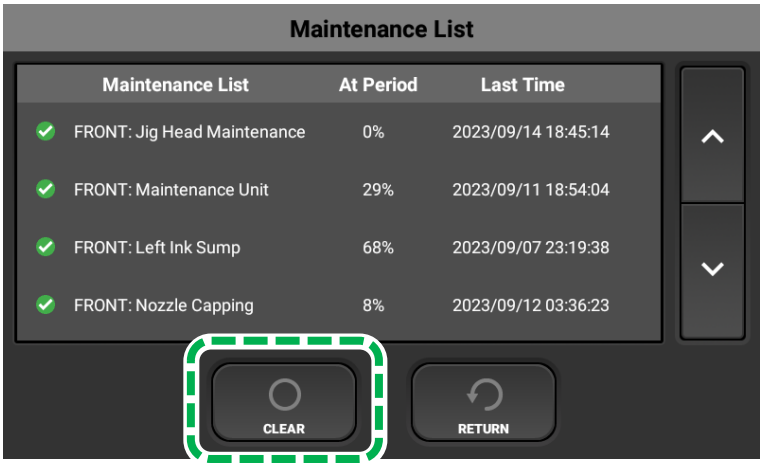
The carriage moves to the right end, and the Head is capped.



IMPORTANT! If encoder errors are frequent and require cleaning often, the encoder may need more thorough cleaning. Contact technical support for guidance on how to clean the encoder more thoroughly.

3. **Press [MAINTENANCE LIST], select the cleaned item, and press [CLEAR].**





4. **After completion of cleaning, perform AUTO HEAD CLEANING (recommended).**

This prevents the ink from drying out and clogging the nozzles.

For details about AUTO HEAD CLEAN, see page 133, “AUTO HEAD CLEAN”.

After completion, it is recommended to print the Nozzle Check and check that the ink discharge is normal.

3.7. How to Clean the Encoder Sheet

Clean both the front unit and rear unit.

IMPORTANT! When you perform maintenance of the front unit and rear unit, do not use the same cleaning applicator or lint free wipe for both of them. Always use a cleaning applicator or lint free wipe separately for each of the front unit and rear unit. It may cause the printer failure.

◆ Things to prepare

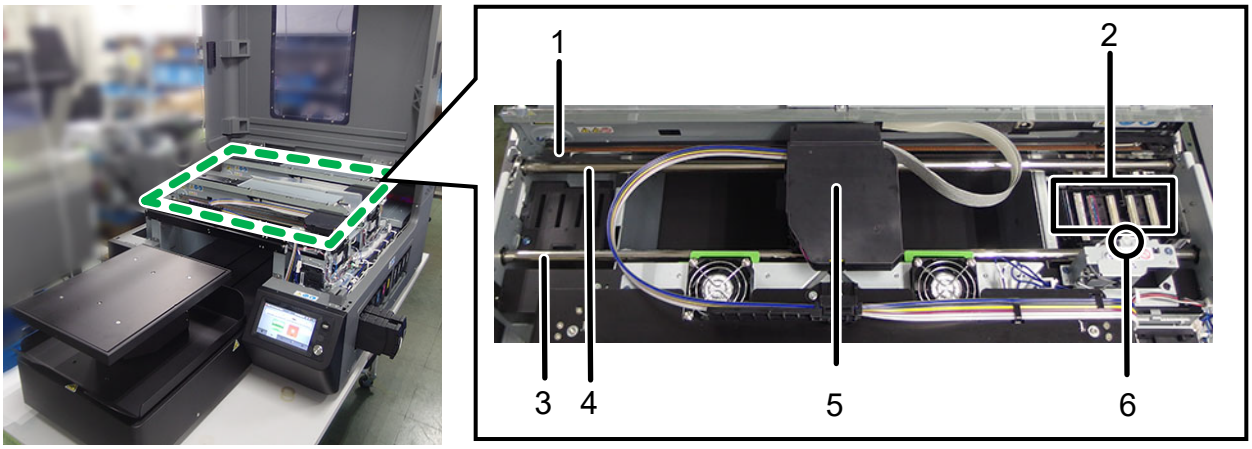
Purpose	Items
To wear	Polyethylene gloves
	Protective glasses or goggles (commercially available)
For use	Cleaning Liquid* or Isopropyl alcohol
	Dropper
	Lint Free Wipes
	Distilled water (commercially available)

* Move the cleaning liquid to use to the bottle for cleaning liquid.

◆ Cleaning times

About 10 minutes (per carriage)

◆ Guide to parts

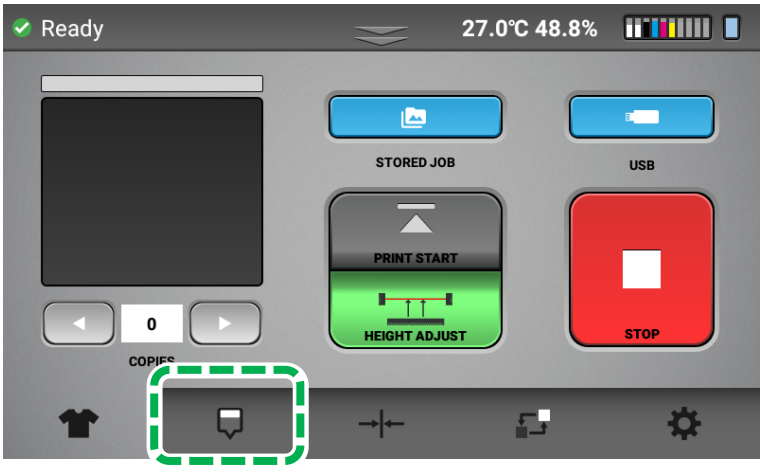


1. Encoder sheet
2. Maintenance unit
3. Guide rod: front
4. Guide rod: main

5. Carriage
6. Filler sensor

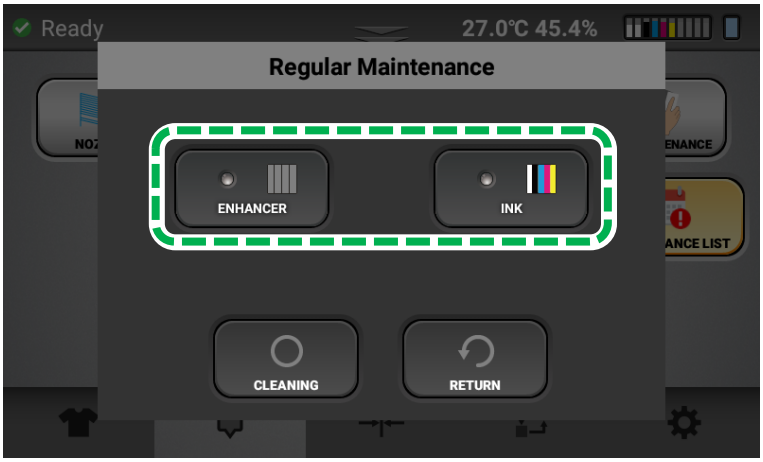
Start REGULAR MAINTENANCE

1. **Press the Maintenance tab.**



2. **Press [REGULAR MAINTENANCE].**

3. **Press [ENHANCER] and [INK].**



4. **Press [CLEANING].**

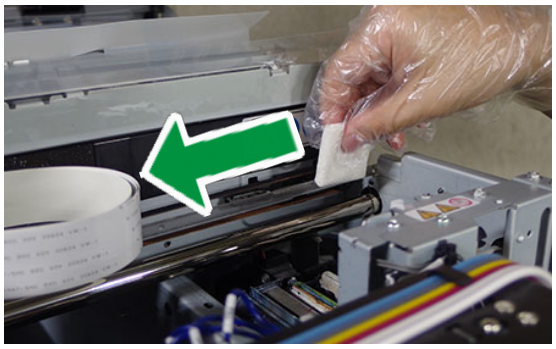
The carriage moves to the center position.

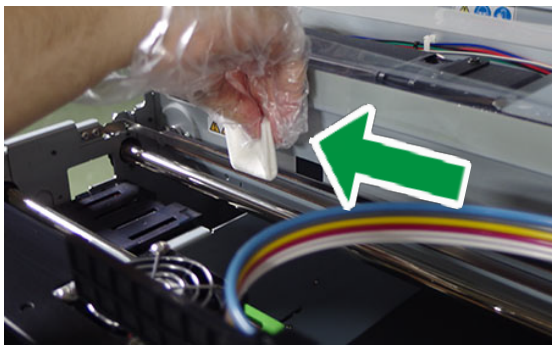
Cleaning the Encoder Sheet

IMPORTANT! Cleaning the encoder strip is usually not required.

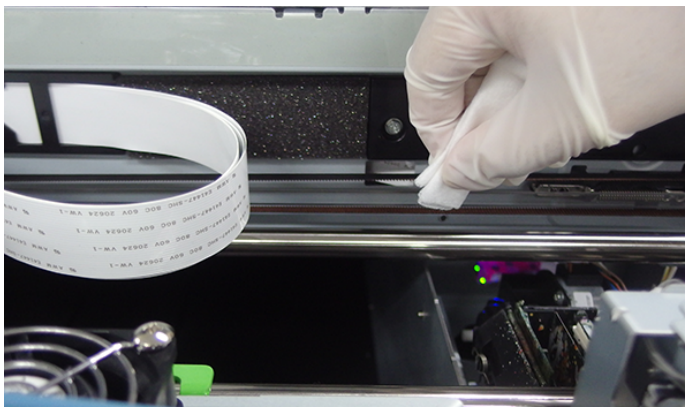
⚠CAUTION

Lint free wipes help ensure the integrity of the encoder strip, but improper usage of the lint free wipes may result in damage to the encoder strip and prevent printer functionality.





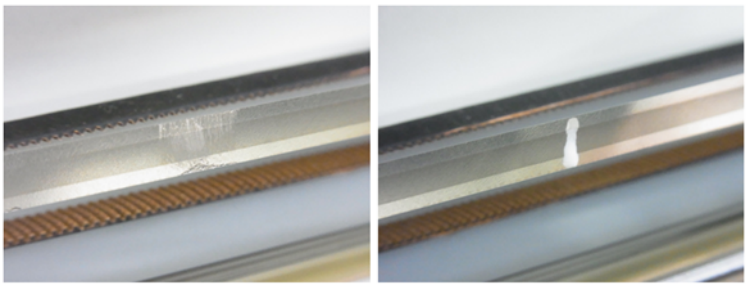
- Be sure to clean in the direction of the arrow shown in the figure above.
- Do not directly touch the encoder sheet with hands.
- Do not bend the encoder sheet.
- Do not allow the Cleaning Liquid to adhere to the timing belt.
- Do not allow the Lint Free Wipes to come into contact with the Guide Rod.



Any of the above can cause a CR encoder error and the encoder may need to be recleaned.

Clean the encoder sheets only when:

- Grease or ink drops on encoder strip.



- Vertical stripes appear in the printed image.

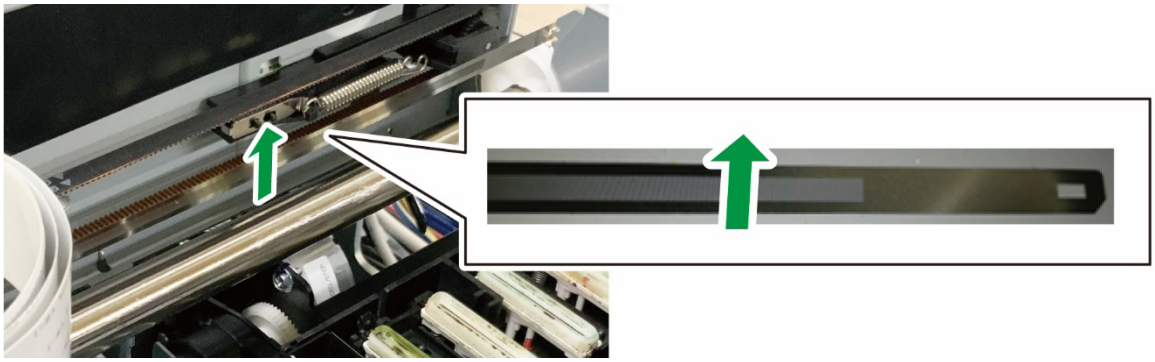
Print direction

(moving carriage direction)

Clean the encoder sheets after applying the grease to the Guide Rod.

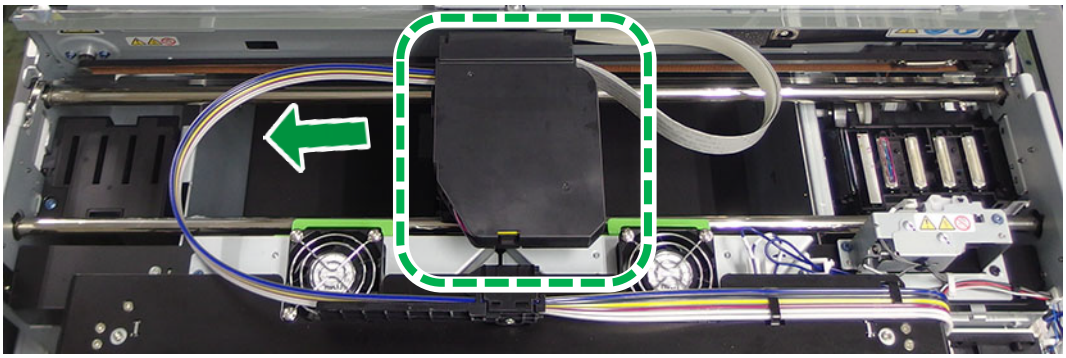
IMPORTANT! The slit part is fragile. Wipe it gently so as not to break or deform the slit part.

If it is difficult to remove ink or grease, wipe in the direction of the arrow below. The wiping direction must be parallel to the slit.

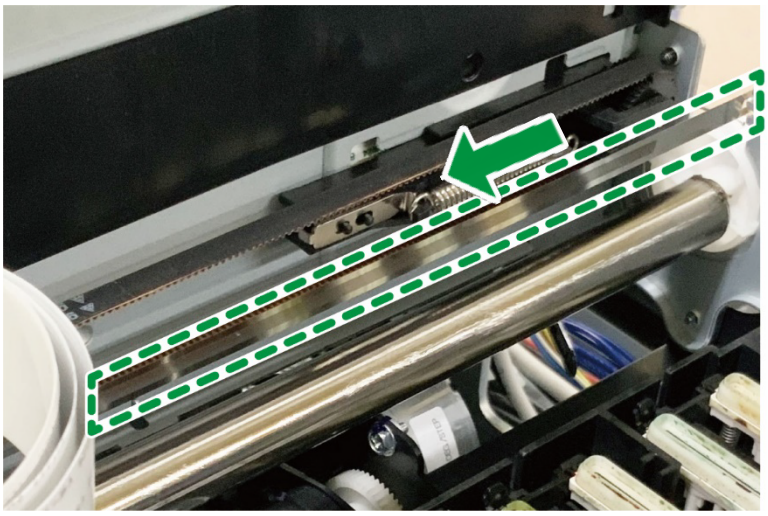


1. **Turn off the machine.**
2. **Unlock the carriage.**

   For information on how to perform unlocking, see page 238 "Unlocking the carriage".
3. **Move the carriage to the left end side by hand.**



4. **Wet a Lint Free Wipe with the cleaning liquid.**
5. **After applying the Lint Free Wipe with the Cleaning Liquid, use it to remove lint and ink adhering to the Encoder Sheet. Move the carriage to clean the entire Encoder Sheet.**

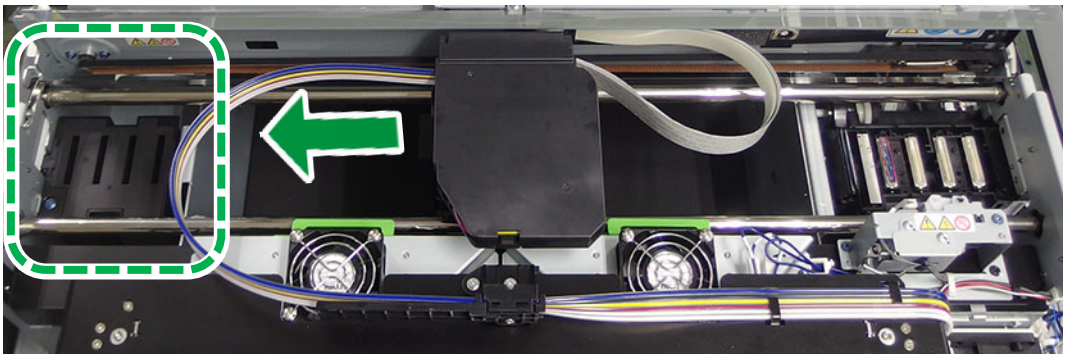


6. **Wet a Lint Free Wipe with distilled water.**
7. **After applying the Lint Free Wipe with distilled water, use it to remove lint and ink adhering to the Encoder Sheet. Move the carriage to clean the entire Encoder Sheet. Repeat the wipe process twice.**
8. **Prepare a dry Lint Free Wipe.**

9. **Using a dry Lint Free Wipe, remove any remaining liquid adhering to the Encoder Sheet. Move the carriage to clean the entire Encoder Sheet.**

10. **After cleaning the Encoder, move the carriage to the left end by hand.**

The Wiper may damage the Head if it makes it stand by on the right end Maintenance Unit.

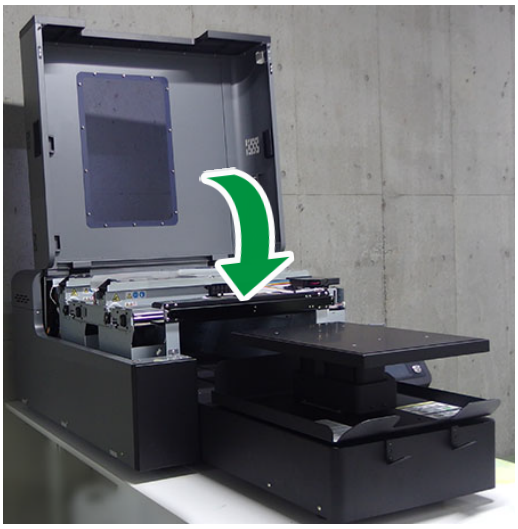


11. **Turn on the machine.**

NOTE - Do not put the cleaning liquid remaining after use into the machine's cleaner tank or back into the cleaner bottle.

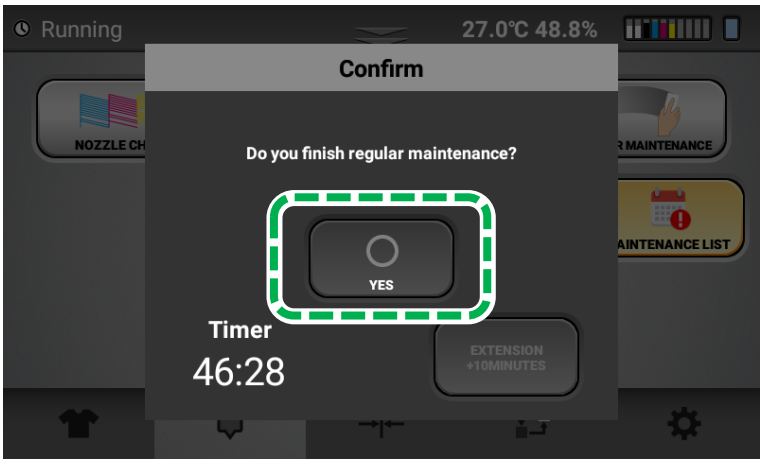
Ending the maintenance

1. Close the front cover.



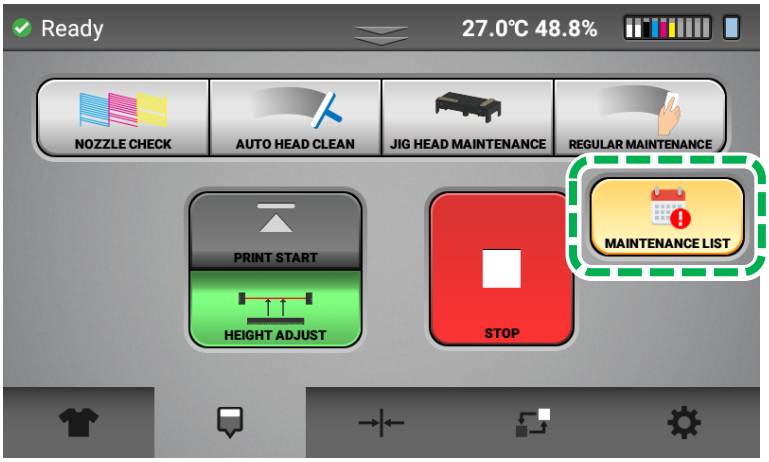
2. Press [YES].

