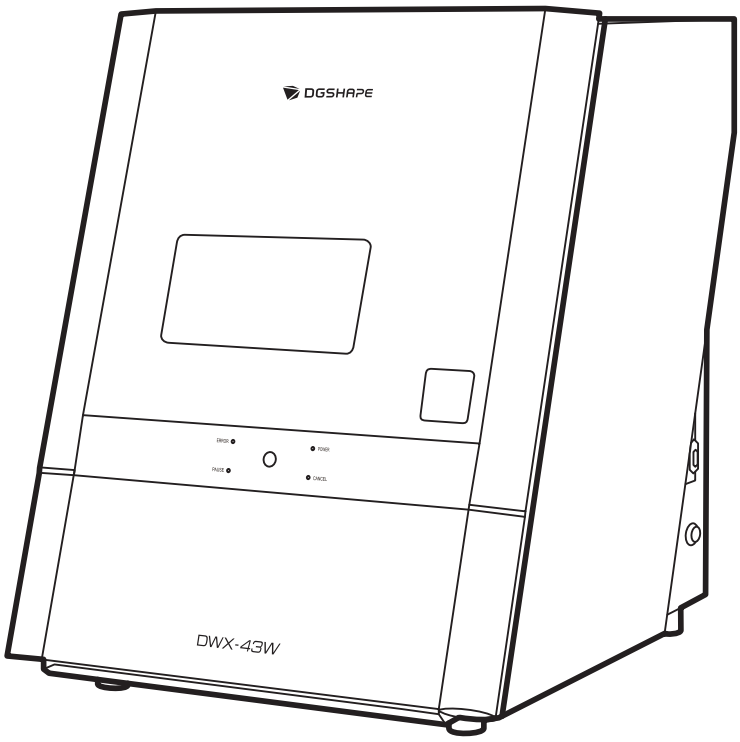
DWX-43W

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.
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- 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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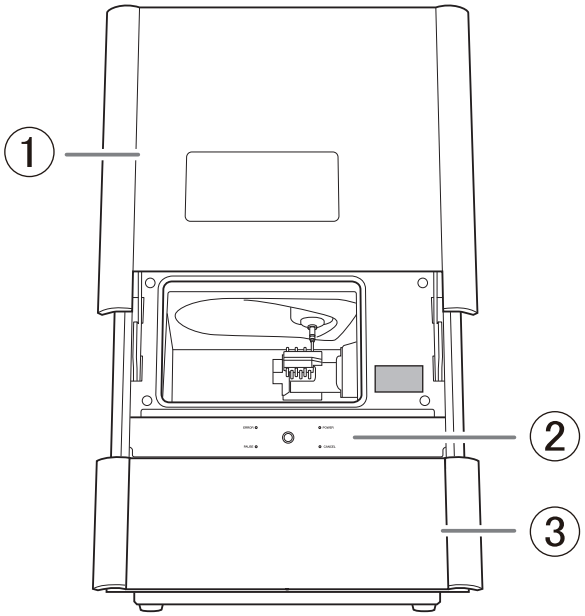
Basic Information

Part Names and Functions

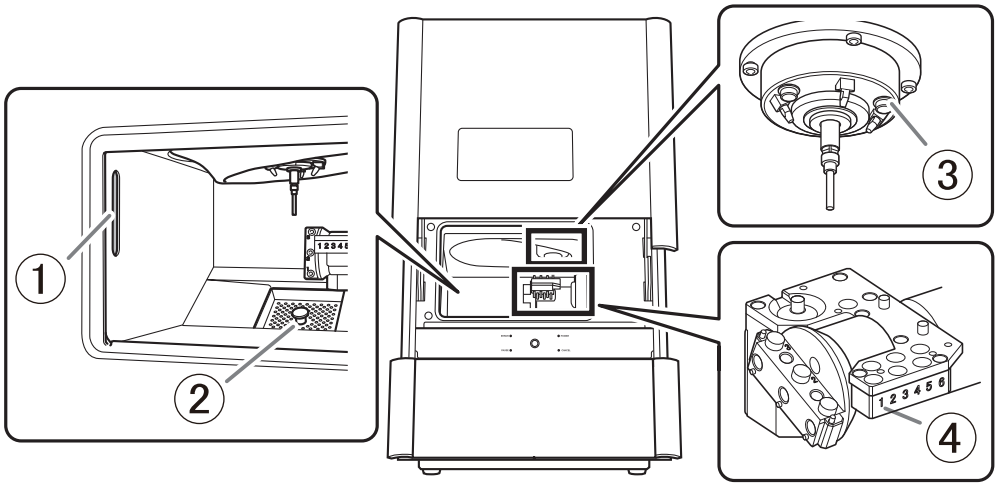
Front



①	Front cover	Open the front cover to attach or remove milling workpieces, change tools, or perform cleaning or maintenance. *1
②	Built-in panel	The LED lights on the built-in panel display the status of the machine.
③	Bottom cover	Stores the coolant tank. It also includes an area for storing items such as replacement tools and maintenance parts.

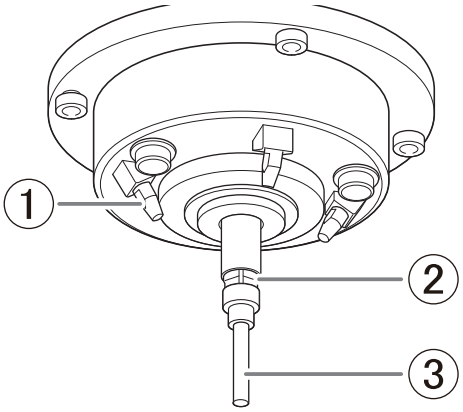
*1 For safety while the machine is operating, the front cover is locked and cannot be opened.

Inside the Front Cover



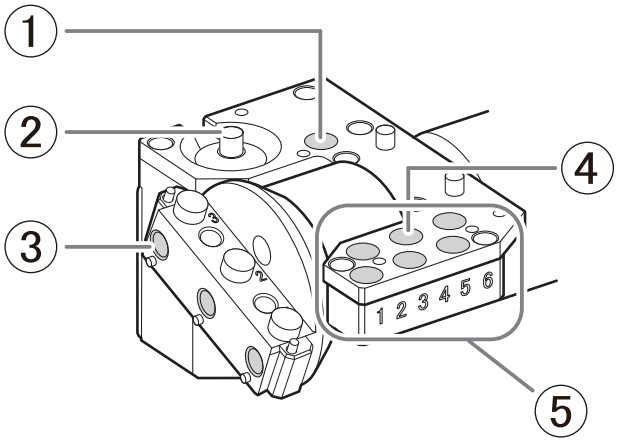
①	Status light	The illumination of flashing of the light indicates the status of the machine.
②	Garbage receptacle	A rough mesh surface catches milling tools, workpieces, large milling waste, and other items in order to prevent them from falling.
③	Spindle head	With the milling bur held by the collet, this rotates and cuts the material as coolant flows.
④	Rotary axis unit	Rotates the workpiece mounting part to which the material to mill is attached, allowing the milling bur to cut the material according to the CAM data sent to the machine.

Spindle head



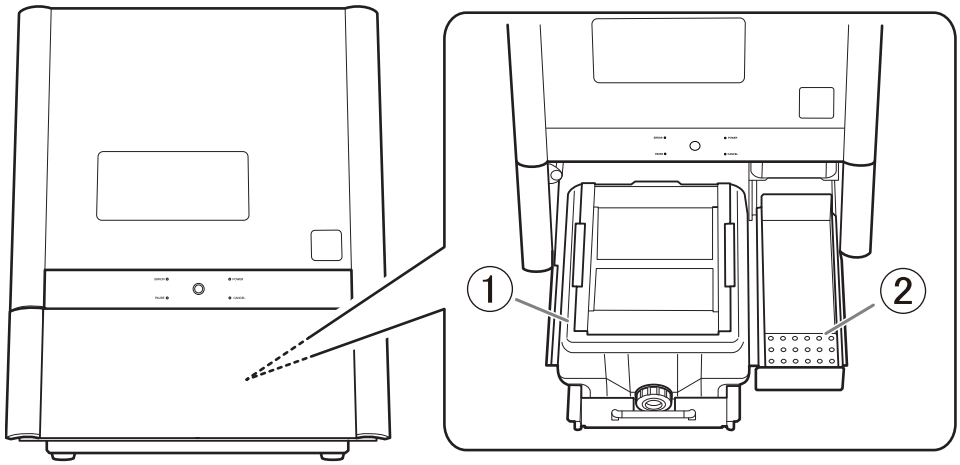
①	Coolant nozzle	The coolant is sprayed from this nozzle. Clean using the included nozzle cleaner.
②	Collet	This tool is used to secure the milling bur. It needs to be maintained before the start of operations each day. This part is attached to the tip of the spindle unit and grips the milling bur or detection pin used in milling and correction. The collet is a part that wears out. To maintain highly accurate milling quality, replace it at the appropriate time.
③	Dummy pin	This is a milling bur dummy. It is attached to the spindle upon shipment. A malfunction may occur if the collet does not grasp anything, so have it grasp the dummy pin when it is not grasping a milling bur.

Rotary axis unit



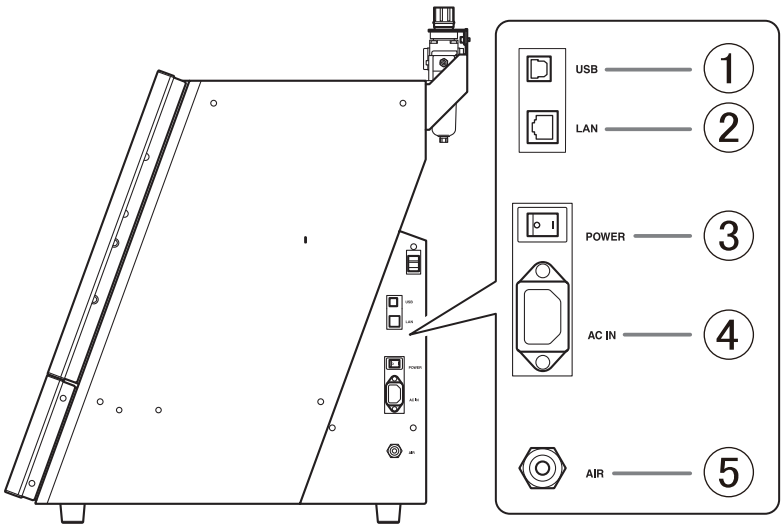
①	Dummy pin stocker	This is a stocker dedicated for the dummy pin. Do not set a milling bur in this stocker. The dummy pin gripped by the collet is set at the start of milling or correction. Also, do not remove the dummy pin that is returned to this stocker unless there are instructions to do so.
②	Milling bur sensor	Judges whether the amount of extension of the milling bur gripped by the spindle unit is appropriate. To maintain good sensor accuracy, clean this part periodically.
③	Mounting part	This is the part which mounts the workpiece. By installing the included holders, up to six workpieces can be attached.
④	Stocker	This is the part where the milling burs are set.
⑤	ATC magazine	Up to six milling burs can be set in this ATC-compliant magazine. ATC (Auto Tool Changer) is a function for automatically replacing the milling burs to match the milling data. Transports milling burs and detection pins used in milling to the spindle unit. When milling data is sent from the computer, the spindle unit grips the milling bur in the stocker with the specified number, and milling starts.

Inside the Bottom Cover



①	Coolant tank	This is the tank that holds the coolant. The coolant must be replaced and the filters must be cleaned periodically.
②	Storage	Milling burs and other items can be stored here. It has two levels. The upper level is exactly large enough to fit the included maintenance kit case.

Side/Rear



①	USB connector	Use this connector to connect the USB cable between this machine and the computer.
②	LAN connector	Use this connector to connect the LAN cable between this machine and the computer.
③	Power switch	Turns the machine's power on and off.
④	Power cord connector	Connect the supplied power cord to this connector.
⑤	Compressed air intake	This is the intake for the compressed air adjusted by the regulator.

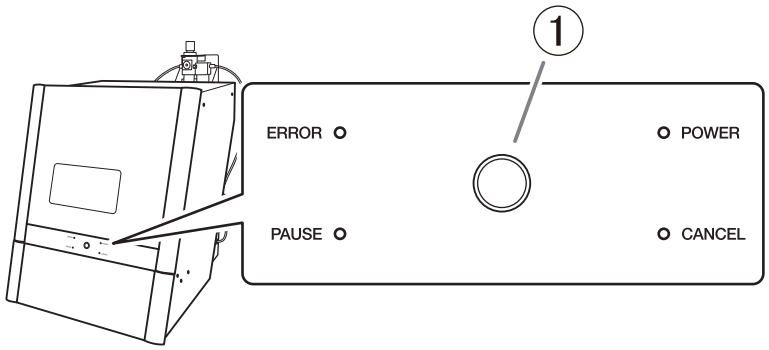
RELATED LINKS

- DWX-43W Setup Guide

Milling Machine Display

Built-in panel

During machine operation, the machine status is indicated by the LED lights on the built-in panel. Operations such as milling pause and resuming, and error correction, can be performed using the operation button (①) in the center of the built-in panel.



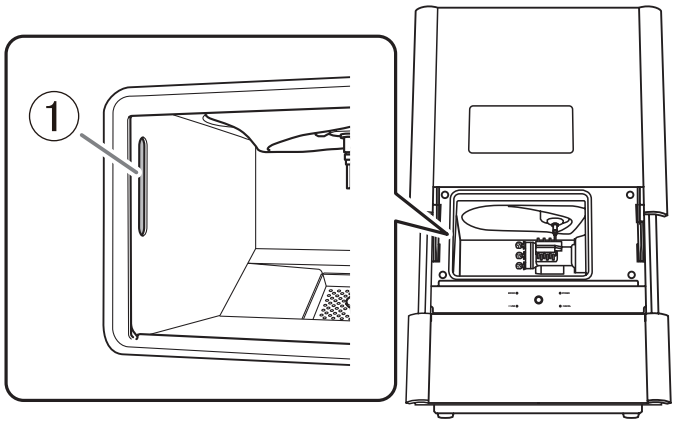
[ERROR]	Flashes when an error has occurred.		
[PAUSE]	Illuminates when operation is paused. Flashes when operation is ongoing (from the point when the operation button is pressed during milling to the point when operation is paused).		
[POWER]	Lights when the power is turned on.		
[CANCEL]	Flashes when data is being cancelled and during the initial operations. Milling data received while this light is flashing will be cancelled.		
[Operation Button]	Flashes during the initial operations and when mechanisms near the spindle unit are operating. Lights under any other status while the power is on.		
	During milling	Press	Pauses or resumes operation. Clears some errors.
		Hold	Aborts milling or clears some errors.
	During standby	Press	Rotates the rotary axis by 180 degrees.
		Hold	Clears some errors (when an error has occurred).

RELATED LINKS

- P. 178 Message Handling

Status light

To ensure that operators can determine the status of the machine whether they are right next to it or far away, a status light (①) is provided inside the machine.



Blue	Lit	The machine is in standby. To reduce power consumption, if no operation is performed for 60 seconds while the machine is in standby, the machine will change to the sleep status, and the status lights will turn off.
	Flashing	The machine is undergoing the initial operation after it turns on. Alternatively, maintenance such as automatic correction and spindle run-in is in progress.
White	Lit	Milling is being performed or has been paused or the front cover is open.
Yellow	Lit	An error has occurred during milling, and the machine has been paused. Check the error details shown on VPanel. Press the operation button on the built-in panel to resume milling.
Red	When lit or flashing in red, an error has occurred and milling has been stopped. Milling cannot be resumed.	
	Lit	Press and hold the built-in panel's operation button. Milling will be canceled and the machine will return to the ready status.
	Flashing	Turn the machine off, and then restart it.
Off	The status lights turn off when the machine is in the sleep state or the power is turned off.	

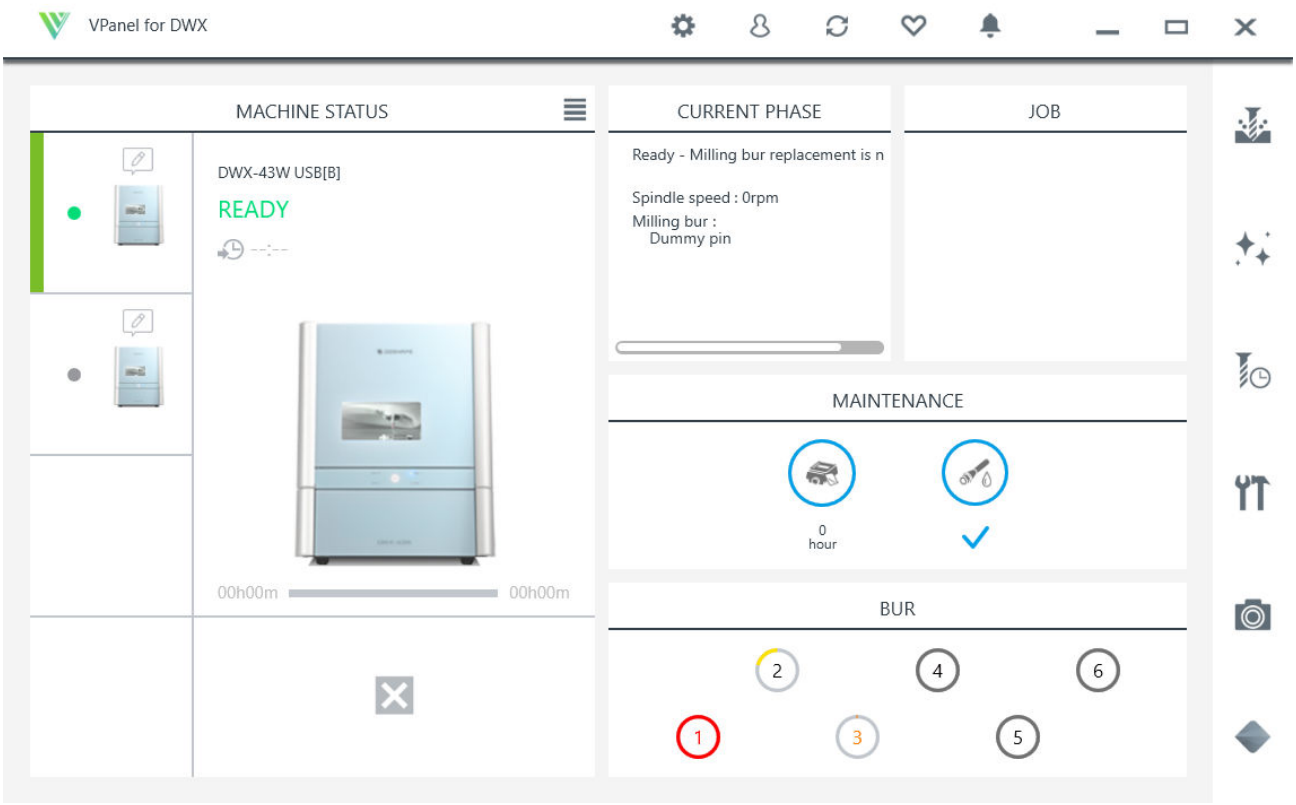
RELATED LINKS

- P. 179 VPanel Error Messages

VPanel for DWX

VPanel for DWX is an application that allows for milling machine operation on a computer screen. It has functions for outputting milling data, performing maintenance, and making various corrections. It also displays information such as the milling machine status and errors.

For information on the windows displayed in this application and for a detailed explanation of its functions, refer to the VPanel for DWX User's Manual. The term "VPanel" is used in this manual to refer to VPanel for DWX.



RELATED LINKS

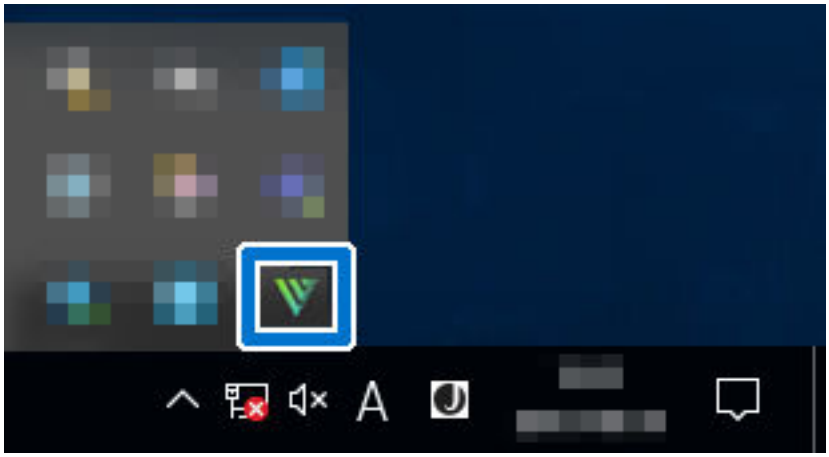
- VPanel for DWX USer's Manual

Displaying VPanel

Displaying VPanel from the Task Tray

Procedure

1. Click in the task tray on the desktop.



The top window of VPanel will appear. If you cannot find in the task tray, start the program from the Windows [**Start**] menu.

Displaying VPanel from the Start Screen

Procedure

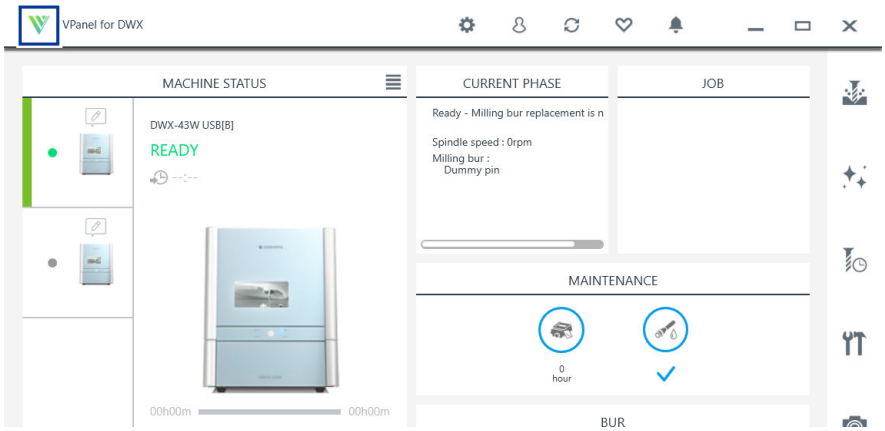
1. Display VPanel from the Start screen.
   - **Windows 11 (version: 24H2)**
     a. Click [**Start**].
     b. Click [**All Apps**]>[**VPanel for DWX**].
   - **Windows 10 (version: 22H2)**
     a. Click [**Start**].
     b. Click [**VPanel for DWX**]>[**VPanel for DWX**].

Exiting VPanel

Exiting VPanel from the System Menu

Procedure

1. Click in the VPanel title bar to display the system menu.

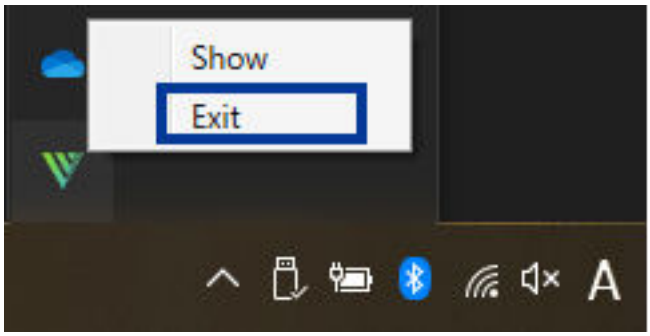


2. Click [Exit].

Exiting VPanel from the Task Tray

Procedure

1. Right-click in the task tray, and then click [Exit].



Usable Tools

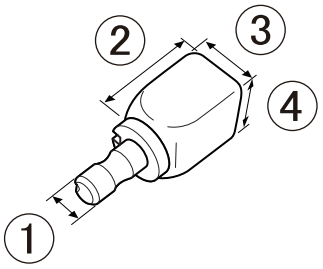
Workpiece

Workpiece Materials

The materials that can be milled by this machine are as follows. To prevent machine malfunctions, be sure to check the material before milling.

- Glass ceramics
- Titanium alloys
- Composite resins
- PMMA
- PEEK
- Glass-fiber-reinforced resin
- Baked zirconia

Types and Sizes of Workpieces

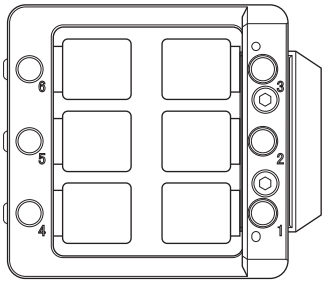
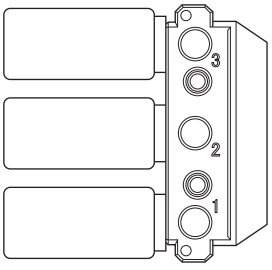
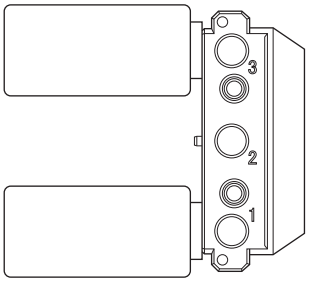


Type	Type with pin		
Size	①	ø5.9 ± 0.02 mm (0.23 in. ± 0.79 mil)	
Number of mountable workpieces	Maximum 6*1		
Size of mountable workpieces	②	Width	Maximum 40 mm (1.57 in.)
	③	Height	Maximum 20 mm (0.78 in.)
	④	Depth	Maximum 20 mm (0.78 in.)

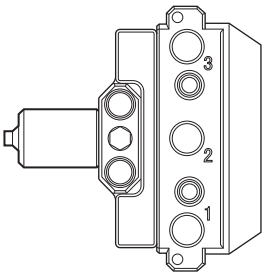
*1 The number of mountable workpieces is limited by their sizes.

Workpiece sizes and the number of mountable workpieces

The following figures show the number of workpieces that can be mounted on the multi-pin clamp according to their sizes.

Width: less than 18 mm (0.7 in.), depth: less than 15.85 mm (0.62 in.)	Width: 18 mm (0.71 in.) or more, depth: less than 15.85 mm (0.62 in.)*2	Depth: 15.85 mm (0.63 in.) or more*2
		

*2 When performing cutting under these conditions, do not use the holder. Using the holder may lead to it coming into contact with and thereby damaging the spindle.

Pre-milled block*2


RELATED LINKS

- P. 45 Mounting the Workpiece
- P. 61 Milling Using the Multi-pin Clamp

Milling Bur

Use dedicated milling burs. Contact your authorized DGSHAPE Corporation dealer or visit our website to purchase.

RELATED LINKS

- https://www.dgshape.com/

Basic Operation

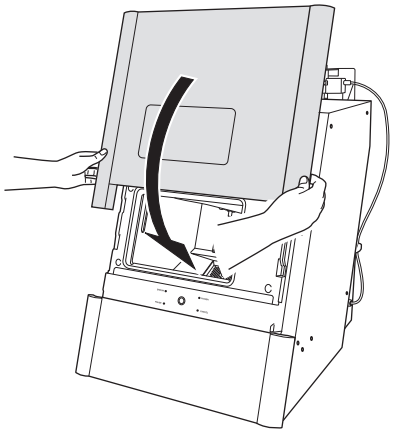
Power Supply Operations

Switching the Power On

Procedure

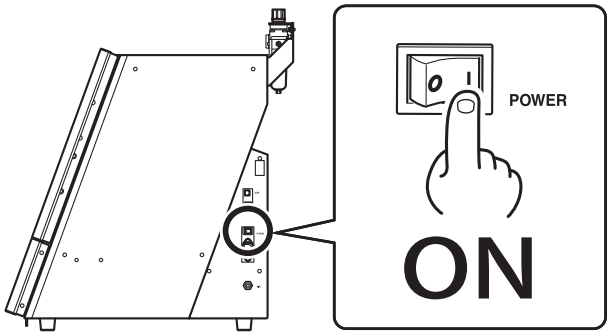
1. Close the front cover if it is open.

Hold the parts shown in the figure with both hands and close the cover.



2. Switch on the machine's power switch.

The machine starts the initial operations. When the status light stops flashing and remains steadily lit, the initial operations are complete.



IMPORTANT

Do not open the front cover during the initial operations.

MEMO

To prevent milling waste from adhering to the inside of the machine, it performs a regular flushing operation, which automatically cleans the inside of the machine once every 12 hours from the point the machine is turned on.

Even when the machine is not in use, it regularly sprays coolant onto the inside of the front cover to wash off milling waste. Pay attention to the following points.

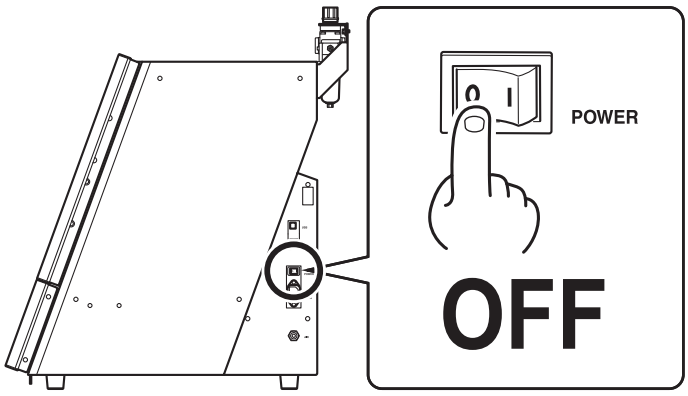
- Leave the machine turned on at all times.
- Supply compressed air from the compressor at all times.
- Close the front cover.
- Attach the coolant tank containing coolant.
- Do not set other parts or materials in the stocker for the dummy pin unless instructed to do so. Doing so may cause impact during operation and damage the machine.

- Do not leave a tool, correction jig, or other unnecessary item inside the front cover. These items may cause impact or become caught during operation and damage the machine.

When Turning Off the Power

Procedure

1. **Switch off the machine's power switch.**



IMPORTANT

Leave the machine turned on at all times.
Turning the machine off leads to moisture collecting inside of the machine, which may lead to malfunction of the machine.

IMPORTANT

Only in the following cases, perform Rinsing and Draining the Coolant Lines and then turn off the machine's power.

- When there are no plans to use the machine for 1 week or longer
- When moving the machine

In order to prevent damage to the machine caused by adhered milling waste, be sure to clean the inside of the front cover before turning off the machine’s power.

RELATED LINKS

- P. 131 Work when the Machine Will Not Be Used for a Prolonged Period or when Moving the Machine

Canceling Flushing

To prevent milling waste from adhering to the inside of the machine, it performs a regular flushing operation, which automatically cleans the inside of the machine once every 12 hours from the point the machine is turned on.

You can also perform flushing on demand.

If you want to cancel flushing and operate the machine, carry out the following procedures.

RELATED LINKS

- P. 118 Preventing Adhering of Milling Waste (Flushing)

Canceling Flushing from VPanel

Procedure

1. **Click ☒ in the VPanel main window.**

2. **Click [OK].**

   Flushing is canceled.

   When the front cover is closed and 30 minutes elapse without operating the machine, flushing is performed again. Regular flushing will thereafter be performed every 12 hours.

Canceling Flushing from the Built-in Panel

Procedure

1. **Press the operation button on the built-in panel.**

   Flushing is canceled.

   When the front cover is closed and 30 minutes elapse without operating the machine, flushing is performed again. Regular flushing will thereafter be performed every 12 hours.

Milling

Milling

Preparing for Milling

CAM Settings Necessary for Milling

The settings shown below must be included in the milling data output to this machine.

Workpiece	Set the type of workpiece to mill. P. 17 Workpiece
Milling bur	Set all the milling burs to use in milling. P. 19 Milling Bur
Milling bur stocker number	Set the numbers of the milling bur stockers in which the milling burs will be loaded. P. 40 Setting the Milling Bur

Filling the Coolant Tank

⚠ CAUTION

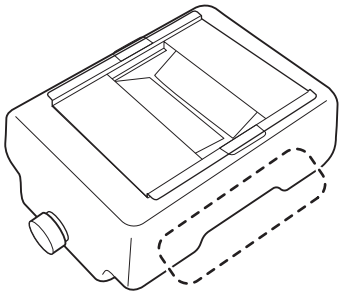
Do not overfill or tilt the coolant tank.

The fluid inlet on the coolant tank is open. Overfilling or tilting will cause fluid to spill out.

⚠ CAUTION

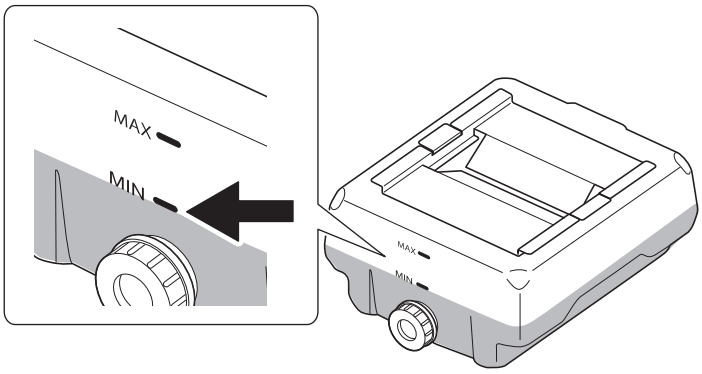
When raising or lowering the coolant tank, hold the parts indicated in the following figure.

Failing to do so may result in your fingers being pinched, leading to injury.



When to Perform This Work

- When first using the machine
- When starting to use the machine again with the tank empty
- When the fluid level in the tank reaches the "MIN" label



MEMO

When the milling time or usage time exceeds a fixed period, a message is displayed in VPanel.
Replace the coolant according to the instructions displayed in VPanel.
P. 96 Replacing the Coolant

Items to Prepare Yourself

Water (soft or purified water)

Use soft or purified water. Using hard water may have a negative effect on the service life of the milling bur and on the quality of the product.

Additive (ZAW-1000D)

You will need to prepare the designated additive separately. Contact your authorized DGSHAPE Corporation dealer to purchase items.

Chelating reagent (ZCH-250D)

You will need to prepare the designated chelating reagent separately. Contact your authorized DGSHAPE Corporation dealer to purchase items.

Handling Additives

- Store additives in a cool, dark place.
- Due to the characteristics of the internal components, the color may change and deposits of separated components may form, but these do not indicate any problems with the use of the additives.
- If component deposits form, lightly shake the container to mix the components before use.

RELATED LINKS

- https://www.dgshape.com/

1. Remove the coolant tank.

MEMO

When filling the coolant tank, if the fluid level reaches the "MIN" label, no operation is necessary in VPanel.

In this situation, make the coolant according to Step 2 in 2. Filling the Machine with Coolant(P. 33), and then fill the coolant tank.

