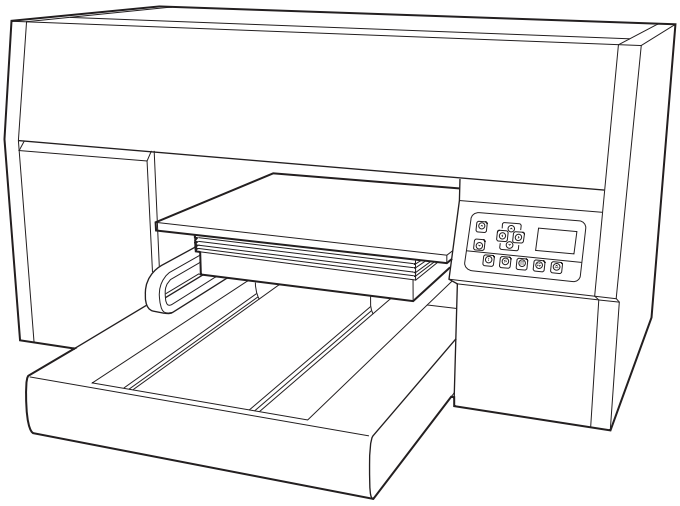
VersaSTUDIO BF-16

User's Manual



Thank you very much for purchasing this product.

- To ensure correct and safe usage with a full understanding of this product's performance, please be sure to read through this manual completely.
- Unauthorized copying or transferal, in whole or in part, of this manual is prohibited.
- The specifications of this product and the contents of this operation manual are subject to change without notice.
- The operation manual and the product have been prepared and tested as much as possible. If you find any misprints or errors, please inform us.
- Roland DG Corporation assumes no responsibility for any direct or indirect loss or damage that may occur through use of this product, regardless of any failure to perform on the part of this product.
- Roland DG Corporation assumes no responsibility for any direct or indirect loss or damage that may occur with respect to any article made using this product.

FA04423
R3-250509

https://www.rolanddg.com/

Roland DG Corporation

Contents

Basic Handling Methods

Basic Information

Usage Precautions

Precautions When Operating the Printer

Be sure to observe the following when operating the printer.

- Be sure to put on protective eyewear and gloves when performing printing, maintenance, or other work.

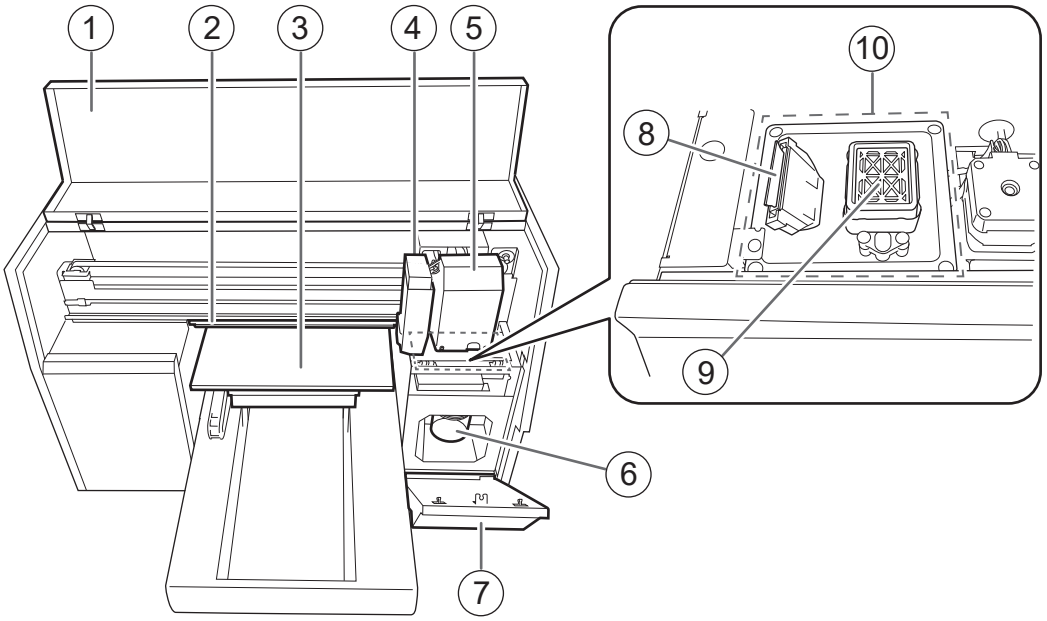
  Even when the front cover is closed, UV light will leak from the gap between the front cover and the flat table during printing. Be sure to wear this protective gear to protect your eyes and skin from the UV light.
- Do not perform printing when the front cover and right cover are open.

  The print-head carriage moves left and right at high speed during printing. Close the front cover and right cover to prevent contact with or being caught in the print-head carriage.

Part Names and Functions

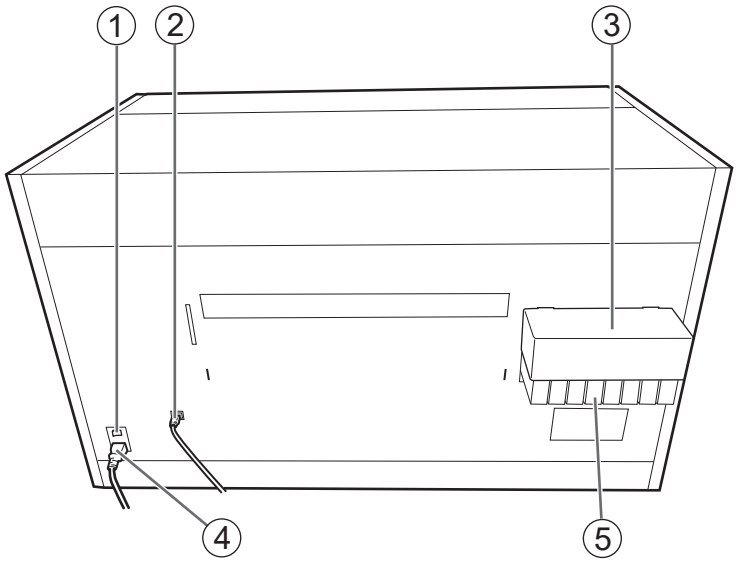
Printer Unit

Front



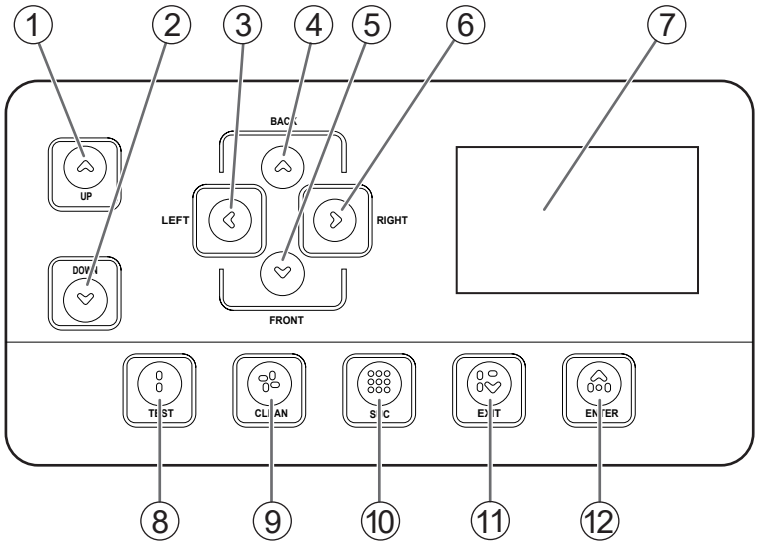
No.	Name	Function overview
①	**Front cover**	Prevents contact with the print-head carriage and other such fast-moving parts when the machine is operating. To prevent excessive dust from entering inside the machine, keep the front cover closed except when loading objects to be printed on or when performing maintenance.
②	**Head gap sensor**	Detects the height of the object to be printed on. The machine stops when the object to be printed on or other object contacts the head gap sensor.
③	**Flat table with suction function**	This is the flat table on which the object to be printed on is placed. By activating the negative pressure, you can fasten the object in place.
④	**UV-LED device**	Shines the ultraviolet light. Shines the ultraviolet light on the print surface to cure the ink.
⑤	**Print-head carriage**	Transports the built-in print heads and UV-LED device.
⑥	**Drain bottle**	Discharged fluid is stored in this bottle.
⑦	**Right Cover**	Provides access to the interior of the lower-right side of the machine. Open this cover when performing maintenance such as discarding accumulating discharged fluid.
⑧	**Wiper**	Cleans the print heads. Removes dirt and excess ink that have adhered to these heads.
⑨	**Cap Top**	Prevents the print heads from drying out. Seals to the print heads to protect the ink emission surface when the print-head carriage is at the right side of the machine, such as when waiting for printing.
⑩	**Capping station**	The wiper and cap top are installed on this part. Cleaning and capping the print heads are performed by raising and lowering the capping station.

Rear



No.	Name	Function overview
①	**Power switch**	Turns the machine power on/off.
②	**Ethernet cable**	Connect the Ethernet cable to the Ethernet cable port. This machine is connected directly to the computer by the Ethernet cable.
③	**Ink tank cover**	Protects the top of the ink tanks from light.
④	**Power cable**	Connect the power cable to the power cable port.
⑤	**Ink tanks**	These are the ink tanks that are filled with ink. Fill with the ink color specified on the ink color label.

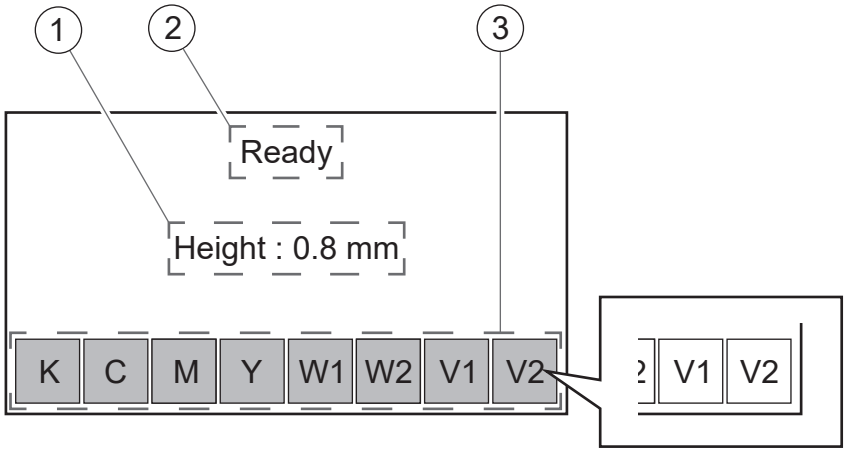
Operation Panel



	Name	Description
①	[UP] button	Raises the flat table.
②	[DOWN] button	Lowers the flat table.
③	[LEFT] button	Moves the print-head carriage to the left. Also used to select the menu items on the display screen.
④	[BACK] button	Moves the flat table to the back. Also used to select the menu items on the display screen.
⑤	[FRONT] button	Moves the flat table forward. Also used to select the menu items on the display screen.
⑥	[RIGHT] button	Moves the print-head carriage to the right. Also used to select the menu items on the display screen.
⑦	Display screen	This displays various setting menus and other information.
⑧	[TEST] button	Executes a printing test.
⑨	[CLEAN] button	Performs cleaning of the print heads.
⑩	[SUC] button	Activates the suction fan to suction the object to be printed on in place.
⑪	[EXIT] button	Returns the display screen to the previous display and cancels the operation that is being executed.
⑫	[ENTER] button	Used to enter the menu or decide the menu item.

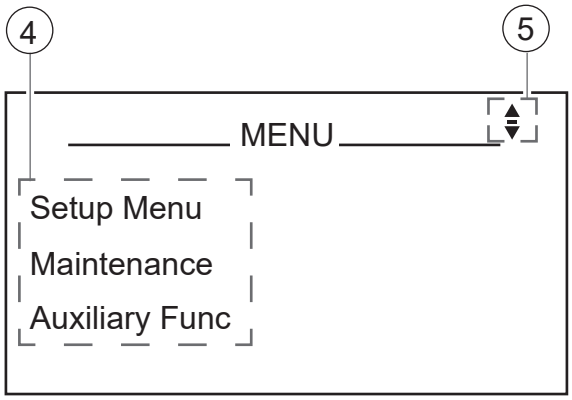
Display Screen

Home Screen

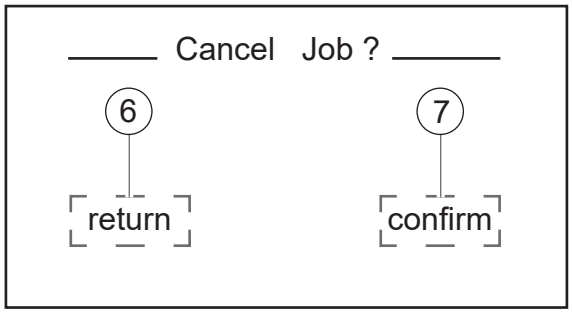


①	Displays the height (thickness) of the object that was installed on the flat table. The value changes when the table is raised or lowered. Set when installing the object to be printed on onto the flat table.
②	Indicates that the machine status is ready to start printing. When printing cannot be started, a message is displayed.
③	Indicates that the tank contains ink. When the ink runs out, the inside of the color box becomes white, indicating that the tank is out of ink.

Menu Screen



④	Displays the various menu items.
⑤	Press the [BACK] or [FRONT] button, and select a menu item.



⑥	Select the printer operation. To select the command at the bottom left of the display screen, press the [EXIT] button.

⑦	Select the printer operation. To select the command at the bottom right of the display screen, press the [ENTER] button.

For details of each setting and menu, refer to the Menu List.

Menu(P. 15)

Object to Be Printed On

Conditions for Settable Objects to Be Printed On

MEMO

In this manual, the objects to be printed are called the "object" or "media."

The D-UAB ink used in this machine is an ink that is instantly adhered to the object to be printed on by irradiating it with ultraviolet light. This makes it possible to perform printing on objects that are difficult to print on using conventional inks.

This section explains the objects which can be printed on using the machine.

Material

Even materials with the same name have many variations with different properties depending on slight differences in ingredients, and even if the ingredients are the same, printing may or may not be possible depending on differences in surface treatment such as plating or coating. Even if a material is listed as a printable material, always be sure to perform a test print to confirm that satisfactory print quality can be achieved.

- ABS
- PET (polyethylene terephthalate)
- PC (polycarbonate)
- TPU (thermoplastic polyurethane)
- Leather
- Wood

Objects that cannot be printed on or have print quality issues

- In the case of objects that easily reflect light, the reflection of UV light may accelerate the curing of the UV ink on the surface of the print heads, resulting in ink discharge failure.
- Objects to be printed on that are electrostatically charged should be discharged before use.

  If the ink is electrostatically charged, the position of the ink landing will not be stable, and printing quality will be adversely affected.
- Objects with excessive unevenness cannot be used for printing.

  P. 59 Notes When the Print Surface Is Uneven
- If the object to be printed on still comes loose even with the flat table suction function turned on, use commercially available tape or some other means to hold the object in place.

  If the object to be printed on comes loose, the ink emission surface of the print heads and the print surface can rub together, resulting in malfunction.
- This printer cannot print on all materials. When selecting the object to be printed on, be sure to carry out testing in advance to make sure that satisfactory print quality can be obtained.

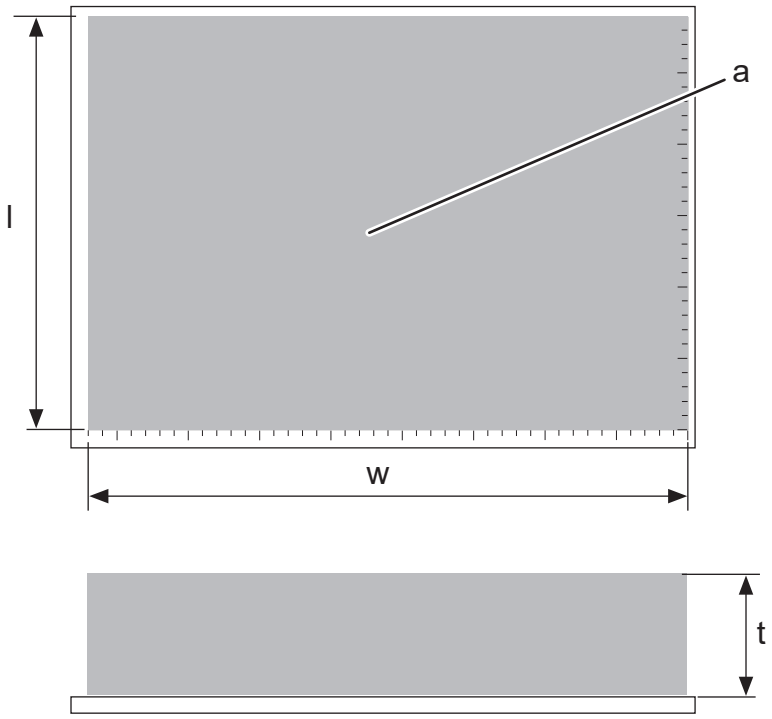
The conditions for objects to be printed on that can be set in the machine are shown below.

Maximum size	Width	430 mm (16.9 in.)
	Length	340 mm (13.3 in.)
	Thickness	90 mm (3.54 in.)
Maximum weight		5 kg (11.0 lb.)

Printable area

Maximum printable area: Width (W) 420 mm (16.5 in.) × Length (L) 297 mm (11.6 in.) × Thickness (t) 90 mm (3.54 in.)

- The maximum printable area is the area (a) inside the scale lines on the flat table.
- The maximum size of the object to be printed on and the maximum printable area are different.



Features of Inks

Features of D-UAB Inks

This printer uses D-UAB inks. D-UAB inks are fixed to the object to be printed on instantly by ultraviolet light. This makes it possible to perform printing on objects that are difficult to print on using conventional inks. D-UAB inks are available in a lineup of six colors (cyan, magenta, yellow, black, white, and gloss).

Menu List

Menu

When the home screen is displayed, press the [ENTER] button to display the menu screen. Press the [EXIT] button to return to the previous screen.

Level 1	Level 2	Level 3	Details
"Setup Menu"	"Station Setup"		"Left CAR Right" Use when aligning the positions of the print head nozzle surface and the cap top. Press the [LEFT] or [RIGHT] button to move the print-head carriage left and right, and align the center of the nozzle surface with the center of the cap top. To [**Set**] at the moved position, press the [ENTER] button. "UP STA. DOWN" Use when adjusting the clearance between the print head nozzle surface and the cap top. Press the [BACK] or [FRONT] button to move the capping station up or down, and place the cap top in close contact with the print head nozzle surface. To [**Set**] at the moved position, press the [ENTER] button.
	"Auto Clean"	"IDLE auto. clean."	Set the interval for performing automatic cleaning. "Wait Time" Select the interval that you want to set from among the provided settings for the interval at which cleaning is performed. "other" To perform automatic cleaning at an interval other than the "Wait Time" selections, set the desired interval. For more information, refer to Setting the Interval for Automatic Cleaning(P. 49).
		"IDLE auto. flush"	Cleaning of the print head nozzle surface is performed by discharging ink from the print heads at the set interval. Performing ink discharge regularly can prevent ink dot displacement and dot drop-out. "Wait Time" Select the interval that you want to set from among the provided settings for the interval at which automatic ink discharge is performed. "other" This setting is used to perform automatic ink discharge at a chosen interval other than the "Wait Time" selections. "Flush Num" Set the number of times to discharge ink at automatic ink discharge. For more information, refer to Setting Flushing(P. 51).
	"Clean_Set"		Set the cleaning type. The set cleaning is applied to the cleaning that is performed automatically when the [CLEAN] button was pressed or when "Clean Nozzle" was selected from the "Maintenance" menu. For more information, refer to Changing the Cleaning Operation that Is Performed When the CLEAN Button Is Pressed(P. 53).

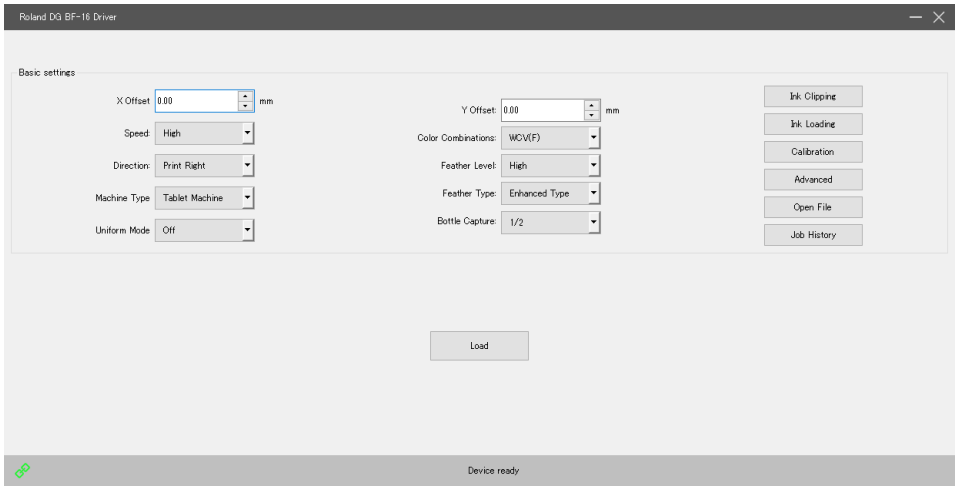
"Mainte-nance"	"Nozzle Test"	Performs test pattern printing. Check that there is no dot displacement or dot drop-out in the test pattern. For more information, refer to Step 2: Performing a Printing Test(P. 32).
	"Clean Nozzle"	Cleans the print heads to stabilize ink discharge. The cleaning which was set with "Clean_Set" on "Setup Menu" is performed. Refer to the following for details. • Step 3: Performing Normal Cleaning(P. 33) • Changing the Cleaning Operation that Is Performed When the CLEAN Button Is Pressed(P. 53)
	"Manual Pump"	Ink from the print heads is suctioned and discharged into the drain bottle. Use in cases such as when you want to bleed air from the ink channel when filling with ink for the first time, when you want to stabilize the color, and when you want to improve uneven color.
	"Wipe Nozzle"	The wiper is used to wipe off excess ink adhering to the nozzle surface of the print heads. Use when ink dropping or lateral streaks become noticeable.
	"Flush"	Discharges ink continually in order to stabilize ink discharge.
	"Cap Head"	This menu item is used for replacing the cap top that protects the print head nozzle surface.
	"Manual Clean"	This menu item is used for cleaning the area around the print heads. Use the maintenance stick to remove ink adhering around the print heads and on the lip of the cap top.
"Auxiliary Func"	"Suction"	This menu item adjusts the suction force of the suction fan. Change the setting to match the material and properties of the object to be printed on. For more information, refer to Setting the Suction Fan Suction Force(P. 44).
	"Ink Circulation"	This menu item sets the operation of the ink mixer that is installed inside the ink tank for white ink. Mixing the ink prevents precipitation and uneven color. For more information, refer to Preventing White Ink Precipitation and Uneven Color(P. 55).
	"Carrier Start"	This menu item sets the printing-start location. It sets the position on the flat table where printing starts. For more information, refer to Changing the Printing-start Location(P. 46).
	"Job start Clean"	This menu item sets whether or not to perform cleaning before printing starts. For more information, refer to Configuring the Settings for Cleaning Before Printing Start(P. 54).
	"Station align"	This menu item is not used by the customer. Do not touch it. It performs position adjustment for placing the print head nozzle surface in close contact with the cap top.
	"After print Rst"	This menu item sets the position to move the flat table to after printing is completed. For more information, refer to Setting the Flat Table Operation After Printing Ends(P. 48).
"Dev. Mgr."		Allows the basic information about the machine to be checked. For more information, refer to Viewing Printer Information(P. 57).
"Para. Recovery"		This menu item is not used by the customer. Do not touch it. This procedure returns the printer settings to their factory default values.
"Language"		Set the language to use on the display screen. For more information, refer to Setting the Display Language(P. 56).

Roland DG BF-16 Driver Window and Functions

Roland DG BF-16 Driver is an application that allows users to operate the machine from a computer window. Various printing conditions can be set to output print data. The status and errors of the machine can also be displayed.

Basic Settings of Roland DG BF-16 Driver

Start Roland DG BF-16 Driver and configure basic settings from the [Basic settings].



[X Offset:] / [Y Offset:]

This sets the printing start position. This sets the position on the flat table where printing starts.

When 0 is set for both [**X Offset:**] and [**Y Offset:**], printing starts from the 0 scale position at the front right of the flat table.

[Speed:]

This sets the printing speed.

Select from [**Low**], [**Standard**], and [**High**].

[Direction:]

This sets the printing direction.

When [**Print Right**] is selected, printing is performed when the print-head carriage moves from left to right. When [**Print Left**] is selected, printing is performed when the print-head carriage moves from right to left. When [**Bidi**] is selected, printing is performed in both directions, from left to right and from right to left.

[Machine Type:]

Used when an optional item is installed on the machine.

Set to [**Tablet Machine**].

[Uniform Mode:]

This machine does not use this function.

[Color Combinations:]

Set the colors to use for printing.

[**WCV**]: Select when printing white ink as the undercoat, then printing CMYK color ink on the white ink, and finally printing gloss ink on top of that and creating a gloss finish.

[**W**]: Select when printing with white ink only.

[**C**]: Select when printing with CMYK color ink only.

[**V**]: Select when printing with gloss ink only.

[**WC**]: Select when printing white ink as the undercoat, and then printing CMYK color ink on the white ink.

[**WV**]: Select when printing white ink as the undercoat, and then printing gloss ink on the white ink.

[**CV**]: Select when printing CMYK color ink, and then printing gloss ink on the CMYK color ink.

[**CW**]: Select when printing CMYK color ink, and then printing white ink on the CMYK color ink.

[**WCV (F)**]: Select when printing white ink as the undercoat, then printing CMYK color ink on the white ink, then printing gloss ink on top of that and creating a matte finish.

[**V (F)**]: Select when printing with gloss ink only and creating a matte finish.

[**CV (F)**]: Select when printing CMYK color ink, then printing gloss ink on the CMYK color ink and creating a matte finish.

[**WV (F)**]: Select when printing white ink as the undercoat, and then printing gloss ink on the white ink and creating a matte finish.

[**CWC**]: Select when printing CMYK color ink, then printing white ink on the CMYK color ink, and then printing CMYK color ink on top of that.

[Feather Level:]

Adjust the level of the dispersion method for the ink dot landing positions.

Select from [**Off**], [**Low**], [**Mid**], and [**High**].

[Feather Type:]

Adjust the density of the landed ink dots.

Select [**Default Type**] or [**Enhanced Type**].

[Bottle Capture:]

Used when an optional item is installed on the machine.

Set this to [**0**].

[Ink Clipping]

This is an adjustment menu.

Do not change it from the initial setting.

[Ink Loading]

This is an adjustment menu.

Do not change it from the initial setting.

[Calibration]

Adjust the deviation of the ink discharge position when printing.

Enter the printing test results in the designated location in order to adjust the ink landing position.

[Advanced]

Perform ink activation and set the machine so it is ready for printing.

For more information, refer to Filling with Ink(P. 89).

[Open File]

Open a printing settings file. Specify the folder in which the file is located and open the file.

[Job History]

Displays the list of output jobs.

You can select a job that has been output to output it again.

[Load]

Causes Roland DG BF-16 Driver to load the previous output settings from the printer.

[Save]

Saves the settings.

When you have changed a setting, click **[Save]**.

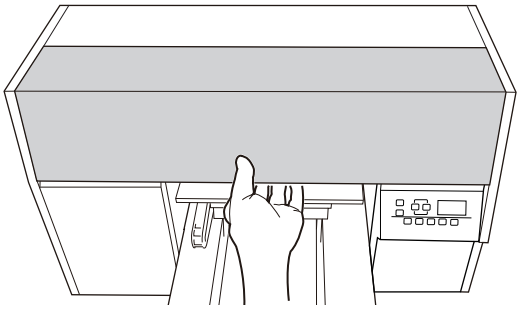
Basic Operations

Power Supply Operations

Turning the Power On

IMPORTANT

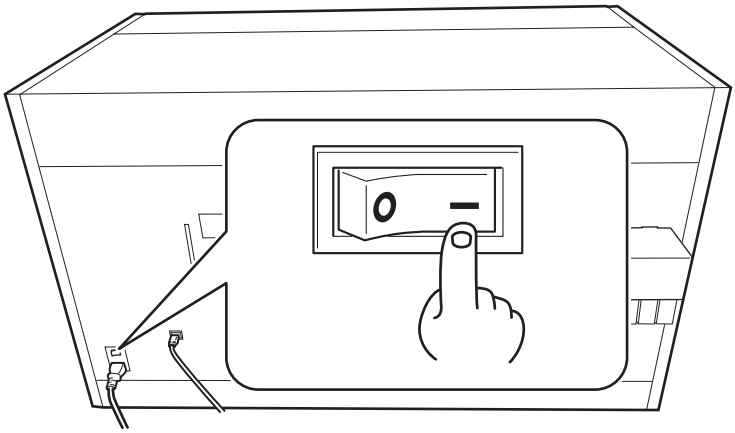
Open and close the front cover and right cover gently. If you open and close them forcefully or release the cover when it is partly open, not only may it malfunction, but you may also be injured. When opening and closing the front cover, grasp the center of the front cover to open or close it.



Procedure

1. If the front cover and right cover are open, close them.

2. Switch on the printer power.



Turning the Power Off

The machine is equipped with the white ink mixing function and the automatic cleaning function. Do not turn the power off unless the machine has stopped due to an error or other cause and cannot be restarted.

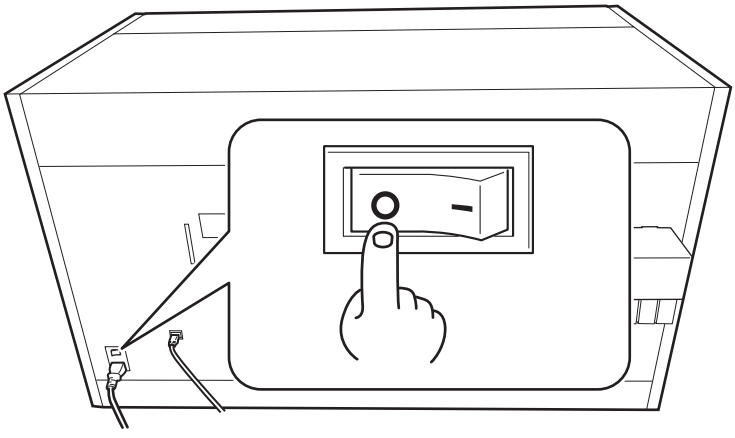
IMPORTANT

Open and close the front cover and right cover gently. If you open and close them forcefully or release the cover when it is partly open, not only may it malfunction, but you may also be injured. When opening and closing the front cover, grasp the center of the front cover to open or close it.

