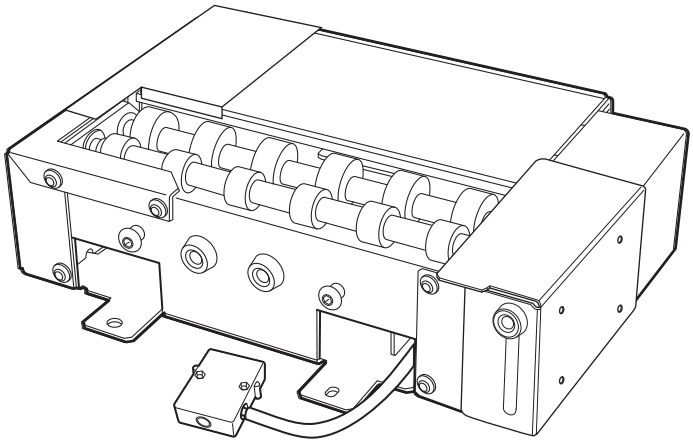
OA-RA-12
OA-RA-8

User's Manual



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- 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.
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Roland DG Corporation

Contents

About This Machine

Introduction

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

About This Manual

This document is the OA-RA-12/8 common user's manual. This document uses the following notations to distinguish between the models where necessary.

- OA-RA-12
- OA-RA-8

Most of the figures in this document depict the OA-RA-8.

Features of This Machine

- This machine is an optional unit that can be installed on Roland DG printers (BD-12 or BD-8).
- Installing this machine to the BD-12 or BD-8 allows printing on cylindrical objects (media).
- For cautions on use and further details on how to use the BD-12 or BD-8, refer to the "BD-12/BD-8 User's Manual."https://downloadcenter.rolanddg.com/BD-8

Operating the Machine

When you have finished installing the machine, you can operate the machine in Utility.

For matters regarding Utility not included in this manual, see the "BD-12/BD-8 User's Manual."

https://downloadcenter.rolanddg.com/BD-8

Firmware Update Request

Update your firmware if the firmware version of your machine is not 1.5 or higher. Refer to the "Firmware Update Request" for the procedure for updating the firmware.

IMPORTANT

Failure to update the firmware may result in unexpected machine performance or malfunction. Be sure to update the firmware to version 1.5 or later before continuing with use.

Conditions for Loadable Objects (Media)

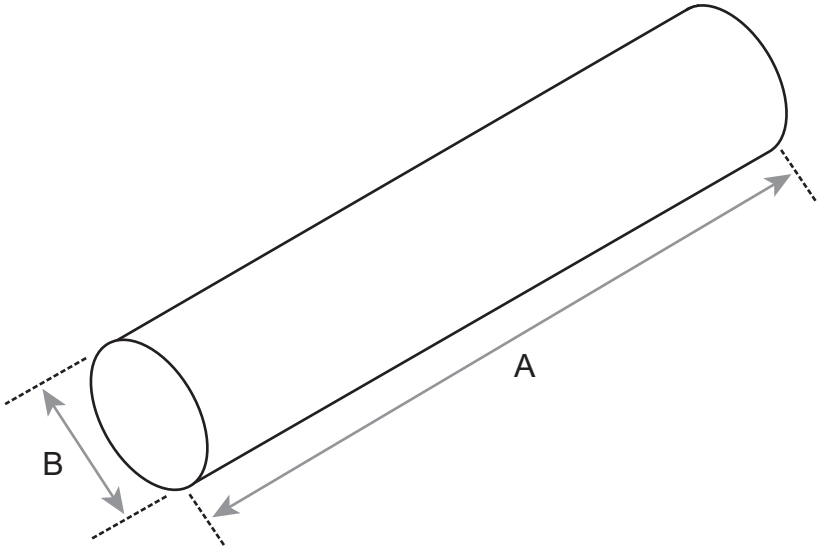
Shape

Cylindrical shape (an undulating surface that does not affect rotation)

MEMO

If the object has undergone embossing, verify that the embossed part does not touch the roller of the rotary axis unit. Object rotation will be impeded if the embossed part is placed on top of the roller of the rotary axis unit, causing the object to move to the left and right and leading to misalignment in the printing position and other such reductions in quality.

Size and Weight



		OA-RA-8	OA-RA-12
Size	Length (A)	50 mm–170 mm (1.97 in.–6.69 in.)	50 mm–265 mm (1.97 in.–10.43 in.)
	Diameter (B)	10 mm–50 mm (0.39 in.–1.97 in.)	
Weight		0.01 kg–1 kg (0.03 lb.–2.2 lb.)	0.01 kg–1.5 kg (0.03 lb.–3.30 lb.)

Material

Do not print on the following objects.

- **Mirrors, stainless steel, and other objects that are likely to reflect UV light**

  These objects promote the curing of the surface of the print heads and therefore cannot be used.
- **Objects that are charged with static electricity**

  Static electricity can cause the ink to splatter, adversely impacting printing results and the print heads.
- **Objects made from soft material**

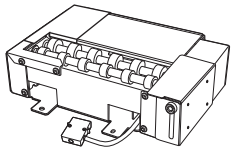
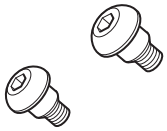
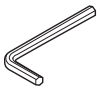
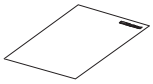
  If the object to be printed on is made from soft material, the pressure it applies on the head gap sensor is too weak. This prevents its height from being detected correctly.

IMPORTANT

- This printer cannot print on all materials. When selecting the object, be sure to carry out test prints in advance to make sure that satisfactory print quality can be obtained.
- Depending on the type of object to print on and the installation method, the height may not be set correctly. The machine may malfunction if printing is performed when an incorrect installation method is used or if printing is performed on an inappropriate material.

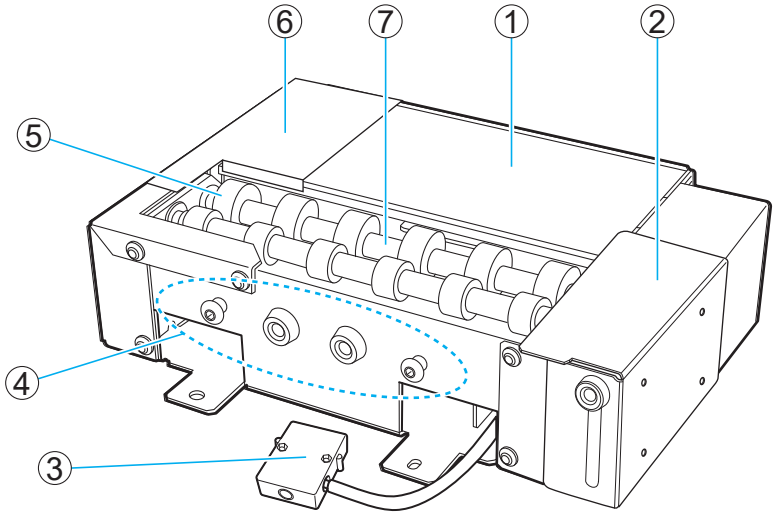
Checking the Package Contents

The following items are included with the machine. Make sure they are all present and accounted for.

 Rotary axis unit (1)	 Rotary axis unit positioning screws (2)	 Rotary axis unit fixing screws (2)	 Hexagonal wrench (1)
 User's Manual Guide (1)			

Part Names

External View



No.	Name
①	Nozzle drop-out test stage
②	Guide
③	Connector
④	Screw holder to prevent loss of screws
⑤	Roller
⑥	Tail stopper
⑦	Shaft

Attaching/Detaching This Machine

How to install Ventilating Equipment

⚠ 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 or burns.

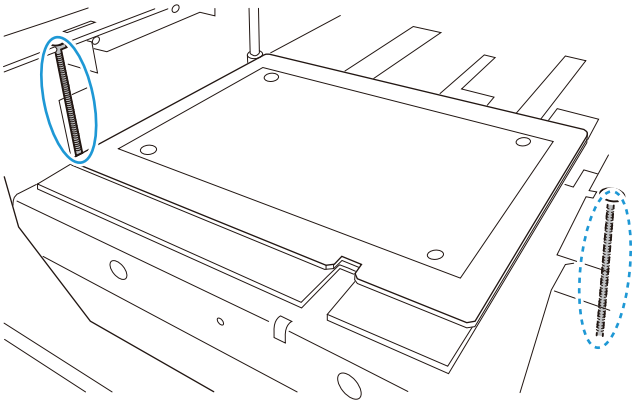
⚠ WARNING

Only insert and remove the rotary axis unit connector when the main power is off or when executing [Rotary Axis Unit Attachment/Removal] from the Utility.

Failure to do so may result in damage to the equipment or electric shock.

MEMO

- Use the following link to view a reference video for this procedure. We recommend that you view this video to understand the overall flow of work.
  https://vimeo.com/930488449/1feec5d69a
- Grease may adhere to the rotary axis unit during removal/installation. Use gloves if necessary.



Procedure

1. **Check that the printer has been set up.**

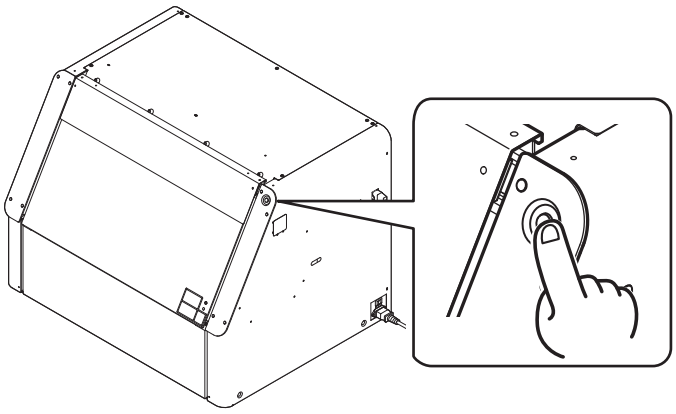
   If the printer has not been set up, refer to the "Installation Guide" and "Installation and Initial Settings" linked to below to perform printer setup and install the printer software.

   https://downloadcenter.rolanddg.com/BD-8

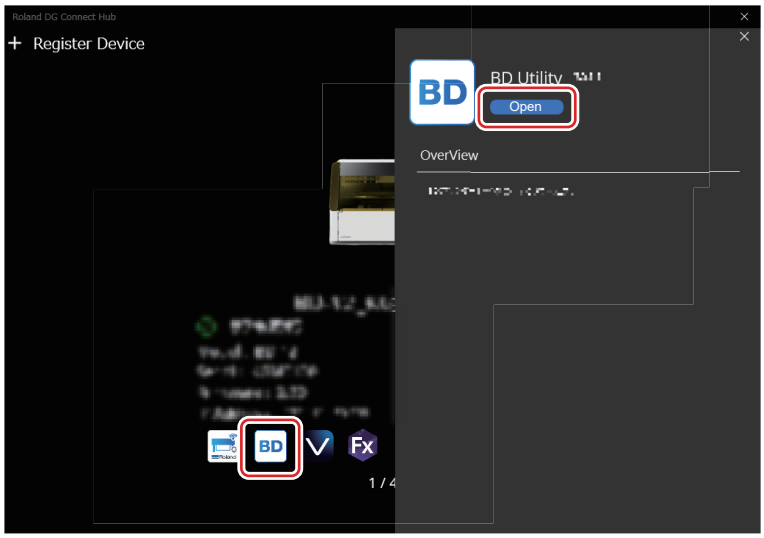
2. **Close the printer's front cover.**

3. **Press the sub power button on the printer.**

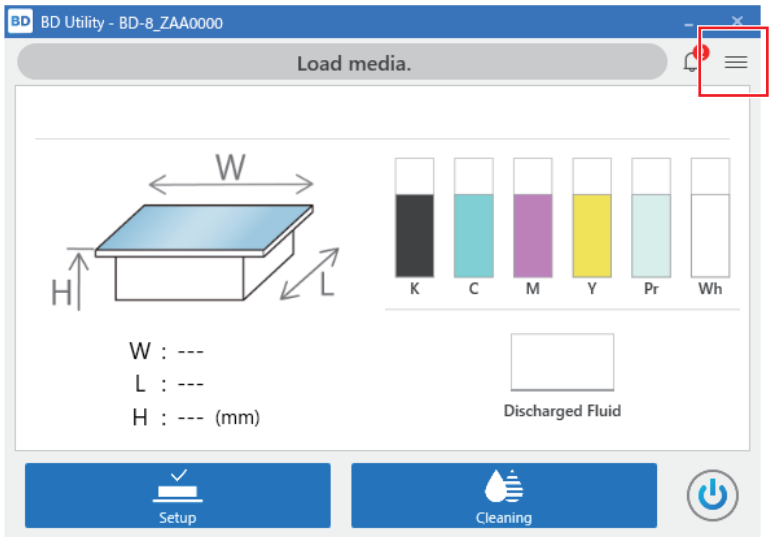
   The sub power is switched on. When the sub power button indicator changes from flashing blue to steady blue, startup is finished.



4. **Start Utility from the Roland DG Connect Hub home screen.**
   Click **[Open]** next to Utility.