Procedure

1. **Show VPanel.**

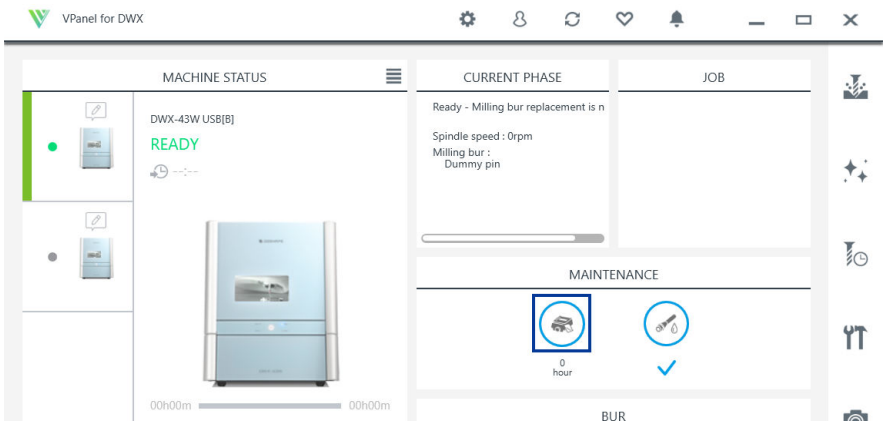
2. **Open the [Coolant fill] window.**

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

When you have connected multiple machines, you can switch to a different machine to operate by clicking its image under [**MACHINE STATUS**].

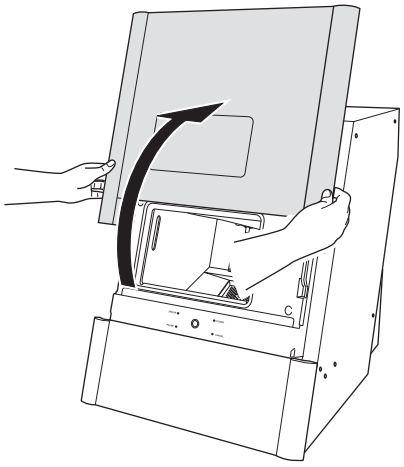
(2) **Click**  **.**

The [**Coolant fill**] window is displayed.



3. **Open the front cover.**

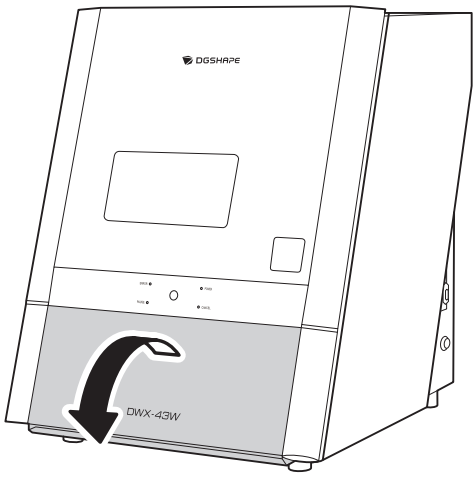
Hold the parts shown in the figure with both hands and open the cover.



4. **Remove the workpiece, rotary axis correction jig, and ATC magazine correction jig.**

5. Click [Next].

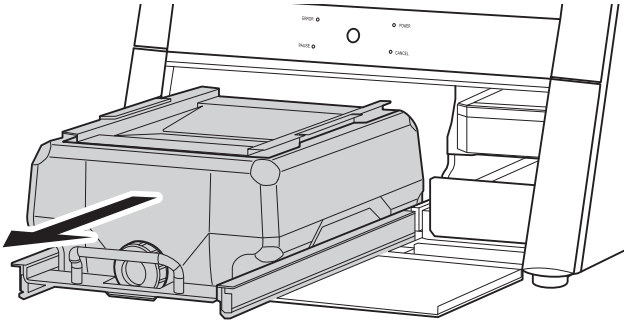
6. Gently push the bottom cover, and then lower it toward you to open it.



7. Remove the coolant tank.

MEMO

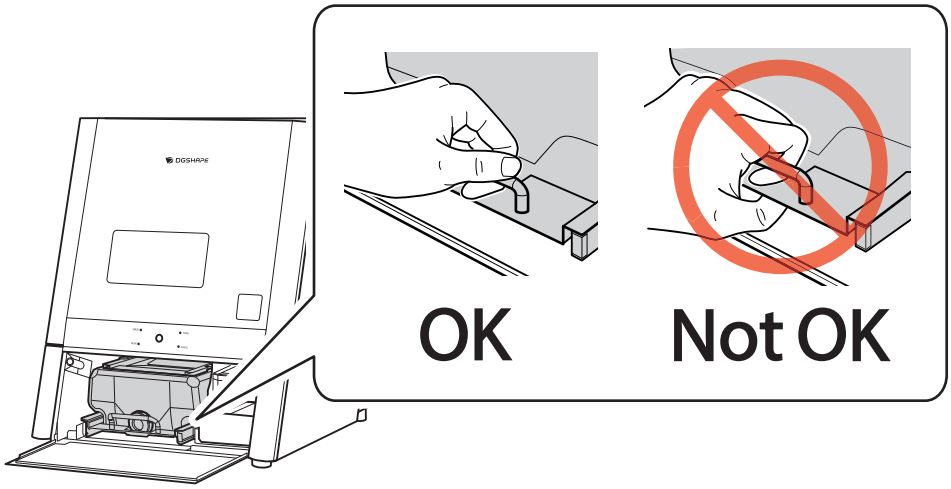
Move the coolant tank slowly. Forcefully moving the coolant tank may cause the coolant to spray out.



⚠ CAUTION

When removing the coolant tank, hold the handle as shown in the figure.

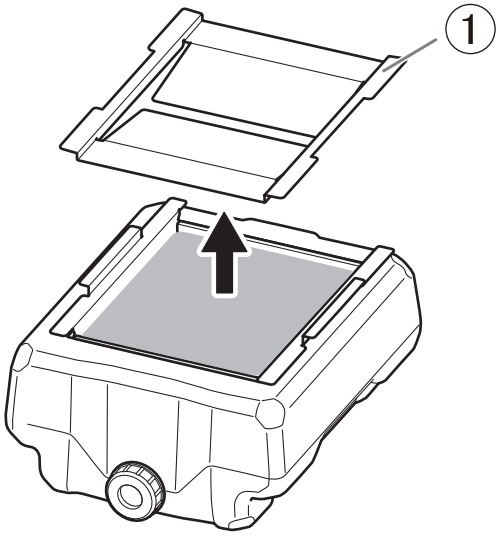
Placing a finger under the drawer may lead to injury due to your finger hitting the cover.


OK
Not OK

2. Filling the Machine with Coolant

Procedure

1. **Remove the lid (①) of the coolant tank.**



2. **Adjust the coolant.**

To make the coolant, mix the 3 materials (water, additive (ZAW-1000D), and chelating reagent (ZCH-250D)) at the fixed ratios. Use the included measuring cup for measuring.

(1) **Water: Mix water and additive in the ratio of "95:5" (water:additive).**

There is no need to stir the solution.

The capacity of the coolant tank is approximately 5 L. To fill the tank, use 4,750 ml of water and 250 ml of additive.

(2) **Water + additive solution: Mix the water + additive solution and chelating reagent in the ratio of "400:1" (water + additive solution:chelating reagent).**

There is no need to stir the solution.

To fill the tank, use 5,000 ml of water and additive, and 12.5 ml of chelating reagent.

⚠ CAUTION

Be sure to use the specified additive.

Additives are effective in reducing coolant deterioration and raising the milling efficiency in order to maintain product performance. Furthermore, if additives are not used, the coolant may generate an unpleasant odor.

⚠ CAUTION

Be sure to use the specified chelating reagent.

The chelating reagent works to make calcium and similar substances contained in the water inactive, making it easier to clean off milling powder that adheres to the machine and the cutting tool after milling.

Refer to the appropriate safety data sheet (SDS) for the chemical substances used in the additive and chelating reagent and the safety related to those substances.

To purchase additives, contact your authorized DGSHAPE Corporation dealer or access our website (https://www.dgshape.com/).

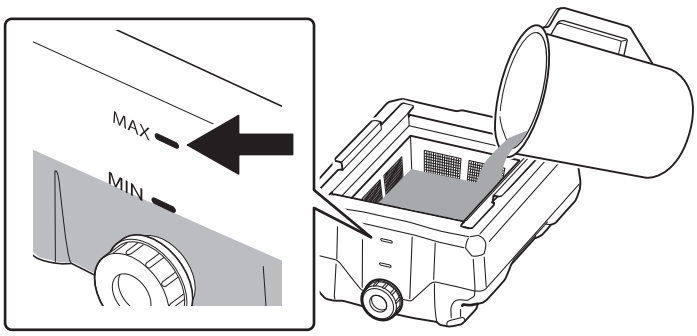
IMPORTANT

Add an additional 12.5 ml of chelating reagent to the coolant in the following cases.

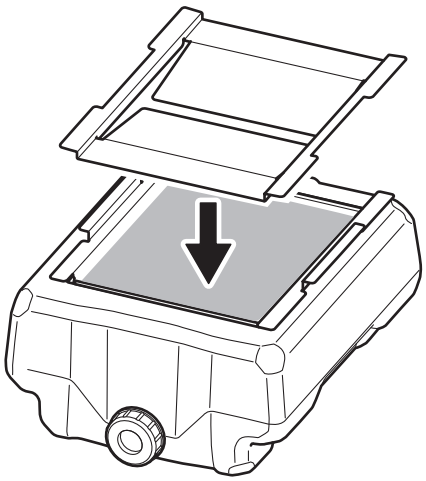
- It is easy for milling waste to adhere to the inside of the machine.
- The milling time exceeds 8 hours, regardless of whether milling waste adheres to the machine.

3. Fill the coolant tank with the coolant.

Do not add coolant past "MAX" indicated on the coolant tank.



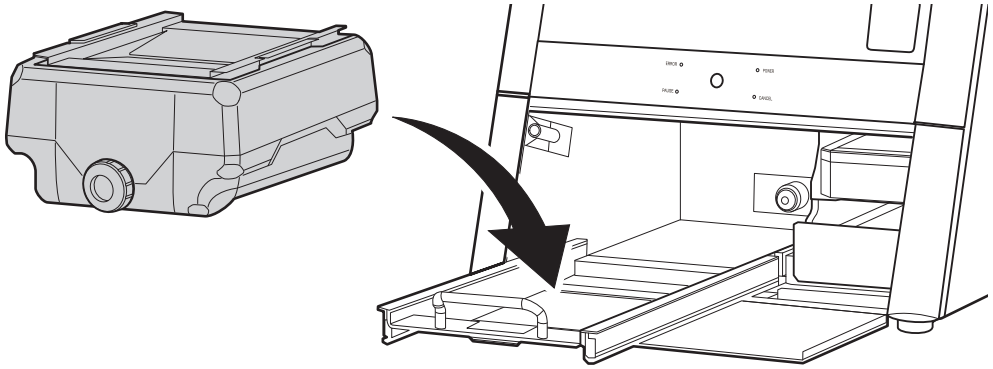
4. Place the lid on the coolant tank.



3. Install the coolant tank

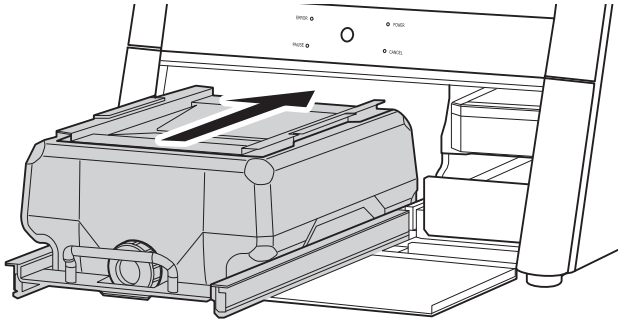
Procedure

1. **Return the coolant tank to its original position.**



2. **Push the coolant tank toward the back of the machine.**

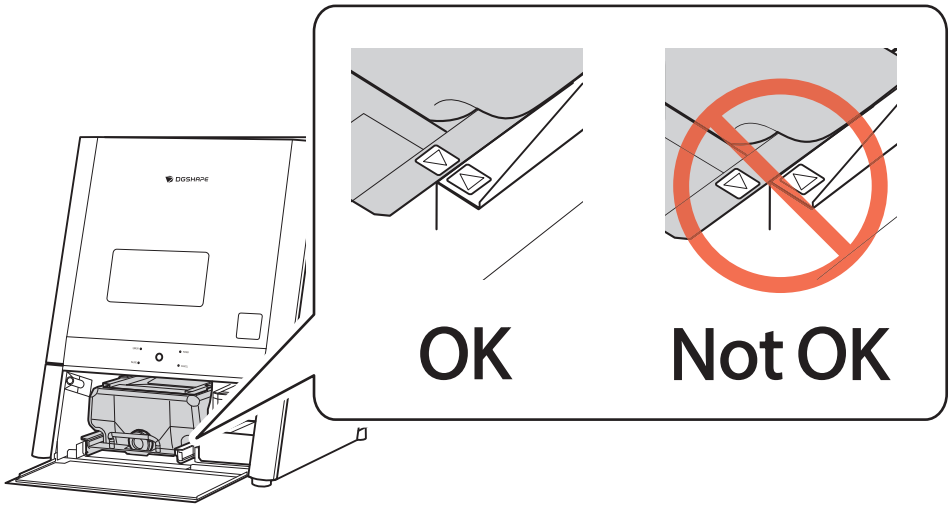
Push the coolant tank to the point where you feel a click.



MEMO

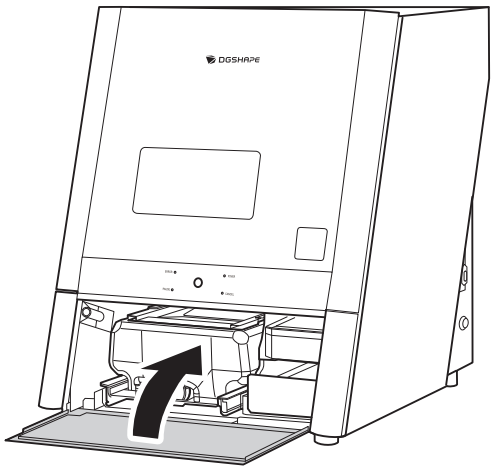
Move the coolant tank slowly. Forcefully moving the coolant tank may cause the coolant to spray out.

Align the label affixed to the right side of the coolant tank with the label affixed to the machine.



3. **Close the bottom cover.**

Flushing starts.



4. **Click [Complete].**

Cleaning the Inside of the Machine

Clean inside the machine with a dry cloth.

⚠ CAUTION

Use a dry cloth to clean the inside of the equipment.
Failure to do so may cause the components inside the equipment to degrade, which can lead to injury.

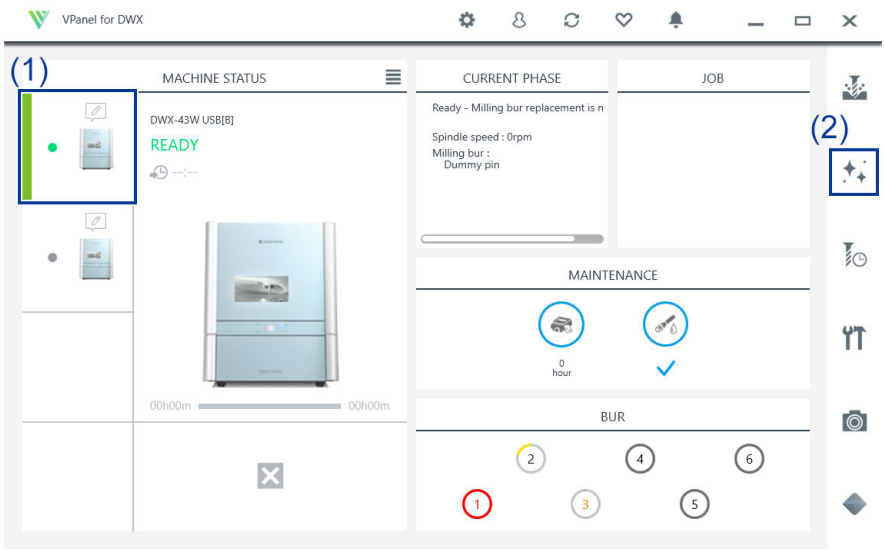
⚠ CAUTION

Be careful of the pointed portion inside the front cover.
There is a pointed portion inside the front cover. Exercise caution when cleaning.

Procedure

1. **Show VPanel.**

2. **Open the [Milling area cleaning] window.**
   (1) **In the top window of VPanel, select the machine to operate.**
   When you have connected multiple machines, you can switch to a different machine to operate by clicking its image under [**MACHINE STATUS**].
   (2) **Click**  .
   The [**Milling area cleaning**] window is displayed.

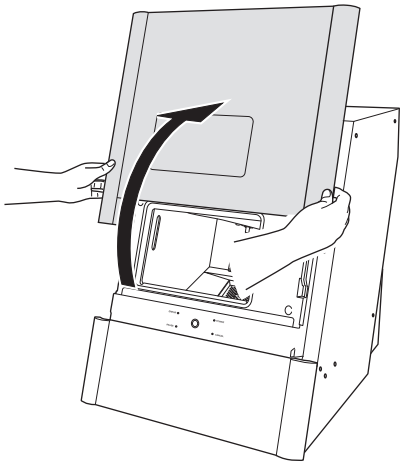


3. **Click [Front], [Rear], or [Reverse side] according to the location you want to clean.**

- [**Front**]: The rotary axis unit moves to the front of the machine and the spindle head moves to the left side of the machine.
- [**Rear**]: The rotary axis unit moves to the back of the machine and the spindle head moves to the right side of the machine.
- [**Reverse side**]: The rotary axis unit turns over.

4. **Open the front cover.**

Hold the parts shown in the figure with both hands and open the cover.



5. **Follow the on-screen instructions to clean inside the machine.**

Clean carefully with a dry cloth. Carefully wipe around the spindle head and the rotary axis parts shown in gray in the following figure.

Fluid and milling waste in these areas may affect milling results.

⚠ CAUTION

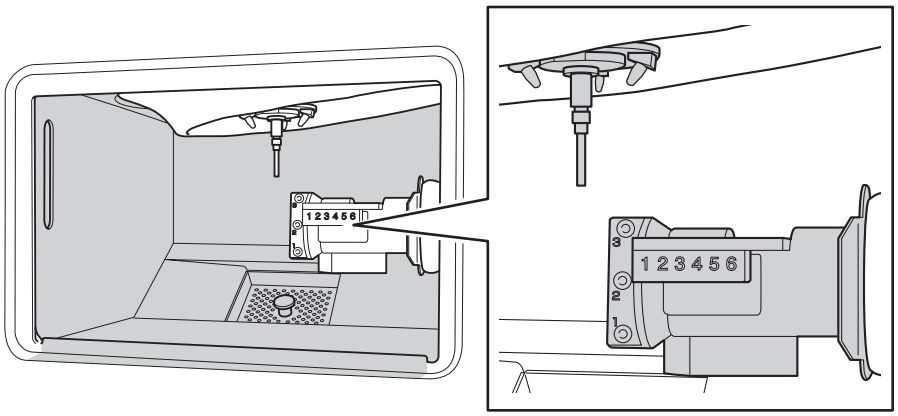
Be careful around milling waste.

Sharp milling waste may become mixed. To avoid injury, exercise caution.

MEMO

The front cover window scratches easily, so do not wipe it off with a cloth.

- Inside the machine



6. When you have finished cleaning, close the front cover.

7. Click [Close].

Setting the Milling Bur

⚠ WARNING

Securely fasten the milling tool and workpiece in place. After securing in place, make sure no installation tools or other articles have inadvertently been left behind.

Otherwise, such articles may be thrown from the machine with force, posing a risk of injury.

⚠ CAUTION

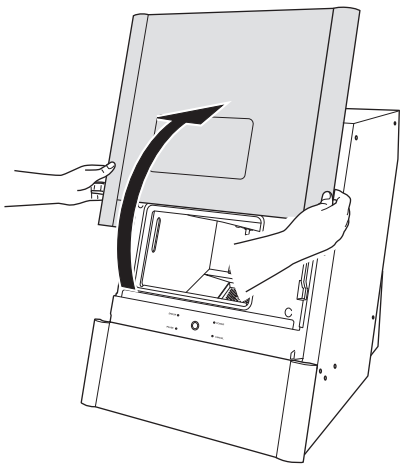
Under no circumstances should you move the Z-axis unit with your hands.

Doing so may cause a breakdown.

Procedure

1. **Open the front cover.**

   Hold the parts shown in the figure with both hands and open the cover.



2. **Set the milling burs in the ATC magazine.**

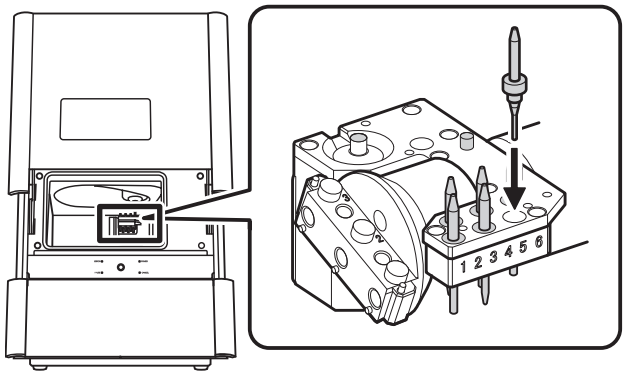
   ⚠ CAUTION

   Be careful around the tip and other sharp edges.

   Be careful not to touch the tool tip or any other sharp edges. Doing so may cause injury.

   MEMO

   - Set milling burs with their tips facing down.
   - Push milling burs in until the top of each milling bur holder is at the same height as the ATC magazine surface.
   - Do not set a milling bur in the stocker for the dummy pin.



3. Close the front cover.

Setting Milling Burs to Use in Milling

Use this section to set the milling bur to use in milling from the milling burs loaded in the ATC magazine.

Procedure

1. **Show VPanel.**

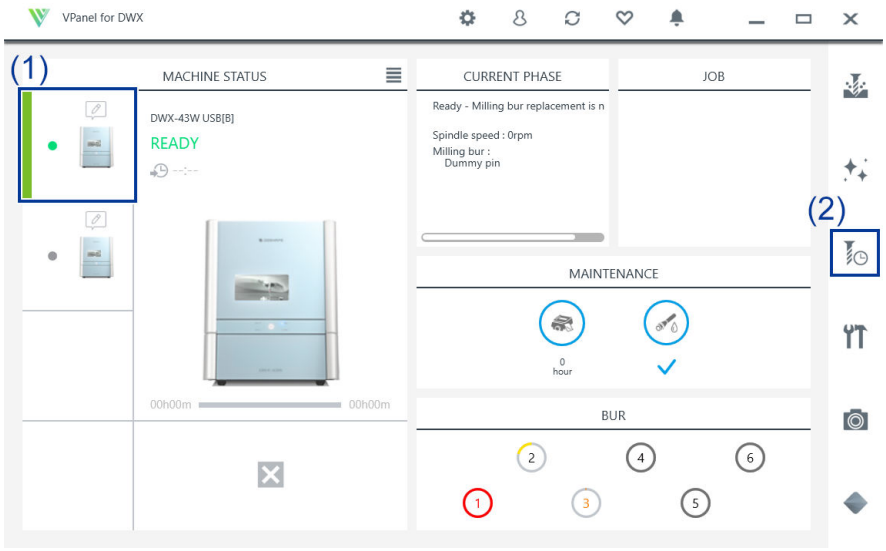
2. **Open the [Milling bur registration] window.**

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

When you have connected multiple machines, you can switch to a different machine to operate by clicking its image displayed under [**MACHINE STATUS**].

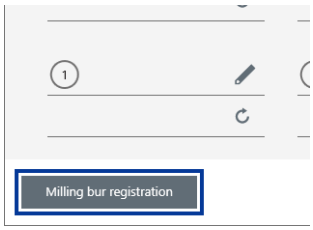
(2) **Click**  .

The [**Milling bur management**] window is displayed.



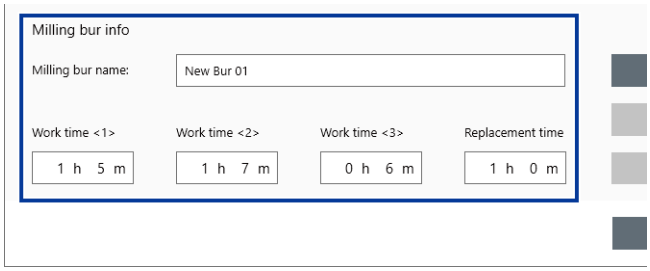
(3) **Click [Milling bur registration].**

The [**Milling bur registration**] window is displayed.



3. **Select [<New Bur>], and then enter under [Milling bur info] the name, work time, and replacement time information of the milling bur to register.**

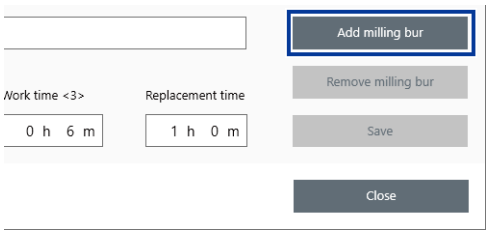
Replacement times depend on the type of milling bur or workpiece as well as the milling conditions. Adjust the replacement time value as necessary.



4. **Click [Add milling bur].**

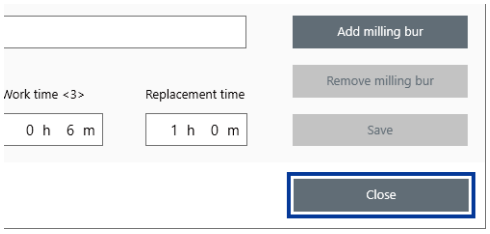
The milling bur is registered to the list and can now be selected in the [**Milling bur management**] window.

You can register up to 20 milling burs.

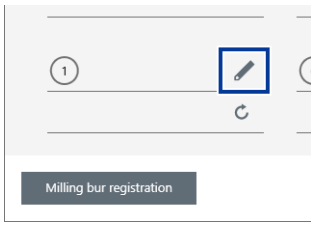


5. **Click [Close].**

The [**Milling bur registration**] window closes.

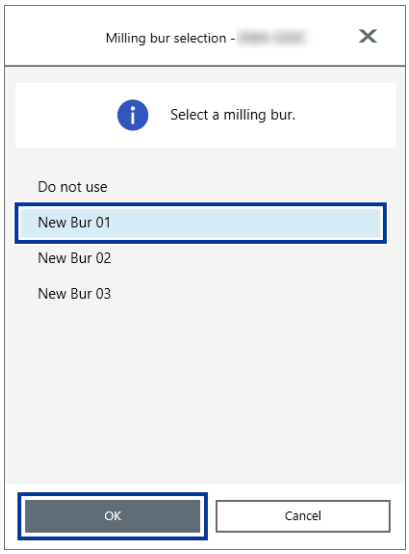


6. **Click  next to the number of the stocker in which the milling bur has been loaded.**



7. **Select the milling bur to use in milling from the registered burs, and then click [OK].**

The milling bur is assigned, and the work time and replacement time entered at the time of registration are displayed.



MEMO

To perform long-term, continuous milling without changing the type of milling bur, load milling burs with the same specifications in multiple stockers and set the same milling bur name on these stockers.

If you use the ITC (Intelligent Tool Control) function, when the milling bur being used approaches its replacement time, it is automatically switched with the next milling bur, and milling continues.

You can set the same name to up to three milling burs.

RELATED LINKS

- P. 55 Automatically Switching Out the Worn Milling Bur (Intelligent Tool Control)
- VPanel for DWX USer's Manual

Mounting the Workpiece

⚠ WARNING

Securely fasten the milling tool and workpiece in place. After securing in place, make sure no installation tools or other articles have inadvertently been left behind.

Otherwise, such articles may be thrown from the machine with force, posing a risk of injury.

⚠ CAUTION

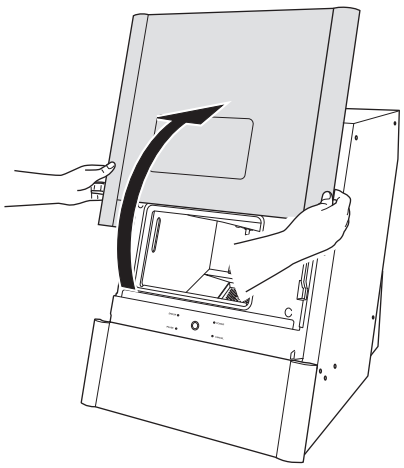
Under no circumstances should you move the Z-axis unit with your hands.

Doing so may cause a breakdown.

Procedure

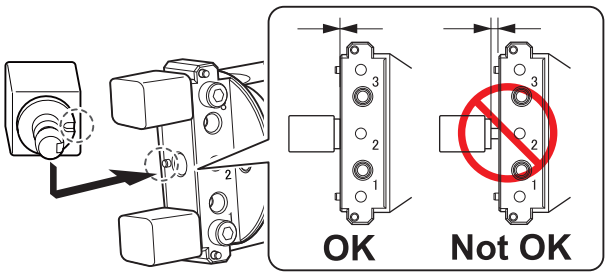
1. **Open the front cover.**

   Hold the parts shown in the figure with both hands and open the cover.



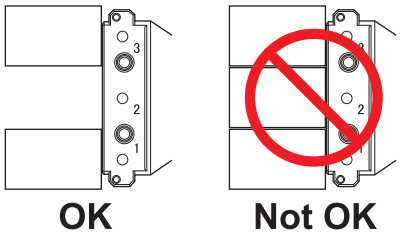
2. **Insert the pin portion of the workpiece into the hole on the rotary axis.**

   Align the notch on the root of the workpiece's pin with the protrusion on the rotary axis so as to eliminate the gap between the attaching surfaces.



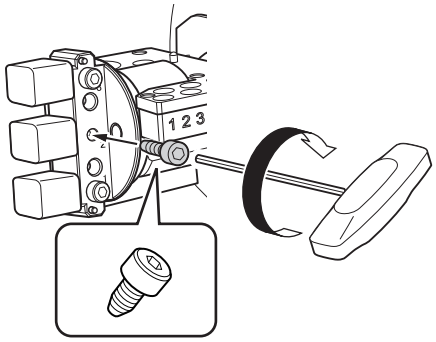
MEMO

When the workpiece type is PMMA, the maximum number of workpieces that can be installed is two. However, when installing two workpieces, do so in positions 1 and 3 so that there is space between the workpieces.



3. **Use a mounting screw to secure the workpiece in place.**

Tighten the mounting screw with a hexagonal screwdriver.



4. **Close the front cover.**

Starting Milling

Outputting Milling Data and Starting Milling

⚠ CAUTION

Do not place any electronic devices in the vicinity of this machine.

Because coolant flows within this machine, water may be sprayed on objects in the vicinity of the machine when its front cover is opened. To prevent malfunctions, do not place any electronic devices in the vicinity of this machine.

Procedure

1. **Check the settings of the milling data.**

P. 27 CAM Settings Necessary for Milling

2. **Show VPanel.**

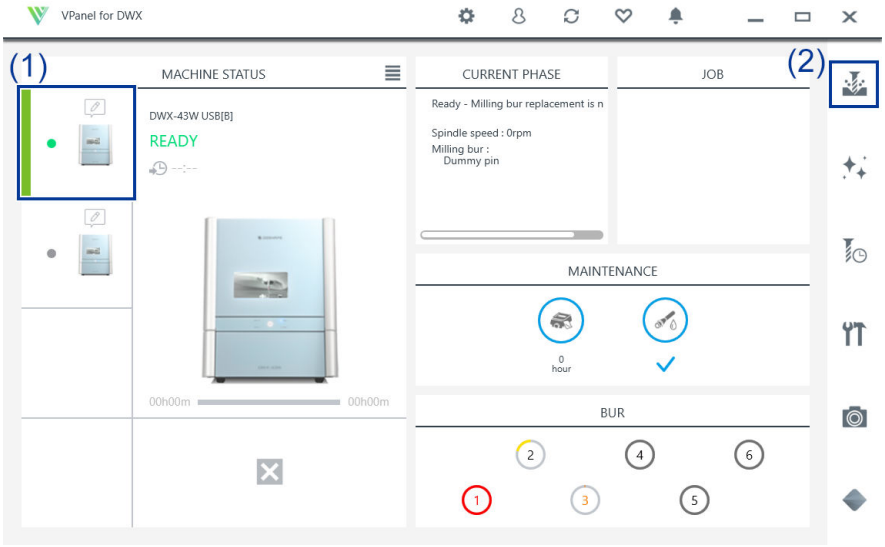
3. **Open the [Output a file] window.**

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

When you have connected multiple machines, you can switch to a different machine to operate by clicking its image under [**MACHINE STATUS**].

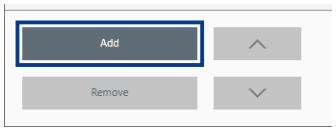
(2) **Click**  **.**

The [**Open**] window is displayed.



4. **Select the milling data, and then click [Open].**

The selected milling data is displayed in the data list of the [**Output a file**] window. Click [**Add**] in the [**Output a file**] window to add files when you want to output milling data continuously.



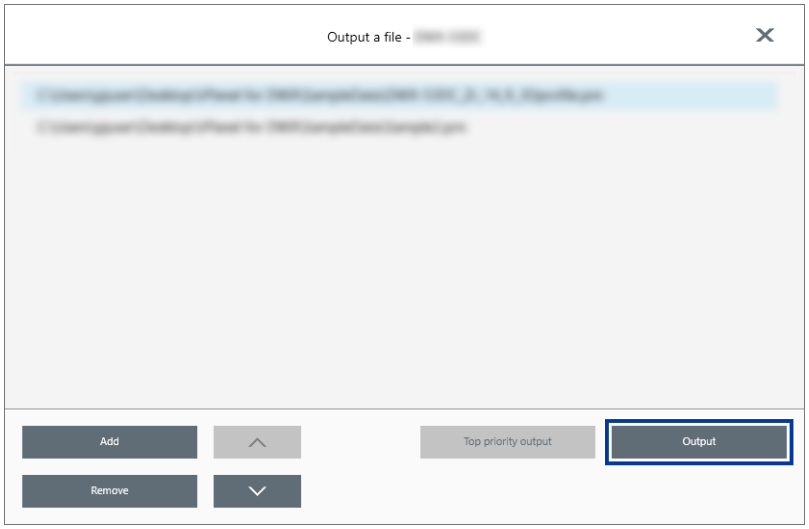
MEMO

Continuous output of milling data in a different file format is not possible.
After output is complete, add the milling data to the data list in a different file format before performing output.

