

# ***MC-BDS***

## **Setup Guide**

This clamp is used to mill “BDLoad,” workpieces made by Merz Dental GmbH, with the DWX-51D/DWX-52D.

In addition to BDLoad, disk-type materials (with step) and pin-type materials can also be attached.

### **Attachable workpieces**

- **“BDLoad” made by Merz Dental GmbH**
- **Disk type (with step)**
  - Step section: 98.5 mm (3.88 in.) (diameter), 10 mm (0.39 in.) (height)**
  - Body section: 95 mm (3.74 in.) (diameter), 60 mm (2.36 in.) (height max.)**
- **Pin type**
  - Pin diameter: 6 mm (0.24 in.)**

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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 and store it in a safe location.
  - At the time of purchase, verify that the provided “Warranty” is affixed with the dealer’s signature, address, and purchase date. Keep this warranty in a safe location.
  - Unauthorized copying or transferal, in whole or in part, of this manual is prohibited.
  - The contents of this operation manual and the specifications of this product 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 misprint or error, please inform Roland DG Corporation.
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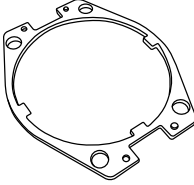

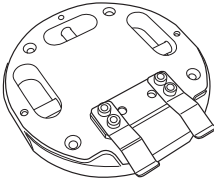


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# Getting Started

## Included Items

Check that all the items are included.

 <p>BDS clamp (1), BDS clamp cap (1)</p>	 <p>BDS blank adapter (1)</p>	 <p>Hexagonal wrench 3 mm (1), 2 mm (1)*1</p>
 <p>Automatic correction jig (1)</p>	 <p>Screws (4)*1</p>	 <p>Pins (2)*2</p>

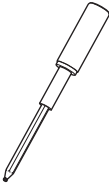

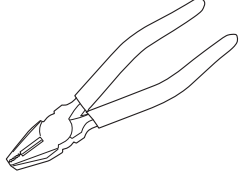
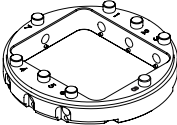
\*1: This is used when attaching the BDS clamp to the DWX-51D. It is not used with the DWX-52D.

\*2: This is used when reattaching the standard clamp included with the machine.

## Non-included Items to Use

Non-included items to use when attaching the clamp and workpiece are listed below.

Prepare these items.

 <p>Torque screwdriver (included with the machine; 1)</p>	 <p>Detection pin (included with the machine; 1)</p>	 <p>Commercially available pliers (1)</p>
 <p>Pin-type material adapter (1)*1</p>	<p>*1: DWX-51D: "ZV-52D" (sold separately; adapter included with the DWX-51D cannot be used) DWX-52D: Pin-type material adapter included with the DWX-52D</p>	

### Updating the Software to the Latest Version

To use this clamp to mill workpieces, it is necessary to update VPanel. If you are using the DWX-51D, you will also have to update the machine's firmware.

The latest versions of the firmware and VPanel can be downloaded from DGSHAPE's product support page, which can be accessed from the following URL.

[http://www.dgshape.com/en\\_GL/support/mc-bds/manuals](http://www.dgshape.com/en_GL/support/mc-bds/manuals)

# Attaching the Clamp

## Step 1: Removing the Standard Clamp Included with the Machine

☞ P. 5 "DWX-51D"

☞ P. 8 "DWX-52D"

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### DWX-51D

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#### Procedure

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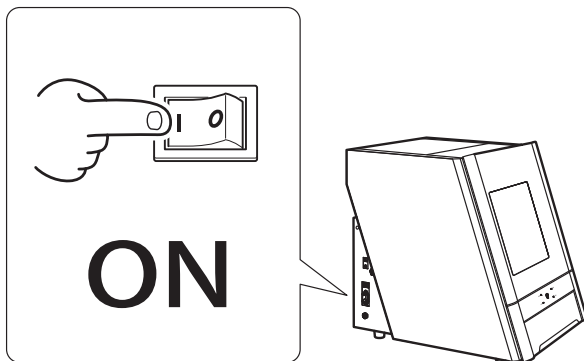
- 1** Close the machine's front cover, and then turn on the power switch.

The machine starts the initial operations. Wait for the status light to turn on.

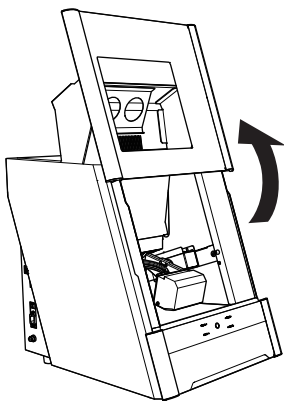
#### *Important*

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Do not open the front cover during the initial operations.



- 2** Open the front cover.

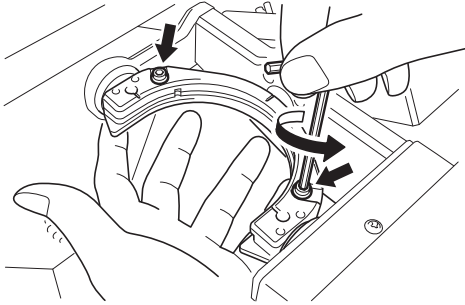


## Attaching the Clamp

- 3** While supporting the standard clamp from below with your hand, use a 3 mm hexagonal wrench to remove the two screws.

