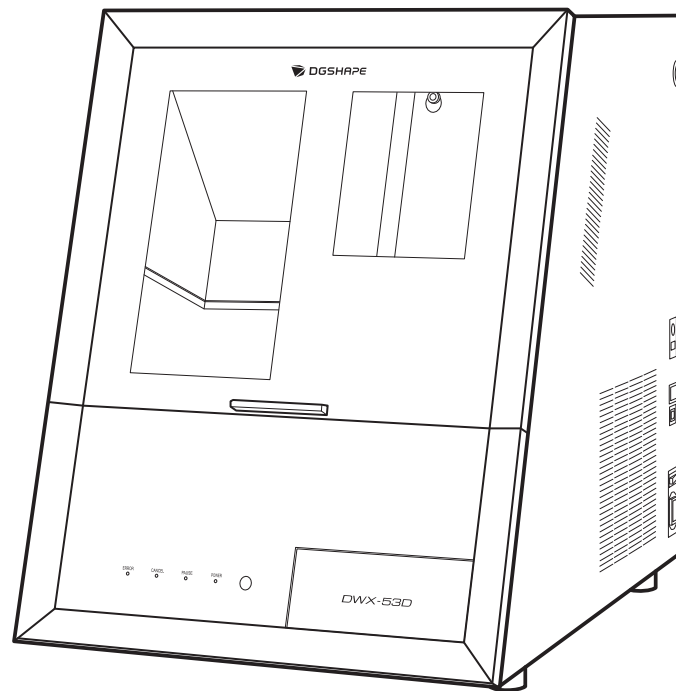


DWX-53D

User's Manual



Thank you very much for purchasing this product.

- To ensure correct and safe usage with a full understanding of this product's performance, please be sure to read through this manual completely.
- Unauthorized copying or transferal, in whole or in part, of this manual is prohibited.
- The contents of this operation manual and the specifications of this product are subject to change without notice.
- This manual and the product have been prepared and tested as much as possible. If you find any misprints or errors, please inform Roland DG Corporation.
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Contents

Basic Handling Methods	5
Basic Information	6
Part Names and Functions	7
Front.....	7
Side/Rear	10
Statuses Indicated by Status Light Color.....	11
VPanel for DWX.....	12
Displaying VPanel.....	13
Exiting VPanel.....	14
Usable Tools	15
Workpiece	15
Milling bur	16
Adapter/Adapter ID	17
Basic Operation.....	18
Power Supply Operations	19
Switching the Power On	19
Switching the Power Off.....	20
Milling	21
Milling.....	22
Preparing for Milling.....	23
CAM Settings Necessary for Milling	23
Step 1: A. Mounting Disc Workpieces on Adapters.....	24
Step 1: B. Mounting Pin-type Workpieces on Adapters	29
Step 2: Attaching the Adapter to the Machine.....	37
Step 3: Setting the Milling Bur.....	39
Step 4: Adjusting the Pressure of the Compressed Air.....	41
Step 5: Setting Milling Burs to Use in Milling	42
Starting Milling	45
Outputting Milling Data and Starting Milling	45
Removing the Adapter Cap from the Machine	48
Aborting and Canceling Milling	49
Aborting Output	49
Removing Milling Data in Standby from the Output List.....	49
Other Milling	50
Continuous Milling	51
Automatically Switching Out the Worn Milling Bur (Intelligent Tool Control).....	51
Purchasing Additional Adapters	53
Optimizing Quality and Efficiency	54
Optimizing the Milling Quality	55
Recommended CAD Data Thickness Values	56
Correcting the Milling Position According to the Milling Results for Correction (Manual Correction)	57
Correcting for Errors Caused by Temperature Changes (Temperature Change Correction)	60
Optimizing Operation Management	62
Checking the Workpiece Milling Status	63
Maintenance	64

Getting Started	65
Maintenance Precautions	66
Maintenance Precautions	66
Daily Maintenance	67
Cleaning after Milling Finishes	68
Cleaning the Milling Area	68
Cleaning the Tool Area	72
Cleaning the Milling Bur/Adapter	74
Care and Storage of Detection Pin and Automatic Correction Jig	76
Periodic Maintenance	77
When Maintenance Is Required	78
Spindle Run-in (Warm-up)	79
Correcting the Milling Position	81
Automatic correction	82
Retightening the Collet	91
Regulator Maintenance	94
Cleaning the Bowl	94
Replacing Consumable Parts	97
Replacing Parts Used in Milling	98
Replacing Milling Burs	98
Replacing the Dummy Pin Cleaner	99

Troubleshooting Methods..... 103

Machine Trouble	104
Initialization is Not Performed or Initialization Fails	105
Is the front cover open?	105
Is the milling bur caught on anything?	105
Is anything caught on the spindle unit or rotary axis unit?	105
Non-responsive Built-in Panel Touch Sensor	106
Is the front cover open?	106
Are you wearing gloves?	106
VPanel Does Not Recognize the Machine	107
Is the cable connected?	107
Is the driver installed correctly?	107
Did you verify the connection procedure when connecting more than one machine?	107
Was the machine ID changed?	107
No Data Can Be Output to the Machine or the Machine Does Not Operate Even Though Data Is Being Output ...	108
Is the front cover open?	108
Does VPanel recognize the machine?	108
If multiple machines are connected, is the correct machine selected?	108
Is operation paused?	108
Is initialization or a data cancel in progress?	108
Is the milling data correct?	108
Has an error occurred?	108
The Computer Shuts Down When Connecting Multiple Machines	109
Are machines with the same ID connected to the computer at the same time?	109
The spindle does not rotate.	110
Is the spindle belt damaged or disconnected?	110
The Ionizer Is Ineffective	111
Is the workpiece being milled a PMMA workpiece?	111
Is there milling waste around the ionizer?	111
Is the machine grounded?	111
Compressed Air Does Not Come Out	112