Procedure

1. **If the front cover and right cover are open, close them.**

2. **Switch off the printer power.**
   Turn off the power after printing is complete.



Precautions When Operating the Power Supply

IMPORTANT

Always keep the power switched on.

Never switch off the power. Leaving the power on enables white ink mixing and automatic maintenance to be carried out periodically. If the automatic maintenance is not carried out, it may result in the breakdown of this machine, such as the breakdown of the print heads.

Never switch off the power or unplug the power cord suddenly while operation is in progress.

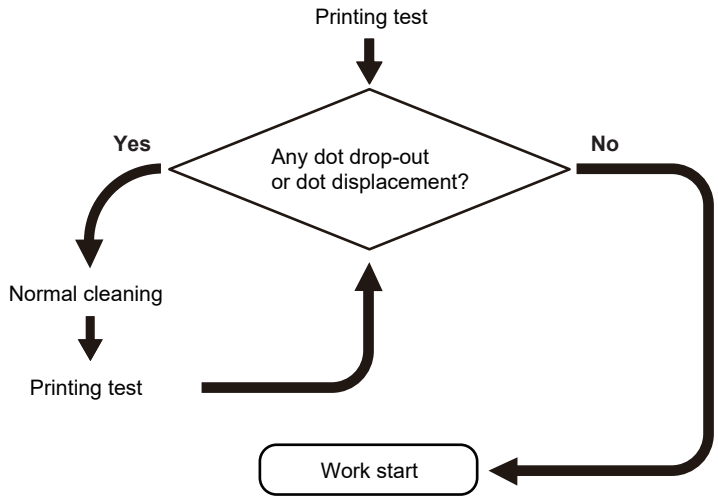
Switching off the power or unplugging the power cord suddenly while operation is in progress may damage the print heads. If the power is accidentally switched off, immediately turn the power back on.

Checks before Operations

Before starting work for the day

Before starting the day's work, eliminate dot drop-out on the print heads.

We especially recommend test printing if the printer has not been used for a few days. If there is a problem with discharge, clean the print heads.



Checking Before Printing

On this machine, ink affixed on the surface of the print heads might be cured by reflection of the UV light and ink mist (ink splash upon printing). If ink affixed on the surface of the print heads is cured, dot drop-outs may occur. Continued use of the product in this state may cause a failure that requires the replacement of the print heads.

While daily cleaning is necessary to prevent dot drop-outs, there are also important points to check before printing.

1. Do not use objects that easily reflect light.

Materials that are likely to reflect the UV light, such as mirrors and stainless steel, accelerate the curing of the surface of the print heads and therefore cannot be used as the object to be printed on.

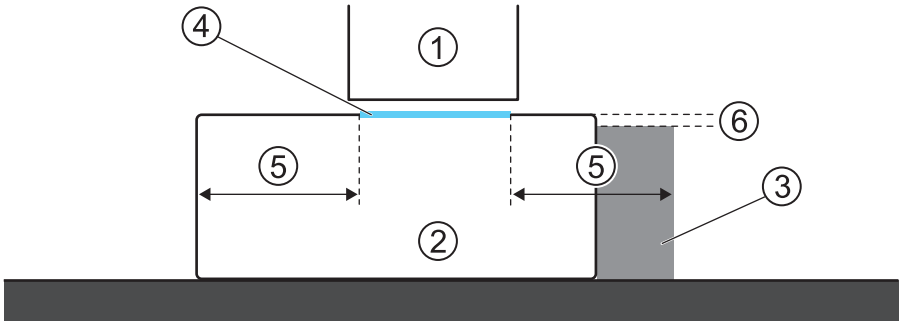
2. Maintain a correct distance from the print heads.

As the distance between the print heads and the printing surface of the object to be printed on increases, the likelihood of ink mist increases. Measure the height of the object to be printed on before installing it. The position with the flat table lowered by the measured value is the correct distance between the print heads and the printing surface of the object to be printed on.

3. Consider whether a jig is necessary.

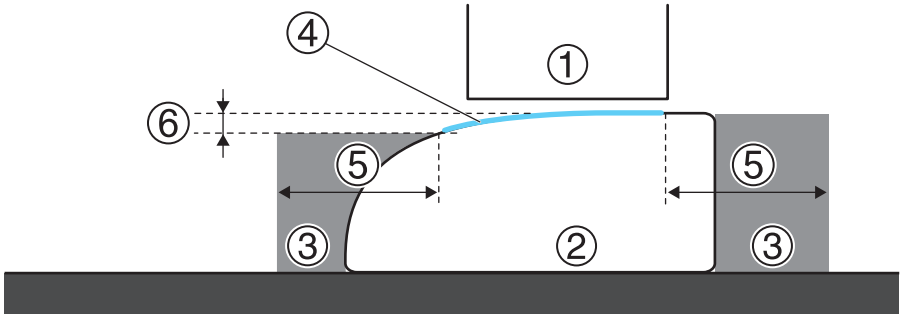
As the distance between the object to be printed on and the print heads increases, the likelihood of ink mist increases. Therefore, a jig might be required according to the size and shape of the object to be printed on. Prepare a jig if one of the following conditions is met.

- With just the object to be printed on, no margins can be obtained in the areas 40 mm (1.57 in.) to both the right and left of the portion (width) of the data to be printed.



①	Print heads	④	Data area
②	Object to be printed on	⑤	Margin: 40 mm (1.57 in.) or more
③	Jig	⑥	Less than 2 mm (78.7 mil) in height difference from the actual print surface

- The variation in height of the surface of the object to be printed on is 2 mm (78.7 mil) or more.

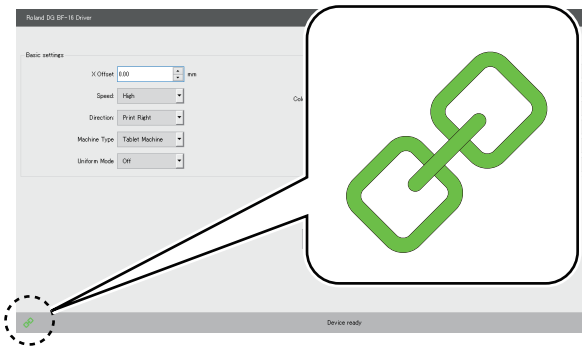


①	Print heads	④	Data area
②	Object to be printed on	⑤	Margin: 40 mm (1.57 in.) or more
③	Jig	⑥	Less than 2 mm (78.7 mil) in height difference from the actual print surface

LAN (Local Network) Settings

The connection status between the printer and the computer can be checked with the Roland DG BF-16 Driver [**Basic settings**].

If the icon at the bottom left of [**Basic settings**] is green, they are connected correctly.



If the icon is red, this means that the machine and the computer cannot communicate. Check that the LAN cable is securely inserted and that the LAN cable is not broken.

Output Method

Printing Operations

Printing method

Preparation before Starting Work

Perform a printing test to ensure no dot drop-out or dot displacement occurs. If dot drop-out or dot displacement occurs, clean the print heads (normal cleaning).

Step 1: Attach the object to be printed on for the printing test.

Attach the object to be printed on for the printing test. Use paper for printing tests (width 160 mm (6.30 in.) × length 110 mm (4.34 in.) or more), not the object that will actually be printed on.

IMPORTANT

Open and close the front cover and right cover gently. If you open and close them forcefully or release the cover when it is partly open, not only may it malfunction, but you may also be injured. When opening and closing the front cover, grasp the center of the front cover to open or close it.

Procedure

1. **Open the front cover.**

2. **Press the [FRONT] button and move the flat table forward to a position where the printing test paper can be installed.**

   MEMO

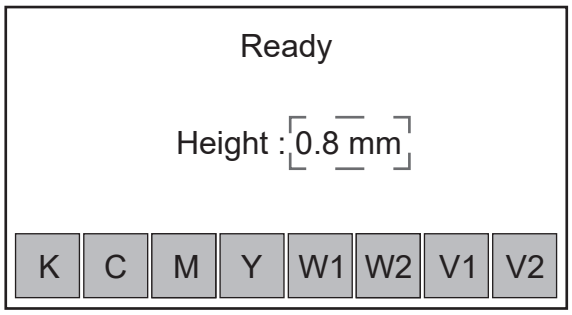
   The flat table will continue moving if you press and hold the [FRONT] button for three seconds or longer and then release it. To stop the movement, press [FRONT] again or press the [BACK] button.

3. **Press the [UP] or [DOWN] button to adjust the flat table height.**

   Press the [UP] or [DOWN] button and change the value of "Height" on the display screen to the thickness of the printing test paper.

   MEMO

   If the paper for the printing test is less than 0.1 mm (3.93 mil) thick, set the "Height" value to 0.



4. **Install the paper for the printing test onto the flat table.**

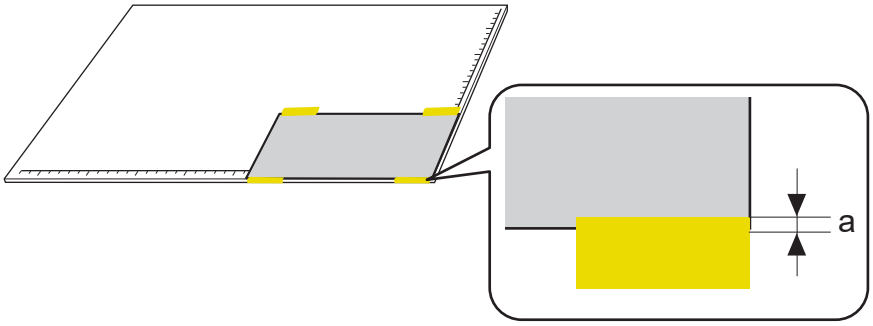
Install so that it is aligned with the bottom right corner of the flat table.

5. **Press the [SUC] button.**

The suction fan activates to suction the object to be printed on in place.

MEMO

If the ends of the object to be printed on are rolled up, if the object to be printed on is thick, and in similar situations, it may not be possible to secure the media in place. For objects to be printed on whose ends are rolled up, secure the ends of the object to be printed on with tape so that dimension a is 5 mm (0.20 in.) or less, and then use the suction function. If the tape application margin exceeds 5 mm (0.20 in.), the test pattern may be printed on the tape.

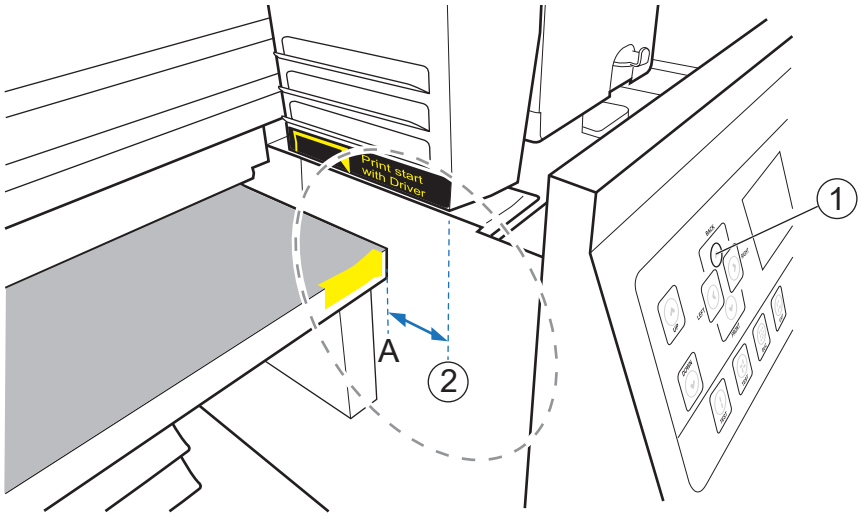


6. **Move the flat table to the printing test start position.**

Press the [BACK] button ① and move the flat table to the printing test start position. The nozzle surface of the print heads is located at a position 30 mm (1.18 in.) inward from the front ② of the UV-LED device. Position the front edge of the flat table at position A 25 mm (0.98 in.) inward from the front of the UV-LED device.

MEMO

The flat table will continue moving if you press and hold the [BACK] button for three seconds or longer and then release it. To stop the movement, press [BACK] again or press the [FRONT] button.



7. **Close the front cover.**

RELATED LINKS

- P. 45 Turning the Suction Function On or Off

Step 2: Performing a Printing Test

Before you carry out actual printing, perform a printing test to ensure no dot drop-out or dot displacement occurs.

IMPORTANT

Put on protective eyewear when performing a printing test.

Procedure

1. **Press the [TEST] button.**

Test printing is started.

MEMO

Press the [TEST] button to immediately start test printing.
Be sure to install paper for the printing test and move the flat table to a suitable position before pressing the [TEST] button.

When the printing test is finished, the display screen returns to the original display.

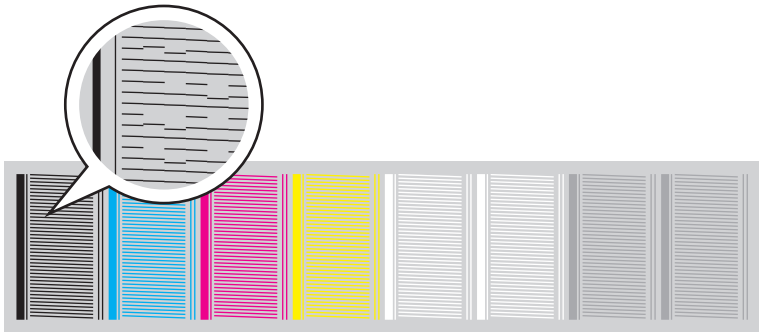
2. **Press [FRONT] and move the flat table forward to a position where the printing test results can be checked.**

MEMO

The flat table will continue moving if you press and hold the [FRONT] button for three seconds or longer and then release it. To stop the movement, press [FRONT] again or press the [BACK] button.

3. **Check whether there is dot drop-out or dot displacement in the test pattern.**

Missing blocks indicate dot drop-out. Collapsed or inclined blocks indicate dot displacement. If dot drop-out or dot displacement is still present, perform normal cleaning.



If no dot drop-out or dot displacement occurs, this operation is finished.

Step 3: Performing Normal Cleaning

You can assign the cleaning method that you frequently use to the [CLEAN] button. The default value for the cleaning operation that is performed when the [CLEAN] button is pressed is set to "Normal". Normally set the height-adjustment lever to "Normal".

For how to check and change the setting, refer to Changing the Cleaning Operation that Is Performed When the CLEAN Button Is Pressed(P. 53).

Procedure

1. **Press the [CLEAN] button.**

   Normal cleaning starts.

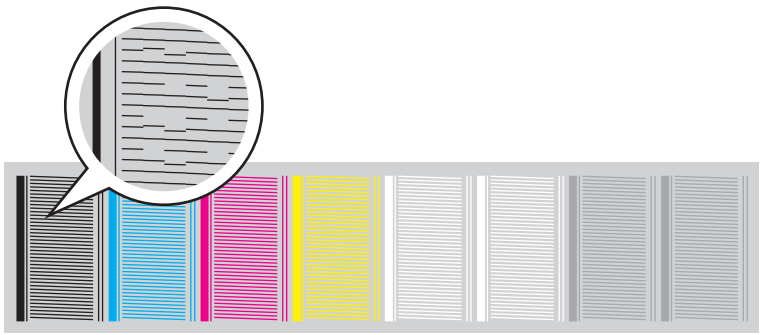
2. **Install the paper for the printing test onto the flat table.**

   Step 1: Attach the object to be printed on for the printing test.(P. 30)

3. **Performing a Printing Test.**

   Step 2: Performing a Printing Test(P. 32)

4. **Check to make sure the dot drop-out or dot displacement has been corrected.**



If the problem persists, try performing normal cleaning again. If the printer has been used for a long period, dot drop-outs may not be fixed even after performing normal cleaning two or three times. If this is the case, clean using a different method.

IMPORTANT

UV ink will harden. It may adhere to the print head and solidify. If left alone, ink may clog the print heads and cause problems including printer malfunctions. Clean the head manually when printing frequently with the

print head at a distance from the print surface. This is called manual cleaning. To prevent clogging of the print heads, it may be necessary to perform manual cleaning each time you print.

RELATED LINKS

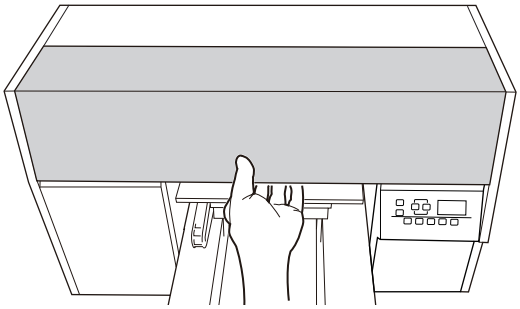
- P. 106 When Normal Cleaning Is Not Effective
- P. 109 Manual Cleaning

Printing

1. Attach the object to be printed on.

IMPORTANT

Open and close the front cover and right cover gently. If you open and close them forcefully or release the cover when it is partly open, not only may it malfunction, but you may also be injured. When opening and closing the front cover, grasp the center of the front cover to open or close it.



Procedure

1. **Open the front cover.**

2. **Press [FRONT] and move the flat table forward to a position where the object to be printed on can be installed.**

   MEMO

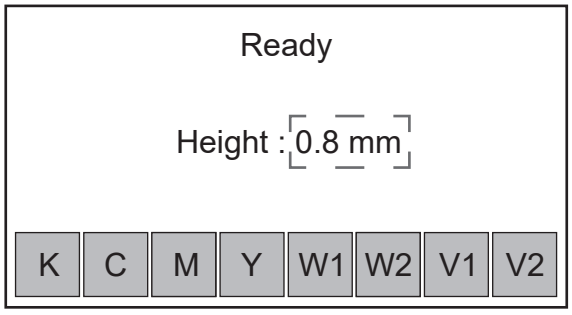
   The flat table will continue moving if you press and hold the [FRONT] button for three seconds or longer and then release it. To stop the movement, press [FRONT] again or press the [BACK] button.

3. **Press the [UP] or [DOWN] button to adjust the flat table height.**

   Press the [UP] or [DOWN] button and change the value of "Height" on the display screen to the thickness of the object to be printed on.

   MEMO

   If the object to be printed on is less than 0.1 mm (3.93 mil) thick, set the "Height" value to 0.

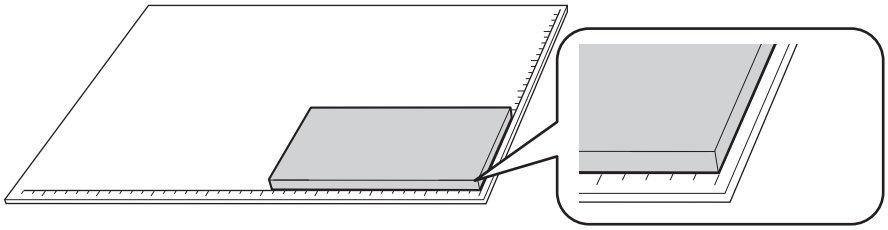


4. **Install the object to be printed on the flat table.**

   Place the object aligned with the flat table scale marks.

MEMO

With the printer initial settings, printing starts from the X-axis and Y-axis 0 scale position at the bottom right of the flat table. Align the bottom right of the object to be printed on with the X axis and Y axis scale 0 position at the bottom right of the flat table. When the printing-start location was changed, place the object to be printed on in the position of the changed coordinates.



5. **Press the [SUC] button.**

The suction fan activates to suction the object to be printed on in place.

MEMO

If the ends of the object to be printed on are rolled up, if the object to be printed on is thick, and in similar situations, it may not be possible to secure the media in place. For objects to be printed on whose ends are rolled up, secure them with masking tape, double-sided tape, or other means, and then use the suction function.

6. **Close the front cover.**

RELATED LINKS

- P. 25 Checking Before Printing

2. Perform printing.

IMPORTANT

UV light is emitted when printing starts. Put on protective eyewear before clicking [**Print**].

Recommended printing settings

Large differences in print quality occur due to the combination of [**Print Quality:**], [**Speed:**], [**Feather level:**], and [**Feather type:**]. The recommended printing settings are the following.

Draft

[Print Quality]	[960 × 900 dpi (set in VersaWorks)]
[Speed:]	[High (set in Roland DG BF-16 Driver)]
[Feather Level:]	[High (set in Roland DG BF-16 Driver)]
[Feather Type:]	[Default type (set in Roland DG BF-16 Driver)]

High Speed

[Print Quality]	[960 × 900 dpi (set in VersaWorks)]
[Speed:]	[High (set in Roland DG BF-16 Driver)]
[Feather Level:]	[Mid (set in Roland DG BF-16 Driver)]
[Feather Type:]	[Enhanced type (set in Roland DG BF-16 Driver)]

Standard

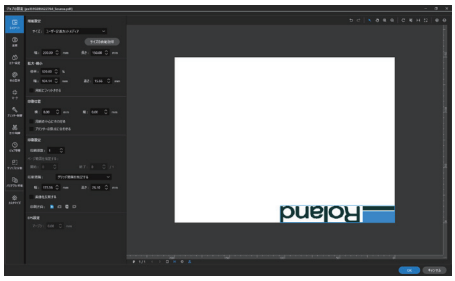
[Print Quality]	[960 × 900 dpi (set in VersaWorks)]
[Speed:]	[High (set in Roland DG BF-16 Driver)]
[Feather Level:]	[High (set in Roland DG BF-16 Driver)]
[Feather Type:]	[Enhanced type (set in Roland DG BF-16 Driver)]

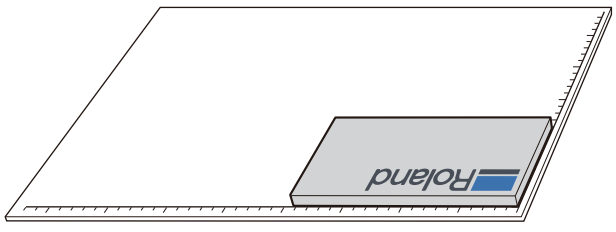
High Quality

[Print Quality]	[960 × 1200 dpi (set in VersaWorks)]
[Speed:]	[High (set in Roland DG BF-16 Driver)]
[Feather Level:]	[High (set in Roland DG BF-16 Driver)]
[Feather Type:]	[Enhanced type (set in Roland DG BF-16 Driver)]

MEMO

The orientation displayed in the VersaWorks window is the same as the actual print orientation.



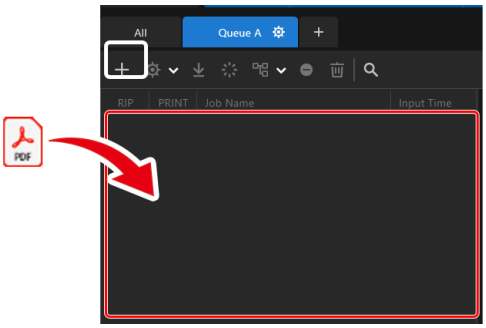


Procedure

1. **Start VersaWorks.**

2. **Add the created print data to a VersaWorks job.**

   Click [+] (add to job) or drag the print data to add it.



3. **Set the print data in VersaWorks.**

   - Under [**Media Settings**] on the [**Layout**] tab, set the size of the object to be printed on to attach to the printer.

     The portion of the print data that does not fit on the media will not be printed. You can adjust the print data with [**Scaling**] on the [**Layout**] tab.
   - Use [**Print Quality**] on the [**Quality**] tab to set the resolution.
   - Use [**Mode**] on the [**Quality**] tab to set the color used with the print data.

   Configure other items as necessary.

4. **Click [OK].**

5. **Click [Print].**

   Select the location in which to save the print data, and then click [**Save**]. It is a good idea to create the folder in which to save the print data before you attempt to save it.

   This completes the configuration of settings in VersaWorks.

6. **Start Roland DG BF-16 Driver.**

7. **Configure the printing settings under [Basic setting].**

   (1) **Set the printing speed with [Speed:].**

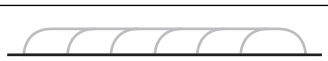
   Select from [**Low**], [**Standard**], and [**High**].

   (2) **Set the printing direction with [Direction:].**

   When [**Print Right**] is selected, printing is performed when the print-head carriage moves from left to right. When [**Print Left**] is selected, printing is performed when the print-head carriage moves from right to left. When [**Bidi**] is selected, printing is performed in both directions, from left to right and from right to left.

   (3) **Set the inks to use for printing with [Color Combinations:].**

> MEMO
>
> When using white ink or gloss ink, it is necessary to specify spot colors in the print data. For information on how to set spot colors, refer to the VersaUV Usage Guide.

Color combinations:	Application example	Description
WCV		White ink is used as the color ink undercoat, and gloss ink is used on top of the color ink.
W		Only white ink is used.
C		Only CMYK ink is used.
V		Only gloss ink is used.
WC		White ink is used as the undercoat for color ink.
WV		Coating is performed using gloss ink on top of the white ink.
CV		Coating is performed using gloss ink on top of the color ink.
CW		White ink is used on top of color ink. This is used for reverse printing on transparent objects.
WCV (F)		White ink is used as the undercoat for color ink, gloss ink is used on top of the color ink, and a matte finish is created.
V (F)		Only gloss ink is used, and a matte finish is created.
CV (F)		Coating is performed using gloss ink on top of the color ink, and a matte finish is created.
WV (F)		Coating is performed using gloss ink on top of the white ink, and a matte finish is created.
CWC		White ink is used on top of the color ink, and color ink is used on top of the white ink. This is used for printing that is visible from both front and back sides on transparent objects.

(4) **Adjust the level of the dispersion method for the ink dot landing positions with [Feather Level:].**

Select from **[Off]**, **[Low]**, **[Mid]**, and **[High]**.

(5) **Adjust the density of the landed ink dots with [Feather type:].**

Select **[Default Type]** or **[Enhanced Type]**.

(6) **Click [Save].**

Settings are now completed.

8. **Load print data into Roland DG BF-16 Driver.**

(1) **Click [Open File].**

(2) **Select the print data created in VersaWorks.**

9. **Use [Total Print:] to select the number of copies to print.**

10. **Click [Print].**

The print data is sent to the printer, and then printing starts.

RELATED LINKS

- https://downloadcenter.rolanddg.com/VersaWorks7

Pausing and Canceling Printing

You can pause and cancel printing before it finishes.

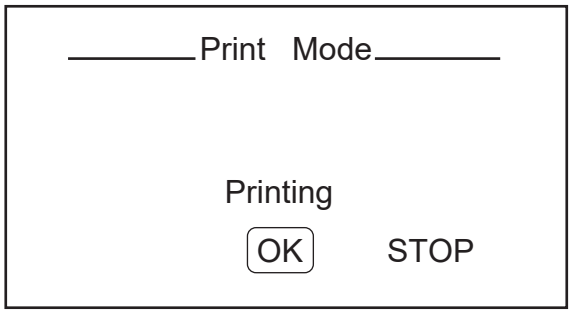
Pausing and Resuming Printing

IMPORTANT

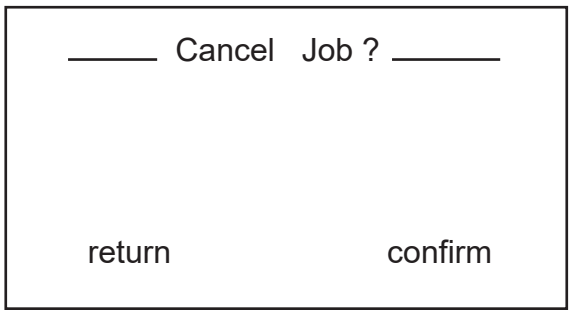
We do not recommend resuming printing because horizontal stripes are produced at the place where printing was paused.

Procedure

1. **Press the [ENTER] button during printing.**
   Printing pauses.



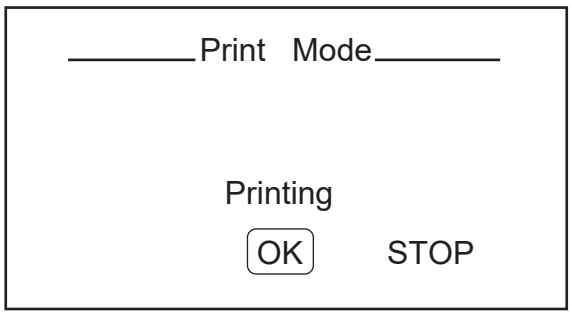
2. **Press the [EXIT] button.**
   Printing resumes.



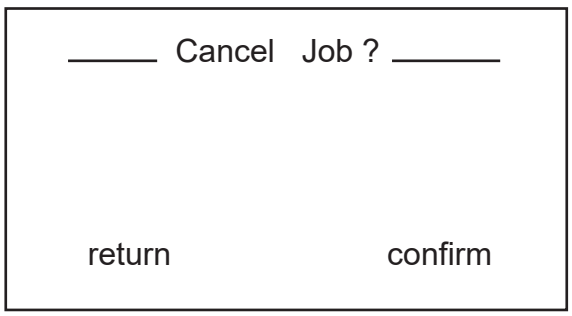
Canceling Printing

Procedure

1. **Press the [ENTER] button during printing.**
   Printing pauses.



2. **Press the [ENTER] button again.**
   This cancels printing.



Configuring and Adjusting the Printer

Printer Settings

Suction Function Setting

Setting the Suction Fan Suction Force

Set the suction force to match the material of the object to be printed on.

Procedure

1. **Check that the home screen is displayed.**
   If it is not displayed, press the [EXIT] button several times to display the home screen.
2. **Press the [ENTER] button.**
   The "MENU" window appears.
3. **Select "Auxiliary Func".**
   Press the [FRONT] or [BACK] button to select.
4. **Press the [ENTER] button.**
   The "Auxiliary Func" window appears.
5. **Select [Suction].**
   Press the [FRONT] or [BACK] button to select.
6. **Press the [ENTER] button.**
   The "FAN SETUP" screen appears.
7. **Press the [FRONT] or [BACK] button to set the suction force.**
   The suction force can be set in stages from 1 to 16.
8. **Press the [ENTER] button.**
   The set suction force is applied and the suction force changes. To change the setting again, repeat steps 7 and 8.
9. **Press the [EXIT] button several times to return to the home screen.**

Turning the Suction Function On or Off

The object to be printed on is suctioned to prevent lifting up of the object. This function is especially effective when the object to be printed on is thin and light.

The suction force setting can be changed to increase or decrease the suction force. For the suction force setting, refer to Setting the Suction Fan Suction Force(P. 44).

Procedure

1. **Press the [SUC] button.**

   The suction function turns on (or off).

MEMO

The suction function cannot be used to hold in place curled or thick objects to be printed on. Secure the object to be printed on to the flat table using a substance such as commercially available adhesive tape.

Setting the Printing-start Location

Changing the Printing-start Location

With the printer initial settings, printing starts from the X-axis and Y-axis 0 position at the bottom right of the flat table. While it is possible to change the print data layout position to change the printing-start location, this section explains the procedure for changing the printing-start location by changing the printer settings.