5. **Click** ☰ **on the Utility window.**

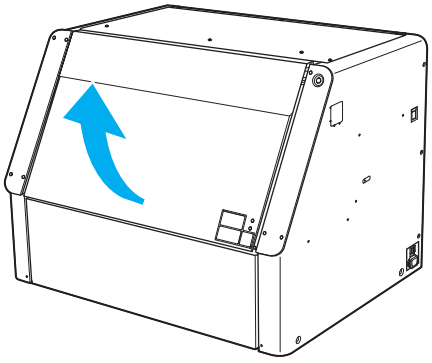


6. **Click [Preferences].**

7. **Click [Execute] under [Rotary Unit Attachment/Removal]>[Move to Attachment/Removal Position].**

The flat table moves to a position where the rotary axis unit can be attached.

8. **After the flat table stops, open the front cover.**

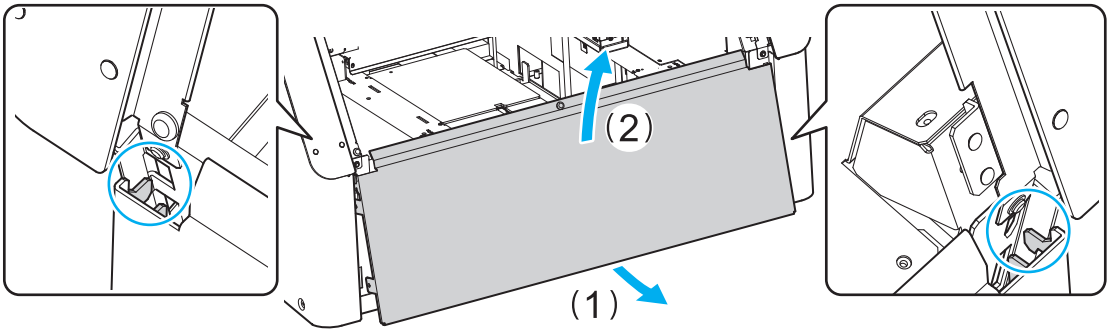


9. **Open the maintenance cover according to the procedure below.**

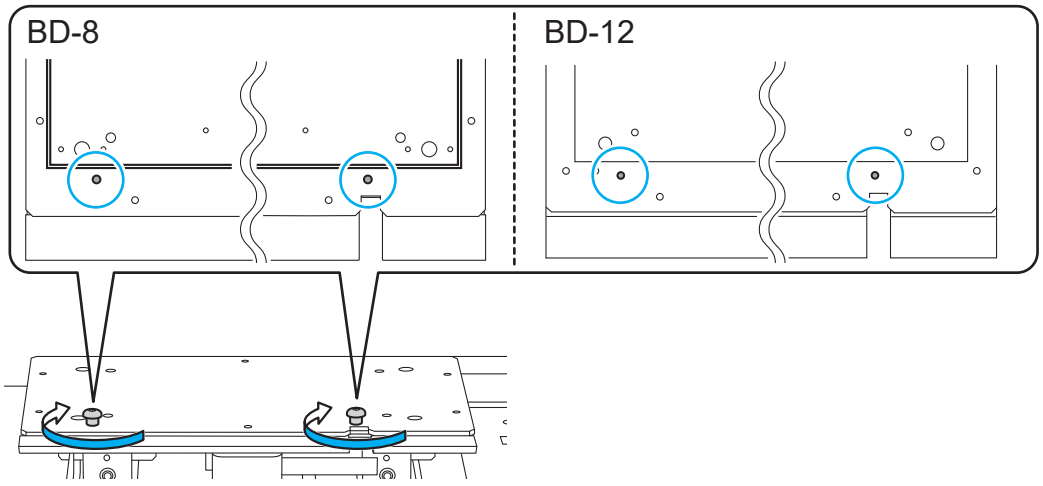
(1) **Hold the underside of the maintenance cover, and pull it approximately 30 mm (1.18 in.) towards you.**

(2) **Lift the maintenance cover up to remove it.**

To remove the maintenance cover, release the hooks at both ends of the cover.



10. **Attach the rotary axis unit positioning screws to the flat table using the included hexagonal wrench.**



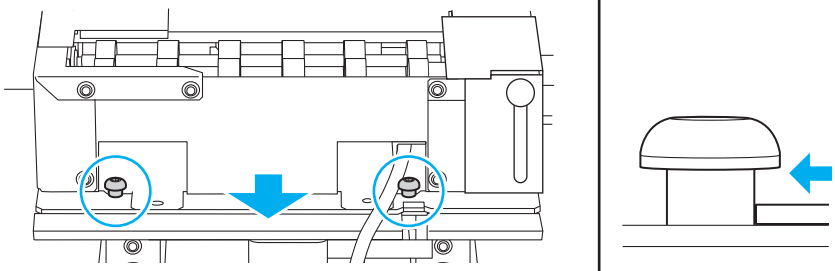
11. **Attach the machine to the flat table.**

⚠ CAUTION

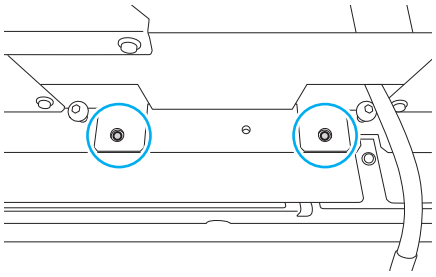
Exercise caution to prevent the rotary axis unit from falling.
Failure to do so may result in injury.

(1) **Place the machine on the flat table.**

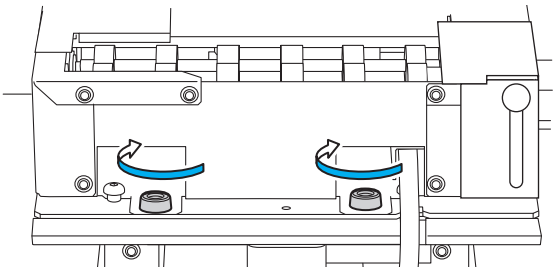
(2) **Have the machine come into contact with the rotary axis unit positioning screws, as shown in the figure.**



(3) **With the machine touching the rotary axis unit positioning screws, align the holes on the machine and the flat table threaded holes as shown in the figure.**

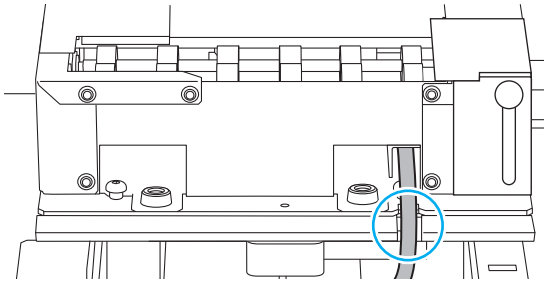


(4) **Attach the rotary axis unit fixing screws.**



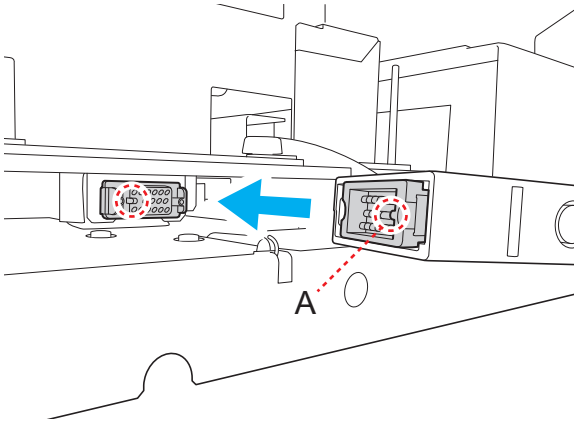
12. **Connect the connector on the machine to the printer on the printer side.**

(1) **Pass the machine cable through the slit on the flat table.**



(2) **Connect the connector on the machine to the printer on the printer side.**

Align the protruding part (A) on the connector, and insert it firmly until you hear a click.

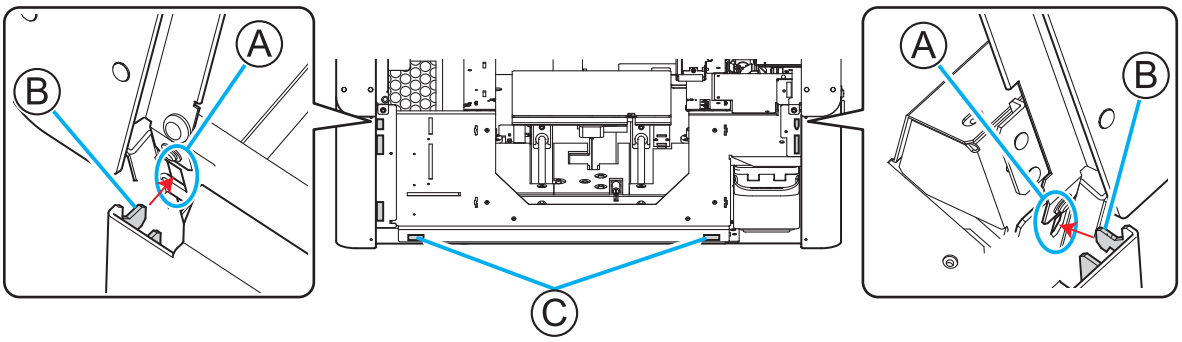


13. **Click [Next] on the Utility window.**

14. **Attach the maintenance cover according to the following procedure.**

(1) **Insert the hooks (B) on the maintenance cover into the grooves on the left and right (A).**

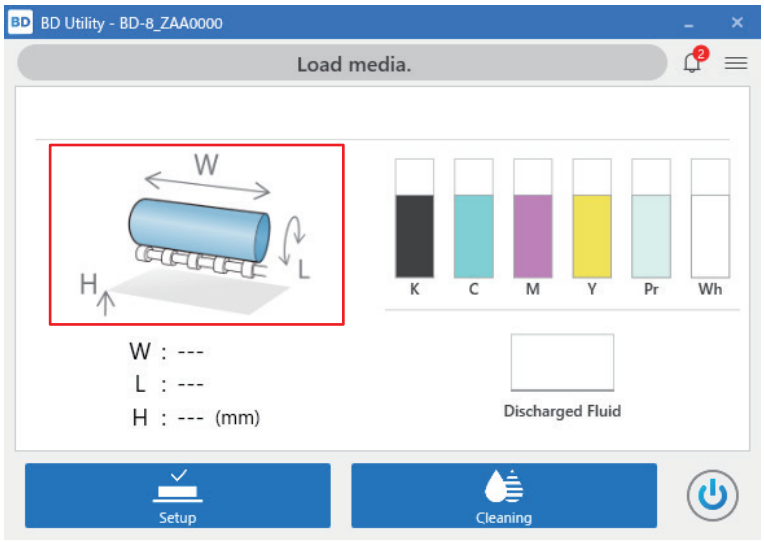
(2) **Secure the maintenance cover in place using the magnets (C).**



15. **Close the front cover.**

16. **Click [Finish] on the Utility window.**

If the connector is properly connected, the illustration in the Utility window will change to the rotary axis unit.



This completes the machine installation procedure.

17. **If this is your first time installing the machine, adjust the position of the manual cleaning tool.**

P. 14 Adjust Manual Cleaning Tool Position

Adjust Manual Cleaning Tool Position

If this is your first time installing the machine, be sure to adjust the position of the manual cleaning tool. Also adjust the position of the manual cleaning tool when the manual cleaning tool has been replaced.

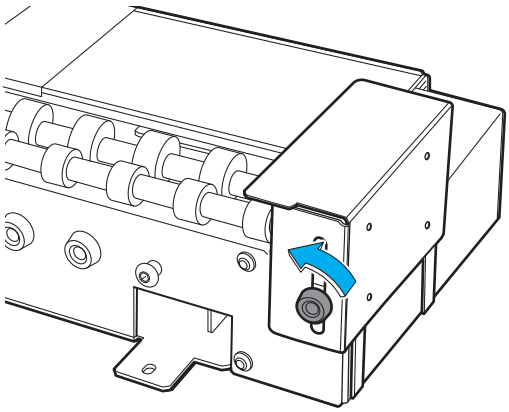
Procedure

1. **Open the front cover.**

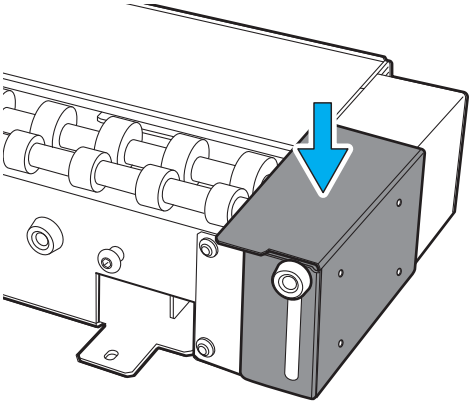
2. **Remove any object already on the machine.**
If the object is already set up, cancel the setup in Utility.

3. **Lower the machine guide to its lowermost point.**

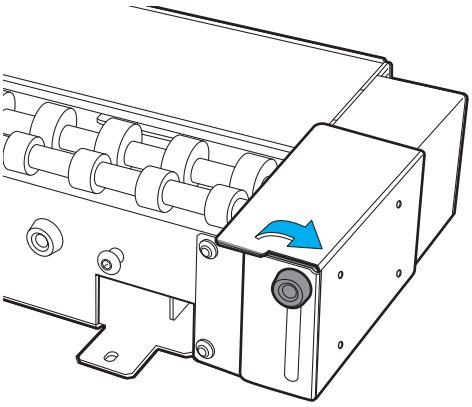
(1) **Loosen the guide fixing screw.**



(2) **Lower the guide to its lowermost point.**



(3) **Tighten the guide fixing screw.**



4. On the Utility home screen, click ☰.

5. Click [Preferences].

6. Click [Execute] under [Position Adjustment]>[Adjust Manual Cleaning Tool Position].

[Execute] cannot be clicked when the object is set up.