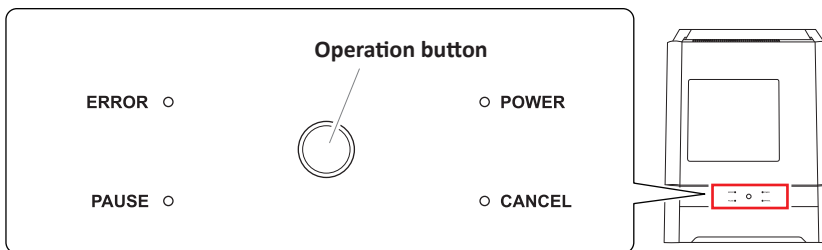
When you remove the two screws, the bottom clamp will come loose, so support it with your hand to prevent it from dropping.

Remove the springs together with the screws. The springs are easy to lose, so exercise caution to prevent this.



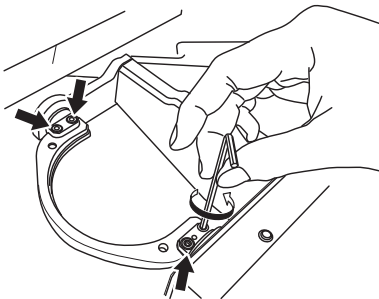
- 4** Close the front cover, and then press the operation button on the built-in panel.

The standard clamp rotates 180 degrees and stops.

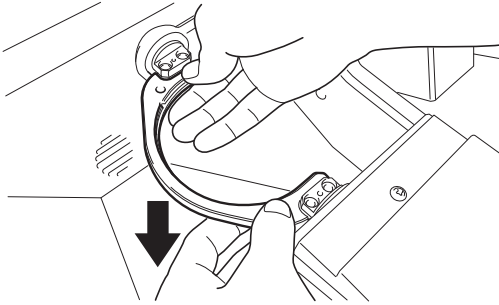


- 5** Open the front cover.

- 6** Use a hexagonal wrench (3 mm) to remove the four screws.



- 7** Pull the standard clamp down to remove it.



- 8** Close the front cover, and then press the operation button on the built-in panel.

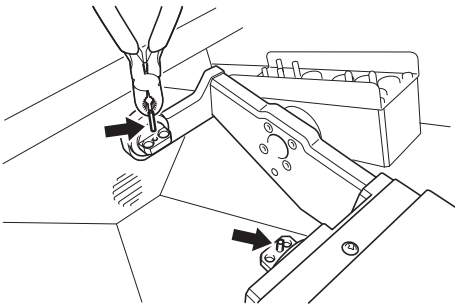
The rotary axis rotates 180 degrees and stops.

- 9** Open the front cover.

- 10** Use a pair of commercially available pliers to pull out the two pins.

This operation is unnecessary if the pins were removed together with the standard clamp in step 7.

If the pins are stiff and difficult to remove, they can be made easier to remove by crushing them slightly with a pair of pliers. Attempting to remove the pins forcibly may lead to your hands or other body parts striking the front cover, resulting in injury. Do not reuse pins that have been removed.



## Attaching the Clamp

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DWX-52D

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### Procedure

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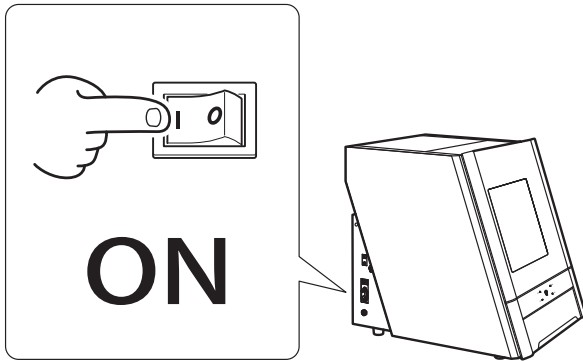
- 1 **Close the machine's front cover, and then turn on the power switch.**

The machine starts the initial operations. Wait for the status light to turn on.

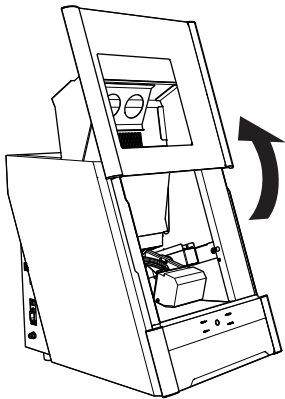
### Important

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Do not open the front cover during the initial operations.