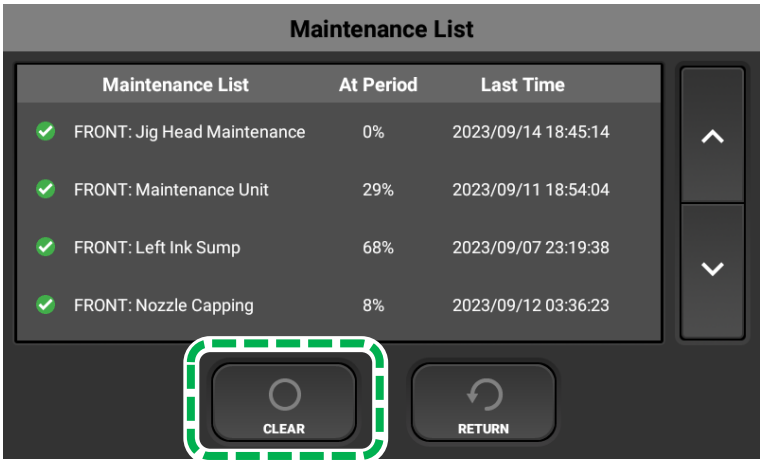
The carriage moves to the right end, and the Head is capped.



IMPORTANT! If encoder errors are frequent and require cleaning often, the encoder may need more thorough cleaning. Contact technical support for guidance on how to clean the encoder more thoroughly.

3. **Press [MAINTENANCE LIST], select the cleaned item, and press [CLEAR].**





4. **After completion of cleaning, perform AUTO HEAD CLEANING (recommended).**

This prevents the ink from drying out and clogging the nozzles.

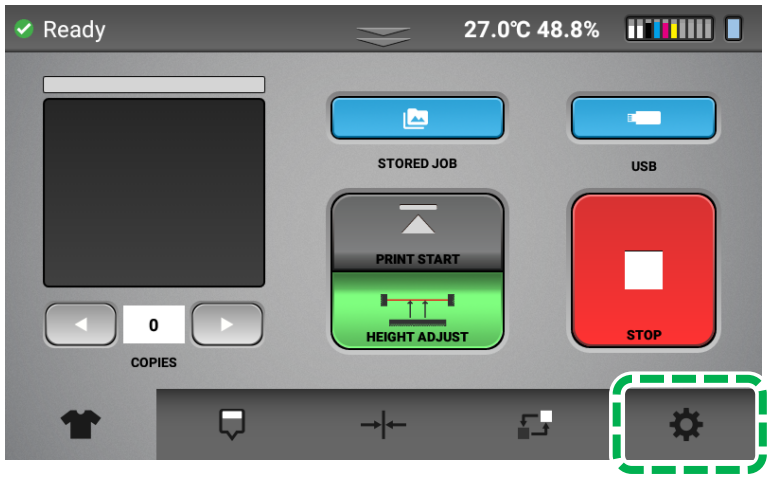
For details about AUTO HEAD CLEAN, see page 133, “AUTO HEAD CLEAN”.

After completion, it is recommended to print the Nozzle Check and check that the ink discharge is normal.

3.8. White Clean Freq.

You can change the level of White Cleaning Frequency with printing.

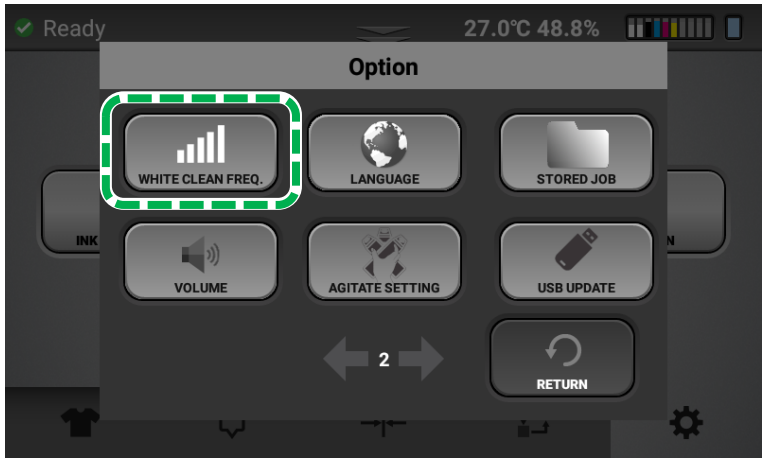
1. **Press the Settings tab.**



2. **Press [OPTION].**

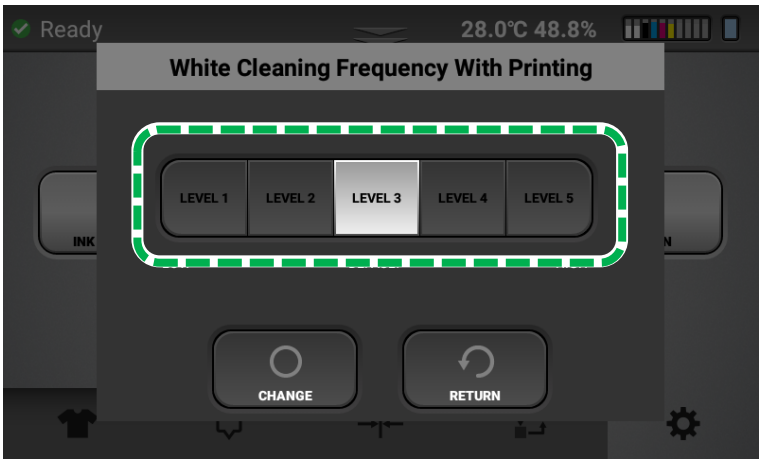
3. **Press [▶].**

4. **Press [WHITE CLEAN FREQ.].**



5. Press the level you want to use.

This option determines how often an automatic white head clean can occur while printing.



Clean Levels	Description
LEVEL 1 (LOW)	After 20 CMYK only Prints or after approximately 10 (varies depending on size) CMYK and White prints a white head Clean will occur.
LEVEL 2	After 15 CMYK Prints or 7 to 8 CMYK and white a white head clean will occur.
LEVEL 3 (Default)	After 10 CMYK Prints or 5 CMYK and White a white head clean will occur.
LEVEL 4	After 5 CMYK Prints or 2 to 3 CMYK and White prints a white head clean will occur.
LEVEL 5 (HIGH)	After 1 CMYK or CMYK and white print a white head clean will occur.

3.9. Agitating a White Cartridge

⚠WARNING

- Do not shake the cartridge too quickly or too hard.

⚠CAUTION

- Do not hit or drop it when agitating. It may cause injury, cartridge damage, or ink leakage.
- Do not excessively agitate/shake. It may cause ink leakage.
- Agitate/Swing as instructed. Other methods may cause ink leakage.
- Be sure to wear commercially available protective glasses, gloves, and clothing when replacing or handling cartridges.

The printer will prompt you every 12 hours.

White ink is prone to ink precipitation (the tendency for the ink to accumulate at the bottom of the ink solution). Ink precipitation may decrease the print density or cause nozzle clogging. Be sure to agitate the white ink when you unpack the ink cartridge and once a day after it has been unpacked.

After the first displayed, it will notify you by the buzzer every hour (selectable ON/OFF).

There are two types of display formats (Count Manually / Count Automatically) and you can select which one to use. For details, see page 186 "Count Manually (at a button)" and page 187 "Count Automatically".

When the message appears, pull out all white cartridges and agitate/shake it as follows.

NOTE - You can watch the maintenance instruction video. For details, see page 125, “Watching the Procedure on Video”.

- To prevent being stained by ink or cleaning solution, wear protective gear (protective gloves, protective glasses/goggles, protective clothing). Also take care not to stain your surroundings while agitating the ink.

1. Prepare

Use a lint free wipes to wipe off any dirt on the white ink cartridge and cartridge slot. For details on how to clean the cartridge and cartridge slot, see page 194 “Cleaning the Cartridges and Cartridge Slots". Make sure there are no tears or cracks on the white ink cartridge.

2. Agitate the ink

- Hold the cartridge as shown in Figure 1.
- Hold the white ink cartridge with the ink supply port face up.
- Shake the ink cartridge by tilting it side to side at 45°degree angles, as shown below.
- Shake the cartridge for 50 seconds at a speed of 2 back-and-forth shakes per second.

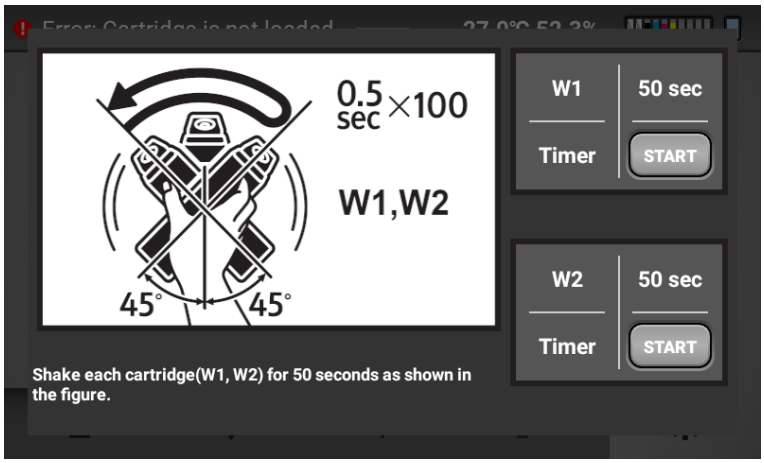
IMPORTANT! Shaking ink cartridges in other ways may cause nozzle clogging or affect the print quality when the ink cartridge is low on ink.

Figure 1

3. After agitating the ink, wipe off any ink stains on the ink supply port

◆ Count Manually (at a button)

The printer will prompt you every 12 hours with the following message:

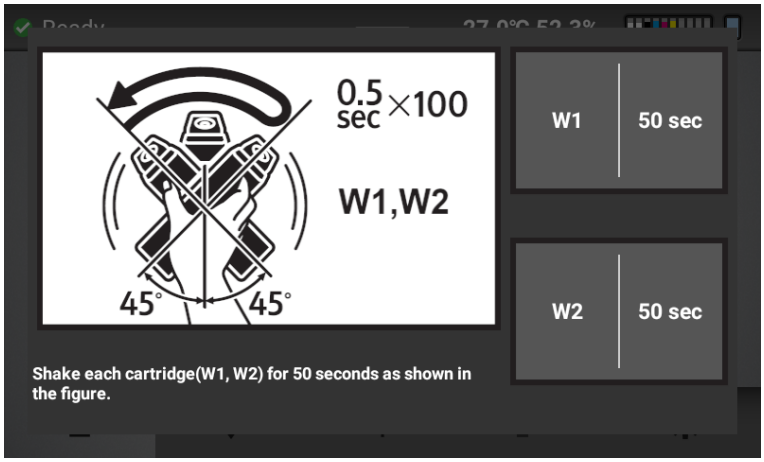


- Pull out each white cartridge, then “Start” button is displayed for each target cartridge.
- Press “Start”, button changes to “Counting” and counter will start to decrease.
- When you insert the cartridge before counter reaches 0, the counter will pause, button will change to “Resume”.
- If you remove the cartridge again and press “Resume”, timer will restart, and button will return to “Counting”.
- All the counters reach 0, then the printer will display the following message:

- After agitating cartridges, insert the cartridges.

◆ Count Automatically

The printer will prompt you every 12 hours with the following message:



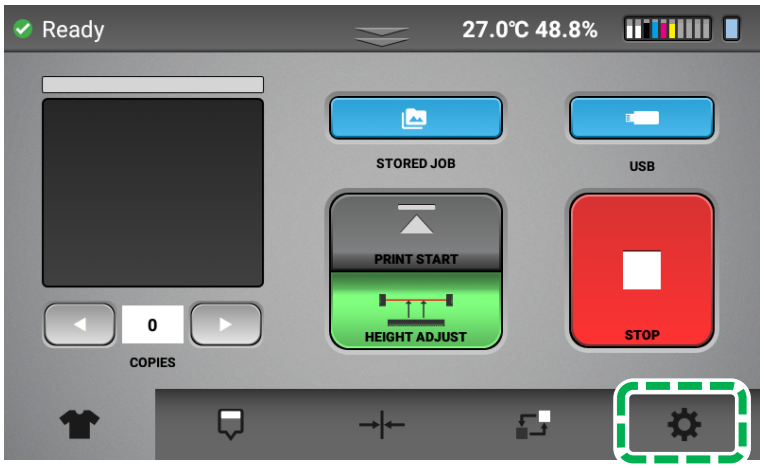
- Pull out each white cartridge, then each counter will start to decrease.
- When you insert the cartridge before counter reaches 0, the counter will pause.
- If you remove the cartridge again, timer will restart.
- All the counters reach 0, then the printer will display the following message:

- After agitating cartridges, insert the cartridges.

◆ Select display format

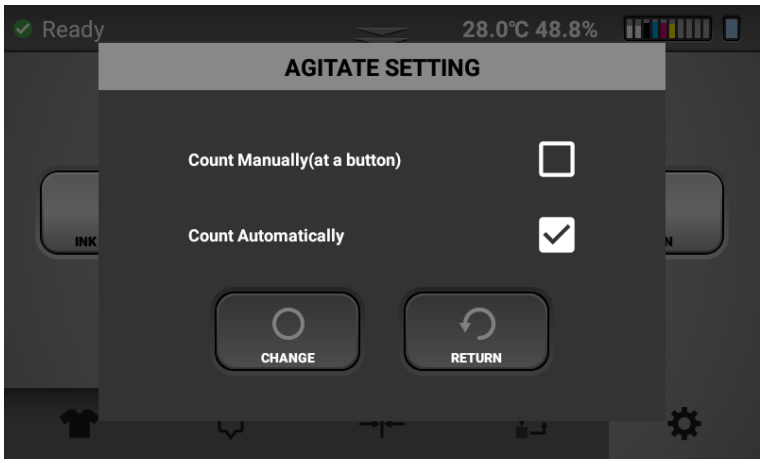
You can select two types of display format (Count Manually / Count Automatically).

1. **Press the Setting tab on the touch panel of this machine.**



2. **Press [OPTION].**
3. **Press [ ].**
4. **Press [AGITATE SETTING].**

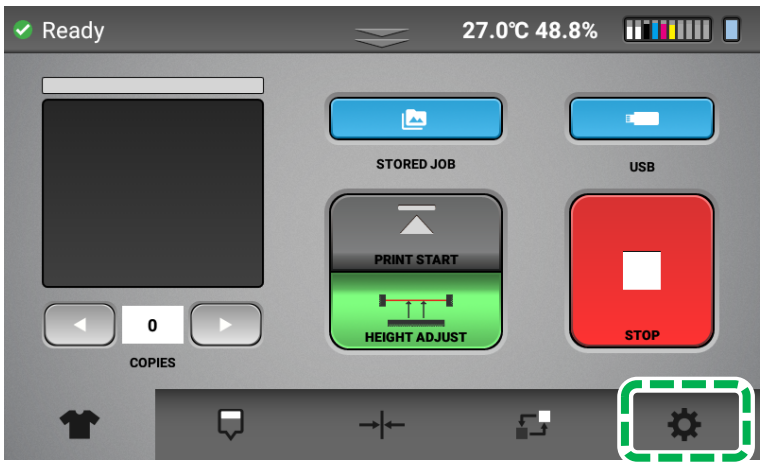
5. Select the display format to use from following:



◆ Setting buzzer notification

You can set the buzzer notification.

1. Press the Setting tab on the touch panel of this machine.

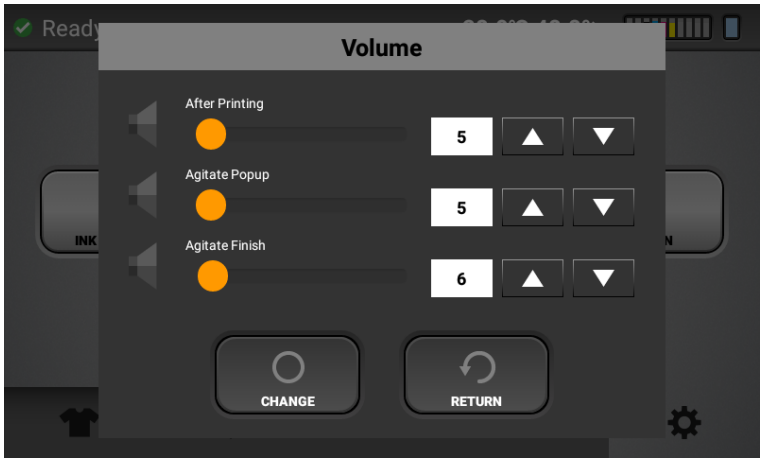


2. Press [OPTION].

3. Press [ ].

4. Press [VOLUME].

5. **Set the buzzer parameter from following. (volume 0 equals “OFF”)**



3.10. Circulation

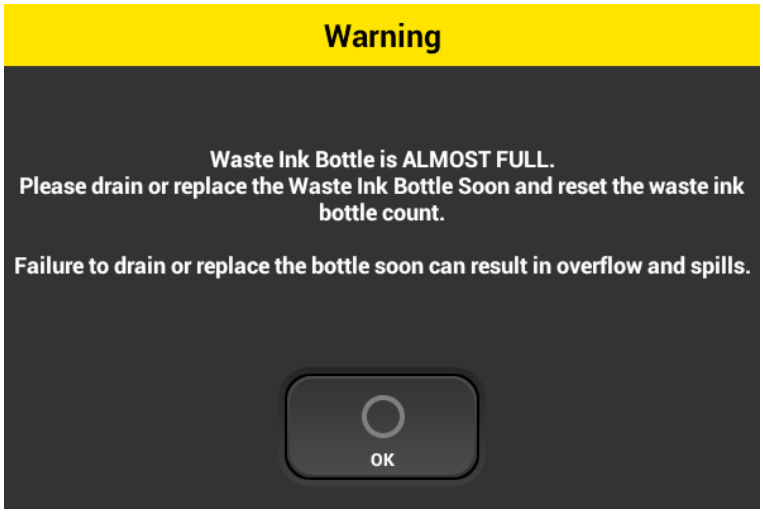
This printer has the function of white ink circulation that moves the white ink in the system from the ink bay to the printhead and back. This is used to avoid the white ink settling within the lines and provides quality white ink prints.

3.11. Emptying the Waste Bottles

⚠CAUTION

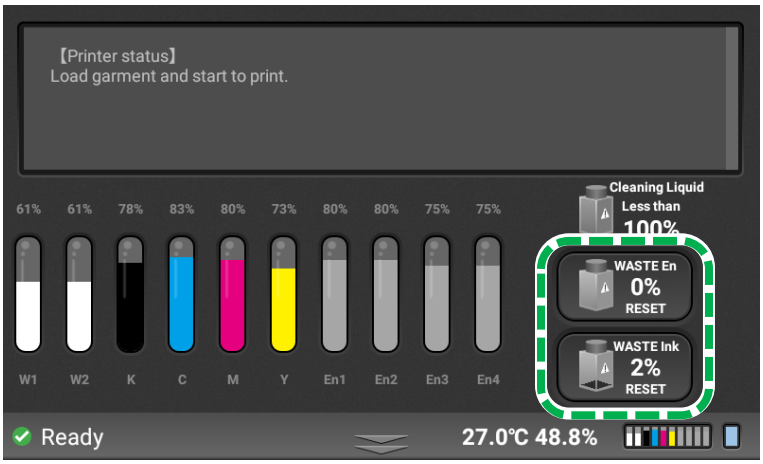
- If the waste bottle is full, auto maintenance will not occur, and head clogging may occur.
- When you press the reset button to reset the waste bottle warning, make sure to empty the waste bottle in advance. This will avoid any spilling or other potential hazards.
- When disposing the waste ink, clean the waste tube if there is dirt such as lumps of ink on the tip of the tube. Otherwise, clogging the waste tube and defective discharging of waste ink could result.
- When disposing the waste enhancer, clean the waste tube if there is dirt such as lumps of enhancer on the tip of the tube. Otherwise, clogging the waste tube and defective discharging of waste enhancer could result.

Once a certain amount of ink or enhancer is used, the following message is appears on the touch panel.



- When you dispose of the waste bottle, replace the waste bottle, or empty the waste liquid in it. If ink deposits are noticeable in the waste bottle, replace the waste bottle. Take care that, depending on the amount of ink deposits, the waste liquid may overflow before the waste bottle becomes full.
- You can check the amount of waste liquid on the Status screen and reset the waste bottle.

- To reset the waste bottle, empty the waste bottle, press the reset button, and then press [Yes] on the confirmation message.



To reset the Waste enhancer bottle, press [WASTE En **% RESET].

To reset the Waste Ink bottle, press [WASTE Ink **% RESET].

3.12. Cleaning the Cartridges and Cartridge Slots

⚠CAUTION

- Be sure to wear commercially available protective glasses, gloves, and clothing for this work.

Cartridges and cartridge slots may become stained by ink, enhancer or cleaning solution. Be sure to perform cleaning each time after removing the cartridge for cases such as by replacing a cartridge or agitating the white ink.