5. **Check the following three points.**

- The coolant has been set.
  P. 28 Filling the Coolant Tank
- The milling burs have been set.
  P. 40 Setting the Milling Bur
- The workpieces have been set.
  P. 45 Mounting the Workpiece

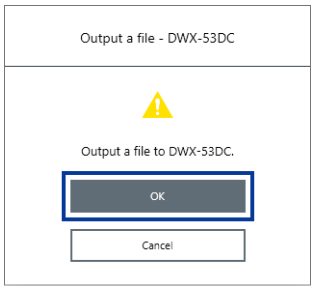
6. **Click [Output].**



MEMO

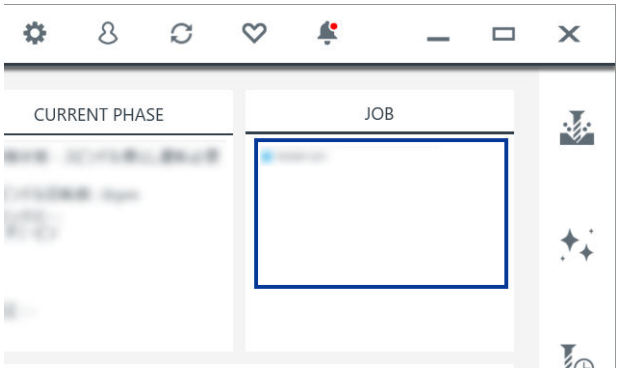
- **Changing the data list order**
  You can change the output order by selecting the milling data in the data list and clicking ^ or v. (The milling data is output from the top of the data list.)
- **Removing milling data from the data list**
  To remove milling data from the output list, select the milling data in the data list and click **[Delete]**.
- **Adding milling data by dragging and dropping**
  You can add milling data to the data list by dragging the data to the top window or the **[Output a file]** window.

7. **In the confirmation window, click [OK].**



The output milling data is displayed in the [**JOB**] of the top window, and then milling starts.

For details about how to view the VPanel display contents and screens, refer to "VPanel for DWX User's Manual."



RELATED LINKS

- VPanel for DWX USer's Manual

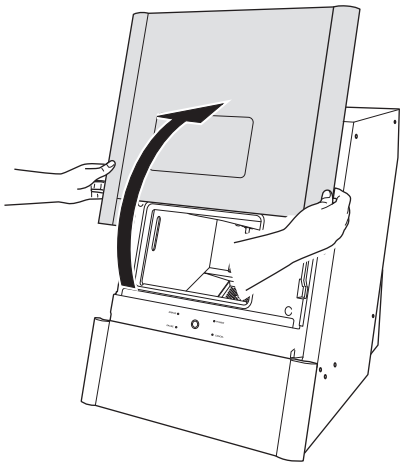
Removing the Workpiece

When milling is finished, you can remove the workpiece from the machine.
Milling is finished when [**READY**] or [**FINISH**] appears under [**MACHINE STATUS**] in VPanel.

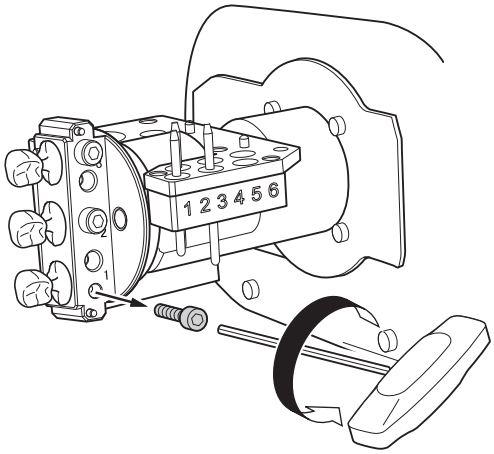
Procedure

1. **Open the front cover.**

Hold the parts shown in the figure with both hands and open the cover.



2. **Remove the product.**



⚠ CAUTION

Be careful around milling waste.
Sharp milling waste may become mixed. To avoid injury, exercise caution.

⚠ WARNING

Do not touch the spindle unit or the surrounding areas immediately after milling has ended.
Doing so may result in burns.

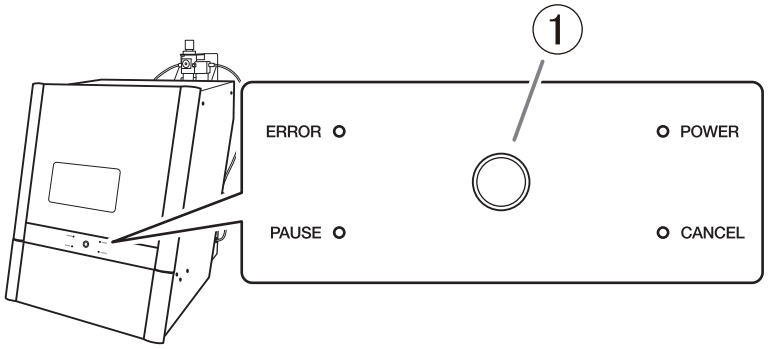
⚠ CAUTION

After milling, wash away any products with purified water or the like.

After milling, there will be coolant on the product. Using the product as is may cause an inflammation or the like.

MEMO

Press the operation button (①) while the machine is on standby to rotate the rotary axis 180 degrees. You can use this function when you want to view the back of the product without removing the workpiece.



Aborting and Canceling Milling

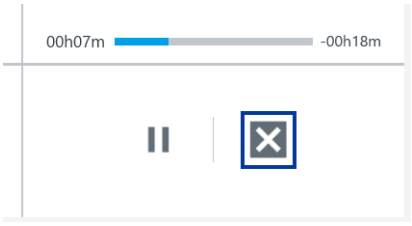
Aborting Milling

Aborting Milling from VPanel

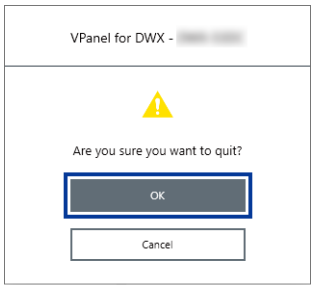
Procedure

1. **In the top window of VPanel, select the machine where milling will be aborted.**

2. **Click** .

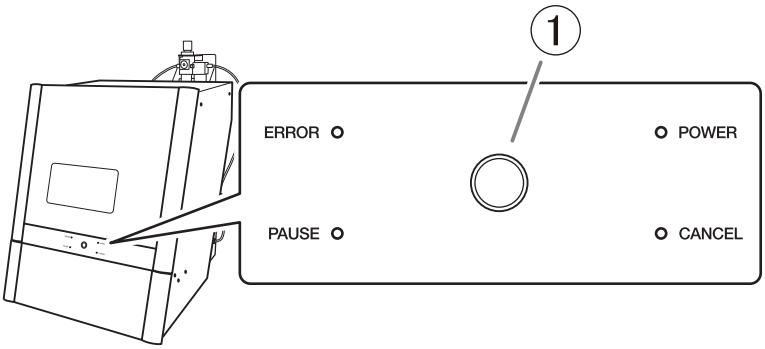


3. **Click [OK].**
   The output of the milling data is canceled.
   When not aborting, click **[Cancel]**.



Aborting Milling from the Built-in Panel

- **Pausing**
  Press the operation button (①) on the built-in panel.
- **Resuming**
  With operation paused, press the operation button (①) on the built-in panel.
- **Aborting**
  Hold down the operation panel (①) on the built-in panel for two seconds or longer.



Deleting Standby Milling Data

Procedure

1. **In the top window of VPanel, select the machine whose output list you want to edit.**
2. **Right-click the milling data to remove from the output list.**
3. **Click [Cancel].**

   Only milling data in standby (milling data in the second or following positions from the top of the [**JOB**] list) can be removed from the output list.

   The milling data displayed at the top of the output list is currently being milled, so it cannot be removed.

Other Milling

Continuous Milling

Automatically Switching Out the Worn Milling Bur (Intelligent Tool Control)

During milling, the milling bur wears out and may need to be replaced. If you want to have the worn milling bur switched out automatically during milling, use Intelligent Tool Control (ITC).

ITC is a function that automatically replaces milling burs that reach their replacement time during use with the next milling bur. This makes it possible to continue milling for a long time without any loss in milling quality.

Use the [**Milling bur management**] window to set the combinations of milling burs that will be switched automatically. Register multiple milling burs with the same name to set them as a single unit.

You can set the same name to up to three milling burs.

Procedure

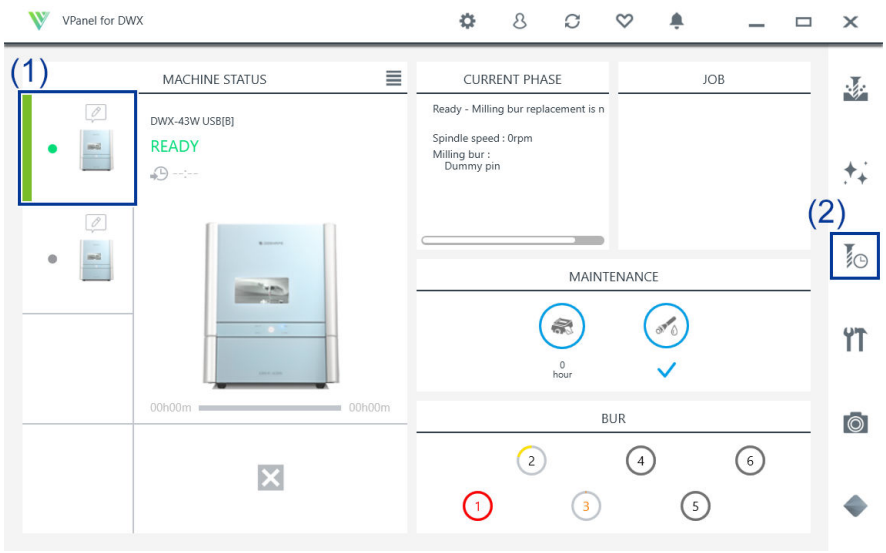
1. Open the [Milling bur management] window.

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

When you have connected multiple machines, you can switch to a different machine to operate by clicking its image displayed under [**MACHINE STATUS**].

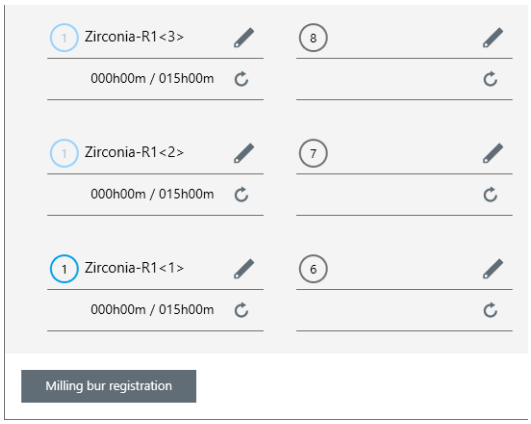
(2) **Click**  .

The [**Milling bur management**] window is displayed.



2. Set the milling burs that you want to use ITC to switch between automatically into two or three milling bur stocker locations.

Milling burs with the same name are set as a single unit. When the milling bur reaches its replacement time during milling, it is automatically switched with the next milling bur.



RELATED LINKS

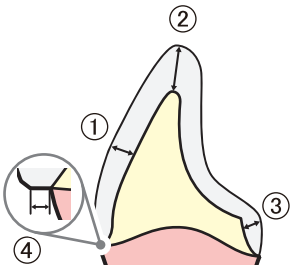
- P. 121 Replacing Milling Burs

Optimizing Quality and Efficiency

Optimizing the Milling Quality

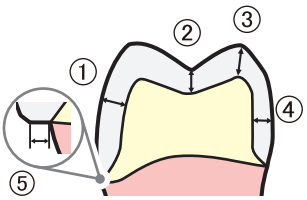
Recommended CAD Data Thickness Values

Front tooth crown



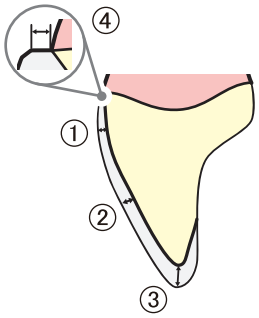
①	1.0 to 1.2 mm (39.38 to 47.24 mil)
②	1.5 mm (59.06 mil) or more
③	0.8 mm (31.50 mil) or more
④	0.2 mm (7.88 mil) or more

Molar tooth crown



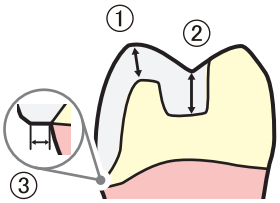
①	1.5 mm (59.06 mil) or more
②	1.0 mm (39.38 mil) or more
③	1.5 mm (59.06 mil) or more
④	0.8 mm (31.50 mil) or more
⑤	0.2 mm (7.88 mil) or more

Veneer



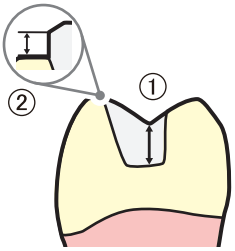
①	0.4 mm (15.75 mil) or more
②	0.6 mm (23.63 mil) or more
③	0.5 to 1.5 mm (19.69 to 59.05 mil)
④	0.25 mm (9.85 mil) or more

Onlay



①	1.5 mm (59.06 mil) or more
②	1.0 mm (39.38 mil) or more
③	0.25 mm (9.85 mil) or more

Inlay



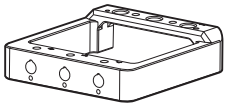
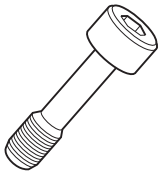
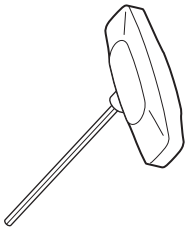
①	1.0 mm (39.38 mil) or more
②	0.25 mm (9.85 mil) or more

Milling Using the Dedicated Clamp

Milling Using the Multi-pin Clamp

Depending on the workpiece size, install the included holder and change to the multi-pin clamp. This allows a maximum of six material workpieces to be milled at one time.

Required items

Included items			
			
holder	Bolt	Mounting screw	T-shaped hexagonal screwdriver

RELATED LINKS

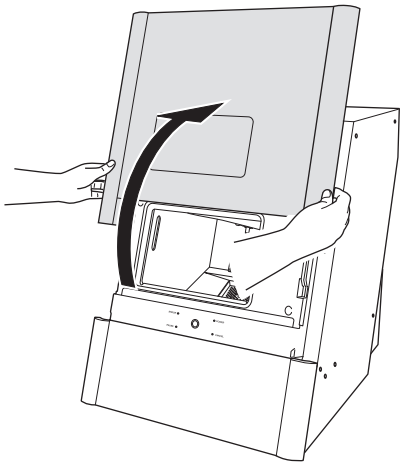
- P. 17 Workpiece

Mounting the Workpiece

Procedure

1. **Open the front cover.**

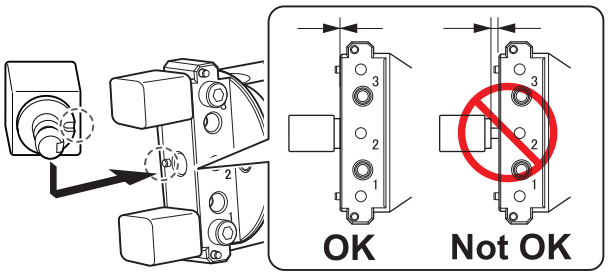
   Hold the parts shown in the figure with both hands and open the cover.



2. **Insert the pin portion of the workpiece into the hole on the rotary axis.**

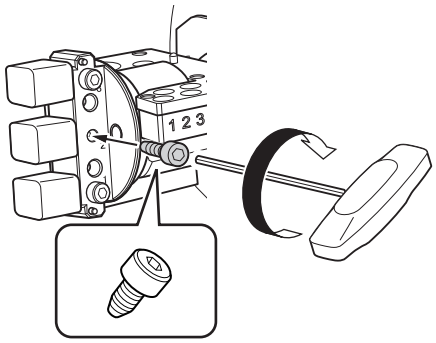
   Align the notch on the root of the workpiece's pin with the protrusion on the rotary axis so as to eliminate the gap between the attaching surfaces.

   You can install a maximum of three workpieces.



3. **Use a mounting screw to secure the workpiece in place.**

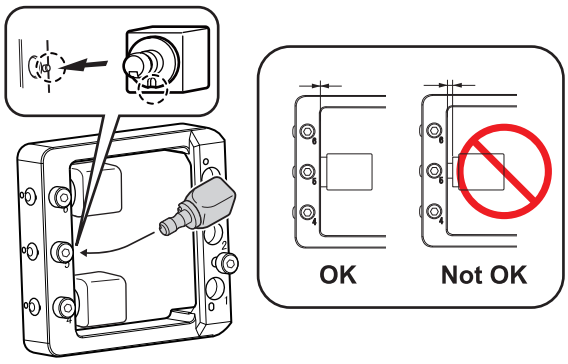
Tighten the mounting screw with a hexagonal screwdriver.



4. **Mount the workpiece on the holder.**

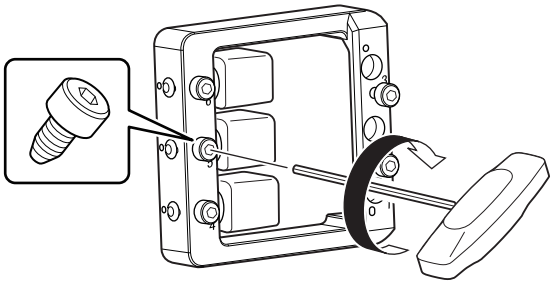
Align the notch on the root of the workpiece's pin with the protrusion on the holder so as to eliminate the gap between the attaching surfaces.

You can install a maximum of three workpieces.



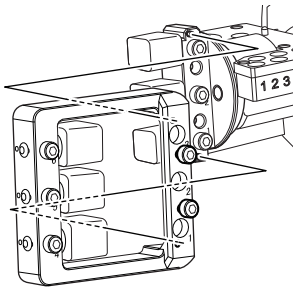
5. **Use a mounting screw to secure the workpiece mounted on the holder.**

Tighten the mounting screw with a hexagonal screwdriver.



6. **Attach the holder to the rotary axis.**

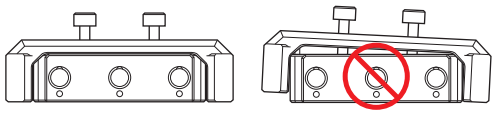
(1) **Insert the positioning pins on the rotary axis into the holes on the holder.**



(2) **Check that the holder does not lift up off of the rotary axis.**

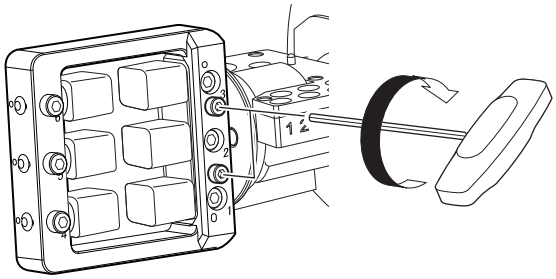
IMPORTANT

Correct milling will not be possible with the holder lifted up.
Also, tightening the bolts with the holder lifted up may damage the multi-pin clamp.



7. **Secure the holder with two bolts.**

Tighten the bolts with a hexagonal screwdriver.



8. **Close the front cover.**

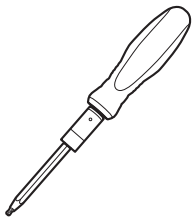
Before starting milling, check that the milling bur to be used for milling is set and that registration has been completed.

RELATED LINKS

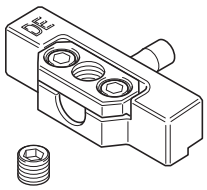
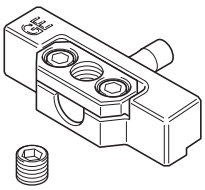
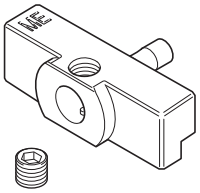
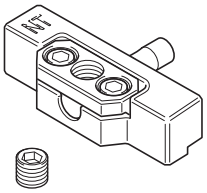
- P. 40 Setting the Milling Bur
- P. 42 Setting Milling Burs to Use in Milling
- P. 47 Starting Milling

Mill the abutment.

Required item

Included items	
	
Mounting screw	Torque screwdriver

Attachment

Items to prepare yourself			
			
AK-1-DE (DESS)	AK-1-GE (GeoMedi)	AK-1-ME (MEDENTiKA)	AK-1-NT (NT-Trading)

Step 1: Attach the attachment.

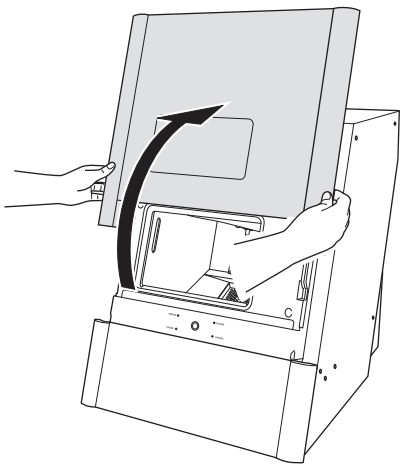
IMPORTANT

When the included holder is installed onto the rotary axis unit and the clamp is changed to the multi-pin clamp, remove the holder before performing this work.

Procedure

1. **Open the front cover.**

   Hold the parts shown in the figure with both hands and open the cover.

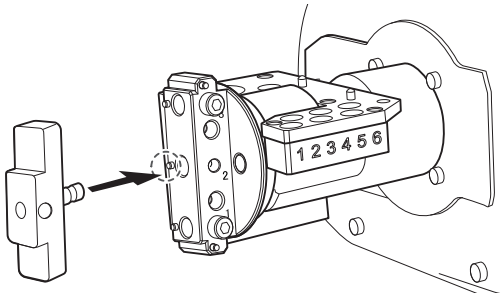


2. **Attach the attachment to hole "2" on the rotary axis.**

MEMO

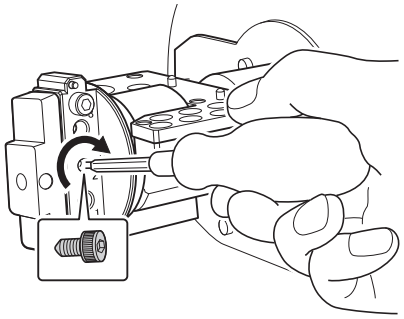
Check the following two points when attaching the attachment.

- No dirt or milling waste is adhering to the installation surface of the attachment.
- There is no gap when the attachment is pressed against the rotary axis.



3. **Secure the attachment by tightening the mounting screw using a torque screwdriver.**

Tighten the screws until turning the handle of the torque screwdriver no longer turns the screw bit.

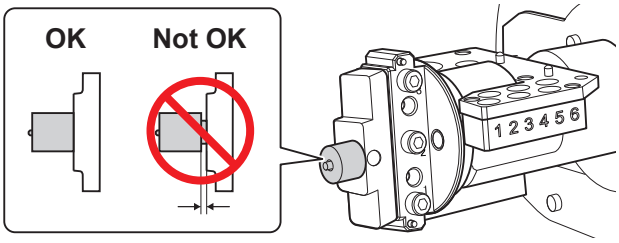


Step 2: Attach the pre-milled block.

Procedure

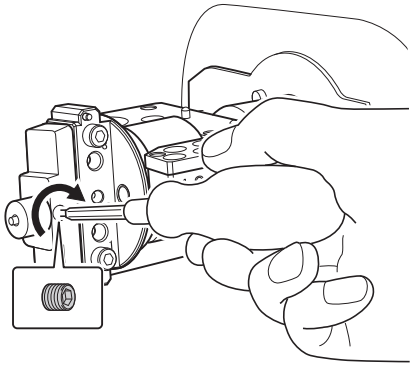
1. **Attach the pre-milled block to the attachment.**

   When attaching, insert the pre-milled block as far as possible so there is no gap.



2. **Tighten the mounting screws that were included with the attachment using a torque screwdriver to secure the pre-milled block.**

   Tighten the screws until turning the handle of the torque screwdriver no longer turns the screw bit.

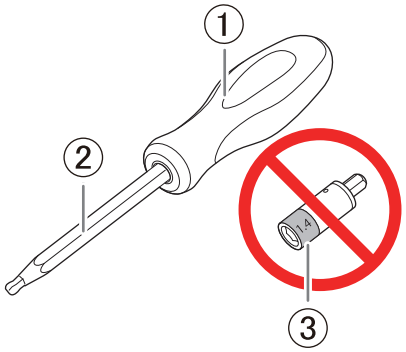


Before starting attachment milling, check that the milling bur to be used for milling is set and that registration has been completed.

After milling is completed, use a torque screwdriver to remove the mounting screws, then remove the attachment.

IMPORTANT

To remove the attachment, use the handle (①) and bit (②) of the torque screwdriver. Do not use a sleeve (③).



Mill the abutment.

RELATED LINKS

- P. 40 Setting the Milling Bur
- P. 42 Setting Milling Burs to Use in Milling
- P. 47 Outputting Milling Data and Starting Milling

Maintenance

Getting Started

Maintenance Precautions

Maintenance Precautions

⚠ WARNING

Never use a pneumatic blower.

This machine is not compatible with a pneumatic blower. Milling waste may get inside the machine and cause fire or electrical shock.

⚠ WARNING

Never use a solvent such as gasoline, alcohol, or thinner to perform cleaning.

Doing so may cause a fire.

⚠ CAUTION

Be careful around the milling tool.

The milling tool is sharp. Broken milling tools are also dangerous. To avoid injury, exercise caution.

⚠ CAUTION

Use a dry cloth when cleaning silicone resin parts, and be careful to prevent the silicone resin from being damaged.

The silicone resin being damaged may lead to electric leakage.

⚠ CAUTION

Under no circumstances should you move the Z-axis unit with your hands.

Doing so may cause a breakdown.

- This machine is a precision device. Carry out daily care and maintenance.
- Carefully clean away milling waste. Operating the machine with milling waste present may cause a malfunction.
- Never install this machine in an environment where silicone substances (oil, grease, spray, etc.) are present. Doing so may cause poor switch contact.

Daily Maintenance

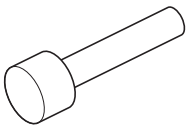
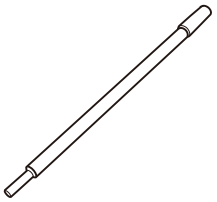
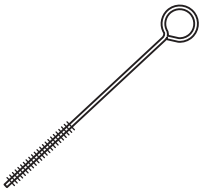
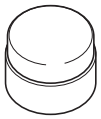
Before Daily Operations

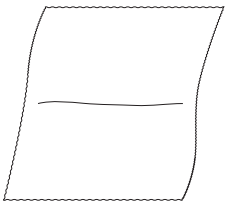
These tasks are necessary for maintaining a favorable machine condition and for ensuring a high level of product quality.

If these tasks are not executed, a message prompting operation will be displayed in VPanel.

Using this machine without maintaining it sufficiently may affect the milling results and may even damage the machine.

Required items

Included items				
				
Collet replacement jig	Collet tap	Taper cleaner	Collet brush	Grease

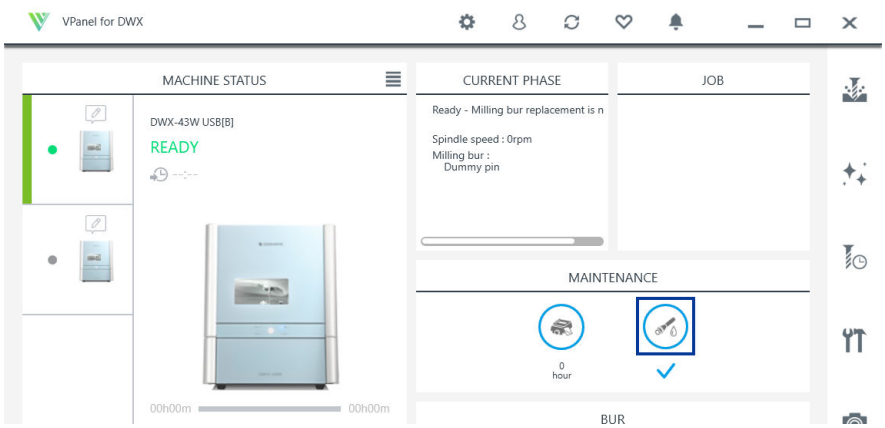
Items to prepare yourself

Clean, dry cloth

Collet Maintenance

1. Remove the collet.

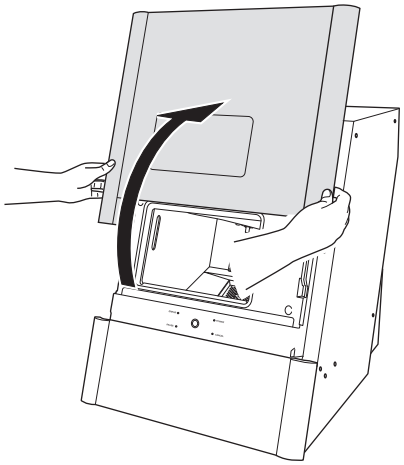
Procedure

1. **Show VPanel.**
2. **Click**  **.**



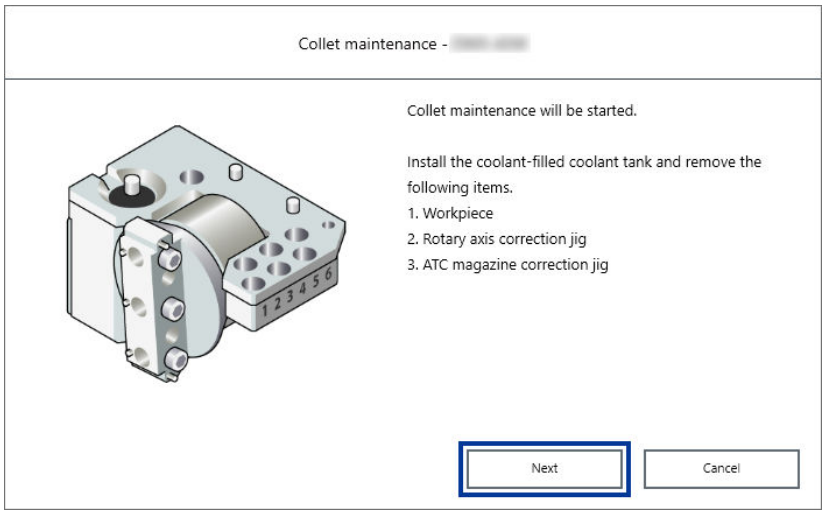
3. **Open the front cover.**

Hold the parts shown in the figure with both hands and open the cover.



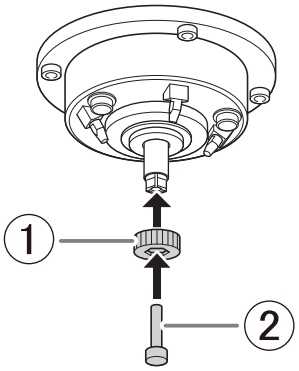
4. **Remove the workpiece, rotary axis correction jig, and ATC magazine correction jig.**

5. **Click [Next].**



6. **Press the collet replacement jig (①) against the collet, and then insert the collet tap (②).**

Align the hexagonal tip of the collet and the hexagonal portion of the collet replacement jig.



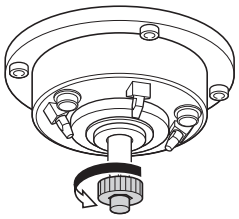
7. **While gently pressing the collet tap up into the hole, rotate the collet replacement jig in the direction indicated in the figure.**

Rotate the collet replacement jig until the collet naturally comes free.

⚠ CAUTION

Rotate the collet replacement jig with the collet tap inserted.

If the collet replacement jig is rotated without the collet tap inserted, the collet may be damaged.



2. Clean the collet.

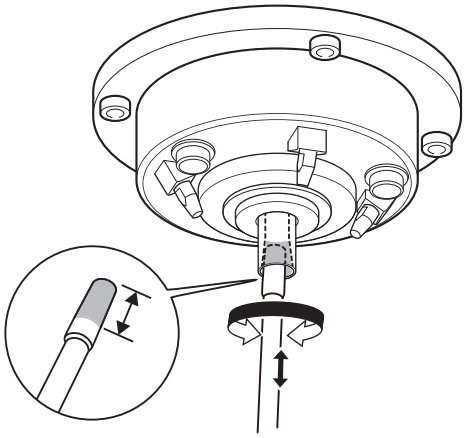
Procedure

1. **Clean the inside of the spindle (where contact with the collet is made) with the taper cleaner.**

   Insert about 2/3 of the taper cleaner tip into the spindle and clean the entirety of the inside of the spindle while moving the cleaner up and down aligned with the tapered (slanted) part.

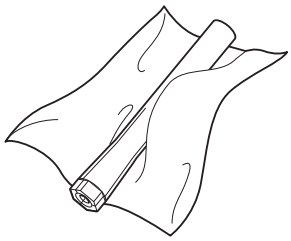
   MEMO

   As a general guide, the taper cleaner should be replaced after 20 cleaning operations.



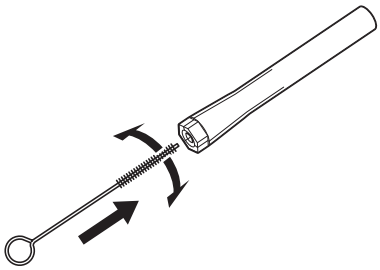
2. **Wipe the outer portion of the collet with a clean, dry cloth.**

   Do not hold the tapered portion tightly. This part being deformed may result in malfunctions.



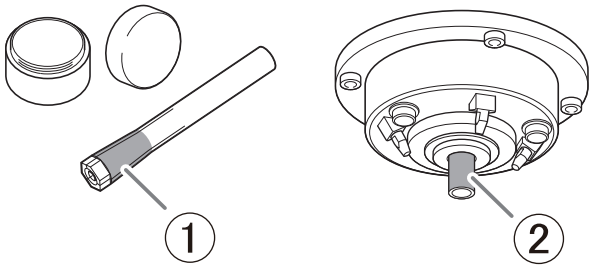
3. **Clean the inner portion of the collet with the collet brush.**

   Rotate the collet brush left and right as if you are brushing the inner portion of the collet.

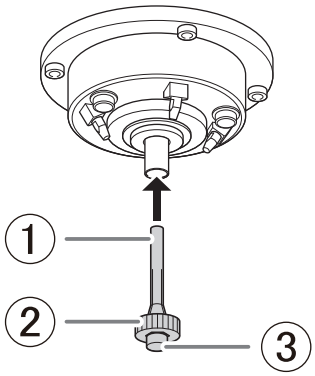


4. **Apply a thin layer of grease to two locations: the tapered portion on the outside of the collet (①) and the spindle head (②).**

   A thin application of grease is sufficient. Do not apply excessively.

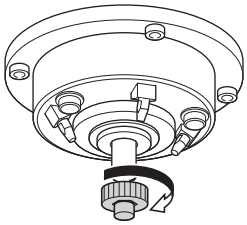


5. **Assemble the collet (①), collet replacement jig (②), and collet tap (③) as shown in the figure, and then insert this assembly into the spindle.**

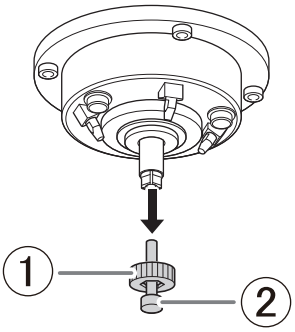


6. **While gently pressing the collet tap up into the hole, rotate the collet replacement jig in the direction indicated in the figure to tighten the collet.**

Keep rotating until the collet replacement jig will not rotate any more.