7. Follow the instructions on the Utility window to adjust the position of the manual cleaning tool.

MEMO

The pointer used to adjust the manual cleaning tool position always irradiates the initial position.

(1) When the message "This starts manual cleaning tool position adjustment" appears, click [OK].

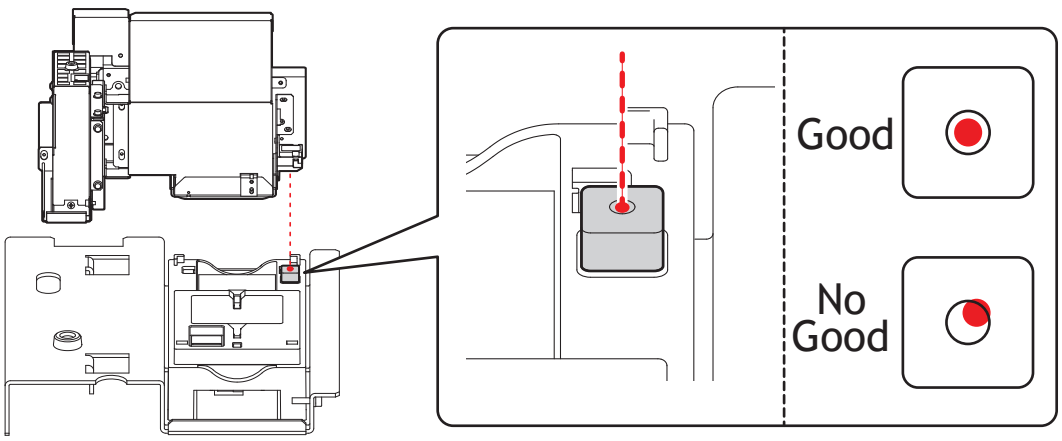
(2) Attach the manual cleaning tool.

MEMO

Refer to "Manual Cleaning" in the BD-12/BD-8 User's Manual to attach the manual cleaning tool.
https://downloadcenter.rolanddg.com/BD-8

(3) Click [OK].

(4) Click ▲, ▼, ◀, or ▶ to align the pointer to the manual cleaning tool reference position.



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

(6) **When the message [Remove the manual cleaning tool.] appears, remove the manual cleaning tool.**

(7) **Click [OK].**

8. **Click [Close] to return to the original screen.**

Removal

⚠ 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 or burns.

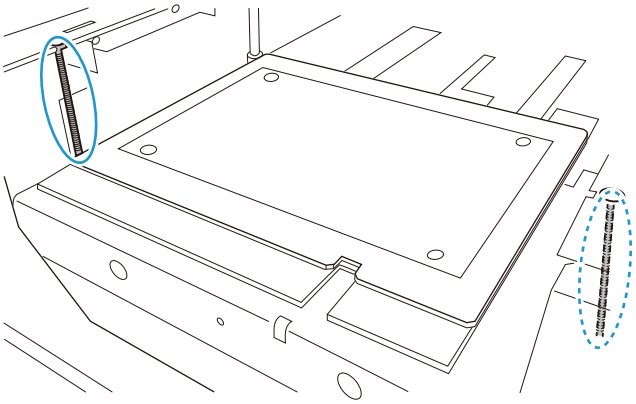
⚠ WARNING

Only insert and remove the rotary axis unit connector when the main power is off or when executing [Rotary Axis Unit Attachment/Removal] from the Utility.

Failure to do so may result in damage to the equipment or electric shock.

MEMO

- Use the following link to view a reference video for this procedure. We recommend that you view this video to understand the overall flow of work.
  https://vimeo.com/930488449/1feec5d69a
- Grease may adhere to the rotary axis unit during removal/installation. Use gloves if necessary.

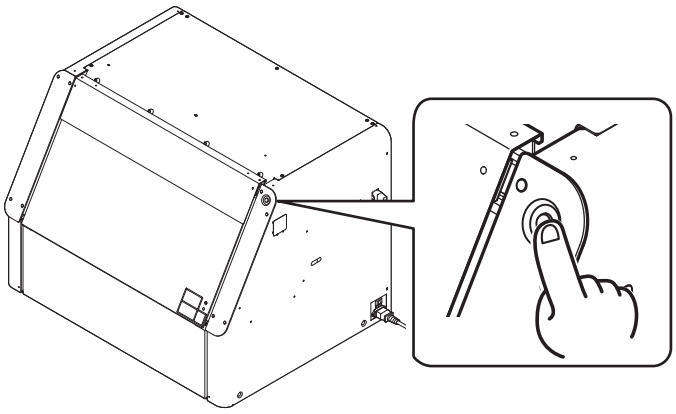


Procedure

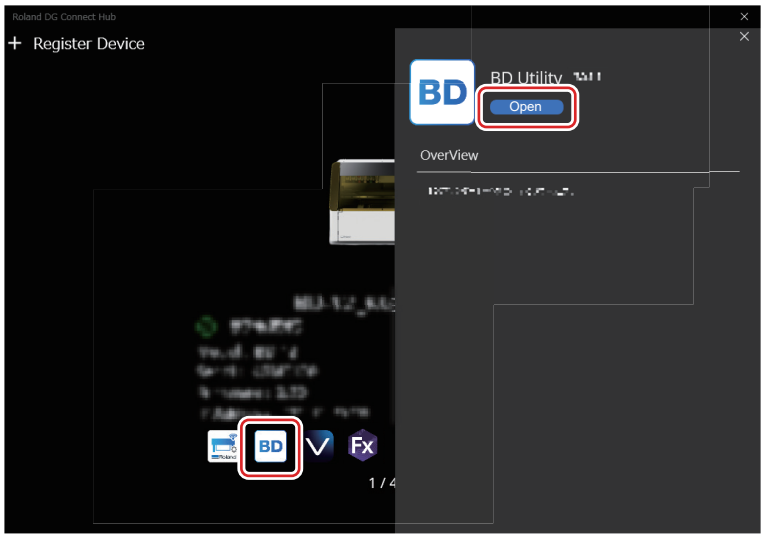
1. **Close the printer's front cover.**

2. **Press the sub power button on the printer.**

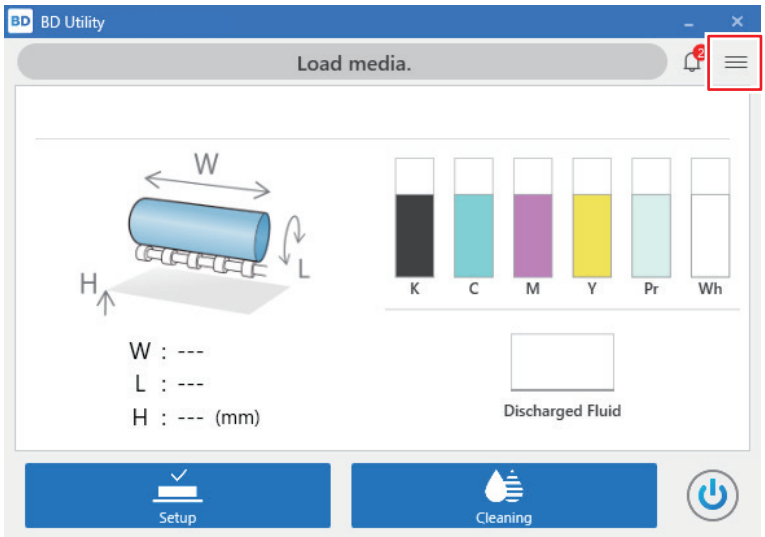
   The sub power is switched on. When the sub power button indicator changes from flashing blue to steady blue, startup is finished.



3. **Start Utility from the Roland DG Connect Hub home screen.**
   Click [**Open**] next to Utility.



4. **Click** ☰ **on the Utility window.**

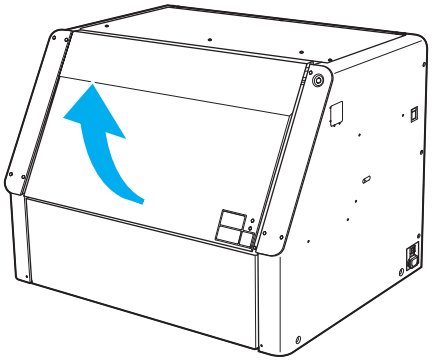


5. **Click [Preferences].**

6. **Click [Execute] under [Rotary Unit Attachment/Removal]>[Move to Attachment/Removal Position].**

The flat table moves to a position where the rotary axis unit can be removed.

7. **After the flat table stops, open the front cover.**

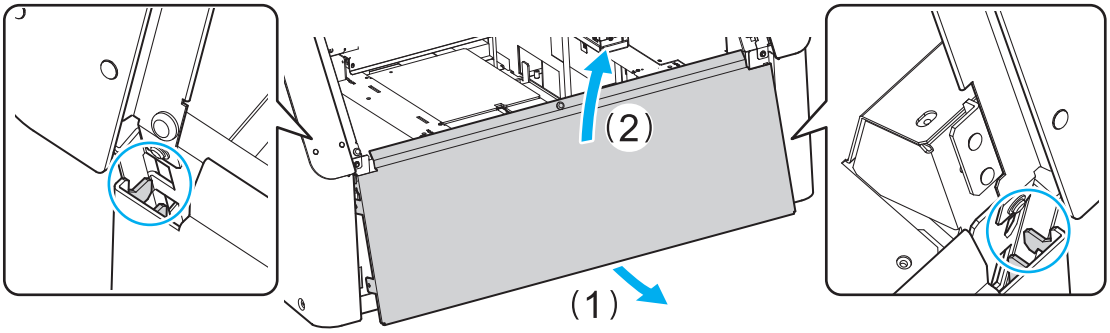


8. **Open the maintenance cover according to the procedure below.**

(1) **Hold the underside of the maintenance cover, and pull it approximately 30 mm (1.18 in.) towards you.**

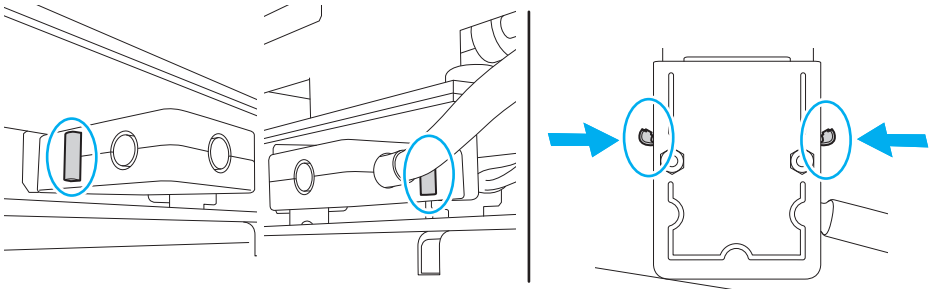
(2) **Lift the maintenance cover up to remove it.**

To remove the maintenance cover, release the hooks at both ends of the cover.



9. **Remove the connector for the machine.**

Press down on the metal part at both ends of the connector to remove it, as shown in the figure.

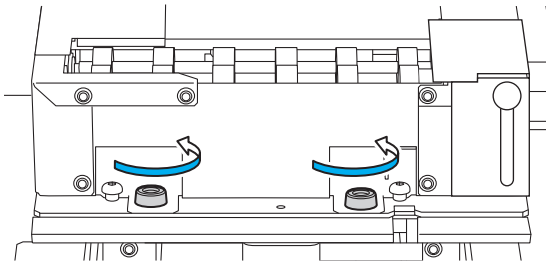


10. **Remove the machine from the flat table.**

⚠ CAUTION

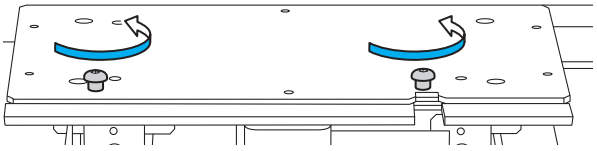
Exercise caution to prevent the rotary axis unit from falling.
Failure to do so may result in injury.