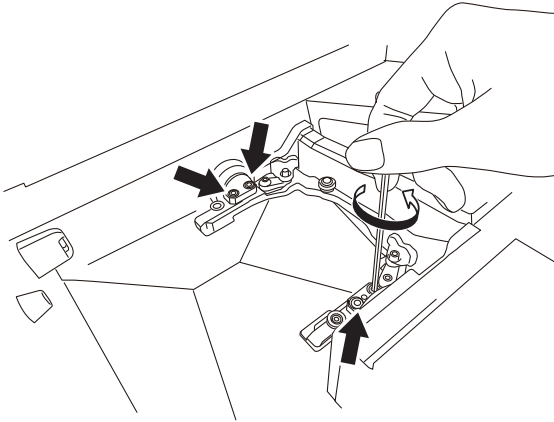


- 2 **Open the front cover.**

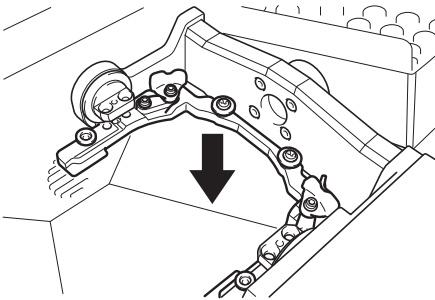




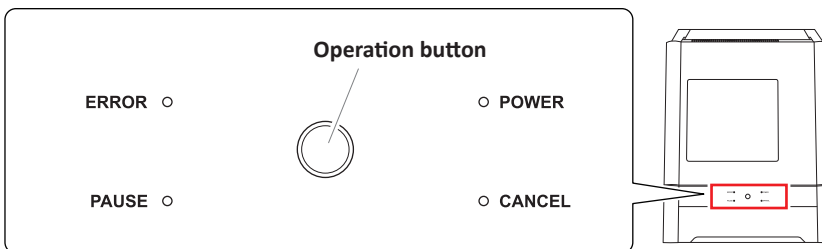
- 3** Use a 3 mm hexagonal wrench to remove the four screws of the standard clamp.  
Reuse the four removed screws when attaching the BDS clamp.



- 4** Pull the standard clamp down to remove it.



- 5** Close the front cover, and then press the operation button on the built-in panel.  
The rotary axis rotates 180 degrees and stops.

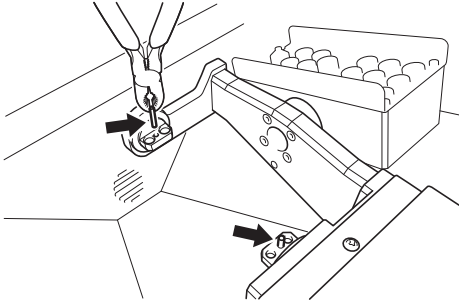


- 6** Open the front cover.

## Attaching the Clamp

### 7 Use a pair of commercially available pliers to pull out the two pins.

This operation is unnecessary if the pins were removed together with the standard clamp in step 0. If the pins are stiff and difficult to remove, they can be made easier to remove by crushing them slightly with a pair of pliers. Attempting to remove the pins forcibly may lead to your hands or other body parts striking the front cover, resulting in injury. Do not reuse pins that have been removed.



### 8 Close the front cover, and then press the operation button on the built-in panel.

The rotary axis rotates 180 degrees and stops.

## Step 2: Attaching the BDS Clamp

☞ P. 10 "DWX-51D"

☞ P. 12 "DWX-52D"

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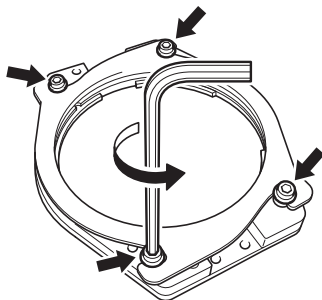
### DWX-51D

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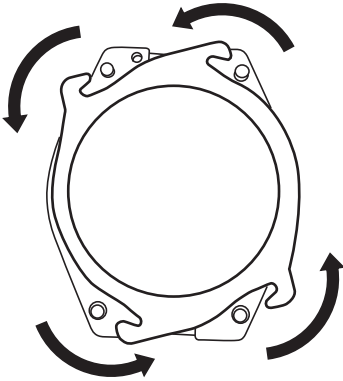
#### Procedure

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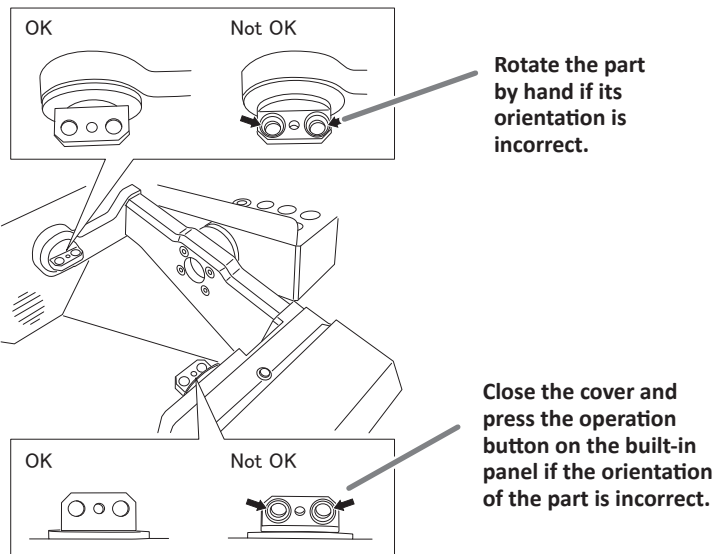
### 1 Use a 3 mm hexagonal wrench to rotate the BDS clamp screws through approximately four turns to loosen them. (4 locations)



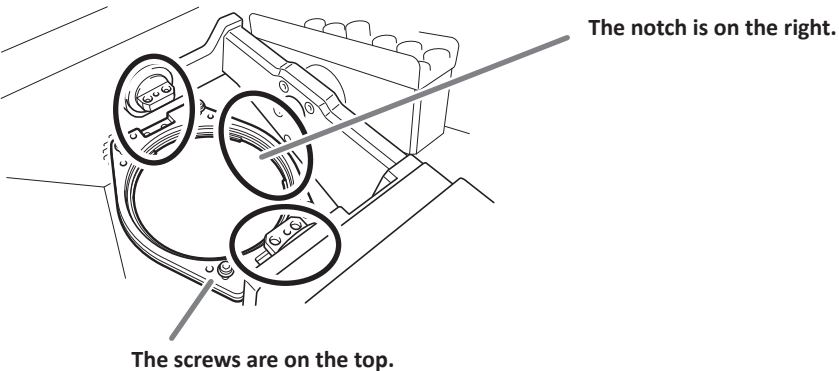
- 2 Rotate the BDS clamp cap in the direction of the arrows to remove it.