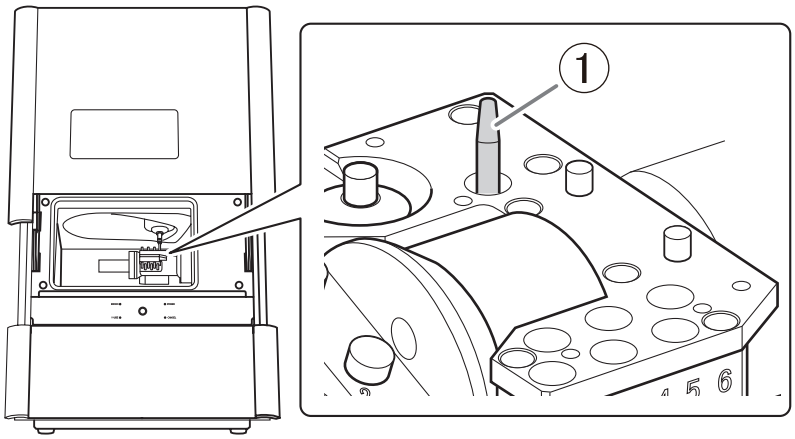
7. **Remove the collet replacement jig (①) and the collet tap (②).**



3. Clean the dummy pin.

Procedure

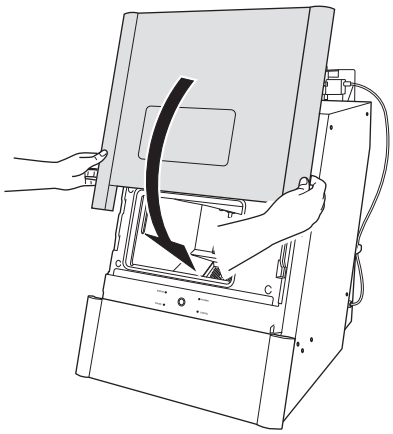
1. **Clean the handle (①) of the dummy pin with a dry cloth.**
   Clean only the handle of the dummy pin with it inserted. Do not pull the dummy pin out.



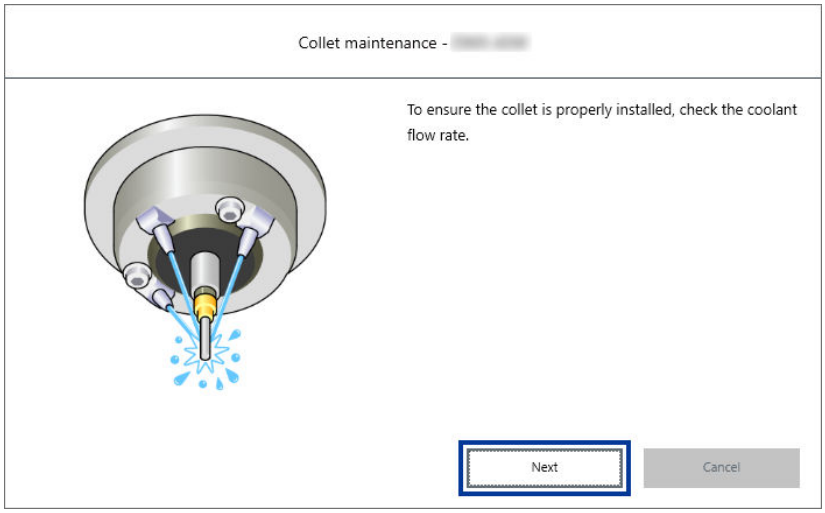
4. Check the coolant flow rate

Procedure

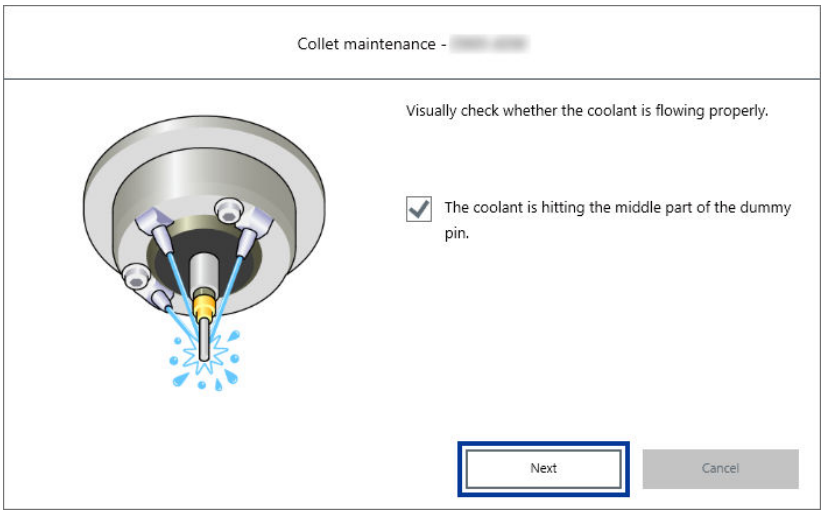
1. **Close the front cover.**
   Hold the parts shown in the figure with both hands and close the cover.



2. **Click [Next].**
   Coolant is discharged and contacts the dummy pin.



3. **Visually check that coolant is applied to the middle of the dummy pin.**
   - **If coolant is applied to the middle of the dummy pin**
     a. Select [**The coolant is hitting the middle part of the dummy pin.**], and then click [**Next**].
     b. Click [**Complete**].
     This completes the procedure for checking the coolant flow rate.



- **If coolant is not applied to the middle of the dummy pin**
  a. Click [**Next**] without selecting [**The coolant is hitting the middle part of the dummy pin.**].
  b. Check the following items, and then click [**Close**].

     There must be a sufficient amount of coolant.

     P. 28 Filling the Coolant Tank

     Coolant nozzles must not be clogged.

     P. 113 Cleaning the Coolant Nozzle

     The tank filter must not be clogged.

     P. 96 Replacing the Coolant

  c. Check the coolant flow rate again.

     Follow the procedure below to check the coolant flow rate.

     P. 111 Checking the Coolant Flow Rate

After Daily Operations

These tasks are recommended after daily milling for maintaining a favorable machine condition and for ensuring a high level of product quality.

MEMO

After milling is completed,  may be displayed in [**Maintenance**] on VPanel.

Click  and replace the coolant according to the instructions displayed in VPanel.

P. 96 Replacing the Coolant

Cleaning the Milling Bur and the Inside of the Machine (Recommended)

Clean inside the machine with a dry cloth.

When to Perform This Work

- After daily operations
- When the coolant is replaced

⚠ CAUTION

Use a dry cloth to clean the inside of the equipment.

Failure to do so may cause the components inside the equipment to degrade, which can lead to injury.

⚠ CAUTION

Be careful of the pointed portion inside the front cover.

There is a pointed portion inside the front cover. Exercise caution when cleaning.

Procedure

1. **Show VPanel.**

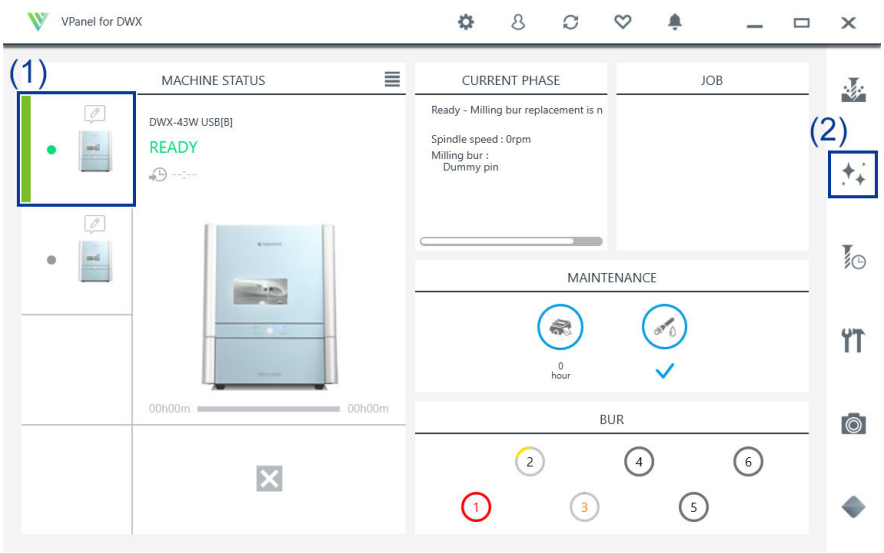
2. **Open the [Milling area cleaning] window.**

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

   When you have connected multiple machines, you can switch to a different machine to operate by clicking its image under [**MACHINE STATUS**].

   (2) **Click**  **.**

   The [**Milling area cleaning**] window is displayed.

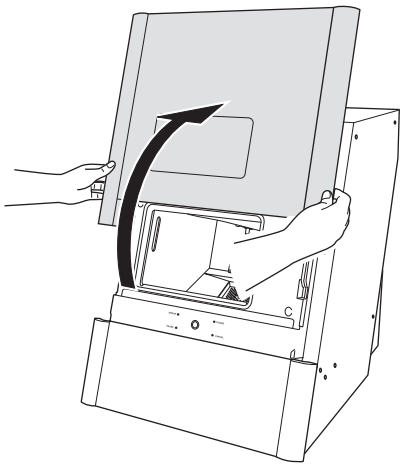


3. **Click [Front], [Rear], or [Reverse side] according to the location you want to clean.**

- [**Front**]: The rotary axis unit moves to the front of the machine and the spindle head moves to the left side of the machine.
- [**Rear**]: The rotary axis unit moves to the back of the machine and the spindle head moves to the right side of the machine.
- [**Reverse side**]: The rotary axis unit turns over.

4. **Open the front cover.**

Hold the parts shown in the figure with both hands and open the cover.



5. **Follow the on-screen instructions to clean inside the machine.**

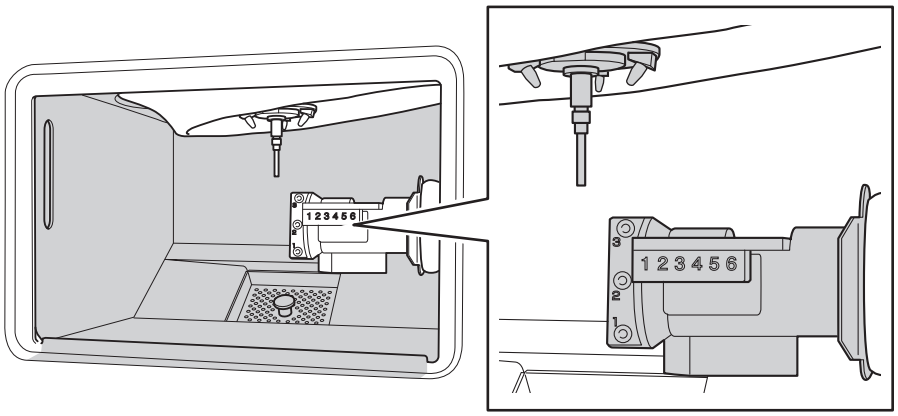
Clean carefully with a dry cloth. Carefully wipe around the spindle head and the rotary axis parts shown in gray in the following figure.

Fluid and milling waste in these areas may affect milling results.

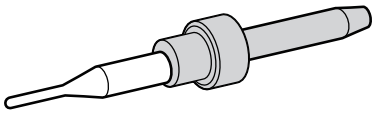
> ⚠ CAUTION
>
> **Be careful around milling waste.**
> Sharp milling waste may become mixed. To avoid injury, exercise caution.

> MEMO
>
> The front cover window scratches easily, so do not wipe it off with a cloth.

- **Inside the machine**



- **Milling bur**



6. **When you have finished cleaning, close the front cover.**

7. **Click [Close].**

RELATED LINKS

- DWX-43W Setup Guide

Periodic Maintenance

When Maintenance Is Required

When installing the machine When replacing the spindle unit	P. 86 Perform Spindle Run-in P. 88 Correcting the Milling Position
When the machine has not been used for a prolonged period	P. 86 Perform Spindle Run-in
When moving the machine to a different installation site When the milling position is misaligned When symptoms such as a hole in the Z direction occur When a milling bur replacement error occurred	P. 88 Correcting the Milling Position
When the work time exceeds 20 hours When 14 days have passed since the last coolant replacement	P. 96 Replacing the Coolant P. 113 Cleaning the Coolant Nozzle
When water or dust accumulates on the regulator	P. 115 Regulator Maintenance
When milling waste or dirt has accumulated inside the machine	P. 118 Preventing Adhering of Milling Waste (Flushing)

Perform Spindle Run-in

Spindle run-in operation may be required to stabilize the rotation of the spindle.

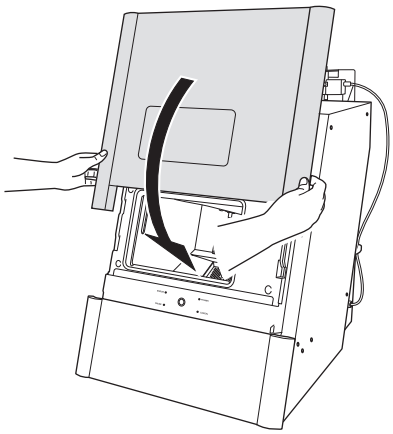
Situations Requiring This Work

- When installing the machine
- When replacing the spindle unit
- When the machine has not been used for a prolonged period

Procedure

1. **Close the front cover.**

Hold the parts shown in the figure with both hands and close the cover.



2. **Turn on the machine.**

The machine starts the initial operations. When the status light stops flashing and remains steadily lit, the initial operations are complete.

3. **Show VPanel.**

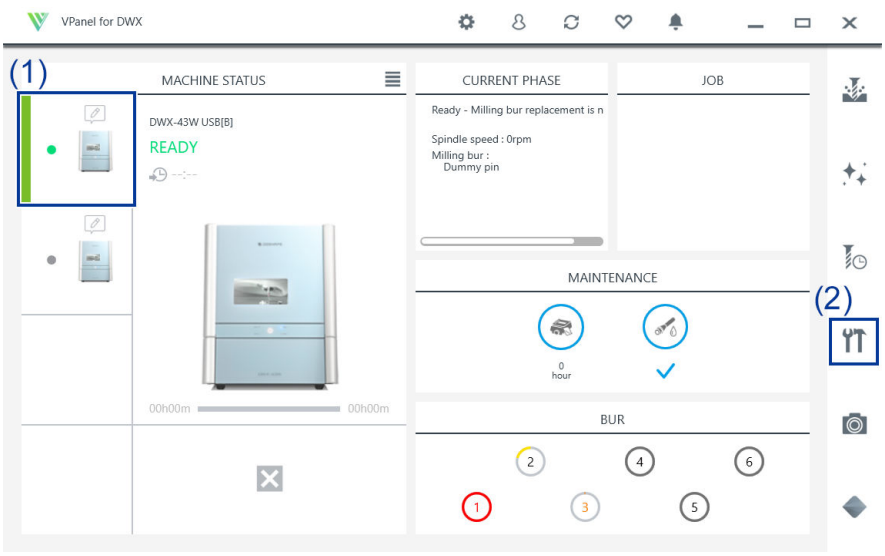
4. **Open the [Machine settings] window.**

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

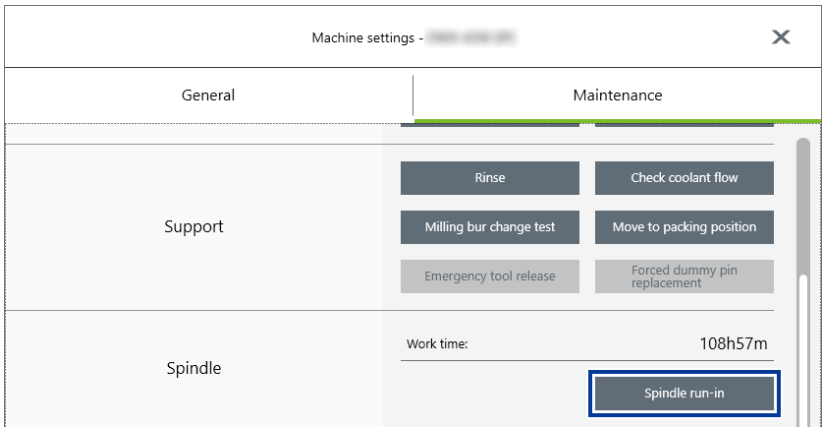
When you have connected multiple machines, you can switch to a different machine to operate by clicking its image under [**MACHINE STATUS**].

(2) **Click**  **.**

The [**Machine settings**] window is displayed.

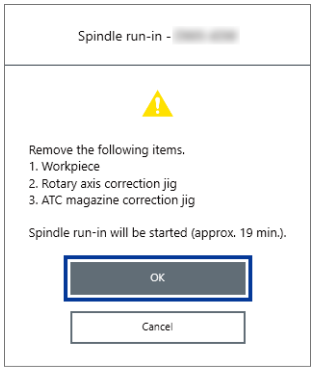


5. **On the [Maintenance] tab, click [Spindle run-in].**



6. **When the window shown in the following figure appears, click [OK].**

Start spindle run-in.



When a message indicating that work is complete appears, the spindle run-in is complete.

RELATED LINKS

- VPanel for DWX USer's Manual

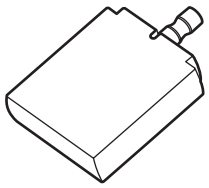
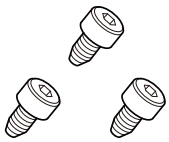
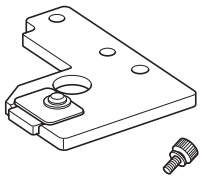
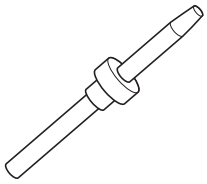
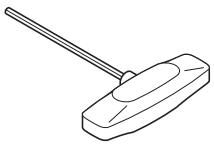
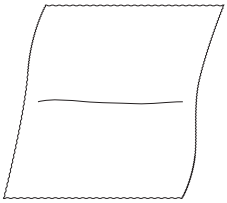
Correcting the Milling Position

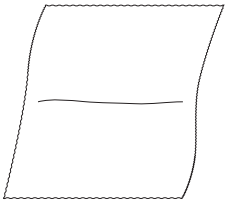
The accuracy of the milling machine may change if it is used for a long period of time or the surrounding environment changes. Performing automatic correction will correct the ATC magazine and rotary axis positions.

Situations Requiring This Work

- When installing or moving the machine
- When replacing the spindle unit
- When the milling position is misaligned
- When symptoms such as a line of level difference or a hole in the Z direction occurs in the milling results
- When a milling bur replacement error occurred

Required items

Included items		
 Rotary axis correction jig	 Mounting screw	 ATC magazine correction jig / screw A
 Detection pin for correction	 T-shaped hexagonal screwdriver	 Cloth for care

Items to prepare yourself
 Clean, dry cloth

IMPORTANT

Handle the detection pin for correction and the dummy pin separately to be absolutely sure that you do not confuse them.

If the detection pin for correction is used as the dummy pin even once, the detection pin for correction cannot be used to provide proper correction. If for some reason the detection pin for correction is used as the dummy pin, a new detection pin for correction will be necessary.

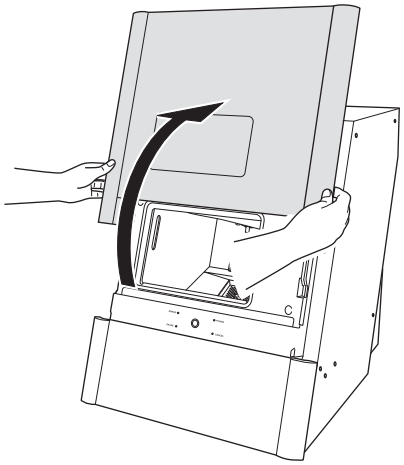
Contact your authorized DGSHAPE Corporation dealer or access our website (https://www.dgshape.com/).

Step 1: Cleaning the Detection Points for Use During Correction

Procedure

1. **Open the front cover.**

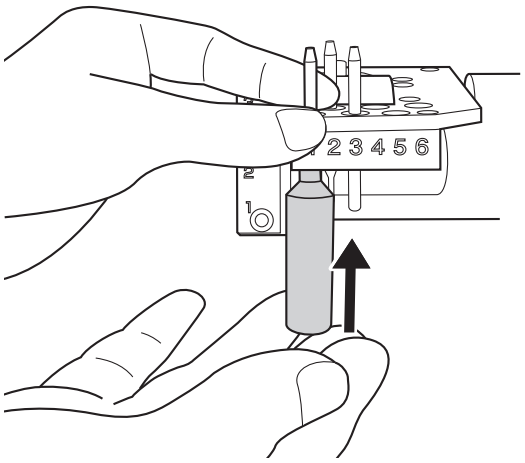
Hold the parts shown in the figure with both hands and open the cover.



2. **If milling burs are set in the ATC magazine, remove all of them.**

> ⚠ CAUTION
>
> **Be careful around the tip and other sharp edges.**
>
> Be careful not to touch the tool tip or any other sharp edges. Doing so may cause injury.

> MEMO
>
> When the milling bur is difficult to remove, use the milling bur removal jig.
>
> Insert the tip of the milling bur into the tip (the narrow end) of the milling bur removal jig, and then push the milling bur up to remove it.

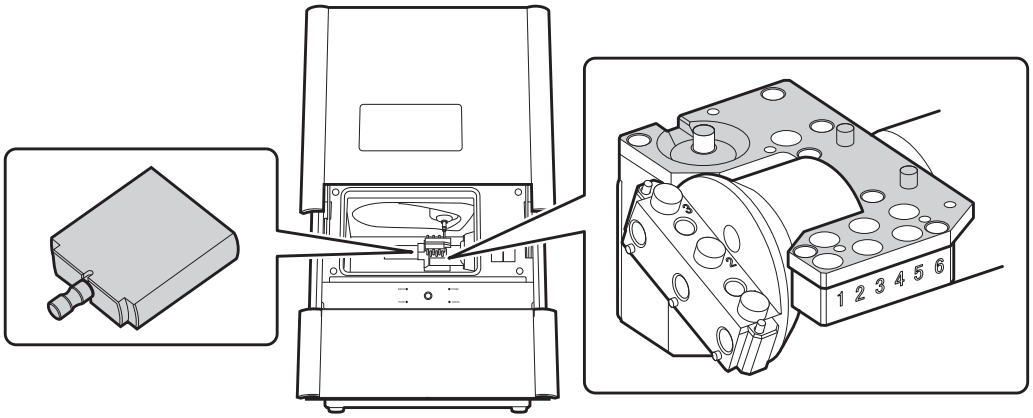


3. **If any included holders or attachments are installed at the workpiece mounting part, remove all of them.**

4. **If the inside of the machine is wet, wipe it off with a clean, dry cloth.**

5. **Use the cloth for care and maintenance to wipe the locations shown in grey in the figures below clean of dirt.**

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

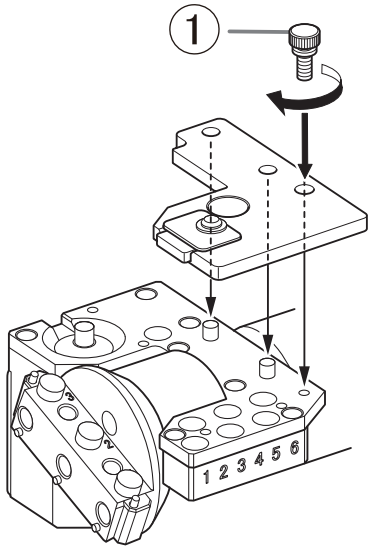


Step 2: Attaching the Automatic Correction Jig

Procedure

1. **Attach the ATC magazine correction jig to the rotary axis unit.**

Align the holes in the ATC magazine correction jig with the projections on the rotary axis unit, and secure them with screw A (①).

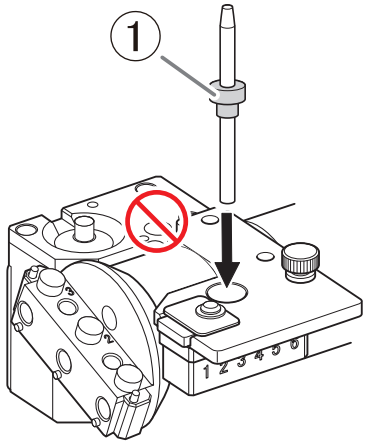


2. **Push the detection pin for correction (①) as far as it will go into stocker number 4 in the ATC magazine.**

The tapered (slanted) end is the top of the detection pin for correction. Be careful not to confuse which side is up and which is down.

IMPORTANT

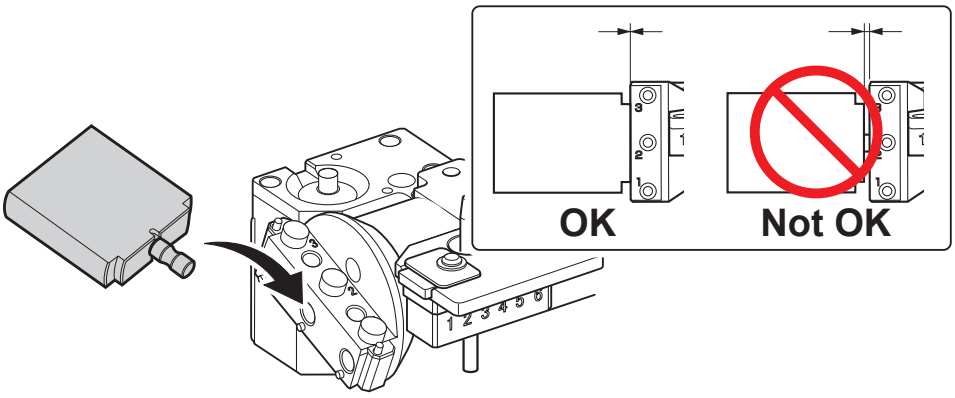
Pay attention to the position where the detection pin for correction is pressed in.
If the detection pin for correction is pressed into a stocker in the wrong position, impact will occur during operation and the machine may be damaged.



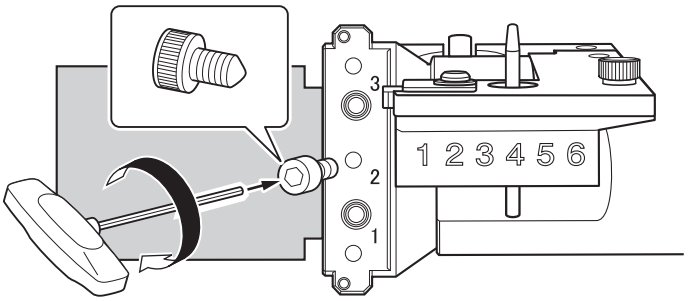
3. **Attach the rotary axis correction jig to hole "2" on the rotary axis.**

(1) **Align the recessed portion of the jig with the protrusion on the rotary axis, and then insert the jig.**

Ensure that there is no gap between the mounting surfaces. It does not matter which of the two recesses on the jig is aligned to the protrusion.



(2) **Use a T-shaped hexagonal screwdriver to secure the rotary axis correction jig in place with a mounting screw.**



4. **Close the front cover.**

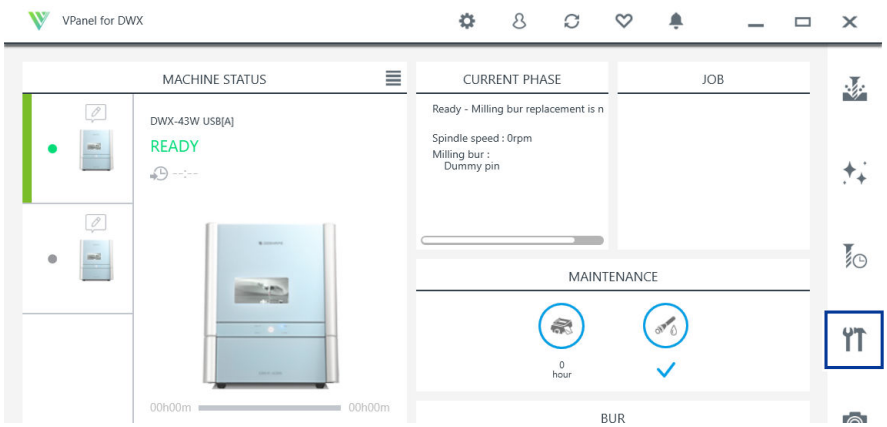
Step 3: Performing Automatic Correction

Procedure

1. **Show VPanel.**

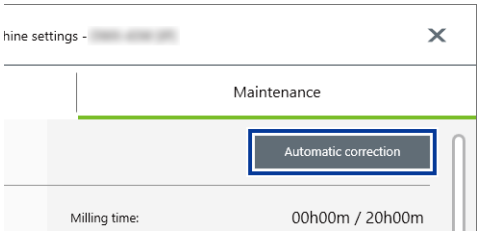
   P. 15 Displaying VPanel

2. **Click** .



   The [**Machine settings**] window is displayed.

3. **On the [Maintenance] tab, click [Automatic correction].**



4. **Follow the on-screen instructions to perform automatic correction.**

   After performing the work displayed in the window, click [**OK**] to proceed to the next window.

   The automatic correction is finished when the operation complete message is displayed.

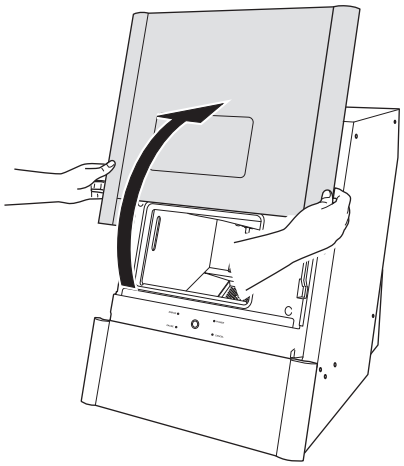
Step 4: Remove the detection pin and the automatic correction jig.

Once correction is complete, remove the detection pin and the automatic correction jig, clean them, and then store them.

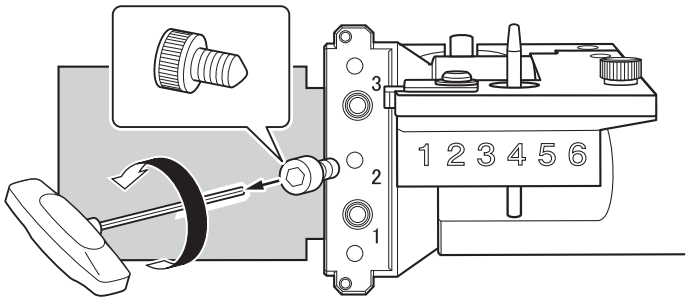
Procedure

1. **Open the front cover.**

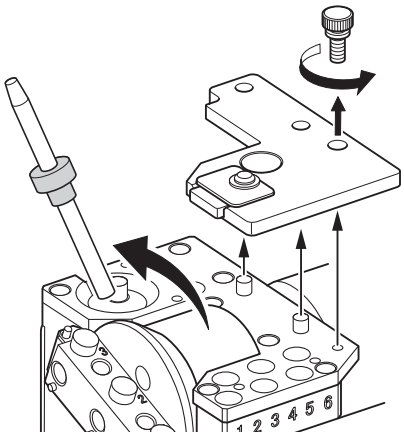
   Hold the parts shown in the figure with both hands and open the cover.



2. **Remove the rotary axis correction jig.**

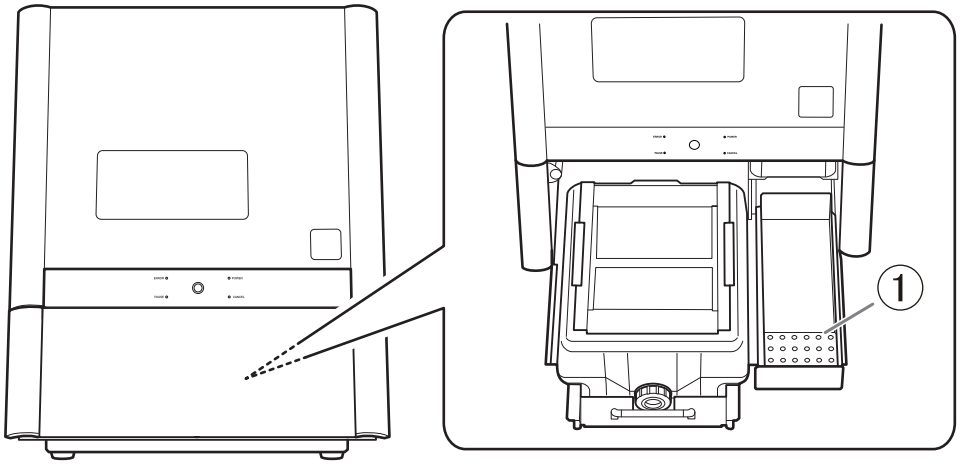


3. **Remove the ATC magazine correction jig and detection pin for correction.**



4. **Close the front cover.**

5. **Store the detection pin and the automatic correction jig in the storage (①).**



Before use, wipe well using a clean, dry cloth, and make sure that no dust, rust, or scratches are found.

The automatic correction jig being damaged, dirty, or rusted will make it impossible to make accurate detections. This may affect the milling results and may even lead to machine damage.

MEMO

To check whether the following symptoms have been improved, actually output milling data.

- When the milling position is misaligned
- When symptoms such as a line of level difference or a hole in the Z direction occurs in the milling results

RELATED LINKS

- P. 47 Starting Milling

Replacing the Coolant

⚠ CAUTION

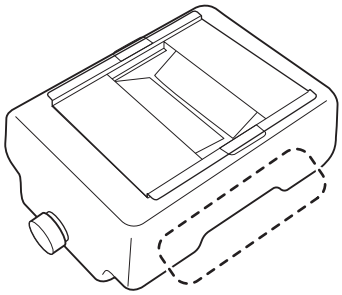
Do not overfill or tilt the coolant tank.

The fluid inlet on the coolant tank is open. Overfilling or tilting will cause fluid to spill out.

⚠ CAUTION

When raising or lowering the coolant tank, hold the parts indicated in the following figure.

Failing to do so may result in your fingers being pinched, leading to injury.