Does the operation require compressed air?	112
Is the regulator properly connected and are the pressure settings correctly configured?	112
Is the knob at the bottom of the regulator open?	112
Automatic Correction Fails	113
Is the automatic correction jig, detection pin, ATC magazine, or clamp dirty?	113
Is the automatic correction jig properly attached?	113
Is the detection pin properly attached?	113
Milling Quality Problems	114
The Milled Surface Is Not Attractive	115
Is the workpiece secured loosely?	115
Is the milling bur worn?	115
Are the milling conditions too strict?	115
There Is a Line of Level Difference in the Milling Results	116
Is the machine out of correction?	116
Are the CAM milling conditions correct?	116
Chipping (edges of milling products become chipped) occurs.	117
Is the installation base of the machine secure?	117
Is the workpiece secured loosely?	117
Is the milling bur worn?	117
Are the milling conditions too strict?	117
Is the thickness specified in the CAD data excessively thin?	117
A Hole Opens in the Milling Results	118
Do the milling bur diameter and the milling bur stocker number match the CAM settings?	118
Is the machine out of correction?	118
Are the milling conditions too strict?	118
The Dimensions of the Milling Results Do Not Match	119
Does the milling bur diameter match the CAM settings?	119
Is the CAM shrinkage factor setting appropriate for the workpiece?	119
Do the settings of the sintering program match the workpiece?	119
Installation Trouble	120
Driver Installation Is Impossible	121
Installing the Driver in Windows 11 (Procedure A)	121
Installing the Driver in Windows 11 (Procedure B)	122
Installing the Driver in Windows 10 (Procedure A)	123
Installing the Driver in Windows 10 (Procedure B)	124
Uninstalling the Driver	125
Uninstalling the Driver in Windows 11	125
Uninstalling the Driver in Windows 10	126
Uninstalling VPanel	127
Uninstalling VPanel in Windows 11	127
Uninstalling VPanel in Windows 10	128
Message Handling	129
VPanel Error Messages	130
[1000-****][The % limit switch was not found.]	130
[1006-02**][The % axis position has been shifted.]	130
[1017-0000][The front cover was opened.]	131
[101C-0000][The milling bur sensor was not found.]	131
[101D-00**][The % milling bur cannot be released.]	131
[101D-01**] [The % milling bur cannot be released. It might be broken from the root.]	132
[101E-****][The % milling bur might be broken.]	133
[101F-****][The % milling bur chucking has slipped out.]	133
[1020-****][The % milling bur is too long.]	134
[1021-****][The % milling bur is too short.]	134
[1022-****][The % milling bur was not found.]	135
[1023-0000] to [1028-0000] [Milling data error.]	135
[1029-0000][The spindle experienced an overload.]	136

[102A-0000][The spindle experienced an overload.]	136
[102B-0000][The spindle motor temperature is too high.]	137
[102D-0000][The spindle can not be turned.].....	137
[102D-0001][The spindle abnormally stopped during milling.]	137
[102E-0000][A moving part has collided with other components.]	137
[1030-0001][The dust collector filter needs to be replaced.]	138
[1038-0000][Milling data error. No milling bur is selected.].....	138
[103B-0000][The automatic correction is not yet finished.]	138
[103D-0000][Milling data error. The milling bur cannot reach the milling position.]	139
[105F-****][The pressure of the compressed air for blowing away the milling waste is out of range.].....	139
[****_****][An unknown error occurred.]	140
Other Error Messages.....	141
[A machine that has the same ID has been connected.].....	141

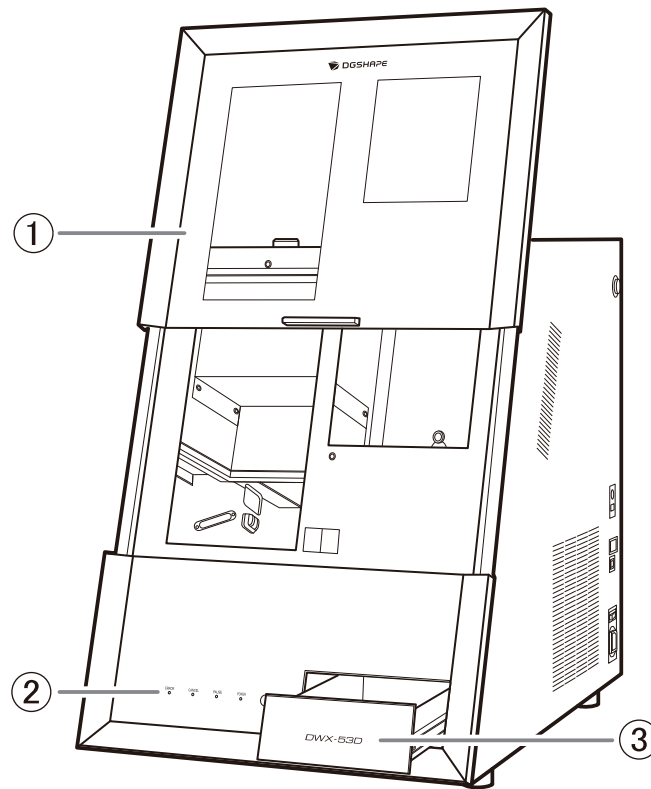
Basic Handling Methods

Basic Information

Part Names and Functions.....	7
Front	7
Side/Rear	10
Statuses Indicated by Status Light Color	11
VPanel for DWX	12
Displaying VPanel.....	13
Exiting VPanel	14
Usable Tools	15
Workpiece	15
Milling bur	16
Adapter/Adapter ID.....	17

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	Handle	Hold the handle when opening or closing the front cover.
③	Built-in panel	The LED lights on the built-in panel display the status of the machine. When the machine is connected to a dust collector with built-in linking function, pressing the touch sensor with a cover open turns the dust collector on.
④	Bottom storage	Use this area to store items such as replacement tools and maintenance parts.

*1 For safety, the machine stops if this cover is opened during operation.

⚠ CAUTION

Be careful with the cover.