- 3 Orient the parts as shown in the figure.



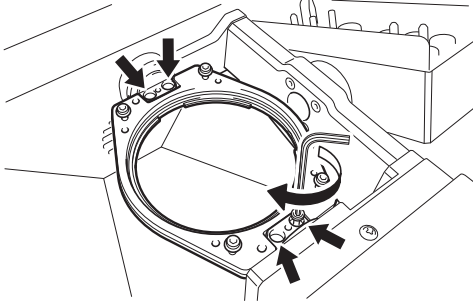
- 4 Orient the BDS clamp as shown in the figure, and then insert it from the bottom to the top of the rotary axis.



## Attaching the Clamp

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- 5** Tighten the four screws to secure the BDS clamp to the rotary axis.  
Use the included screws and tighten them with a 2 mm hexagonal wrench.



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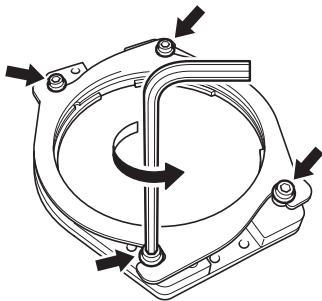
DWX-52D

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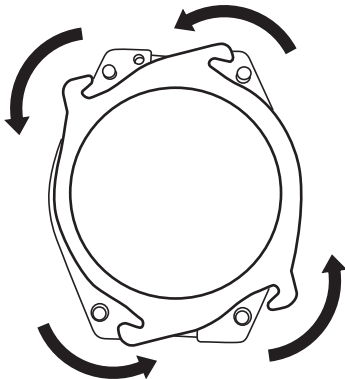
### Procedure

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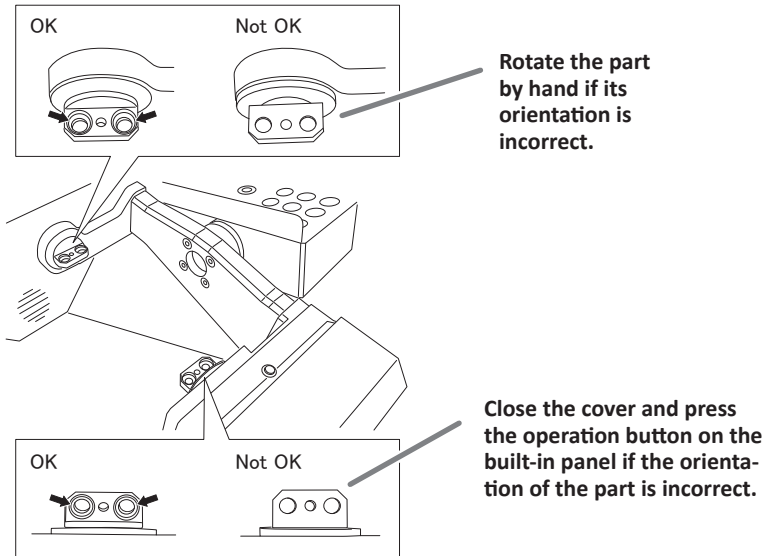
- 1** Use a 3 mm hexagonal wrench to rotate the BDS clamp screws through approximately four turns to loosen them. (4 locations)



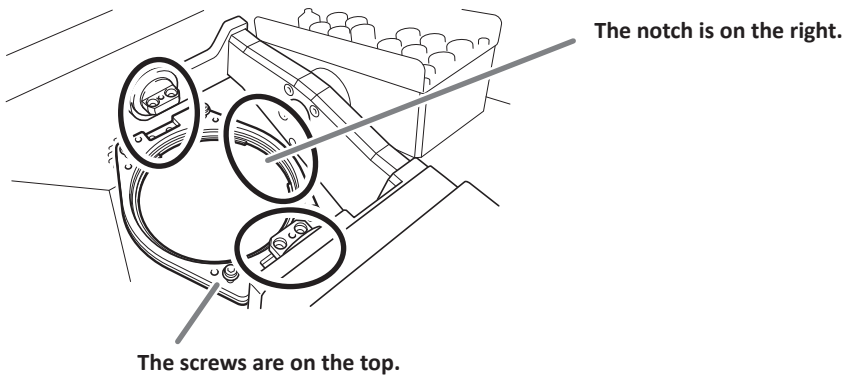
- 2** Rotate the BDS clamp cap in the direction of the arrows to remove it.



- 3** Check the orientation of the parts shown in the figure.