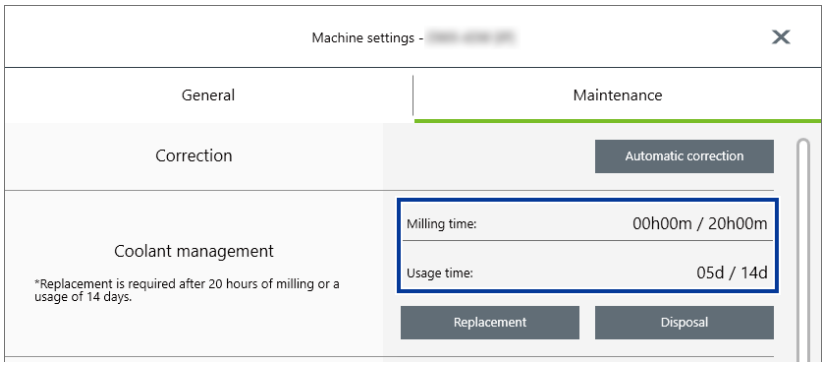


When to Perform This Work

- When the work time exceeds 20 hours
- When 14 days have passed since the last coolant replacement

A notification is displayed on VPanel when it is time to perform this work.

The coolant use time can be checked from **[Machine settings]**>**[Maintenance]**>**[Coolant management]** in VPanel.

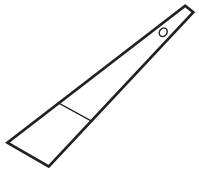
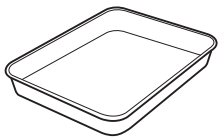
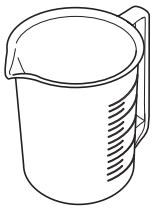


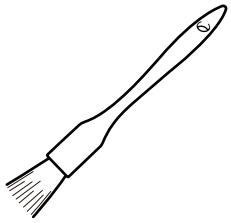
IMPORTANT

If coolant replacement was not performed when the specified work time was exceeded, milling waste in the coolant tank will enter the machine and may damage the machine.

Refer to the following procedure and replace the coolant according to the instructions displayed in VPanel.

Required item

Included items		
		
Cleaning spatula	Cleaning tray	Measuring cup

Items to prepare yourself

Brush

Items to prepare yourself

Water (soft or purified water)

Use soft or purified water. Using hard water may have a negative effect on the service life of the milling bur and on the quality of the product.

Additive (ZAW-1000D)

You will need to prepare the designated additive separately. Contact your authorized DGSHAPE Corporation dealer to purchase items.

Chelating reagent (ZCH-250D)

You will need to prepare the designated chelating reagent separately. Contact your authorized DGSHAPE Corporation dealer to purchase items.

Handling Additives

- Store additives in a cool, dark place.
- Due to the characteristics of the internal components, the color may change and deposits of separated components may form, but these do not indicate any problems with the use of the additives.
- If component deposits form, lightly shake the container to mix the components before use.

Step 1: Removing the Coolant Tank

MEMO

When filling the coolant tank, if the fluid level reaches the "MIN" label, no operation is necessary in VPanel.
In this situation, make the coolant according to Step 4 in Step 3: Filling the Machine with New Coolant(P. 104), and then fill the coolant tank.

Procedure

1. **Show VPanel.**

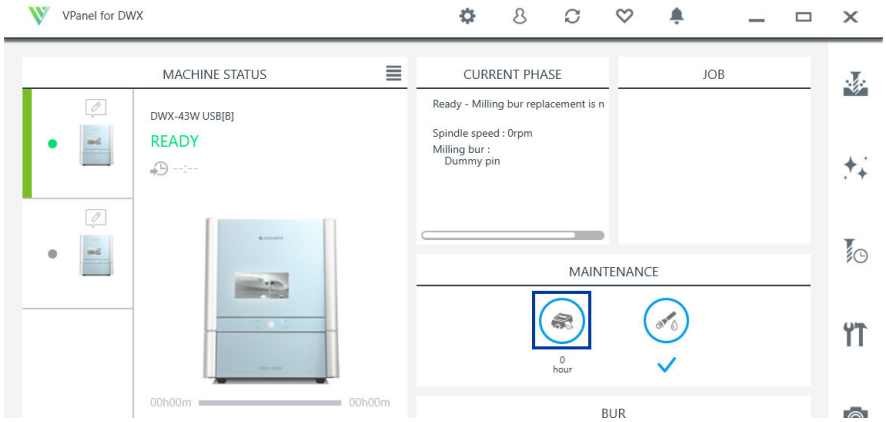
2. **Open the [Coolant replacement and cleaning] window.**

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

When you have connected multiple machines, you can switch to a different machine to operate by clicking its image under **[MACHINE STATUS]**.

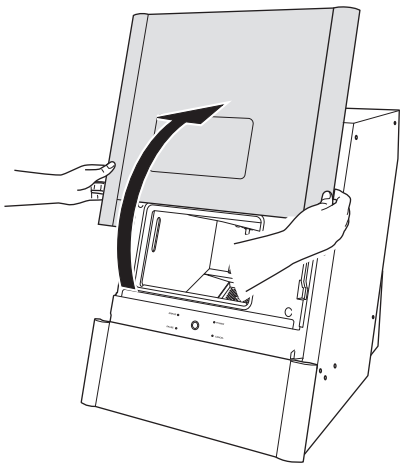
(2) **Click**  **.**

The **[Coolant replacement and cleaning]** window is displayed.



3. **Open the front cover.**

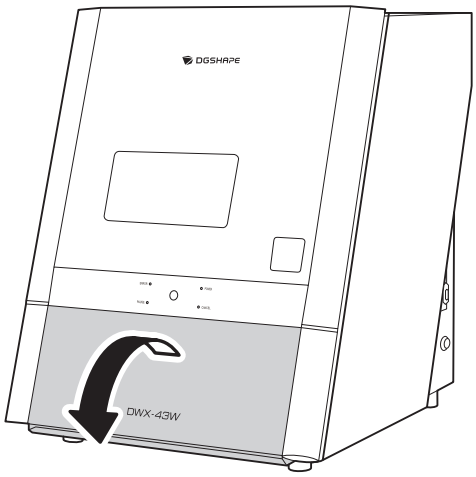
Hold the parts shown in the figure with both hands and open the cover.



4. **Remove the workpiece, rotary axis correction jig, and ATC magazine correction jig.**

5. Click [Next].

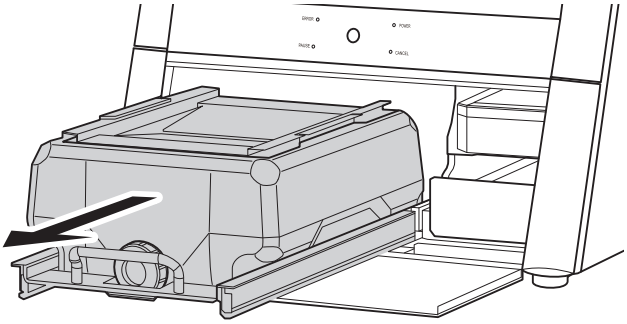
6. Gently push the bottom cover, and then lower it toward you to open it.



7. Remove the coolant tank.

MEMO

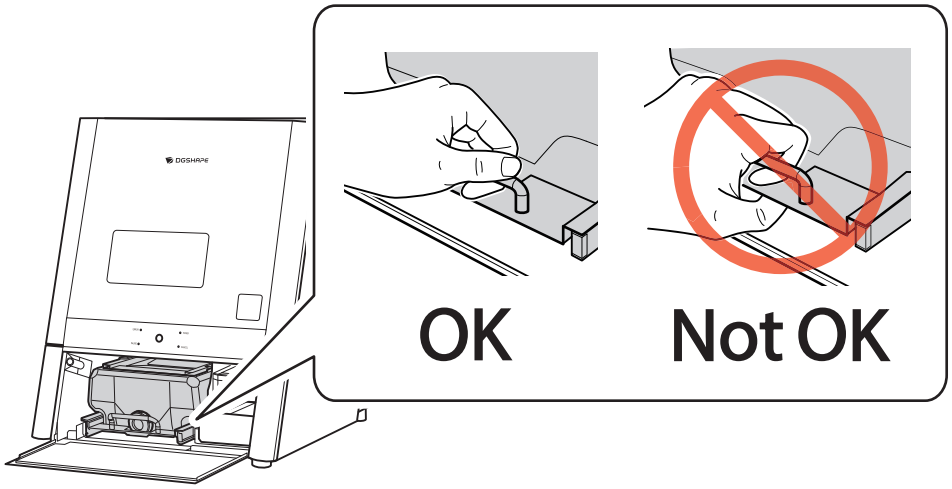
Move the coolant tank slowly. Forcefully moving the coolant tank may cause the coolant to spray out.



⚠ CAUTION

When removing the coolant tank, hold the handle as shown in the figure.

Placing a finger under the drawer may lead to injury due to your finger hitting the cover.

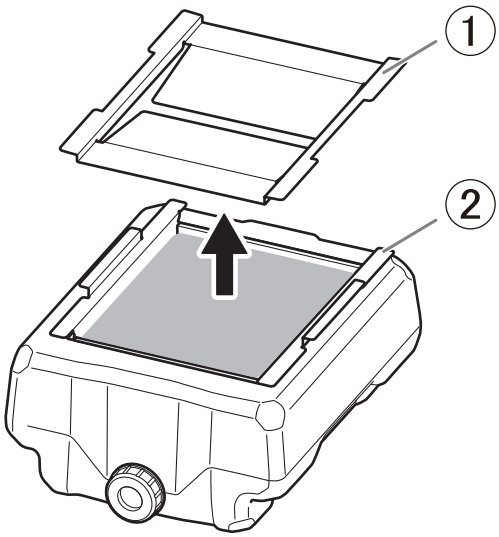

OK
Not OK

Step 2: Disposing the Old Coolant

Procedure

1. **Remove the lid (①) and basket filter (②) of the coolant tank.**

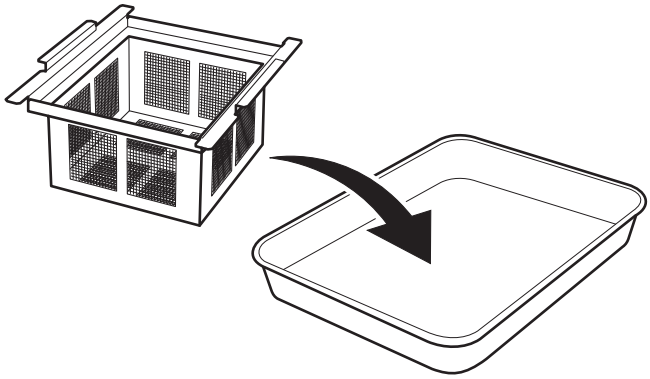
By lifting up the basket filter, both the lid and the basket filter can be removed together.



2. **Place the basket filter in the included tray.**

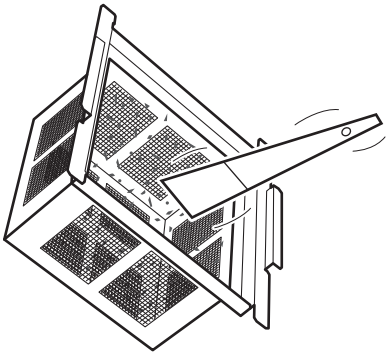
When much milling waste has accumulated in the basket filter, or when milling PMMA, coolant may accumulate inside the basket filter.

Place the basket filter inside the cleaning tray to catch the coolant which flows out from the basket filter.



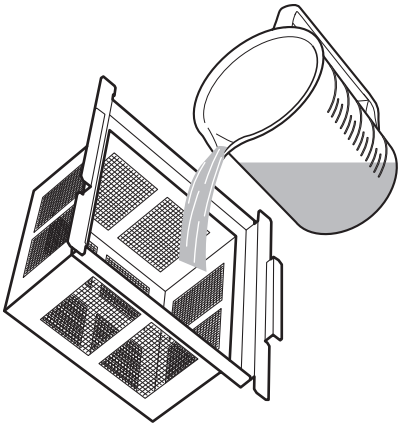
3. **Clean the filter.**

(1) **Use the included cleaning spatula to remove the milling waste from inside the basket filter.**



(2) **Put water in the included measuring cup and rinse out the remaining milling waste in the basket filter.**

In order to prevent clogging, after adding water and mixing the remaining milling waste in the basket filter, thoroughly rinse the basket filter so that no milling waste remains.

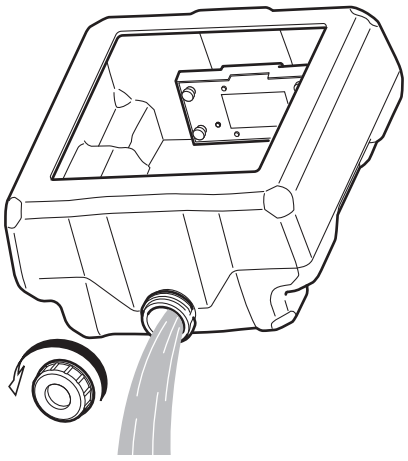


(3) **Repeat Steps (1) and (2) two to three times, until the basket filter is clean.**

4. **Remove the cap of the coolant tank, and then drain the coolant.**

IMPORTANT

Dispose of coolant and milling waste appropriately in accordance with local regulations.
Do not thoughtlessly dispose of them in sewers or rivers or dump them in inappropriate locations. Doing so may have an adverse impact on the environment.



5. **Clean the inside of the coolant tank.**

(1) **Use the included spatula and collect the milling waste in the collection tray placed inside the tank.**

(2) **Remove the milling waste that was collected in the collection tray.**

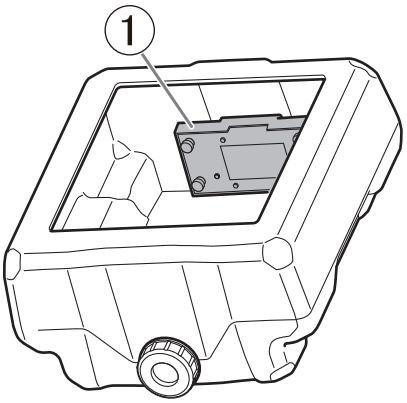
After removing the milling waste, use tap water and rinse off any remaining waste in the collection tray.

(3) **Pour a little tap water into the tank, shake the tank to the left and right, and then dispose of the dirty water.**

(4) **If milling waste has adhered to the tank filter (①), use a brush to remove it.**

IMPORTANT

If the filter is clogged or torn, there is the risk of damage to the machine.
Contact your authorized DGSHAPE Corporation dealer for filter replacement.

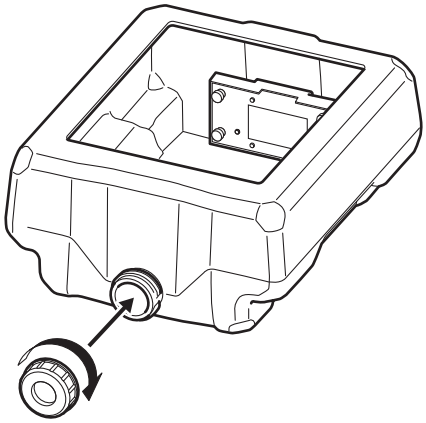


(5) **Repeat Step (3) two to three times, and clean until no more dirty water comes out.**

Step 3: Filling the Machine with New Coolant

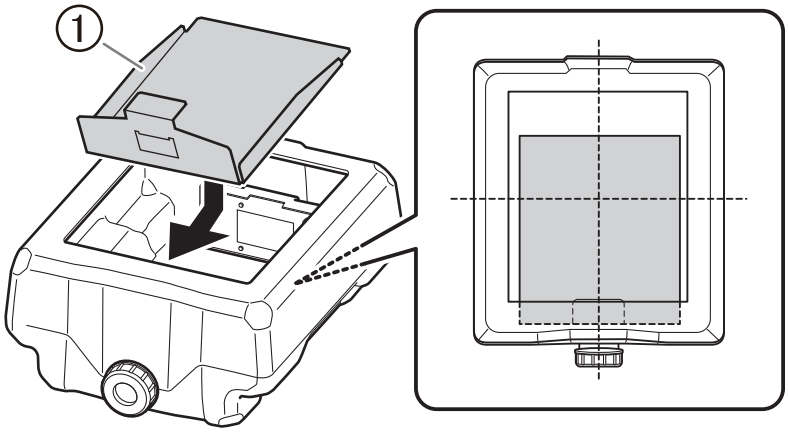
Procedure

1. **Attach the drain cap to the coolant tank.**

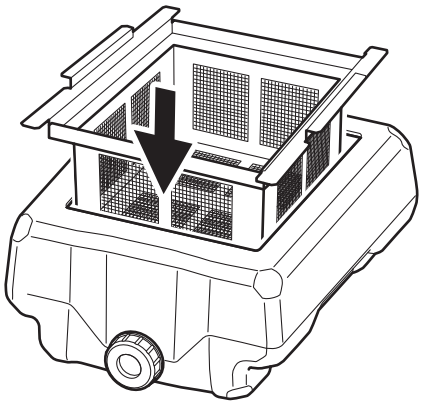


2. **Place the collection tray (①) into the coolant tank.**

   The side of the collection tray with the hole faces the front (the side where the coolant cap is). Move it toward the front and place it in the center in the left-right direction.



3. **Install the filters in the coolant tank.**



4. **Adjust the coolant.**

To make the coolant, mix the 3 materials (water, additive (ZAW-1000D), and chelating reagent (ZCH-250D)) at the fixed ratios. Use the included measuring cup for measuring.

(1) **Water: Mix water and additive in the ratio of "95:5" (water:additive).**

There is no need to stir the solution.

The capacity of the coolant tank is approximately 5 L. To fill the tank, use 4,750 ml of water and 250 ml of additive.

(2) **Water + additive solution: Mix the water + additive solution and chelating reagent in the ratio of "400:1" (water + additive solution:chelating reagent).**

There is no need to stir the solution.

To fill the tank, use 5,000 ml of water and additive, and 12.5 ml of chelating reagent.

⚠ CAUTION

Be sure to use the specified additive.

Additives are effective in reducing coolant deterioration and raising the milling efficiency in order to maintain product performance. Furthermore, if additives are not used, the coolant may generate an unpleasant odor.

⚠ CAUTION

Be sure to use the specified chelating reagent.

The chelating reagent works to make calcium and similar substances contained in the water inactive, making it easier to clean off milling powder that adheres to the machine and the cutting tool after milling.

Refer to the appropriate safety data sheet (SDS) for the chemical substances used in the additive and chelating reagent and the safety related to those substances.

To purchase additives, contact your authorized DGSHAPE Corporation dealer or access our website (https://www.dgshape.com/).

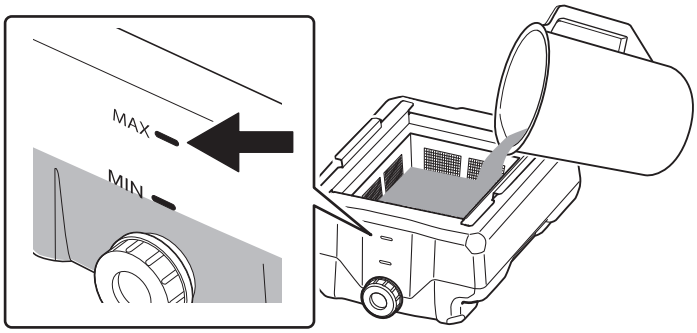
IMPORTANT

Add an additional 12.5 ml of chelating reagent to the coolant in the following cases.

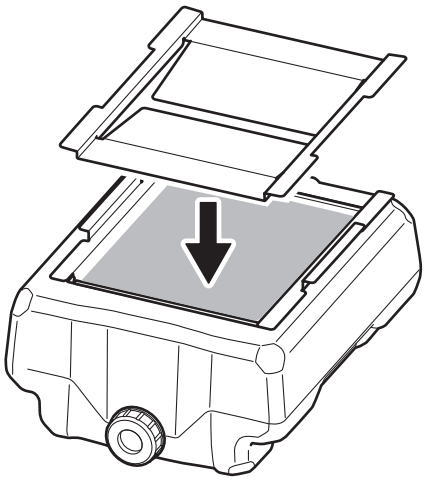
- It is easy for milling waste to adhere to the inside of the machine.
- The milling time exceeds 8 hours, regardless of whether milling waste adheres to the machine.

5. Fill the coolant tank with the coolant.

Do not add coolant past "MAX" indicated on the coolant tank.



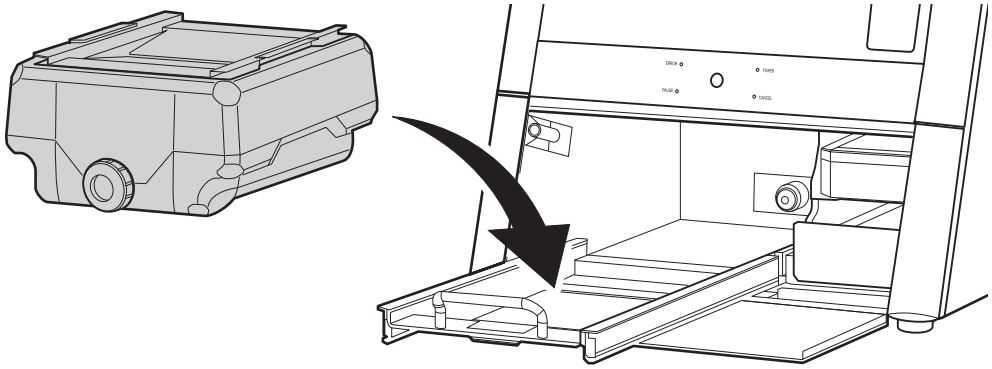
6. Place the lid on the coolant tank.



Step 4: Install the coolant tank

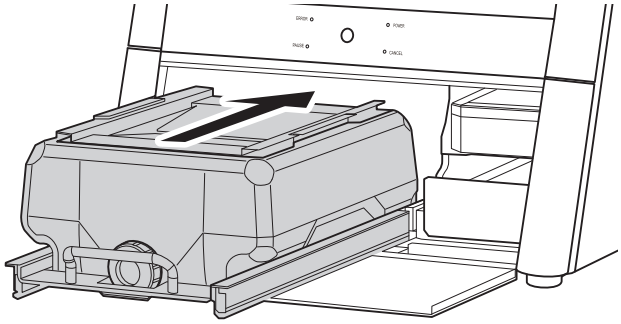
Procedure

1. **Return the coolant tank to its original position.**



2. **Push the coolant tank toward the back of the machine.**

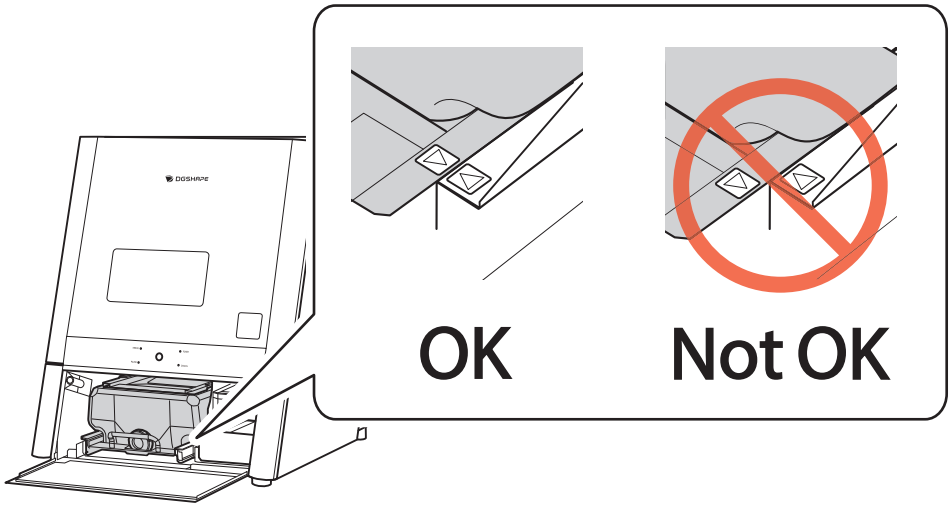
   Push the coolant tank to the point where you feel a click.



MEMO

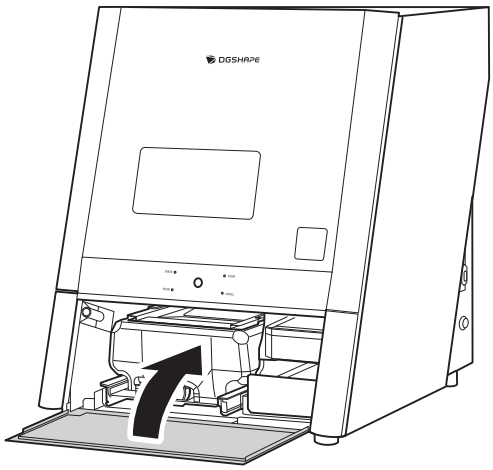
Move the coolant tank slowly. Forcefully moving the coolant tank may cause the coolant to spray out.

Align the label affixed to the right side of the coolant tank with the label affixed to the machine.



3. **Close the bottom cover.**

Flushing starts.



4. **Click [Next].**

Step 5: Cleaning the Inside of the Machine

Clean inside the machine with a dry cloth.

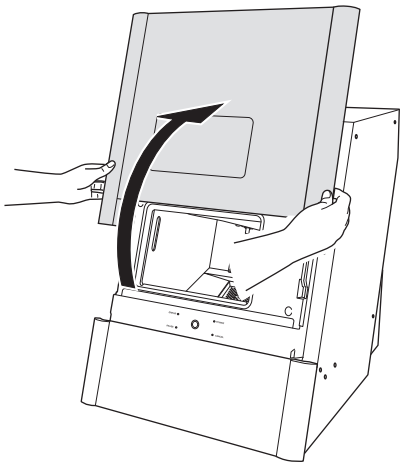
> ⚠ CAUTION
>
> **Use a dry cloth to clean the inside of the equipment.**
> Failure to do so may cause the components inside the equipment to degrade, which can lead to injury.

> ⚠ CAUTION
>
> **Be careful of the pointed portion inside the front cover.**
> There is a pointed portion inside the front cover. Exercise caution when cleaning.

Procedure

1. **Open the front cover.**

   Hold the parts shown in the figure with both hands and open the cover.



2. **Follow the on-screen instructions to clean inside the machine, and then click [Next].**

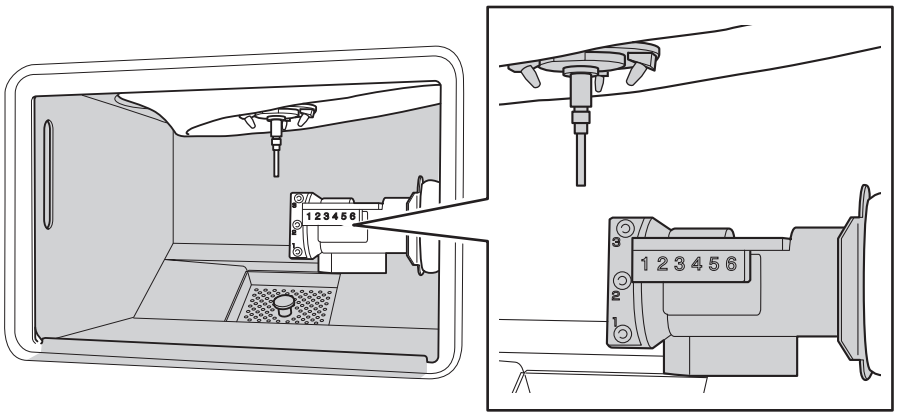
   Clean carefully with a dry cloth. Carefully wipe around the spindle head and the rotary axis parts shown in gray in the following figure.

   Fluid and milling waste in these areas may affect milling results.

   > ⚠ CAUTION
   >
   > **Be careful around milling waste.**
   > Sharp milling waste may become mixed. To avoid injury, exercise caution.

   > MEMO
   >
   > The front cover window scratches easily, so do not wipe it off with a cloth.

Inside the machine



3. When you have finished cleaning, close the front cover.

4. When a message indicating that the operation is complete appears, click [Finish].

Checking the Coolant Flow Rate

Check whether the coolant flow rate is correct.

If the coolant flow rate is not correct, there may be an effect on the milling results.

MEMO

This work is not necessary if the correct coolant flow was already confirmed during the series of work involved in collet maintenance.

Procedure

1. **Show VPanel.**

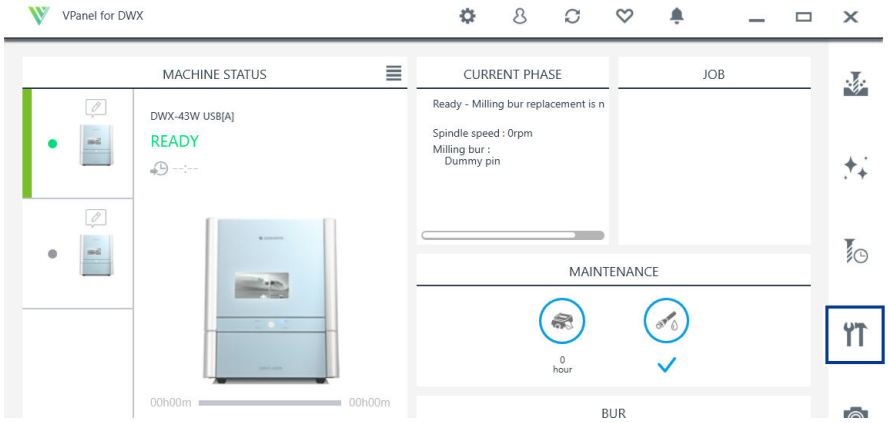
2. **Open the [Machine settings] window.**

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

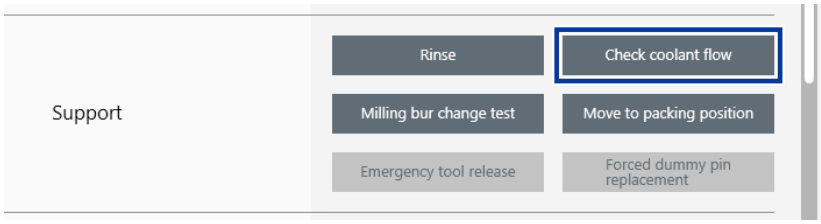
When you have connected multiple machines, you can switch to a different machine to operate by clicking its image under [**MACHINE STATUS**].

(2) **Click**  .

The [**Machine settings**] window is displayed.

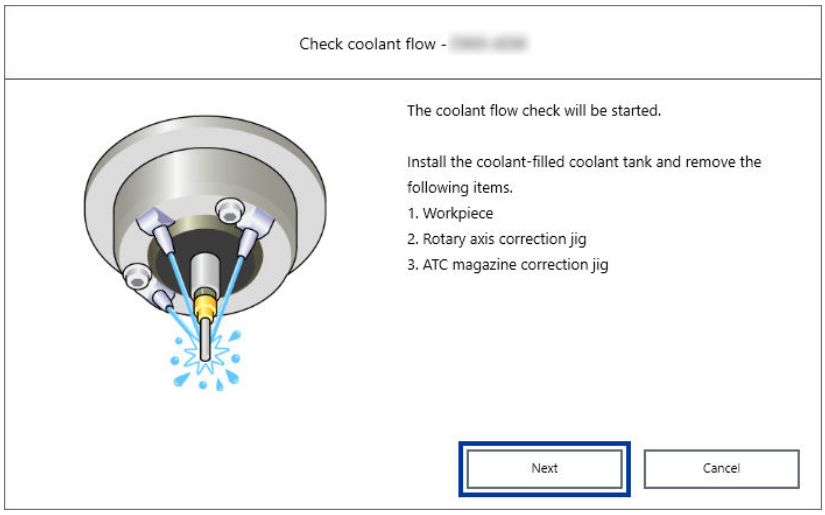


3. **On the [Maintenance] tab, click [Check coolant flow].**



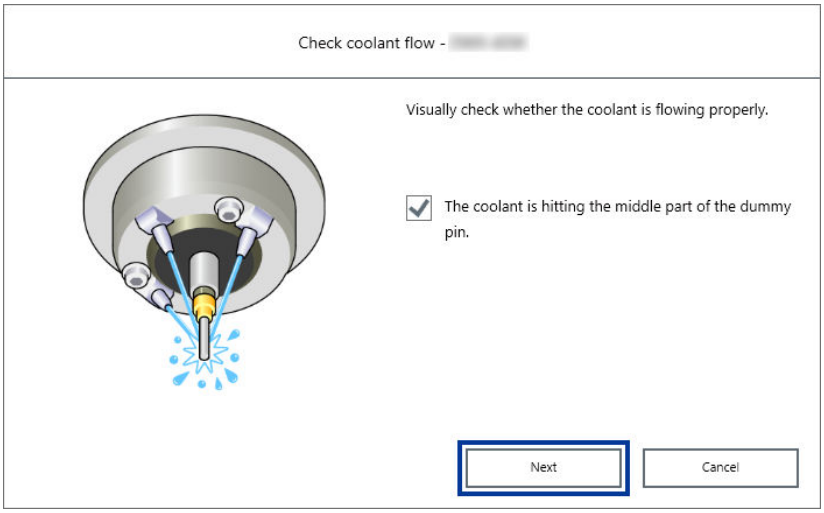
4. **Click [Next].**

Coolant is discharged and contacts the dummy pin.



5. **Visually check that coolant is applied to the middle of the dummy pin.**

- **If coolant is applied to the middle of the dummy pin**
  a. Select [**The coolant is hitting the middle part of the dummy pin.**], and then click [**Next**].
  b. Click [**Complete**].
  This completes the procedure for checking the coolant flow rate.



- **If coolant is not applied to the middle of the dummy pin**
  a. Click [**Next**] without selecting [**The coolant is hitting the middle part of the dummy pin.**].
  b. Check the following items, and then click [**Close**].

  There must be a sufficient amount of coolant.
  P. 28 Filling the Coolant Tank

  Coolant nozzles must not be clogged.
  P. 113 Cleaning the Coolant Nozzle

  The tank filter must not be clogged.
  P. 96 Replacing the Coolant

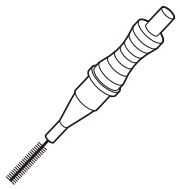
  c. Perform this procedure from the start and check the coolant flow rate again.
  If the coolant flow rate is still insufficient even after adding coolant and cleaning the coolant nozzles, contact your authorized DGSHAPE Corporation dealer.

Cleaning the Coolant Nozzle

When to Perform This Work

- When the coolant is replaced
- When the coolant flow rate is insufficient

Required Item

Included item
 Nozzle cleaner

Cleaning the Coolant Nozzles

Procedure

1. **Show VPanel.**

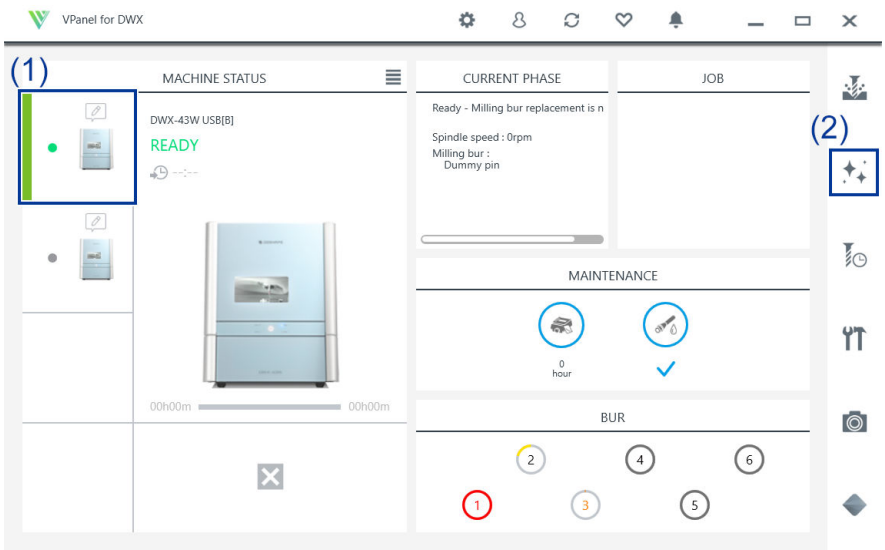
2. **Open the [Milling area cleaning] window.**

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

When you have connected multiple machines, you can switch to a different machine to operate by clicking its image under [**MACHINE STATUS**].