- To prevent being stained by ink, enhancer or cleaning solution during the work, wear protective gear (protective gloves, protective glasses/goggles, protective clothing). Also take care not to smudge the surroundings during the work.
- Wipe off any stains by ink, enhancer or cleaning solution on the cartridge and cartridge slot (where the print cartridge is attached to the printer) with lint free wipes. Be sure to perform cleaning each time after removing the cartridge.
- **Do not use cleaning liquid for cleaning (because the circuit board is nearby).**

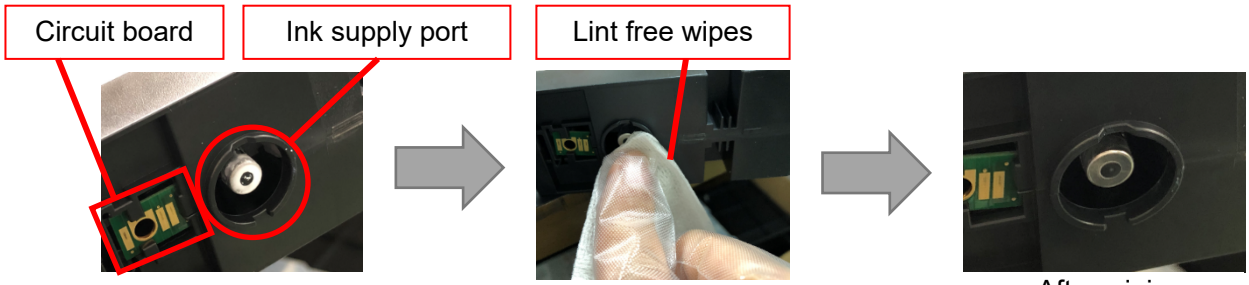
Cleaning the Cartridges

Do not use cleaning liquid for cleaning.

Take care not to touch or stain the circuit board.

The main part to clean on the cartridge is the ink supply port.

Wipe off any stains on other parts of the cartridge as well.



Before wiping

Wipe off the ink with lint free wipes.

After wiping

Cleaning the Cartridge Slots

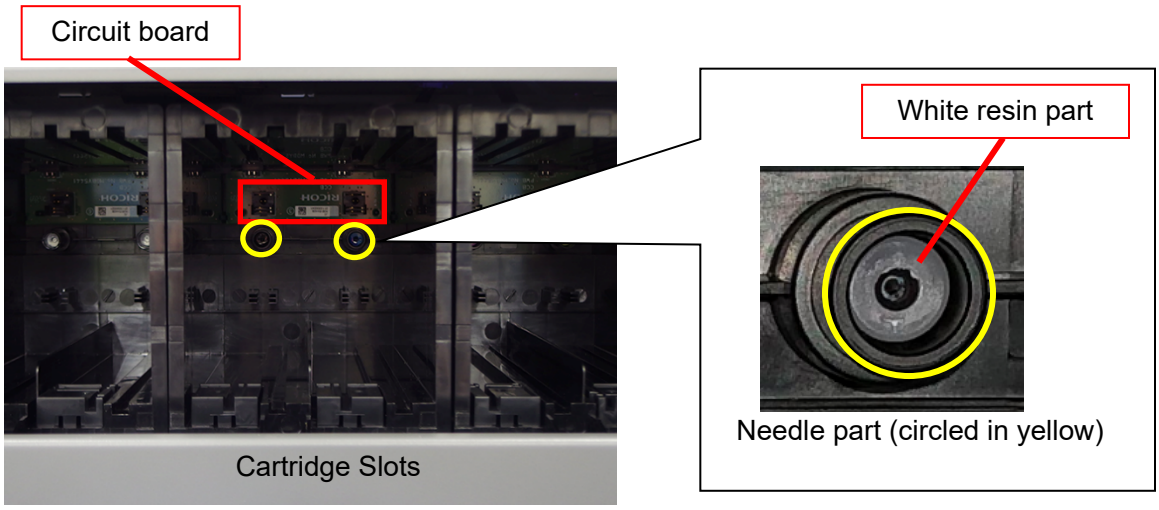
Do not use cleaning liquid for cleaning.

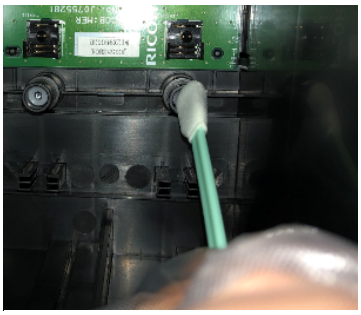
Take care not to touch or stain the circuit board.

The needle part in the cartridge slot (the cylindrical part circled in yellow on the photo) has a needle inside the cylinder, so clean only its surface with the cleaning applicators. The white resin part can be pushed in, but do not push it in during cleaning. Do not perform cleaning if the white resin part circled in yellow is further in the recess than shown on the photo.

Wipe off the stains on any other areas of the cartridge slot.

It is not necessary to wipe off the ink that has dried and stuck to the surface.





For the needle part, clean only its surface.

What to Check after Cleaning

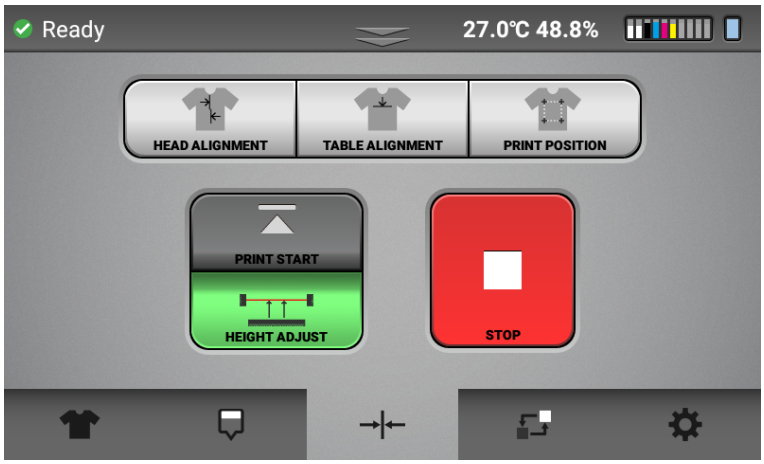
After cleaning, insert the cartridges, and check that they are correctly identified.

4. Adjustments

This section describes how to adjust the image quality of this printer from the touch panel.

Although the printer head nozzle status is good, if the printer quality is not good, you need to perform the following process.

- These functions can be performed on the Alignment tab.



- You can print the basic adjustment pattern. Also, it is best to print it on the transparent A4 media (such as OHP films).
- It is recommended to use the medium-sized platen.

- If a part of the media is raised, use tape to fix the four corners of the media.

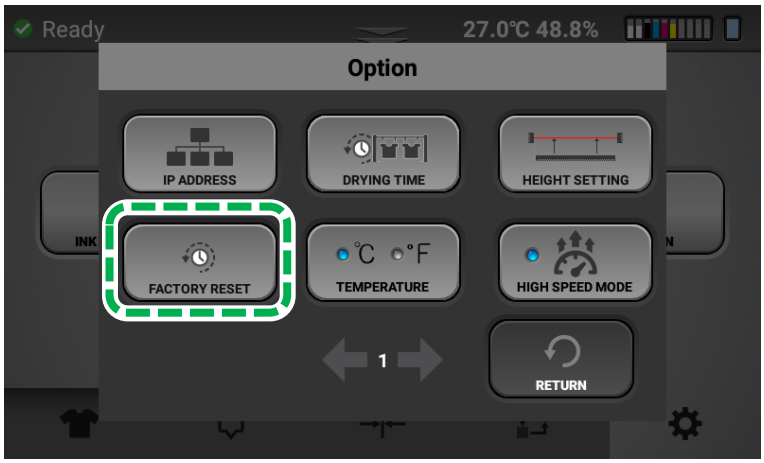
Adjustment tips

If the print is misaligned even after the adjustment, it is recommended to adjust it according to the thickness of the medium (T-shirt, etc.) to be printed.

1. Set the medium to be printed on the platen, and then adjust the height.
2. Remove the media from the platen.
3. Add plain paper to the back side of the transparent OHP sheet until it becomes the same height as the medium used for printing, and then fix it with tape to prevent it from slipping. At this time, be careful not to cause warping or floating.
4. Perform the adjustment using the OHP sheet with plain paper set in Step 3. The subsequent procedure is the same as the normal adjustment procedure.

NOTE - You can reset adjustment value (Head Alignment / Table Alignment / Print Position) to the original settings by pressing [FACTORY RESET] by going to the Settings tab and pressing [OPTION].

For details, see page 45, "Settings Tab".



4.1. Adjusting the Head

Typically, this adjustment is only necessary after a part replacement such as a carriage or CTL replacement.

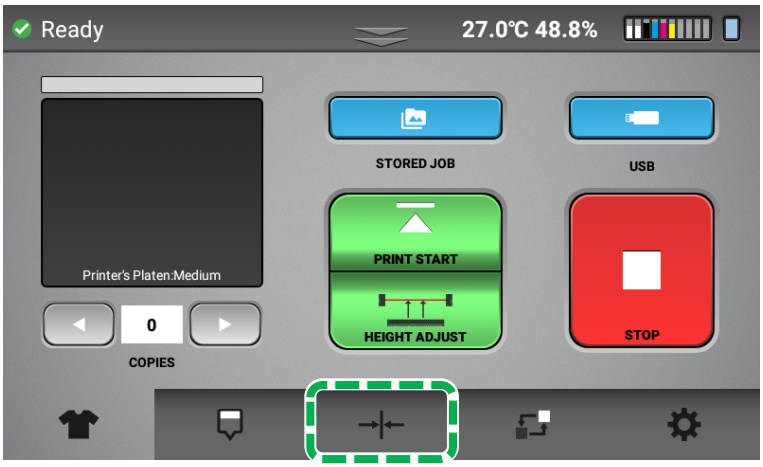
This function adjusts the print head alignment position. When the print result is not clear (for example, vertical lines are misaligned, color is not clear, or print is fuzzy) this adjustment may improve the result.

NOTE - Always check the table height first. If the printing surface is too far away from the head, the prints may be fuzzy, and the lines may not appear straight.

◆ Things to prepare

Purpose	Items
For use	Transparent A4 media

1. Press the Alignment tab.

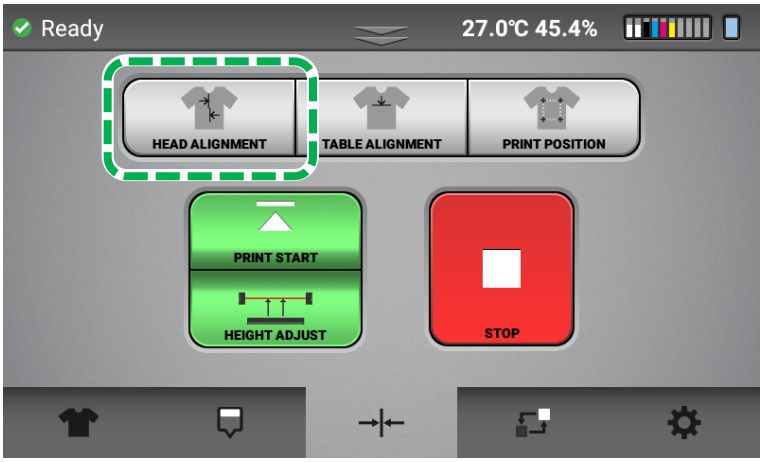


2. Set the transparent media.

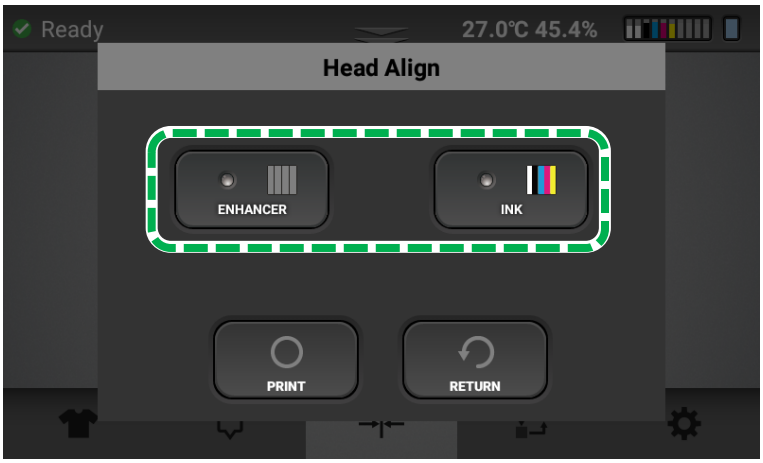
3. Press [HEAD ALIGNMENT].

If a message prompting height adjustment appears, press [YES] to adjust the height.

After adjusting the height, check that [PRINT START] is lit up and press [HEAD ALIGNMENT].



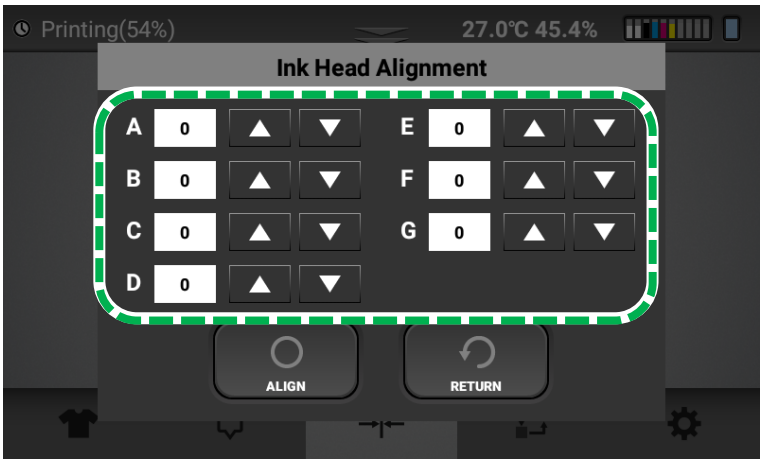
4. Press [ENHANCER] or [INK].



5. Press [PRINT].

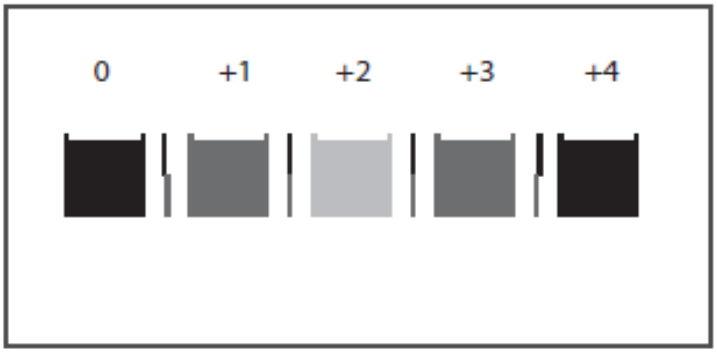
The adjusting head pattern of the selected printer head is printed.

6. After finding an appropriate adjustment value, form the print result of the adjustment pattern.

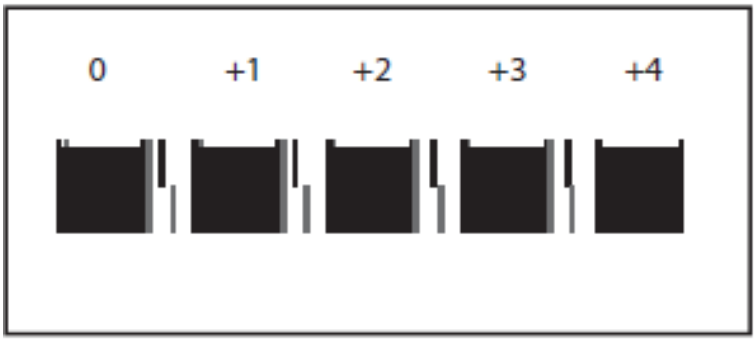


1. Find a pattern with a square in the lightest color and vertical lines on both sides that are the straightest (or closest to this condition) aligned in row A.

   Note that the value indicated over the pattern indicates an appropriate adjustment value.
   An appropriate adjustment value is “+2” in this example.



2. Enter this value in the box for ROW A (the up arrows make the value go up and down arrows make the value go down).
3. Repeat this for the other rows in the test pattern (B, C, etc.).



4. When there are no straight vertical side lines, as shown in the upper illustration, check the last square out of the sequence of squares with the smallest gap in the side lines and then find a corresponding value.

   In the upper illustration, the value is “+4”.

7. **After you enter a value for all the rows, press [ALIGN] that sets the new values.**

8. **Print the pattern again and repeat the above process.**

9. **Repeat the process until all rows (A, B, C, etc.) show the 0 column or close to the 0 column as the best value.**

4.2. Adjusting the Table

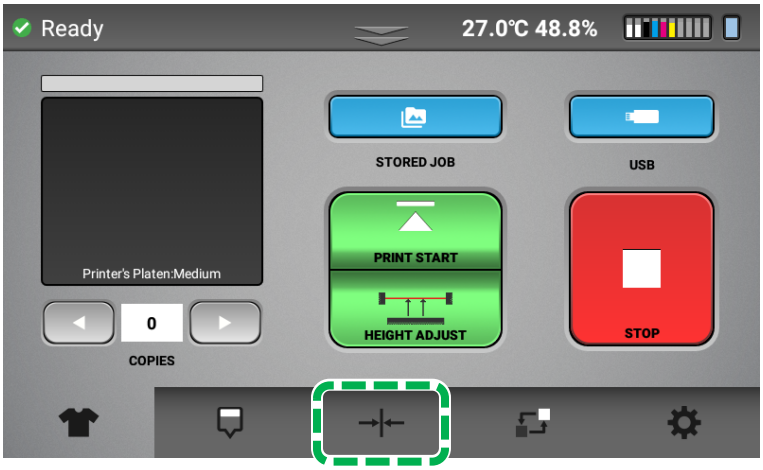
The printing indexing of the table can be adjusted. Typically, you do not need to do this unless a component is replaced such as the sub control board or the CTL board.

If the print result shows horizontal lines and the nozzle check is perfect (no missing nozzles and no nozzle deflection and the table height is correct), you need to do this function.

◆ Things to prepare

Purpose	Items
For use	Transparent A4 media

1. Press the Alignment tab.

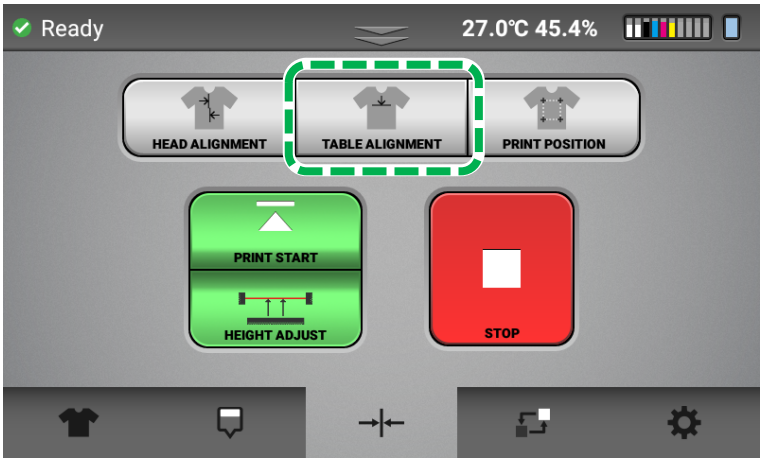


2. Set the transparent media.

3. Press [TABLE ALIGNMENT].

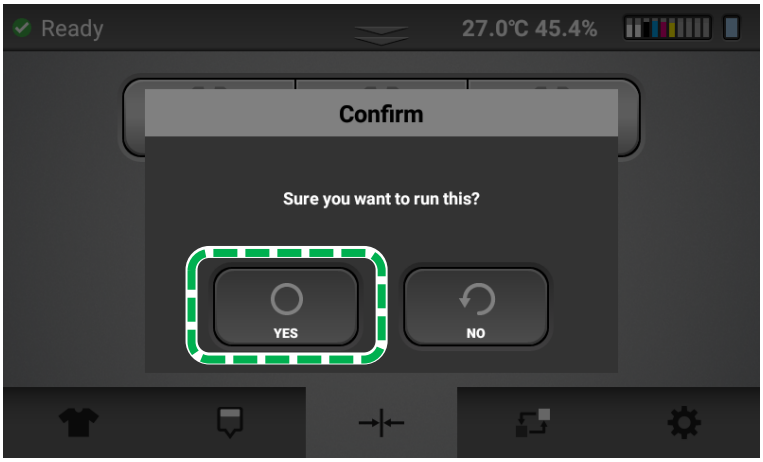
If a message prompting height adjustment appears, press [YES] to adjust the height.

After adjusting the height, check that [PRINT START] is lit up and press [TABLE ALIGNMENT].