Procedure

1. **Check that the home screen is displayed.**
   If it is not displayed, press the [EXIT] button several times to display the home screen.
2. **Press the [ENTER] button.**
   The "MENU" screen appears.
3. **Select "Auxiliary Func".**
   Press the [FRONT] or [BACK] button to select.
4. **Press the [ENTER] button.**
   The "Auxiliary Func" screen appears.
5. **Select "Carrier Start".**
   Press the [FRONT] or [BACK] button to select.
6. **Press the [ENTER] button.**
   The "Carrier Start" screen appears.
7. **Select either "Relative point" or "Offset settings".**
8. **Press the [ENTER] button.**
9. **Set the printing-start location.**

Settings	Description
"Relative point"	The printing-start location moves from the print origin position by the amount of the offset values. Press the [LEFT] or [RIGHT] button to move the print-head carriage, and press the [FRONT] or [BACK] button to move the flat table. The offset values are displayed on the display screen. • "Xoffset" Press the [LEFT] or [RIGHT] button to move the print-head carriage and decide the amount of offset in the left-right direction. • "Yoffset" Press the [FRONT] or [BACK] button to move the flat table and decide the amount of offset in the forward-back direction. A location outside the printable area cannot be specified.

Settings	Description
"Offset settings"	The printing-start location moves from the current printing-start location by the amount of the offset values. Press the [FRONT] or [BACK] button, and select the "Xoffset" or "Yoffset" menu item. Press the [LEFT] or [RIGHT] button to display the offset values on the display screen. • "Xoffset" Press the [LEFT] or [RIGHT] button to decide the amount of offset in the left-right direction. • "Yoffset" Press the [LEFT] or [RIGHT] button to decide the amount of offset in the forward-back direction. A location outside the printable area cannot be specified.

When setting is completed, press [ENTER].

10. Press the [EXIT] button several times to return to the original screen.

Setting the Flat Table Position

Setting the Flat Table Operation After Printing Ends

Set the flat table operation that is performed after printing ends. With the printer initial settings, when printing ends, the flat table stops in the position where printing ended. This setting moves the flat table to the desired position after printing ends, allowing the printing results to be easily checked.

Procedure

1. **Check that the home screen is displayed.**
   If it is not displayed, press the [EXIT] button several times to display the home screen.
2. **Press the [ENTER] button.**
   The "MENU" screen appears.
3. **Select "Auxiliary Func".**
   Press the [FRONT] or [BACK] button to select.
4. **Press the [ENTER] button.**
   The "Auxiliary Func" screen appears.
5. **Select "After print Rst".**
   Press the [FRONT] or [BACK] button to select.
6. **Press the [ENTER] button.**
   The "After print Rst" screen appears.
7. **Set the flat table operation that is performed after printing ends.**
   Press the [LEFT] or [RIGHT] button and select the setting item, then press the [ENTER] button to confirm.

Settings	Description
"POS"	Moves the flat table to the set position after printing ends. Press the [LEFT] or [RIGHT] button to change the display to [**Cur pos**]>[**Front lmt**]>[**Back lmt**]>[**other**] in sequence. Select the position to set and press the [ENTER] button. A black circle is displayed next to the current setting. • "Cur pos" Stops the flat table in the position where printing ended. • "Front lmt" Moves the flat table all the way forward after printing ends. • "Back lmt" Moves the flat table all the way back after printing ends. When "Cur pos", "Front lmt", or "Back lmt" is selected, "null" is displayed for "other". To set a position other than "Cur pos", "Front lmt", or "Back lmt", select "other".
"other"	Set the position when you want to move the table to a position other than "Cur pos", "Front lmt", or "Back lmt". Select "other" for "Cur pos". Press the [LEFT] or [RIGHT] button to increase or decrease in increments of [**1 mm (39.4 mil)**]. Select the position to stop the table in and press the [ENTER] button. The position can be set in the range of [**1 mm (39.4 mil)**] to [**450 mm (17.72 in.)**]. The setting is the distance from the table farthest back position.

8. **Press the [EXIT] button several times to return to the original screen.**

Setting the Cleaning Function

Setting the Interval for Automatic Cleaning

Cleaning of the print head nozzle surface is performed automatically at the set interval. Performing cleaning periodically ensures stable print quality.

Procedure

1. **Check that the home screen is displayed.**
   If it is not displayed, press the [EXIT] button several times to display the home screen.
2. **Press the [ENTER] button.**
   The "MENU" screen appears.
3. **Select "Setup Menu".**
   Press the [FRONT] or [BACK] button to select.
4. **Press the [ENTER] button.**
   The "Setup Menu" screen appears.
5. **Select "Auto Clean".**
   Press the [FRONT] or [BACK] button to select.
6. **Press the [ENTER] button.**
   The "Auto Clean" screen appears.
7. **Select "IDLE auto. clean.".**
   Press the [FRONT] or [BACK] button to select.
8. **Press the [ENTER] button.**
   The "Auto Clean Set" screen appears.
9. **Set the automatic cleaning.**
   Press the [FRONT] or [BACK] button and select the setting item, then press the [ENTER] button to confirm.

Settings	Description
"Wait Time"	Select the interval that you want to set from among the provided settings for the interval at which cleaning is performed. Press the [LEFT] or [RIGHT] button to change the display to [**8H**]>[**3H**]>[**1H**]>[**0.5H**]>[**OFF**]>[**other**] in sequence. When the interval to set is selected, press the [ENTER] button. A black circle is displayed next to the set value at the current setting. When the interval is set with "Wait Time", "NULL" is displayed for "other". To perform automatic cleaning at an interval other than the "Wait Time" selections, select [**other**].
"other"	To perform automatic cleaning at an interval other than the "Wait Time" selections, set the desired interval. Select [**other**] for "Wait Time". Press the [LEFT] or [RIGHT] button to increase or decrease in increments of 1H. When the desired interval is selected, press the [ENTER] button. The time can be set in the range of [**1H**] to [**36H**].

   A black circle is displayed on the right side of the selected setting.

10. Press the [EXIT] button several times to return to the home screen.

Setting Flushing

Cleaning of the print head nozzle surface is performed by discharging ink from the print heads at the set interval. Performing ink discharge regularly can prevent ink dot displacement and dot drop-out.

Procedure

1. **Check that the home screen is displayed.**
   If it is not displayed, press the [EXIT] button several times to display the home screen.
2. **Press the [ENTER] button.**
   The "MENU" screen appears.
3. **Select "Setup Menu".**
   Press the [FRONT] or [BACK] button to select.
4. **Press the [ENTER] button.**
   The "Setup Menu" screen appears.
5. **Select "Auto Clean".**
   Press the [FRONT] or [BACK] button to select.
6. **Press the [ENTER] button.**
   The "Auto Clean" screen appears.
7. **Select "IDLE auto. flush".**
   Press the [FRONT] or [BACK] button to select.
8. **Press the [ENTER] button.**
   The "Auto Clean Set" screen appears.
9. **Set the interval for automatically discharging ink.**
   Press the [FRONT] or [BACK] button and select the setting item, then press the [ENTER] button to confirm.

Settings	Description
"Wait Time"	Select the interval that you want to set from among the provided settings for the interval at which automatic ink discharge is performed. Press the [LEFT] or [RIGHT] button to change the display to [**OFF**]>[**5 min**]>[**10 min**]>[**0.5H**]>[**1H**]>[**2H**]>[**3H**]>[**other**] in sequence. When the interval to set is selected, press the [ENTER] button. The current setting is indicated by a black circle next to the time. When the interval is set with "Wait Time", "NULL" is displayed for "other". To perform automatic ink discharge at an interval other than the "Wait Time" selections, select [**other**].
"other"	This setting is used to perform automatic ink discharge at an interval other than the "Wait Time" selections. Select [**other**] for "Wait Time". Press the [LEFT] or [RIGHT] button to increase or decrease in increments of [**1 min**]. When the desired interval is selected, press the [ENTER] button. The interval can be set in the range of [**1 min**] to [**1440 min**].
"Flush Num"	Set the number of times to discharge ink at automatic ink discharge. Press the [LEFT] or [RIGHT] button to increase or decrease in increments of [**1**]. When the desired interval is selected, press the [ENTER] button. The interval can be set in the range of [**5**] to [**254**].

A black circle is displayed on the right side of the selected setting.

10. **Press the [EXIT] button several times to return to the home screen.**

Changing the Cleaning Operation that Is Performed When the CLEAN Button Is Pressed

You can assign the cleaning method that you frequently use to the [CLEAN] button. The default value for the cleaning operation that is performed when the [CLEAN] button is pressed is set to "Normal". Normally set the height-adjustment lever to "Normal".

Procedure

1. **Check that the home screen is displayed.**
   If it is not displayed, press the [EXIT] button several times to display the home screen.
2. **Press the [ENTER] button.**
   The "MENU" screen appears.
3. **Select "Setup Menu".**
   Press the [FRONT] or [BACK] button to select.
4. **Press the [ENTER] button.**
   The "Setup Menu" screen appears.
5. **Select "Clean_Set".**
   Press the [FRONT] or [BACK] button to select.
6. **Press the [ENTER] button.**
   The "Clean_Set" screen appears, and the current setting when the [CLEAN] button is pressed is displayed.
7. **Press the [LEFT] or [RIGHT] button, and select the cleaning operation to perform when the [CLEAN] button is pressed.**
   Press the [LEFT] or [RIGHT] button to change the display.

Settings	Description
"Normal"	Performs ink suction, discharge, nozzle surface wiping, and other cleaning in order to clean the print heads.
"Medium"	Performs ink suction, discharge, nozzle surface wiping, and other cleaning in order to clean the print heads. This is powerful cleaning that has a longer suction time and larger discharge count than "Normal".
"Powerful"	Performs ink suction, discharge, nozzle surface wiping, and other cleaning in order to clean the print heads. This is powerful cleaning that has a longer suction time and larger discharge count than "Medium".

8. **Press the [ENTER] button.**
   A black circle is displayed on the right side of the selected setting, and the cleaning operation performed when the [CLEAN] button is pressed is changed.
9. **Press the [EXIT] button several times to return to the home screen.**

Configuring the Settings for Cleaning Before Printing Start

Set the frequency for performing cleaning before printing. The setting is the print count, and cleaning is performed each time the set count is reached. For example, if 3 is set, cleaning will be performed before printing every third printing.

To perform cleaning every time at each printing, set 1. To not perform cleaning before printing, set 0. This is effective in cases such as when ink mist is likely to occur or when performing continuous printing.

Procedure

1. **Check that the home screen is displayed.**
   If it is not displayed, press the [EXIT] button several times to display the home screen.
2. **Press the [ENTER] button.**
   The "MENU" screen appears.
3. **Select "Auxiliary Func".**
   Press the [FRONT] or [BACK] button to select.
4. **Press the [ENTER] button.**
   The "Auxiliary Func" screen appears.
5. **Select "Job start Clean".**
   Press the [FRONT] or [BACK] button to select.
6. **Press the [ENTER] button.**
   The "Job Clean" screen appears.
7. **Configure the setting for cleaning before printing starts.**
   Press the [LEFT] or [RIGHT] button to set.

Settings	Description
"Job Num"	Set how many times to print before performing cleaning before printing starts. Press the [LEFT] or [RIGHT] button to increase or decrease in increments of 1. This can be set in the range of 0 to 100. When the desired count is selected, press the [ENTER] button. When 0 is set, cleaning is not performed before the start of printing. When 1 is set, cleaning is performed every time before the start of printing.

   A black circle is displayed on the right side of the selected setting.
8. **Press the [EXIT] button several times to return to the home screen.**

MEMO

Default setting: 0

White Ink Mixing Setting

Preventing White Ink Precipitation and Uneven Color

In order to prevent white ink precipitation and uneven color, set the operation frequency and strength of the ink mixer that is installed in the ink tank.

Procedure

1. **Check that the home screen is displayed.**
   If it is not displayed, press the [EXIT] button several times to display the home screen.
2. **Press the [ENTER] button.**
   The "MENU" screen appears.
3. **Select "Auxiliary Func".**
   Press the [FRONT] or [BACK] button to select.
4. **Press the [ENTER] button.**
   The "Auxiliary Func" screen appears.
5. **Select "Ink Circulation".**
   Press the [FRONT] or [BACK] button to select.
6. **Press the [ENTER] button.**
   The "Ink Circulation" screen appears.
7. **Set the ink mixer operation.**
   Press the [FRONT] or [BACK] button and select the setting item, then press the [ENTER] button to confirm.

Settings	Description
"ON"	Set the ON time of the motor that mixes the ink. Press the [LEFT] or [RIGHT] button to increase or decrease in 1 s increments. When the desired interval is selected, press the [ENTER] button. The time can be set in the range of [**0 s**] to [**3600 s**].
"OFF"	Set the OFF time of the motor that mixes the ink. Press the [LEFT] or [RIGHT] button to increase or decrease in 1 s increments. When the desired interval is selected, press the [ENTER] button. The time can be set in the range of [**0 s**] to [**3600 s**].
"Lv"	Set the mixing speed of the motor that mixes the ink. Press the [LEFT] or [RIGHT] button to increase or decrease in increments of 1. When the desired speed is selected, press the [ENTER] button. The time can be set in the range of [**0**] to [**15**].

   A black circle is displayed on the right side of the selected setting.
8. **Press the [EXIT] button several times to return to the home screen.**

MEMO

Default settings
ON : 3 s
OFF : 3600 s
Lv : 3

Basic Printer Settings

Setting the Display Language

Set the language for the display screen.

Procedure

1. **Check that the home screen is displayed.**
   If it is not displayed, press the [EXIT] button several times to display the home screen.
2. **Press the [ENTER] button.**
   The "MENU" screen appears.
3. **Select "Language".**
   Press the [FRONT] or [BACK] button to select.
4. **Press the [ENTER] button.**
   The "Language" screen appears.
5. **Select the display screen language.**
   Press the [FRONT] or [BACK] button to select.
6. **Press the [ENTER] button.**
7. **Press the [EXIT] button several times to return to the home screen.**

MEMO

Default setting: Simplified Chinese

Viewing Printer Information

This is the method for checking printer system information.

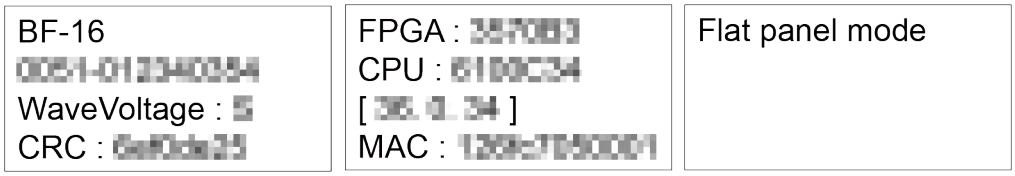
Procedure

1. **Check that the home screen is displayed.**
   If it is not displayed, press the [EXIT] button several times to display the home screen.

2. **Press the [ENTER] button.**
   The "MENU" screen appears.

3. **Select "Dev. Mgr.".**
   Press the [FRONT] or [BACK] button to select.

4. **Press the [ENTER] button.**
   You can check the following information:
   Press the [FRONT] or [BACK] button to change the screen.



5. **Press the [EXIT] button several times to return to the home screen.**

Adjusting the Printer

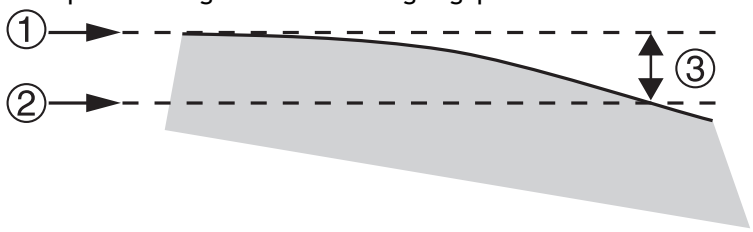
Adjusting the Height

Notes When the Print Surface Is Uneven

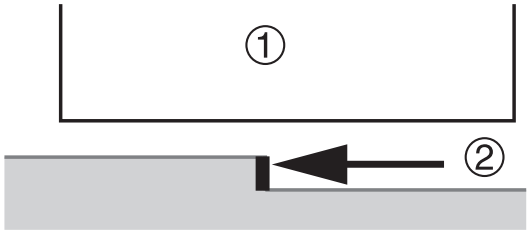
This machine can also print on uneven surfaces. However, remember the following points for the height setting.

- The gap between the "highest position of the object to be printed on" (①) and the "lowest position of the print surface" (②) should be 2 mm (78.7 mil) or less (③; as a general guide).

  Print quality at the lower position degrades as the height gap widens.



- Printing on a surface (②) that is perpendicular to the print heads (①) is not possible.



Adjusting the Ink Landing Position

There are three settings: printing when the print-head carriage moves left, printing when it moves right, and printing when it moves in both directions. Although adjustment is performed at the time of installation, when contact occurs between the print heads and the object to be printed on, or when the distance between the printing surface on the object to be printed on and the print heads changes, deviation of the ink landing position may occur. This deviation is corrected in order to eliminate it. Correction is performed for each printing direction.

Correcting Misalignment When Printing by Left Movement of the Print-head Carriage

1. Attach the object to be printed on for the printing test.

IMPORTANT

Open and close the front cover and right cover gently. If you open and close them forcefully or release the cover when it is partly open, not only may it malfunction, but you may also be injured. When opening and closing the front cover, grasp the center of the front cover to open or close it.

Procedure

1. **Open the front cover.**

2. **Press the [FRONT] button and move the flat table forward to a position where the object to be printed on for the printing test can be installed.**

   MEMO

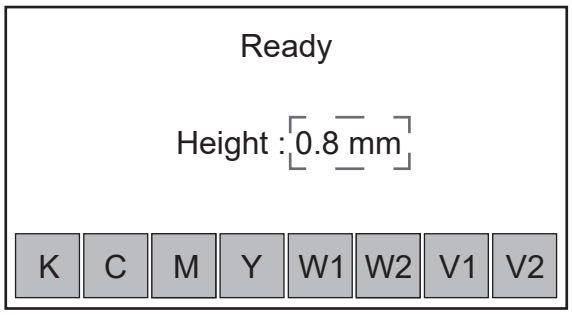
   The flat table will continue moving if you press and hold the [FRONT] button for three seconds or longer and then release it. To stop the movement, press [FRONT] again or press the [BACK] button.

3. **Press the [UP] or [DOWN] button to adjust the flat table height.**

   Press the [UP] or [DOWN] button and change the value of "Height" on the display screen to the thickness of the object to be printed on for the printing test.

   MEMO

   If the object to be printed on for the printing test is less than 0.1 mm (3.93 mil) thick, set the "Height" value to 0.



4. **Install the object to be printed on for the printing test onto the flat table.**

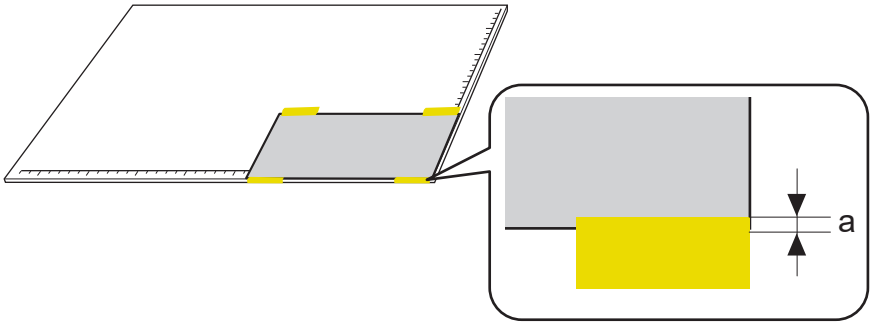
Install so that it is aligned with the bottom right corner of the flat table.

5. **Press the [SUC] button.**

The suction fan activates to suction the object to be printed on in place.

MEMO

If the ends of the object to be printed on are rolled up, if the object to be printed on is thick, and in similar situations, it may not be possible to secure the media in place. For objects to be printed on whose ends are rolled up, secure the ends of the object to be printed on with tape so that dimension a is 5 mm (0.20 in.) or less, and then use the suction function. If the tape application margin exceeds 5 mm (0.20 in.), the test pattern may be printed on the tape.

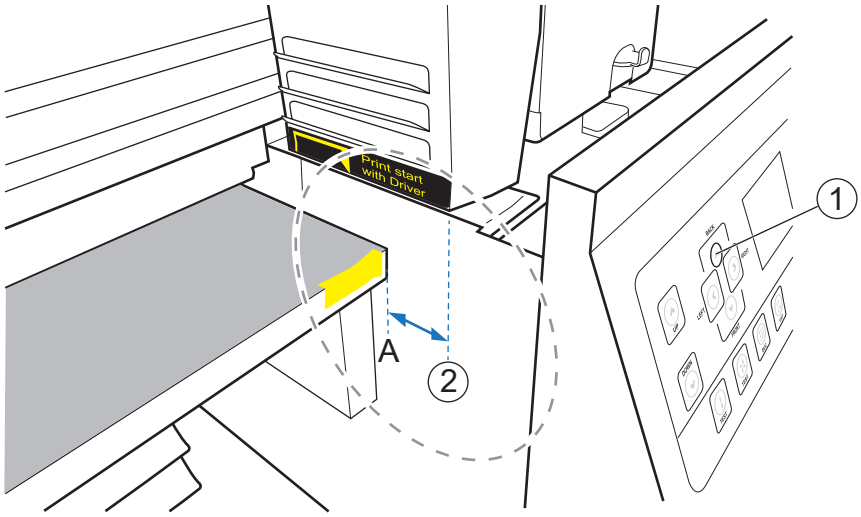


6. **Move the flat table to the printing test start position.**

Press the [BACK] button ① and move the flat table to the printing test start position. The nozzle surface of the print heads is located at a position 30 mm (1.18 in.) inward from the front ② of the UV-LED device. Position the front edge of the flat table at position A 25 mm (0.98 in.) inward from the front of the UV-LED device.

MEMO

The flat table will continue moving if you press and hold the [BACK] button for three seconds or longer and then release it. To stop the movement, press [BACK] again or press the [FRONT] button.



7. **Close the front cover.**

RELATED LINKS

- P. 25 Checking Before Printing

2. Perform a printing test.

Procedure

1. **Start Roland DG BF-16 Driver.**
2. **Click [Calibration] for [Basic settings].**
3. **Click [Calibrate to the left] for [Register Calibration].**

IMPORTANT

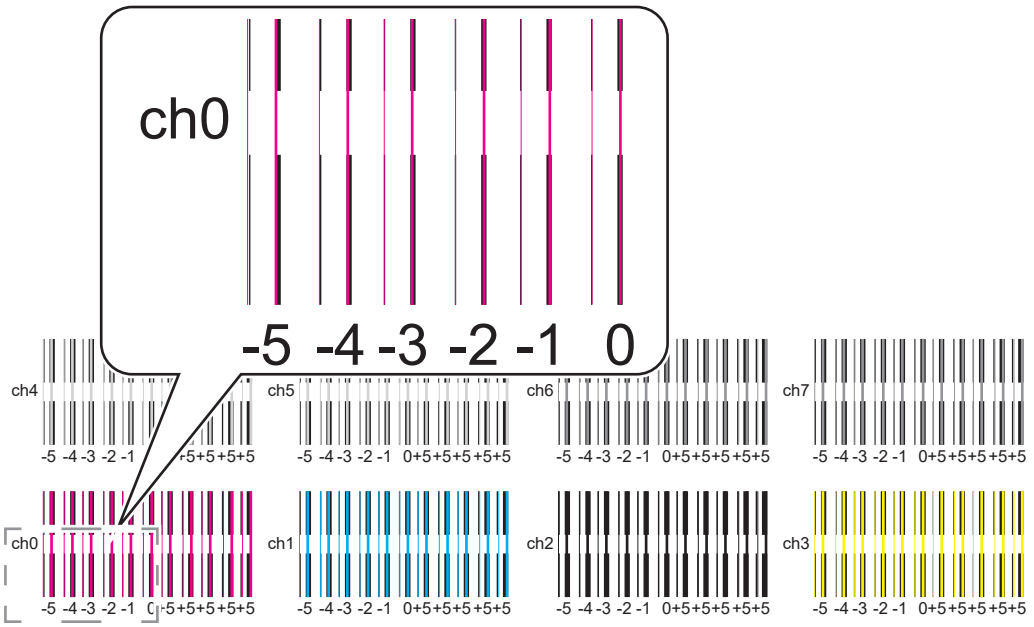
Put on protective eyewear before clicking [**Calibrate to the left**] for [**Register Calibration**].

Test printing is started.

3. Check and correct the printing test results.

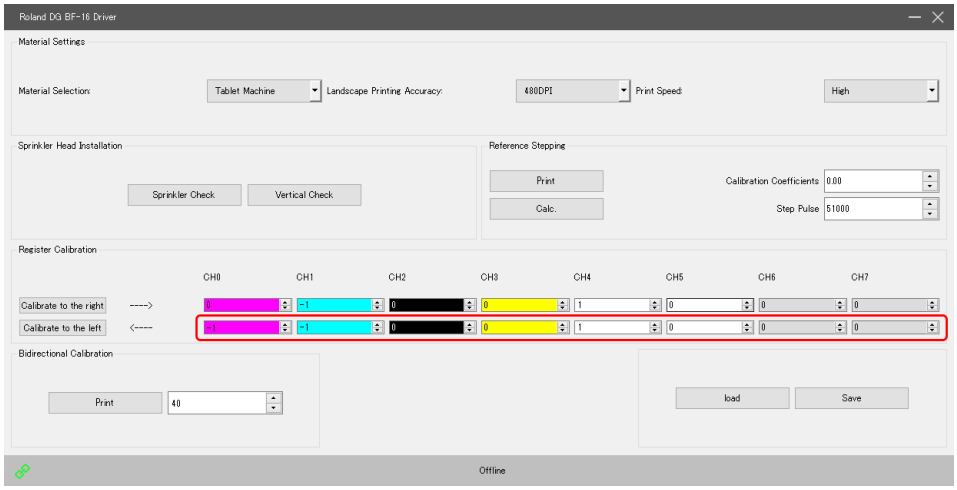
Procedure

1. **Check the test pattern.**



The value below the location where there is the least deviation between the overlapping lines is the correction value. The value where there is the least deviation for Ch0 is -2. Check the value below the location where there is the least deviation for Ch0 through Ch7.

2. **Enter the correction values that were checked in Step 1 into [CH0] to [CH7] for [Calibrate to the left].**



Click [**Save**].

3. **Attach the object to be printed on for the printing test.**

1. Attach the object to be printed on for the printing test.(P. 60)

4. **Perform the printing test again.**

2. Perform a printing test.(P. 67)

5. **Check the test pattern.**

Adjustment is completed if the least amount of deviation is at the 0 position.

If it is deviated, check the correction value and repeat adjustment until the least amount of deviation is at the 0 position.

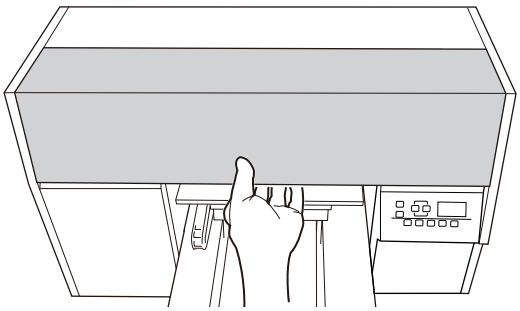
6. **Click × to close the window.**

Correcting Misalignment When Printing by Right Movement of the Print-head Carriage

1. Attach the object to be printed on for the printing test.

IMPORTANT

Open and close the front cover and right cover gently. If you open and close them forcefully or release the cover when it is partly open, not only may it malfunction, but you may also be injured. When opening and closing the front cover, grasp the center of the front cover to open or close it.



Procedure

1. **Open the front cover.**

2. **Press the [FRONT] button and move the flat table forward to a position where the object to be printed on for the printing test can be installed.**

   MEMO

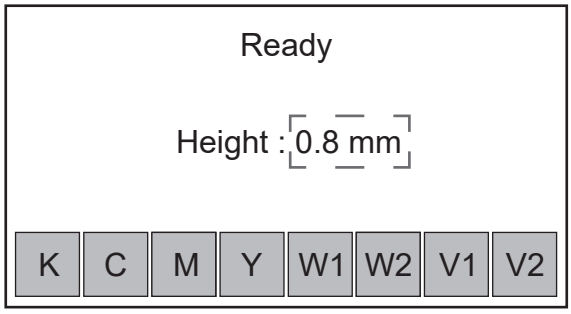
   The flat table will continue moving if you press and hold the [FRONT] button for three seconds or longer and then release it. To stop the movement, press [FRONT] again or press the [BACK] button.

3. **Press the [UP] or [DOWN] button to adjust the flat table height.**

   Press the [UP] or [DOWN] button and change the value of "Height" on the display screen to the thickness of the object to be printed on for the printing test.

   MEMO

   If the object to be printed on for the printing test is less than 0.1 mm (3.93 mil) thick, set the "Height" value to 0.



4. **Install the object to be printed on for the printing test onto the flat table.**

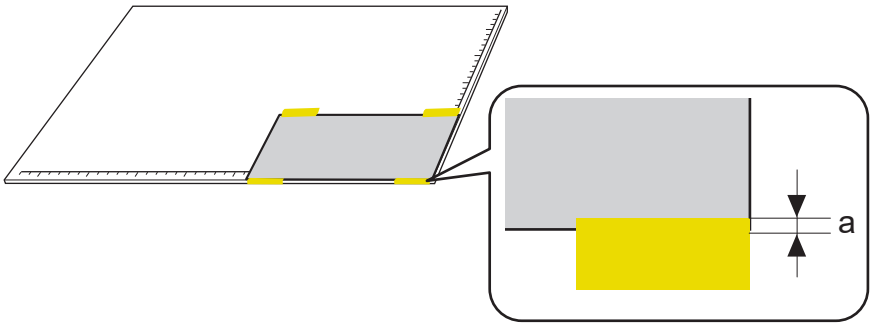
Install so that it is aligned with the bottom right corner of the flat table.

5. **Press the [SUC] button.**

The suction fan activates to suction the object to be printed on in place.

MEMO

If the ends of the object to be printed on are rolled up, if the object to be printed on is thick, and in similar situations, it may not be possible to secure the media in place. For objects to be printed on whose ends are rolled up, secure the ends of the object to be printed on with tape so that dimension a is 5 mm (0.20 in.) or less, and then use the suction function. If the tape application margin exceeds 5 mm (0.20 in.), the test pattern may be printed on the tape.