(1) **Remove the rotary axis unit fixing screws.**



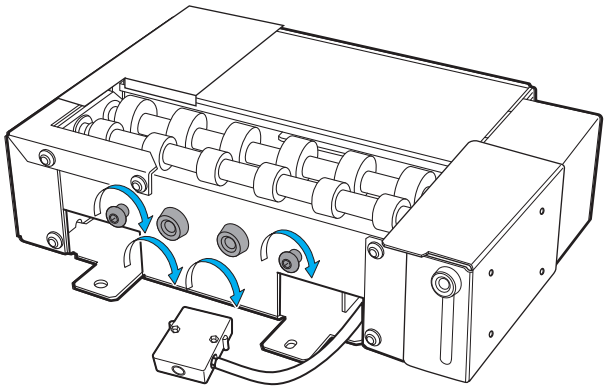
(2) **Remove the machine from the flat table.**

(3) **Remove the rotary axis unit positioning screws.**



(4) **Attach the rotary axis unit fixing screws and rotary axis unit positioning screws to the machine.**

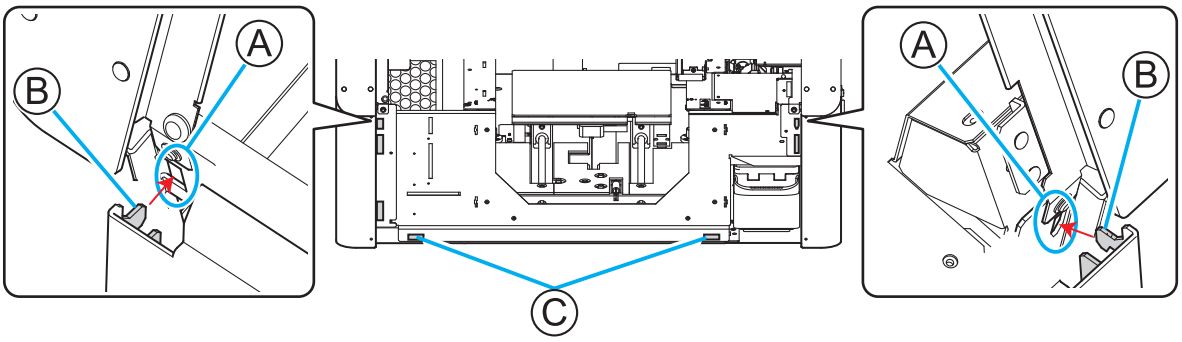
The rotary axis unit fixing screws and rotary axis unit positioning screws are needed when attaching the machine. Attach the rotary axis unit fixing screws and rotary axis unit positioning screws to the machine to store them safely.



11. **Attach the maintenance cover according to the following procedure.**

(1) **Insert the hooks (B) on the maintenance cover into the grooves on the left and right (A).**

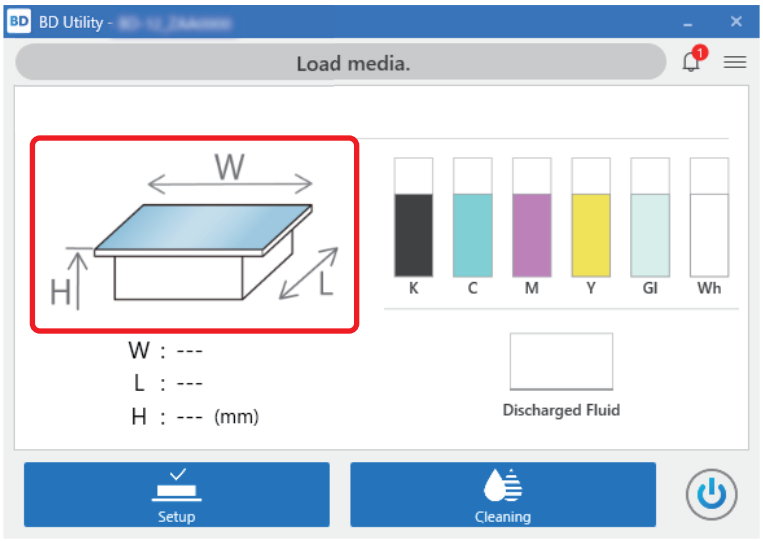
(2) **Check that the maintenance cover is fixed in place using the magnets (C).**



12. **Close the front cover.**

13. **Click [Finish] on the Utility window.**

The illustration on the Utility window will change to the flat table.



This completes the procedure for removing the machine.

Printing

Performing a Nozzle Drop-out Test

MEMO

Use the following link to view a reference video for this procedure. We recommend that you view this video to understand the overall flow of work.

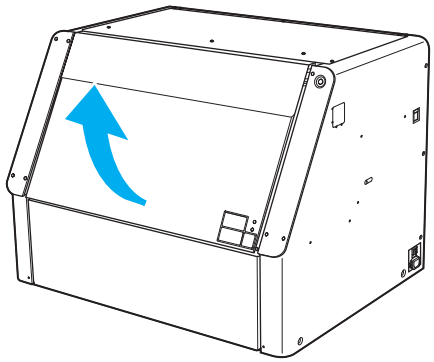
https://vimeo.com/907674658/9d88d07ebe

Setting Up Nozzle Drop-out Test Paper

Follow this procedure to set up nozzle drop-out test paper. It is recommended that you use a media size that is at least 110 mm × 70 mm (4.33 in. × 2.76 in.).

Procedure

1. **Open the front cover.**



2. **Remove any objects (media) in the machine.**

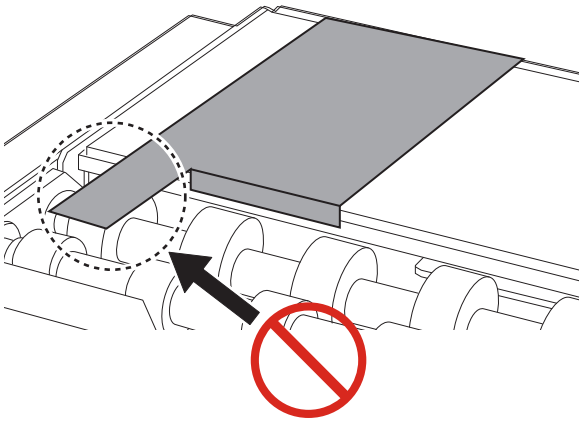
IMPORTANT

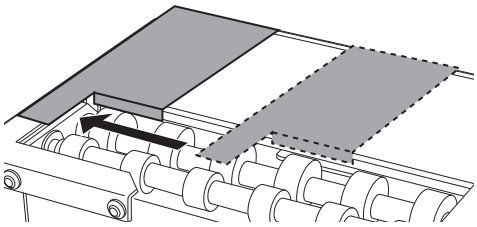
Attempting to perform a nozzle drop-out test with an object in the machine may cause the print head to contact the object, damaging the machine or the print head.

3. **Slide the tail stopper to the left edge.**

IMPORTANT

Do not hold the part shown in the figure. Holding this part and sliding the tail stopper may cause the tail stopper to bend, leading to decreased print quality and malfunctions.



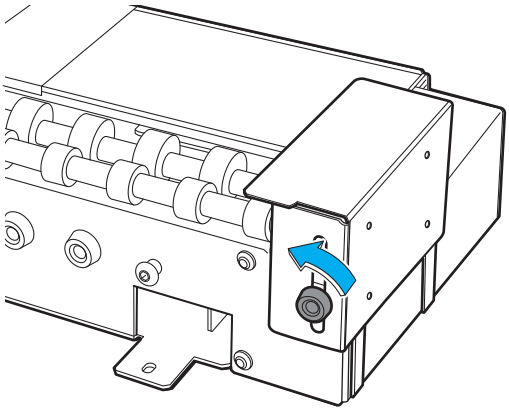


4. **Lower the machine guide to its lowermost point and secure it there.**

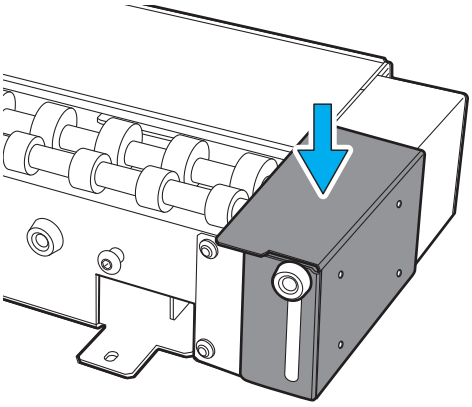
IMPORTANT

Failure to lower the guide to its lowermost point will cause the print head to collide with the guide, and this may lead to malfunctions.

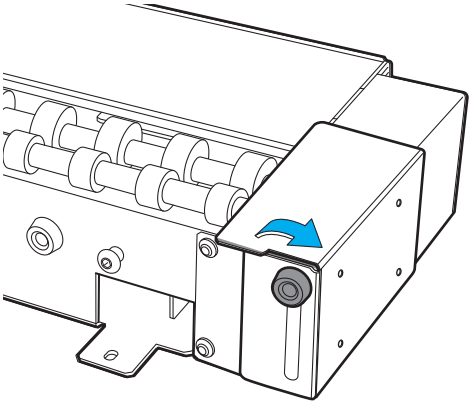
(1) **Loosen the guide fixing screw.**



(2) **Lower the guide to its lowermost point.**



(3) **Tighten the guide fixing screw.**



5. **When using white ink, remove the white ink cartridge and shake it.**

Remove the white ink cartridge, shake it 50 times (about 20 seconds), and then reinsert this cartridge.

6. **Load the nozzle drop-out test paper into the machine's nozzle drop-out test stage.**

This example describes the procedure used to load the nozzle drop-out test paper that is 110 mm × 70 mm (4.33 in. × 2.76 in.) in size.

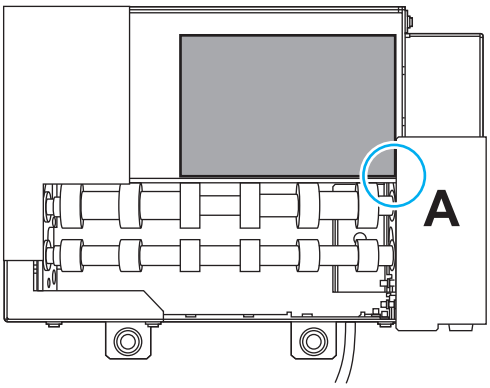
IMPORTANT

- When a rotary axis unit is connected, the printer will print the test pattern on the right end of the nozzle drop-out test stage. You do not need to set the height of the flat table or the printing position.
- As the test pattern position cannot be changed, you cannot print test patterns alongside one another horizontally or vertically.
- When performing consecutive nozzle drop-out tests, subsequent test patterns will be printed over the test pattern on the printing test position used for the first test. When performing consecutive nozzle drop-out tests, make sure to replace the nozzle drop-out test paper.

(1) **Prepare nozzle drop-out test paper that is 110 mm × 70 mm (4.33 in. × 2.76 in.) in size.**

(2) **Align the corners of the nozzle drop-out test paper to the corners of the machine's nozzle drop-out test stage as shown in the figure. (Figure A)**

(3) **Using tape, fasten the test media in place so that it does not move.**



7. **Register or select the object for the rotary axis unit.**

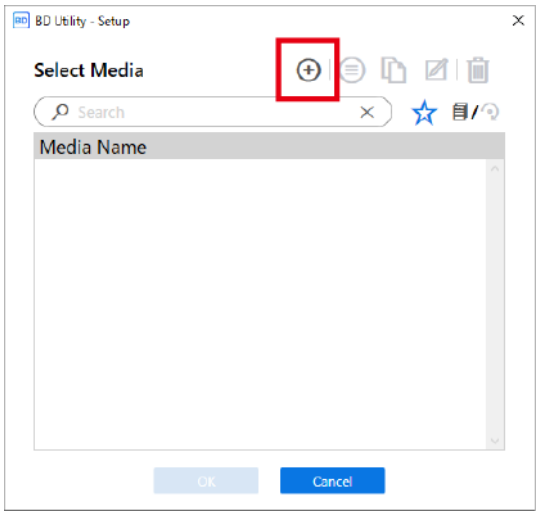
(1) **On the Utility home screen, click**  **[Setup].**

(2) **Register or select the object for the rotary axis unit.**

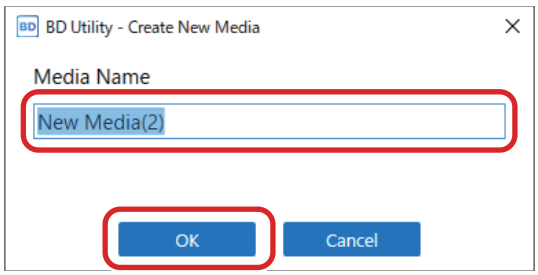
> **MEMO**
>
> In Utility, "media" is used on the window used to register/manage objects.

When registering an object for the rotary axis unit for the first time

i. Click ⊕.



ii. Enter the media name, and then click [**OK**].



For an object that has already been registered for the rotary axis unit

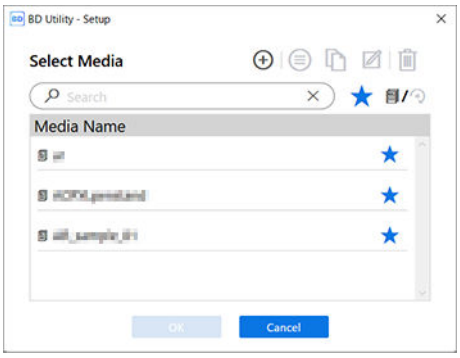
i. Select the rotary axis unit media (media with a mark), and then click [**OK**].

MEMO

- **We recommend that you set frequently used objects as favorites.**

  1. Click ☆ next to a registered media name to change this icon to ★.
  2. Click ☆ next to the search box.

     The icon changes to ★, and the list of media set as favorites appears.



- **You can display all registered objects.**
  If a rotary axis unit is not attached, the names of flat table media are displayed. If a rotary axis unit is attached, the names of rotary axis unit media are displayed.

  Click or to display all registered objects.
- You can use the favorites function and the search function to easily find registered objects.
- Media registered to the flat table cannot be selected for the optional item (rotary axis unit).

ii. Step (3) is not required. Proceed to Step (4).

(3) **In the [Object Type] window, select one of the following, and then click [OK].**

- [**Transparent**]: A hand placed on the other side of the object can be seen through it.
  If the object is transparent, select [**Others**] from the [**Transparent**] pull-down menu.
- [**Opaque**]: A hand placed on the other side of the object cannot be seen through it.

(4) **Click [OK].**

You are returned to the home screen.