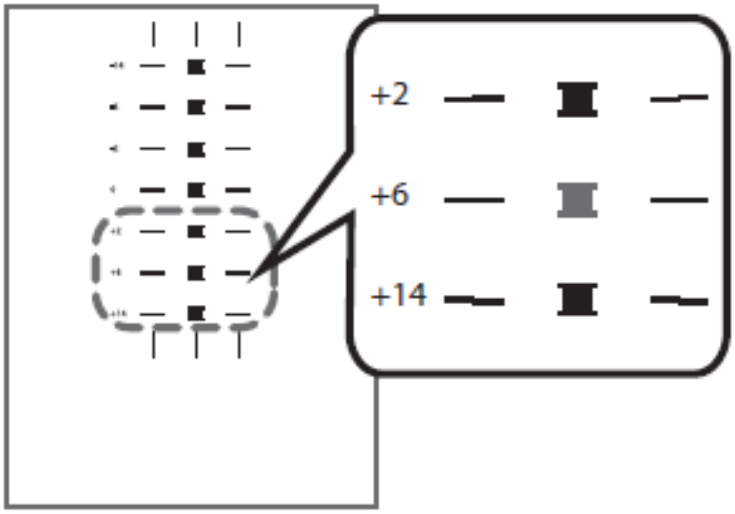
4. Press [YES].

The adjustment pattern is printed.



5. Find an appropriate adjustment value from the print result of adjustment patterns.

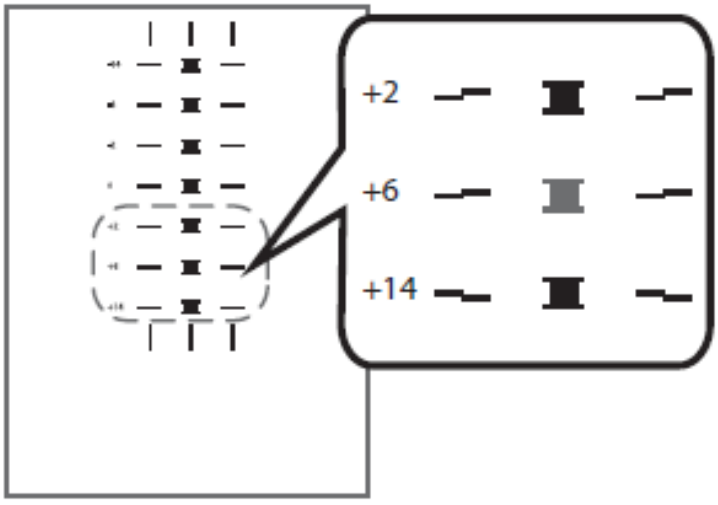
1. Find a pattern with a square in the lightest color and horizontal lines on both sides aligned.



- A value on the upper of the pattern indicates an appropriate adjustment value.
- An appropriate adjustment value is “+6”.

NOTE - In some cases, an adjustment value is an in-between value of patterns.

When a square is in the lightest color, but horizontal lines on both sides are misaligned.



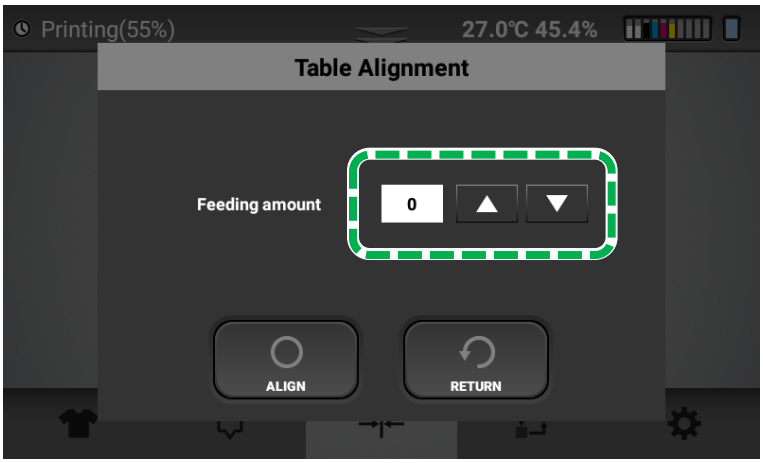
In the upper illustration, a square in the lightest color is for “+6”, but horizontal lines on both sides are misaligned. In this case, check horizontal lines for one pattern above and one pattern below of the square.

The horizontal lines for “+2” and “+6” are misaligned in the same direction, but the horizontal lines for “+14” are misaligned in the opposite direction.

In this case, a value that horizontal lines align exists somewhere in between “+6” and “+14”. After passing the value, the horizontal lines begin to be misaligned in the opposite direction as getting closer to “+14”.

By referring to the alignment of the lines, decide a value between “+6” and “+14” as an appropriate adjustment value.

6. After entering the value, press [ALIGN] and reprint the pattern.



7. Repeat the process until the pattern print shows 0 or close to 0 as the best result as described above.

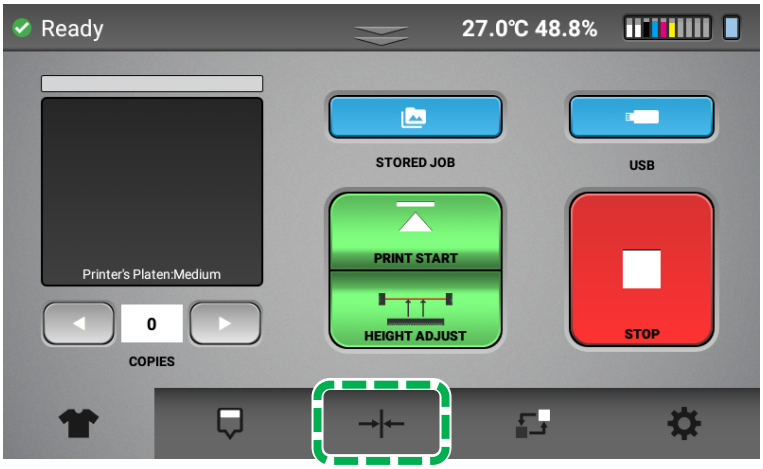
4.3. Adjusting the print position

The printing start position can be adjusted accurately within the range of ±8.0 mm in the Table Direction and ±5.0 mm in the Head Direction. This typically only needs to be adjusted if a component such as the Z-axis or CTL is replaced.

◆ Things to prepare

Purpose	Items
For use	Transparent A4 media

1. Press the Alignment tab.

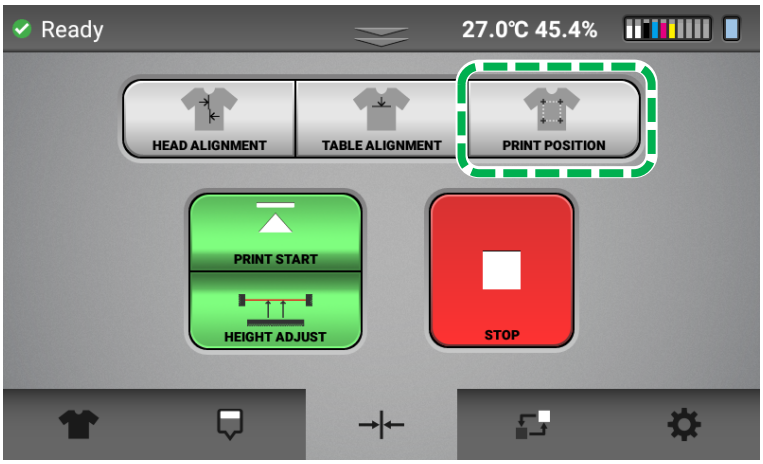


2. Set the transparent media.

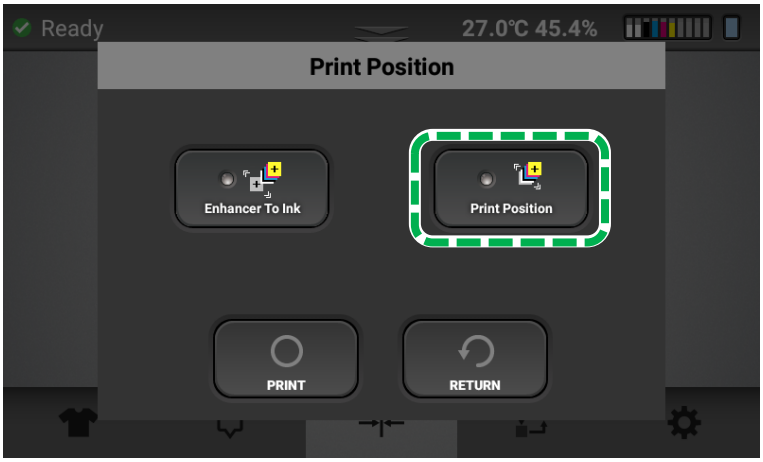
3. Press [PRINT POSITION].

If a message prompting height adjustment appears, press [YES] to adjust the height.

After adjusting the height, check that [PRINT START] is lit up and press [PRINT POSITION].



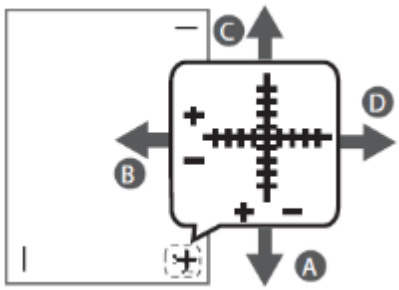
4. **Press [Print Position].**



5. **Press [PRINT].**

The print position pattern is printed.

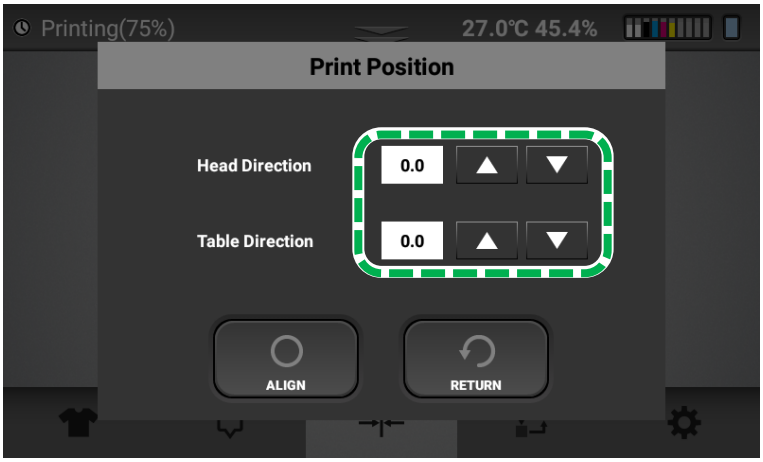
6. **After printing the pattern for the print position adjustment, you need to find an appropriate value based on the alignment files to the 4 arrows on the platen.**



7. **Position the paper so that the cross on the test print paper comes at the right bottom corner.**

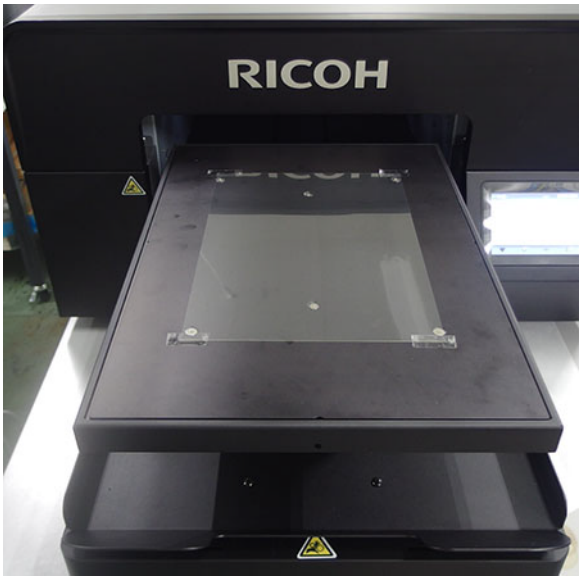
- You can select values between “-5.0” and “+5.0” in the Head Direction and between “-8.0” and “+8.0” in the Table Direction increments of 0.1 mm.
- To move the print position to the “A” direction, enter a value between “-0.1” and “-8.0” in the Table input area.
- To move the print position to the “B” direction enter a value between “+0.1” and “+5.0” in the head input area.
- To move the print position to the “C” direction enter a value between “+0.1” and “+8.0” in the table input area.
- To move the print position to the “D” direction enter a value between “-0.1” and “-5.0” in the Head input area.

8. After entering the values, press [ALIGN] to set the values.



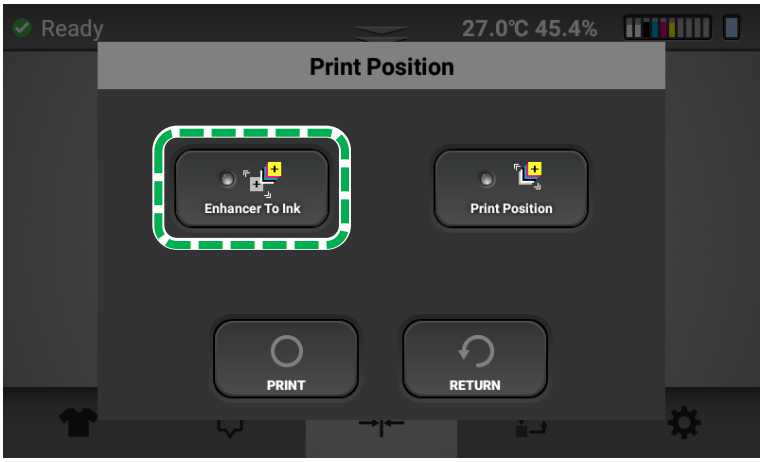
9. Repeat the process until the print appears to be centered.

10. After completing the position adjustment for [Print Position], place a transparent sheet in the center of the platen.



11. Press [PRINT POSITION].

12. Press [Enhancer To Ink].

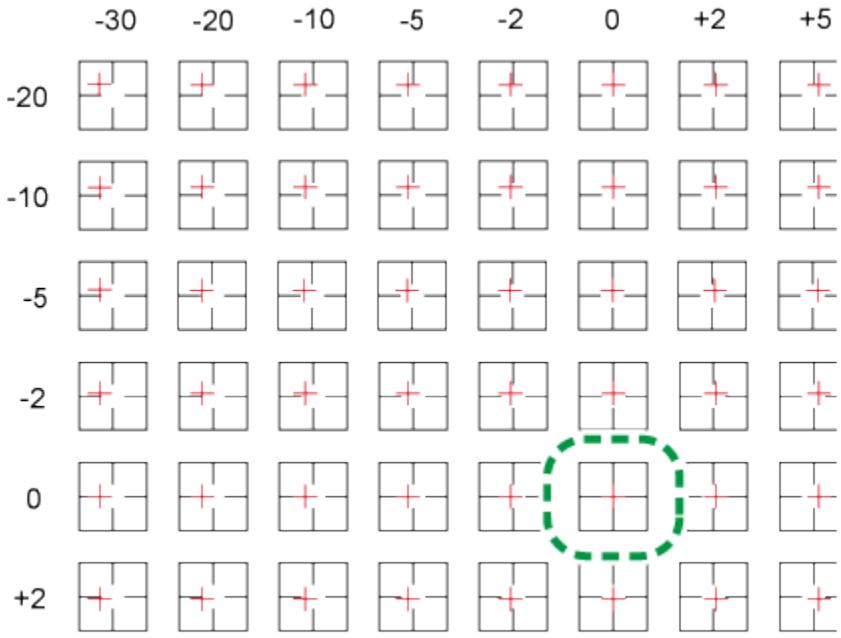


13. Press [PRINT].

The adjustment pattern is printed.

14. On the printed test pattern, check that the vertical and horizontal lines and the cross in the square are aligned to the vertical "0" and horizontal "0" positions.

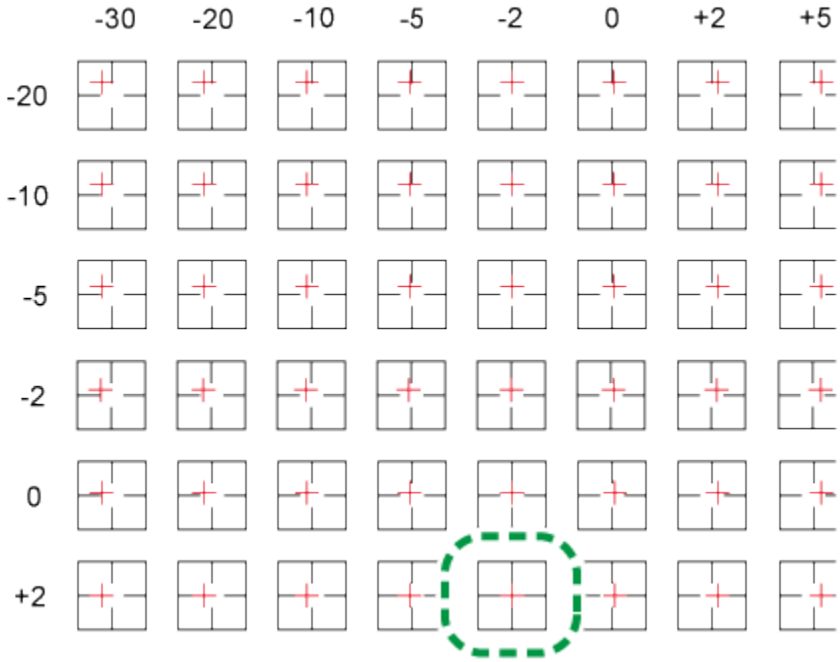
The parts on the illustrations are color-coded for clarity and differ from actual colors.

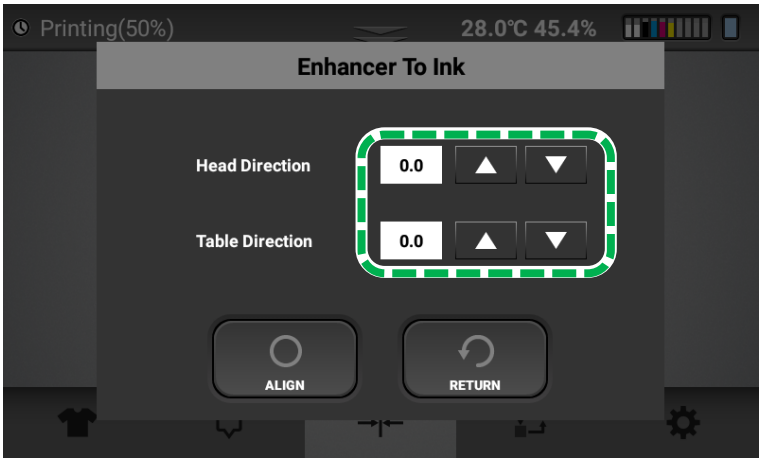


If both the vertical and horizontal lines are aligned to the "0" position, the following steps are not necessary. If they do not match, go to the next step.

15. If either of the vertical or horizontal lines are aligned to a position other than "0", specify the adjustment value.

Example:
If the vertical and horizontal lines and the cross in the square are aligned to the position of vertical "-2" and horizontal "+2", set [Head Direction] to "-2" and [Table Direction] to "+2".





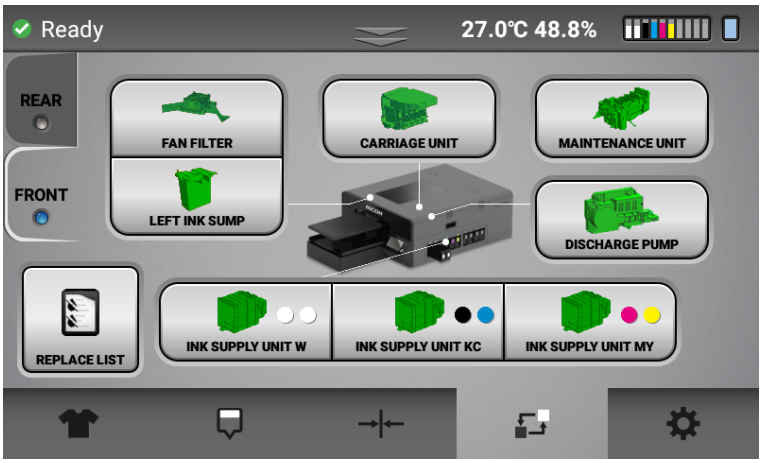
16. After entering the values, press [ALIGN] to set the values.

17. Continue making adjustments until the vertical and horizontal lines and the cross in the square are aligned to the vertical "0" and horizontal "0" positions.

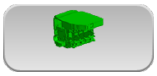
5. Replacing Service Parts

5.1. Service parts

This printer has some replaceable service parts and sumps that are monitored for service life.

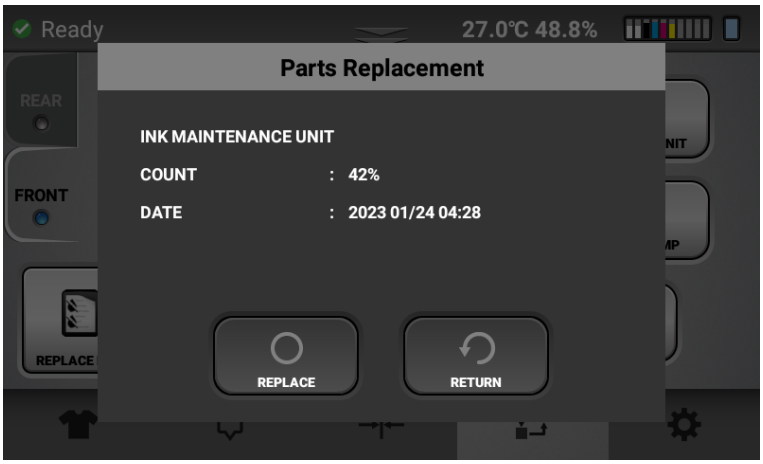


- Each icon provides the status of each service part.