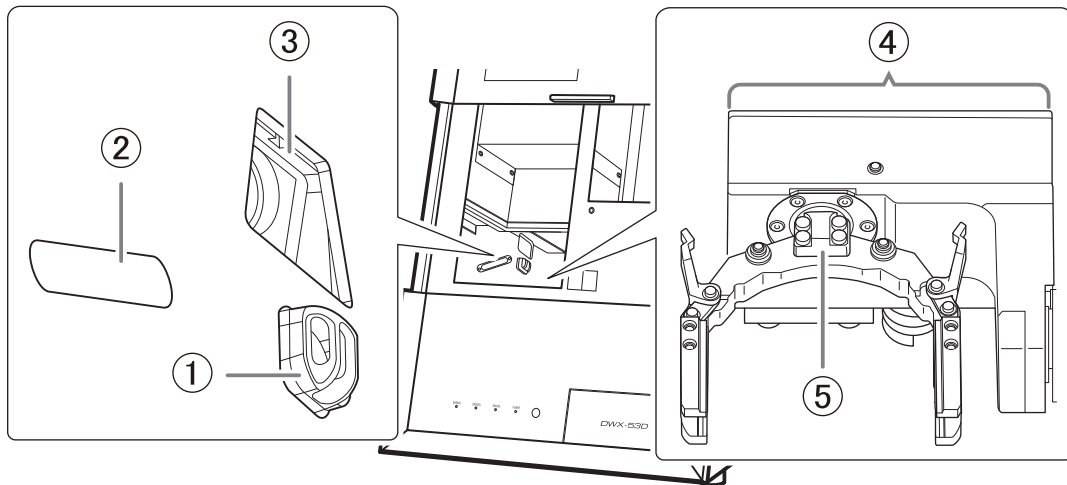
The edges of the cover are sharp. To avoid injury, exercise caution.

⚠ CAUTION

Hold the handle when opening or closing the front cover.

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

Milling Area



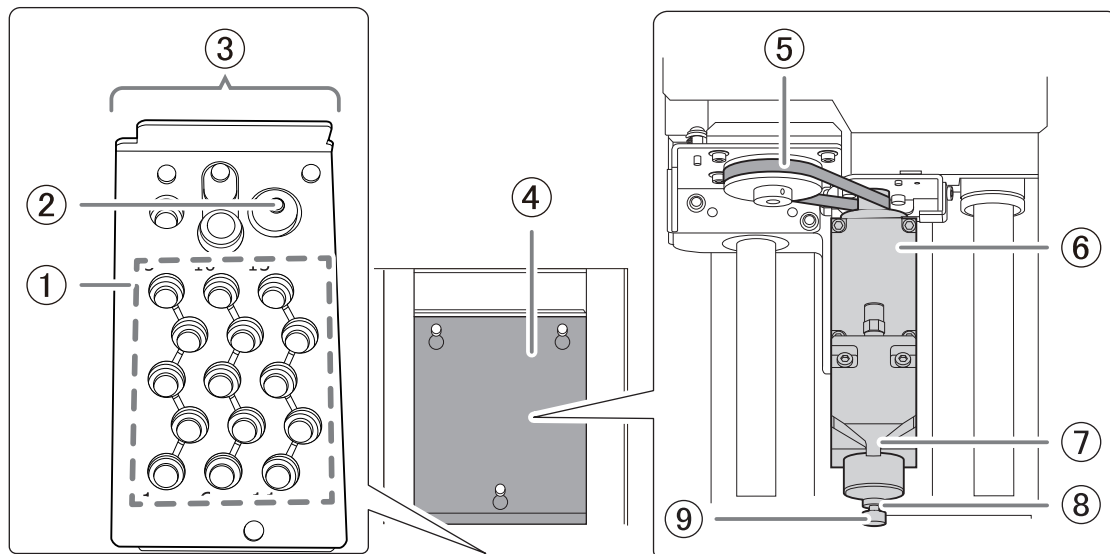
①	Ionizer	The ionizer works to eliminate static electricity from milling waste when cutting PMMA. This makes it easier for the milling waste to move away from the material during milling, which has the effect of maintaining the milling quality. *1
②	Status light	This light is linked with the status light at the top of the machine and indicates the status of the machine with its color and depending on whether it is lit or flashing.
③	Camera	The camera allows the milling status of the machine to be checked from VPanel. When the camera settings are configured, recording starts at the same time as milling. Images are automatically saved only when an error occurs. The images are useful in checking the milling status and in identifying the causes of errors.
④	Rotary axis unit	Rotates the adapter 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.
⑤	Clamp	Rotates along with the adapter to which the milling material is attached and holds the adapter until milling is finished.

*1 To obtain the optimal ionizer effect, ground this machine.

RELATED LINKS

- [P. 11 Statuses Indicated by Status Light Color](#)