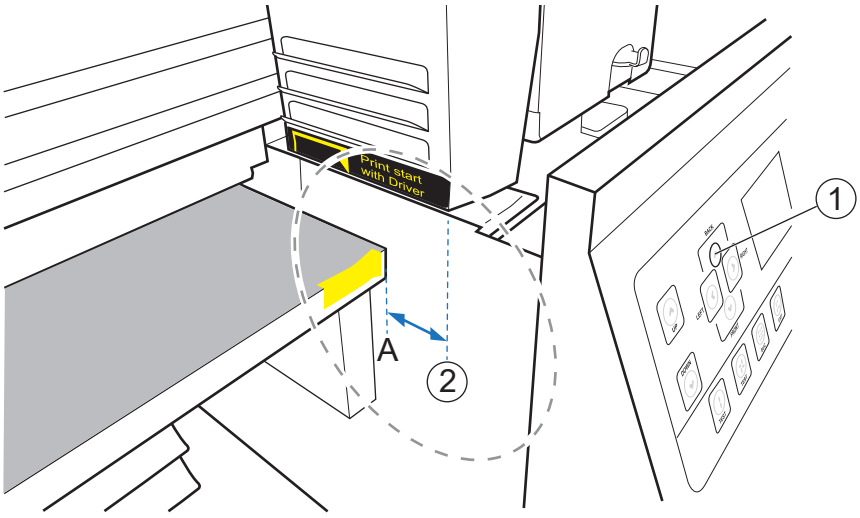


6. **Move the flat table to the printing test start position.**

Press the [BACK] button ① and move the flat table to the printing test start position. The nozzle surface of the print heads is located at a position 30 mm (1.18 in.) inward from the front ② of the UV-LED device. Position the front edge of the flat table at position A 25 mm (0.98 in.) inward from the front of the UV-LED device.

MEMO

The flat table will continue moving if you press and hold the [BACK] button for three seconds or longer and then release it. To stop the movement, press [BACK] again or press the [FRONT] button.



7. **Close the front cover.**

RELATED LINKS

- P. 25 Checking Before Printing

2. Perform a printing test.

Procedure

1. **Start Roland DG BF-16 Driver.**
2. **Click [Calibration] for [Basic settings].**
3. **Click [Calibrate to the right] for [Register Calibration].**

IMPORTANT

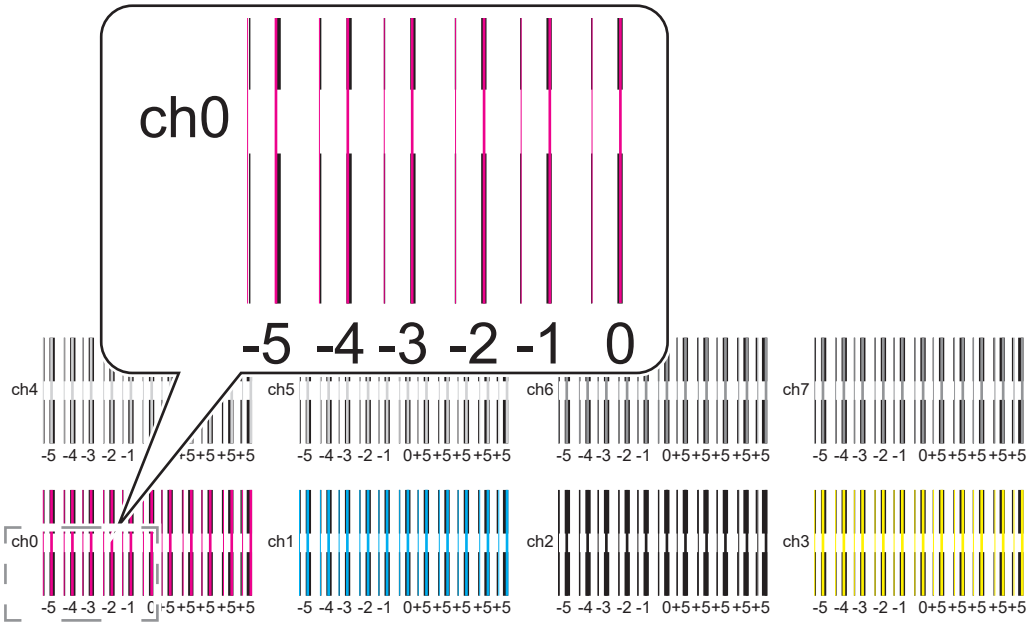
Put on protective eyewear before clicking [**Calibrate to the right**] for [**Register Calibration**].

Test printing is started.

3. Check and correct the printing test results.

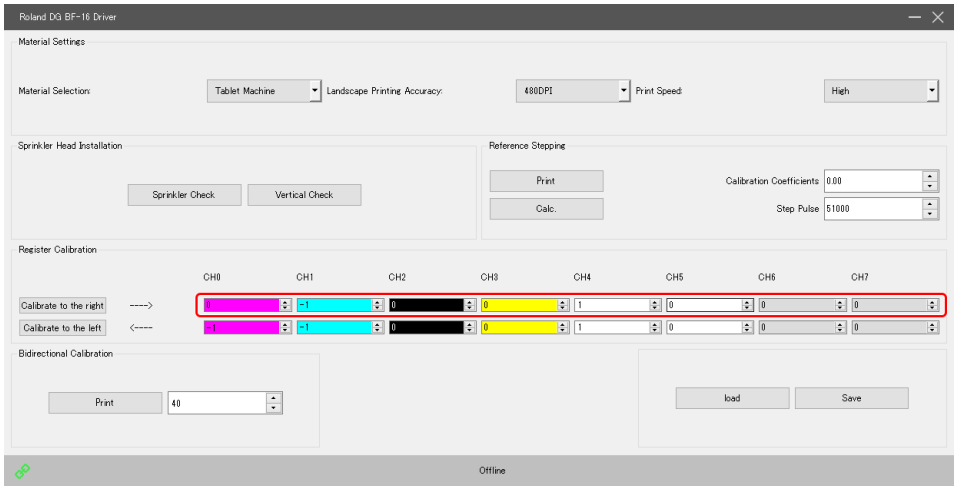
Procedure

1. **Check the test pattern.**



The value below the location where there is the least deviation between the overlapping lines is the correction value. The value where there is the least deviation for Ch0 is -2. Check the value below the location where there is the least deviation for Ch0 through Ch7.

2. Enter the correction values that were checked in Step 1 into [CH0] to [CH7] for [Calibrate to the right].



Click [**Save**].

3. Attach the object to be printed on for the printing test.

1. Attach the object to be printed on for the printing test.(P. 60)

4. Perform the printing test again.

2. Perform a printing test.(P. 67)

5. Check the test pattern.

Adjustment is completed if the least amount of deviation is at the 0 position.

If it is deviated, check the correction value and repeat adjustment until the least amount of deviation is at the 0 position.

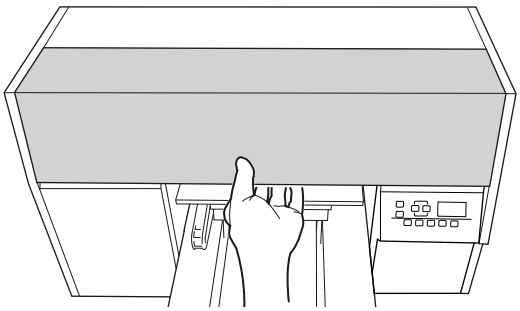
6. Click × to close the window.

Correcting Misalignment When Printing by Bidirectional Movement of the Print Head Carriage

1. Attach the object to be printed on for the printing test.

IMPORTANT

Open and close the front cover and right cover gently. If you open and close them forcefully or release the cover when it is partly open, not only may it malfunction, but you may also be injured. When opening and closing the front cover, grasp the center of the front cover to open or close it.



Procedure

1. **Open the front cover.**

2. **Press the [FRONT] button and move the flat table forward to a position where the object to be printed on for the printing test can be installed.**

MEMO

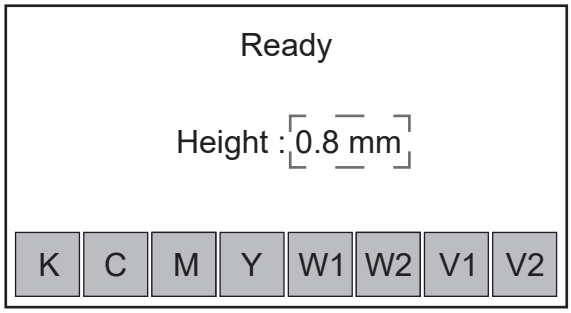
The flat table will continue moving if you press and hold the [FRONT] button for three seconds or longer and then release it. To stop the movement, press [FRONT] again or press the [BACK] button.

3. **Press the [UP] or [DOWN] button to adjust the flat table height.**

Press the [UP] or [DOWN] button and change the value of "Height" on the display screen to the thickness of the object to be printed on for the printing test.

MEMO

If the object to be printed on for the printing test is less than 0.1 mm (3.93 mil) thick, set the "Height" value to 0.



4. **Install the object to be printed on for the printing test onto the flat table.**

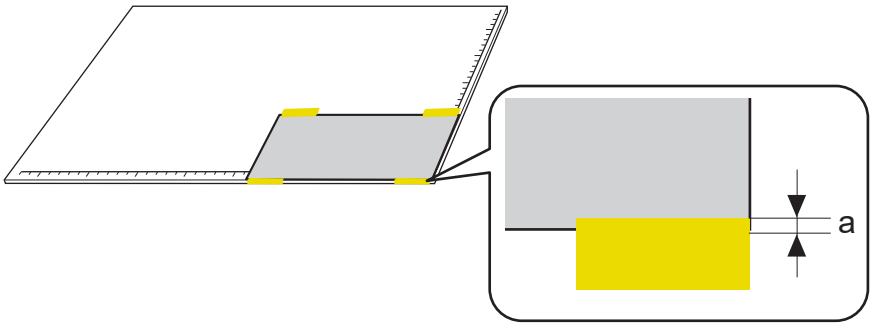
Install so that it is aligned with the bottom right corner of the flat table.

5. **Press the [SUC] button.**

The suction fan activates to suction the object to be printed on in place.

MEMO

If the ends of the object to be printed on are rolled up, if the object to be printed on is thick, and in similar situations, it may not be possible to secure the media in place. For objects to be printed on whose ends are rolled up, secure the ends of the object to be printed on with tape so that dimension a is 5 mm (0.20 in.) or less, and then use the suction function. If the tape application margin exceeds 5 mm (0.20 in.), the test pattern may be printed on the tape.

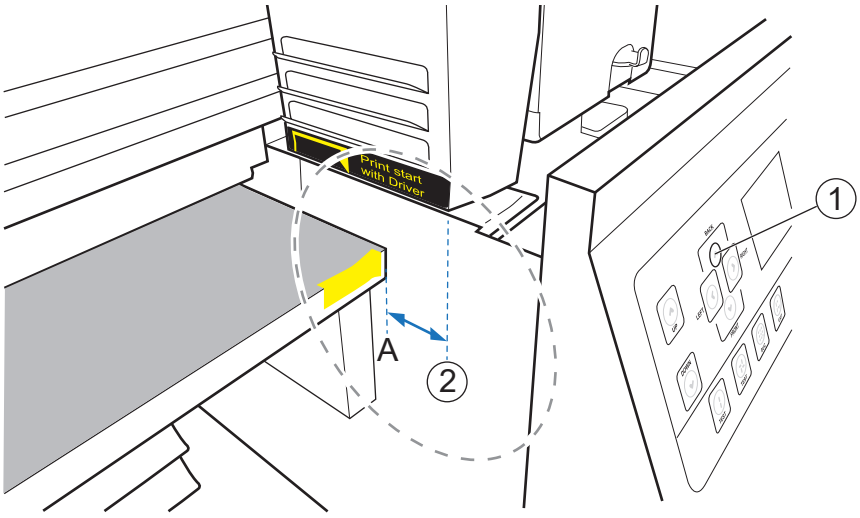


6. **Move the flat table to the printing test start position.**

Press the [BACK] button ① and move the flat table to the printing test start position. The nozzle surface of the print heads is located at a position 30 mm (1.18 in.) inward from the front ② of the UV-LED device. Position the front edge of the flat table at position A 25 mm (0.98 in.) inward from the front of the UV-LED device.

MEMO

The flat table will continue moving if you press and hold the [BACK] button for three seconds or longer and then release it. To stop the movement, press [BACK] again or press the [FRONT] button.



7. **Close the front cover.**

RELATED LINKS

- P. 25 Checking Before Printing

2. Perform a printing test.

Procedure

1. **Start Roland DG BF-16 Driver.**
2. **Click [Calibration] for [Basic settings].**
3. **Click [Print] under [Bidirectional Calibration].**

IMPORTANT

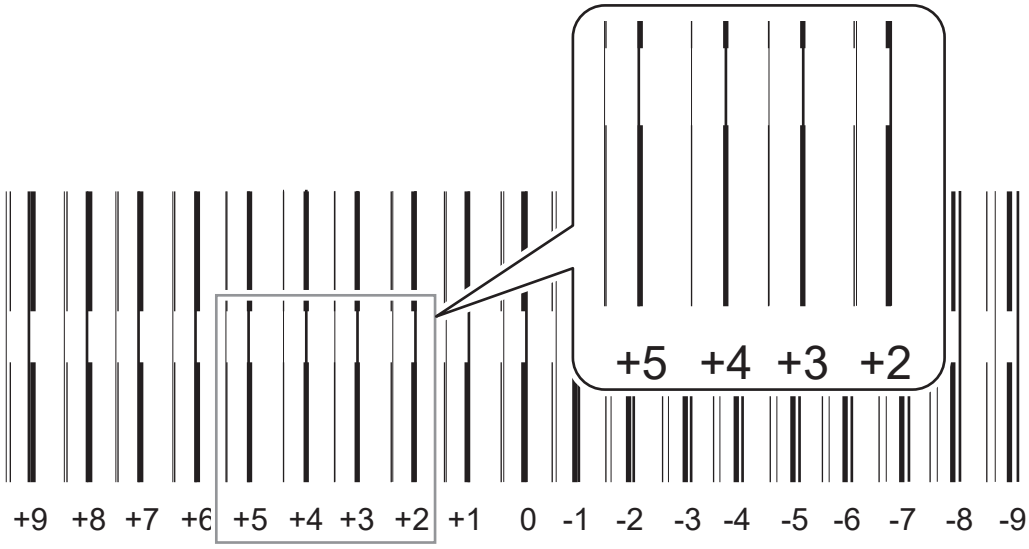
Put on protective eyewear before clicking **[Print]** under **[Bidirectional Calibration]**.

Test printing is started.

3. Check and correct the printing test results.

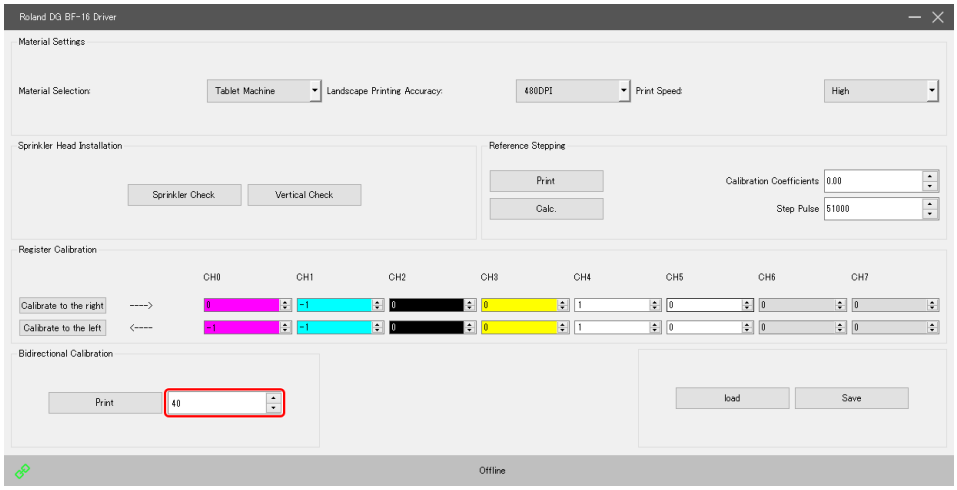
Procedure

1. **Check the test pattern.**



The value below the location where there is the least deviation between the overlapping lines is the correction value. In the figure above, the value where there is the least deviation is +4.

2. Check the value that is displayed in the box on the right side of [Print].



The value displayed in the box in the above figure is 40.

3. Enter the correction value into the box on the right side of [Print].

The correction value is the value that was displayed in the box on the right side of **[Print]** plus the value where there is the least deviation. In this example, enter 44.

4. Click [Save].

5. Attach the object to be printed on for the printing test.

1. Attach the object to be printed on for the printing test.(P. 60)

6. Perform the printing test again.

2. Perform a printing test.(P. 71)

7. Check the test pattern.

Adjustment is completed if the least amount of deviation is at the 0 position.

If it is deviated, check the correction value and repeat adjustment until the least amount of deviation is at the 0 position.

8. **Click × to close the window.**

Maintenance

Introduction

Important Notes on Handling and Use

Printer

This machine is a precision device.

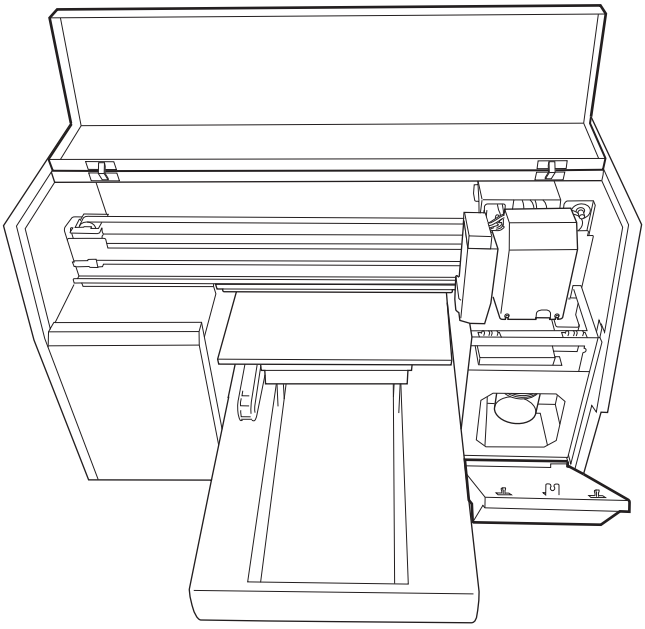
- Never subject the machine to impacts or excessive force.
- Never needlessly put your hand or fingers inside the cover or other internal areas of the machine.

Install in a suitable location.

- Install the machine in a location having the specified temperature and relative humidity.
- Install the machine in a quiet, stable location offering good operating conditions.

Open and close the front cover and right cover gently.

- Open and close the front cover and right cover gently. If you open and close them forcefully or release the cover when it is partly open, not only may it malfunction, but you may also be injured. When opening and closing the front cover, grasp the center of the front cover to open or close it.



The print heads and the UV-LED device are delicate devices.

- Avoid needlessly touching them, allowing them to scrape against the object, or similar. Failure to handle with care may cause damage.
- The print heads may be damaged if allowed to dry out. The machine prevents desiccation automatically, but improper operation may render this feature inoperative. Operate properly, as specified in this manual.
- Daily maintenance as well as various types of maintenance depending on the status must be performed. Read this manual thoroughly and perform the appropriate maintenance at the appropriate times.
- The print heads are components that wear out. Periodic replacement is required, with the frequency of replacement depending on use.

Ink Bottle

Handling

- Inks come in various types.

  Use a type that is compatible with the printer. Also, be sure to use only genuine items from Roland DG Corporation.
- Never subject the ink bottle to impact.

  Never drop the ink bottle or shake it forcefully. Ink may leak.
- Use all of the ink in the ink bottle for one refill.

  Do not divide the ink into two or three refills, or refill the ink bottle with ink.
- If ink is spilled, wipe it off immediately.

  If ink gets on your hands or clothing, wash it off as soon as possible. Removal may become difficult if allowed to stand.

Storage

- Use up the ink before the expiration date printed on the ink bottle.
- Store the ink bottle in a location that is not subject to direct sunlight or strong illumination.
- Store the ink bottle unopened in a well-ventilated location at a temperature of 5°C (41°F) or higher and less than 30°C (86°F) and a relative humidity of 20 to 80% RH.

Basic Maintenance Knowledge

Types and Timing of Maintenance

To use this machine under its optimal conditions, it is important to perform the appropriate maintenance at the appropriate times.

Regular Maintenance

These are the maintenance items that are required on a daily basis.

Timing	Category	Item
Before daily operations	Cleaning of the print heads	P. 101 Printing Tests and Normal Cleaning
During and after daily operations	Cleaning the Machine	P. 85 Cleaning the Machine
	Cleaning of the print heads	P. 87 Removing Excess Ink Adhering to the Print Heads
	Cleaning of the print heads	P. 88 Stabilizing Ink Discharge
	Filling with Ink	P. 89 Filling with Ink
When the discharged fluid is ready to overflow	Disposing of discharged fluid	P. 98 If the Discharged Fluid Disposal Message Appears
Once a week	Cleaning of the print heads	P. 110 Manual Cleaning Method
When dot drop-out or dot displacement occurs	Cleaning of the print heads	P. 101 Printing Tests and Normal Cleaning
		P. 106 Medium Cleaning Method
		P. 108 Powerful Cleaning Method
		P. 110 Manual Cleaning Method
Once a month	Cleaning the UV-LED devices	P. 119 Cleaning That Must Be Performed Once a Month or More

Replacing Consumable Parts

Perform replacement of consumable parts at appropriate times.

For information about replacing consumable parts, contact your authorized dealer.

Timing	Part name
Every six months	Wiper
Every six months	Cap Top

RELATED LINKS

- P. 128 Inquiries for Consumable Parts and Products

Automatic Maintenance Feature and Notes

This machine has a feature that automatically performs maintenance periodically.

This function performs operations for preventing the print heads from drying out, so:

- **Always keep the power switched on.**
- **Do not leave the front cover and right cover open for a long time.**
- **Return to the home screen after specifying settings in the menus.**

When the Machine Will Not Be Used for a Prolonged Period

Be sure to follow the instructions shown below when the printer is not in use for a prolonged period.

- **Empty the drain bottle.**

  If you know that you will not use the machine for a prolonged period, empty the drain bottle. When the power is on, the machine periodically performs automatic maintenance in which fluid is discharged.

  When the drain bottle becomes full, automatic maintenance is not performed. Therefore periodically check the discharged fluid even when the machine is not used for a prolonged period.

- **Procedure when the machine will not be used for three days or longer**

  To prevent the print heads from drying out and prevent clogging of the print head nozzles, drip three to five drops of cleaning fluid onto the cap top and then place the print head and cap top in close contact. For more information, refer to Protecting the Print Heads When the Machine Will Not be Used for a Prolonged Period(P. 81).

  Leaving the machine unused for a prolonged period may damage the print heads, so be sure to switch on the power to perform these automatic operations.

- **Keep the machine at a constant temperature and relative humidity.**
  Even when the machine is not in use, keep it at a temperature of 22 to 33°C (71.6 to 91.4°F) and a relative humidity of 30 to 65% RH (with no condensation). Failure to do so may result in malfunction.

Protecting the Print Heads When the Machine Will Not be Used for a Prolonged Period

This procedure is performed to prevent the print heads from drying out and prevent clogging of the print head nozzles. Be sure to perform this procedure when the machine will not be used for three days or longer.

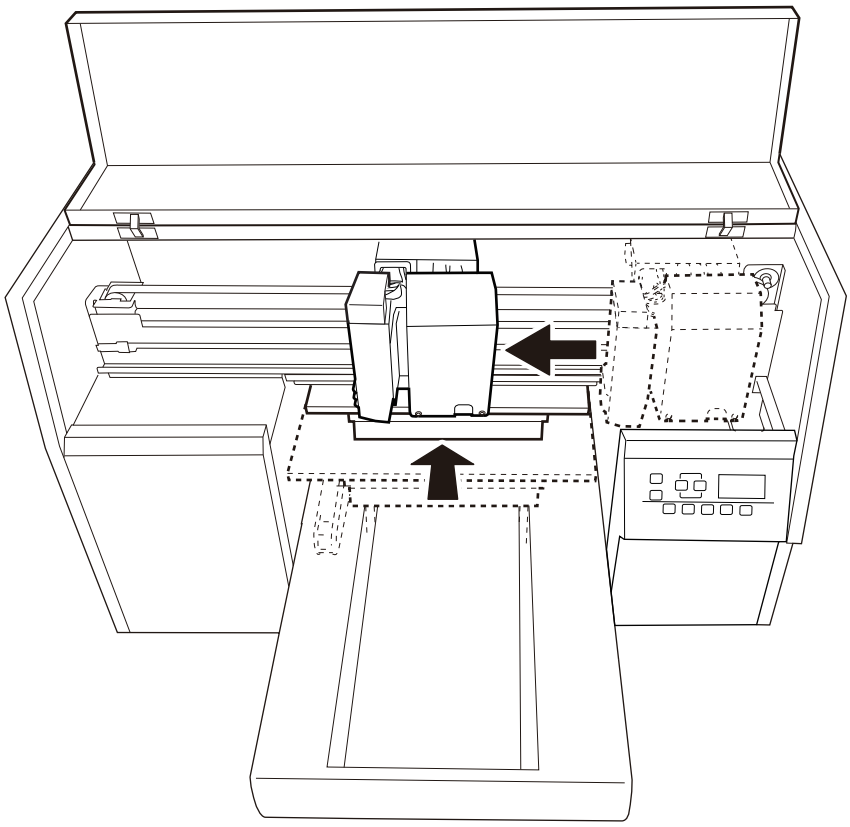
1. Move the print-head carriage.

IMPORTANT

Open and close the front cover and right cover gently. If you open and close them forcefully or release the cover when it is partly open, not only may it malfunction, but you may also be injured. When opening and closing the front cover, grasp the center of the front cover to open or close it.

Procedure

1. **Open the front cover.**
2. **Remove the object to be printed on.**
3. **Check that the home screen is displayed.**
   If it is not displayed, press the [EXIT] button several times to display the home screen.
4. **Press the [ENTER] button.**
   The "MENU" screen appears.
5. **Select "Maintenance".**
   Press the [FRONT] or [BACK] button to select.
6. **Press the [ENTER] button.**
   The "MAINTENANCE" screen appears.
7. **Select "Manual Clean".**
   Press the [FRONT] or [BACK] button to select.
8. **Press the [ENTER] button.**
   "Start" is displayed on the screen.
9. **When "Start" is displayed, press the [ENTER] button.**
   The flat table moves to the back, and the print-head carriage moves to near the center of the machine.



2. Dampen the cap top with cleaning liquid.

IMPORTANT

Put on protective eyewear and gloves when performing this work.

Procedure

1. **Moisten a new cleaning stick with the cleaning liquid.**

   Dip the cleaning stick in the cleaning liquid until drops of cleaning fluid drip from the cleaning stick.

   IMPORTANT

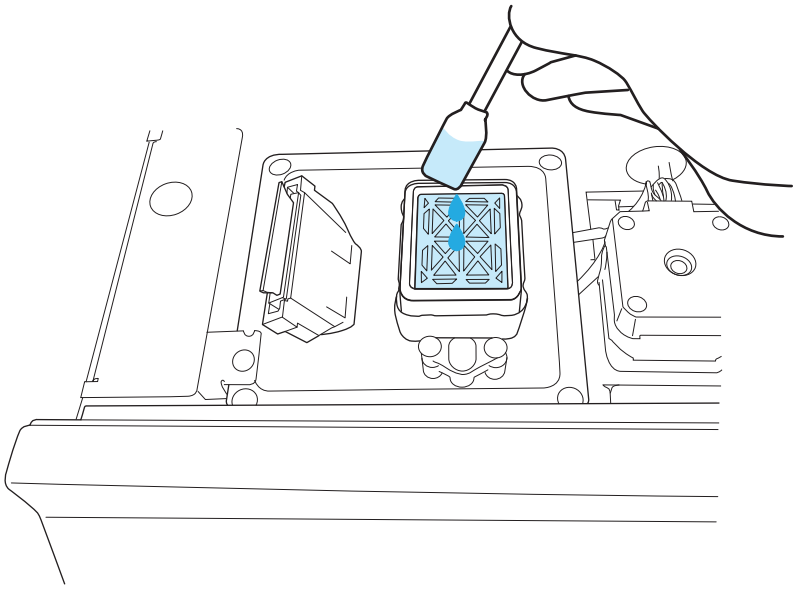
   Be sure to use one of the included cleaning sticks.

2. **Use the dampened cleaning stick and drip around three to five drops of cleaning liquid onto the cap top.**

   MEMO

   If cleaning liquid adheres to any part other than the cap top, wipe it off immediately.



3. **Press the [ENTER] button.**

   Move the print-head carriage to the right side of the machine so the print head is in close contact with the cap top.

4. **Press the [EXIT] button several times to return to the home screen.**

5. **Close the front cover.**

Regular Maintenance

Cleaning the Machine

Cleaning the Machine on a Daily Basis

As part of daily cleaning, wipe away any buildup of ink or grime that has adhered to the machine. In particular, the flat table is likely to have a buildup of grime. Clean by wiping with a cloth moistened with neutral detergent diluted with water then wrung dry.

⚠ WARNING

Never use a solvent such as gasoline, alcohol, or thinner to perform cleaning.
Doing so may cause a fire.

IMPORTANT

- This machine is a precision device and is sensitive to dust and dirt. Perform cleaning on a daily basis.
- Never attempt to oil or lubricate the machine.
- Before performing this operation, remove any objects to be printed on.

IMPORTANT

Open and close the front cover and right cover gently. If you open and close them forcefully or release the cover when it is partly open, not only may it malfunction, but you may also be injured. When opening and closing the front cover, grasp the center of the front cover to open or close it.

Procedure

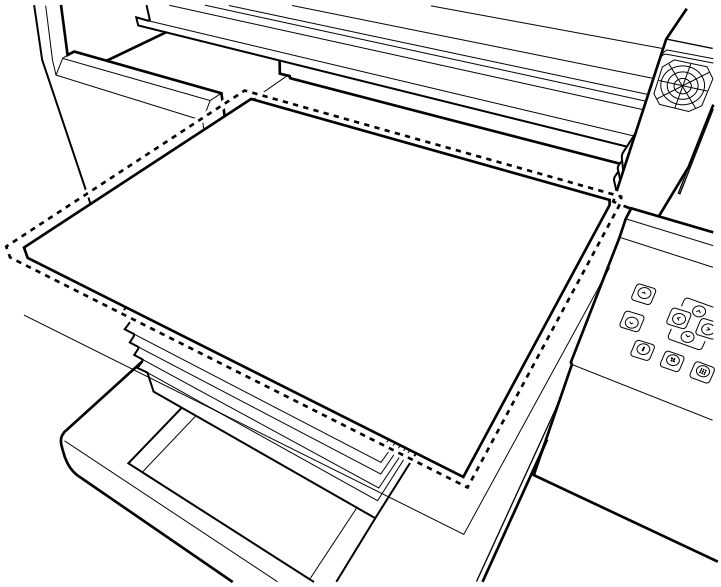
1. **Press the [FRONT] button and move the flat table all the way forward.**

   MEMO

   The flat table will continue moving if you press and hold the [FRONT] button for three seconds or longer and then release it. To stop the movement, press [FRONT] again or press the [BACK] button.