The color of each component icon	Description
Green 	Normal
Yellow	Replace soon
Red	Replace now

NOTE - This is a suggested service life end based on averages. Printing and maintenance operation will not be interrupted when the service life end is reached for all components except for the left and right sumps. These sumps must be drained or replaced when the service life end is reached. Contact technical support. The components such as the maintenance unit cannot be replaced under warranty when the service life is reached (typically this is several thousand prints depending on use).

- When a component is selected, the [Parts Replacement] dialog box is displayed. It shows the count and the date of the last replacement.



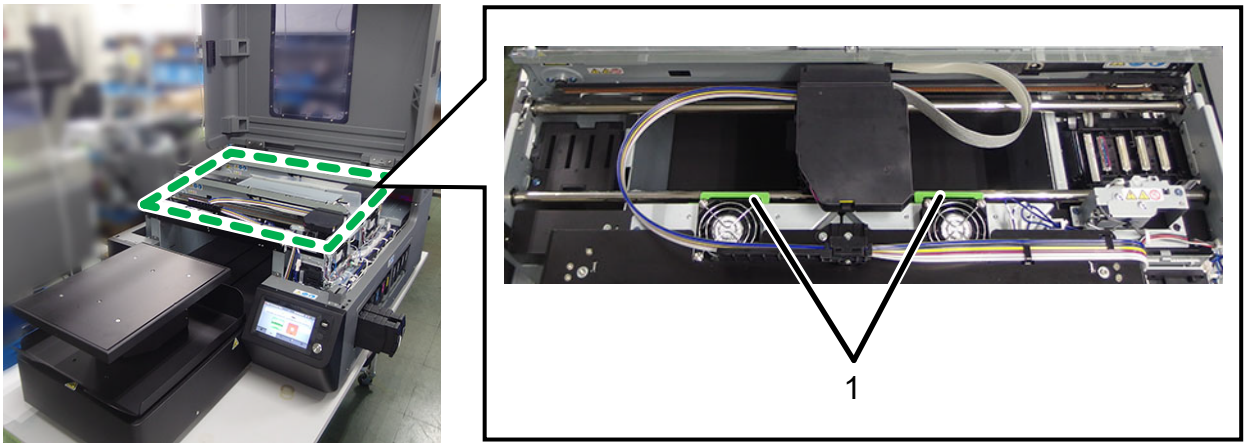
5.2. Replacing the Mist Fan Filter

If the mist fan filter needs to be replaced, a message will be displayed on the touch panel.

◆ Things to prepare

Purpose	Items
To wear	Polyethylene gloves
	Protective glasses or goggles (commercially available)
For use	New mist fan filters (2 or 4)

◆ Guide to parts

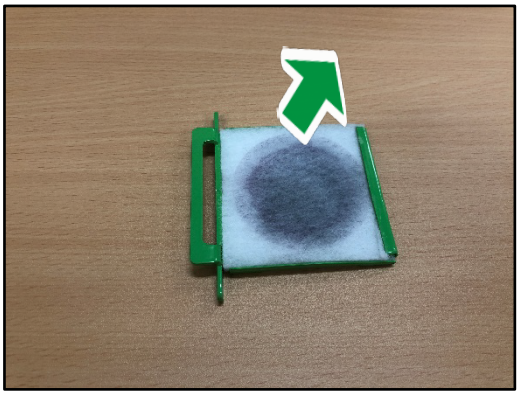


1. Mist fan filters with fixing frames

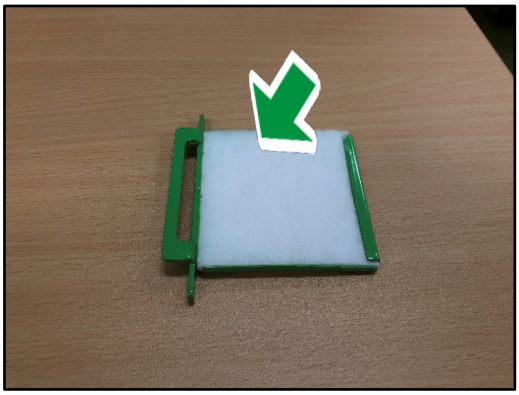
1. **Check the filter that needs to be replaced, via the touch panel.**
2. **Press [FAN FILTER].**
3. **Press [REPLACE].**
4. **Open the front cover.**

5. Remove the mist fan filter fixing frame.

6. Remove the mist fan filter from the fixing frame.



7. Set the new mist fan filter into the fixing frame.



8. Insert the mist fan filter fixing frame into its original position until it clicks.

9. Press [YES] on the confirmation message on the touch panel.

6. Preparing Your Printer for Storage/Shipping

Note - Please have cleaning cartridges available for all channels

1. **Perform regular maintenance.**

   Please refer to the following page for implementation instructions.

   See page 139, “How to Clean the Maintenance Unit and the Left Ink Sump”.

   See page 163, “How to Clean the Guide Rod”.

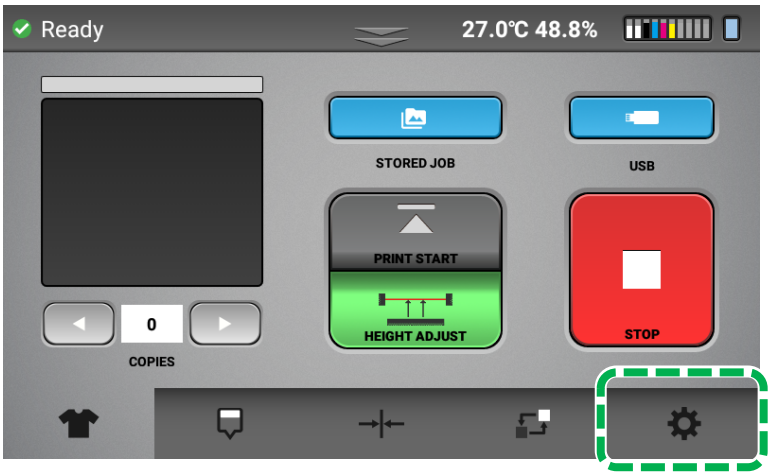
2. **Perform jig head cleaning.**

   See page 153, “JIG HEAD MAINTENANCE (CLEANING)”.

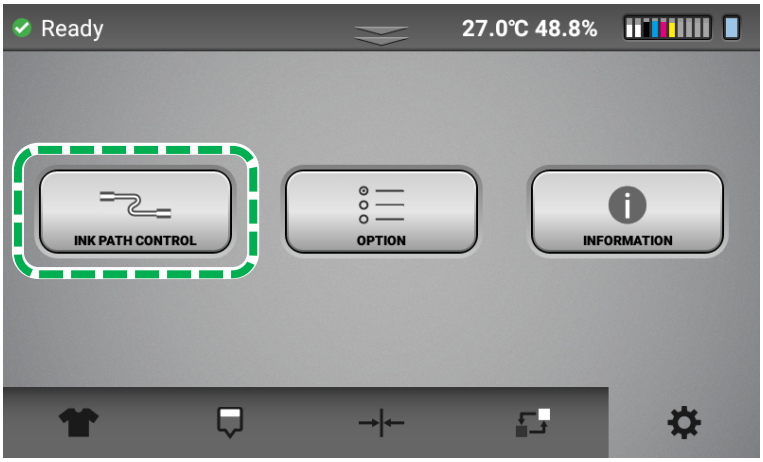
3. **Remove ink cartridges and enhancer cartridges.**

4. **Insert cleaning cartridges.**

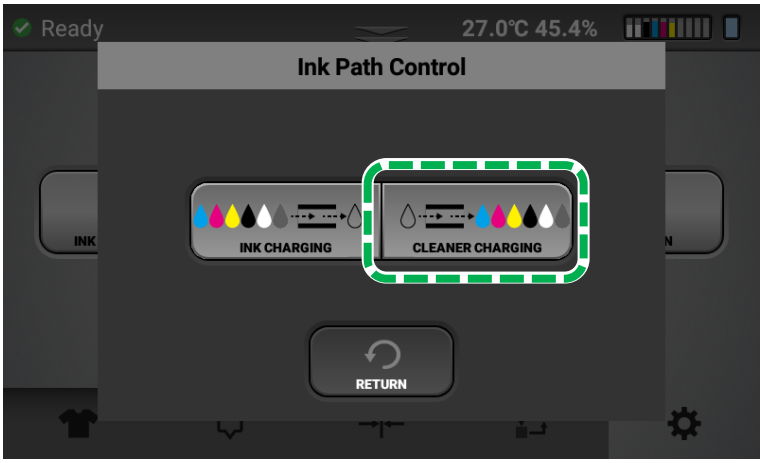
5. **Press the Settings tab.**



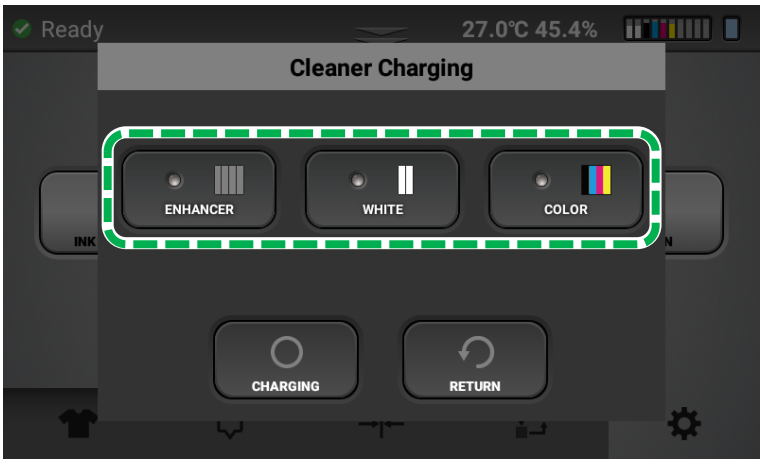
6. Press [INK PATH CONTROL].



7. Press [CLEANER CHARGING].



8. Select all 3 buttons: [ENHANCER], [WHITE], and [COLOR].



9. Press [CHARGING].

10. Confirm by pressing [YES] to charge the system with cleaning solution.

11. Attach the rubber cap to the carriage.

For information on how to attach the rubber cap, see page 240 "Attaching the rubber cap".

IMPORTANT! If the moving or shipping the printer, the right and left sumps must be emptied prior to moving or ink may spill out of the sumps and damage the printer. Contact technical support for guidance.

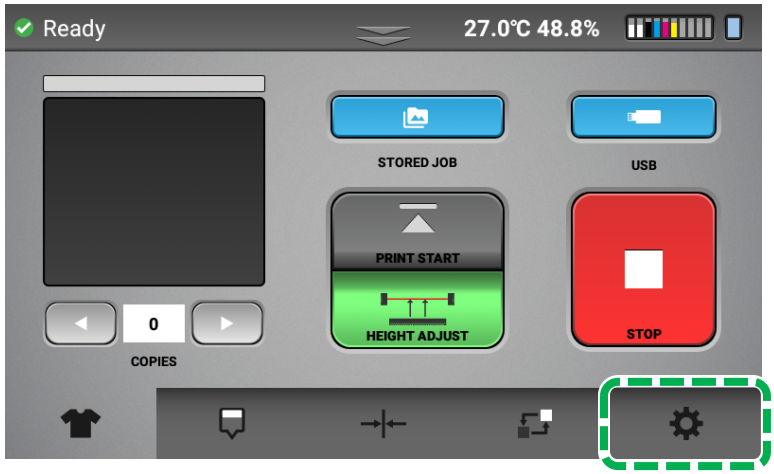
7. Using the Printer in 4C Mode (CMYK Only)

When using the printer in 4C Mode, it allows you only to use CMYK and keep the white in storage mode.

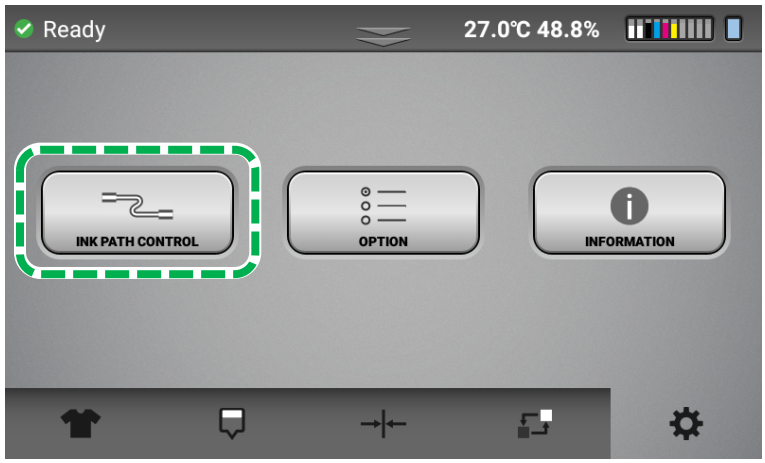
To change from 4C+W Mode to 4C Mode, perform the following operations.

Note that “4C” stands for CMYK colors and “W” stands for white color. In 4C+W mode, CMYK and white colors are used.

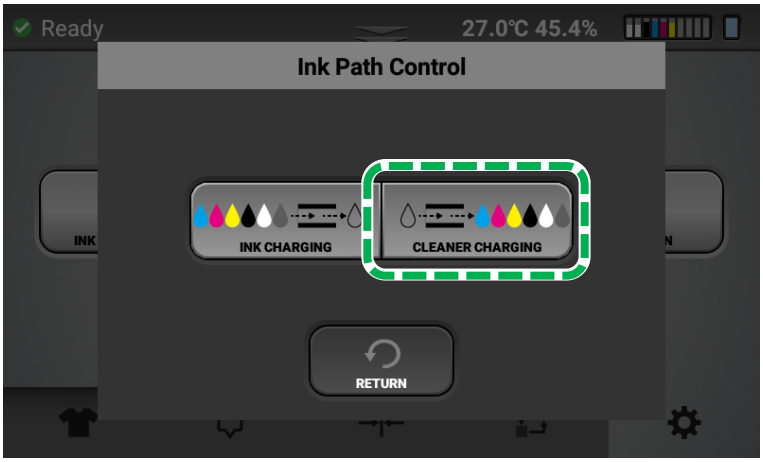
1. **Remove white Ink cartridges.**
2. **Install 2 ink cleaning cartridges in the location that was occupied by the white ink cartridge.**
3. **Press the Settings tab.**



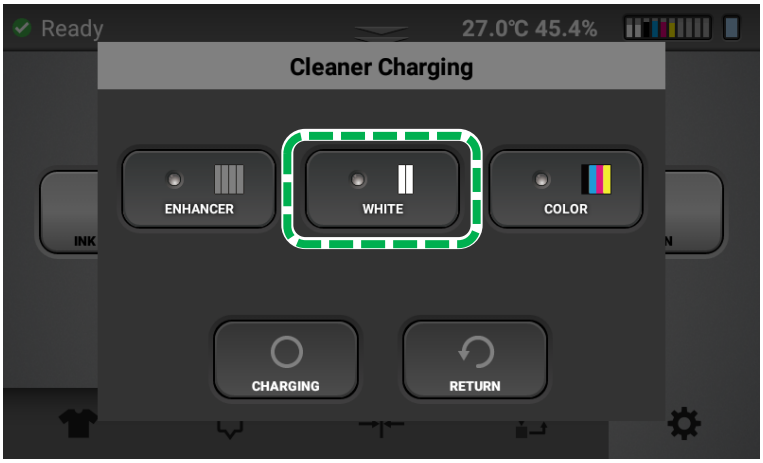
4. **Press [INK PATH CONTROL].**



5. **Press [CLEANER CHARGING].**



6. **Press [WHITE].**



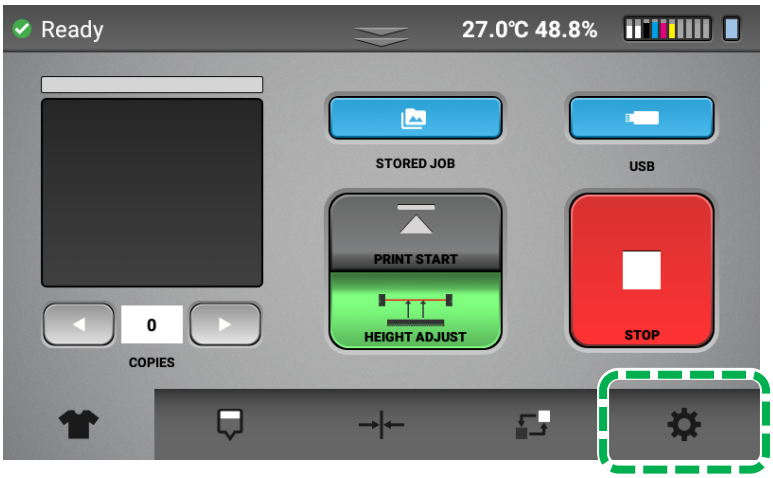
7. **Press [CHARGING].**

8. **Confirm by pressing [YES] to charge the system with cleaning solution.**

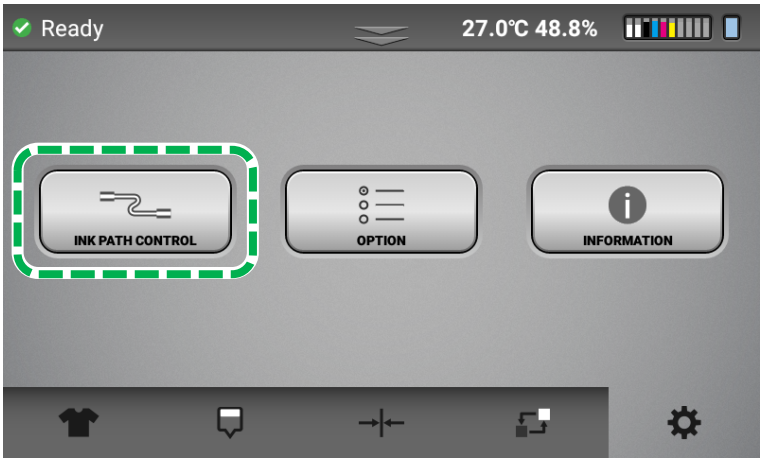
NOTE – Please allow up to 40 mins (approx.) for the system to flush the ink out and full the white lines with cleaning solution.

7.1. Changing the printer to 4C+W Mode from 4C Mode

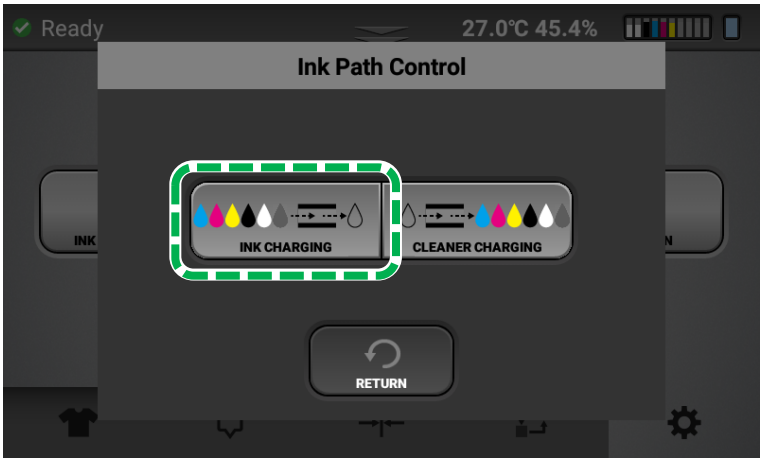
1. Remove the ink cleaning cartridges for white channel.
2. Insert the white ink cartridges.
3. Press the Settings tab.



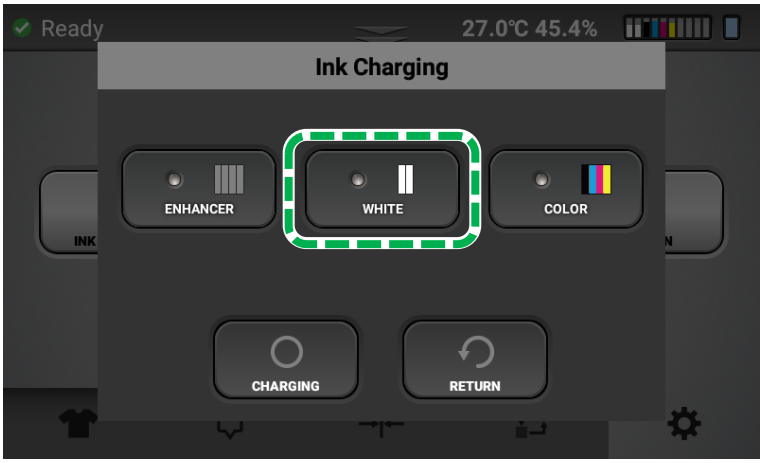
4. Press [INK PATH CONTROL].