MEMO

When performing a nozzle drop-out test, you do not need to set the [**Flat Table Height**] or the [**Printing Area**].

Performing a Nozzle Drop-out Test

Perform a nozzle drop-out test (print a test pattern) and confirm the test pattern before starting printing. If an error occurs, clean the print heads (normal cleaning). Perform nozzle drop-out test again to ensure no dot drop-out or dot displacement occurs.

Procedure

1.

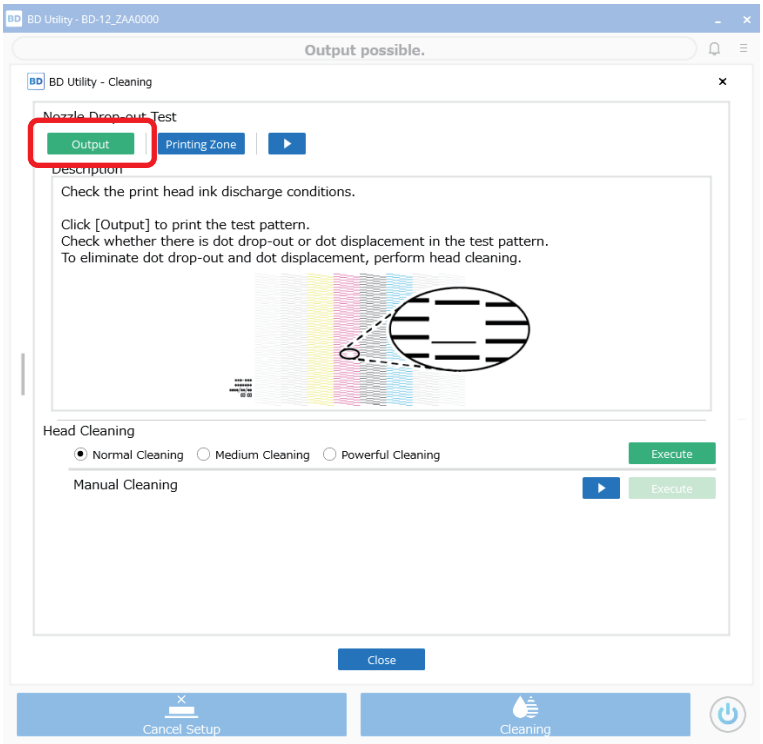
Verify that the object has been removed and the guide is at the lowest position.

IMPORTANT

If the guide is not lowered to its lowermost point, the print head will collide with the guide, and this may lead to malfunctions.

2. Click [Cleaning]on the Utility home screen.

3. Click [Output] under [Nozzle Drop-out Test].



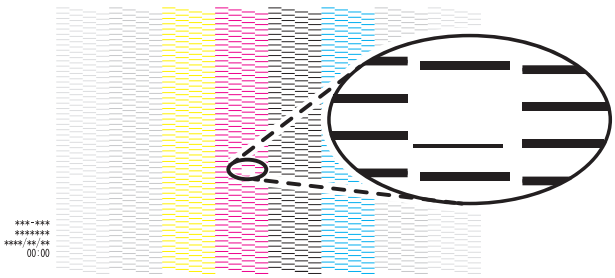
4. Click [OK].

5. When printing is complete, open the front cover.

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

   Gaps in the block pattern indicate dot drop-out, and collapsed or inclined blocks indicate dot displacement.

   - If no dot drop-out or dot displacement occurs: Output preparations are complete.
   - If dot drop-out or dot displacement occurs: Clean the print heads (normal cleaning).BD-12/BD-8 User's Manual - Performing Normal Cleaning



7. Close the front cover.

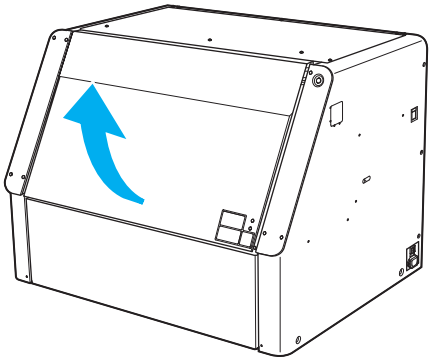
8. Click [Close] to return to the original screen.

Attaching the Object (Media)

How to install Ventilating Equipment

Procedure

1. **Open the printer's front cover.**



2. **Check the object (media).**

Confirm that the object material and size are appropriate.

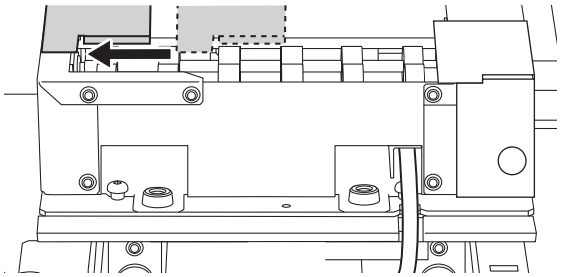
P. 3 Conditions for Loadable Objects (Media)

IMPORTANT

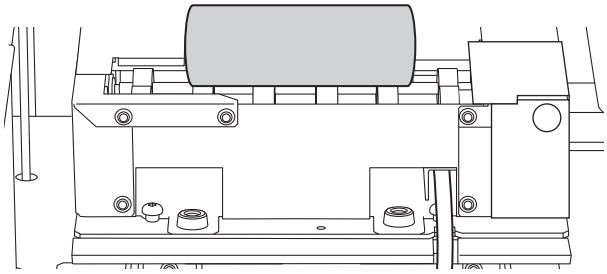
Media with the following shapes cannot be attached to the machine.

- Any media that does not have a cylindrical shape
- Media with an undulating surface that affects rotation

3. **Slide the tail stopper to the left.**

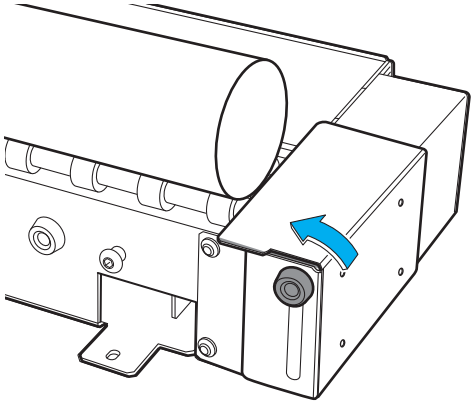


4. **Place the object on the roller of the machine.**



5. **Adjust the height of the guide.**

(1) **Loosen the guide fixing screw.**



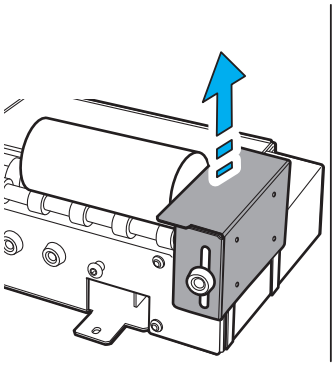
(2) **Adjust the guide height so that the upper end of the guide is lower than the upper end of the object.**

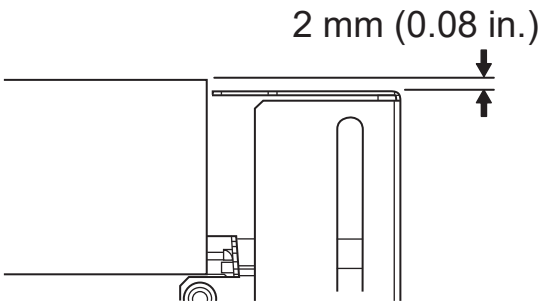
To guarantee the print quality, it is recommended to position the upper end of the guide approximately 2 mm (0.08 in.) lower than the upper end of the object. However, if the diameter of the object is 12 mm (0.47 in.) or less, lower the guide to its lowermost point.

IMPORTANT

Be sure to set the upper end of the guide lower than the upper end of the object.

If the upper end of the guide is higher than the upper end of the object, the print heads may contact the guide, damaging the machine or the print heads.

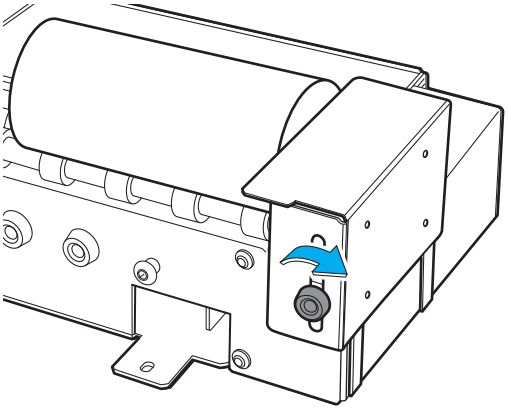




(3) **Tighten the guide fixing screw.**

MEMO

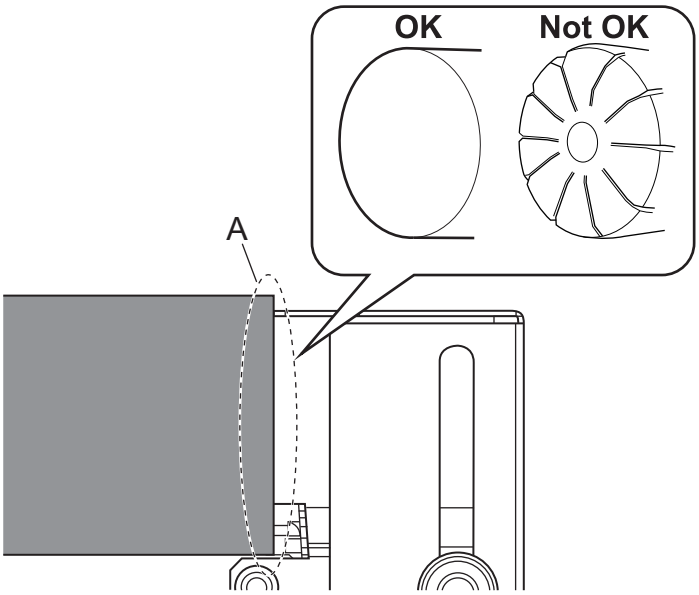
- When tightening the guide fixing screw, push the guide against the rotary axis unit to prevent the guide from tilting.
- After tightening the guide fixing screw, check that the guide is not tilted. If you tighten the screw without pushing the guide against the rotary axis unit, the guide height may be different.



6. **Gently bring the object into contact with the left edge of the guide.**

MEMO

- Rotation may be impeded if the object forcefully pushes against the guide, leading to defective printing. Attach the object so it touches the guide gently.
- Make sure that edge A of the object, which touches the guide, is perpendicular to the print surface and is a flat, even surface. If a rough surface that is not flat touches the guide, the object will move to the left and right, leading to misalignment in the printing position and other such reductions in quality.



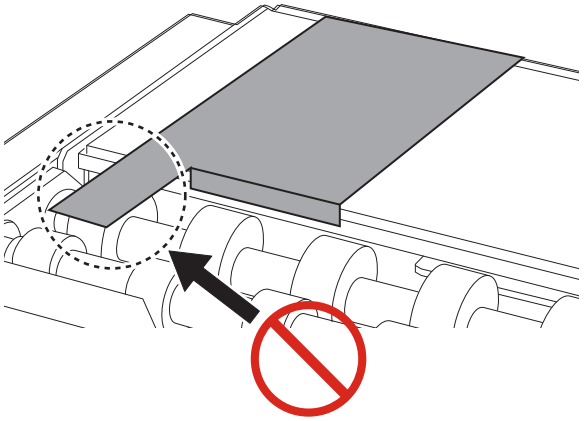
7. **Slide the tail stopper to the right until it touches the object gently.**

Gently bring the tail stopper into contact with the object to prevent it from moving left or right.

Use the tail stoppers when printing around the entirety of a cylinder, when printing layered colors, and in similar situations.

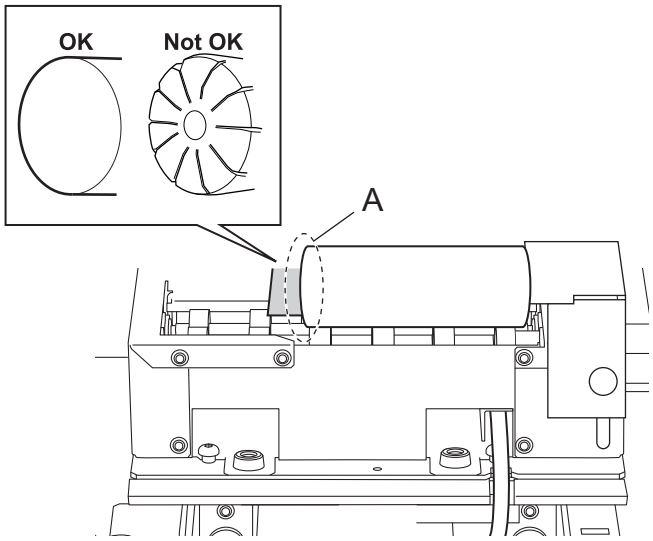
IMPORTANT

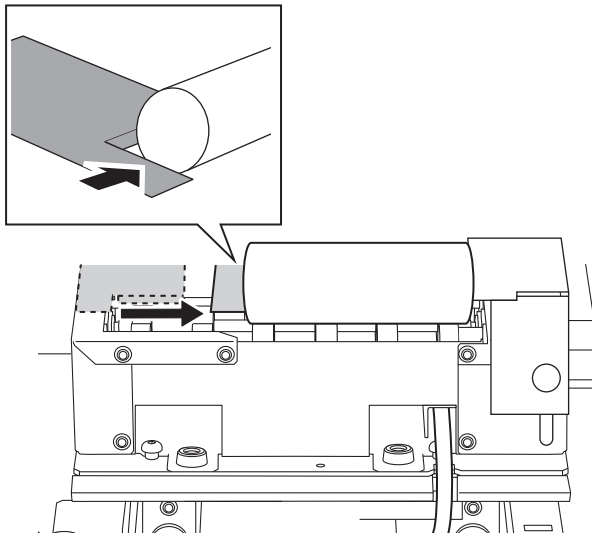
Do not hold the part shown in the figure. Holding this part and sliding the tail stopper may cause the tail stopper to bend, leading to decreased print quality and malfunctions.