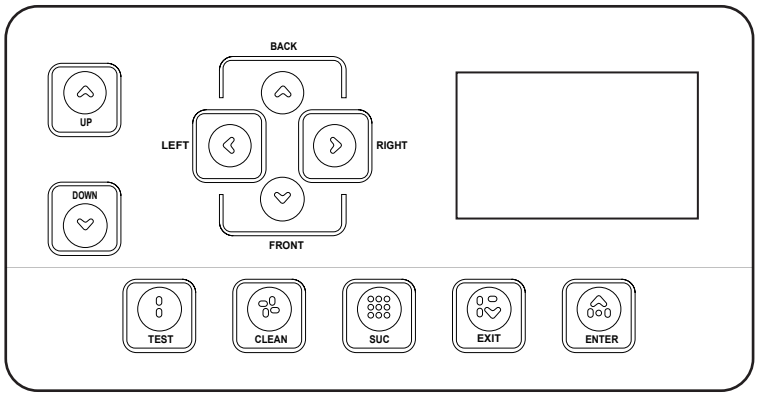
2. **Open the front cover.**

3. **Clean the flat table.**



4. **Clean the operation panel or the screen display.**

Clean by wiping with a cloth moistened with neutral detergent diluted with water then wrung dry, or a soft, dry cloth, taking care not to scratch the screen.



5. **Press [BACK] to move the flat to the back.**

MEMO

The flat table will continue moving if you press and hold the [BACK] button for three seconds or longer and then release it. To stop the movement, press [BACK] again or press the [FRONT] button.

6. **Close the front cover.**

Cleaning the Print Head Nozzle Surface

This is cleaning that is performed between automatic cleaning and the next automatic cleaning when lateral streaks or other problems become noticeable. Performing this cleaning regularly is effective in preventing ink dropping, dot drop-out, and dot displacement.

Removing Excess Ink Adhering to the Print Heads

Procedure

1. **Check that the home screen is displayed.**
   If it is not displayed, press the [EXIT] button several times to display the home screen.
2. **Press the [ENTER] button.**
   The "MENU" screen appears.
3. **Select "Maintenance".**
   Press the [FRONT] or [BACK] button to select.
4. **Press the [ENTER] button.**
   The "MAINTENANCE" screen appears.
5. **Select "Wipe Nozzle".**
   Press the [FRONT] or [BACK] button to select.
6. **Press the [ENTER] button.**
   Use the wiper to wipe the nozzle surface of the print heads and remove excess ink.
7. **Press the [EXIT] button several times to return to the home screen.**

Stabilizing Ink Discharge

Continually discharge ink from the print heads on the cap top in order to stabilize ink discharge. This operation is called flushing.

The ink discharge count for flushing is set with [**Setup Menu**]>[**Auto Clean**]>[**IDLE auto. flush**]>[**Flush Num**].
Setting Flushing(P. 51)

Procedure

1. **Check that the home screen is displayed.**
   If it is not displayed, press the [EXIT] button several times to display the home screen.
2. **Press the [ENTER] button.**
   The "MENU" screen appears.
3. **Select "Maintenance".**
   Press the [FRONT] or [BACK] button to select.
4. **Press the [ENTER] button.**
   The "MAINTENANCE" screen appears.
5. **Select "Flush".**
   Press the [FRONT] or [BACK] button to select.
6. **Press the [ENTER] button.**
   Ink is continually discharged from the print heads on the cap top.
7. **Press the [EXIT] button several times to return to the home screen.**

Filling with Ink

⚠ WARNING

Never store ink, cleaning liquid, or discharged fluid in any of the following locations.

- **Any location exposed to open flame**
- **Any location where high temperature may occur**
- **Near bleach or any other such oxidizing agent or explosive material**
- **Any location within the reach of children**

Fire may be a danger. Accidental ingestion by children may pose a health hazard.

IMPORTANT

- Be sure to fill with the same type and same color of ink.
- Never use any remaining ink that was previously used in another machine, even if it is an identical type.
- Never mix different types of ink.
- Never perform ink refill while the printer is operating.

IMPORTANT

The amount of ink which was used after ink activation is managed by the printer. Perform refill only of the ink where [**Lack of Ink**] is displayed on the printer display screen and where the area inside the color box is white.

Use all of the ink in the ink bottle for one refill. Do not divide the ink into two or three refills, or refill the ink bottle with ink.

Filling the Ink Tank with Ink

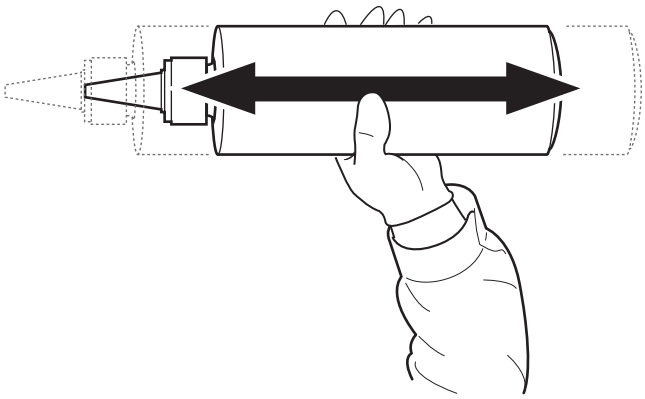
IMPORTANT

- Put on protective eyewear and gloves before filling with ink.
- If ink contacts your hand or if you spill it on something, wipe it off immediately.

Procedure

1. **Shake the ink bottle 50 times (about 20 seconds).**

   So that the ink mixes well, shake the ink bottle horizontally with a stroke length of around 5 cm (1.97 in.) from each end of the ink cartridge.



2. **Prepare for ink filling.**

(1) **Remove the cap from the ink bottle.**

(2) **Remove the ink leakage prevention seal (①) from the ink bottle.**

Use a cutting tool to remove the ink leakage prevention seal.

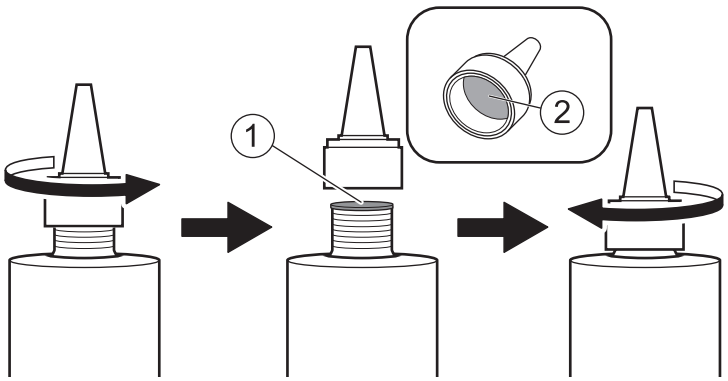
> **IMPORTANT**
>
> Be careful to prevent the intrusion of cutting scraps and garbage into the ink bottle.

(3) **Remove the seal (②) attached to the inside of the cap.**

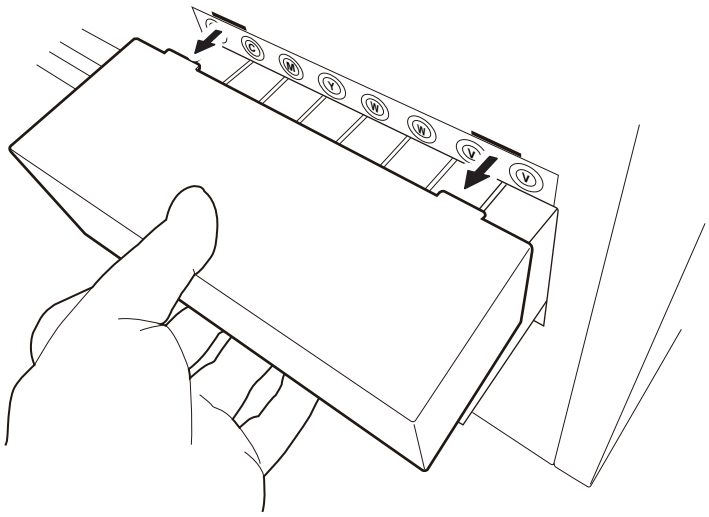
> **IMPORTANT**
>
> If you fill the machine with the cap attached and without removing the seals, ink may leak out from the gap between the cap and the bottle. Be sure to remove the seal from the inside of the cap.

(4) **Install the cap onto the ink bottle.**

Tighten the cap securely so that ink does not leak when filling with ink.

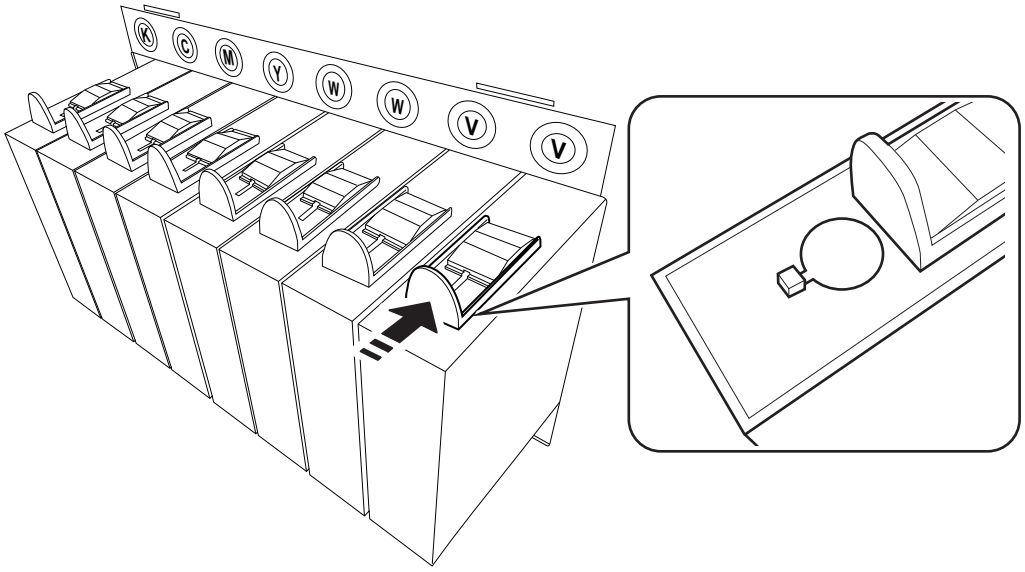


3. **Remove the ink tank cover on the back of the machine.**

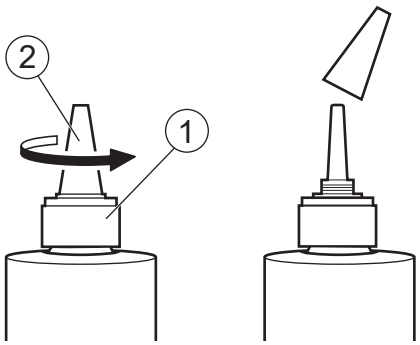


4. **Slide the ink tank knob to the machine side.**

The ink filling port becomes visible.



5. **Fasten the ink bottle cap (①) with a hand, and remove the cap cover (②).**

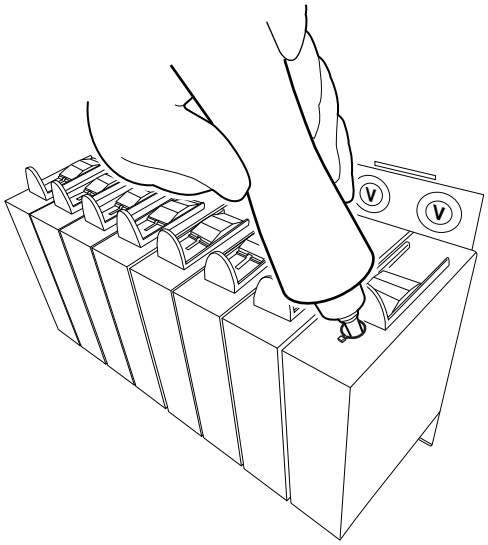


6. **Insert the end of the ink bottle cap into the ink filling port on the ink tank, and slowly fill the tank with ink.**

The ink level is affixed to the top of the ink tank. Take care to avoid filling with the wrong color of ink.

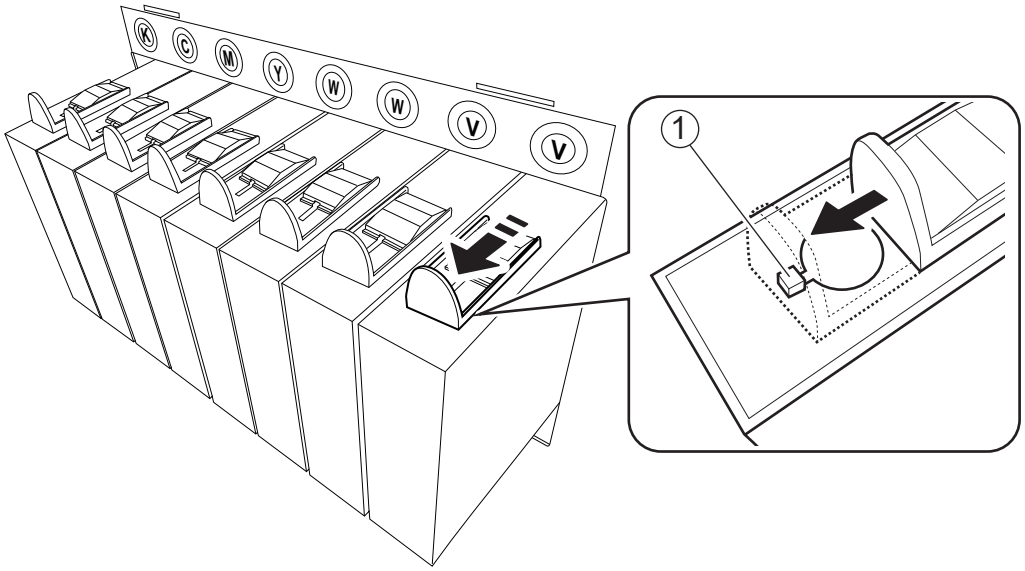
IMPORTANT

- Use all of the ink in the ink bottle for one refill.
- If ink drips or is spilled, wipe it off immediately with paper towels or similar material.



7. **Slide the knob on the ink tank toward you.**

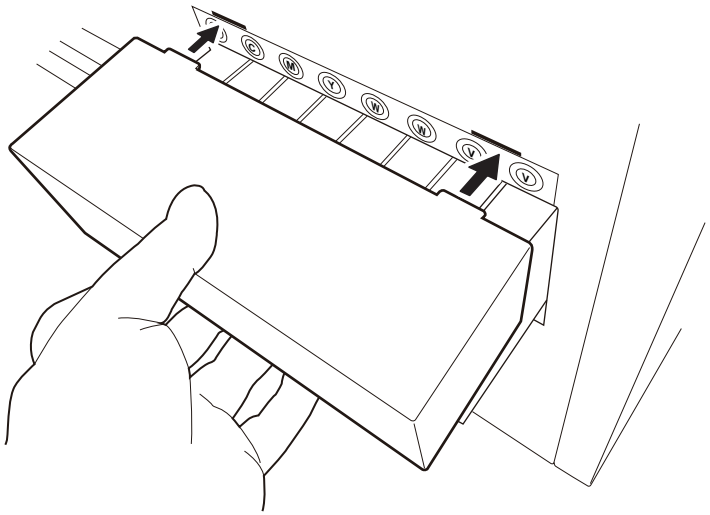
Slide the knob toward you until the protrusion (①) is hidden and the knob clicks into place.



IMPORTANT

An Ink ID label is applied to the ink bottle. Do not throw away the ink bottle before completing ink activation.

8. **Install the ink tank cover on the back of the machine.**



Ink activation

When refilling ink, use the Ink ID printed on the ink bottle label and perform ink activation.

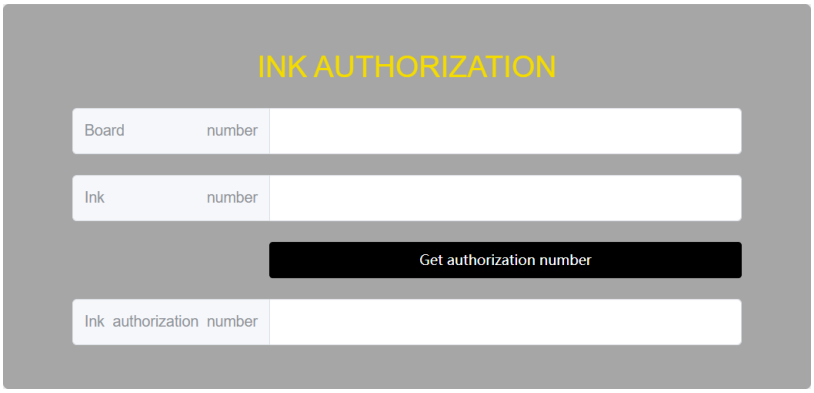
Procedure

1. **Access http://124.71.46.129:8089/user/#/home.**

The INK AUTHORIZATION window appears.

MEMO

To change the display language, select from the pull-down menu at the top right of the window.

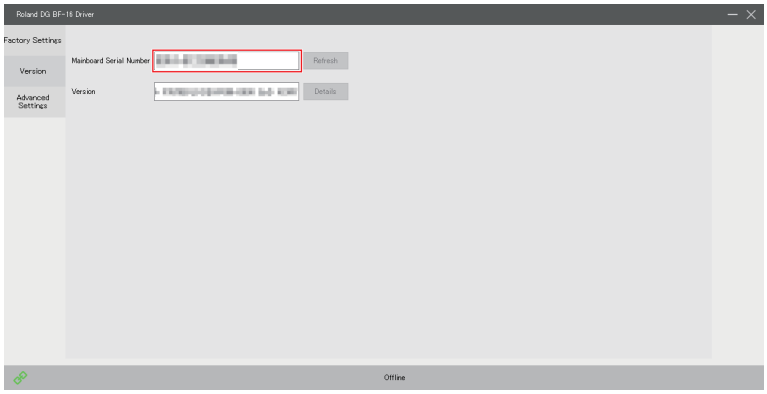


2. **Acquire the [Ink authorization number].**

(1) **Enter the [Board number].**

The [**Board number**] can be checked by starting Roland DG BF-16 Driver.

Click [**Advanced**]>[**Version**], and then make a note of the [**Motherboard Serial Number**].

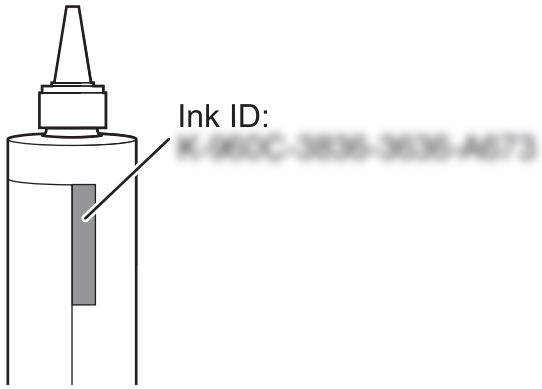


(2) **Enter the [Motherboard Serial Number] in the [Board number] field in the INK AUTHORIZATION window.**

(3) **Enter the ink bottle Ink ID in the [Ink number] field.**

MEMO

The first alphabet letter of the Ink ID indicates the ink color.



(4) **Click [Get authorization number].**

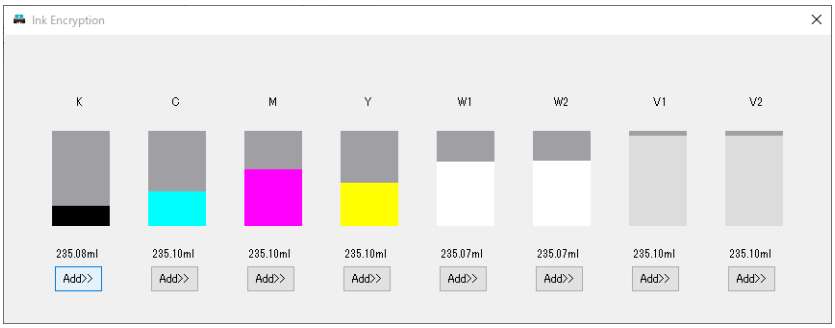
The **[Ink authorization number]** is acquired.

3. Enter the [Ink authorization number] into Roland DG BF-16 Driver.

(1) **Start Roland DG BF-16 Driver.**

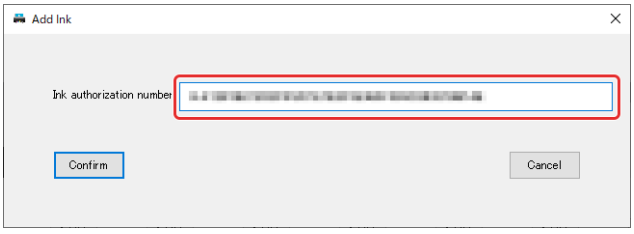
(2) **Click [Advanced]>[Advanced Settings]>[Ink Encryption].**

The **[Ink Encryption]** window appears.



(3) **Click [Add>>] for the ink tank where ink refill was performed.**

(4) **Enter the [Ink authorization number] that was acquired in Step 2 in the [Add Ink] window.**



(5) **Click [Confirm].**

The [**Add ink to confirm**] window appears.

(6) **Click [Confirm].**

(7) **When the [Added successfully! Reset ink successfully] window appears, click [Confirm].**

When the [**Ink licensing success**] window appears, ink activation is complete.

4. Repeat steps 2 and 3 and perform ink activation for the ink tanks where ink refill was performed.

MEMO

Ink activation must be performed for each ink tank where ink was refilled.

Disposing of Discharged Fluid

Precautions for Disposing of Discharged Fluid

⚠ WARNING

Never place discharged fluid or ink near an open flame.

Doing so may cause a fire.

⚠ CAUTION

If [WASTE INK ALARM] appears on the display screen, remove the drain bottle and discard the discharged fluid, then promptly install the drain bottle onto the machine.

If discharged fluid contacts your hand or spills, wipe it off immediately.

⚠ CAUTION

To store discharged fluid temporarily, place it in the included drain bottle or in a durable sealed container such as a metal can or polyethylene tank, and cap the container tightly.

Any spillage or vapor leakage may cause fire, odor, or physical distress.

IMPORTANT

Do not store discharged fluid in a location where it is exposed to direct sunlight.

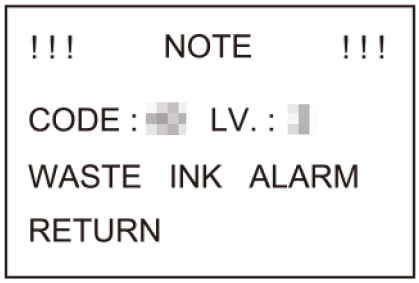
When temporarily storing discharged fluid in the included drain bottle, do not store it in a location that is exposed to direct sunlight. The discharged fluid may harden, making the drain bottle unusable. The drain bottle may also deteriorate, leading to discharged fluid leaks.

Dispose of discharged fluid properly, in accordance with the laws in effect in your locale.

Discharged fluid is flammable and contains toxic ingredients. Never attempt to incinerate discharged fluid or discard it with ordinary trash. Also, do not dispose of it in sewer systems, rivers, or streams. Doing so may have an adverse impact on the environment.

If the Discharged Fluid Disposal Message Appears

The message appears when a certain amount of discharged fluid has been collected in the bottle. If this message appears, dispose of the discharged fluid.



IMPORTANT

Open and close the front cover and right cover gently. If you open and close them forcefully or release the cover when it is partly open, not only may it malfunction, but you may also be injured. When opening and closing the front cover, grasp the center of the front cover to open or close it.

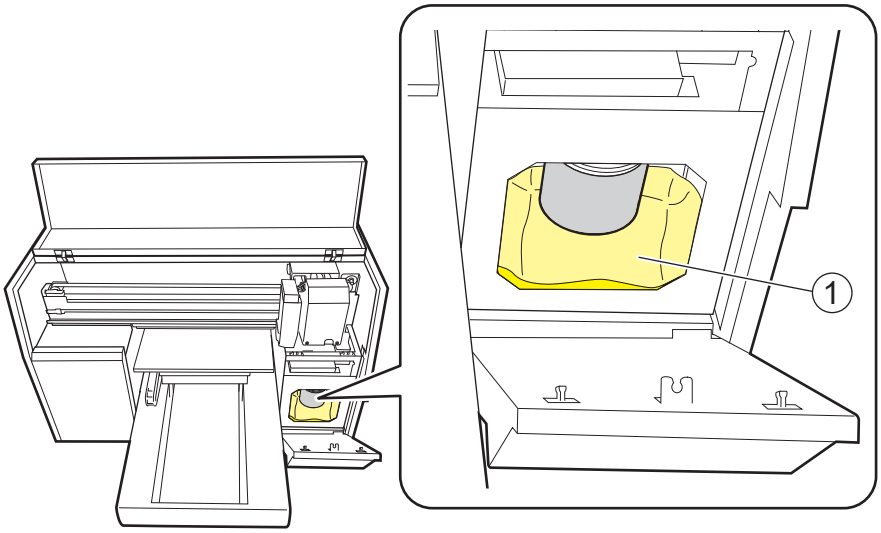
Procedure

1. **Open the front cover and right cover.**

2. **Lay paper towels (①) or similar material under the drain bottle.**

IMPORTANT

Lay paper towels or similar material so that discharged fluid does not contact the machine when the drain bottle is removed.



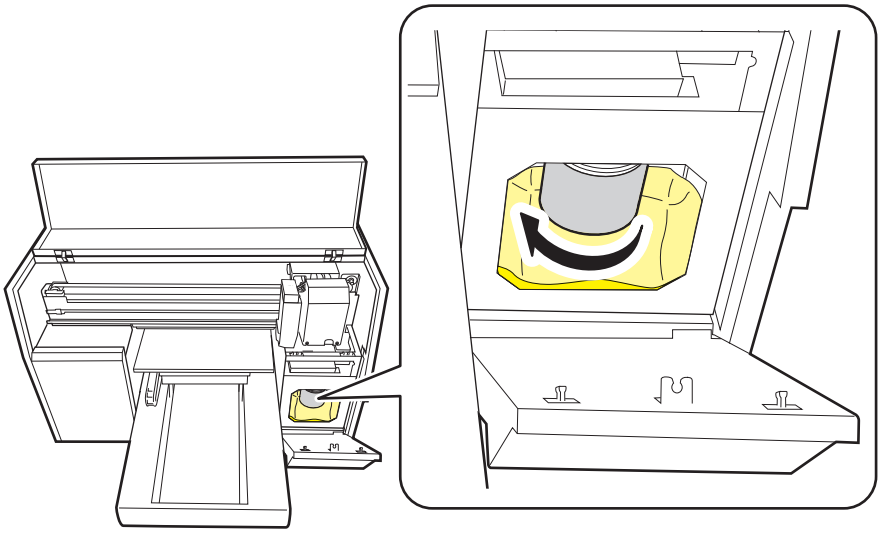
3. **Detach the drain bottle.**

Rotate the drain bottle in the direction of the arrow to remove it, then discard the discharged fluid.

MEMO

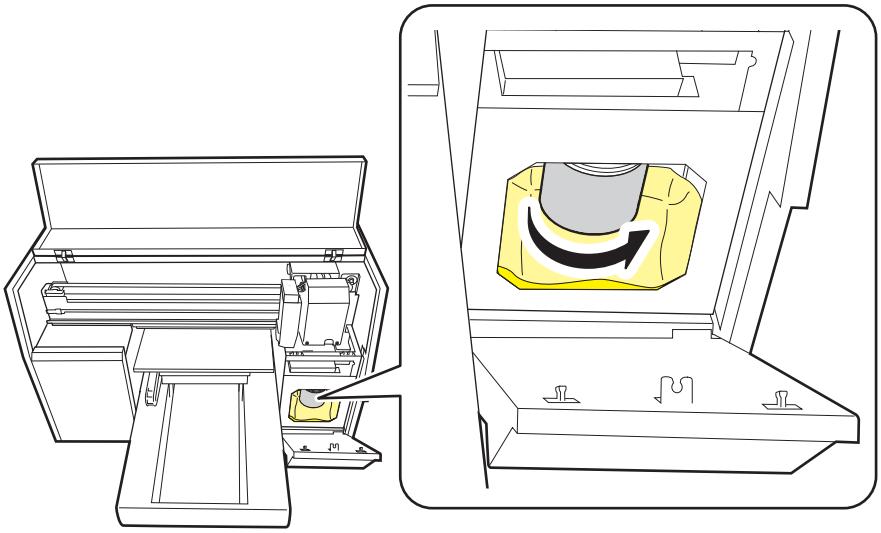
After discarding the discharged fluid, promptly attach the drain bottle to the machine.

When you remove the drain bottle, a few drops of discharged fluid may come out of the machine. Exercise caution to prevent this fluid from soiling your hands or the floor.



4. **Install the drain bottle.**

Rotate the drain bottle in the direction of the arrow to install it.



5. **Remove the paper towels or similar material from under the drain bottle, and clean the surrounding area.**

   Wipe away any discharged fluid, dust, or other dirt.

6. **Close the front and right covers.**

7. **Press the [EXIT] button.**

   The display returns to the original screen.

Maintenance That Must Be Performed Daily

Printing Tests and Normal Cleaning

Perform a printing test to ensure no dot drop-out or dot displacement occurs. If dot drop-out or dot displacement occurs, clean the print heads (normal cleaning).

1. Attach the object to be printed on for the printing test.

Attach the object to be printed on for the printing test. Use paper for printing tests (width 160 mm (6.30 in.) × length 110 mm (4.34 in.) or more), not the object that will actually be printed on.

IMPORTANT

Open and close the front cover and right cover gently. If you open and close them forcefully or release the cover when it is partly open, not only may it malfunction, but you may also be injured. When opening and closing the front cover, grasp the center of the front cover to open or close it.

Procedure

1. **Open the front cover.**

2. **Press the [FRONT] button and move the flat table forward to a position where the printing test paper can be installed.**

   MEMO

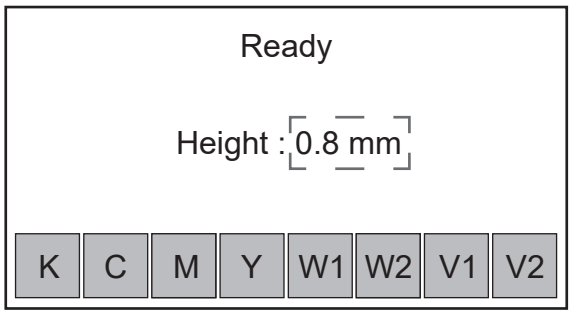
   The flat table will continue moving if you press and hold the [FRONT] button for three seconds or longer and then release it. To stop the movement, press [FRONT] again or press the [BACK] button.