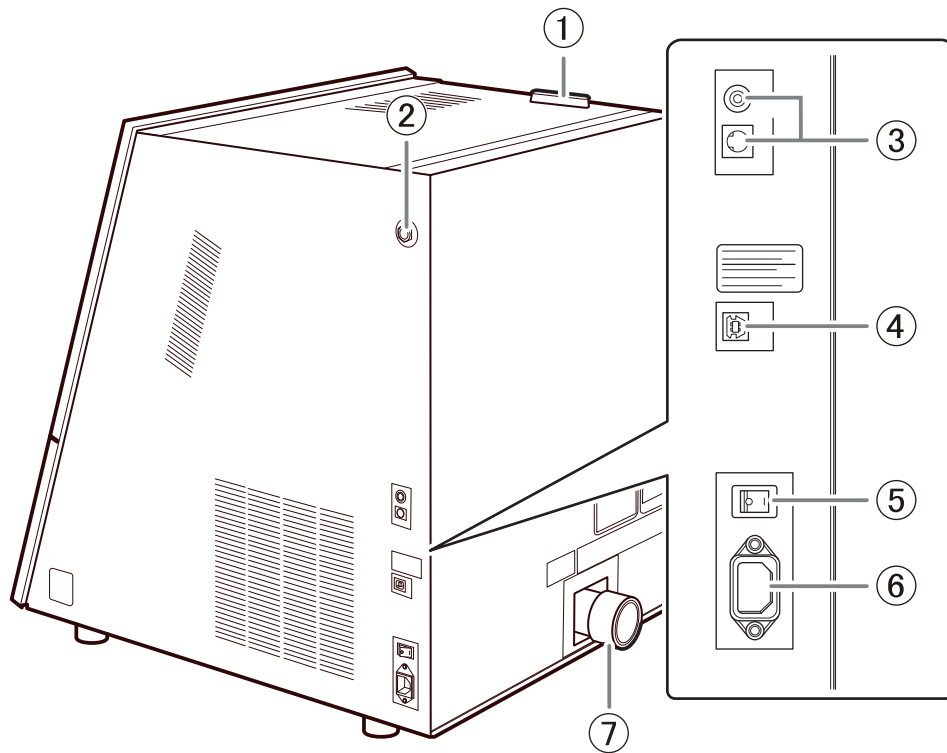
Tool Area



①	Dummy pin stocker	This is the dedicated stocker for the dummy pin gripped by the collet at the start of milling or correction. Do not set milling burs or detection pins in this stocker.
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	Milling bur stockers	Load the milling burs and detection pins to use in milling and correction here.
④	ATC magazine	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.
⑤	Maintenance cover	Covers the aperture used for machine maintenance such as spindle unit and spindle belt replacement.
⑥	Spindle belt* ¹	Conveys the rotation of the spindle motor to the spindle unit. The spindle belt is a part that wears out. To maintain highly accurate milling quality, replace it at the appropriate time.
⑦	Spindle unit* ¹	Conveys the rotation of the spindle belt to the milling bur. The spindle unit is a part that wears out. To maintain highly accurate milling quality, replace it at the appropriate time.
⑧	Air nozzle* ¹	Discharges compressed air during milling to blow milling waste away from the workpiece.
⑨	Collet* ¹	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.
⑩	Dummy pin* ¹	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.

*1 Inside the maintenance cover

Side/Rear



①	Status light	This light is linked with the status light in the milling area and indicates the status of the machine with its color and depending on whether it is lit or flashing.
②	Compressed air intake	This is the intake for the compressed air adjusted by the regulator. The compressed air is used, for example, to blow away the waste generated when milling workpieces.
③	Expansion port	Use this port to connect a dust collector with built-in linking function. Check the linking cable for the dust collector being used and connect the linking cable to the terminal with the appropriate shape. IMPORTANT Do not connect more than one dust collector at a time. Doing so may result in incorrect operation or malfunction of the machine or dust collector.
④	USB connector	Use this connector to connect the USB cable between this machine and the computer.
⑤	Power switch	Turns the machine's power on and off.
⑥	Power cord connector	Connect the supplied power cord to this connector.
⑦	Dust collection hose attachment port	Attach the dust collection hose to this port. Use either the dust collection hose included with the machine or a dust collection hose that meets the required specifications described in the Setup Guide.

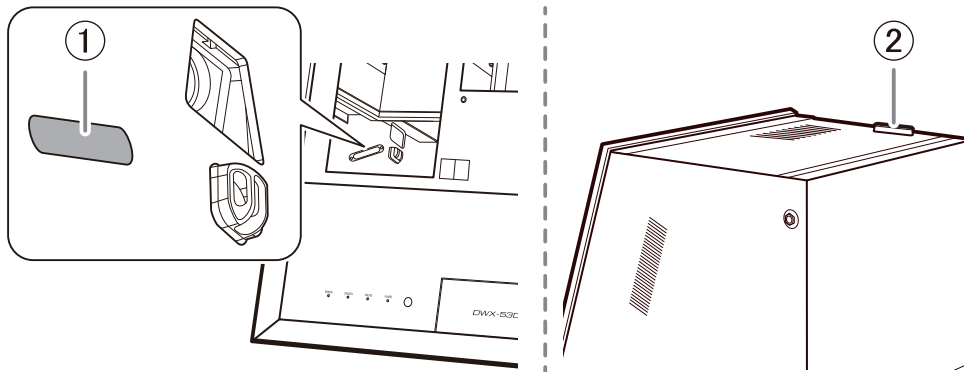
RELATED LINKS

- [P. 11 Statuses Indicated by Status Light Color](#)
- [DWX-53D Setup Guide](#)

Statuses Indicated by Status Light Color

Status Lights at the Top of the Machine and in the Milling Area

To ensure that operators can determine the status of the machine whether they are right next to it or far away, one status light is provided in the milling area (①) and another on the top of the machine (②). These two synchronized lights display the status of the machine.



Blue	Lit	The machine is in standby. To reduce power consumption, if no operation is performed for 30 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.
	Flashing	The dust collector is in standby.
Yellow	Lit	An error has occurred during milling, and the machine has been paused. Check the error details shown on VPanel. Press the touch sensor 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	Hold down the touch sensor on the built-in panel. 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.	