MEMO

- Rotation may be impeded if the tail stopper forcefully pushes against the object, leading to defective printing. Attach the tail stopper so it touches the object gently.
- Make sure that edge A of the object, which touches the tail stopper, is perpendicular to the print surface and is a flat, even surface. If a rough surface that is not flat touches the tail stopper, the object will move to the left and right, leading to misalignment in the printing position and other such reductions in quality.





8. Close the front cover.

Performing Printing

Setting Up the Object (Media)

The flat table height and printing position settings can be configured with the front cover open.

Procedure

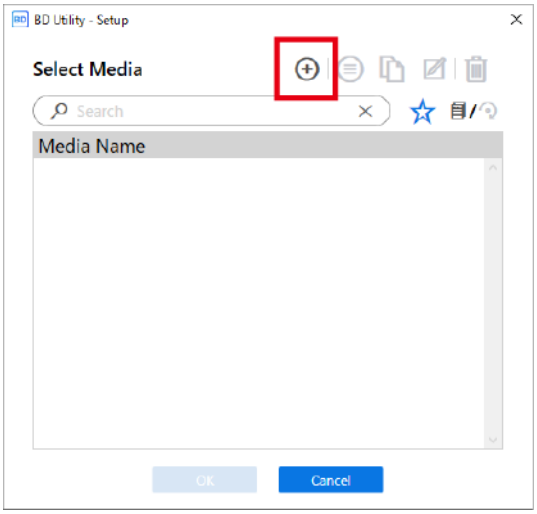
1. **On the Utility home screen, click  [Setup].**

2. **Register/select the object.**

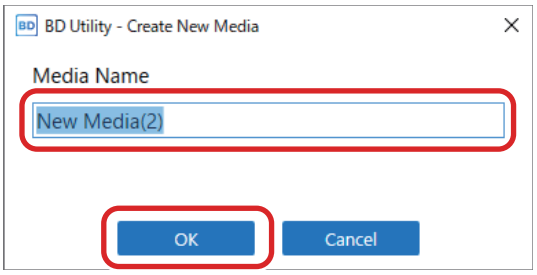
MEMO

In Utility, "media" is used on the window used to register/manage objects.

- **When printing on an object for the first time**
  a. Click ⊕.



  b. Enter a new media name and click [**OK**].
  Previously registered media names cannot be used. Enter a new media name.



  The flat table goes down to its lowermost point.

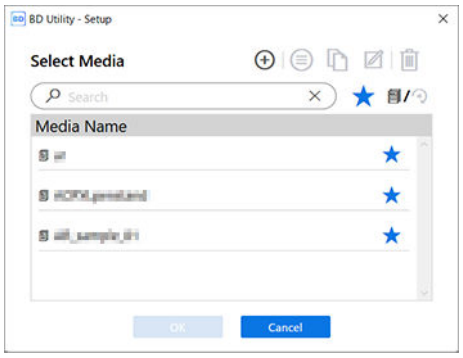
- **For an object that has already been registered for the rotary axis unit**
  a. Select the rotary axis unit media (media with a mark), and then click [**OK**].

MEMO

- **We recommend that you set frequently used objects as favorites.**

  1. Click ☆ next to a registered media name to change this icon to ★.
  2. Click ☆ next to the search box.

     The icon changes to ★, and the list of media set as favorites appears.



- **You can display all registered objects.**
  If a rotary axis unit is not attached, the names of flat table media are displayed. If a rotary axis unit is attached, the names of rotary axis unit media are displayed.

  Click / or / to display all registered objects.
- You can use the favorites function and the search function to easily find registered objects.
- Media registered to the flat table cannot be selected for the optional item (rotary axis unit).

b. Step 3 is not required. Proceed to Step 4.

3. **In the [Object Type] window, select one of the following, and then click [OK].**

- [**Transparent**]: A hand placed on the other side of the object can be seen through it.
  If the object is transparent, select [**Others**] from the [**Transparent**] pull-down menu.
- [**Opaque**]: A hand placed on the other side of the object cannot be seen through it.

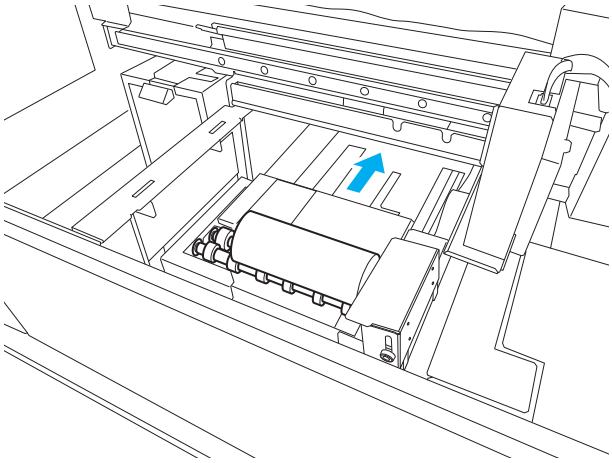
4. **Click [Change] next to [Flat Table Height] to set the height of the object.**

(1) **Click** .

The flat table will automatically move to the location for setting the flat table height.

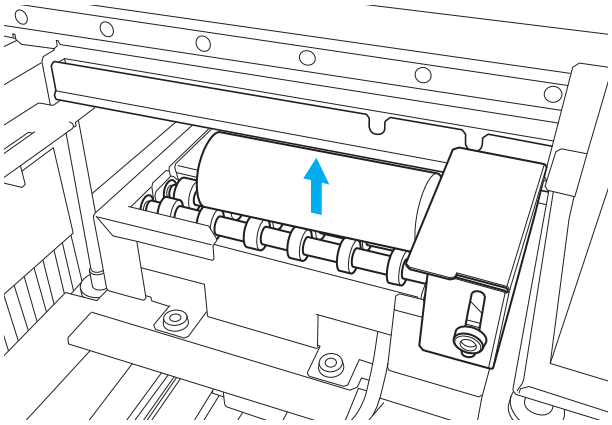
MEMO

You can also move the flat table manually by clicking ▲ or ▼ on the right side of the window.



(2) **Click**  **on the left side of the window to have the object approach the head gap sensor.**

- Move it to a position several mm below what is considered to be the highest position.
- If the height position is unclear, open the front cover and make the adjustments from a close distance.



(3) **Click [Automatic Setup].**

The flat table moves and the head gap sensor detects the height of the object.

(4) **Click [OK].**

5. **Select [Print Origin] from [Origin Relative] or [Center Relative].**

This section explains how to configure settings when [**Origin Relative**] is selected.

MEMO

For details on [**Center Relative**], refer to the BD-12/BD-8 User's Manual.

BD-12/BD-8 User's Manual - Object (Media) Registration Items

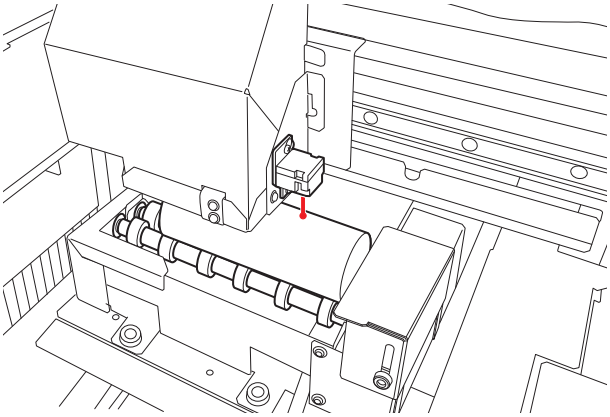
6. **Click [Change] next to [Print Origin] and [Printing Area] to set the printable area.**

- [**Print Origin**] setting
  a. Select [**Pointer**] for [**Position Specification**].

     The print-head carriage moves to the bottom right point of the currently set printing area, and the pointer is lit.

b. Click , , , or to specify the print origin (lower-right corner of printing area).

Align the pointer to the printing-start location of the object installed (print origin).



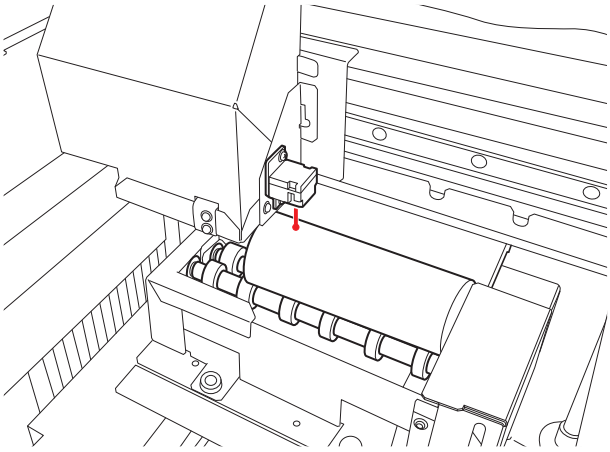
- [**Printing Area**] setting

a. Select [**Printing Area**].

The print-head carriage moves to the top left point of the currently set printing area, and the pointer is lit.

b. Click , , , or to specify the upper-left corner of the printing area.

Specify the printing area for the object installed using the pointer.



c. Click [**OK**].

Return to the [Flat Table Height], [Print Origin], and [Printing Area] settings window.

MEMO

- If left without user input for approximately 3 minutes, the print-head carriage automatically returns to the standby position to prevent the print heads from drying out. Perform the procedure again.
- You can also set [**Print Origin**] with [**Numeric Input**].
  In [**Position Specification**], select [**Numeric Input**], and then enter a value for [**S**].

7. **Click [OK].**

[**Setup in progress.**] appears. Once setup is complete, you will be returned to the home screen, and the name of the registered media name and the printing area will appear.

Performing Printing

Procedure

1. **Output the print data.**

(1) **Start FlexiDESIGNER VersaSTUDIO Edition.**

(2) **Open the print data.**

(3) **Click**  .

The [**Send to Device**] dialog box appears.

(4) **In [Device], select the output machine (BD-8 or BD-12).**

(5) **Click [Print parameters].**

(6) **In the [Quality] tab, select the following.**

- [**Media Type**]: [**Rotary**]
- [**Print Quality**]: [**Standard**] or [**High Speed**]
- [**Mode**]: Select any print mode.
- [**Media Diameter**]: Enter the diameter of the object (media).

(7) **Click [OK].**

(8) **Click [Send].**

Printing starts.

MEMO

- For details on this procedure, refer to "Introduction to FlexiDESIGNER VersaSTUDIO Edition."
  https://downloadcenter.rolanddg.com/BD-8
- Output data created in commercial application software in VersaWorks. For details, see the VersaWorks First Step Guide.
  https://downloadcenter.rolanddg.com/VersaWorks7

Examples of Printing on Cosmetics

MEMO

Use the following link to view a reference video for this procedure. We recommend that you view this video to understand the overall flow of work.
https://vimeo.com/916974377/dee2530f0b

This section shows an example of printing text on lipstick.

Creating Printing Data

Create printing data using FlexiDESIGNER. See "Introduction to FlexiDESIGNER VersaSTUDIO Edition" for details on how to use FlexiDESIGNER.

Procedure

1. **Start up FlexiDESIGNER.**

2. **Set the printing area according to the procedure below.**

   (1) **Click the**  **(A) icon.**

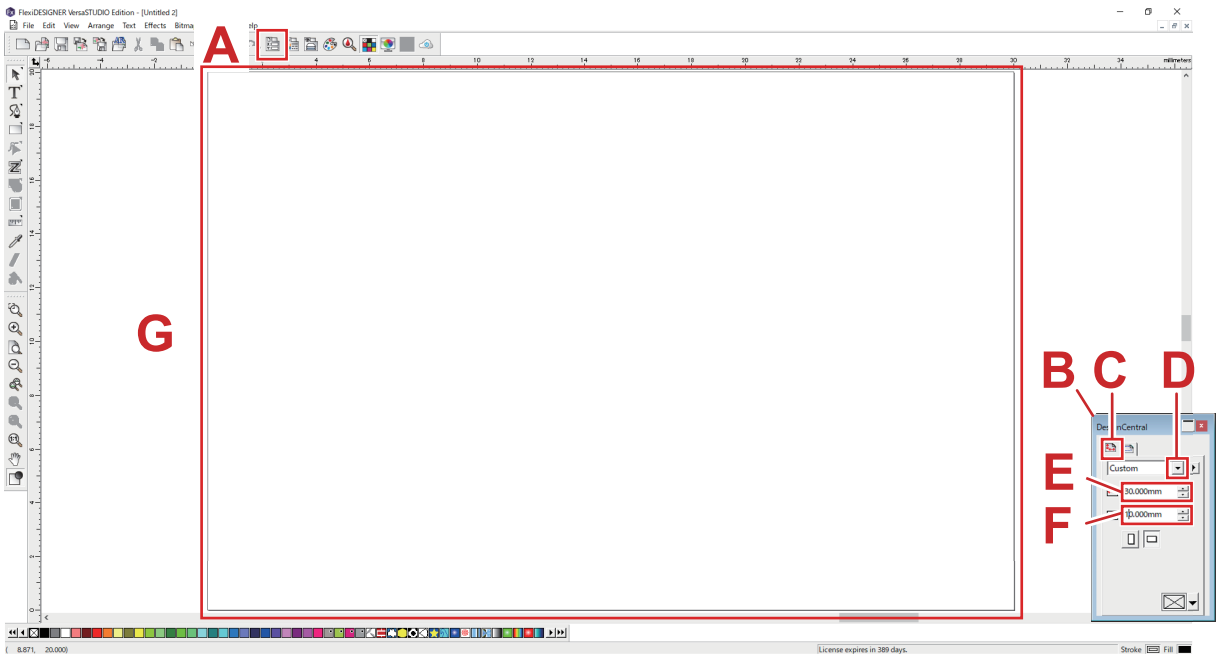
   The **[DesignCentral]** dialog box (B) opens.