3. **Press the [UP] or [DOWN] button to adjust the flat table height.**

   Press the [UP] or [DOWN] button and change the value of "Height" on the display screen to the thickness of the printing test paper.

   MEMO

   If the paper for the printing test is less than 0.1 mm (3.93 mil) thick, set the "Height" value to 0.



4. **Install the paper for the printing test onto the flat table.**

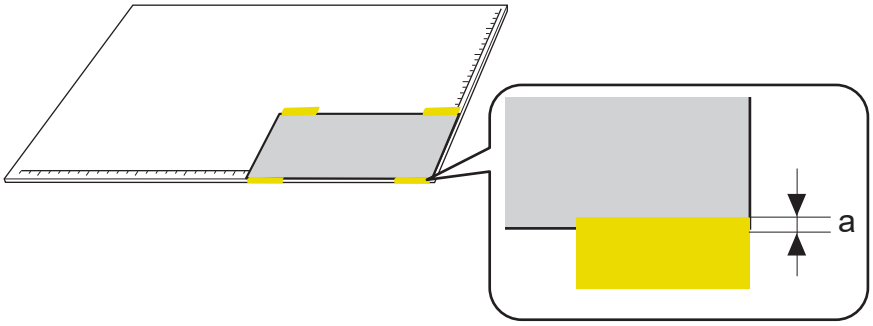
Install so that it is aligned with the bottom right corner of the flat table.

5. **Press the [SUC] button.**

The suction fan activates to suction the object to be printed on in place.

MEMO

If the ends of the object to be printed on are rolled up, if the object to be printed on is thick, and in similar situations, it may not be possible to secure the media in place. For objects to be printed on whose ends are rolled up, secure the ends of the object to be printed on with tape so that dimension a is 5 mm (0.20 in.) or less, and then use the suction function. If the tape application margin exceeds 5 mm (0.20 in.), the test pattern may be printed on the tape.

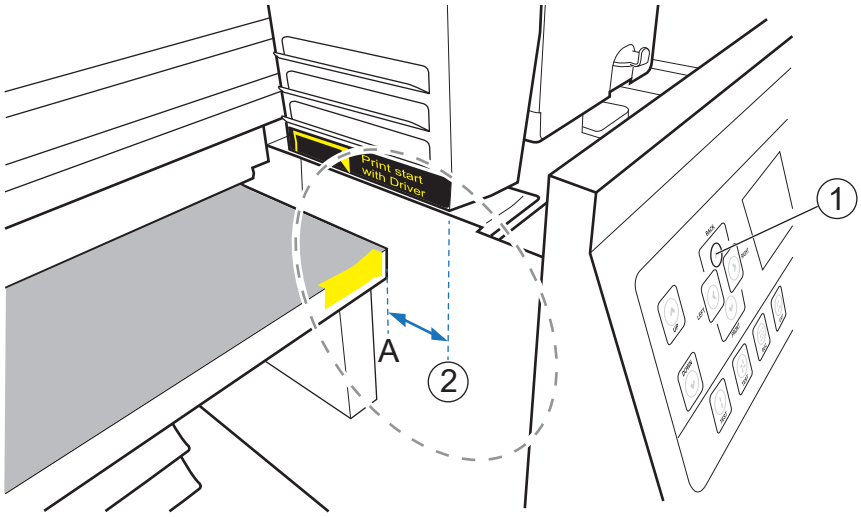


6. **Move the flat table to the printing test start position.**

Press the [BACK] button ① and move the flat table to the printing test start position. The nozzle surface of the print heads is located at a position 30 mm (1.18 in.) inward from the front ② of the UV-LED device. Position the front edge of the flat table at position A 25 mm (0.98 in.) inward from the front of the UV-LED device.

MEMO

The flat table will continue moving if you press and hold the [BACK] button for three seconds or longer and then release it. To stop the movement, press [BACK] again or press the [FRONT] button.



7. **Close the front cover.**

RELATED LINKS

- P. 45 Turning the Suction Function On or Off

2. Performing a Printing Test

Before you carry out actual printing, perform a printing test to ensure no dot drop-out or dot displacement occurs.

IMPORTANT

Put on protective eyewear when performing a printing test.

Procedure

1. **Press the [TEST] button.**

Test printing is started.

MEMO

Press the [TEST] button to immediately start test printing.
Be sure to install paper for the printing test and move the flat table to a suitable position before pressing the [TEST] button.

When the printing test is finished, the display screen returns to the original display.

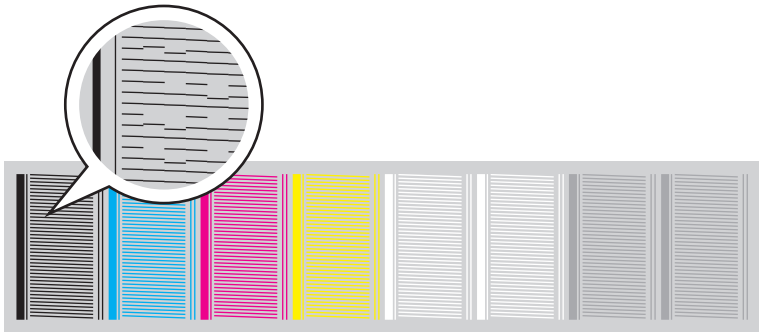
2. **Press [FRONT] and move the flat table forward to a position where the printing test results can be checked.**

MEMO

The flat table will continue moving if you press and hold the [FRONT] button for three seconds or longer and then release it. To stop the movement, press [FRONT] again or press the [BACK] button.

3. **Check whether there is dot drop-out or dot displacement in the test pattern.**

Missing blocks indicate dot drop-out. Collapsed or inclined blocks indicate dot displacement. If dot drop-out or dot displacement is still present, perform normal cleaning.



If no dot drop-out or dot displacement occurs, this operation is finished.

3. Performing Normal Cleaning

You can assign the cleaning method that you frequently use to the [CLEAN] button. The default value for the cleaning operation that is performed when the [CLEAN] button is pressed is set to "Normal". Normally set the height-adjustment lever to "Normal".

For how to check and change the setting, refer to Changing the Cleaning Operation that Is Performed When the CLEAN Button Is Pressed(P. 53).

Procedure

1. **Press the [CLEAN] button.**

   Normal cleaning starts.

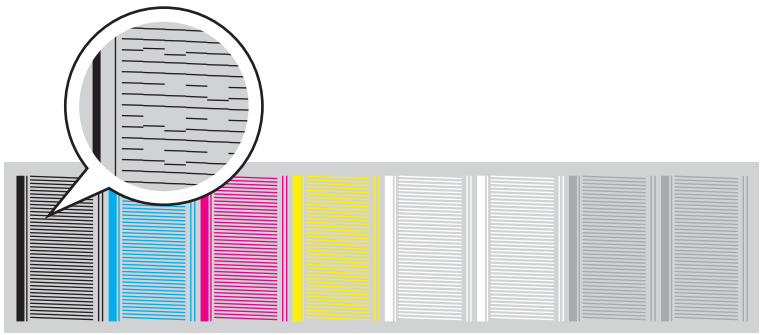
2. **Install the paper for the printing test onto the flat table.**

   Step 1: Attach the object to be printed on for the printing test.(P. 30)

3. **Performing a Printing Test.**

   Step 2: Performing a Printing Test(P. 32)

4. **Check to make sure the dot drop-out or dot displacement has been corrected.**



If the problem persists, try performing normal cleaning again. If the printer has been used for a long period, dot drop-outs may not be fixed even after performing normal cleaning two or three times. If this is the case, clean using a different method.

IMPORTANT

UV ink will harden. It may adhere to the print head and solidify. If left alone, ink may clog the print heads and cause problems including printer malfunctions. Clean the head manually when printing frequently with the

print head at a distance from the print surface. This is called manual cleaning. To prevent clogging of the print heads, it may be necessary to perform manual cleaning each time you print.

RELATED LINKS

- P. 106 When Normal Cleaning Is Not Effective
- P. 109 Manual Cleaning

When Normal Cleaning Is Not Effective

Medium Cleaning Method

The print heads are important components that discharge ink. They require periodic and appropriate maintenance. When problems such as dot drop-out are not resolved by normal cleaning, perform the more forceful "medium cleaning" to remove clogging from the print heads.

IMPORTANT

Medium cleaning consumes more ink than normal cleaning, and overly frequent use may damage the print heads themselves. Avoid performing this operation more than necessary.

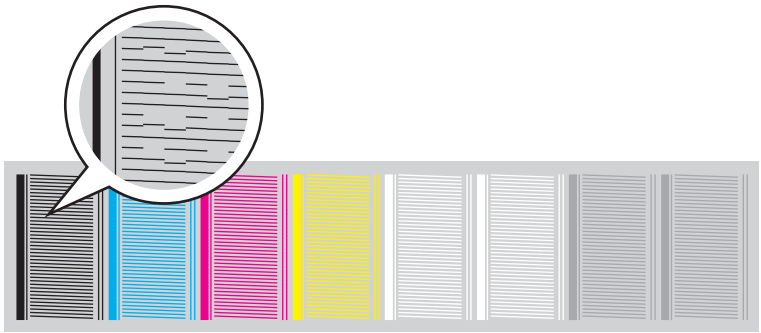
Perform medium cleaning.

When performing cleaning by pressing the [CLEAN] button, it is necessary to check the cleaning operation setting. If the [CLEAN] button is pressed and cleaning is performed without checking, cleaning which is different from the cleaning you intended may be performed. Check that the setting is "Medium".

For how to check and change the setting, refer to Changing the Cleaning Operation that Is Performed When the CLEAN Button Is Pressed(P. 53).

Procedure

1. **Press the [CLEAN] button.**
   Medium cleaning starts.
2. **Install the paper for the printing test onto the flat table.**
   Step 1: Attach the object to be printed on for the printing test.(P. 30)
3. **Performing a Printing Test.**
   Step 2: Performing a Printing Test(P. 32)
4. **Check to make sure the dot drop-out or dot displacement has been corrected.**



MEMO

If the problem persists, try performing medium cleaning again.
If problems such as dot drop-out and dot displacement persist even after you have performed medium cleaning several times, perform powerful cleaning.

RELATED LINKS

- P. 108 Powerful Cleaning Method

Powerful Cleaning Method

The print heads are important components that discharge ink. They require periodic and appropriate maintenance. When problems such as dot drop-out are not resolved by medium cleaning, perform the more forceful "powerful cleaning" to remove clogging from the print heads.

IMPORTANT

Powerful cleaning consumes more ink than medium cleaning, and overly frequent use may damage the print heads themselves. Avoid performing this operation more than necessary.

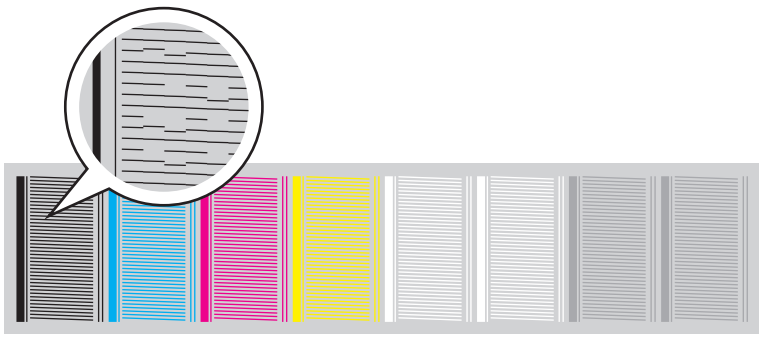
Perform powerful cleaning.

When performing cleaning by pressing the [CLEAN] button, it is necessary to check the cleaning operation setting. If the [CLEAN] button is pressed and cleaning is performed without checking, cleaning which is different from the cleaning you intended may be performed. Check that the setting is "Powerful".

For how to check and change the setting, refer to Changing the Cleaning Operation that Is Performed When the CLEAN Button Is Pressed(P. 53).

Procedure

1. **Press the [CLEAN] button.**
   Powerful cleaning starts.
2. **Install the paper for the printing test onto the flat table.**
   Step 1: Attach the object to be printed on for the printing test.(P. 30)
3. **Performing a Printing Test.**
   Step 2: Performing a Printing Test(P. 32)
4. **Check to make sure the dot drop-out or dot displacement has been corrected.**



MEMO

If the problem persists, try performing powerful cleaning again.
If problems such as dot drop-out and dot displacement persist even after you have performed powerful cleaning several times, perform manual cleaning.

RELATED LINKS

- P. 109 Manual Cleaning

Manual Cleaning

When Manual Cleaning Is Necessary

The print heads are important components that discharge ink. They require periodic and appropriate maintenance. It is important to perform manual cleaning with the appropriate timing.

Once a week or more

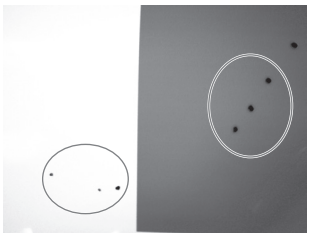
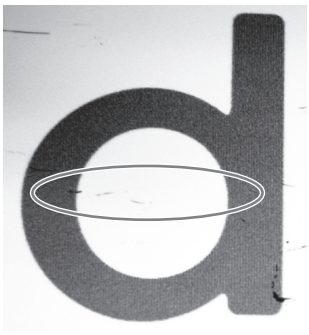
To keep a stable printing condition at all times, perform manual cleaning once a week or more.

When There Is a Lot of Scattered Ink Mist and the Inside of the Machine is Soiled

Perform this cleaning every day when frequently printing with the print heads at a distance from the print surface or when ink is emitted to locations that protrude from the print surface. If the scattered ink mist is allowed to harden, it may cause malfunctions.

When symptoms that cannot be improved with powerful cleaning occur

When any of the symptoms given below occur and powerful cleaning is not effective, perform manual cleaning.

Dot drop-out/Dot displacement	Ink drips	Dragging dirt
		
Dust or other foreign matter adheres to the print heads and impedes correct ink discharge.	Ink accumulates on dirty areas around the print heads and drips onto the object to be printed on.	Dirt accumulates on the area around the print heads and touches the object to be printed on.

MEMO

Wiper replacement may also be effective in improving these symptoms.

RELATED LINKS

- P. 128 Inquiries for Consumable Parts and Products

Manual Cleaning Method

Perform manual cleaning once per week, if the inside of the machine is dirty due to ink mist, or if dot drop-out or ink drip issues that cannot be improved with powerful cleaning occur.

⚠ WARNING

Be sure to perform operations as specified by the instructions, and never touch any area not specified in the instructions.

Sudden movement of the machine may cause injury.

IMPORTANT

Important notes on this procedure

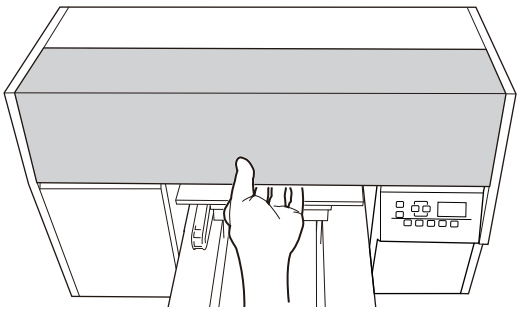
- Before performing this operation, remove any objects to be printed on.
- To prevent the print heads from drying out, finish this procedure in 10 minutes or less.
- Never use any implements other than the included cleaning sticks. Cotton swabs or other lint-producing items may damage the print heads.
- Promptly dispose of cleaning sticks after using them once. Reusing cleaning sticks immediately or after time has passed will have a negative effect on the print heads.
- Do not put a cleaning stick that has been used for cleaning into the cleaning liquid. Doing so will deteriorate the cleaning liquid.
- Never rub the print head surface (nozzle surface).
- Put on protective eyewear and gloves when performing this work.

Required items	
	
Cleaning sticks	Cleaning liquid

1. Move the print-head carriage.

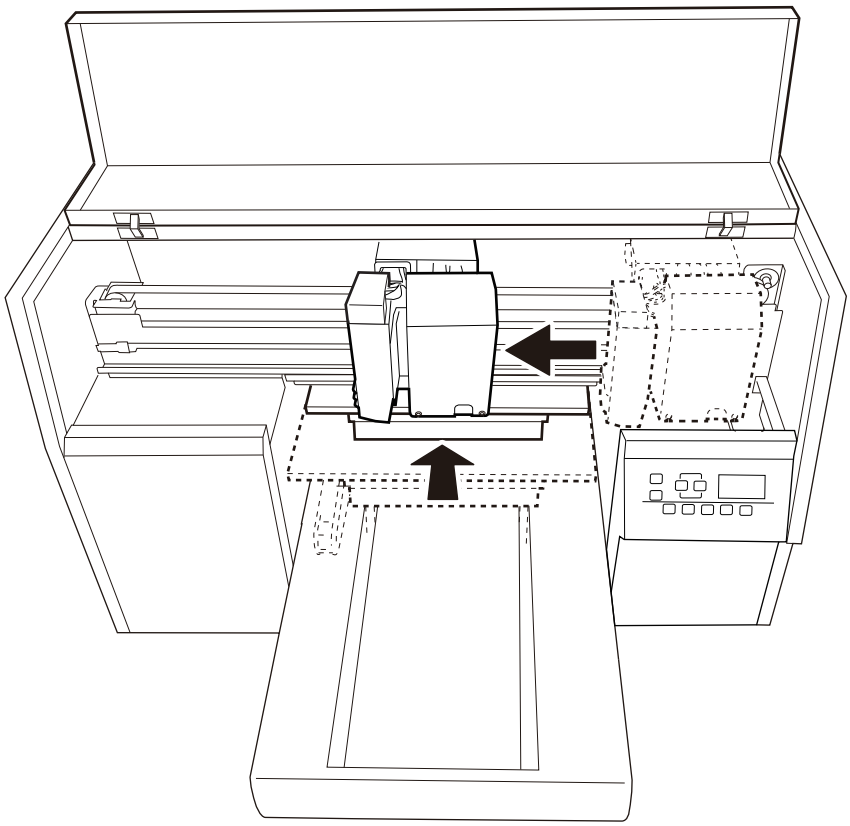
IMPORTANT

Open and close the front cover and right cover gently. If you open and close them forcefully or release the cover when it is partly open, not only may it malfunction, but you may also be injured. When opening and closing the front cover, grasp the center of the front cover to open or close it.



Procedure

1. **Open the front cover.**
2. **Remove the object to be printed on.**
3. **Check that the home screen is displayed.**
   If it is not displayed, press the [EXIT] button several times to display the home screen.
4. **Press the [ENTER] button.**
   The "MENU" screen appears.
5. **Select "Maintenance".**
   Press the [FRONT] or [BACK] button to select.
6. **Press the [ENTER] button.**
   The "MAINTENANCE" screen appears.
7. **Select "Manual Clean".**
   Press the [FRONT] or [BACK] button to select.
8. **Press the [ENTER] button.**
   "Start" is displayed on the screen.
9. **When "Start" is displayed, press the [ENTER] button.**
   The flat table moves to the back, and the print-head carriage moves to near the center of the machine.



2. Clean the print head caps.

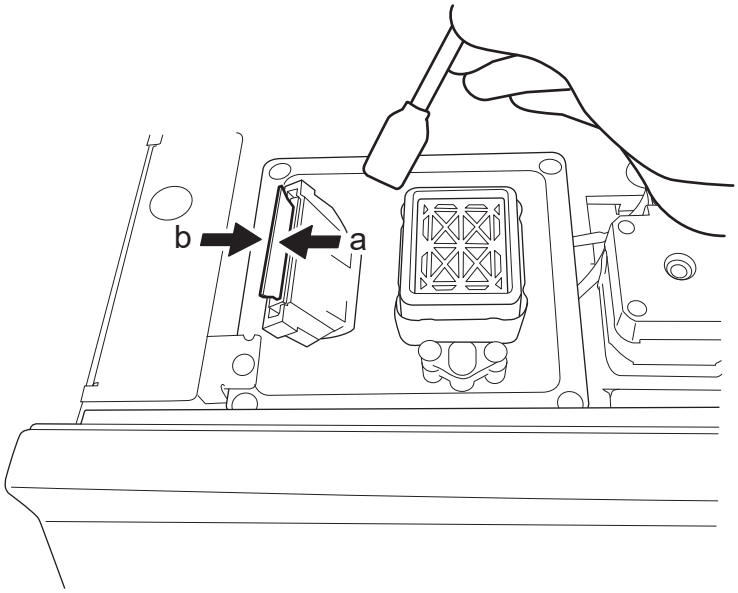
Procedure

1. Moisten a new cleaning stick with the cleaning liquid.

IMPORTANT

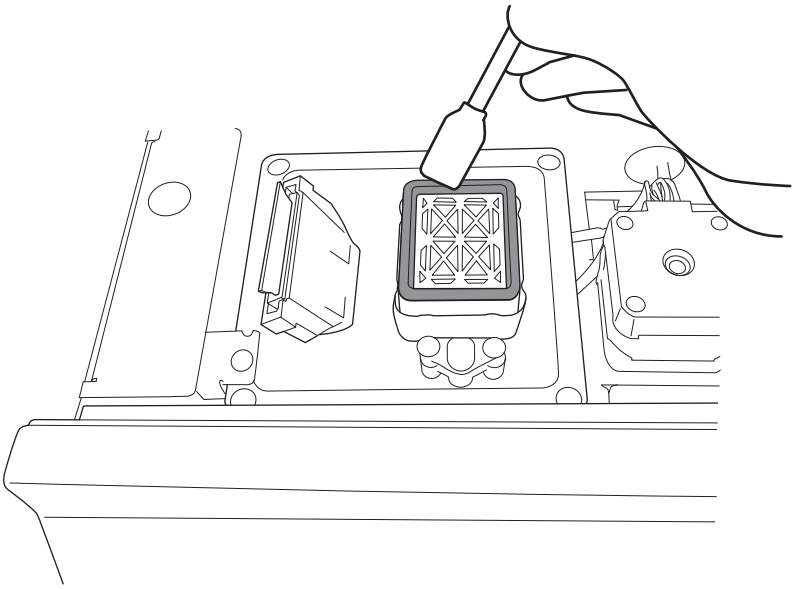
Be sure to use one of the included cleaning sticks.

2. Clean wiper surfaces (a) and (b) using the cleaning stick.

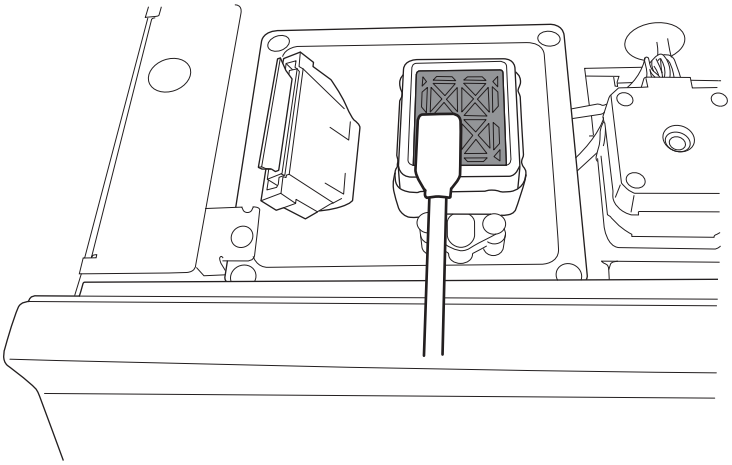


3. Clean the cap top.

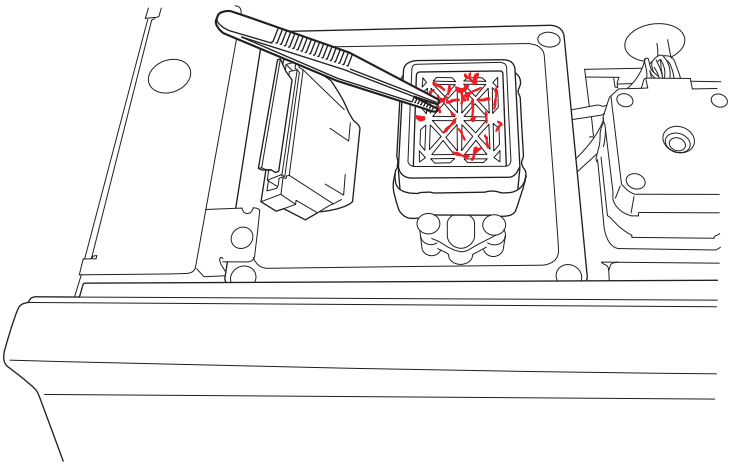
(1) Clean the locations shown in the figure using the cleaning stick.



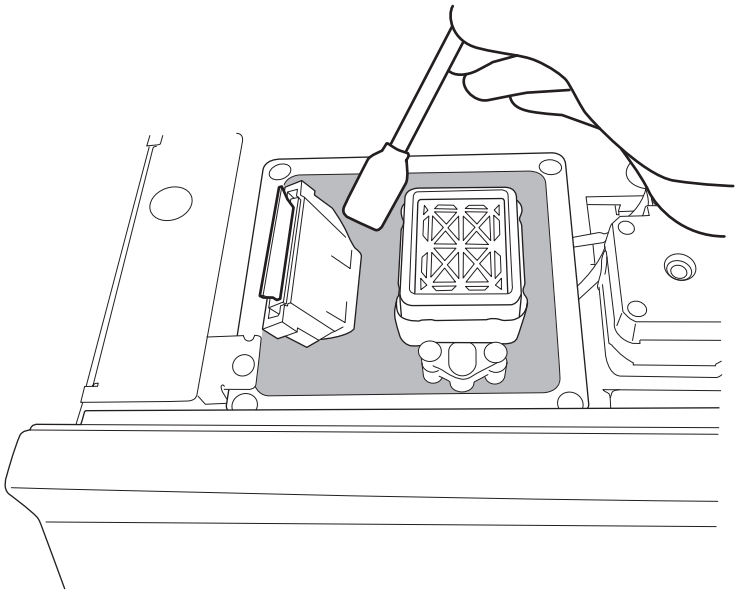
(2) **Use the wide surface of the cleaning stick, pressing the cleaning stick down while sliding between locations to clean up dirt.**



(3) **If there is any hardened ink, use tweezers to remove it.**



4. **Clean the capping station using the cleaning stick.**



3. Clean the area around the print heads.

IMPORTANT

Open and close the front cover and right cover gently. If you open and close them forcefully or release the cover when it is partly open, not only may it malfunction, but you may also be injured. When opening and closing the front cover, grasp the center of the front cover to open or close it.

Procedure

1. **Moisten a new cleaning stick with the cleaning liquid.**

IMPORTANT

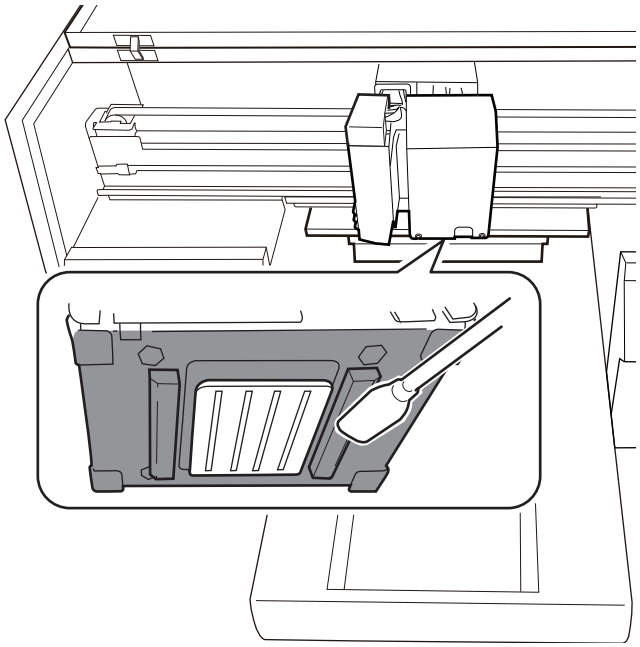
Be sure to use one of the included cleaning sticks.

2. **Clean the locations shown in the figure using the cleaning stick.**

   Be especially careful to clean away any fibrous dust (lint).

IMPORTANT

Do not clean the nozzle surface of the print heads. Be careful not to contact the nozzle surface with the cleaning stick.



3. **Press the [ENTER] button.**

   Move the print-head carriage to the right side of the machine so the print head is in close contact with the cap top.

4. **Press the [EXIT] button several times to return to the home screen.**

5. **Close the front cover.**

4. Attach the object to be printed on for the printing test.

Attach the object to be printed on for the printing test. Use paper for printing tests (width 160 mm (6.30 in.) × length 110 mm (4.34 in.) or more), not the object that will actually be printed on.

IMPORTANT

Open and close the front cover and right cover gently. If you open and close them forcefully or release the cover when it is partly open, not only may it malfunction, but you may also be injured. When opening and closing the front cover, grasp the center of the front cover to open or close it.

Procedure

1. **Open the front cover.**

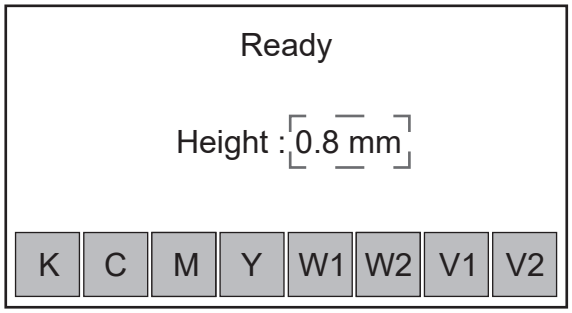
2. **Press the [FRONT] button and move the flat table forward to a position where the printing test paper can be installed.**

> **MEMO**
>
> The flat table will continue moving if you press and hold the [FRONT] button for three seconds or longer and then release it. To stop the movement, press [FRONT] again or press the [BACK] button.

3. **Press the [UP] or [DOWN] button to adjust the flat table height.**

   Press the [UP] or [DOWN] button and change the value of "Height" on the display screen to the thickness of the printing test paper.

> **MEMO**
>
> If the paper for the printing test is less than 0.1 mm (3.93 mil) thick, set the "Height" value to 0.