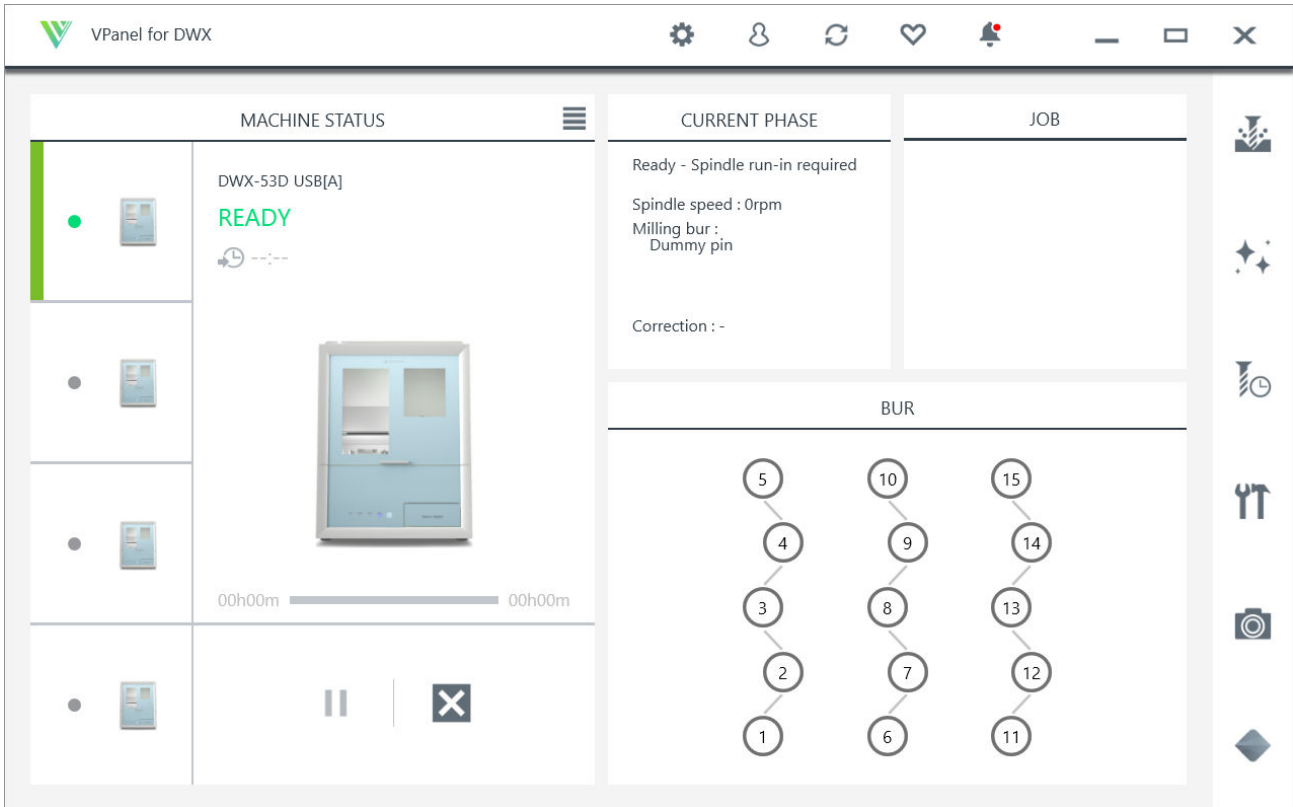
RELATED LINKS

- [P. 130 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

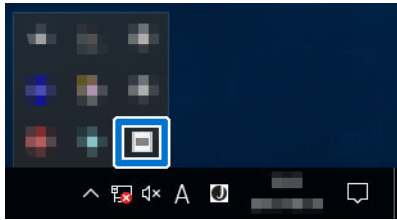
- [VPanel for DWX User's Manual](#)


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

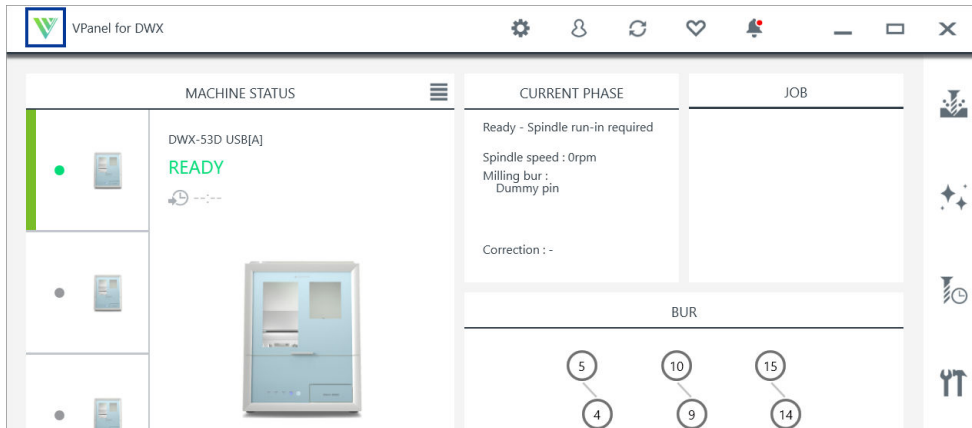
1. Display VPanel from the Start screen.
 - Windows 11
 - a. Click [Start].
 - b. Click [All Apps]>[VPanel for DWX].
 - Windows 10
 - a. Click [Start].
 - b. Click [VPanel for DWX]>[VPanel for DWX].

Exiting VPanel

Exiting VPanel from the System Menu

Procedure

1. Right-click  in the VPanel title bar to display the system menu.

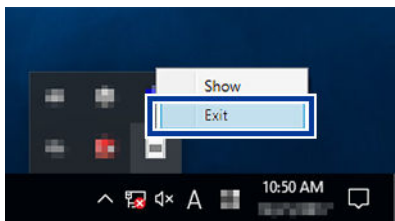


2. Click [Exit].

Exiting VPanel from the Task Tray

Procedure

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



Usable Tools


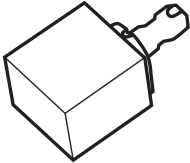
Workpiece

Usable Workpieces and Sizes

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

- Zirconia
- Wax
- PMMA
- Composite resins
- PEEK
- PEKK
- Glass-fiber-reinforced resin
- CoCr sintered metal
- Polycarbonate

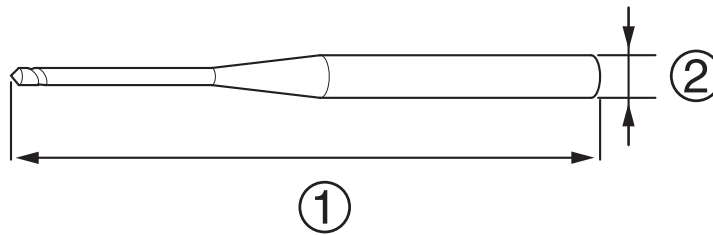
The types and sizes of the workpieces that can be milled by this machine are as follows.

Type		Size
Disc type (with step)		Step section: 98.5 mm (3.88 in.) (diameter), 10 ± 0.3 mm (0.39 ± 0.01 in.) (height) Body section: 95 mm (3.74 in.) (diameter), 60 mm (2.36 in.) max. (height)
Pin type		Pin diameter: 6 mm

Milling bur

Usable Milling Bur Sizes

* The shape of the milling bur is merely an example. Select the milling bur that matches the application. Contact your authorized DGSHAPE Corporation dealer or visit our website to purchase items.



- ①: 40 to 55 mm (1.58 to 2.16 in.)
- ②: \varnothing 4 mm (\varnothing 0.16 in.)

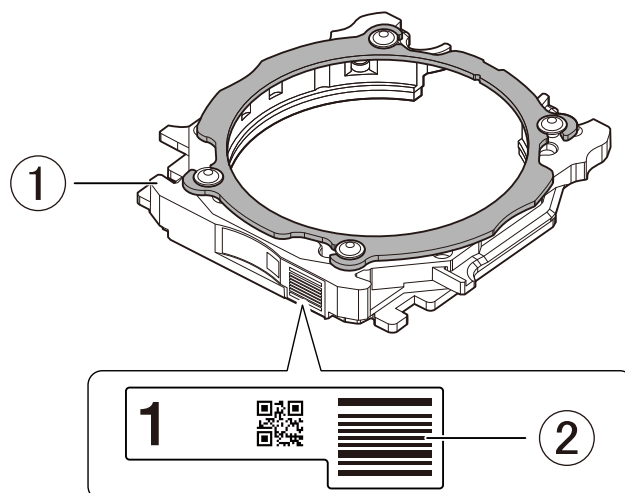
RELATED LINKS

- <https://www.dgshape.com/>

Adapter/Adapter ID

Workpieces are used while set in adapters labeled with adapter IDs. Use the adapter ID to manage the work situations of workpieces.