(2) **Click**  .

The [**Milling area cleaning**] window is displayed.

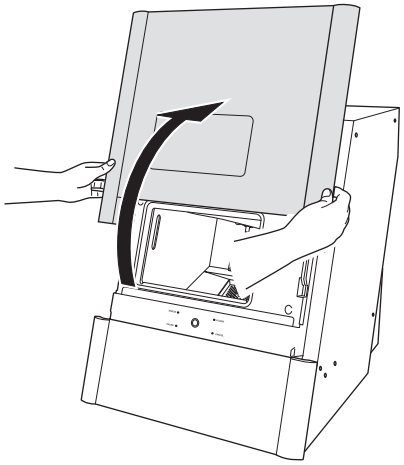


3. **Click [Front].**

The rotary axis unit moves to the front of the machine and the spindle head moves to the left side of the machine.

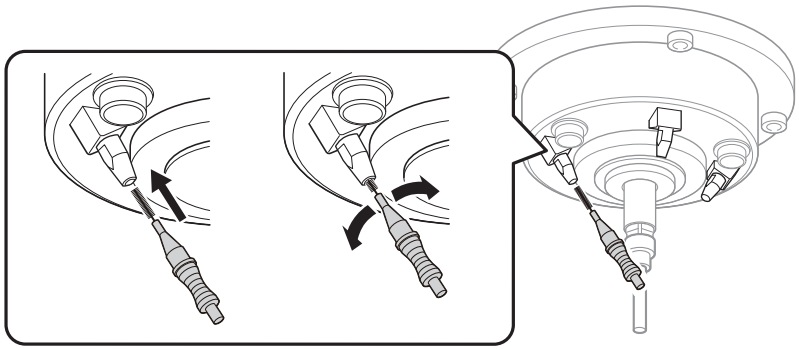
4. **Open the front cover.**

Hold the parts shown in the figure with both hands and open the cover.



5. **Use the nozzle cleaner to clean all coolant nozzles.**

> ⚠ CAUTION
>
> **Be careful of the pointed portion inside the front cover.**
> There is a pointed portion inside the front cover. Exercise caution when cleaning.



6. **When you have finished cleaning, close the front cover.**

7. **Click [Close].**

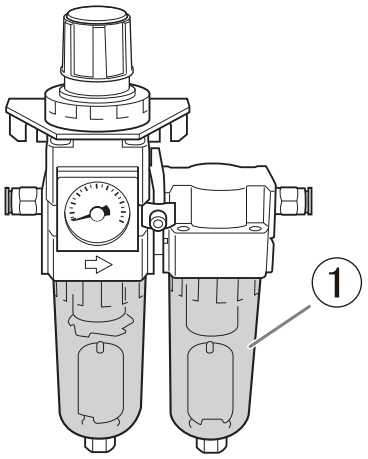
Regulator Maintenance

Cleaning the Bowl

The regulator is equipped with a filter that becomes filled with drainage (moisture and dust) over time. When a certain amount of drainage collects, it drains automatically from the drain hose, but dirt remains inside the bowl (①).

In the following situations, remove the bowl from the regulator and clean the bowl.

- When drainage remains in the bowl.
- When the inside of the bowl is dirty.



⚠ WARNING

Be sure to bleed off the air pressure before removing the regulator bowl.

Failure to do so may result in a rupture or components flying off.

⚠ WARNING

Before removing or attaching the regulator and before performing maintenance, make sure that the bowl is securely attached.

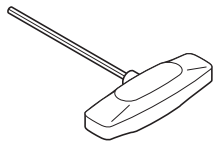
If the bowl is not properly attached, it may come flying off when compressed air is supplied.

⚠ WARNING

Clean the regulator bowl using a neutral detergent. Never use solvents such as gasoline, alcohol, or thinner.

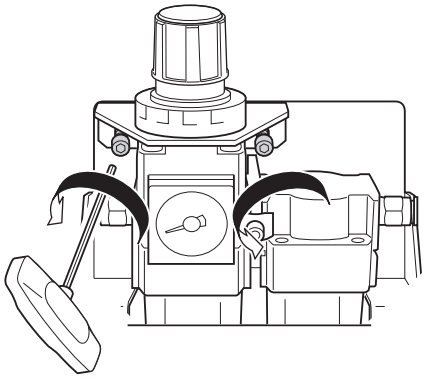
Using solvents may degrade the bowl and may result in a rupture.

Required item

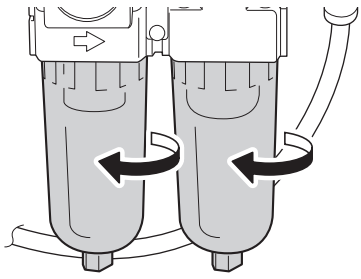
Included item

T-shaped hexagonal screwdriver

Procedure

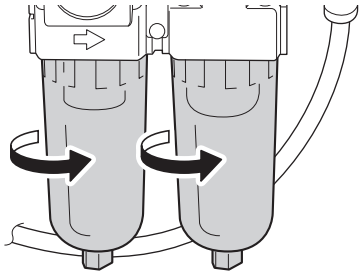
1. Switch on the machine's power switch.
2. Stop the supply of compressed air.
3. Check that the regulator air pressure is 0 MPa.
4. Use a T-shaped hexagonal screwdriver to loosen the screws in the two locations shown in the following figure by about three turns.



5. Remove the regulator.
6. Remove the bowl from the regulator.

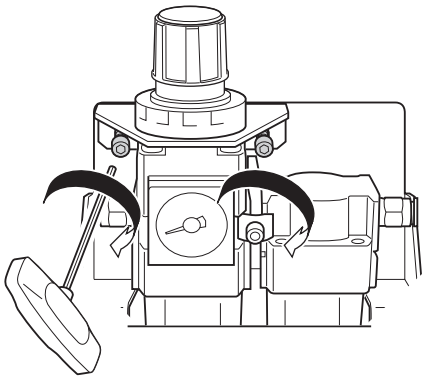


7. Wash the bowl using a neutral detergent.
8. After making sure that the bowl is completely dry, attach the bowl to the regulator.



9. **Attach the regulator to the machine.**

10. **Use a T-shaped hexagonal screwdriver to tighten the screws in the two locations shown in the following figure and secure the regulator.**



11. **Resume the supplying of compressed air.**

    Adjust the air pressure to 0.18 to 0.22 MPa.

RELATED LINKS

- DWX-43W Setup Guide

Preventing Adhering of Milling Waste (Flushing)

To prevent milling waste from adhering to the inside of the machine, it performs a regular flushing operation, which automatically cleans the inside of the machine once every 12 hours from the point the machine is turned on.

You can also perform flushing manually when needed.

Situations Requiring This Work

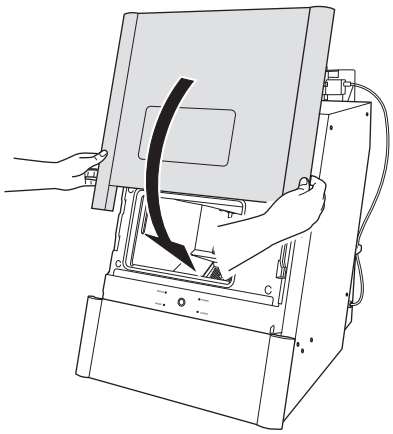
- When milling waste or dirt has accumulated inside the machine

Procedure

1. **Check that the workpiece, milling burs, correction jigs, and other such items are not installed in the machine.**

2. **Close the front cover.**

   Hold the parts shown in the figure with both hands and close the cover.



3. **Show VPanel.**

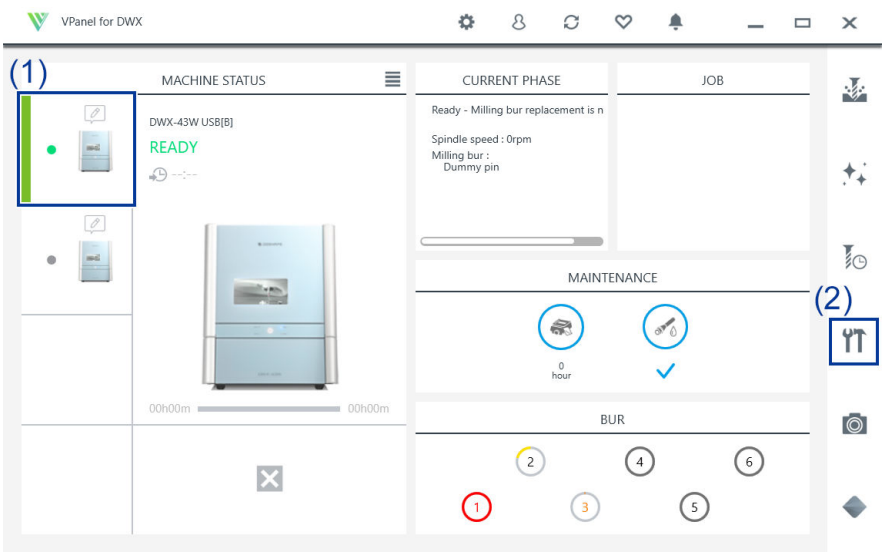
4. **Open the [Machine settings] window.**

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

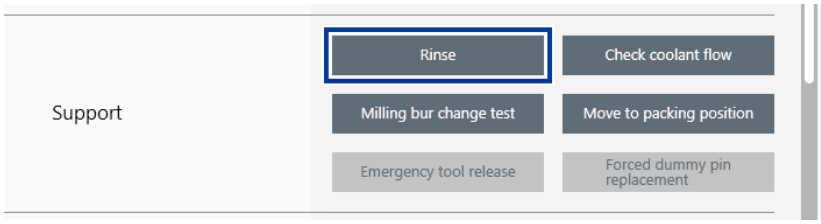
   When you have connected multiple machines, you can switch to a different machine to operate by clicking its image under [**MACHINE STATUS**].

   (2) **Click**  **.**

   The [**Machine settings**] window is displayed.

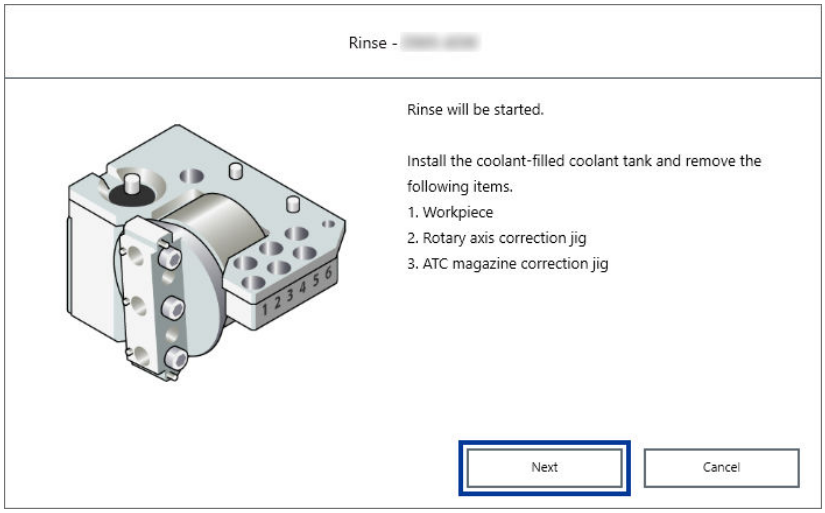


5. **On the [Maintenance] tab, click [Rinse].**



6. **Click [Next].**

Flushing starts and the inside of the machine is cleaned.



7. **When a message indicating that the operation is complete appears, click [Complete].**

Replacing Consumable Parts

Replacing Consumable Parts

When purchasing consumable parts used in milling, contact your authorized DGSHAPE Corporation dealer or access our website.

RELATED LINKS

- https://www.dgshape.com/

Replacing Milling Burs

Replacement Time

The replacement time of the milling bur varies depending on the material that is milled. Replace it at the appropriate time.

To purchase new milling burs, contact your authorized DGSHAPE Corporation dealer or access our website.

Glass ceramics	Milling bur				
	ZGB-125D	ZGB-50D	ZGB2-125D	ZGB2-50D	ZGB2-25D / 75D
	10 h	14 h	10 h	14 h	7 h

Titanium alloys	Milling bur		
	ZTR-150D	ZTB-100D	ZTB-50D
	15 h	6 h	15 h

The milling bur replacement time can be checked in VPanel. Milling burs that have been used for longer than the time set when they were registered have reached their replacement time.

IMPORTANT

Do not use milling burs that have reached their replacement time.
Continuing to use such milling burs may affect the milling quality and lead to machine malfunctions.

RELATED LINKS

- VPanel for DWX USer's Manual
- https://www.dgshape.com/

Replacing the Collet

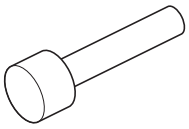
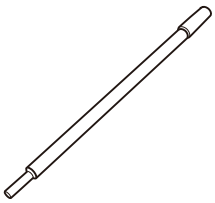
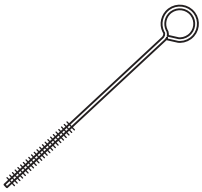
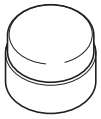
Replacement Time

The times for replacing the collet are as shown below. Replace it at the appropriate time.

To purchase a new collet, contact your authorized DGSHAPE Corporation dealer or access our website.

- When scratches or rust appears on the tapered portion of the collet
- If the collet is deformed.

Required item

Included items				
				
Collet replacement jig	Collet tap	Taper cleaner	Collet brush	Grease

RELATED LINKS

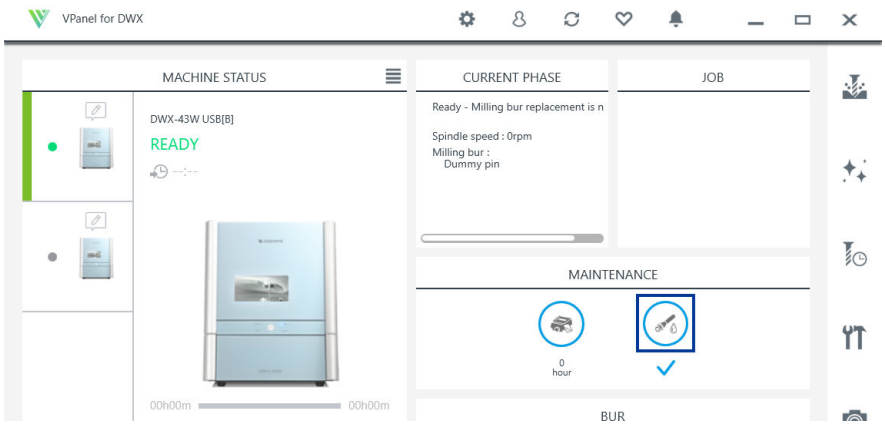
- VPanel for DWX USer's Manual
- https://www.dgshape.com/

1. Remove the collet.

Procedure

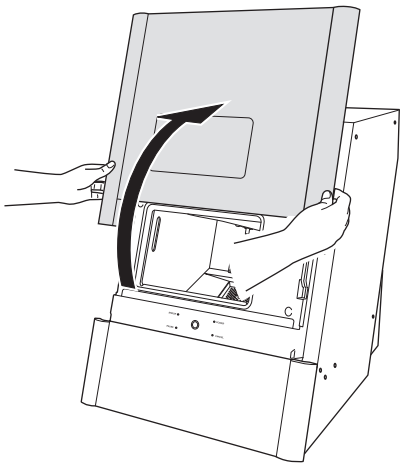
1. **Show VPanel.**

2. **Click**  **.**



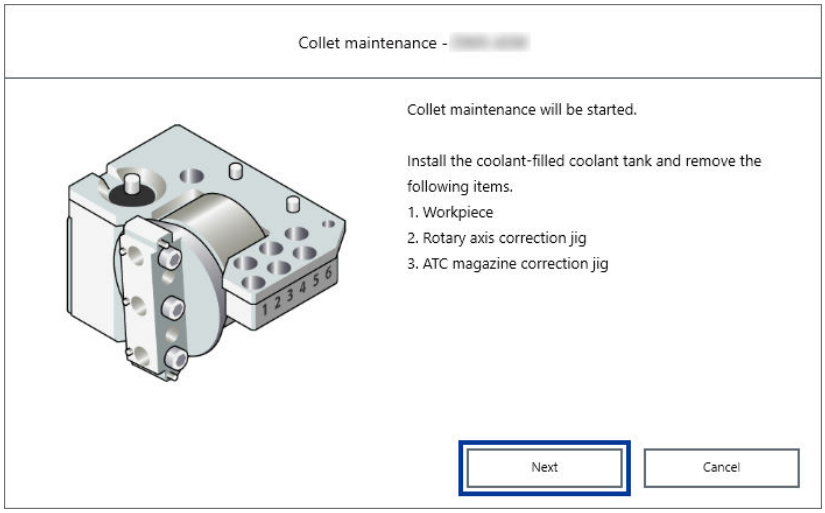
3. **Open the front cover.**

   Hold the parts shown in the figure with both hands and open the cover.

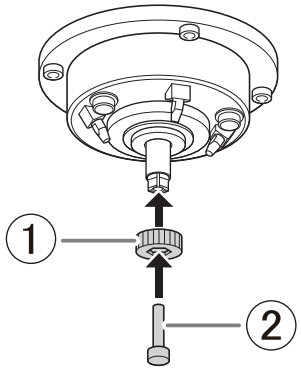


4. **Remove the workpiece, rotary axis correction jig, and ATC magazine correction jig.**

5. **Click [Next].**



6. **Press the collet replacement jig (①) against the collet, and then insert the collet tap (②).**
   Align the hexagonal tip of the collet and the hexagonal portion of the collet replacement jig.

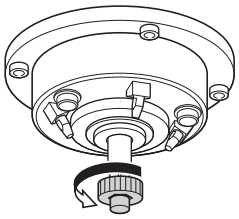


7. **While gently pressing the collet tap up into the hole, rotate the collet replacement jig in the direction indicated in the figure.**
   Rotate the collet replacement jig until the collet naturally comes free.

⚠ CAUTION

Rotate the collet replacement jig with the collet tap inserted.

If the collet replacement jig is rotated without the collet tap inserted, the collet may be damaged.



2. Attach the new collet.

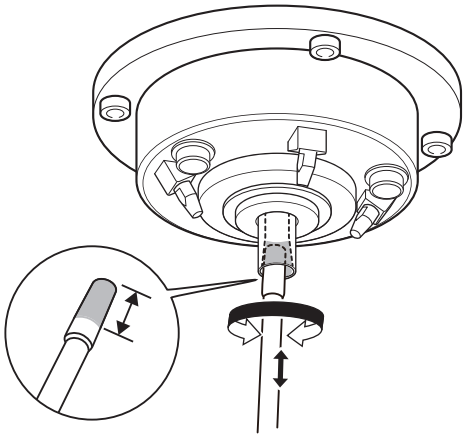
Procedure

1. **Clean the inside of the spindle (where contact with the collet is made) with the taper cleaner.**

   Insert about 2/3 of the taper cleaner tip into the spindle and clean the entirety of the inside of the spindle while moving the cleaner up and down aligned with the tapered (slanted) part.

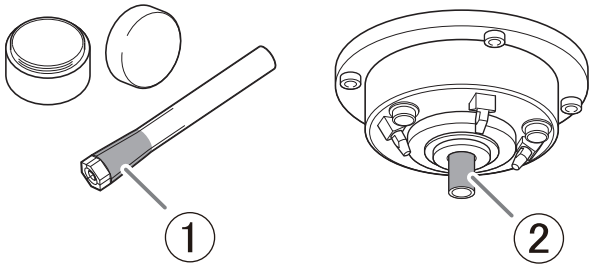
   MEMO

   As a general guide, the taper cleaner should be replaced after 20 cleaning operations.

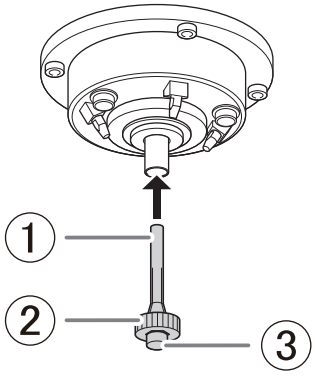


2. **Apply a thin layer of grease to two locations: the tapered portion on the outside of the new collet (①) and the spindle head (②).**

   A thin application of grease is sufficient. Do not apply excessively.

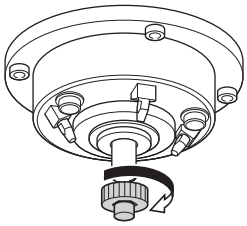


3. **Assemble the collet (①), collet replacement jig (②), and collet tap (③) as shown in the figure, and then insert this assembly into the spindle.**

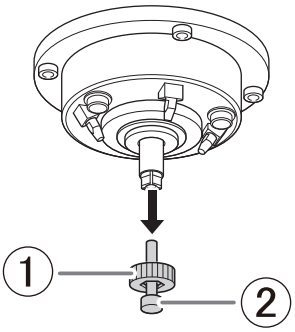


4. **While gently pressing the collet tap up into the hole, rotate the collet replacement jig in the direction indicated in the figure to tighten the collet.**

Keep rotating until the collet replacement jig will not rotate any more.



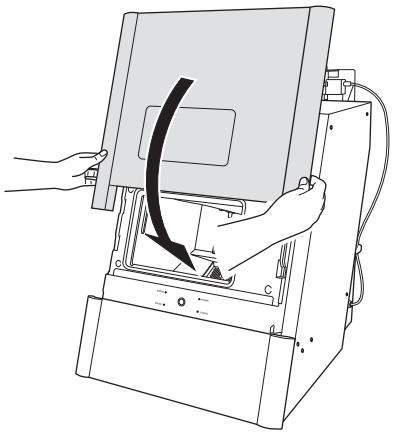
5. **Remove the collet replacement jig (①) and the collet tap (②).**



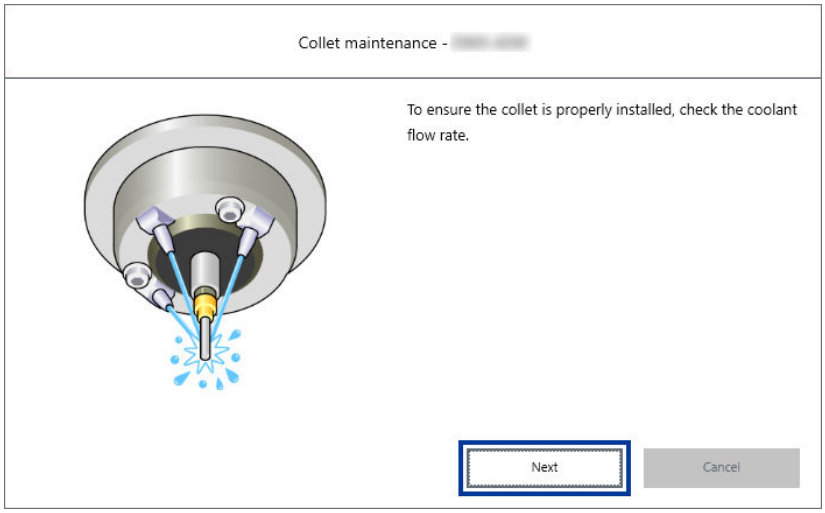
3. Check the coolant flow rate

Procedure

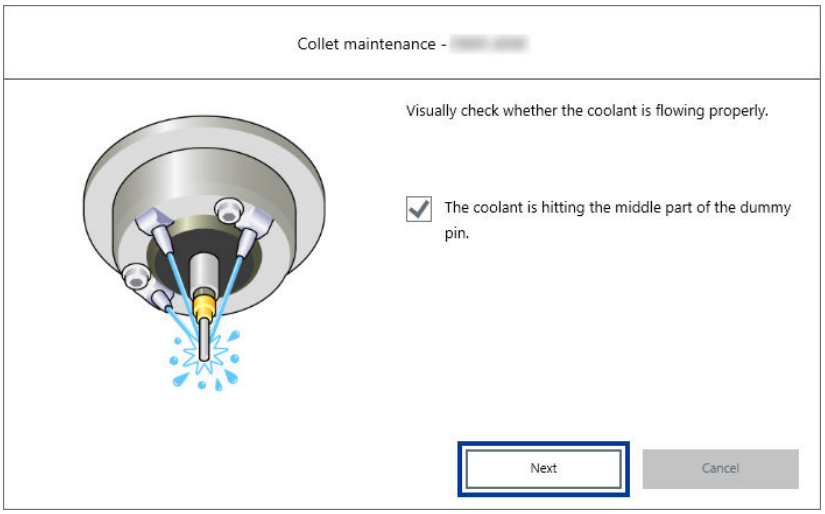
1. **Close the front cover.**
   Hold the parts shown in the figure with both hands and close the cover.



2. **Click [Next].**
   Coolant is discharged and contacts the dummy pin.



3. **Visually check that coolant is applied to the middle of the dummy pin.**
   - **If coolant is applied to the middle of the dummy pin**
     a. Select [**The coolant is hitting the middle part of the dummy pin.**], and then click [**Next**].
     b. Click [**Complete**].
     This completes the procedure for checking the coolant flow rate.



- **If coolant is not applied to the middle of the dummy pin**
  a. Click [**Next**] without selecting [**The coolant is hitting the middle part of the dummy pin.**].
  b. Check the following items, and then click [**Close**].

     There must be a sufficient amount of coolant.

     P. 28 Filling the Coolant Tank

     Coolant nozzles must not be clogged.

     P. 113 Cleaning the Coolant Nozzle

     The tank filter must not be clogged.

     P. 96 Replacing the Coolant

  c. Check the coolant flow rate again.

     Follow the procedure below to check the coolant flow rate.

     P. 111 Checking the Coolant Flow Rate

Replacing the Spindle Unit

Replacement Time

- When the total work time of the spindle exceeds 2,000 hours (with variation depending on the work situation)

You can use VPanel to view the working time of the spindle.

To purchase a new spindle unit or replace a unit, contact your authorized DGSHAPE Corporation dealer.

IMPORTANT

Do not use a spindle unit that has reached its replacement time.
Continuing to use such a spindle unit may affect the milling quality and lead to machine malfunctions.

RELATED LINKS

- VPanel for DWX USer's Manual
- https://www.dgshape.com/

Replacing the Coolant Pump

Replacement Time

- When the total operating time of the pump exceeds 2,000 hours (with variation depending on the work situation)

You can use VPanel to view the pump operating time.

To purchase a new coolant pump or replace a pump, contact your authorized DGSHAPE Corporation dealer.

IMPORTANT

Do not use a coolant pump that has reached its replacement time.
Continuing to use such a coolant pump may affect the milling quality and lead to machine malfunctions.

RELATED LINKS

- VPanel for DWX USer's Manual
- https://www.dgshape.com/

When Not in Use for a Prolonged Period

Work when the Machine Will Not Be Used for a Prolonged Period or when Moving the Machine

Rinsing and Draining the Coolant Lines

After rinsing the coolant lines running through the machine, drain the remaining fluid.

If workpieces, milling burs, correction jigs, and other such items are attached to the machine, remove all of them before performing this work.

IMPORTANT

Do not remove the dummy pin held by the spindle.

When to Perform This Work

- When there are no plans to use the machine after replacing the coolant
- Before moving the machine

Item to Prepare Yourself

- Purified water

1. Setting coolant disposal

Procedure

1. **Show VPanel.**

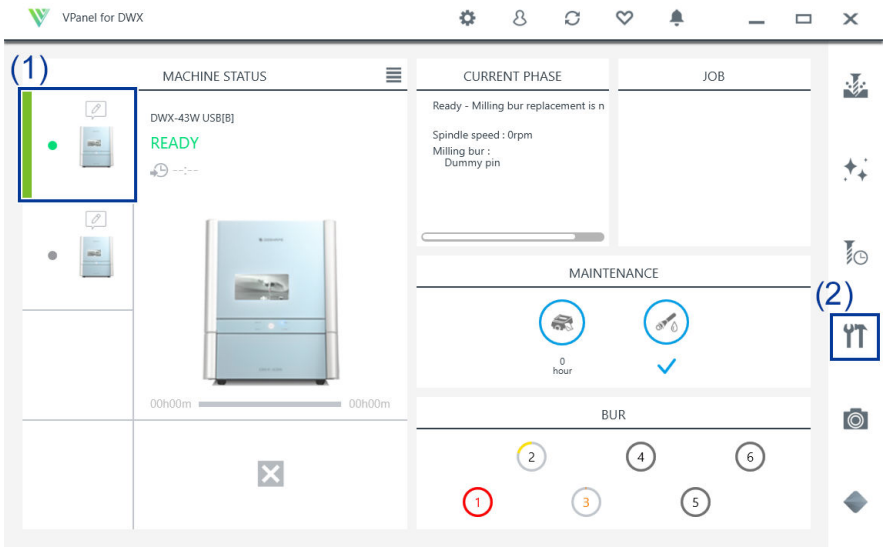
2. **Open the [Machine settings] window.**

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

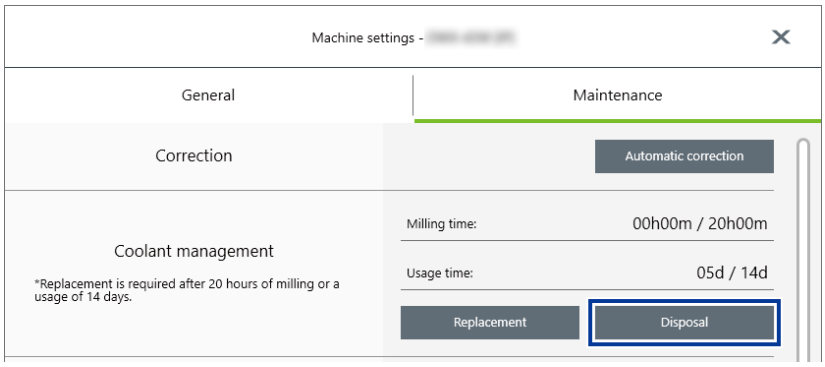
When you have connected multiple machines, you can switch to a different machine to operate by clicking its image under **[MACHINE STATUS]**.

(2) **Click**  .

The [**Machine settings**] window is displayed.

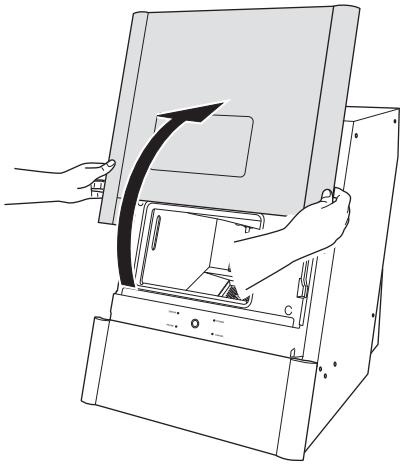


3. **On the [Maintenance] tab, click [Coolant management]>[Disposal].**



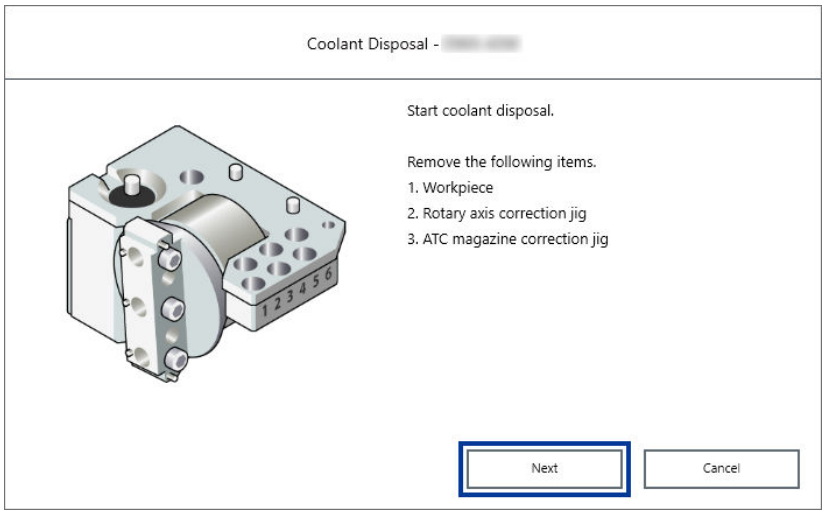
4. **Open the front cover.**

Hold the parts shown in the figure with both hands and open the cover.