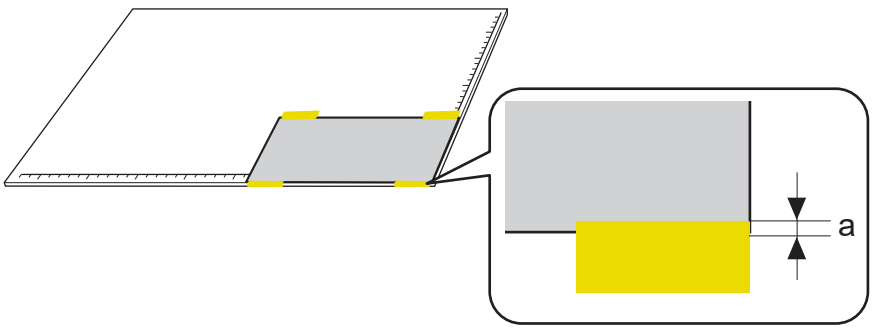
4. **Install the paper for the printing test onto the flat table.**

   Install so that it is aligned with the bottom right corner of the flat table.

5. **Press the [SUC] button.**

   The suction fan activates to suction the object to be printed on in place.

> **MEMO**
>
> If the ends of the object to be printed on are rolled up, if the object to be printed on is thick, and in similar situations, it may not be possible to secure the media in place. For objects to be printed on whose ends are rolled up, secure the ends of the object to be printed on with tape so that dimension a is 5 mm (0.20 in.) or less, and then use the suction function. If the tape application margin exceeds 5 mm (0.20 in.), the test pattern may be printed on the tape.

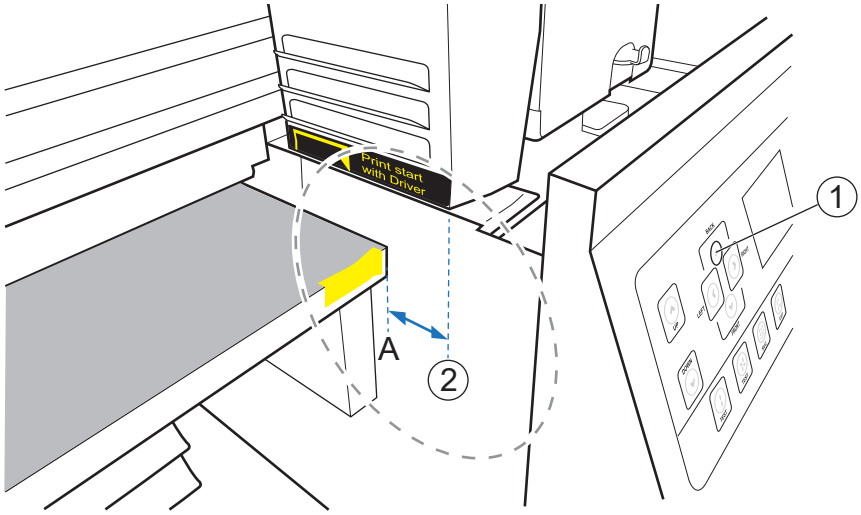


6. **Move the flat table to the printing test start position.**

Press the [BACK] button ① and move the flat table to the printing test start position. The nozzle surface of the print heads is located at a position 30 mm (1.18 in.) inward from the front ② of the UV-LED device. Position the front edge of the flat table at position A 25 mm (0.98 in.) inward from the front of the UV-LED device.

MEMO

The flat table will continue moving if you press and hold the [BACK] button for three seconds or longer and then release it. To stop the movement, press [BACK] again or press the [FRONT] button.



7. **Close the front cover.**

RELATED LINKS

- P. 45 Turning the Suction Function On or Off

5. Performing a Printing Test

Before you carry out actual printing, perform a printing test to ensure no dot drop-out or dot displacement occurs.

IMPORTANT

Put on protective eyewear when performing a printing test.

Procedure

1. **Press the [TEST] button.**

Test printing is started.

MEMO

Press the [TEST] button to immediately start test printing.

Be sure to install paper for the printing test and move the flat table to a suitable position before pressing the [TEST] button.

When the printing test is finished, the display screen returns to the original display.

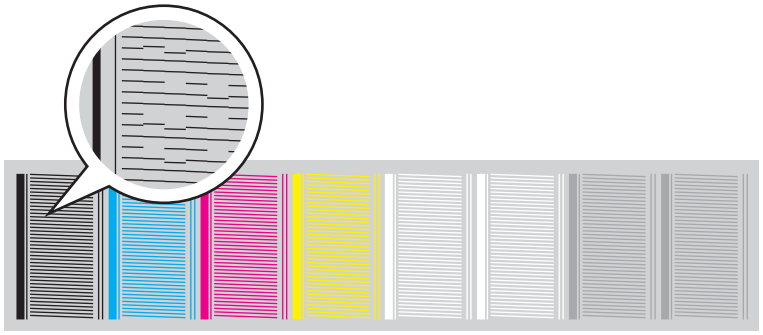
2. Press [FRONT] and move the flat table forward to a position where the printing test results can be checked.

MEMO

The flat table will continue moving if you press and hold the [FRONT] button for three seconds or longer and then release it. To stop the movement, press [FRONT] again or press the [BACK] button.

3. Check whether there is dot drop-out or dot displacement in the test pattern.

Missing blocks indicate dot drop-out. Collapsed or inclined blocks indicate dot displacement. If dot drop-out or dot displacement is still present, perform normal cleaning.



If no dot drop-out or dot displacement occurs, this operation is finished.

Cleaning That Must Be Performed Once a Month or More

When UV-LED Device Cleaning Is Necessary

The UV-LED devices are important components for ink adhesion. They require periodic and appropriate maintenance. It is important to clean the UV-LED device with the appropriate timing.

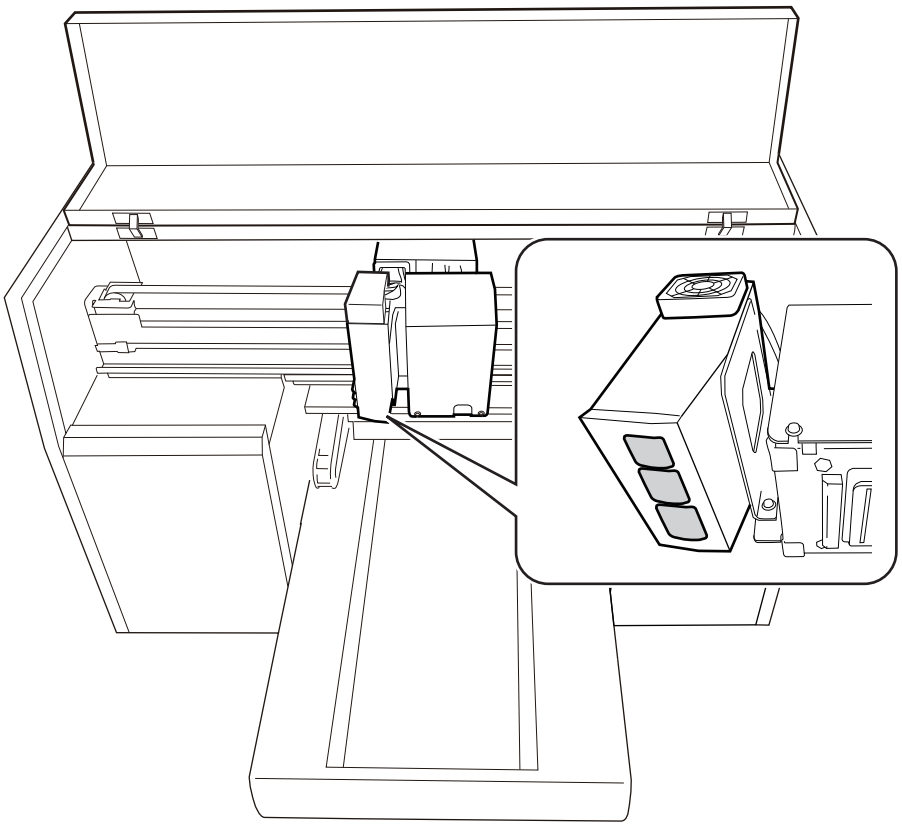
Once a month or more

To keep a stable printing condition at all times, perform cleaning once a month or more.

When There Is a Lot of Scattered Ink Mist and the Inside of the Machine is Soiled

Perform this cleaning every day when frequently printing with the print heads at a distance from the print surface or when ink is emitted to locations that protrude from the print surface. If the scattered ink mist is allowed to harden, it may cause malfunctions.

When the bases and irradiation windows of the UV-LED device are dirty (see the following figure).



MEMO

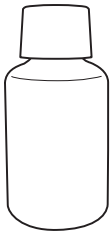
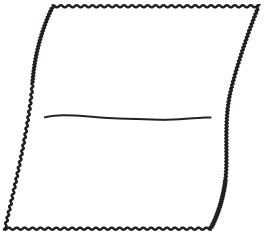
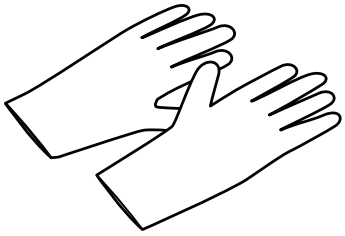
- The frequency with which UV-LED device cleaning is required depends on the machine's use. For information about the frequency of cleaning needed for your conditions of use, contact your authorized dealer.
- For hardened ink and other such dirt that cannot be completely cleaned away, contact your authorized dealer.

How to Clean the UV-LED Devices

IMPORTANT

Important notes on this procedure

- Before performing this operation, remove any objects to be printed on.
- To prevent the print heads from drying out, finish this procedure in 10 minutes or less.
- The cloths, alcohol, and similar items used in cleaning are not included with the product.
- Put on protective eyewear and gloves when performing this work.

Required items		
		
Anhydrous ethanol or isopropyl alcohol	Cloth (that is not fluffy)	Rubber gloves

⚠ CAUTION

Do not perform cleaning immediately after printing has finished. (Wait approximately 15 minutes after printing finishes.)

The area around the UV-LED device is hot and may cause burns.

⚠ CAUTION

When using anhydrous ethanol or isopropyl alcohol, be sure to follow the product's usage precautions.

Exercise caution regarding items such as fire, ventilation, and rashes.

⚠ CAUTION

Only use anhydrous ethanol or isopropyl alcohol.

Using chemicals (or similar substances) other than anhydrous ethanol or isopropyl alcohol may lead to UV-LED device damage.

⚠ CAUTION

Use cloth that is not fluffy to wipe off the parts. Do not use a hard material such as metal.

Using cloth that is fluffy or a hard material such as metal may lead to UV-LED device damage.

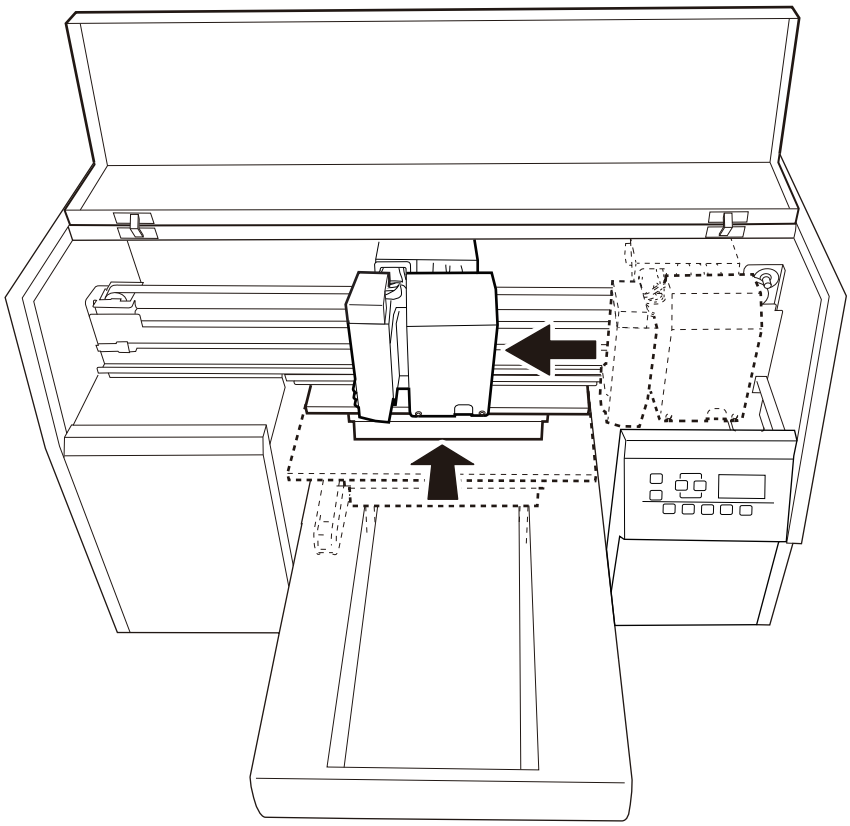
1. Move the print-head carriage.

IMPORTANT

Open and close the front cover and right cover gently. If you open and close them forcefully or release the cover when it is partly open, not only may it malfunction, but you may also be injured. When opening and closing the front cover, grasp the center of the front cover to open or close it.

Procedure

1. **Open the front cover.**
2. **Remove the object to be printed on.**
3. **Check that the home screen is displayed.**
   If it is not displayed, press the [EXIT] button several times to display the home screen.
4. **Press the [ENTER] button.**
   The "MENU" screen appears.
5. **Select "Maintenance".**
   Press the [FRONT] or [BACK] button to select.
6. **Press the [ENTER] button.**
   The "MAINTENANCE" screen appears.
7. **Select "Manual Clean".**
   Press the [FRONT] or [BACK] button to select.
8. **Press the [ENTER] button.**
   "Start" is displayed on the screen.
9. **When "Start" is displayed, press the [ENTER] button.**
   The flat table moves to the back, and the print-head carriage moves to near the center of the machine.



2. Cleaning the UV-LED Device

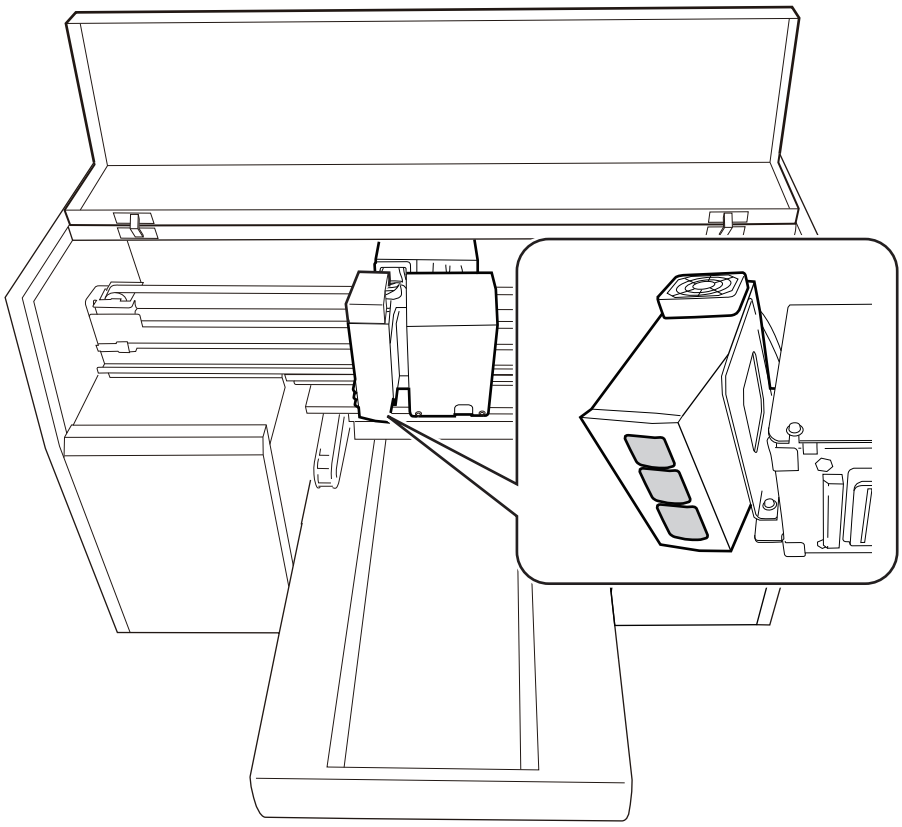
IMPORTANT

Open and close the front cover and right cover gently. If you open and close them forcefully or release the cover when it is partly open, not only may it malfunction, but you may also be injured. When opening and closing the front cover, grasp the center of the front cover to open or close it.

Procedure

1. **Wet a cloth with anhydrous ethanol or isopropyl alcohol, and then wipe off the base and irradiation unit of each UV-LED device with this cloth.**

   Wipe the cloth across each UV lamp for approximately 10 round trips until all the dirt is cleared away.



2. **Press the [ENTER] button.**

   The print-head carriage moves to the right side of the machine, and cleaning starts. After cleaning, the print heads move so they are in close contact with the cap top, and the "MAINTENANCE" screen appears.

3. **Press the [EXIT] button several times to return to the home screen.**

4. **Close the front cover.**

RELATED LINKS

- P. 119 When UV-LED Device Cleaning Is Necessary

Advanced Maintenance

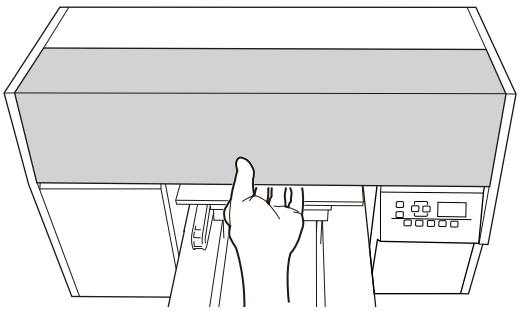
Emergency Measure) Cleaning the Print Head Surface

When dot drop-out or dot deflection is not improved even if cleaning is performed several times, you can clean the surface of the print heads as an emergency measure. The print head surface (nozzle surface) is a very delicate mechanism, so work must be performed carefully and cautiously.

This operation is an emergency measure. It may damage defect-free parts depending on the symptoms, worsening the symptoms. If you have any questions, contact your authorized dealer.

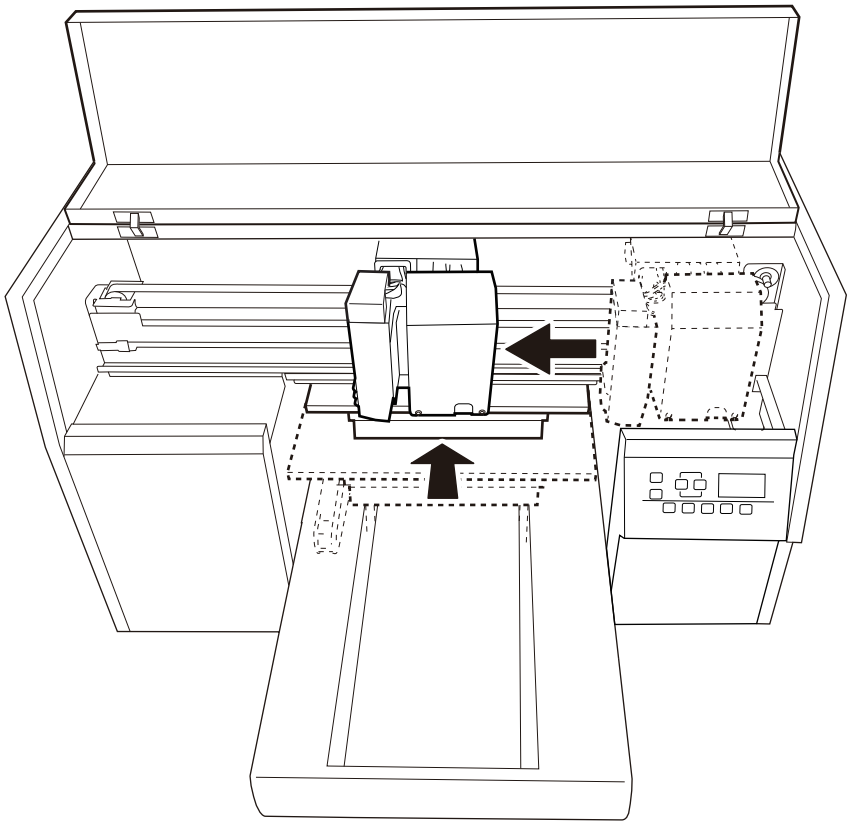
IMPORTANT

Open and close the front cover and right cover gently. If you open and close them forcefully or release the cover when it is partly open, not only may it malfunction, but you may also be injured. When opening and closing the front cover, grasp the center of the front cover to open or close it.



Procedure

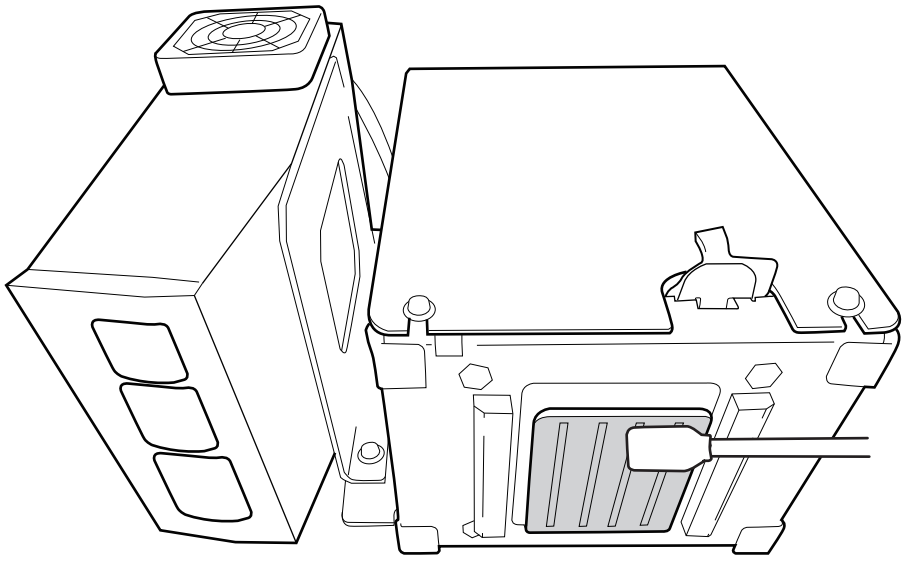
1. **Open the front cover.**
2. **Remove the object to be printed on.**
3. **Check that the home screen is displayed.**
   If it is not displayed, press the [EXIT] button several times to display the home screen.
4. **Press the [ENTER] button.**
   The "MENU" screen appears.
5. **Select "Maintenance".**
   Press the [FRONT] or [BACK] button to select.
6. **Press the [ENTER] button.**
   The "MAINTENANCE" screen appears.
7. **Select "Manual Clean".**
   Press the [FRONT] or [BACK] button to select.
8. **Press the [ENTER] button.**
   "Start" is displayed on the screen.
9. **When "Start" is displayed, press the [ENTER] button.**
   The flat table moves to the back, and the print-head carriage moves to near the center of the machine.



10. **Apply a large amount of cleaning liquid to the cleaning stick.**

11. **Very gently touch the cleaning stick against the print head surface (nozzle surface).**

Very softly press the cleaning stick against the print head so that cleaning liquid soaks into the print head surface (nozzle surface). Never rub the stick on the surface or press it forcibly.



12. **Press the [ENTER] button.**

The print-head carriage moves to the right side of the machine, and cleaning starts. After cleaning, the print heads move so they are in close contact with the cap top, and the "MAINTENANCE" screen appears.

13. **Press the [EXIT] button several times to return to the home screen.**

14. Close the front cover.

Inquiries for Consumable Parts and Products

Items That You Can Purchase by Yourself

To purchase the following consumable products, contact your authorized dealer or visit our website (https://www.rolanddg.com/).

Item	Related page
Cleaning sticks	3. Clean the area around the print heads.(P. 114)
Cleaning liquid	

Items That Require Inquiries before Replacement

When replacing the following consumable parts, contact your authorized dealer.

Item	Related page
Print heads	3. Clean the area around the print heads.(P. 114)

Troubleshooting Methods

Print Quality Problems

Printed results are coarse or contain horizontal stripes

Do the print heads cause dot drop-out?

Carry out a printing test and make sure no dot drop-out or dot displacement occurs. If dot drop-out or dot displacement is still present, perform normal cleaning.

RELATED LINKS

- P. 101 Printing Tests and Normal Cleaning
- P. 106 When Normal Cleaning Is Not Effective

Is the printer installed in a level and stable location?

Never install the machine in a location where it is tilted or where it may wobble or experience vibration. These factors may lead to dot-dropout or reduced printing quality.

Is the printer installed in a location that is not exposed to direct sunlight?

Never install the machine in a location that is exposed to direct sunlight. Doing so may result in dot drop-out or other problems with reduced printing quality, or may even result in malfunction.

Is the method of loading the object to be printed on appropriate?

If the object to be printed on is not loaded correctly, output may be adversely affected. Load the object to be printed on correctly.

RELATED LINKS

- P. 35 Attach the object to be printed on.

The Object to be Printed on Becomes Soiled When Printed

Are the print heads dirty?

The following may cause ink to drip on the object to be printed on during printing.

- Buildup of fibrous dust (lint) around the print heads
- Ink transferred to the print heads due to rubbing against the object to be printed on

If this happens, perform manual cleaning. We recommend carrying out periodic cleaning of the print heads.

RELATED LINKS

- P. 109 Manual Cleaning

Is the humidity of the room too low?

Use in an environment of 30 to 65% RH (with no condensation).

Colors are unstable or uneven

Is the white ink mixing setting turned on?

A device which mixes the ink is installed in the white ink tank. Check that there is no problem with the white ink mixing setting.

RELATED LINKS

- P. 55 White Ink Mixing Setting

Was printing paused partway through?

When printing is paused, the coloring at the seam may be altered when printing resumes. Avoid pausing printing. Printing pauses when ink remaining inside the machine runs out.

Is the printer installed in a level and stable location?

Never install the machine in a location where it is tilted or where it may wobble or experience vibration. These factors may lead to dot-dropout or reduced printing quality.

Is the printer being used in a location subject to severe changes in the operating environment?

Large fluctuations in temperature or humidity while printing is in progress may cause the colors to change partway through the printing. When printing, use the machine in a location where the temperature and humidity are stable.

Are the output settings in the software appropriate?

Try changing the VersaWorks and Roland DG BF-16 Driver output settings. Specific combinations of [**Print Quality:**] (VersaWorks), [**Direction:**] (Roland DG BF-16 Driver), [**Feather Level:**] (Roland DG BF-16 Driver), [**Feather Type:**] (Roland DG BF-16 Driver), and other settings may cause the colors to be uneven, and results may also vary greatly depending on the color-profile selection. Select settings appropriate for the object to be printed on.

Is the method of loading the object to be printed on appropriate?

If the object to be printed on is not loaded correctly, output may be adversely affected. Load the object to be printed on correctly.

RELATED LINKS

- P. 35 Attach the object to be printed on.

Is the irradiation window of the UV-LED device dirty?

If the irradiation window is dirty, this can reduce ink adhesion and the quality of the printed materials. Check the level of dirt and clean at the appropriate times.

RELATED LINKS

- P. 122 Cleaning the UV-LED Device

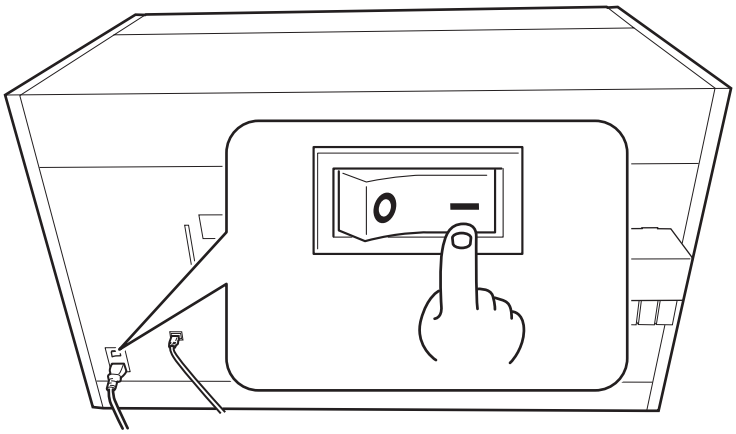
Machine Problems

Why Has the Print-Head Carriage Stopped Moving?

If the print-head carriage stopped above the flat table, immediately take action to prevent the print heads from drying out.

What to Do First

Switch the power off and then back on. If the print-head carriage moves to the standby position (above the capping station), the operation has ended successfully.



If the print-head carriage still does not move

Again switch the power off and then back on.

If the Print Heads Still Do Not Move

If the heads still do not move, carry out the following emergency response measure, and then contact your authorized dealer.

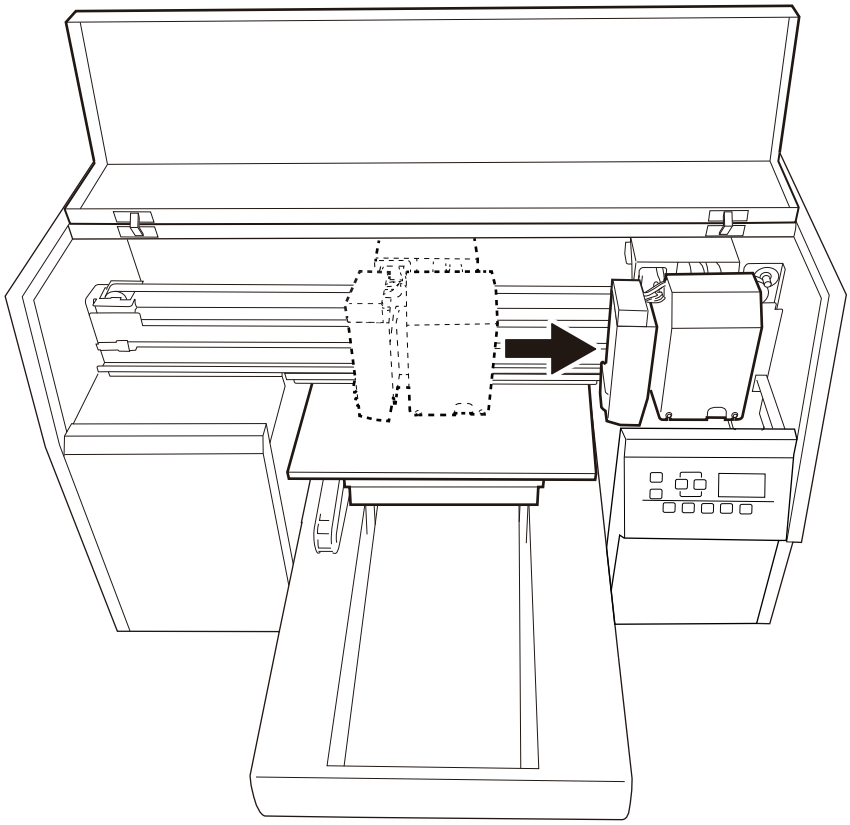
IMPORTANT

Open and close the front cover and right cover gently. If you open and close them forcefully or release the cover when it is partly open, not only may it malfunction, but you may also be injured. When opening and closing the front cover, grasp the center of the front cover to open or close it.