   (2) **On the**  **tab (C), click the pull-down menu, and then select [Custom] (D).**

   (3) **Specify the printing area.**

   In this example, a printing area of 30 mm (1.18 in.) (E) × 10 mm (0.39 in.) (F) is set.

   The printing area frame (G) will appear in the design area.



3. **Create data for printing.**

Enter a name here, and apply a color to the text.

(1) **Click** .

(2) **Click a location close to where you want to enter the text, and then enter the text.**

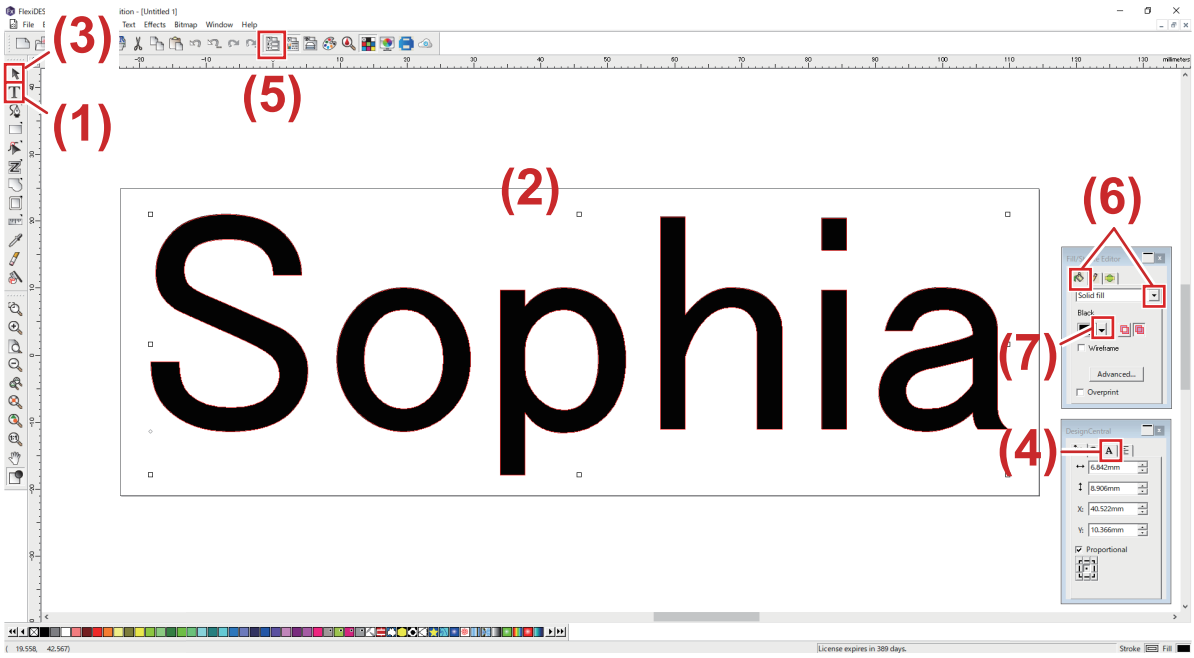
(3) **Click** , **and select the text entry.**

(4) **Click the** **tab in the [DesignCentral] dialog box to adjust the font and size, and align the text to any position.**

(5) **Click the** **icon.**

(6) **With the text selected, in the** **tab, click the pull-down menu, and then select [Solid fill].**

(7) **Select any color from the pull-down menu.**



4. Click [File]>[Save] to save the data.

5. Click [File]>[Close] to close the printing data created.

Placing and Setting Up the Object (Media)

Object setup can be performed while the front cover is open.

Procedure

1. Start Utility.

2. Open the front cover.

3. Install the rotary axis unit.

P. 7 Attaching/Detaching This Machine

4. Place the object on the machine, and then adjust the guide height and the position of the object.

Use the tail stopper when printing around the entirety of a cylindrical object, when printing layered colors, and in similar situations.

P. 30 Attaching the Object (Media)

5. Close the front cover.

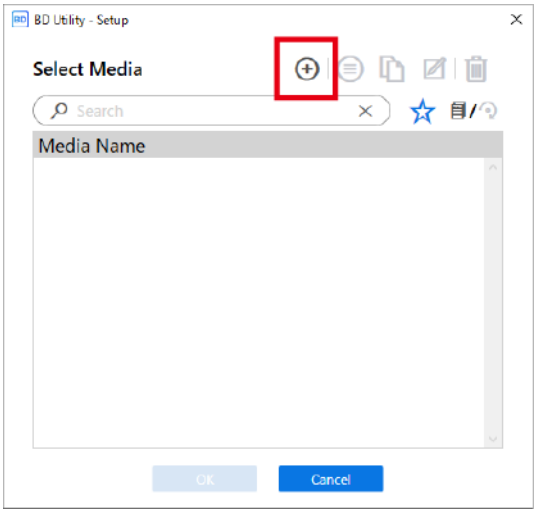
6. On the Utility home screen, click  [Setup].

7. Register/select the object.

> **MEMO**
>
> In Utility, "media" is used on the window used to register/manage objects.

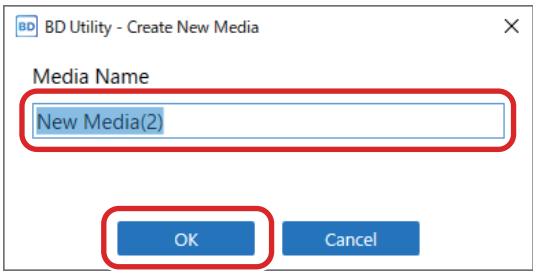
- **When printing on an object for the first time**

  a. Click ⊕.



  b. Enter a new media name and click [**OK**].

  Previously registered media names cannot be used. Enter a new media name.



  The flat table goes down to its lowermost point.

- **For an object that has already been registered for the rotary axis unit**

  a. Select the rotary axis unit media (media with a mark), and then click [**OK**].

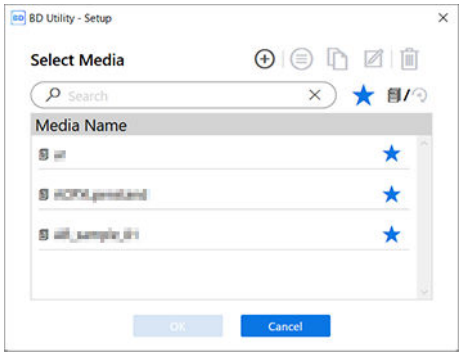
MEMO

- **We recommend that you set frequently used objects as favorites.**

  1. Click ☆ next to a registered media name to change this icon to ★.

  2. Click ☆ next to the search box.

     The icon changes to ★, and the list of media set as favorites appears.



- **You can display all registered objects.**
  If a rotary axis unit is not attached, the names of flat table media are displayed. If a rotary axis unit is attached, the names of rotary axis unit media are displayed.
  Click / or / to display all registered objects.
- You can use the favorites function and the search function to easily find registered objects.
- Media registered to the flat table cannot be selected for the optional item (rotary axis unit).

b. Step 8 is not required. Proceed to Step 9.

8. In the [Object Type] window, select one of the following, and then click [OK].

- [**Transparent**]: A hand placed on the other side of the object can be seen through it.
  If the object is transparent, select [**Others**] from the [**Transparent**] pull-down menu.
- [**Opaque**]: A hand placed on the other side of the object cannot be seen through it.

9. Click [Change] next to [Flat Table Height] to set the height of the object.

(1) **Click** .

The flat table will automatically move to the location for setting the flat table height.

MEMO

You can also move the flat table manually by clicking or on the right side of the window.

(2) **Click on the left side of the window to have the highest point of the object approach the head gap sensor.**

- Move it to a position several mm below what is considered to be the highest position.
- If the height position is unclear, open the front cover and make the adjustments from a close distance.

(3) **Click [Automatic Setup].**

The flat table moves and the head gap sensor detects the height of the object.

(4) **Click [OK].**

10. Select [Print Origin] from [Origin Relative] or [Center Relative].

This section explains how to configure settings when [**Origin Relative**] is selected.

MEMO

For details on [**Center Relative**], refer to the BD-12/BD-8 User's Manual.
BD-12/BD-8 User's Manual - Object (Media) Registration Items

11. Click [Change] next to [Print Origin] and [Printing Area] to set the printable area.

- [**Print Origin**] setting
  a. Select [**Pointer**] for [**Position Specification**].
  The print-head carriage moves to the bottom right point of the currently set printing area, and the pointer is lit.

b. Click , , , or to specify the print origin (lower-right corner of printing area).

Align the pointer to the printing-start location of the object installed (print origin).

- **[Printing Area]** setting

a. Select **[Printing Area]**.

The print-head carriage moves to the top left point of the currently set printing area, and the pointer is lit.

b. Click , , , or to specify the upper-left corner of the printing area.

Specify the printing area for the object installed using the pointer.

c. Click **[OK]**.

Return to the [Flat Table Height], [Print Origin], and [Printing Area] settings window.

MEMO

- If left without user input for approximately 3 minutes, the print-head carriage automatically returns to the standby position to prevent the print heads from drying out. Perform the procedure again.
- You can also set **[Print Origin]** with **[Numeric Input]**.
  In **[Position Specification]**, select **[Numeric Input]**, and then enter a value for **[S]**.

12. **Click [OK].**

[Setup in progress.] appears. Once setup is complete, you will be returned to the home screen, and the name of the registered media name and the printing area will appear.

RELATED LINKS

- P. 35 Setting Up the Object (Media)

Performing Printing

Procedure

1. **Open the printing data created in FlexiDESIGNER.**

Click **[File]**>**[Open...]** to open the saved printing data.

2. **Click** .

The **[Send to Device]** dialog box opens.

3. **Check the following.**

- **[Device]**: BD-8 or BD-12
- **[Number of prints]**: 1
- **[Output]**: **[Page]**

4. **Click [Print parameters].**

5. **In the [Quality] tab, select the following.**
   - [**Media Type**]: Rotary
   - [**Print Quality**]: Standard
   - [**Mode**]: CMYK (v)
   - [**Media Diameter**]: Diameter of object
     Enter the diameter of the object (media).

6. **Click [OK].**
   The Print Parameters window closes.

7. **Click [Send].**
   Printing starts.

8. **Once printing is complete, remove the object, and exit out of setup in Utility.**

Print Parameters (FlexiDESIGNER)

Selecting different options for the [**Media Type**] and [**Mode**] print parameters allows for different types of printing. These different types are listed below.

[Media Type]	[Quality]	[Mode]	Description
[**Rotary**] *1 *2	[**Standard**] *3 [**High Speed**]	[**CMYK**] [**White->CMYK**] [**CMYK->White**] [**White**]	The rotary axis unit is used to print on a cylindrical object.
[**Rotary with Primer**]*1*4	[**Standard**]*3 [**High Speed**]	[**Primer->CMYK**] [**Primer->White->CMYK**] [**Primer->CMYK->White**] [**Primer->White**]	Use this parameter when printing primer under the [**Rotary**] media type.
[**Rotary with Special Effects**]*2	[**Standard**]*3 [**High Speed**]	[**CMYK -> MatteVarnish**] [**MatteVarnish -> CMYK**]	Use this parameter when printing gloss on the [**Rotary**] media type.

*1 Ink type: Five colors (cyan, magenta, yellow, black, and white) and primer

*2 Ink type: Five colors (cyan, magenta, yellow, black, and white) and gloss

*3 Default setting

*4 It is difficult for ink to adhere to metal, PET, acrylic, glass, and similar substances. Using a primer improves ink adherence. However, it is difficult to improve this adherence if the substance has been coated or has otherwise undergone surface treatment such as glass coating, waterproofing, or stain proofing. Be sure to perform test printing with the actual object to check how well the ink adheres to it.

Maintenance and Trouble-shooting

Cleaning the Machine

Wipe away any ink or grime on the nozzle drop-out test stage, rollers, shafts, tail stopper, or guide areas as part of the daily cleaning procedure. Clean by wiping with a cloth moistened with neutral detergent diluted with water then wrung dry.