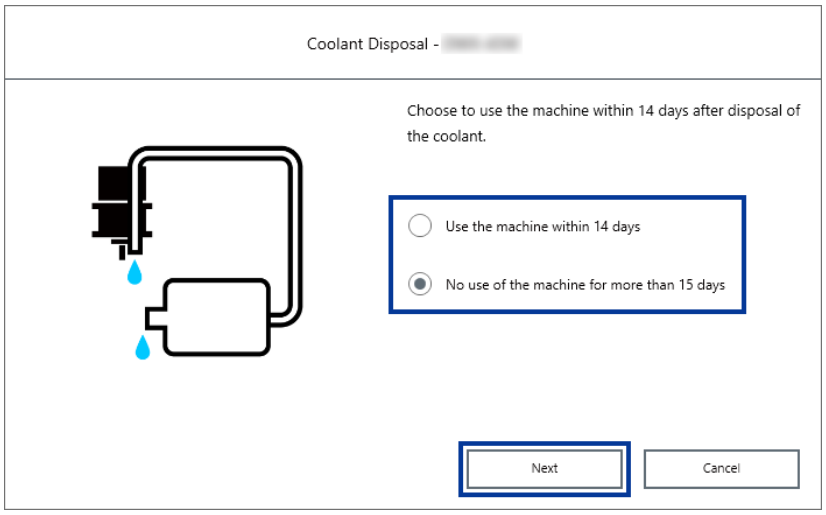


5. **Remove the workpiece, rotary axis correction jig, and ATC magazine correction jig.**

6. **Click [Next].**



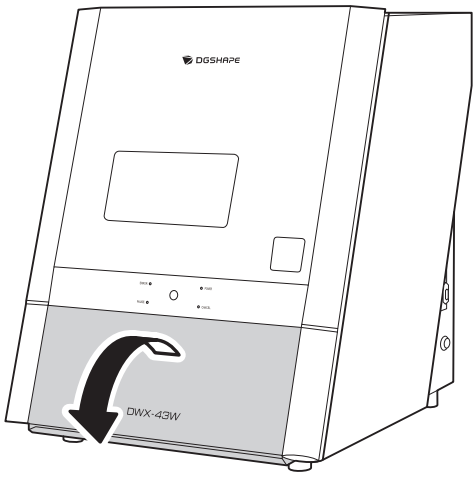
7. **Select the machine use time, and then click [Next].**


Coolant Disposal -
Choose to use the machine within 14 days after disposal of the coolant.
Use the machine within 14 days
No use of the machine for more than 15 days
Next
Cancel

2. Clean the coolant tank

Procedure

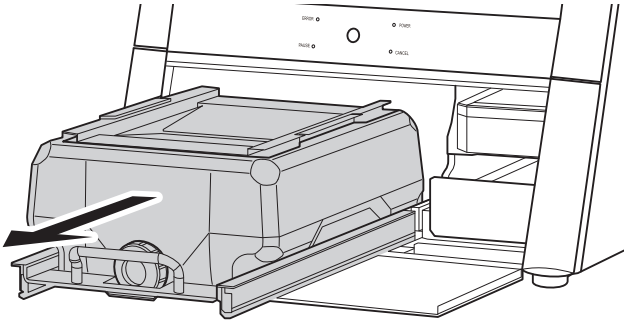
1. **Gently push the bottom cover, and then lower it toward you to open it.**



2. **Remove the coolant tank.**

MEMO

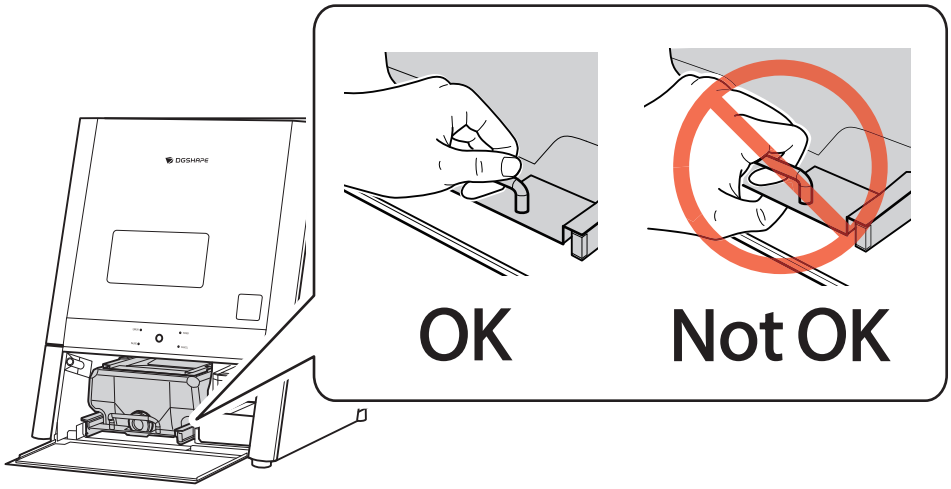
Move the coolant tank slowly. Forcefully moving the coolant tank may cause the coolant to spray out.



⚠ CAUTION

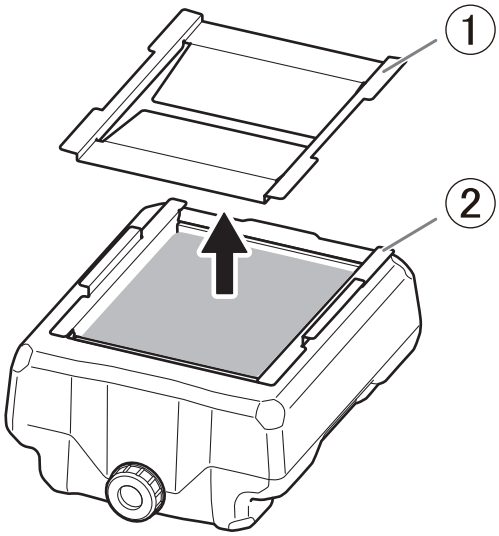
When removing the coolant tank, hold the handle as shown in the figure.

Placing a finger under the drawer may lead to injury due to your finger hitting the cover.



3. **Remove the lid (①) and basket filter (②) of the coolant tank.**

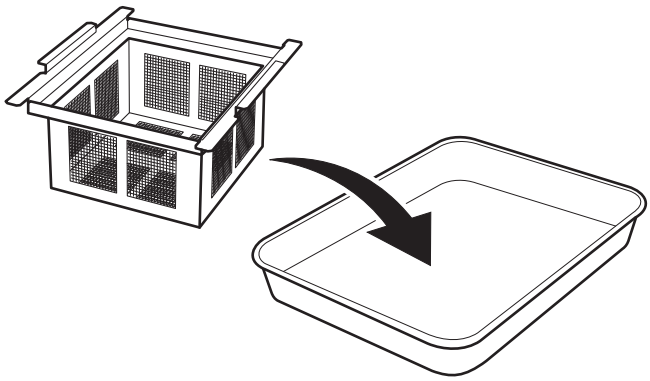
By lifting up the basket filter, both the lid and the basket filter can be removed together.



4. **Place the basket filter in the included cleaning tray.**

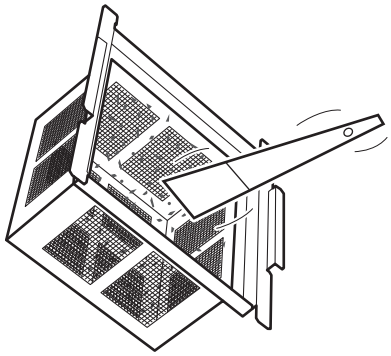
When much milling waste has accumulated in the basket filter, or when milling PMMA, coolant may accumulate inside the basket filter.

In this case, wait until the coolant flows out from the basket filter.



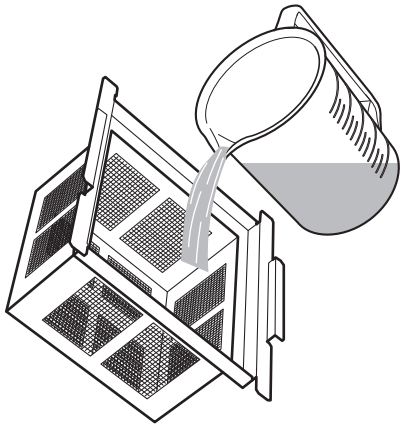
5. **Clean the basket filter.**

(1) **Use the included cleaning spatula to remove the milling waste from inside the filter.**



(2) **Put water in the included measuring cup and rinse out the remaining milling waste in the basket filter.**

In order to prevent clogging, after adding water and mixing the remaining milling waste in the basket filter, thoroughly rinse the basket filter so that no milling waste remains.

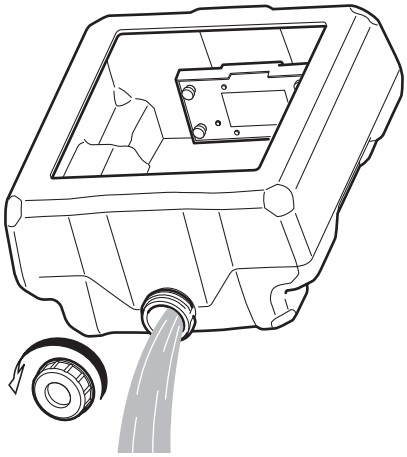


(3) **Repeat Steps (1) and (2) two to three times, until the basket filter is clean.**

6. **Remove the drain cap of the coolant tank, and then drain the coolant.**

IMPORTANT

Dispose of coolant and milling waste appropriately in accordance with local regulations.
Do not thoughtlessly dispose of them in sewers or rivers or dump them in inappropriate locations. Doing so may have an adverse impact on the environment.

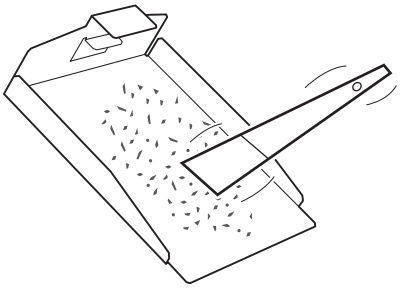


7. **Clean the inside of the coolant tank.**

(1) **Use the included spatula and collect the milling waste in the collection tray placed inside the tank.**

(2) **Remove the milling waste that was collected in the collection tray.**

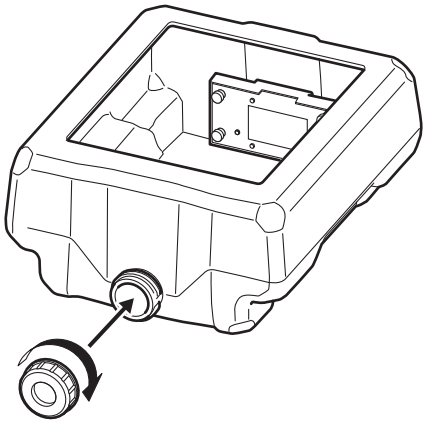
After removing the milling waste, use tap water and rinse off any remaining waste in the collection tray.



(3) **Pour a little tap water into the tank, shake the tank to the left and right, and then dispose of the dirty water.**

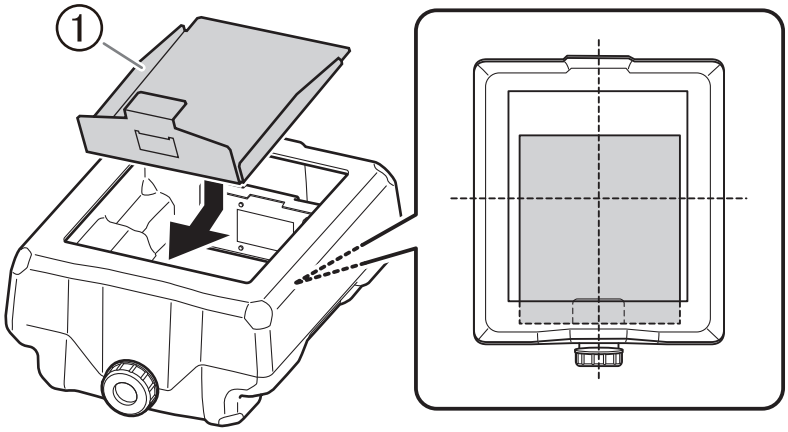
(4) **Repeat Step (3) two to three times, and clean until no more dirty water comes out.**

8. **Attach the drain cap to the coolant tank.**

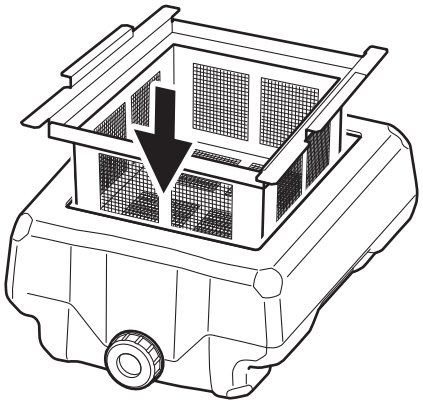


9. **Place the collection tray (①) into the coolant tank.**

The side of the collection tray with the hole faces the front (the side where the coolant cap is). Move it toward the front and place it in the center in the left-right direction.



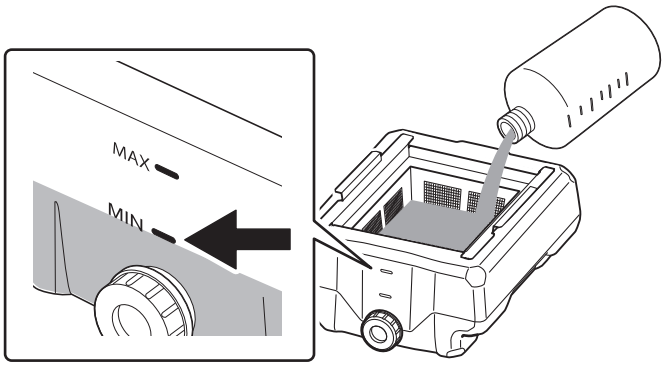
10. **Install the basket filter into the coolant tank.**



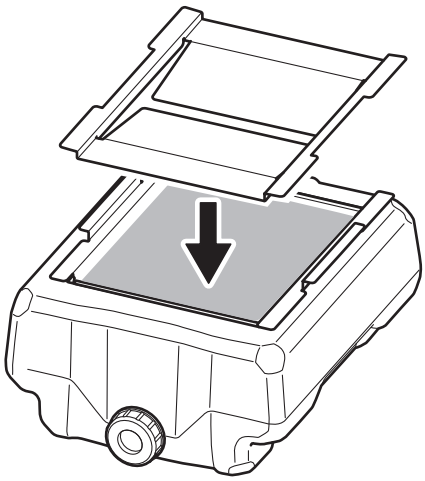
11. **Pour purified water into the coolant tank.**

The purified water is used for regular flushing.

Add purified water until the water level in the tank reaches the "MIN" position.



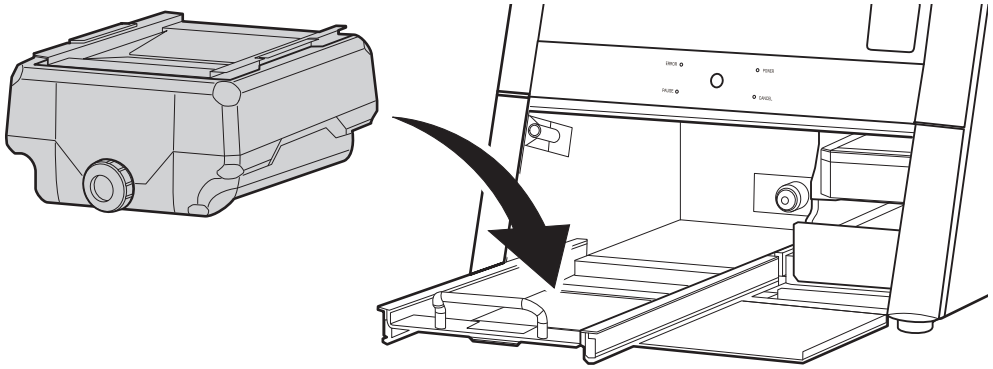
12. **Place the lid on the coolant tank.**



3. Rinsing and draining

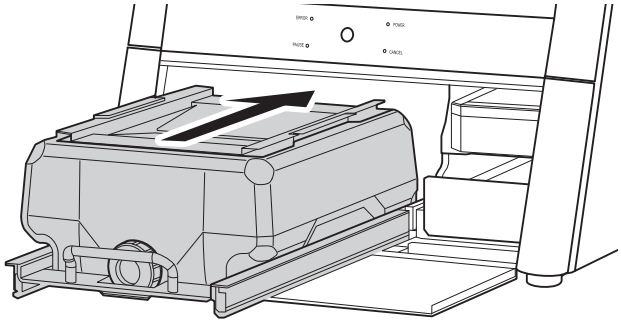
Procedure

1. **Return the coolant tank to its original position.**



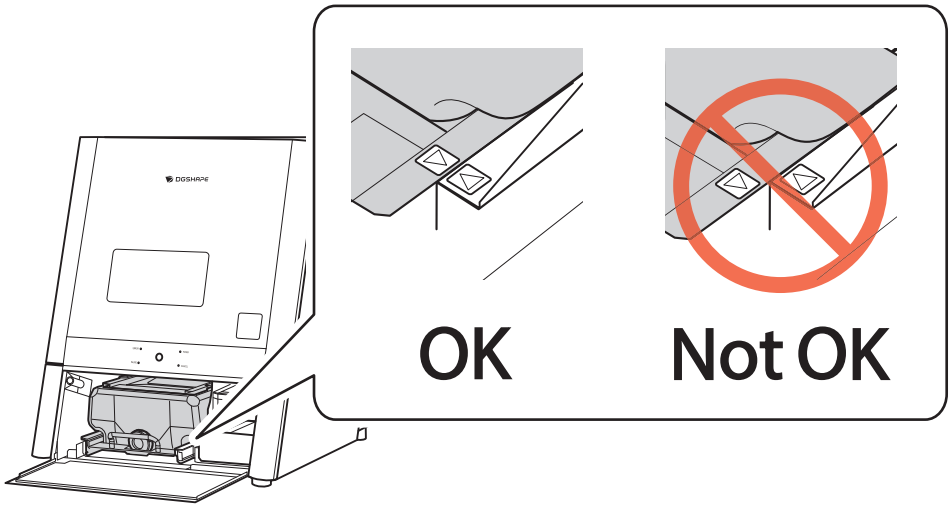
2. **Push the coolant tank toward the back of the machine.**

   Push the coolant tank to the point where you feel a click.



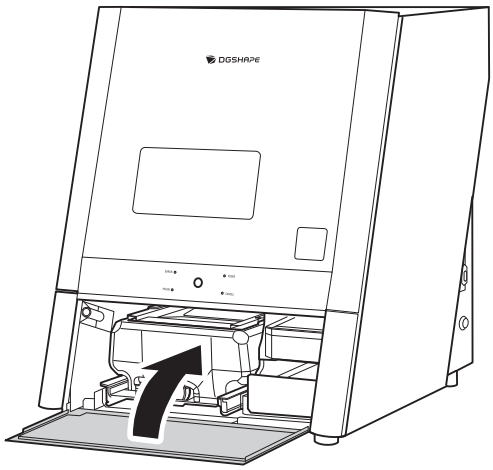
> **MEMO**
>
> Move the coolant tank slowly. Forcefully moving the coolant tank may cause the coolant to spray out.

   Align the label affixed to the right side of the coolant tank with the label affixed to the machine.



3. **Close the bottom cover.**

Flushing starts.



4. **Follow the instructions on the screen and empty the coolant tank.**

Water drainage starts.

MEMO

If **[Use the machine within 14 days]** was selected in Step 7 of 1. Setting coolant disposal(P. 131), water drainage would not start. Proceed to 4. Clean the inside of the machine.(P. 141).

5. **Follow the instructions on the screen and again empty the coolant tank.**

4. Clean the inside of the machine.

Clean inside the machine with a dry cloth.

⚠ CAUTION

Use a dry cloth to clean the inside of the equipment.
Failure to do so may cause the components inside the equipment to degrade, which can lead to injury.

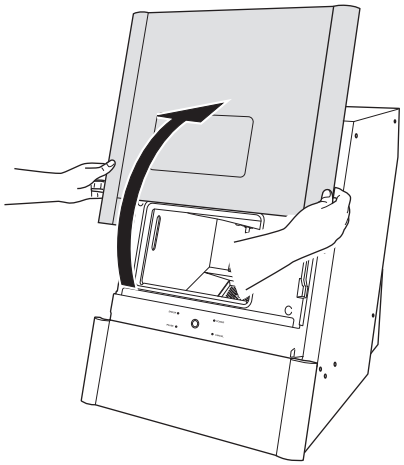
⚠ CAUTION

Be careful of the pointed portion inside the front cover.
There is a pointed portion inside the front cover. Exercise caution when cleaning.

Procedure

1. **Open the front cover.**

   Hold the parts shown in the figure with both hands and open the cover.



2. **Follow the on-screen instructions to clean inside the machine, and then click [Next].**

   Clean carefully with a dry cloth. Carefully wipe around the spindle head and the rotary axis parts shown in gray in the following figure.

   Fluid and milling waste in these areas may affect milling results.

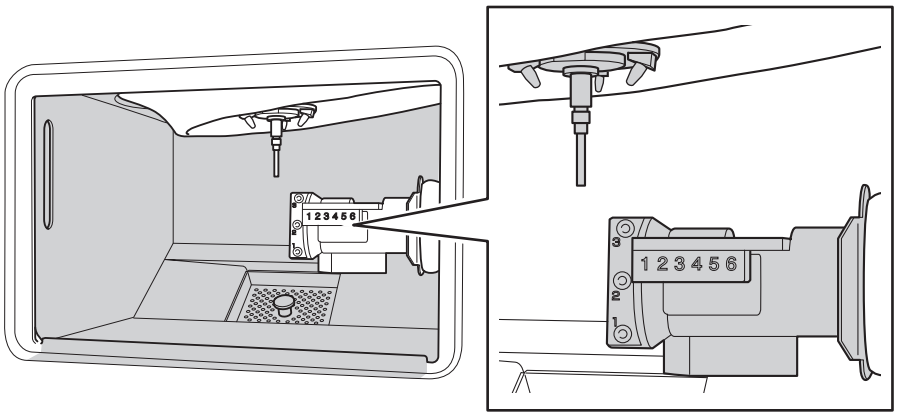
   ⚠ CAUTION

   Be careful around milling waste.
   Sharp milling waste may become mixed. To avoid injury, exercise caution.

   MEMO

   The front cover window scratches easily, so do not wipe it off with a cloth.

Inside the machine



3. When you have finished cleaning, close the front cover.

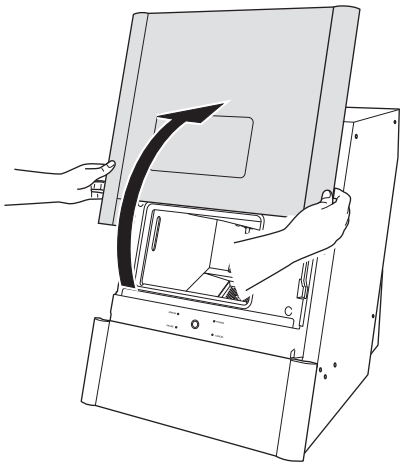
4. Click [Next].

5. Remove the collet.

Procedure

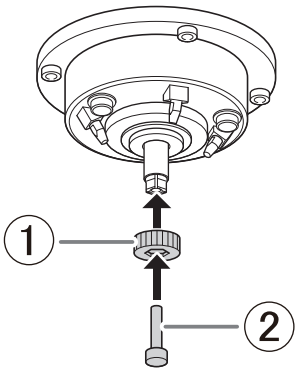
1. **Open the front cover.**

   Hold the parts shown in the figure with both hands and open the cover.



2. **Press the collet replacement jig (①) against the collet, and then insert the collet tap (②).**

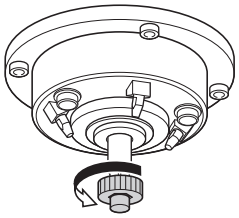
   Align the hexagonal tip of the collet and the hexagonal portion of the collet replacement jig.



3. **While gently pressing the collet tap up into the hole, rotate the collet replacement jig in the direction indicated in the figure.**

   Rotate the collet replacement jig until the collet naturally comes free.

> ⚠ CAUTION
>
> **Rotate the collet replacement jig with the collet tap inserted.**
> If the collet replacement jig is rotated without the collet tap inserted, the collet may be damaged.



6. Clean the collet.

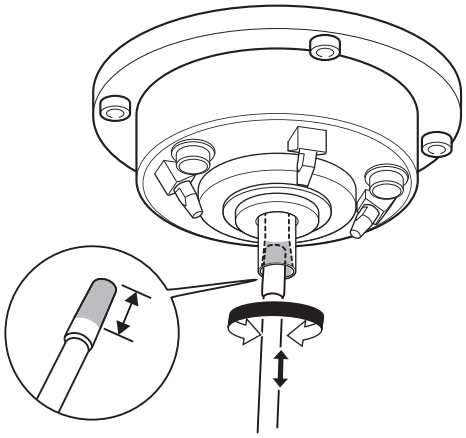
Procedure

1. **Clean the inside of the spindle (where contact with the collet is made) with the taper cleaner.**

   Insert about 2/3 of the taper cleaner tip into the spindle and clean the entirety of the inside of the spindle while moving the cleaner up and down aligned with the tapered (slanted) part.

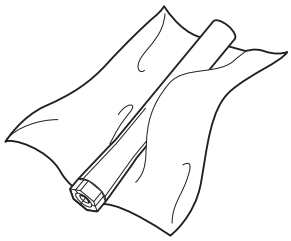
   MEMO

   As a general guide, the taper cleaner should be replaced after 20 cleaning operations.



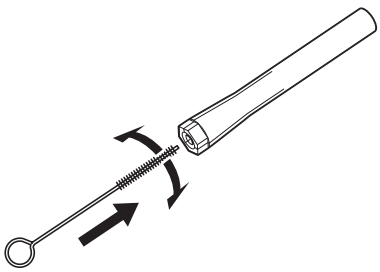
2. **Wipe the outer portion of the collet with a clean, dry cloth.**

   Do not hold the tapered portion tightly. This part being deformed may result in malfunctions.



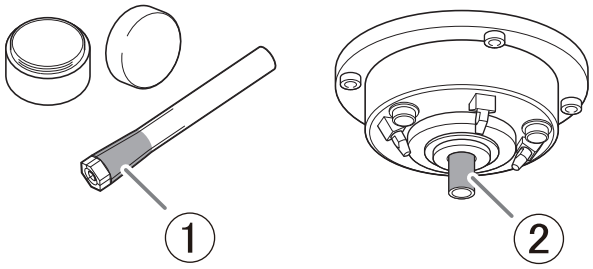
3. **Clean the inner portion of the collet with the collet brush.**

   Rotate the collet brush left and right as if you are brushing the inner portion of the collet.

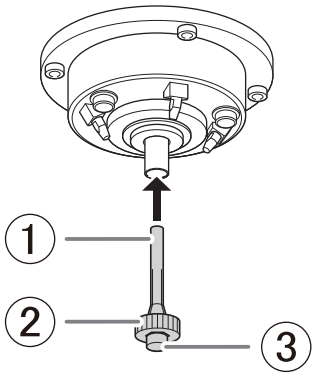


4. **Apply a thin layer of grease to two locations: the tapered portion on the outside of the collet (①) and the spindle head (②).**

   A thin application of grease is sufficient. Do not apply excessively.

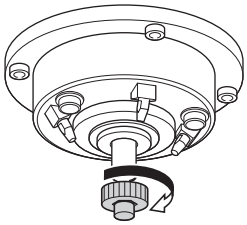


5. **Assemble the collet (①), collet replacement jig (②), and collet tap (③) as shown in the figure, and then insert this assembly into the spindle.**

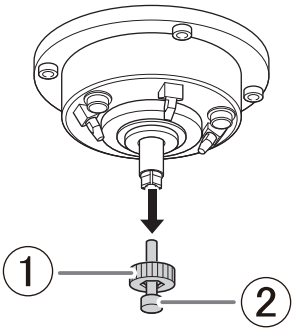


6. **While gently pressing the collet tap up into the hole, rotate the collet replacement jig in the direction indicated in the figure to tighten the collet.**

Keep rotating until the collet replacement jig will not rotate any more.



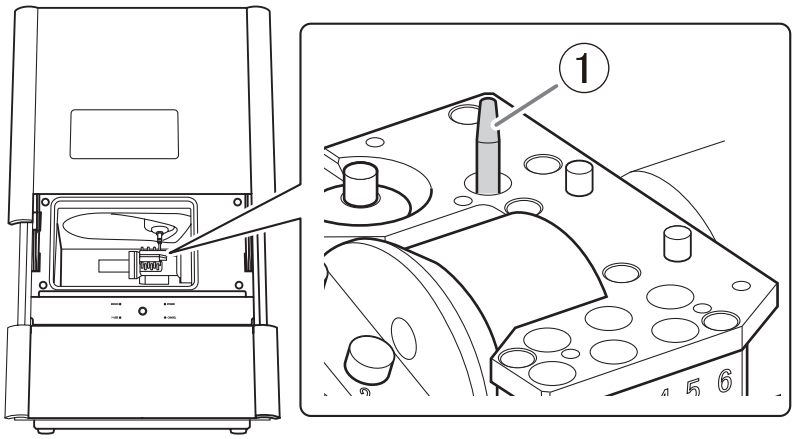
7. **Remove the collet replacement jig (①) and the collet tap (②).**



7. Clean the dummy pin.

Procedure

1. **Clean the handle (①) of the dummy pin with a dry cloth.**
   Clean only the handle of the dummy pin with it inserted. Do not pull the dummy pin out.



2. **Close the front cover.**

3. **When a message indicating that the operation is complete appears, click [Complete].**

Attaching the Retainers

When to Perform This Work

- When moving the machine

Attach the retainer to protect the machine from vibration during shipment.

IMPORTANT

Make sure to complete Rinsing and Draining the Coolant Lines(P. 131) before attaching the retainer.

RELATED LINKS

- P. 131 Rinsing and Draining the Coolant Lines

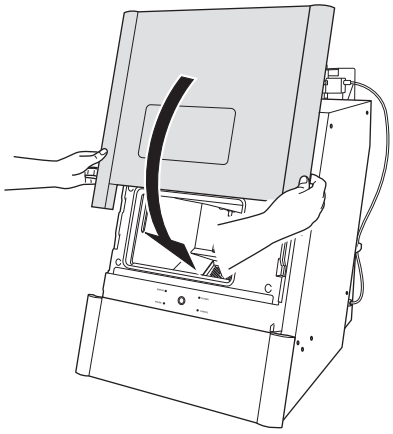
1. Move the position of the spindle head

Procedure

1. **Check that the workpiece, milling burs, correction jigs, and other such items are not installed in the machine.**

2. **Close the front cover.**

Hold the parts shown in the figure with both hands and close the cover.



3. **Show VPanel.**

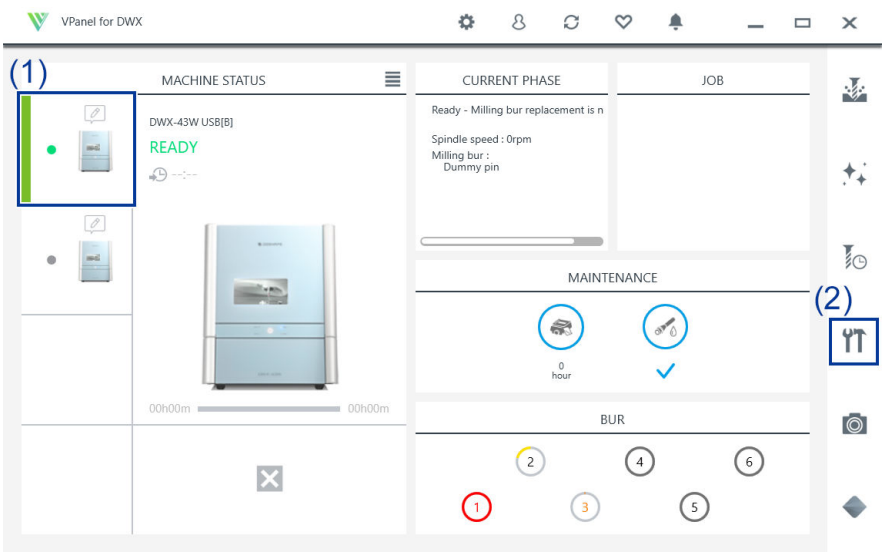
4. **Open the [Machine settings] window.**

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

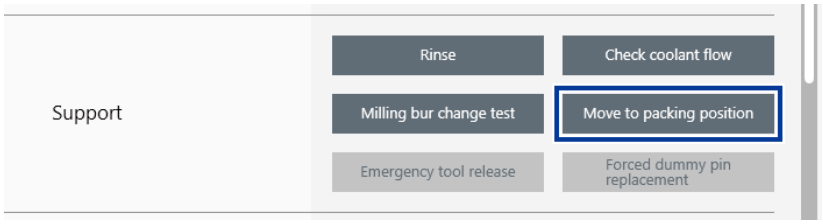
When you have connected multiple machines, you can switch to a different machine to operate by clicking its image under [**MACHINE STATUS**].

(2) **Click**  **.**

The [**Machine settings**] window is displayed.

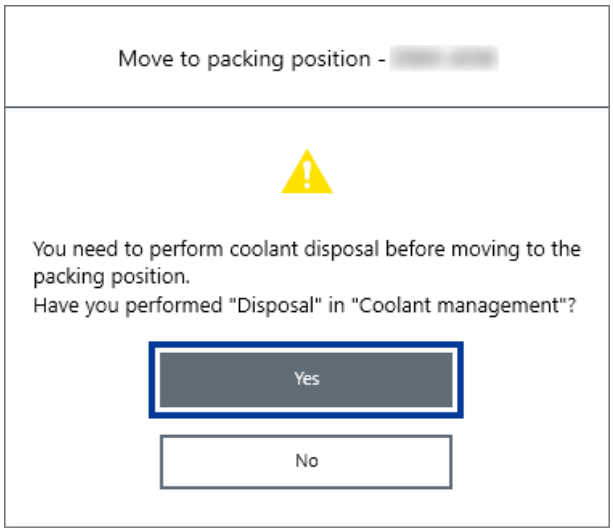


5. **On the [Maintenance] tab, click [Move to packing position].**



6. **When the following window appears, click [Yes].**

If you have not disposed of the coolant, perform Rinsing and Draining the Coolant Lines and then proceed to the next work.



7. **Follow the instructions in the VPanel display and click [OK].**

The machine operates, and the rotary axis unit moves to the packing position.

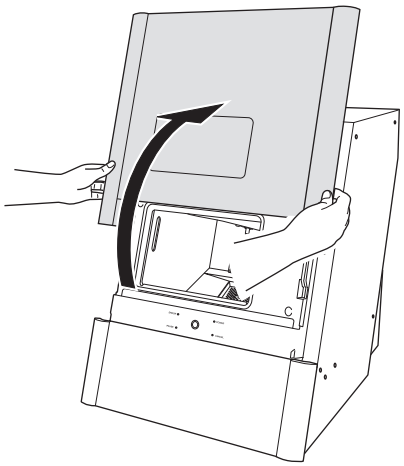
8. **When a message indicating that movement is complete appears, click [OK].**

2. Attaching the retainer onto the machine

Procedure

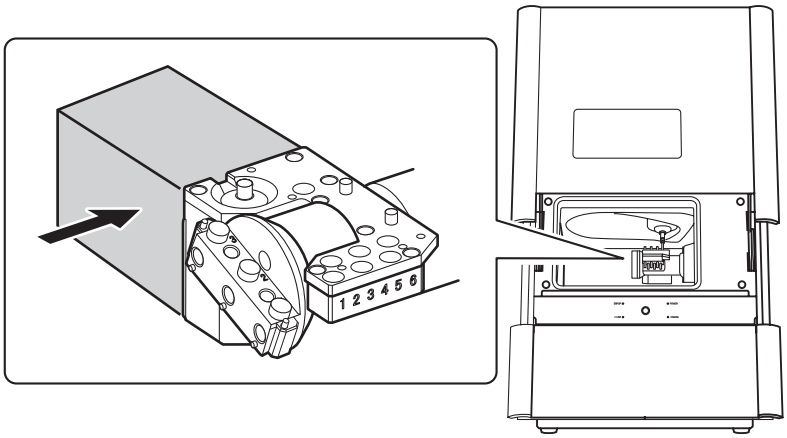
1. **Open the front cover.**

Hold the parts shown in the figure with both hands and open the cover.