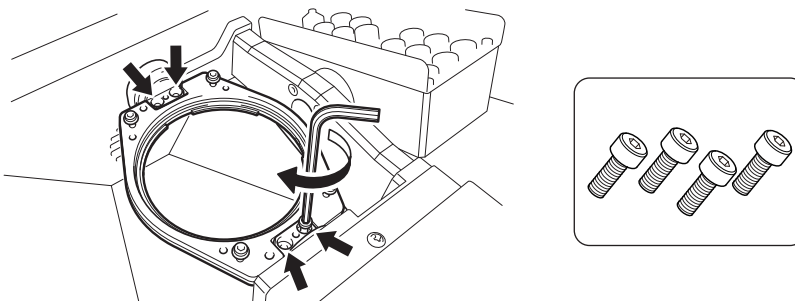


- 4** Orient the BDS clamp as shown in the figure, and then insert it from the bottom to the top of the rotary axis.



- 5** Tighten the four screws to secure the BDS clamp to the rotary axis.

Use the screws from step ① in “Step 1 Removing the Standard Clamp Included with the Machine” and tighten them with a 3 mm hexagonal wrench.

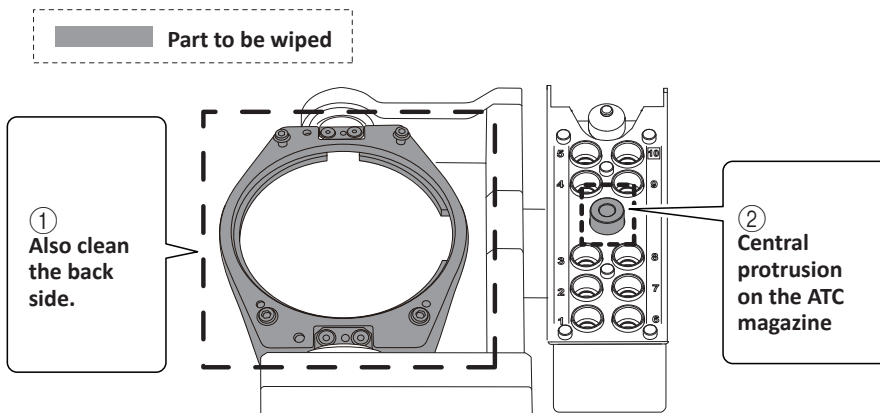


## Step 3: Attaching the Automatic Correction Jig

### Procedure

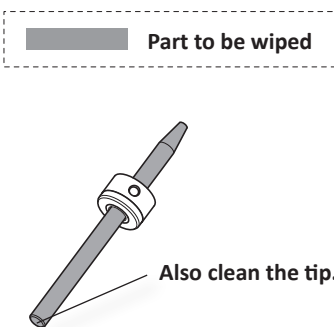
- 1 Remove any debris from the vicinity of the BDS clamp.
- 2 Use the cloth for maintenance and care included with the machine to wipe parts (1) and (2) in the following figure clean.

If any dirt is present in these locations, it may not be possible to perform the correction properly.



- 3 Use the cloth for maintenance and care included with the machine to wipe the detection pin clean.

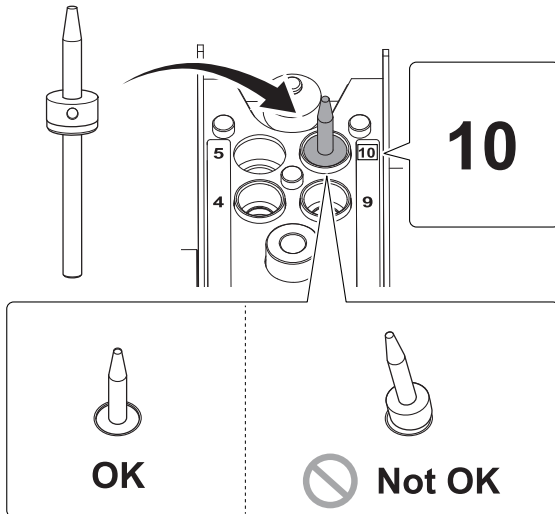
If any dirt is present in these locations, it may not be possible to perform the correction properly.



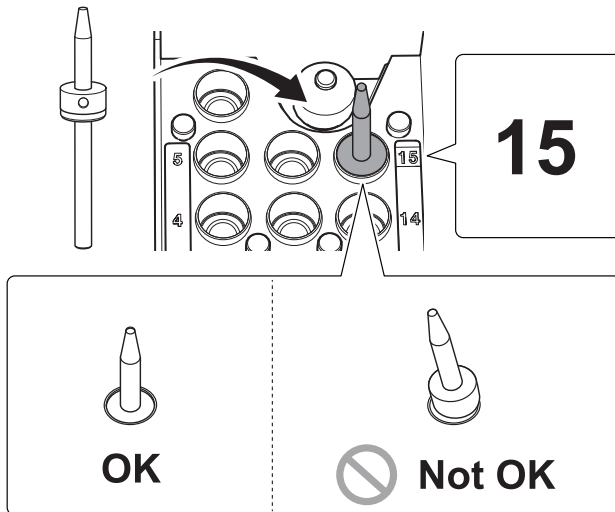
**4** Set the detection pin in the ATC magazine.

Insert the detection pin firmly.

Insert it in slot 10 for the DWX-51D.



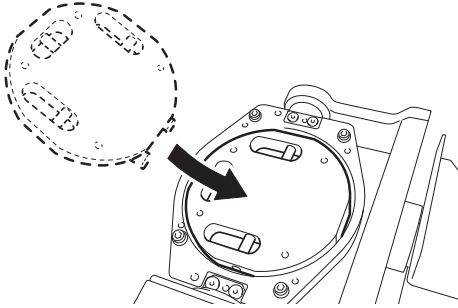
Insert it in slot 15 for the DWX-52D.