5. Press [INK CHARGING].



6. Press [WHITE].



7. Press [CHARGING].

8. Confirm by pressing [YES] to charge the system with ink.

8. Ink Path Guide

Status		Printable Media	Remarks
Enhancer and 4C+W Mode	• Enhancer Channels : Enhancer • Color Channels : Color Ink • White Channels : White Ink	White Media Dark Media	Normal Print Mode
Enhancer and 4C Mode	• Enhancer Channels : Enhancer • Color Channels : Color Ink • White Channels : Cleaner	White Media	Print Mode without White Ink (White Ink Nozzle Protection Mode)
Enhancer and Cleaner Mode	• Enhancer Channels : Enhancer • Color Channels : Cleaner • White Channels : Cleaner	Unprintable	Mode Used for Replacing the Ink Carriage
Cleaner and 4C+W Mode	• Enhancer Channels : Cleaner • Color Channels : Color Ink • White Channels : White Ink	Unprintable	Mode Used for Replacing the Enhancer Carriage
Cleaner and 4C Mode	• Enhancer Channels : Cleaner • Color Channels : Color Ink • White Channels : Cleaner	Unprintable	Mode Used for Replacing the Enhancer Carriage
Shipping & Stock Mode	• Enhancer Channels : Cleaner • Color Channels : Cleaner • White Channels : Cleaner	Unprintable	Mode for Long-Term Storage and Shipping

IMPORTANT!

- "Enhancer and Cleaner Mode", "Cleaner and 4C+W Mode", and "Cleaner and 4C Mode" are special modes used when replacing the carriage. Do not use these modes for other purposes.
- If you have changed to these modes by mistake, please contact our service center.

9. Troubleshooting Guide

Issue/ Error	Causes	Solutions
Fuzzy blurry prints	Table height is too low.	Set the garment correctly on the platen, and then adjust the height again.
	Ink bleeding has occurred due to using excessive ink on white fabrics or light-colored fabrics.	On ColorGATE Productionserver, adjust the amount of enhancer to apply.
	Nozzle check shows all nozzles, but some areas show deflection. (See page 129, “NOZZLE CHECK”.)	Perform normal nozzle cleaning or strong nozzle cleaning, and then recheck the nozzles to see if the deflection is gone.
	For dark shirts with a white Underbase, poor pretreat. Not enough pretreat can make the white can CMYK areas of print to appear dull or fuzzy. Especially if a section of the print appears sharp and another section appears dull or fuzzy.	On ColorGATE Productionserver, adjust the amount of enhancer to apply.
	Head alignment is off.	Perform the head alignment procedure (see page 199, “Adjusting the Head”). Make sure to rule out the above reasons before this adjustment.
Horizontal banding and thin horizontal lines across the entire shirt	Nozzles are missing. A nozzle check may show some nozzles are missing.	Perform head cleans until the CMYK nozzles are 100%.
	Nozzles are all accounted for, but some are showing minor deflection.	Check the table height. The effect of any deflection can be exaggerated if the printing surface is too far away from the head. Set the garment correctly on the platen, and then adjust the height again.
		Perform head cleans until the deflection is reduced.
	Nozzles are 100% and little to no deflection.	Perform the table alignment procedure (see page 203, "Adjusting the Table").

Issue/ Error	Causes	Solutions
Horizontal banding and thick horizontal lines across the entire shirt	Nozzles are 100% and appears in solid colors of dark or gray. Bi-directional banding has to do with the colors laying down in different sequence depending on which direction the carriage is traveling.	Select the uni-directional printing. For details on specifying the print mode, see page 68 "Setting of print mode". For details on unidirectional printing, see the note in "Setting of print mode".
	Nozzles are 100%. It appears in solid colors and the colors are inconsistent in the scanning direction of the carriage. This is caused by the different drops of CMYK that are not combining consistently.	This can show in the Speed mode for CMYK. Print in Fine mode for CMYK. If the problem still persists, perform printing in SuperFine or ExtraFine mode. Doing so may improve the image quality. (See page 68, "Setting of print mode")
Several nozzle out-does not improve not at all or just a little with head normal and strong head cleans and JIG HEAD MAINTENANCE	During an initial ink fill, air is introduced to the head or after a head clean cleaning fluid or air was inadvertently pushed into the head by the cleaning applicator.	Let the printer sit overnight. This will give the air a chance to settle. The nozzle should be good after this.

Issue/ Error	Causes	Solutions
(CLEANING) and JIG HEAD MAINTENANCE (NOZZLE CAPPING)	The print head nozzle has dried and is clogged with toner.	1. Perform JIG HEAD MAINTENANCE (NOZZLE CAPPING). 2. Leave the printer turned off for 1 to 3 days (or 1 week if possible). 3. Turn the power on, remove the Head Cleaning JIG II from the platen. 4. Clean inside the cap of the Head Cleaning JIG II by using clean water and wiping it with a cloth, making sure that there is no ink remaining inside the cap. Wipe the Head Cleaning JIG II too with a dry cloth. 5. Attach the platen and platen frame to the platen base. 6. Set [AUTO HEAD CLEAN] to [STRONG] and execute it 3 to 5 times. 7. Use a cleaning cartridge to replace the ink in the head where the nozzle is clogged with the cleaning liquid, and leave it on for 24 hours. There are two patterns of replacement with cleaning liquid. See page 217, "Preparing Your Printer for Storage/Shipping". See page 220, "Using the Printer in 4C Mode (CMYK Only)". 8. Replace the ink again and perform Nozzle check to see if it meets the recovery criteria. If the problem persists, contact your service or sales representative.
Dark shirt prints look dull	White nozzles are 100% or near 100%. In adequate amount of pretreat on the shirt. This can cause the white ink to sink into the shirt.	On ColorGATE Productionserver, adjust the amount of enhancer to apply.
	White nozzles are 100% or near 100%, but it looks dull. White ink has settled.	On ColorGATE Productionserver, adjust the amount of enhancer to apply.
	Missing many nozzles on one or both white heads.	Perform head cleans to recover the nozzle to 100% or near 100%.
Color print appear to be shift from white Underbase print.	Table height is too low.	Set the garment correctly on the platen, and then adjust the height again.

Issue/ Error	Causes	Solutions
	Head alignment is off.	Perform the head alignment procedure (see page 199, “Adjusting the Head”).
	Depending on the material of the shirt and the amount of ink ejected.	Input the amount of “Choke” with ColorGATE Productionserver. (see ColorGATE Productionserver Online Help).
Light shirt looks too dull	Nozzle is 100%. Wrong output profile is selected.	If printing in 600 X 600 Dpi and using a profile meant for 1200 X 1200 DPI, the shirt will look dull. Change the profile.
Cartridge reads 0% but it was just at a high percentage (for example 65%) from a previous operation (before printing or before cleaning).	Temporary loss of Comm caused the cartridge reading error.	Pull out the cartridge that reads 0%. The status should change to NC and the cartridges not loaded message will appear in the status bar. Put the cartridge back in and the percentage reading should go back to normal. If the percentage still reads 0% after inserting the cartridge again, turn the printer off and then turn it back on. The cartridge should read correctly.
Blot of ink on the shirt	The frame is blotting with ink.	Clean the frame.
	The print head rubs against the media during printing.	Set the garment correctly on the platen, and then adjust the height again.

Maintenance Requirements

IMPORTANT! Perform the following to prevent the risk of printer failure:

- Always keep the machine power on.
- Do not leave the machine with an empty ink cartridge installed, an empty Cleaner tank, or an error or service call message pending.
- Always keep spare ink and Cleaning Liquid for replenishment on hand. If you do not have replacement ink or cleaning liquid , install the cleaning cartridge in the printer and fill it with cleaning liquid to prevent the risk of damage to the carriage.
- If ink clogging occurs frequently, please increase the frequency of cleaning the ink. Refer to the user manual for details.
- Do not move the table back and forth by hand. It can cause printer failure.

Maintenance Schedule

Always perform the following maintenance schedule. These are minimum guidelines. More frequent cleaning may be necessary depending on machine usage. Please refer to the user manual for detailed instructions.

[Daily]
Shake White Cartridge

[Every 3 days]
Clean the Print Head Nozzle Cover of the Color Ink Station.
[Jig Head Maintenance]
Clean the Maintenance Unit and the Flushing Box of the Ink Station. [Regular Maintenance]

[Monthly]
Clean the Guide Rod. [Regular Maintenance]
Attach the Head Cleaning Jig II. [Jig Head Maintenance]

Installation/Operation Environment

Temperature: 59°F/15°C - 90°F/32°C
Humidity: 45% - 80%RH, non-condensing humidifier recommended

9.1. When the Printing Result Is Not as Expected

Depending on the printing conditions, when printing on a dark-colored fabric that involves the formation of a background with white ink, an undesired printed image may occur.

For problems with printing results, see the solutions below.

When white spot appears

For image types with solid ink, white spot appears on the surface after fixing the ink with a heat press.

Causes:

It may occur when the white ink is not sufficiently dried.

The following causes are possible.

- The height of the image size being less than 100 mm,* and the drying time of the white ink being short.
  *If the image size is too small, the proper drying time cannot be ensured after the white ink prints.
- The design of the image uses a lot of dark colors.
- Large amounts of white ink being ejected. (The intensity is set to 100 instead of the default value of 98.)
- Color ink flowing when white ink is set to white solid mode (flooding or minimum 100 of brightness).
- It is set to use a lot of color ink.

Solutions:

Change the print mode on ColorGATE Productionserver.

1. **Select the job in the “Job” archive, and then right-click the selected job.**
2. **Click [Settings].**
3. **Click the [Color] tab, and then click [Settings] under “Advanced”.**
4. **Click the [Print Mode] tab.**
5. **Select [Brightness - Black Substrate] in [White:] in [Special Colors].**

6. Decrease the value for [Intensity:].

Example: Change the value from the default value of “98” to “70”. The value is for reference purposes only.

7. Click [OK].

If the problem persists, perform the following.

- Make sure to heat press the shirt prior to printing.
- Set drying time longer.
- At the time of fixing the ink, the normal fixing is carried out after leaving a gap of about 1 to 2 cm for about 10 seconds without touching the medium with the heat press.

- There is a possibility that the brand or type of printed fabric is bleeding easily.
  If possible, change the brand or type of printed fabric.

9.2. If an SC (Service Call) error is displayed

If a problem occurs with the machine and if "SC-**" (** is a number) is displayed on the touch panel, contact your sales or service representative as soon as possible.

If you are instructed to attach the rubber cap by the sales or service representative, attach it to the head as instructed.

If you cannot promptly contact your sales or service representative, follow the procedure described to attach the rubber caps to the carriages.

The rubber cap protects from damage to the heads.

IMPORTANT!

- Be sure to check the identification labels on the rubber caps before attaching it. Be careful not to attach the cap that was on the rear carriage to the front carriage or attach the cap that was on the front carriage to the rear carriage. Doing so will mix the ink and enhancer, causing a malfunction.
- When you attach the rubber caps to the rear carriage, do so without adding any cleaning liquid. Attaching the rubber caps with cleaning liquid may cause nozzle clogging and a malfunction.

◆ Things to prepare

Purpose	Items
To wear	Polyethylene gloves
	Protective glasses or goggles (commercially available)
For use	Cleaning liquid*
	Dropper
	Rubber Cap
	Tray or paper
	Cleaning cloth

* Move the cleaning liquid to use to the bottle for cleaning liquid.

Stopping printing

If an SC error occurs during printing, stop printing.

If you cannot use the touch panel and if the platen has stopped inside the machine, turn off the machine and pull the platen slowly to the front side of the machine by hand. Then, proceed to page 236, “Checking the carriage position”.

CAUTION: Moving the platen fast or hard by hand could cause a malfunction.

1. Press [STOP].

2. Press [CANCEL].

The printing job is stopped and the platen returns to the front side of the machine.

Proceed to page 236, “Checking the carriage position”.

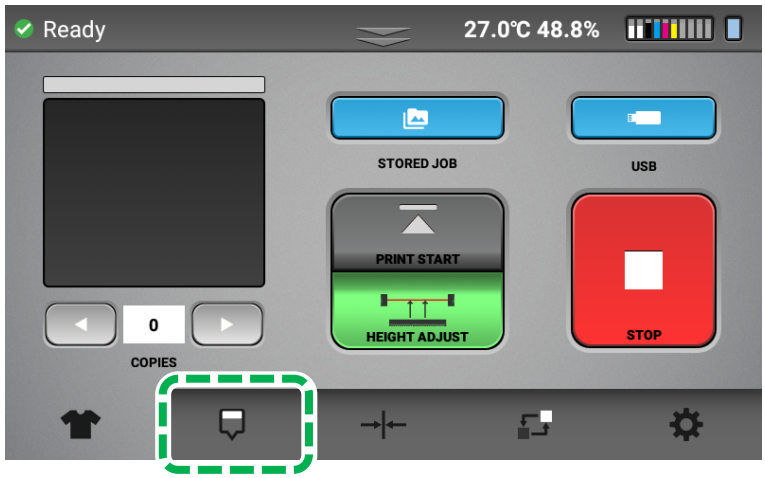
Moving the carriage from the touch panel

To attach the rubber cap to the heads, move the carriage to the center position.

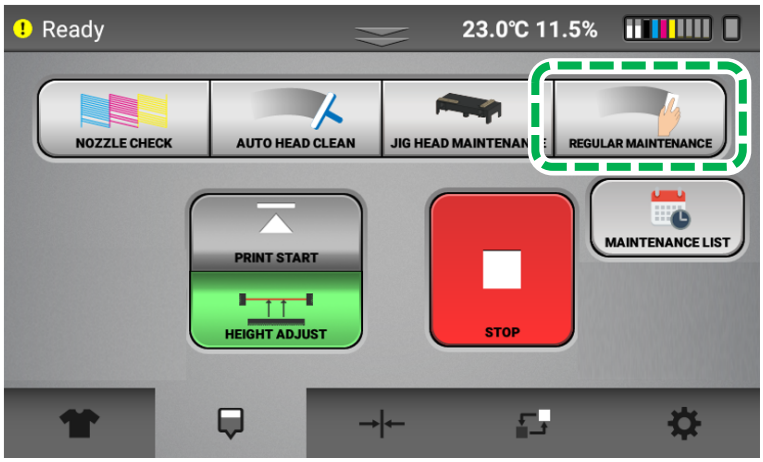
First, move the position of the carriage by operating the touch panel.

If you cannot operate the touch panel, proceed to page 236, “Checking the carriage position”.

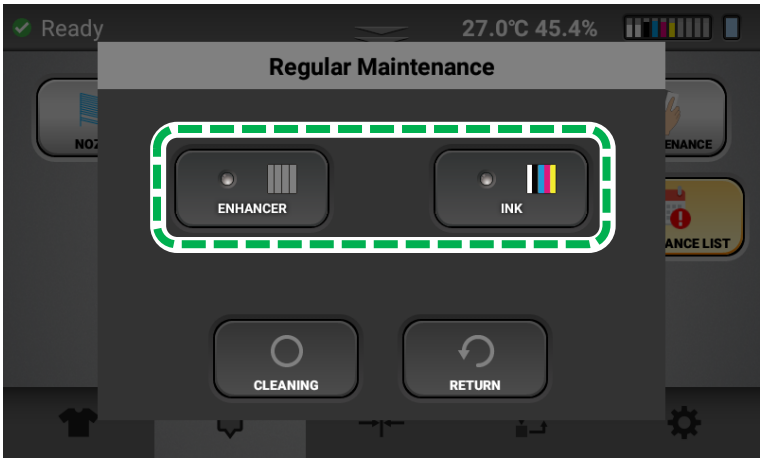
1. Press the Maintenance tab.



2. Press [REGULAR MAINTENANCE].



3. Press [ENHANCER] and [INK].



4. Press [CLEANING].

The carriage moves to the center position.

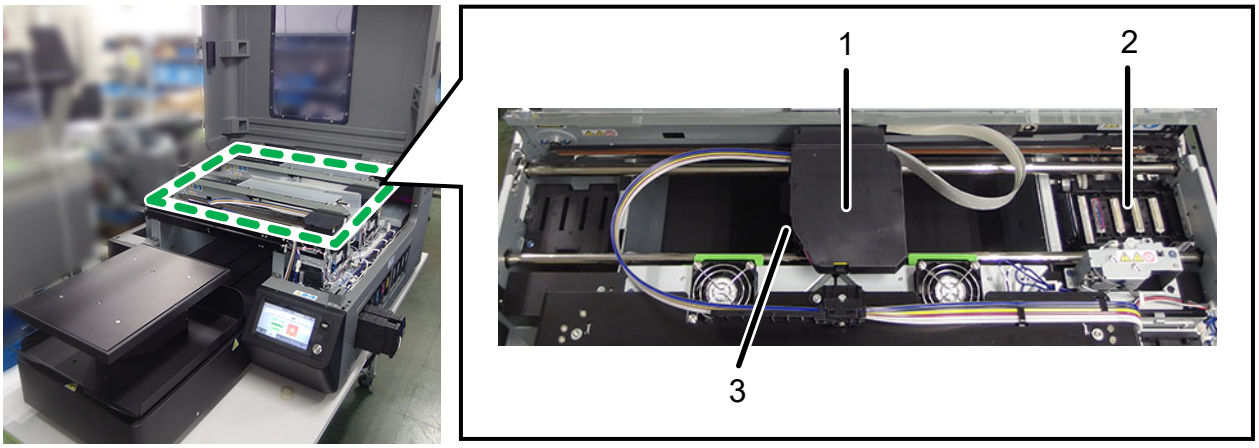
5. Turn off the machine.

If you cannot turn off the machine, turn off the main power switch.

Proceed to page 236, “Checking the carriage position”.

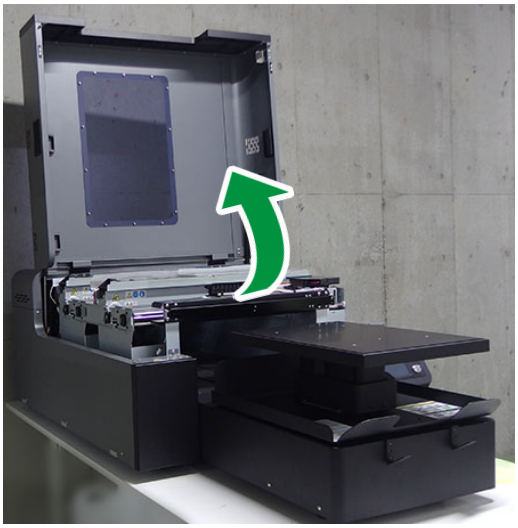
Checking the carriage position

Guide to parts



1. Carriage
2. Maintenance unit
3. Head (Located behind the carriage)

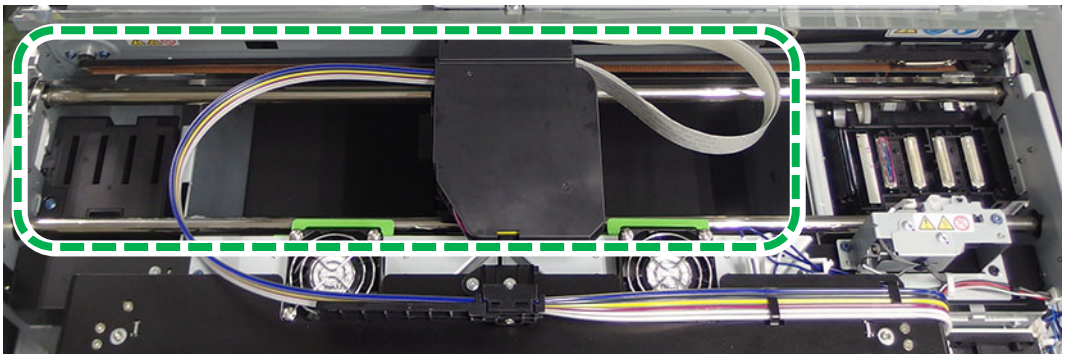
1. Open the front cover.



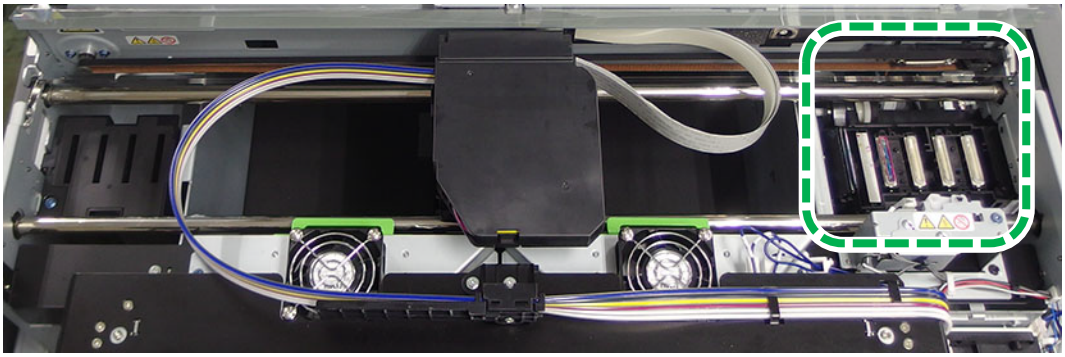
2. Check the carriage position.