Once you have started using a workpiece, do not remove it from the adapter until you are finished using it. If you remove a workpiece that you have started using from the adapter, you will no longer be able to manage information such as the position information in the CAM data. It may also become impossible to correctly read the position at which to resume milling.



- ①: Adapter
- ②: Adapter ID

When You Want to Use Seven or More Adapters

Six adapters are included with the machine. If you want to use seven or more adapters, purchase optional products. You can manage up to 100 adapters (IDs: 1 to 100).

RELATED LINKS

- [P. 53 Purchasing Additional Adapters](#)

Basic Operation

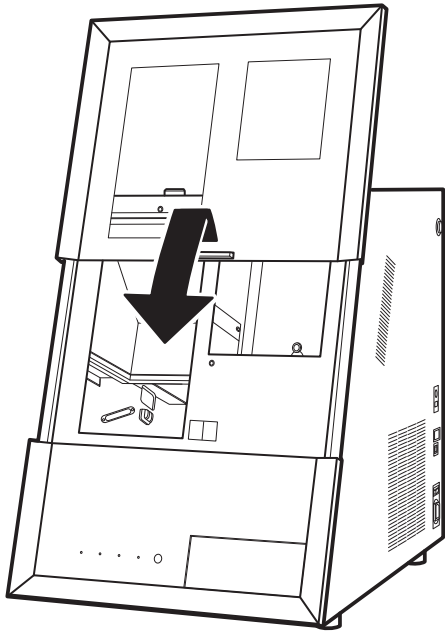
Power Supply Operations	19
Switching the Power On	19
Switching the Power Off	20

Power Supply Operations

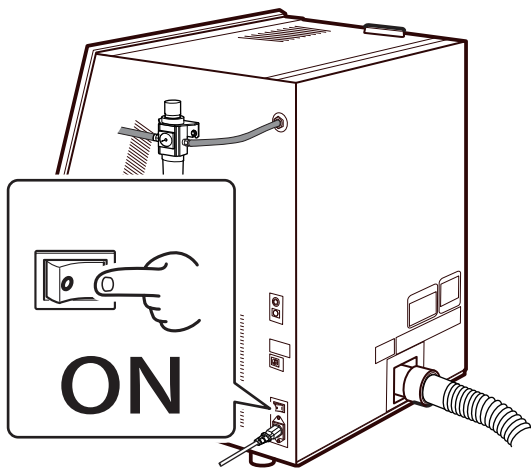
Switching the Power On

Procedure

1. Close the front cover if it is open.
Gently pull up on the front cover and then lower it until a click is heard.



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.



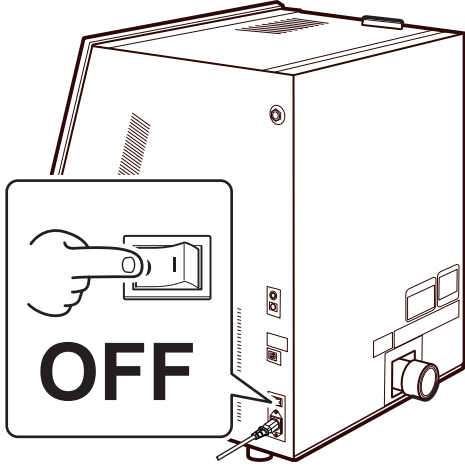
IMPORTANT

Do not open the covers during the initial operations.

Switching the Power Off

Procedure

1. Switch off the machine's power switch.



Milling

Milling

Preparing for Milling	23
CAM Settings Necessary for Milling	23
Step 1: A. Mounting Disc Workpieces on Adapters	24
Step 1: B. Mounting Pin-type Workpieces on Adapters	29
Step 2: Attaching the Adapter to the Machine	37
Step 3: Setting the Milling Bur	39
Step 4: Adjusting the Pressure of the Compressed Air	41
Step 5: Setting Milling Burs to Use in Milling	42
Starting Milling	45
Outputting Milling Data and Starting Milling	45
Removing the Adapter Cap from the Machine	48
Aborting and Canceling Milling	49
Aborting Output	49
Removing Milling Data in Standby from the Output List	49

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. 15 Workpiece
Milling bur	Set all the milling burs to use in milling. P. 16 Milling bur
Milling bur stocker number	Set the numbers of the milling bur stockers in which the milling burs will be loaded. P. 39 Setting the Milling Bur

Step 1: A. Mounting Disc Workpieces on Adapters

Mount workpieces on adapters with unique ID labels. You can mount workpieces on any adapters so long as they have unique ID labels. Use the adapter ID to manage the work situations of workpieces.

This step is not necessary when mounting a pin-type workpiece on the adapter. Proceed to [Step 1: B. Mounting Pin-type Workpieces on Adapters\(P. 29\)](#).

MEMO

Adapter ID labels are not affixed to open edge adapters. Affix the adapter ID labels included as an optional product with this machine to the additional adapters before using them.

Required items

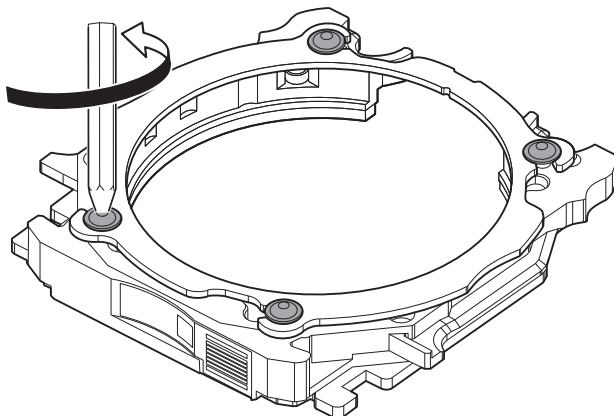


Procedure

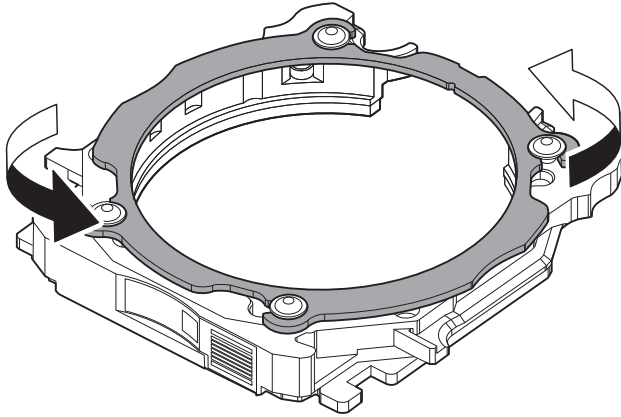
1. Use a torque screwdriver to loosen the adapter screws (in four locations), turning them approximately four times.