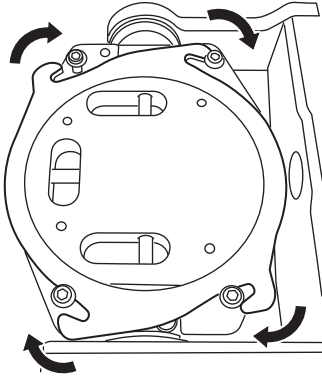
## Attaching the Clamp

- 5** Orient the automatic correction jig as shown in the figure, and then insert it into the BDS clamp.

Insert the depressions on the back of the jig into the notches on the BDS clamp.



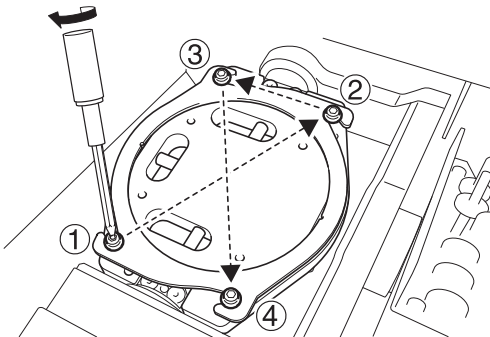
- 6** Rotate the BDS clamp cap in the direction of the arrows to bring it into contact with the screws.



- 7** While pushing the BDS clamp cap against the screws, use a torque screwdriver to tighten the four screws.

Tighten the screws until they click into place.

Tighten the screws a little at a time across the diagonals.



- 8** Close the front cover.



## Step 4: Correcting the Rotary Axis Position

This explanation uses the windows from VPanel for DWX-51D.

### Procedure

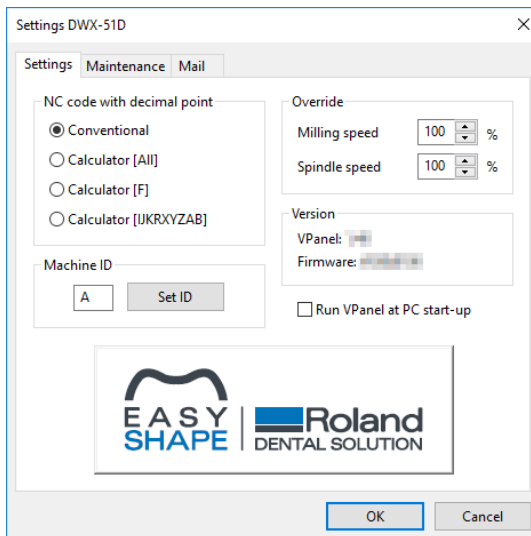
#### 1 Show VPanel.

#### 2 Open the [Settings] window.

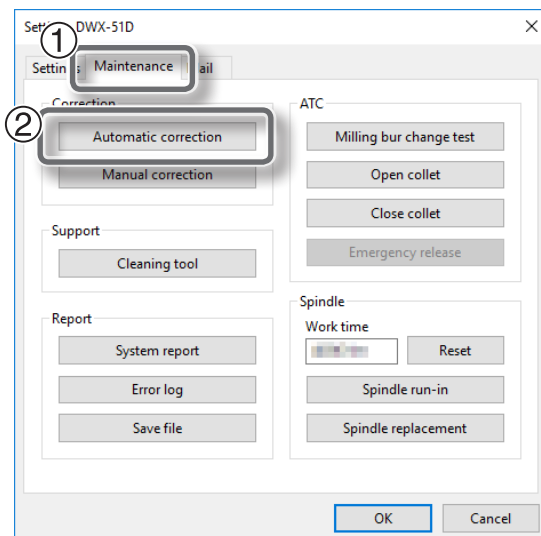
(1) In the VPanel top window, select the machine to operate.

(2) Click .

The [Settings] window is displayed.

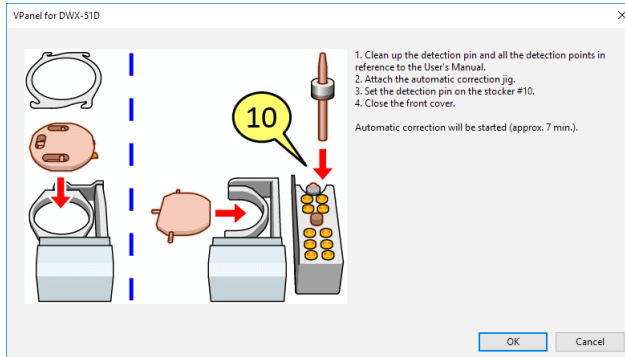


#### 3 Click the [Maintenance] tab, and then click [Automatic correction].



## Attaching the Clamp

- 4** Check that the work displayed on the screen is complete.

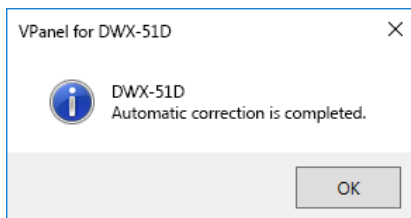


- 5** Click [OK].