Possible case of carriage position

Case 1: The carriage is in the center position or in a position other than the position of the maintenance unit. Proceed to page 240, “Attaching the rubber cap”.



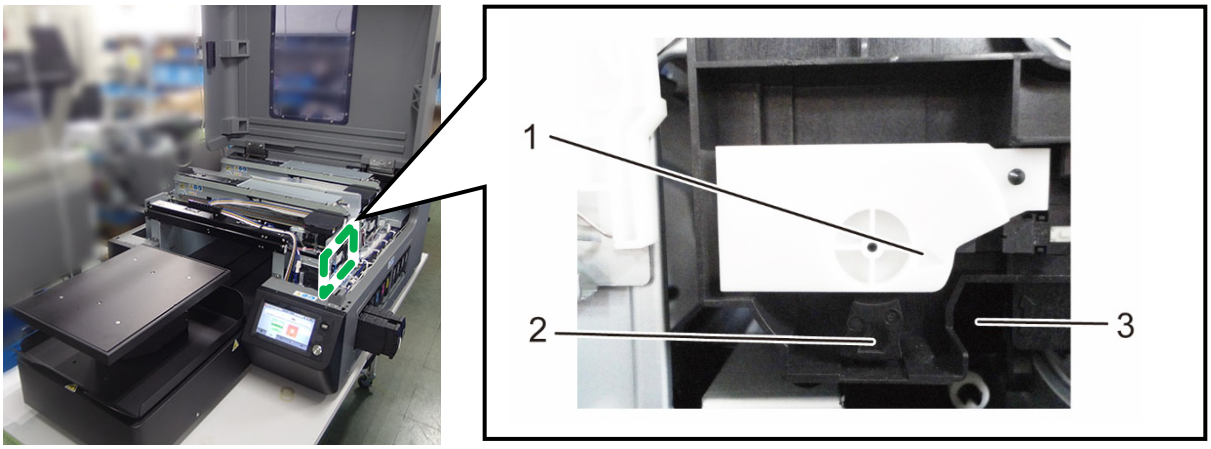
Case 2: The carriage is in the maintenance unit position. The carriage needs to be unlocked. Proceed to page 238, “Unlocking the carriage”.



Unlocking the carriage

If the carriage is in the maintenance unit position and cannot be moved by operating the touch panel, the carriage must be unlocked manually and moved by hand.

◆ Guide to parts

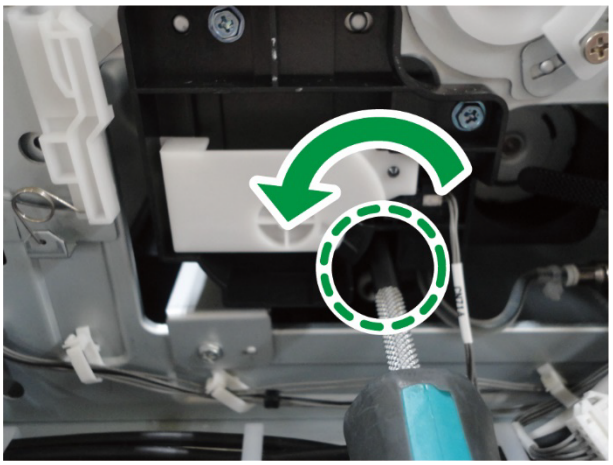


1. **Mark A**
2. **Mark B**
3. **Unlock knob (in the recessed area)**

1. Insert a screwdriver to unlock the knob, or use your fingers to unlock the knob.

Align the screwdriver with the cross on the surface of the unlocking knob.

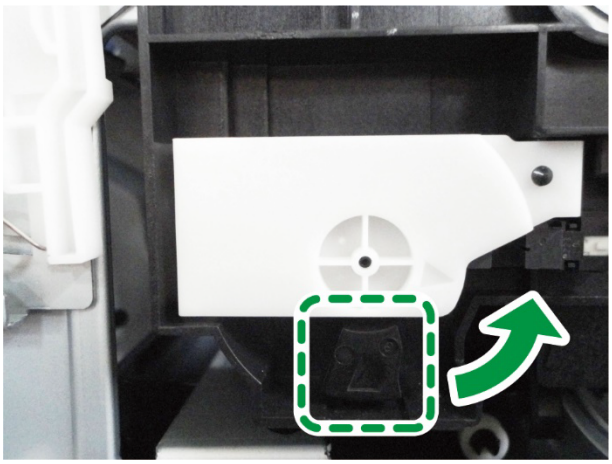
When using fingers, hold down the white cover lightly during operation. Be careful not to push the black tab up too far. Doing so may cause the black tab and cover to come off.

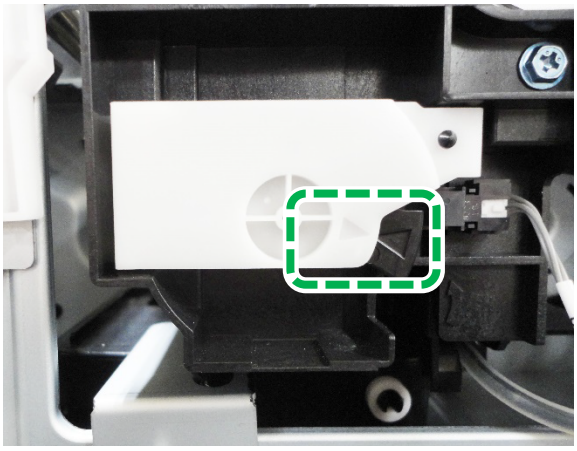


IMPORTANT! Never use the screwdriver for any places other than those specified in this manual. When using a screwdriver, be careful not to damage or break any cables or parts. If you have any questions or concerns about this operation, do not force it to continue. Contact your sales or service representative.

2. **Turn the screwdriver counterclockwise to align mark B with mark A.**

When marks A and B are facing each other, the carriage lock is released.





3. **Move the carriage slowly by hand.**

Proceed to page 240, “Attaching the rubber cap”.

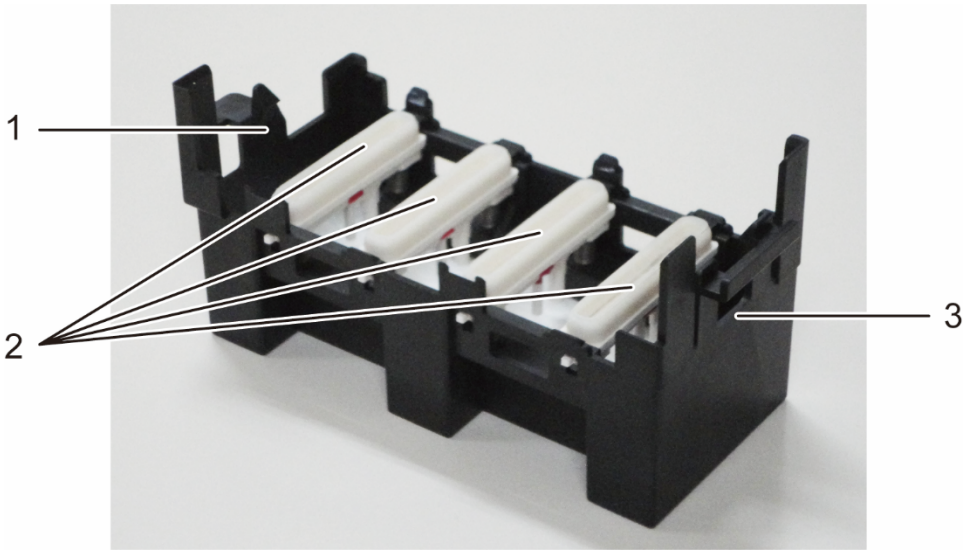
Attaching the rubber cap

Attach the rubber caps to both the front carriage and rear carriage.

IMPORTANT!

- Be sure to turn off the printer before this operation.
- Be sure to check the identification labels on the rubber caps before attaching it. Be careful not to attach the cap that was on the rear carriage to the front carriage or attach the cap that was on the front carriage to the rear carriage. Doing so will mix the ink and enhancer, causing a malfunction.
- If you are not used to installing the rubber cap, such as when installing it for the first time, first practice installing/removing the rubber cap without adding cleaning liquid. After that, please practice installing/removing the rubber cap with cleaning liquid and check if it is installed correctly with the cleaning liquid in place.
- Please be careful not to touch the encoder sheet or guide rod. If you touch the encoder sheet and get dirt on it, wipe off the dirt. For details, see page 174 "How to Clean the Encoder Sheet".
- When you attach the rubber caps to the rear carriage, do so without adding any cleaning liquid. Attaching the rubber caps with cleaning liquid may cause nozzle clogging and a malfunction.

◆ Guide to the rubber cap



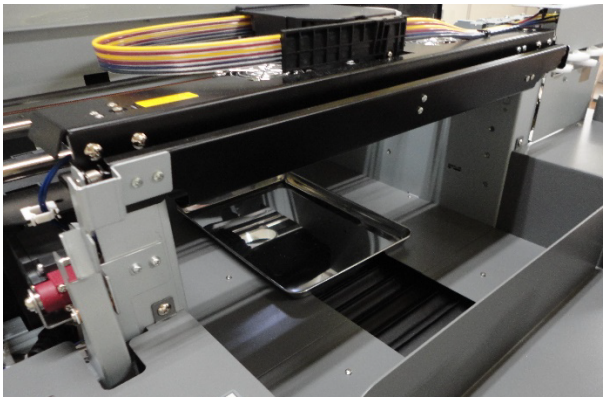
1. **Left side (single frame on the top front)**
2. **Caps**
3. **Right side (two frames on the top)**

1. Clean the maintenance unit.

For details on how to clean the maintenance unit, see page 139 “How to Clean the Maintenance Unit and the Left Ink Sump".

2. Put a tray or paper under the head.

The tray or paper prevents solid ink, lint, and cleaning liquid from entering the machine.



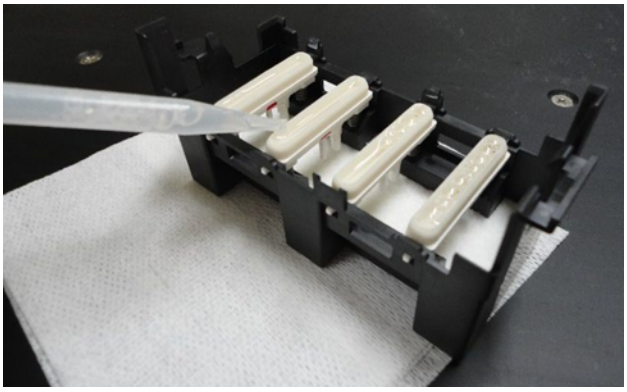
3. If the carriage is in a position where it is difficult to operate, move the carriage slowly by hand.

4. Fill all the caps of rubber cap with cleaning liquid using a dropper.

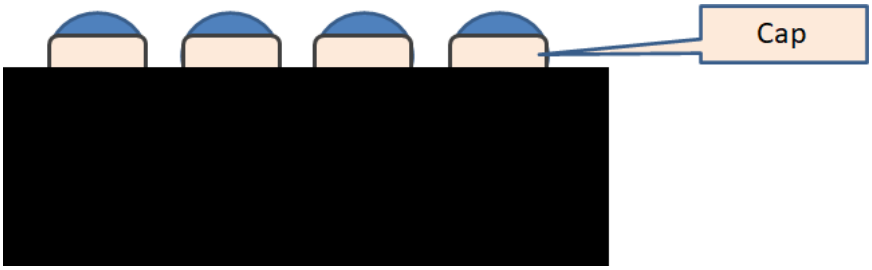
IMPORTANT! When you attach the rubber caps to the rear carriage, do so without adding any cleaning liquid. Attaching the rubber caps with cleaning liquid may cause nozzle clogging and a malfunction.

1. Draw up approximately 2 ml of cleaning liquid from the bottle for cleaning liquid.

2. Place approximately 1 ml of the cleaning liquid drawn using the dropper into the cap.



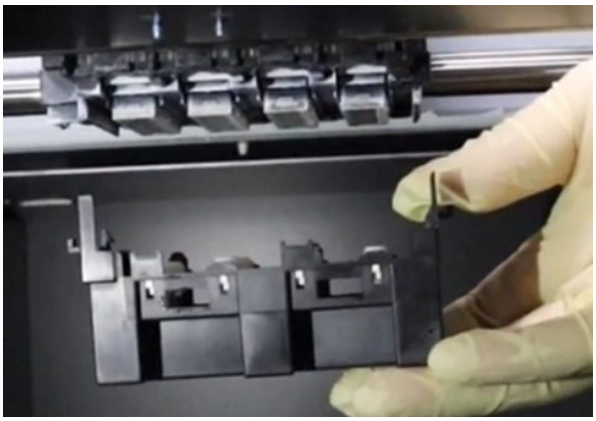
After adding approximately 1 ml of the cleaning liquid, release the remaining liquid from the dropper one drop at a time into the cap until the liquid level is raised slightly above the rim of the cap when viewed from the side, as shown in the illustration below.



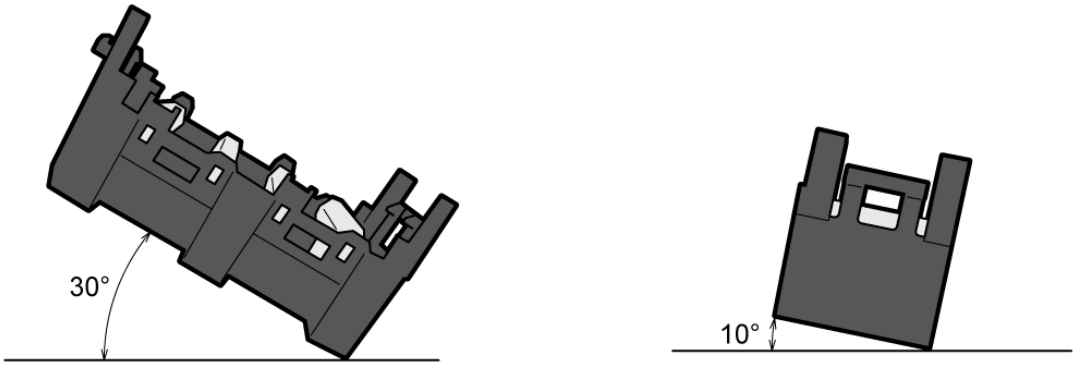
This should be done for all caps.
If bubbles are generated, please use a dropper to suck out the bubbles, as they may not protect the head properly.

5. Move the cleaning liquid in the rubber cap under the carriage so as not to spill it.

If it is difficult to check the position of the head, use a mirror to check the position.



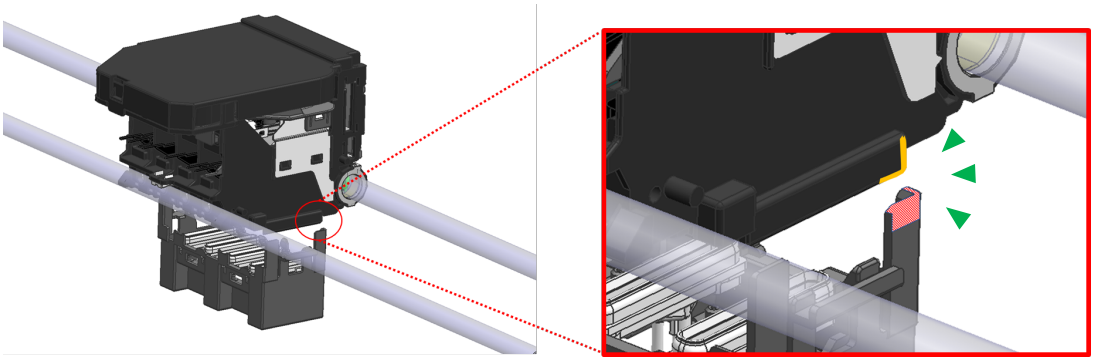
When the rubber cap is tilted, the angle at which the cleaning liquid inside the cap spills out is "left to right: approx. 30 degrees" and "front to back: approx. 10 degrees" when the rubber cap is filled with cleaning liquid to the target state.



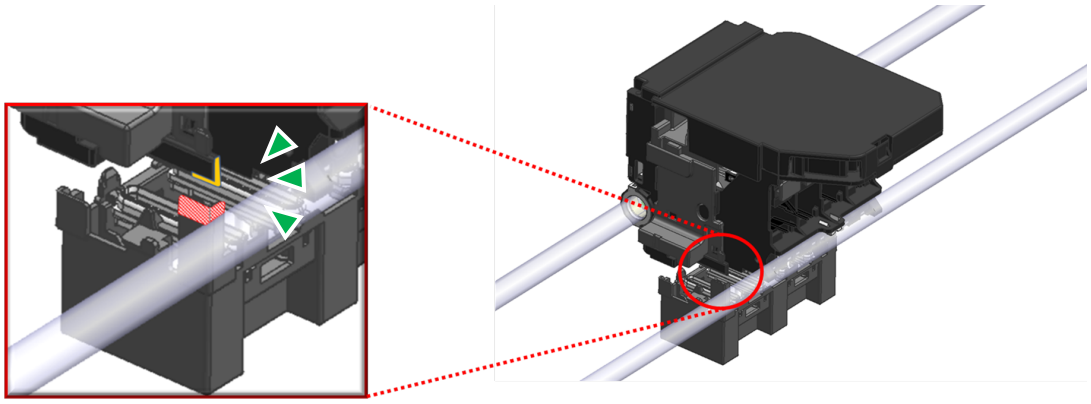
Therefore, when installing the rubber cap, move it carefully so that it tilts to the left or right to some extent, but not to the front or rear.

6. Adjust the left and right corners of the rubber cap to the corners of the carriage.

Right side

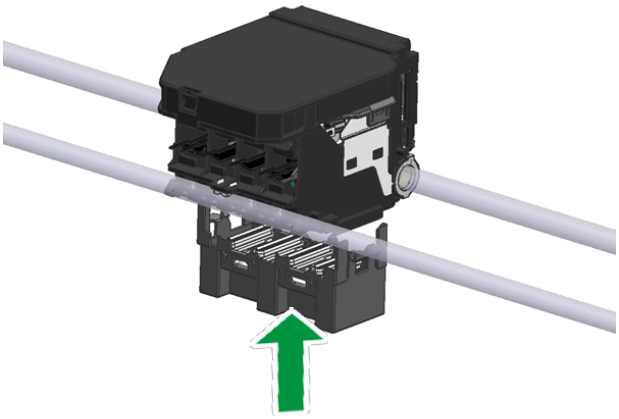


Left side



7. Push the rubber cap up until it clicks.

Wipe up any cleaning liquid spilled when the rubber cap is pushed up.



8. Leave the machine as it is until a serviceperson comes.

NOTE - Do not put the cleaning liquid remaining after use into the machine's cleaner tank or back into the cleaner bottle.

How to check the condition of the installation of the rubber cap with cleaning liquid

IMPORTANT!

- When you attach the rubber caps to the rear carriage, do so without adding any cleaning liquid. Attaching the rubber caps with cleaning liquid may cause nozzle clogging and a malfunction.
- If the amount of cleaning liquid to be added to the rubber cap is not sufficient, or if cleaning liquid spills out during installation, the head will not be protected correctly. If you are not familiar with this operation, please practice installing/removing the rubber cap with cleaning liquid in it to see if the head is protected correctly.

1. Install the rubber cap filled with cleaning liquid.

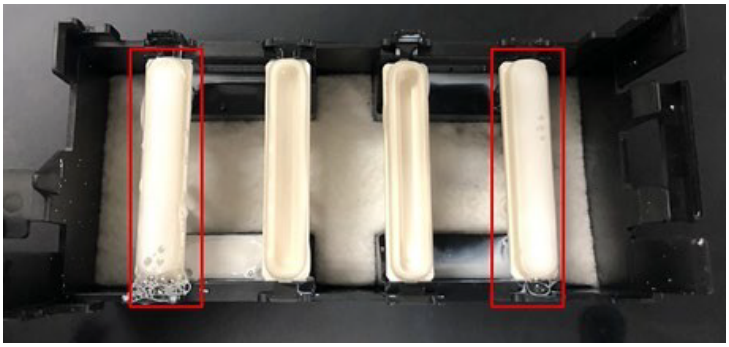
See “Attaching the rubber cap” on page 240 for installation instructions.

2. Remove the rubber cap about 5 minutes after installation.

See “Removing the rubber cap” on page 247 for removal instructions.