IMPORTANT

Use the included spare screws when a screw is lost or worn.

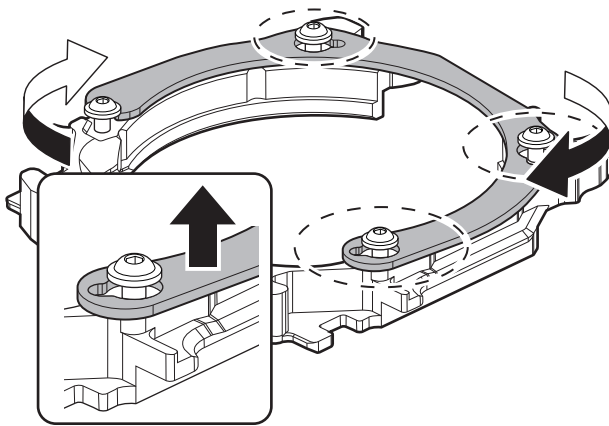


2. Remove the adapter cap.
Turn the adapter cap in the direction of the arrows to remove it.

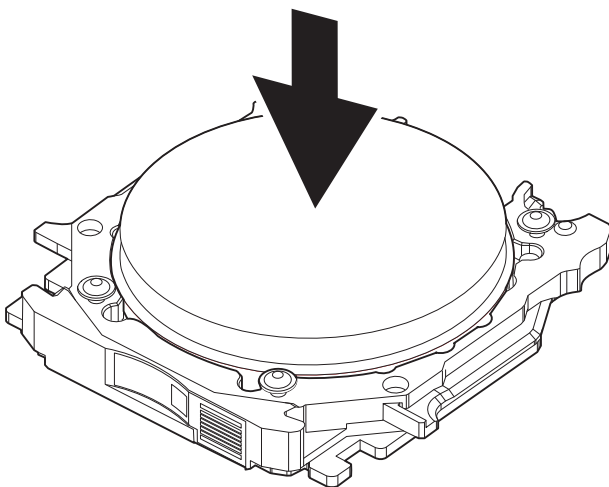


MEMO

If you are using an open edge adapter, turn the adapter cap, and then lift up the adapter cap to remove it.



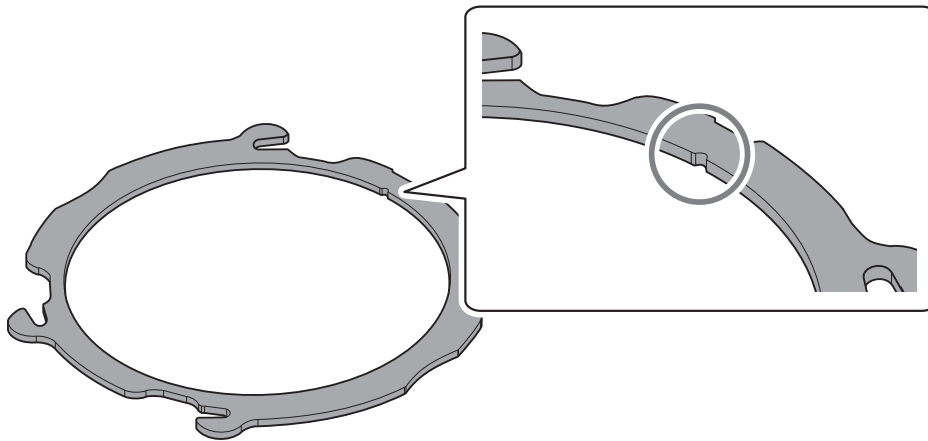
3. Load the disc workpiece into the adapter base.



4. Attach the adapter cap to the adapter base.

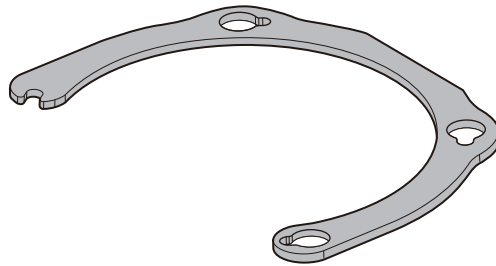
(1) Orient the adapter cap removed in step 2 as shown in the following figure.

Pay attention to the position of the notch.

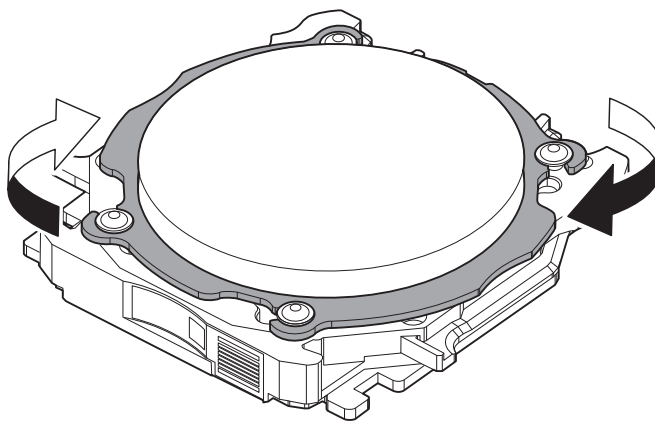


MEMO

Open edge adapters do not have a notch. If you are using an open edge adapter, orient the adapter cap as shown in the following figure.