Procedure

1. **Switch off the power, and then open the front cover.**

2. Gently move the print-head carriage to the home position by hand.



3. Close the front cover.

The printer unit does not run

Is the power switched on?

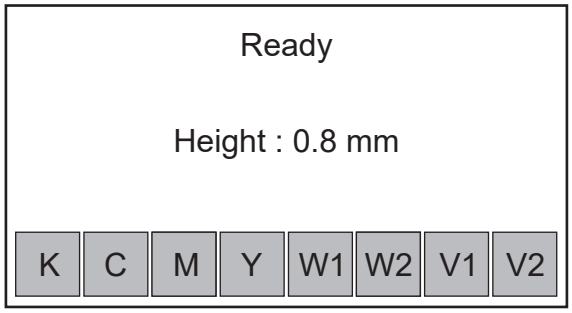
Make sure the power to the printer is switched on.

RELATED LINKS

- P. 21 Turning the Power On

Is the home screen displayed?

If the home screen is not displayed, printing will not start even when data is sent from the computer. Press the [EXIT] button several times to return to the home screen.



If a message is displayed, perform the operation prompted by the displayed message.

RELATED LINKS

- P. 146 Messages
- P. 147 Error Messages

Is printing paused?

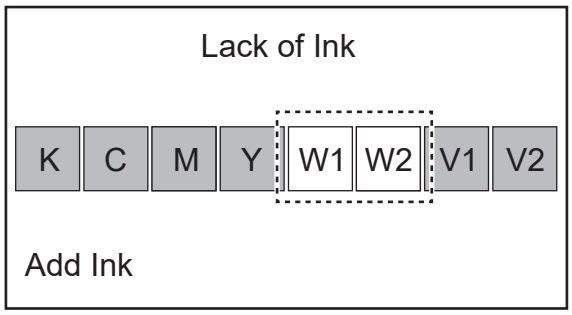
When "Cancel Job ?" is displayed on the screen, printing is paused. To resume, press the [EXIT] button. The display screen changes to "Print Mode" and printing resumes.

RELATED LINKS

- P. 40 Pausing and Resuming Printing

Has the ink run out?

When there is no more ink in an ink tank, the screen below appears and printing will not start. The inside of the color box where ink is empty becomes white. Refill the ink tank with ink, and perform ink activation.



Because the white ink tank includes an ink mixing function, the ink level changes as a result of mixing. When time has passed, the ink level may stabilize and the ink color box on the display panel may indicate that ink is present. When the [EXIT] button is pressed, the display screen shows that printing is possible, however, this is only a temporary solution and you should add ink.

RELATED LINKS

- P. 89 Filling with Ink

Is a message displayed on the display screen?

RELATED LINKS

- P. 146 Messages
- P. 147 Error Messages

Are the cables connected?

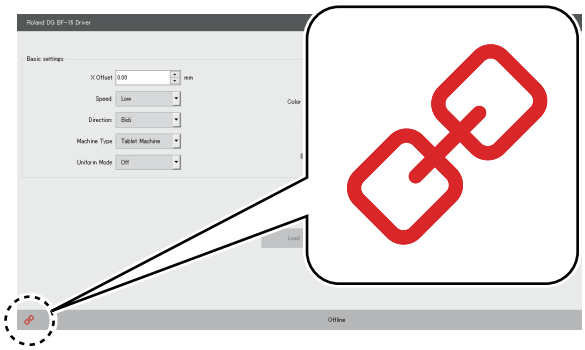
Connect the cables securely.

RELATED LINKS

- https://downloadcenter.rolanddg.com/BF-16

Is the LAN Cable Connected?

If the icon at the bottom left of [**Basic settings**] in Roland DG BF-16 Driver is red, the cable is not correctly connected to the computer. Check that the LAN cable is securely inserted and that the LAN cable is not broken.



Did Roland DG BF-16 Driver end abnormally?

Make sure Roland DG BF-16 Driver is running correctly, and then turn the power switch off and back on.

Is the temperature of the room too low?

Use the machine in an environment with an ambient temperature of 22 to 33°C (71.6 to 91.4°F).

The flat table does not move

Is something stuck in one of the moving components of the flat table?

Check whether or not something is catching or stuck and interfering with operation.

The Head Gap Sensor Does Not Detect the Object to Be Printed on

Is something covering the head gap sensor or has it attracted dust?

Check whether something is interfering with the head gap sensor's detection.

Display Screen Messages

Messages

These are the main messages that appear on the machine's display to prompt correct operation. They do not indicate any error. Follow the prompts and take action accordingly.

[Lack of Ink]

There is not enough ink.

Check and fill the ink that requires refilling, and perform ink activation.

RELATED LINKS

- P. 89 Filling the Ink Tank with Ink
- P. 94 Ink activation

Error Messages

This section describes the error messages that may appear on the machine's display, and how to take action to remedy the problem. If the action described here does not correct the problem or if an error message not described here appears, contact your authorized Roland DG Corporation dealer.

[Error Code: 40]

This error is detected when a certain amount of discharged fluid has been collected in the drain bottle.

Remove the drain bottle and discard the discharged fluid. After discarding the discharged fluid, promptly install the drain bottle and press the [EXIT] button.

[Error Code: 41]

This error is detected when the width of the print data is larger than the printing area.

Review the print data layout, printing-start location, offset values for the printing-start location, and the print data width.

[Error Code: 42]

This error is detected when the length of the print data exceeds is larger than the printing area.

Review the print data layout, printing-start location, offset values for the printing-start location, and the print data length.

[Error Code: 43]

This error is detected when the object for printing installed on the flat table or other object contacts the head gap sensor.

It is also detected when something touches or an object contacts the head gap sensor.

Check that the object to be printed on has been installed correctly, and suitably adjust the height (distance) between the printing surface of the object to be printed on and the print heads. To resume work, press the [EXIT] button.

[Error Code: 50]

This error is detected when ink refill becomes necessary during printing.

Refill the ink where the inside of the ink color box is white on the display panel, and perform ink activation.

Because the white ink tank includes an ink mixing function, the ink level changes as a result of mixing. When time has passed, the ink level may stabilize and the ink color box on the display panel may indicate that ink is present. When the [EXIT] button is pressed, the display screen shows that printing is possible, however, this is only a temporary solution and you should add ink.

RELATED LINKS

- P. 89 Filling with Ink

Appendix

Operations When Moving the Unit

Moving the Unit

Before moving the machine, dispose of the discharged fluid and secure the flat table and print-head carriage in place. Attempting to move the machine without first performing these preparations may result in damage to components or damage to the print heads.

IMPORTANT

- Once the preparations for moving the machine are complete, move the machine promptly and turn on the machine as soon as possible after the machine is relocated. If you leave the machine alone without turning it on, the precipitated ink will coagulate and result in problems such as the clogging of the print heads.
- When moving the machine, keep it at a temperature from 5 to 40°C (41 to 104°F) and at a humidity from 20 to 80% (with no condensation). Failure to do so may result in a breakdown.
- Handle the machine with care when moving it, keeping it level (not tilted at an angle) and preventing it from striking other objects.

1. Discarding the Discharged Fluid in the Drain Bottle

IMPORTANT

Open and close the front cover and right cover gently. If you open and close them forcefully or release the cover when it is partly open, not only may it malfunction, but you may also be injured. When opening and closing the front cover, grasp the center of the front cover to open or close it.

Procedure

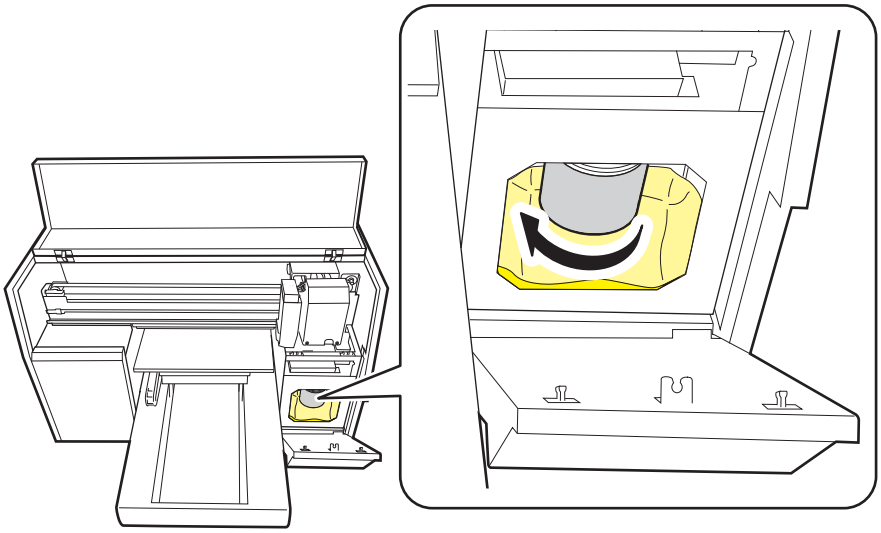
1. **Open the front cover and right cover.**

2. **Detach the drain bottle.**

   Rotate the drain bottle in the direction of the arrow to remove it, then discard the discharged fluid.

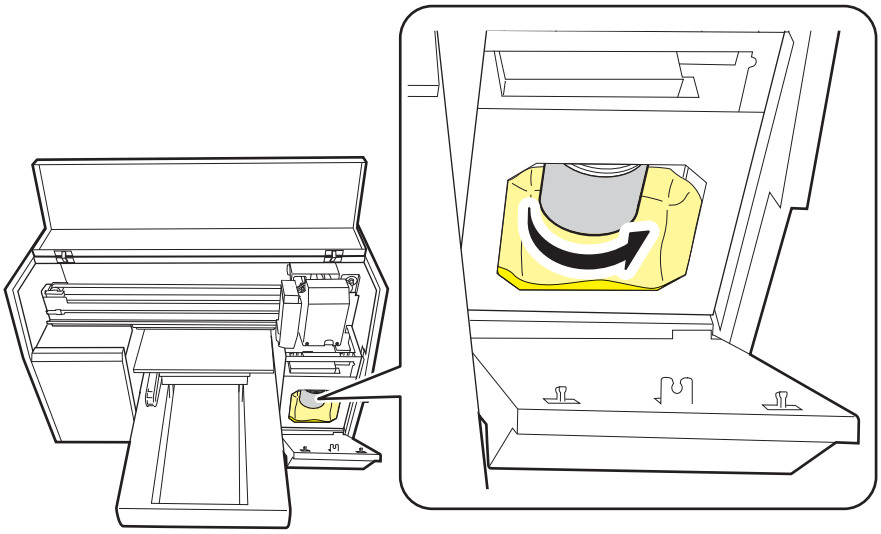
   MEMO

   After discarding the discharged fluid, promptly attach the drain bottle to the machine.
   When you remove the drain bottle, a few drops of discharged fluid may come out of the machine. Exercise caution to prevent this fluid from soiling your hands or the floor.



3. **Install the drain bottle.**

   Rotate the drain bottle in the direction of the arrow to install it.



4. **Clean the area around the drain bottle.**

   Wipe away any discharged fluid, dust, or other dirt.

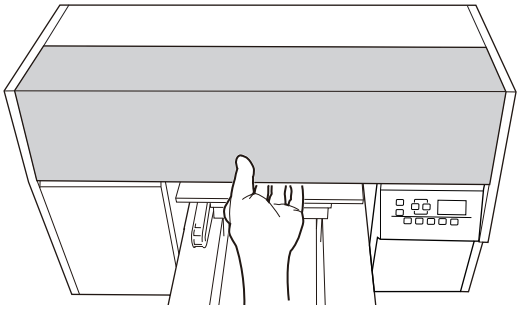
5. **Close the front and right covers.**

2. Securing the Print-head Carriage and Flat Table with Retainers

Attach retainers to the machine to protect it from vibration during transportation.

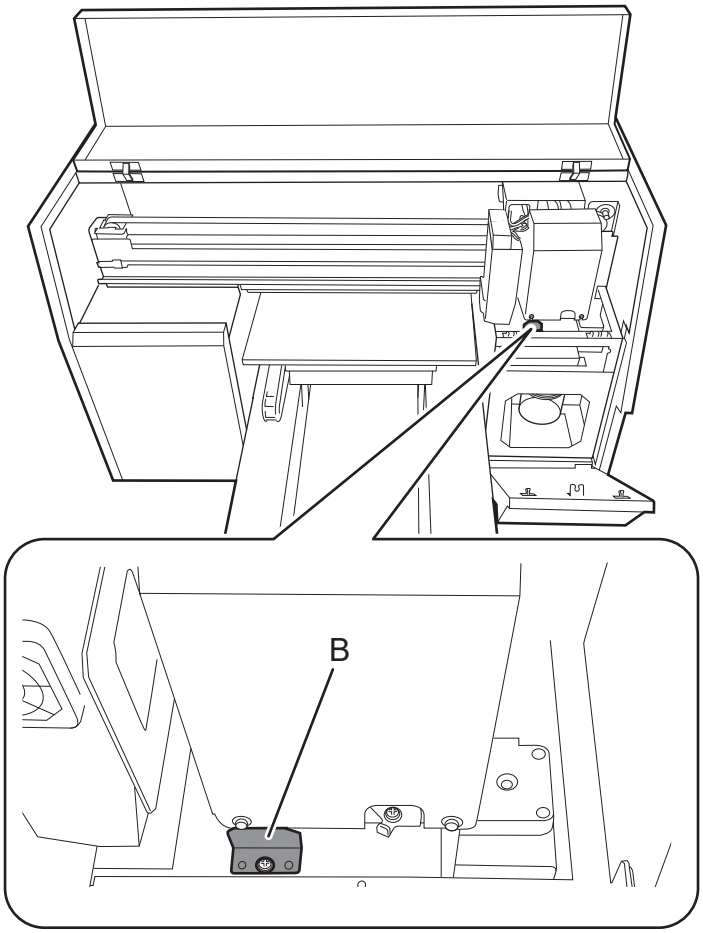
IMPORTANT

Open and close the front cover and right cover gently. If you open and close them forcefully or release the cover when it is partly open, not only may it malfunction, but you may also be injured. When opening and closing the front cover, grasp the center of the front cover to open or close it.



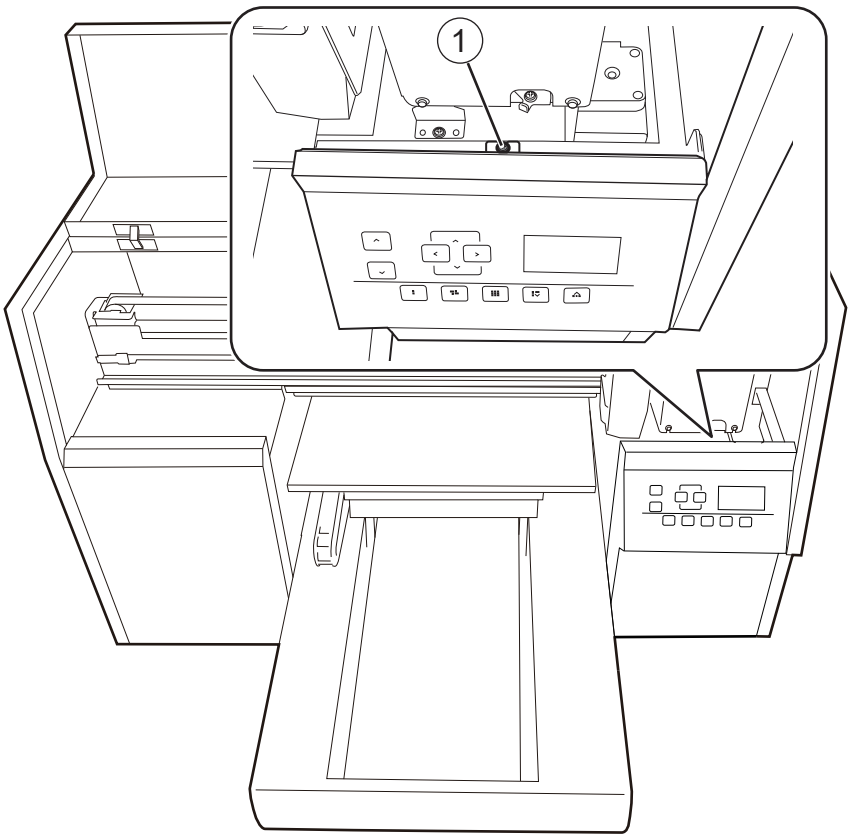
Procedure

1. **Open the front cover.**
2. **Open the right cover.**
3. **Tighten the screw with a Phillips screwdriver, and install the retainer B.**



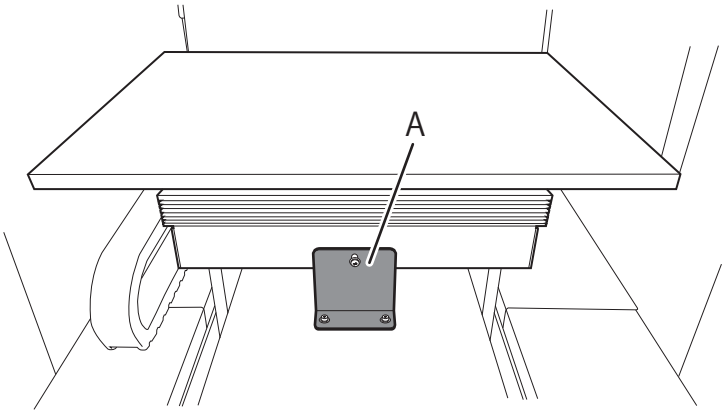
4. Close the right cover.

5. Tighten the right cover retaining screw①with a Phillips screwdriver.



6. **Tighten the screw with a Phillips screwdriver, and install the retainer A.**

   Press the [FRONT] or [BACK] button and move the flat table to a position where the retainer A can be installed.



7. **Close the front cover.**

8. **Switch off the printer power.**

   This completes the preparation for transport.

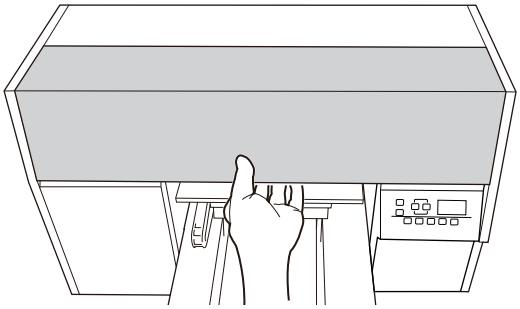
9. **Once the preparations are complete, move the machine with as little delay as possible.**

3. Reinstalling the Machine

When transport is completed, install the machine immediately.

IMPORTANT

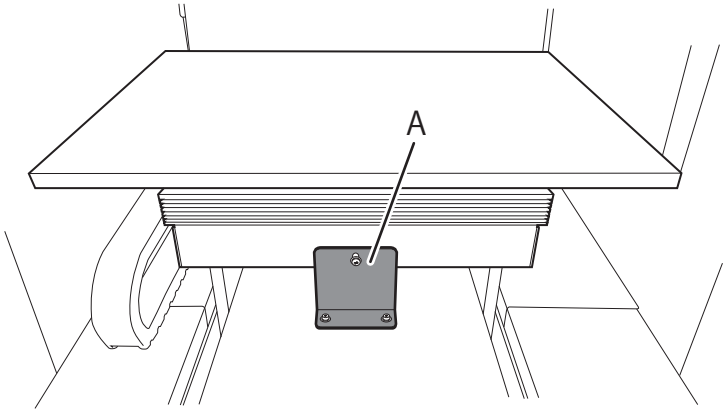
Open and close the front cover and right cover gently. If you open and close them forcefully or release the cover when it is partly open, not only may it malfunction, but you may also be injured. When opening and closing the front cover, grasp the center of the front cover to open or close it.



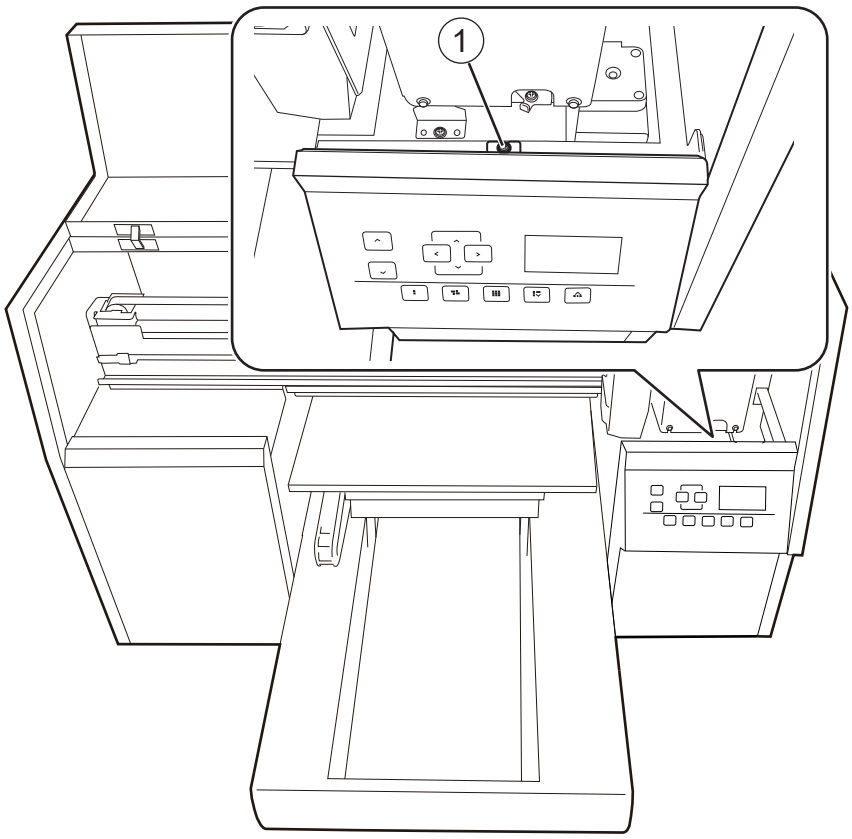
Procedure

1. **Open the front cover.**

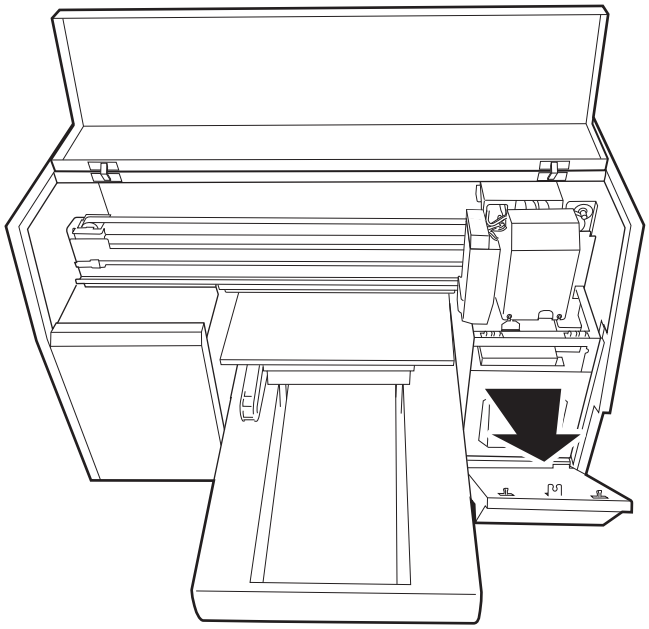
2. **Remove the screw with a Phillips screwdriver, and remove the retainer A.**



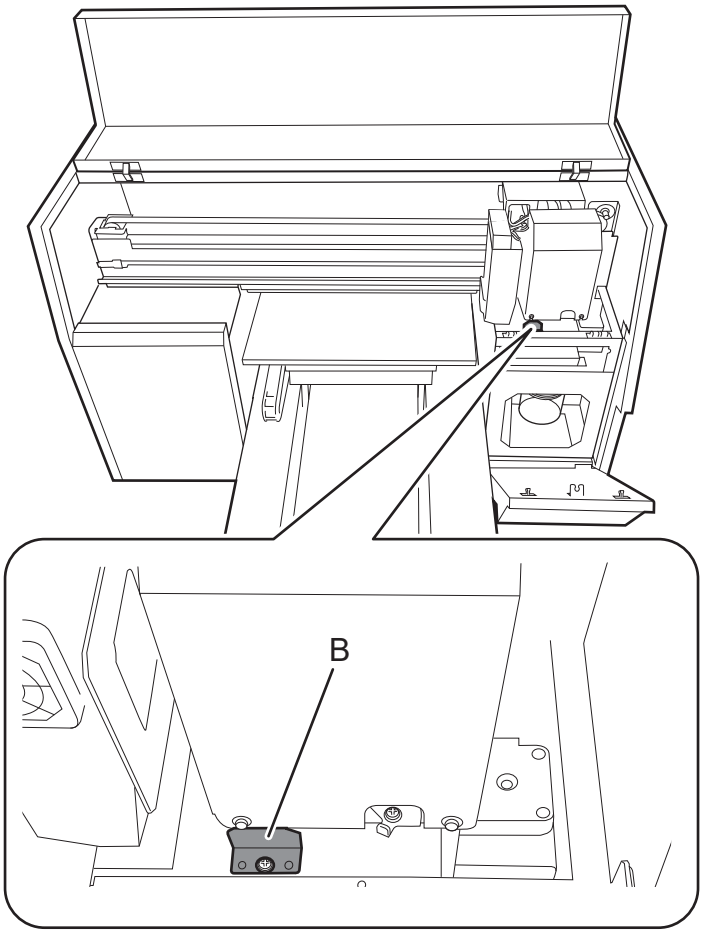
3. **Remove the right cover retaining screw ① with a Phillips screwdriver.**



4. **Open the right cover.**



5. **Remove the screw with a Phillips screwdriver, and remove the retainer B.**



6. Close the right cover.

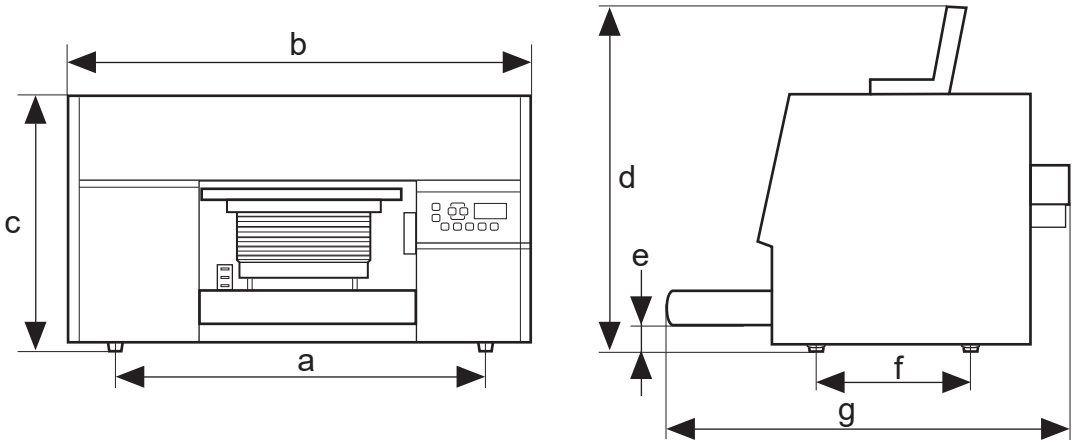
7. Close the front cover.

8. Switch on the printer power.

Main Specifications

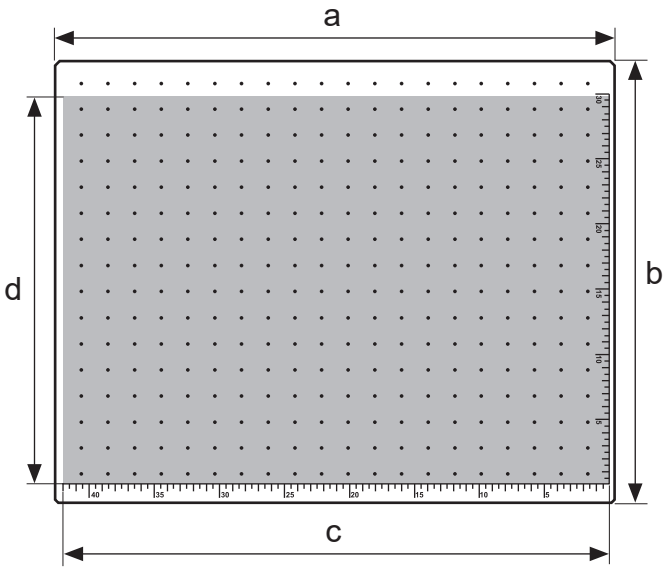
Dimensional Drawings

Outer Dimensions



a	830 mm (32.68 in.)
b	964 mm (37.96 in.)
c	607 mm (23.9 in.)
d	805 mm (31.7 in.)
e	52 mm (2.1 in.)
f	310 mm (12.2 in.)
g	908 mm (35.75 in.)

Flat Table Dimensions

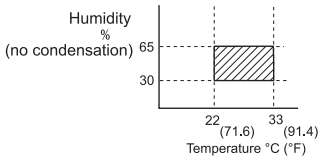


a	430 mm (16.92 in.)
b	340 mm (13.38 in.)
c	420 mm (16.53 in.) (printable area)
d	297 mm (11.69 in.) (printable area)

Specifications

Printing method		Piezo ink-jet method
Loadable objects	W	Max. 430 mm (16.92 in.)
	Length	Max. 340 mm (13.38 in.)
	Thickness	Max. 90 mm (3.54 in.)
	Weight	Max. 5 kg (11.0 lb.)
Maximum printing width/printing length		420 (W) × 297 (L) mm (16.53 [W] × 11.69 [L] in.)
Ink	Type	D-UAB 220 mL Bottle
	Colors	Six colors (cyan, magenta, yellow, black, white (2), and gloss (2))
Ink-curing unit		Built-in UV-LED lamp
Printing resolution		Max. 1,200 dpi
Connectivity		Ethernet 1000BASE-T for control PC only
Rated input		100 - 240 Va.c. 50/60 Hz 3A
Power consumption	During operation	Approx. 250 W
	During standby	Approx. 60 W
Acoustic noise level	During operation	67 dB (A) or less
	During standby	50 dB (A) or less
Outer Dimensions		964 (W) × 908 (D) × 607 (H) mm (37.96 [W] × 35.75 [D] × 23.9[H] in.)
Weight		90 kg (198.42 lb.)
Environment	During operation*1	Temperature: 22 to 33°C (71.6 to 91.4°F) Humidity: 30 to 65% RH (with no condensation) Even when the machine is not in use, keep it at a temperature of 22 to 33°C (71.6 to 91.4°F) and a relative humidity of 30 to 65% RH (with no condensation).
Included items		Power cord, cleaning liquid, User's Manual, software (VersaWorks and Roland DG BF-16 Driver), etc.

*1 Operating environment (Use the machine in an operating environment within these ranges.)




Roland