2. **Attach the retainer (small).**

Attach the retainer (small) by pushing it into the area behind the rotary axis unit.

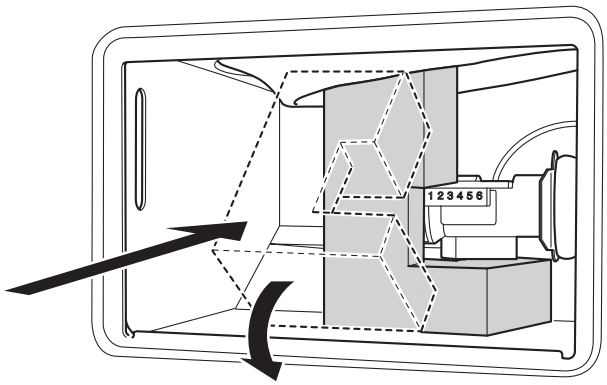


3. **Attach the retainer (large).**

As shown in the figure below, face it upward and slide it into the machine. Then attach by pushing the bottom of the retainer (large) into the machine.

IMPORTANT

Be careful not to pinch the silicone portion around the spindle head with the retainer. Doing so may weaken the secureness of the retainer.



4. Close the front cover.

Troubleshooting Methods

Machine Trouble

Initialization is Not Performed or Initialization Fails

Is the front cover open?

Keep the front cover closed during startup. For safety, the initial operations are not performed if the front cover is open when the machine starts.

Is the milling bur caught on anything?

The milling bur gripped by the spindle unit may fail to perform the initial operations if it is caught on the workpiece or something similar.

Try to detach the milling bur using [**Emergency tool release**] in VPanel.

RELATED LINKS

- VPanel for DWX USer's Manual

Is anything caught on the spindle unit or rotary axis unit?

Temporarily turn the power off, and then check whether something has become caught and is impeding initialization.

After you remove the obstruction, turn on the machine.

No Response from the Operation Button on the Built-in Panel

Is the front cover open?

This machine restricts some operations when the front cover is open. Close the front cover.

Are you wearing gloves?

The built-in panel's operation button will not respond if you are wearing gloves. Operate the touch sensor with a bare hand.

VPanel does not recognize the machine.

Is the cable connected?

Make sure that the cables are connected.

Refer to the "Connecting the Cable" in "Setup Guide" and perform the work.

RELATED LINKS

- DWX-43W Setup Guide

Is the driver installed correctly?

If the connection to the computer is not made according to the procedure described, the driver will not be installed correctly. VPanel will not function normally if the driver is not configured correctly. Check again to ensure that the connection was made using the correct procedure.

Refer to "Installing the Software" in the "Setup Guide" to perform the work.

RELATED LINKS

- DWX-43W Setup Guide

Did you verify the connection procedure when connecting more than one machine?

There is a possibility that the connection procedure was performed incorrectly. Make sure that connections were performed correctly.

Refer to "Connecting Multiple Units" in "Setup Guide" to perform the work.

RELATED LINKS

- DWX-43W Setup Guide

Was the machine ID changed?

When you change the machine ID, restart VPanel.

RELATED LINKS

- VPanel for DWX User's Manual

Are the LAN connection settings correct?

If the cable connections are secure and no problem is found in the network itself, make sure that the IP address and other such settings are appropriate. The settings on both the machine and the computer must be appropriate. Redo the settings, checking to ensure that the IP address doesn't conflict with the IP address for another device on the network, that the port setting for the software RIP specifies the IP address set on the machine, that the settings have no typing errors, and for other such problems.

RELATED LINKS

- DWX-43W Setup Guide

No Data Can Be Output to the Machine or the Machine Does Not Operate Even Though Data Is Being Output

Is the front cover open?

If the front cover is open, the machine will not start milling even if milling data is being received.

Close the front cover, and then press the built-in panel's operation button to start milling.

Does VPanel recognize the machine?

Verify that a message other than [**OFFLINE**] is shown in VPanel.

If [**OFFLINE**] is shown in VPanel regardless of the machine being on, check the cable connections and similar items.

If multiple machines are connected, is the correct machine selected?

Select the machine to output milling data to on the VPanel window.

Is operation paused?

When the "PAUSE" LED on the built-in panel is lit, an error has occurred during milling, and the machine has been paused.

When the machine is paused, milling stops and some operations are restricted.

Quickly pressing the built-in panel's operation button of the machine will cancel the pause. Holding down the operation button will abort milling.

RELATED LINKS

- P. 7 Front

Is initialization or a data cancel in progress?

Milling data received during the initial operations or during a data cancel will be canceled.

Output milling data after confirming that the machine is in the ready status.

RELATED LINKS

- P. 12 Milling Machine Display

Is the milling data correct?

Check the milling data.

Has an error occurred?

The "ERROR" LED on the built-in panel will flash if an error occurs.

Check the error details shown in VPanel, resolve the error, and then perform output again.

RELATED LINKS

- P. 179 VPanel Error Messages

The Computer Shuts Down When Connecting Multiple Machines

Are machines with the same ID connected to the computer at the same time?

Connecting more than one machine with the same ID to a computer at the same time may cause the computer to shut down. In this situation, carry out the following procedure to set the machine IDs again.

Refer to "Connecting Multiple Units" in "Setup Guide" to perform the work.

Procedure

1. **Turn off the power of all the connected machines.**
2. **Remove the USB cable from the computer.**
3. **Restart the computer.**
4. **Start VPanel.**

   If VPanel will not start, reinstall it.
5. **Set the machine IDs again so there are no duplicates.**

RELATED LINKS

- DWX-43W Setup Guide

The spindle does not rotate.

Is it time to replace the spindle unit?

When the working time of the spindle exceeds 2000 hours, replace the spindle unit.

To purchase a new spindle unit or replace a unit, contact your authorized DGSHAPE Corporation dealer or access our website.

RELATED LINKS

- P. 129 Replacing the Spindle Unit
- https://www.dgshape.com/

Automatic Correction Fails

Are the parts used for automatic correction dirty?

If the parts are dirty, clean off the dirt.

When the following parts become dirty due to a buildup of milling waste or the like, this may impede correct sensor operation, making detection impossible.

- ATC magazine correction jig
- Rotary axis correction jig
- Detection pin for correction
- Milling bur sensor tip

RELATED LINKS

- P. 88 Correcting the Milling Position

Is the automatic correction jig properly attached?

Verify that the automatic correction jig is properly attached.

RELATED LINKS

- P. 91 Attaching the Automatic Correction Jig

Is the detection pin properly attached?

Check the attachment status of the detection pin and the position of the milling bur holder on the detection pin.

Refer to the "Dimensional Drawings" (Detection Pin Dimensions) in "Setup Guide" for details.

RELATED LINKS

- DWX-43W Setup Guide

Collet Maintenance Cannot Continue Due to an Error Occurring

Is anything caught on the spindle unit or rotary axis unit?

Check whether something has become caught and is impeding operation.

Did you forget to attach the collet?

Use [**Emergency tool release**] in VPanel, and then attach the collet.

RELATED LINKS

- VPanel for DWX USer's Manual

Milling Quality Problems

The Milled Surface Is Not Attractive

Is the workpiece secured loosely?

Check the mounting condition of the workpiece.

If the workpiece is not mounted on the machine correctly, the screws may come loose during milling, possibly leading to workpiece misalignment.

RELATED LINKS

- P. 45 Mounting the Workpiece

Is the milling bur worn?

If the same milling bur is used for milling for a long period of time, it will become worn and affect milling results.

The work time of the milling bur can be managed in VPanel. Replacing the milling bur may improve the milling results.

RELATED LINKS

- VPanel for DWX User's Manual

Are the milling conditions too strict?

Strict milling conditions may affect milling results. Review the CAM milling conditions.

Is the machine out of correction?

The origin point may become out of position due to prolonged use or relocating the machine, which can result in a line of level difference. Perform [**Automatic correction**].

If the expected results cannot be obtained even after performing automatic correction, configure the settings in [**Advanced settings**]>[**Custom**].

When configuring the settings in [**Advanced settings**]>[**Custom**], changing the Y value in [**Milling position adjustment**] may improve the situation.

RELATED LINKS

- P. 88 Correcting the Milling Position
- VPanel for DWX USer's Manual

There Is a Line of Level Difference in the Milling Results

Is the machine out of correction?

The origin point may become out of position due to prolonged use or relocating the machine, which can result in a line of level difference. Perform [**Automatic correction**].

If the expected results cannot be obtained even after performing automatic correction, configure the settings in [**Advanced settings**]>[**Custom**].

When configuring the settings in [**Advanced settings**]>[**Custom**], changing the Y value in [**Milling position adjustment**] may improve the situation.

RELATED LINKS

- P. 88 Correcting the Milling Position
- VPanel for DWX USer's Manual

Are the CAM milling conditions correct?

If the milling conditions are not appropriate, a level difference may occur. Review the CAM milling conditions.

Chipping (edges of milling products become chipped) occurs.

Is the installation base of the machine secure?

The vibration from milling can shake the installation base. Install the machine in a stable location.

RELATED LINKS

- DWX-43W Setup Guide

Is the workpiece secured loosely?

Check the mounting condition of the workpiece.

If the workpiece is not mounted on the machine correctly, the screws may come loose during milling, possibly leading to workpiece misalignment.

RELATED LINKS

- P. 45 Mounting the Workpiece

Is the milling bur worn?

If the same milling bur is used for milling for a long period of time, it will become worn and affect milling results.

The work time of the milling bur can be managed in VPanel. Replacing the milling bur may improve the milling results.

RELATED LINKS

- VPanel for DWX User's Manual

Is the collet deformed?

The collet may be deformed if the tip of the spindle strikes the rotary axis, etc., or if the spindle is locked.

Replace the collet if it is deformed.

RELATED LINKS

- P. 122 Replacing the Collet

Are the milling conditions too strict?

Strict milling conditions may affect milling results. Review the CAM milling conditions.

Is the thickness specified in the CAD data excessively thin?

If the specified thickness is excessively thin, chipping is likely to occur. Review the shape specified in the CAD data.

Chipping (edges of milling products become chipped) occurs.

RELATED LINKS

- P. 59 Recommended CAD Data Thickness Values

A Hole Opens in the Milling Results

Do the milling bur diameter and the milling bur stocker number match the CAM settings?

Check the CAM's milling bur settings.

Is the machine out of correction?

The origin point may become out of position due to prolonged use or relocating the machine, which can affect milling results. Perform automatic correction.

If the expected results cannot be obtained even after performing automatic correction, configure the settings in [**Advanced settings**]>[**Custom**].

When configuring the settings in [**Advanced settings**]>[**Custom**], changing the Z value in [**Milling position adjustment**] in the + direction may improve the situation.

RELATED LINKS

- P. 88 Correcting the Milling Position
- VPanel for DWX User's Manual

Are the milling conditions too strict?

Strict milling conditions may affect milling results. Review the CAM milling conditions.

Is the thickness specified in the CAD data excessively thin?

The finish thickness of products needs to be 0.8 mm (0.04 in.) or more. Check the thickness specified in the milling data.

RELATED LINKS

- P. 59 Recommended CAD Data Thickness Values

The Dimensions of the Milling Results Do Not Match

Does the milling bur diameter match the CAM settings?

Check the CAM settings.

Is the CAM shrinkage factor setting appropriate for the workpiece?

Check the CAM settings.

Do the settings of the sintering program match the workpiece?

Check the sintering program settings to see if they match the manufacturer's workpiece being used.

Installation Trouble

Driver Installation Is Impossible

If installation quits partway through or when VPanel does not recognize the machine, the driver may not have been installed correctly. In such cases, perform the following procedures. (If procedure A does not solve your problem, perform procedure B.)

MEMO

The operation procedure may differ depending on the OS version.

Installing the Driver in Windows 11 (Procedure A)

This is the operation procedure for Windows 11 (version: 24H2).

Procedure

1. **Connect the machine to the computer with the USB cable and turn on the machine.**
2. **Open the Control Panel.**
   Search for [**Control Panel**] with the task bar search and open it.
3. **Right-click [Devices and Printers] and select [Open].**
4. **Check that the model you are using is displayed under [Unspecified].**
5. **Right-click the icon of the model you are using, and then click [Remove device].**
6. **When the message [Are you sure you want to remove this device?] is displayed, click [Yes].**
7. **Check that the icon for the model you are using is no longer displayed under [Unspecified].**
8. **Disconnect the USB cable connecting the machine to the computer, and then reconnect these devices.**
   If the printer icon for the machine you are using is displayed under [**Printers**], the driver has been successfully installed.
   If this does not solve the problem, perform procedure B for Windows 11.
   P. 171 Installing the Driver in Windows 11 (Procedure B)

Installing the Driver in Windows 11 (Procedure B)

This is the operation procedure for Windows 11 (version: 24H2).

Procedure

1. **Connect the machine to the computer with the USB cable and turn on the machine.**
2. **If the [Found New Hardware] message appears, click [Close] to close it.**
   Disconnect any USB cables for printers or other such equipment other than this machine.
3. **Open the Device Manager.**
   Search for [**Device Manager**] with the task bar search and open it.
4. **When the [User Account Control] window appears, click [Continue].**
   [**Device Manager**] appears.
5. **From the [View] menu, click [Show hidden devices].**
6. **Search the list for [Printers] or [Other devices], and then click it.**
7. **Right-click the name of your machine or [Unknown device], and select [Uninstall device].**
8. **Click [Uninstall].**
9. **Remove the USB cable from the computer, and then restart Windows.**
10. **Uninstall the driver.**
    Carry out the steps from Step 3 in the following topic to uninstall the driver.
    P. 174 Uninstalling the Driver in Windows 11
11. **Reinstall the driver according to the procedure in the Setup Guide ("Installing the Software").**

RELATED LINKS

- DWX-43W Setup Guide "Installing the Software"

Installing the Driver in Windows 10 (Procedure A)

This is the operation procedure for Windows 10 (version: 22H2).

Procedure

1. **Connect the machine to the computer with the USB cable and turn on the machine.**
2. **Open the Control Panel.**
   Search for [**Control Panel**] with the task bar search and open it.
3. **Right-click [Devices and Printers] and select [Open].**
4. **Check that the model you are using is displayed under [Unspecified].**
5. **Right-click the icon of the model you are using, and then click [Remove device].**
6. **When the message [Are you sure you want to remove this device?] is displayed, click [Yes].**
7. **Check that the icon for the model you are using is no longer displayed under [Unspecified].**
8. **Disconnect the USB cable connecting the machine to the computer, and then reconnect these devices.**
   If the printer icon for the machine you are using is displayed under [**Printers**], the driver has been successfully installed.
   If the problem cannot be resolved by following this procedure, perform the procedure under "Windows 10 (Procedure B)."
   P. 173 Installing the Driver in Windows 10 (Procedure B)

Installing the Driver in Windows 10 (Procedure B)

This is the operation procedure for Windows 10 (version: 22H2).

Procedure

1. **Connect the machine to the computer with the USB cable and turn on the machine.**
2. **If the [Found New Hardware] message appears, click [Close] to close it.**
   Disconnect any USB cables for printers or other such equipment other than this machine.
3. **Open the Device Manager.**
   Search for [**Device Manager**] with the task bar search and open it.
4. **When the [User Account Control] window appears, click [Continue].**
   [**Device Manager**] appears.
5. **From the [View] menu, click [Show hidden devices].**
6. **Search the list for [Printers] or [Other devices], and then click it.**
7. **Right-click the name of your machine or [Unknown device], and select [Uninstall device].**
8. **Click [Uninstall].**
9. **Remove the USB cable from the computer, and then restart Windows.**
10. **Uninstall the driver.**
    Carry out the steps from Step 3 in the following topic to uninstall the driver.
    P. 175 Uninstalling the Driver in Windows 10
11. **Reinstall the driver according to the procedure in the Setup Guide ("Installing the Software").**

RELATED LINKS

- DWX-43W Setup Guide "Installing the Software"

Uninstalling the Driver

To uninstall the driver, follow the procedure below.

MEMO

The operation procedure may differ depending on the OS version.

Uninstalling the Driver in Windows 11

This is the operation procedure for Windows 11 (version: 24H2).

IMPORTANT

If the driver is uninstalled without following the procedure given below, it may not be possible to reinstall the driver.

Procedure

1. **Switch off the machine, and then disconnect the connector cable between the computer and the machine.**
2. **Log on to Windows as [the computer's administrator].**
3. **Open the Control Panel.**
   Search for [**Control Panel**] with the task bar search and open it.
4. **Click [Uninstall a program] (or [Programs and Features]).**
5. **Right-click the driver of the machine to remove, and then select [Uninstall].**
   If the [**User Account Control**] window appears, click [**Allow**].
6. **If a message prompting you to confirm deletion appears, click [Yes].**
7. **Start Explorer, and open the drive and folder where the driver is stored.**
   Go to the DGSHAPE Corporation website, download the driver for the machine you want to remove, and then specify the folder where you want to extract the downloaded file.
   https://downloadcenter.rolanddg.com/DWX-43W
8. **Double-click [SETUP64.EXE].**
9. **If the [User Account Control] window appears, click [Allow].**
   The setup program for the driver starts.
10. **After selecting [Uninstall], select the machine to remove and click [Start].**
11. **If a window prompting you to restart the computer appears, click [Yes].**
12. **After the computer has restarted, open Control Panel again.**
13. **Right-click [Devices and Printers] and select [Open].**
14. **If you can see the icon of the machine to delete, right-click it, and then click [Remove device].**

Uninstalling the Driver in Windows 10

This is the operation procedure for Windows 10 (version: 22H2).

IMPORTANT

If the driver is uninstalled without following the procedure given below, it may not be possible to reinstall the driver.

Procedure

1. **Switch off the machine, and then disconnect the connector cable between the computer and the machine.**
2. **Log on to Windows as [the computer's administrator].**
3. **Open the Control Panel.**
   Search for [**Control Panel**] with the task bar search and open it.
4. **Click [Uninstall a program] (or [Programs and Features]).**
5. **Right-click the driver of the machine to remove, and then select [Uninstall].**
   If the [**User Account Control**] window appears, click [**Allow**].
6. **If a message prompting you to confirm deletion appears, click [Yes].**
7. **Click [Start]>[Desktop].**
8. **Start Explorer, and open the drive and folder where the driver is stored.**
   Go to the DGSHAPE Corporation website, download the driver for the machine you want to remove, and then specify the folder where you want to extract the downloaded file.
   https://downloadcenter.rolanddg.com/DWX-43W
9. **Double-click [SETUP64.EXE].**
10. **If the [User Account Control] window appears, click [Allow].**
    The setup program for the driver starts.
11. **After selecting [Uninstall], select the machine to remove and click [Start].**
12. **If a window prompting you to restart the computer appears, click [Yes].**
13. **After the computer has restarted, open Control Panel again.**
14. **If you can see the icon of the machine to delete, right-click it, and then click [Remove device].**

Uninstalling VPanel

To uninstall VPanel, follow the procedure below.

MEMO

The operation procedure may differ depending on the OS version.

Uninstalling VPanel in Windows 11

This is the operation procedure for Windows 11 (version: 24H2).

Procedure

1. **Exit VPanel.**
   (Right-click in the task tray and select **[Exit]**.)
2. **Open the Control Panel.**
   Search for **[Control Panel]** with the task bar search and open it.
3. **Click [Uninstall a program].**
4. **Select [VPanel for DWX], and then click [Uninstall].**
5. **Follow the on-screen instructions to uninstall VPanel.**

Uninstalling VPanel in Windows 10

This is the operation procedure for Windows 10 (version: 22H2).

Procedure

1. **Exit VPanel.**
   (Right-click in the task tray and select [**Exit**].)
2. **Open the Control Panel.**
   Search for [**Control Panel**] with the task bar search and open it.
3. **Click [Uninstall a program] (or [Programs and Features]).**
4. **Select [VPanel for DWX], and then click [Uninstall].**
5. **Follow the on-screen instructions to uninstall VPanel.**

Message Handling

VPanel Error Messages

This section describes the error messages that may appear in VPanel 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 DGSHAPE Corporation dealer.

[%] in these messages indicates information such as axis [X], [Y], [Z], or [A], or a milling bur stocker number from 1 to 7.

RELATED LINKS

- https://www.dgshape.com/

[1000-****][The % limit switch was not found.]

The name of the axis ([X], [Y], [Z], [A], or a combination of these axes) is displayed for [%].

Situation/Error Cause

The operation may be inhibited by milling waste or an obstruction.

Procedure

1. **Turn off the power.**
2. **Remove any objects blocking the operation of the machine and any accumulated milling waste.**
3. **Turn on the power, and then resume operation.**

[1006-02**][The % axis position has been shifted.]

The name of the axis ([X], [Y], [Z], [A], or a combination of these axes) is displayed for [%].

Situation/Error Cause 1

The motor position may have been lost.

Procedure

1. **Remove any objects blocking the operation of the machine and any accumulated milling waste.**
2. **Hold down the operation button on the built-in panel.**
   This will clear the error.

Situation/Error Cause 2

The milling conditions may be excessively strict.

Procedure

1. **Hold down the operation button on the built-in panel.**
   This will clear the error.
2. **Review the CAM settings and the shape specified in the CAD data.**

[101C-0000][The milling bur sensor was not found.]

Situation/Error Cause

The operation may be inhibited by milling waste or an obstruction.

Procedure

1. **Turn off the power.**
2. **Remove any objects blocking the operation of the machine and any accumulated milling waste.**
3. **Turn on the power, and then resume operation.**

[101D-00**][The % milling bur cannot be released.]

[%] indicates a milling bur stocker number from [1] to [7].

Situation/Error Cause 1

The returning of the milling bur failed. The inside of the collet or the ATC magazine might be dirty.

Procedure

1. **Follow the instructions on the VPanel display and remove the milling bur.**
2. **Perform collet maintenance.**
P. 72 Collet Maintenance
3. **Clean the ATC magazine.**
P. 80 Cleaning the Milling Bur and the Inside of the Machine (Recommended)

Situation/Error Cause 2

The returning of the milling bur failed. The stocker might be out of position.

Procedure

1. **Follow the instructions on the VPanel display and remove the milling bur.**
2. **Perform automatic correction.**
P. 88 Correcting the Milling Position

Situation/Error Cause 3

It is possible that the milling bur was not removed from the spindle unit after the instruction to remove the milling bur by following the instructions on the VPanel display.
When cleaning the ATC magazine, be sure to remove the milling bur before beginning work.

If the Error Occurs Again

The collet may be deformed. In this case, replace the collet.
P. 122 Replacing the Collet

[101D-01**][The % milling bur cannot be released. It might be broken from the root.]

[%] indicates a milling bur stocker number from [1] to [7].

Situation/Error Cause 1

The milling bur may be broken from the base due to use exceeding its service life.

Procedure

1. **Follow the instructions on the VPanel display and remove the milling bur.**
2. **Clean the ATC magazine.**
   P. 80 Cleaning the Milling Bur and the Inside of the Machine (Recommended)
3. **Perform automatic correction.**
   P. 88 Correcting the Milling Position

Situation/Error Cause 2

The milling conditions may be excessively strict.

Procedure

1. **Follow the instructions on the VPanel display and remove the milling bur.**
2. **Review the CAM settings and the shape specified in the CAD data.**

If the Error Occurs Again

The collet may be deformed. In this case, replace the collet.
P. 122 Replacing the Collet

[101E-****][The % milling bur might be broken.]

[%] indicates a milling bur stocker number from [1] to [7].

Situation/Error Cause 1

- The milling bur is broken.
- The milling bur holder is out of position.

Procedure

1. **Hold down the operation button on the built-in panel.**
   This will clear the error.
2. **Check the status of the milling bur.**
   - **When the milling bur is broken**
     Replace the milling bur with a new one.
   - **When the installation position of the milling bur holder is not appropriate**
     Install the milling bur holder in the correct position.

P. 40 Setting the Milling Bur

Situation/Error Cause 2

The milling conditions may be excessively strict.

Procedure

1. **Hold down the operation button on the built-in panel.**
   This will clear the error.
2. **Review the CAM settings and the shape specified in the CAD data.**

If the Error Occurs Again

The collet may have worn out and its ability to retain the milling bur may have deteriorated. Replace the collet with a new one.
P. 122 Replacing the Collet

[101F-****][The % milling bur chucking has slipped out.]

[%] indicates a milling bur stocker number from [1] to [7].

Situation/Error Cause 1

The milling bur may have exceeded its service life.

Procedure

1. **Hold down the operation button on the built-in panel.**
   This will clear the error.
2. **Replace with a new milling bur.**
   P. 121 Replacing Milling Burs
3. **Perform collet maintenance.**
   P. 72 Collet Maintenance

Situation/Error Cause 2

The milling conditions may be excessively strict.

Procedure

1. **Hold down the operation button on the built-in panel.**
   This will clear the error.
2. **Review the CAM settings and the shape specified in the CAD data.**

If the Error Occurs Again

The collet may have worn out and its ability to retain the milling bur may have deteriorated. Replace the collet with a new one.
P. 122 Replacing the Collet

[1020-****][The % milling bur is too long.]

[%] indicates a milling bur stocker number from [1] to [7].

Situation/Error Cause

- A milling bur that cannot be used with this machine has been used.
- The milling bur holder is not in the correct position.

Procedure

1. **Attach a usable milling bur.**
   P. 40 Setting the Milling Bur

2. **Clearing Errors**
   - **If the error occurred during milling**
     Press the operation button on the built-in panel.
     Milling will resume.
   - **If the error occurred while the machine was on standby**
     Hold down the operation button on the built-in panel.
     This will clear the error.

[1021-****][The % milling bur is too short.]

[%] indicates a milling bur stocker number from [1] to [7].

Situation/Error Cause

- A milling bur that cannot be used with this machine has been used.
- The milling bur holder is not in the correct position.

Procedure

1. **Attach a usable milling bur.**
   P. 40 Setting the Milling Bur

2. **Clearing Errors**
   - **If the error occurred during milling**
     Press the operation button on the built-in panel.
     Milling will resume.
   - **If the error occurred while the machine was on standby**
     Hold down the operation button on the built-in panel.
     This will clear the error.

[1022-****][The % milling bur was not found.]

[%] indicates a milling bur stocker number from [1] to [7].

Situation/Error Cause 1

The milling bur has not been set or it may have been set on an incorrect stocker number.

Procedure

1. **Load the milling bur in the correct position again.**

2. **Clearing Errors**
   - **If the error occurred during milling**
     Press the operation button on the built-in panel.
     Milling will resume.
   - **If the error occurred while the machine was on standby**
     Hold down the operation button on the built-in panel.
     This will clear the error.

Situation/Error Cause 2

There is a possibility that the ATC magazine is out of position. Perform automatic correction.
P. 88 Correcting the Milling Position

If the Error Occurs Again

The collet may have worn out. Replace the collet.
P. 120 Replacing Consumable Parts
If the error occurs again even after you replace the collet, replace the spindle unit.
To replace the spindle unit, contact your authorized DGSHAPE Corporation dealer.

RELATED LINKS

- P. 121 Replacing Consumable Parts

[1023-0000] to [1028-0000] [Milling data error.]

- [**1023-0000**]: Milling data error. The number of the parameters is incorrect.
- [**1024-0000**]: Milling data error. The parameter is out of range or an invalid tool number was specified with the ITC settings.
- [**1025-0000**]: Milling data error. A wrong command is detected.
- [**1026-0000**]: Milling data error. The address is not defined.
- [**1027-0000**]: Milling data error. The parameter is undefined or an invalid tool number was specified with the ITC settings.
- [**1028-0000**]: Milling data error. The operation cannot be executed.

Situation/Error Cause 1

There may be a problem with the milling data received from the computer.

Procedure

1. **Hold down the operation button on the built-in panel.**
   This will clear the error.

2. **Review the CAM settings and the shape specified in the CAD data.**
   - **If there are no problems with the milling data**
     Restart the computer, and then perform milling again.

Situation/Error Cause 2

When using CAM to select the stocker number, the stocker number set as the second or third milling bur in Intelligent Tool Control may have been selected.

When using CAM to select the stocker number, select the stocker number set as the first milling bur in Intelligent Tool Control.

RELATED LINKS

- P. 55 Automatically Switching Out the Worn Milling Bur (Intelligent Tool Control)

[1029-0000][The spindle experienced an overload.]

Situation/Error Cause 1

- The spindle unit is overloaded.
- The milling bur is worn.
- A workpiece that cannot be milled by the machine is being used.
- The milling conditions are too strict.

Procedure

1. **Turn off the power.**
2. **Check the milling bur, the workpiece, and the CAM settings as well as the shape specified in the CAD data.**
3. **Allow the machine to rest for some time before turning the power on.**
   The motor may have overheated.

Situation/Error Cause 2

- Milling waste has adhered to the spindle.

Procedure

1. **Turn off the power.**
2. **Allow the machine to rest for some time before turning the power on.**
   The motor may have overheated.
3. **Perform spindle run-in.**
   P. 86 Perform Spindle Run-in

If the Error Occurs Again

There is a possibility that the spindle unit is defective.
To replace the spindle unit, contact your authorized DGSHAPE Corporation dealer.

RELATED LINKS

- P. 121 Replacing Consumable Parts

[102A-0000][The spindle experienced an overload.]

Situation/Error Cause 1

- The spindle unit is overloaded.
- The milling bur is worn.
- A workpiece that cannot be milled by the machine is being used.
- The milling conditions are too strict.

Procedure

1. **Turn off the power.**
2. **Check the milling bur, the workpiece, and the CAM settings as well as the shape specified in the CAD data.**
3. **Allow the machine to rest for some time before turning the power on.**
   The motor may have overheated.

Situation/Error Cause 2

- Milling waste has adhered to the spindle.

Procedure

1. **Turn off the power.**
2. **Allow the machine to rest for some time before turning the power on.**
   The motor may have overheated.
3. **Perform spindle run-in.**
   P. 86 Perform Spindle Run-in

Situation/Error Cause 3

- Coolant is not applied to the middle of the milling bur.

Procedure

1. **Turn off the power.**
2. **Allow the machine to rest for some time before turning the power on.**
   The motor may have overheated.
3. **Clean the coolant nozzles.**
   P. 113 Cleaning the Coolant Nozzle

If the Error Occurs Again

There is a possibility that the spindle unit is defective.
To replace the spindle unit, contact your authorized DGSHAPE Corporation dealer.

RELATED LINKS

- P. 121 Replacing Consumable Parts

[102B-0000][The spindle motor temperature is too high.]

Situation/Error Cause 1

- The spindle unit is overloaded.
- The milling bur is worn.
- A workpiece that cannot be milled by the machine is being used.
- The milling conditions are too strict.

Procedure

1. **Turn off the power.**
2. **Check the milling bur, the workpiece, and the CAM settings as well as the shape specified in the CAD data.**
3. **Allow the machine to rest for some time before turning the power on.**
   The motor may have overheated.

Situation/Error Cause 2

- Milling waste has adhered to the spindle.

Procedure

1. **Turn off the power.**
2. **Allow the machine to rest for some time before turning the power on.**
   The motor may have overheated.
3. **Perform spindle run-in.**
   P. 86 Perform Spindle Run-in

If the Error Occurs Again

There is a possibility that the spindle unit is defective.
To replace the spindle unit, contact your authorized DGSHAPE Corporation dealer.

RELATED LINKS

- P. 59 Recommended CAD Data Thickness Values

[1034-0000][The coolant tank is not installed.]

Situation/Error Cause

The coolant tank may have been removed during coolant operation.

Procedure

1. **Correctly attach the coolant tank.**
   P. 139 Rinsing and draining
2. **Clearing Errors**

- **If the error occurred during milling**

  Press the operation button on the built-in panel.

  Milling will resume.
- **If the error occurred while the machine was on standby**

  Hold down the operation button on the built-in panel.

  This will clear the error.

[1038-0000][Milling data error. No milling bur is selected.]

Situation/Error Cause

An attempt was made to start milling without a milling bur.
There may be a problem with the milling data received from the computer.

Procedure

1. **Hold down the operation button on the built-in panel.**

   This will clear the error.
2. **Review the CAM settings and the shape specified in the CAD data.**
3. **Restart the computer, and then perform milling again.**

[103A-000*][DANGER!! The coolant is leaking!!]

Situation/Error Cause

Fluid may be leaking inside the machine.

Procedure

1. **Turn off the power.**
2. **Unplug the power cable.**

   Contact your authorized DGSHAPE Corporation dealer.

RELATED LINKS

- https://www.dgshape.com/

[103B-0000][The automatic correction is not yet finished.]

Situation/Error Cause 1

- Automatic correction has not been performed.
- Automatic correction was canceled before it could finish.
- Automatic correction was not performed after updating the firmware to a version that required automatic correction to be performed again.

Procedure

1. **Hold down the operation button on the built-in panel.**

This will clear the error.

2. **Perform automatic correction.**

P. 88 Correcting the Milling Position

Situation/Error Cause 2

The versions of VPanel and the machine's firmware may not match.
Download the latest versions of VPanel and the machine's firmware, install these versions, and then perform automatic correction.

RELATED LINKS

- https://www.dgshape.com/
- https://downloadcenter.rolanddg.com/DWX-43W

[103D-0000][Milling data error. The milling bur cannot reach the milling position.]

Situation/Error Cause

- The milling bur is too short to reach the milling position.
- The angle of the A axis is too large and the milling bur does not reach the milling position in the Z direction.

Procedure

1. **Hold down the operation button on the built-in panel.**

This will clear the error.

2. **Review the milling bur length and the position of the milling bur holder.**

P. 40 Setting the Milling Bur

3. **Review the CAM settings and decrease the angle of the A axis.**

[105E-0000][The pressure of the compressed air is too high or low.]

Situation/Error Cause

- Compressed air is not being supplied.
- The regulator connection or pressure setting is incorrect.
- The knob at the bottom of the regulator is open.

Procedure

1. **Adjusting the pressure of the compressed air.**

Adjust the supplied air pressure to 0.18 to 0.22 MPa.

2. **Clearing Errors**

- **If the error occurred during milling**

Press the operation button on the built-in panel.
Milling will resume.

- **If the error occurred while the machine was on standby**

Hold down the operation button on the built-in panel.

This will clear the error.

[1062-0000][An error occurred during the automatic correction.]

Situation/Error Cause

It is possible that preliminary correction of the ATC magazine was interrupted.

Procedure

1. **Restart the machine.**
2. **Follow the instructions on the VPanel display and return the dummy pin in its original condition.**

If the Error Occurs Again

Contact your authorized DGSHAPE Corporation dealer.

[1063-0000][The milling cannot be started because the coolant has exceeded its expiration date.]

Situation/Error Cause

The coolant has passed its expiration date.

Procedure

1. **Hold down the operation button on the built-in panel.**
   This will clear the error.
2. **Replace the coolant.**
   P. 96 Replacing the Coolant

[****-****][An unknown error occurred.]

Restart the machine.

If the Error Occurs Again

Contact your authorized Roland DG Corporation dealer.


DGSHAPE