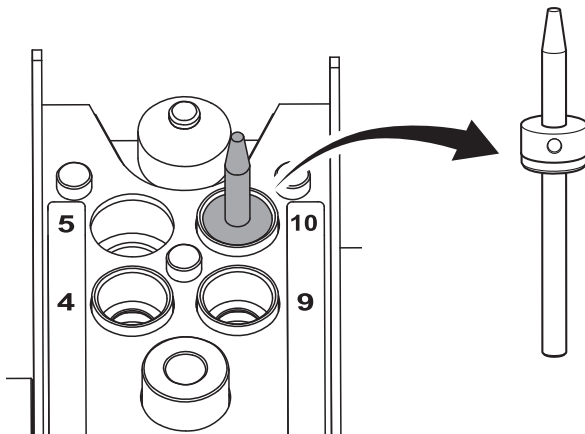
The automatic correction starts.

- 6** When a message indicating that the operation is complete appears, click [OK].

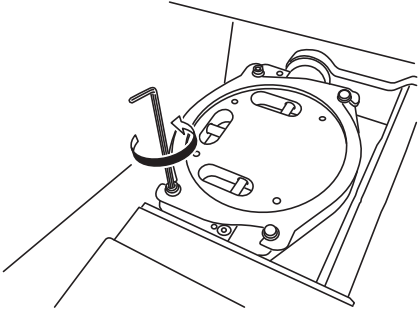
Automatic correction is complete.



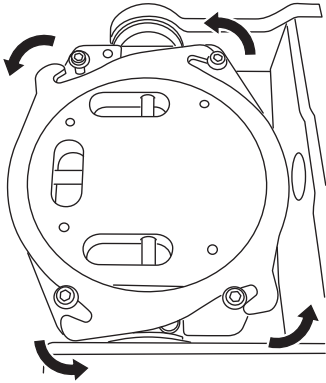
- 7** Open the front cover and remove the detection pin.



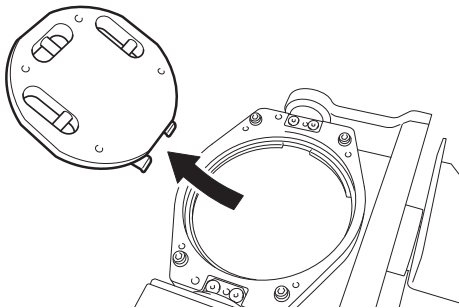
- 8 Use a 3 mm hexagonal wrench to rotate the BDS clamp screws through approximately 10 turns to loosen them. (4 locations)



- 9 Rotate the BDS clamp cap in the direction of the arrows to remove it.



- 10 Remove the automatic correction jig.

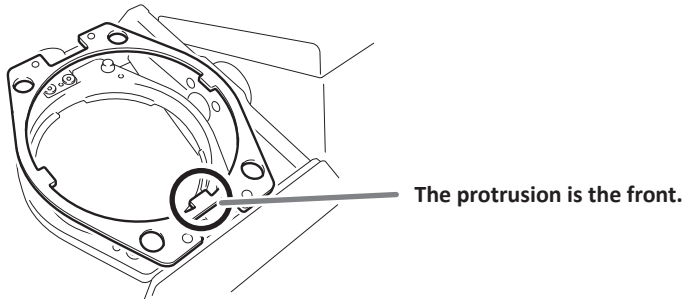


# Attaching Workpieces

## Attaching “BDLoad” Workpieces Made by Merz Dental GmbH

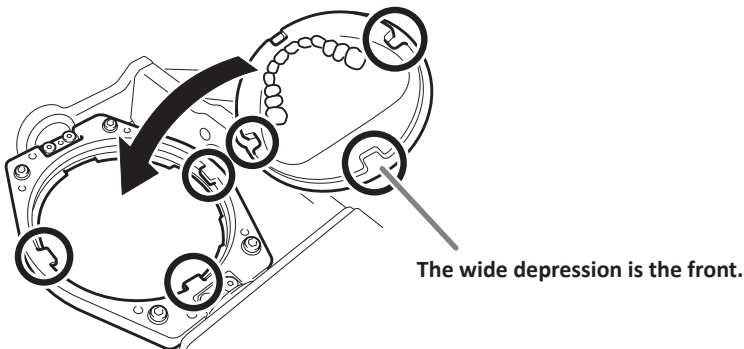
### Procedure

- 1 Open the front cover.
- 2 Attach the BDS blank adapter with the orientation in the figure.

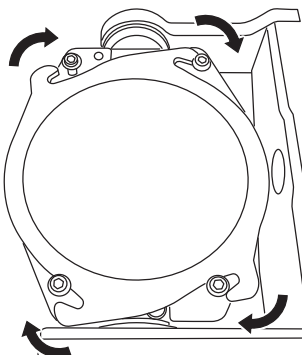


- 3 Turn the workpiece over and insert its depressions into the protrusions on the BDS blank adapter.

If the workpiece interferes with the screws, loosen the screws before attaching the workpiece.



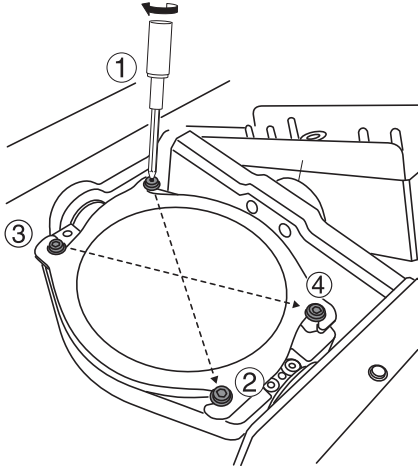
- 4 Rotate the BDS clamp cap in the direction of the arrows to bring it into contact with the screws.