3. Perform visual checks.

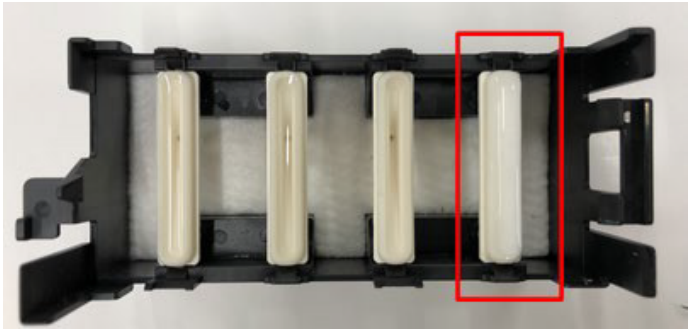
If the cleaning liquid was installed correctly without spilling, the cleaning liquid in the cap appears discolored white. As shown in the photo below, if the caps on the left and right ends are discolored white, the center cap is also installed correctly.



However, if the cleaning liquid in all caps is not discolored white, or if only the caps on either end are discolored white, they may not be installed correctly.

If this is the case, install the rubber cap again to check if it is installed correctly.

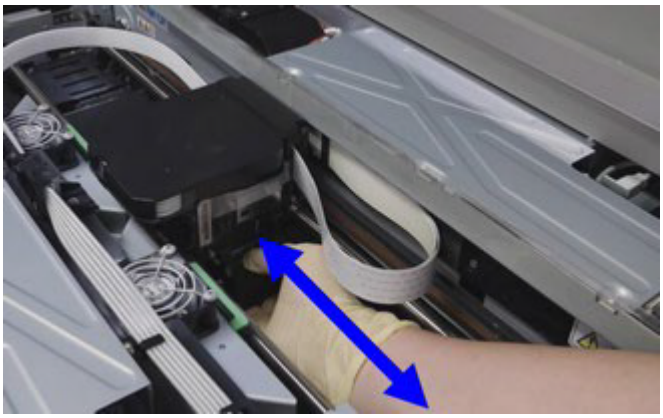
In the NG example below, only the rightmost cap is discolored white. This can occur if the left side claw is not installed correctly. Check for gaps when installing the rubber cap.



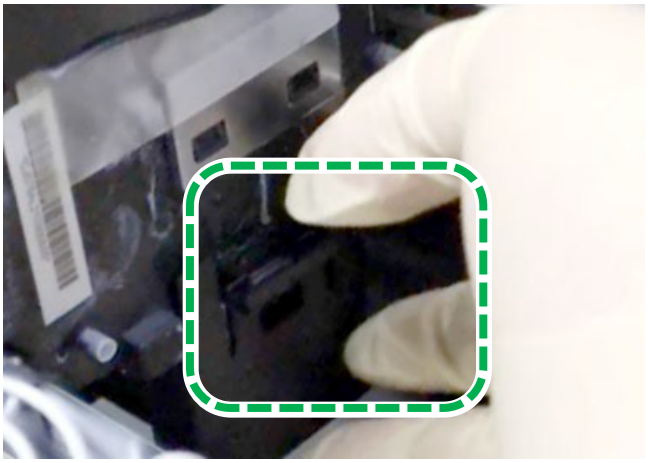
Removing the rubber cap

1. Check the carriage position.

If the carriage is in a position that makes it difficult to remove the rubber cap, move the carriage slowly by hand.

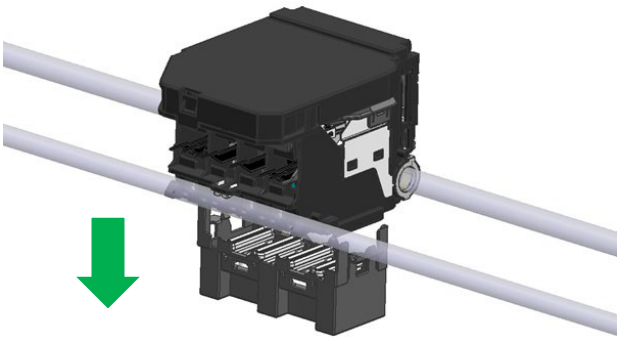


2. Open the two pawls on the right side of the rubber cap outward and remove the pawls from the carriage.



3. Remove the rubber cap from the carriage by pushing it downwards.

If the carriage is in a position that makes it difficult to remove the rubber cap, move the carriage slowly by hand.



4. Remove the rubber cap from between the guide rods.

When removing the rubber cap from between the guide rods, it is recommended to hold the flat cable with the hand opposite to the hand holding the rubber cap while removing the rubber cap, since the rubber cap tends to get caught on the flat cable.

If it is difficult to check the position of the head, use a mirror to check the position.

NOTE- Wipe off the used rubber cap and keep it clean.

10. Appendix

10.1. Update the firmware

RICOH Ri 4000 has 2 manual firmware update methods.

Follow the procedure described in this manual to update.

For details, see below chapter.

- Update by using USB drive
- Update by connecting your PC and RICOH Ri 4000 with Ethernet cable

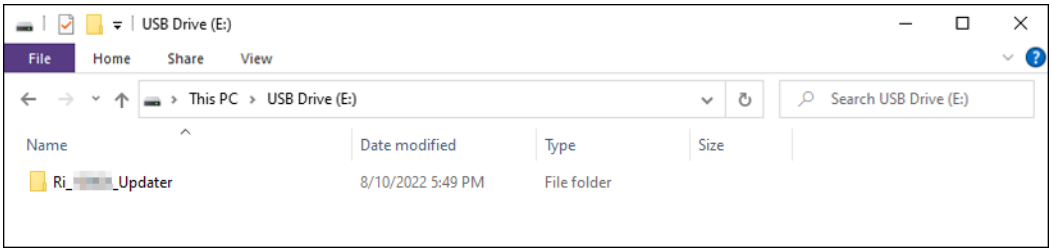
Note - If you installed the Data Collector Module, you can be easy to update automatically.
For details about how to install the Data Collector Module, see page 61, "Setup Driver".

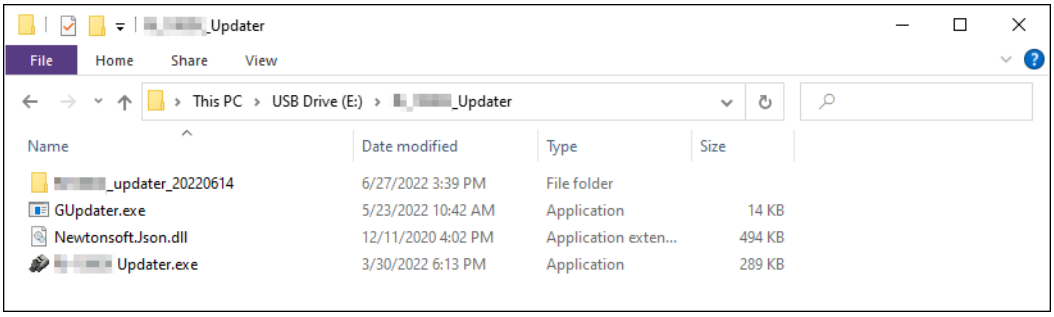
Below are the steps to update manually.

Update by using USB drive

1. Insert USB drive into PC and save updater files.

Save the folder "Ri-4000 Updater" to USB drive with the directory shown below.

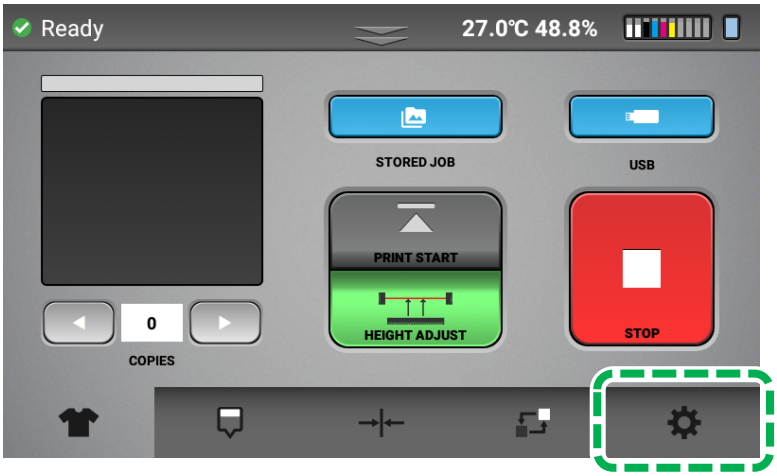




Note - Use a USB drive with the following specification.
Format: FAT32
Capacity: 32GB or less recommended.
Be sure to save files in the above directory. If files are saved in different directory, firmware cannot update normally.
USB drive is not included in this product, please prepare USB drive yourself.

2. Remove the USB drive, insert into the front USB port.

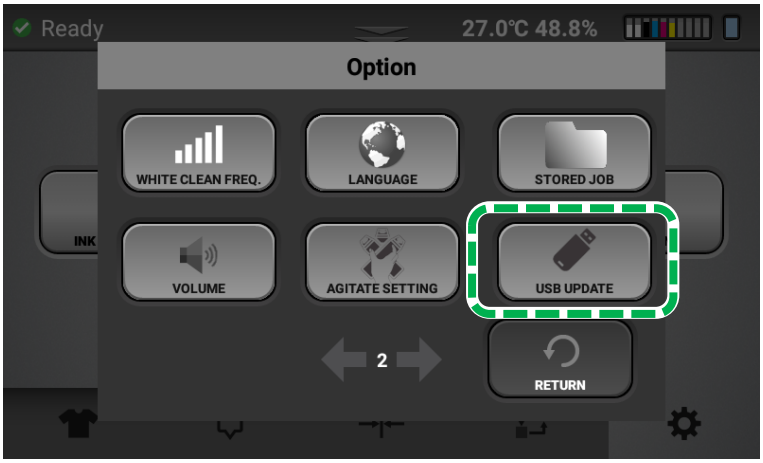
3. Press the Settings tab.



4. Press [OPTION].

5. Press [ ].

6. Press [USB UPDATE].



7. Press [YES].

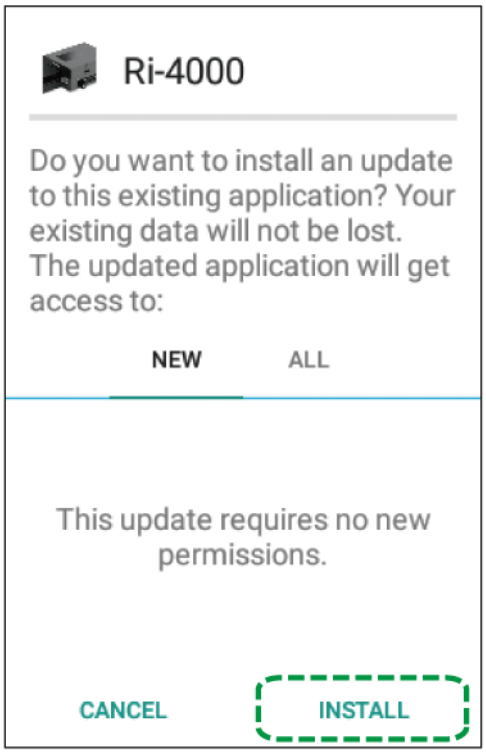
8. Update automatically in order of Panel (GIB), Sub Control (SCB) and Engine (CTL).

Follow the steps below to update each firmware.

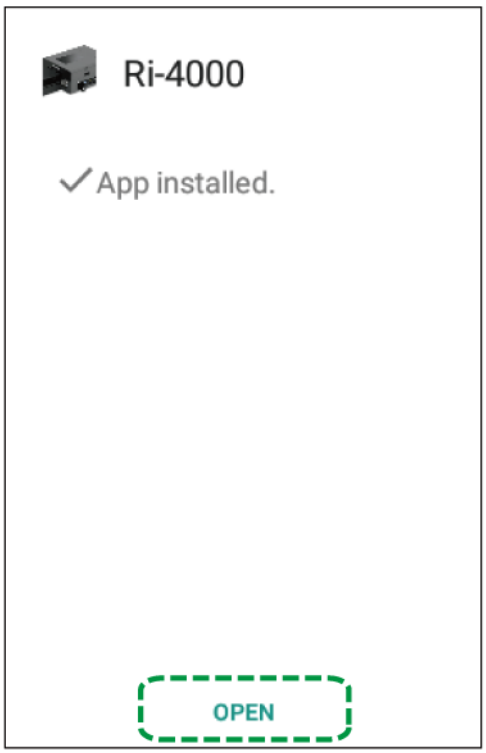
IMPORTANT! Do not turn off RICOH Ri 4000 or remove the USB drive during updating. It may cause the printer failure.

Firmware update (Panel (GIB))

1. After sending the updater, press [INSTALL] when the screen below is displayed.



2. After install completed, press [OPEN] when the screen below is displayed.



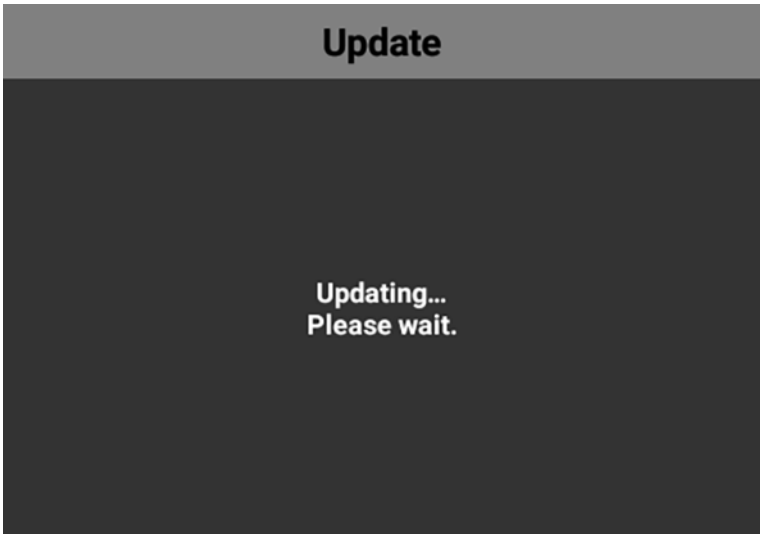
Panel (GIB) reboot automatically after press [OPEN].

Afterwards, Sub Control (SCB) and engine (CTL) start to update automatically.

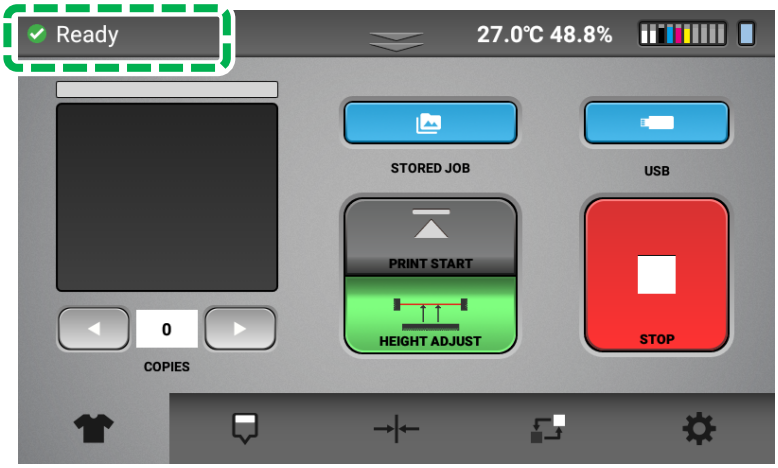
IMPORTANT! You must not follow the steps different from the above.
The printer may become unrecoverable by user.

Firmware update (Sub Control (SCB) / Engine (CTL))

1. After sending the updater, wait until the dialog below disappears.



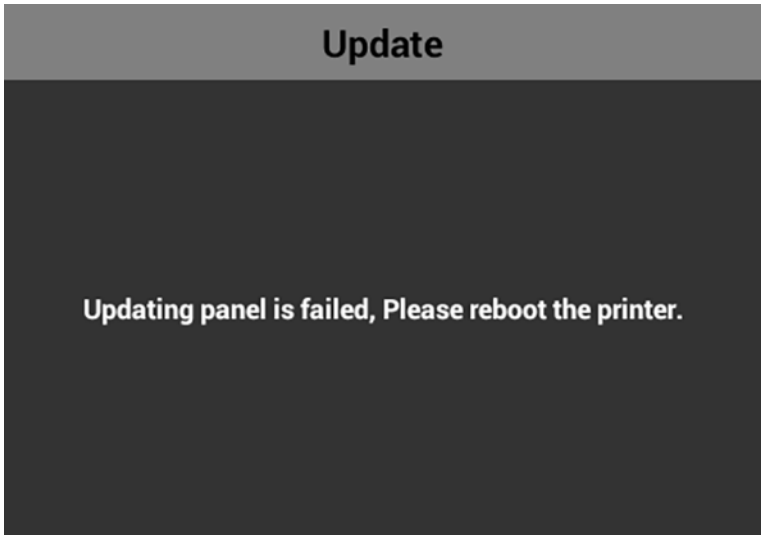
2. After dialog disappears, wait until displayed “Ready” in panel.



These completes all updates.

When update is failed

If the following is displayed or if you have started to update but there is nothing displayed about the firmware update, the update may have failed.



If update is failed, please reboot the printer.

Afterwards, update once again in order from Panel (GIB).

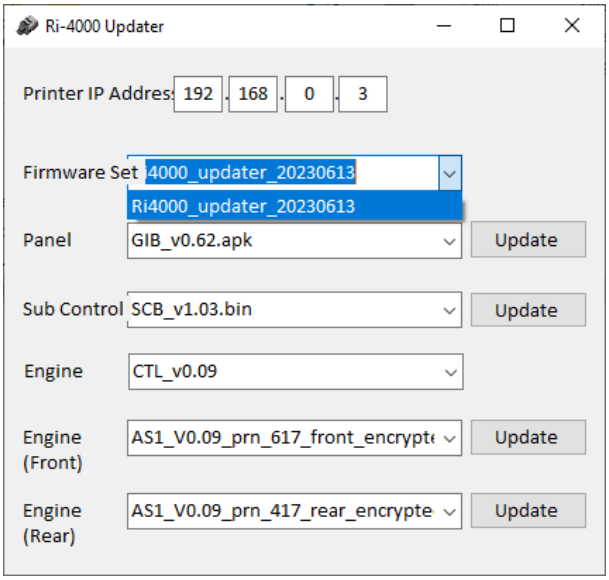
Update by connecting your PC and RICOH Ri 4000 with Ethernet cable

IMPORTANT! Do not disconnect any cable (Communication, Power, and so on) during updating.
Make sure that update firmware is the latest one published on the web.
Do not downgrade, downgrade is not granted.
When update by this method, it is necessary to disable DHCP setting of the IP address.
For details see page 47, “The setting of IP address for the machine”.

1. Double-click “Ri-4000 Updater.exe”.

2. Key-in the printer IP address to update.

3. Select Firmware Set.



4. Click [Update] to send new firmware.

Please update in order of Panel (GIB), Sub Control (SCB), Engine (Front), and Engine (Rear).

Note - You should always update Panel (GIB) first.
Make sure that “Ready” is displayed in panel each update, then update next firmware.

5. Sending firmware done and then start to update.

The following steps are as same as steps of “Update by using USB drive”.

Note - Sub Control (SCB), Engine (Front), and Engine (Rear) do not start update automatically by this method.
You should update in order of Panel (GIB), Sub Control (SCB), Engine (Front), and Engine (Rear) manually.
Therefore, Click [Update] in the above order.

These completes all updates.

10.2. Specifications

General

Printer Type:	Direct-to-garment printer
Technology:	RICOH Piezo-electric drop on demand inkjet systems
Head Type:	RICOH print head
Number of Print Heads:	Color - 4 channels, white - 4 channels
Resolution:	1,200 x 1,200 dpi(Maximum)
Printable Area:	Maximum 406 x 498 mm
Fabric:	100% cotton, cotton blends with minimum 50% cotton, 100% polyester, 100% light polyester
Garment Type:	T-shirts, tote bags, sweatshirts, polo shirts, cushion covers, and more
Fabric Thickness:	Up to 30 mm
Platen Height Adjustment:	Auto
Maintenance Features:	Temperature and humidity measuring, maintenance alerts, auto print head cleaning, precise ink monitoring
Operating Conditions:	Temperature: 15–32°C Relative humidity: 45–80% RH
Noise Emission:	69 dB(A) or less (reference value)
Dimensions (W x D x H):	882 x 1,660 x 500 mm
Weight:	145 kg (320 lb.)
Power Source:	North America: AC100–240 V, 50–60 Hz, 1.0 A or more Europe/Asia: AC100–240 V, 50–60 Hz, 0.5 A or more
Power Consumption:	North America: Active 91.5 W(Maximum), Standby 28.9 W Europe/Asia: Active 88.2 W(Maximum), Standby 28.6 W
Host Interface:	Ethernet 10/100 BASE-T, USB Type-A (2.0)

Ink Set

Ink Type:	Water-based pigment ink
Ink Colors:	CMYK and white
Ink Delivery System:	Cartridge type and pump system, white ink circulation system

Options

Small Platen:	266 x 330 mm
Medium Platen (Standard):	320 x 457 mm
Large Platen:	406 x 498 mm

10.3. About Open Source Software License

ZLib

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10.4. Where to Inquire

For inquiries, contact your sales or service representative.

10.5. Revision history

Revision	Date issued	Description
Initial version	September, 2023	

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