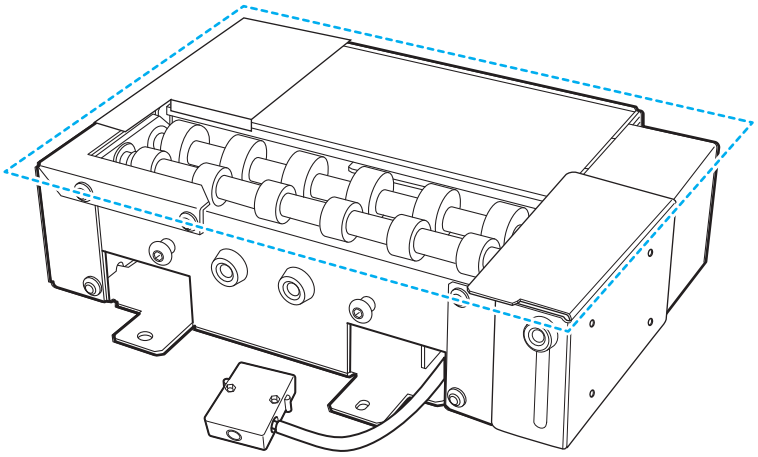
⚠ WARNING

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

Always unplug the power cord when attaching or removing parts and optional parts and when performing cleaning or maintenance that does not require the machine to be connected to a power source.
Attempting such operations while the machine is connected to a power source may result in injury or electrical shock.

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.
- Frequently clean the inside of the rotary axis unit using a vacuum cleaner or by wiping with a cloth moistened with water then wrung dry. If dust and dirt accumulate, they are likely to affix to printed materials.
- If ink or grime has adhered to the roller, the object may not rotate smoothly, resulting in printing misalignment.



Troubleshooting

The Machine Doesn't Run

Is the connector for the machine properly connected?

Make sure the connector is securely connected.

RELATED LINKS

- P. 8 How to install Ventilating Equipment

The Machine Rotates in Reverse or in One Direction

Is the connector for the machine properly connected?

Make sure the connector is securely connected.

RELATED LINKS

- P. 8 How to install Ventilating Equipment

Utility Does Not Recognize the Machine

Is the connector for the machine properly connected?

Make sure the connector is securely connected.

RELATED LINKS

- P. 8 How to install Ventilating Equipment

Dust and Dirt Adheres to the Object (Media)

Is cleaning performed on a daily basis?

Clean the printer and the rotary axis unit.

BD-12/BD-8 User's Manual - Cleaning the Machine
P. 49 Cleaning the Machine

The Object (Media) Does Not Rotate Smoothly

Is rotation impeded because the object is forcefully pushing against the guide?

Attach the object so it touches the guide gently.

Is rotation impeded because a tail stopper is forcefully pushing against an object?

Attach the tail stopper so it touches the object gently.

RELATED LINKS

- P. 30 How to install Ventilating Equipment

The Printing Position Is Offset

Does the object move left or right during printing?

Use the tail stopper and guide to keep the object from moving left or right.

RELATED LINKS

- P. 30 How to install Ventilating Equipment

Printing Color Is Uneven

Note that color may be uneven with some print data.

Print Data Is Sent but Not Printed

Is the size of the print data larger than the printing area?

Increase the size of the printing area or decrease the size of the print data before sending the print data.

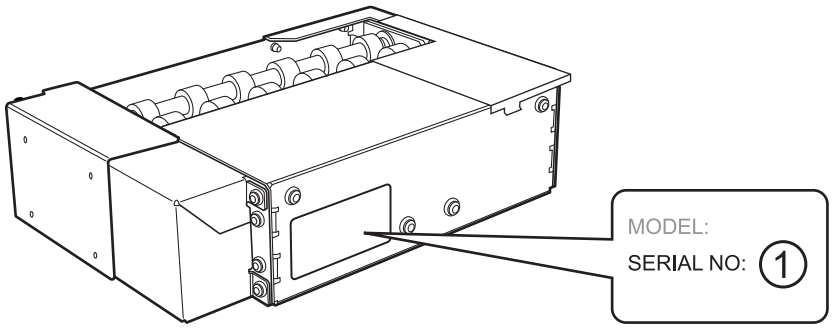
Is [Object] selected on the [Send to Device] screen in FlexiDESIGNER?

When sending print data with [**Object**] selected, the print data size will be slightly larger, possibly causing the print data to be larger than the printing area. Increase the size of the printing area or decrease the size of the print data before sending the print data.

Appendix

Specifications

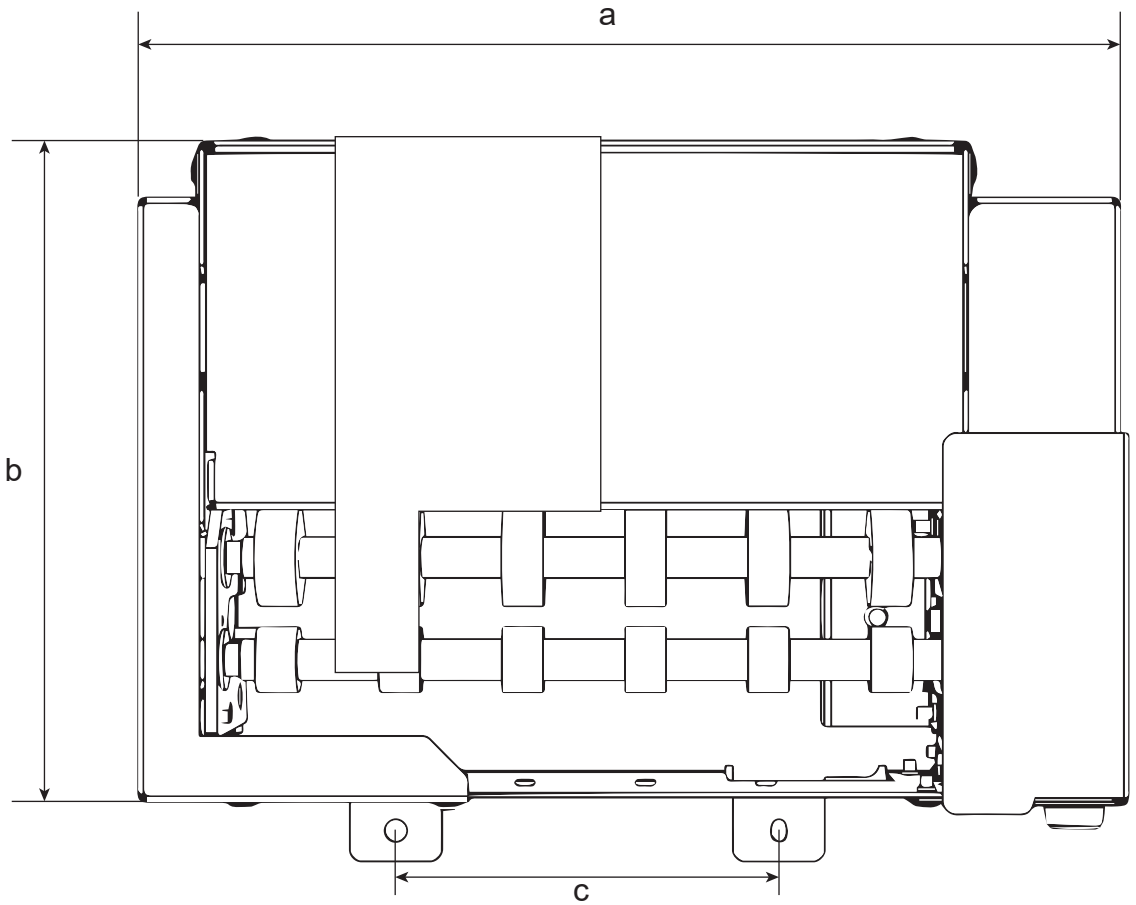
Location of the Serial Number Label

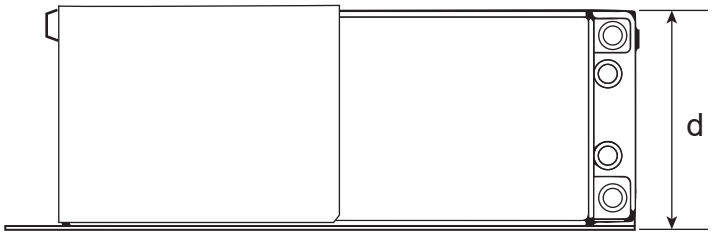


①	Serial number This is required when you seek support. Never peel off the label.

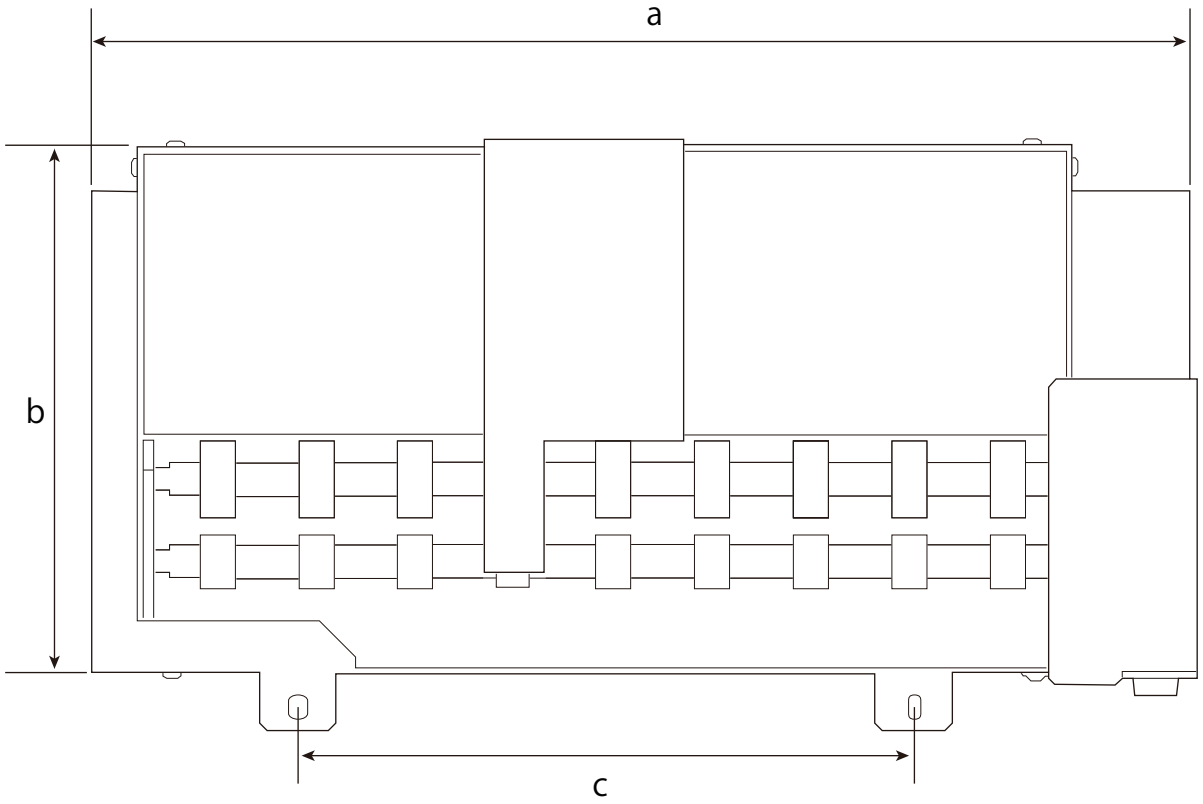
Dimensional Drawings

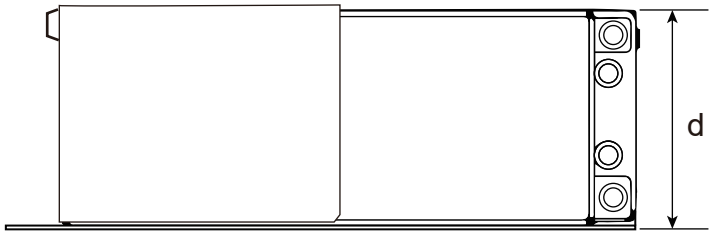
OA-RA-8





OA-RA-12





	OA-RA-8	OA-RA-12
a	238 mm (9.37 in.)	333 mm (13.11 in.)
b	160 mm (6.3 in.)	
c	100 mm (3.94 in.)	195 mm (7.68 in.)
d	61 mm (2.4 in.)	

Specifications

		OA-RA-8	OA-RA-12
Rotation method		Motor drive	
Rotation angle		± 360° or higher	
Loadable objects	Shape	Cylindrical shape (an undulating surface that does not affect rotation)	
	Length	50 mm–170 mm (1.97 in.–6.69 in.)	50 mm–265 mm (1.97 in.–10.43 in.)
	Diameter	10 mm–50 mm (0.39 in.–1.97 in.)	
	Weight	0.01 kg–1 kg (0.03 lb.–2.2 lb.)	0.01 kg–1.5 kg (0.03 lb.–3.30 lb.)
Maximum printing area	Width	170 mm (6.69 in.)	265 mm (10.43 in.)
	Feed direction	Circumference of the object	
Dimensions (Width × Depth × Height)		240 mm × 184 mm × 61 mm (9.45 in. × 7.24 in. × 2.4 in.)	335 mm × 184 mm × 60 mm (13.19 in. × 7.24 in. × 2.36 in.)
Unit weight		2 kg (4.4 lb.)	2.5 kg (5.51 lb.)
Included Items		Rotary axis unit, rotary axis unit positioning screws, rotary axis unit fixing screws, hexagonal wrench, User's Manual Guide