- 5** While pushing the BDS clamp cap against the screws, use a torque screwdriver to tighten the four screws.

Tighten the screws until they click into place.

Tighten the screws a little at a time across the diagonals.

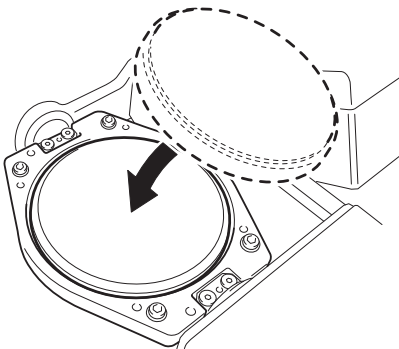


- 6** Close the front cover.

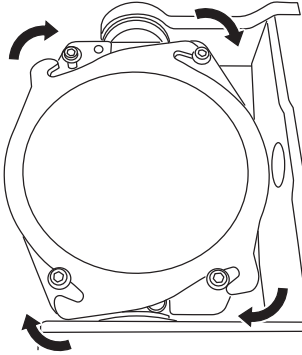
## Attaching Disk Workpieces

### Procedure

- 1** Open the front cover.
- 2** Remove the adapter and cap if they are attached to the clamp.
- 3** Set the disk workpiece on the clamp.



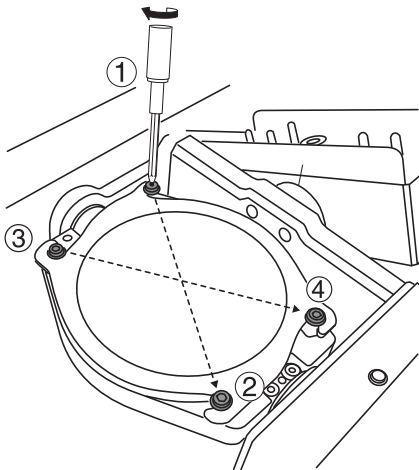
- 4** Rotate the BDS clamp cap in the direction of the arrows to bring it into contact with the screws.



- 5** While pushing the BDS clamp cap against the screws, use a torque screwdriver to tighten the four screws.

Tighten the screws until they click into place.

Tighten the screws across the diagonals.



- 6** Close the front cover.

## Attaching Pin-type Materials

To attach pin-type materials, a dedicated adapter is required.

DWX-51D: "ZV-52D" (sold separately; adapter included with the DWX-51D cannot be used)

DWX-52D: Pin-type material adapter included with the DWX-52D

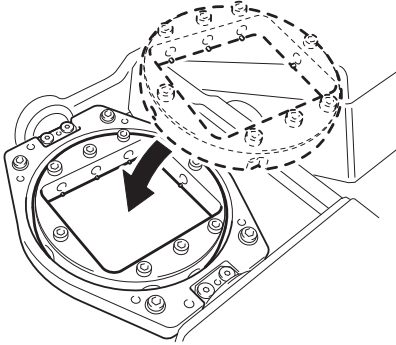
### Procedure

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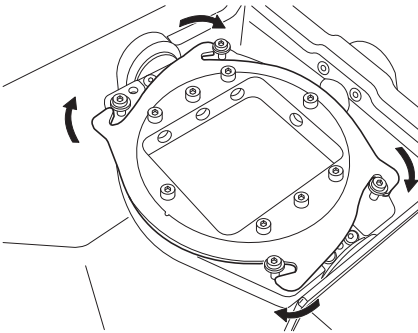
- 1** Open the front cover.
- 2** Remove the adapter and cap if they are attached to the clamp.

- 3** Orient the pin-type material adapter as shown in the figure, and then insert it into the BDS clamp.

Insert the depressions on the back of the adapter into the notches on the BDS clamp.



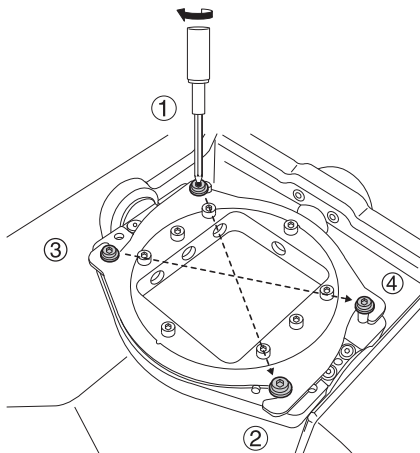
- 4** Rotate the BDS clamp cap in the direction of the arrows to bring it into contact with the screws.



- 5** While pushing the BDS clamp cap against the screws, use a torque screwdriver to tighten the four screws.

Tighten the screws until they click into place.

Tighten the screws a little at a time across the diagonals.

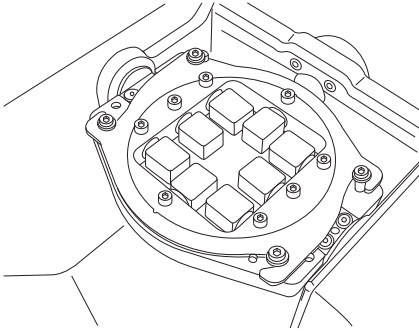


## Attaching Workpieces

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**6** Attach the workpiece to the pin-type material adapter.

For details on how to attach the workpiece, see the User's Manual of the milling machine.



**7** Close the front cover.