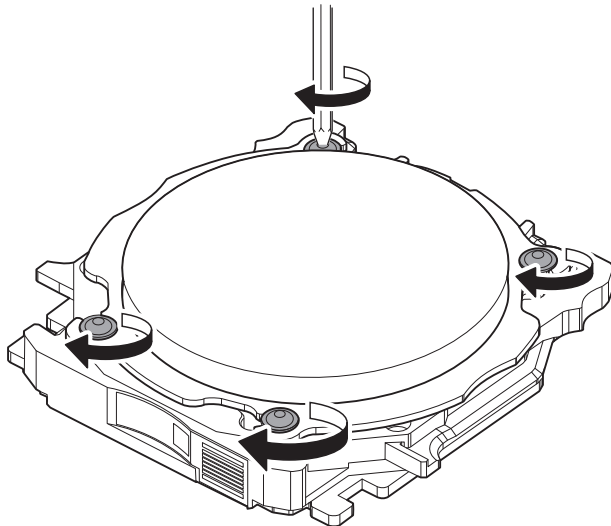


(2) Attach the adapter cap to the adapter base, and then turn the cap in the direction of the arrow.



5. Temporarily tighten the screws (in four locations) with a torque screwdriver so that their seats come into contact with the adapter cap.

To prevent workpiece damage, temporarily tighten the screws before fully tightening them.



6. Use a torque screwdriver to tighten the screws in four locations in the order shown in the following figure.

IMPORTANT

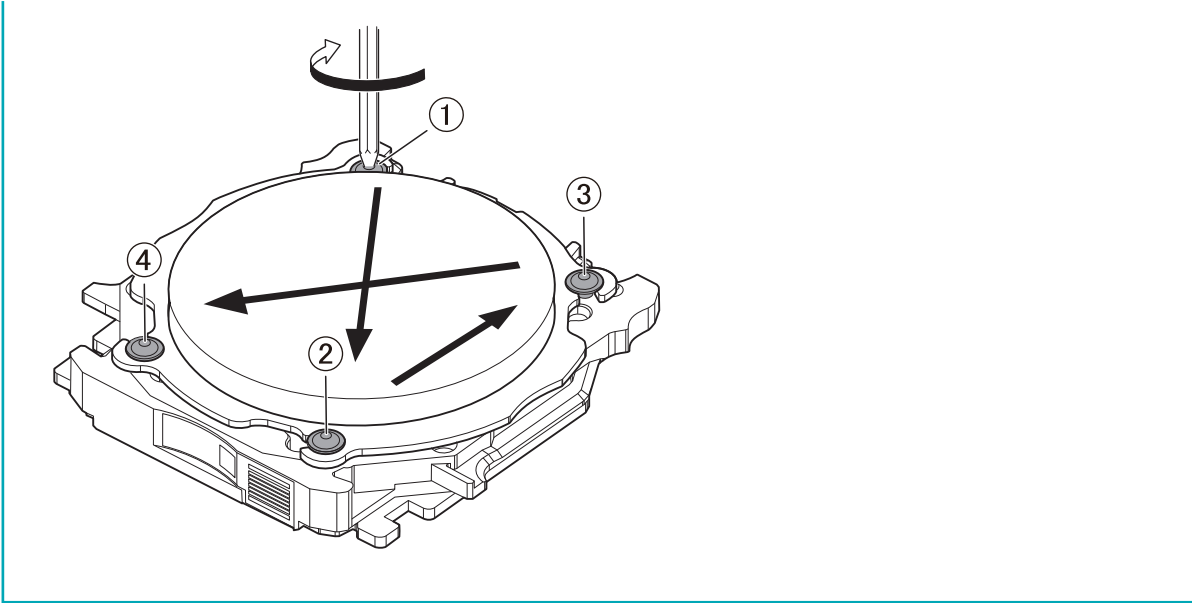
Switch to the torque screwdriver sleeve that matches the material you are using. Failing to do so may damage the workpiece.

The torques required when attaching workpieces of various materials are as follows.

Material	Torque
Zirconia	0.3 N·m
Wax	0.3 N·m
PMMA	0.6 N·m
Composite resins	0.6 N·m
PEEK	0.6 N·m
PEKK	0.6 N·m
Glass-fiber-reinforced resin	0.6 N·m
CoCr sintered metal	0.3 N·m
Polycarbonate	0.6 N·m

IMPORTANT

Tighten the screws until turning the handle of the torque screwdriver no longer turns the screw bit. Also, to prevent workpiece damage, secure the workpiece evenly. Be sure to tighten the screws across the diagonals.

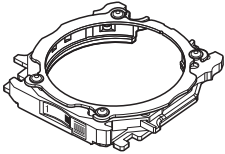
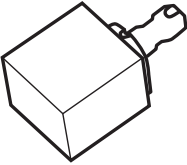
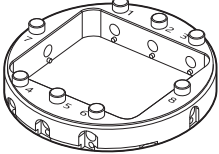
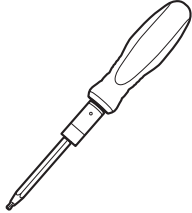


Step 1: B. Mounting Pin-type Workpieces on Adapters

Use this section to mount the workpiece on the adapter with a unique ID label, and then secure the workpiece by tightening the adapter cap. You can mount workpieces on any adapters so long as they have unique ID labels. Use the adapter ID to manage the work situations of workpieces.

This step is not necessary when mounting a disc workpiece on the adapter. Proceed to [Step 1: A. Mounting Disc Workpieces on Adapters\(P. 24\)](#).

Required items

 <p>Adapter</p>	 <p>Pin-type workpiece</p>	 <p>Pin-type workpiece adapter</p>	 <p>Torque screwdriver (0.6 N·m)</p>
--	---	--	---

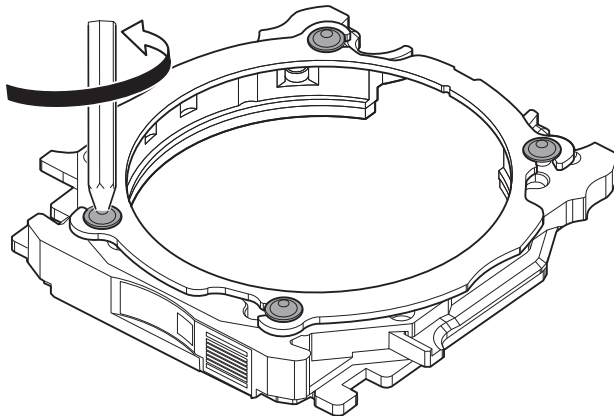
1. Mount the pin-type workpiece adapter on the adapter.

Procedure

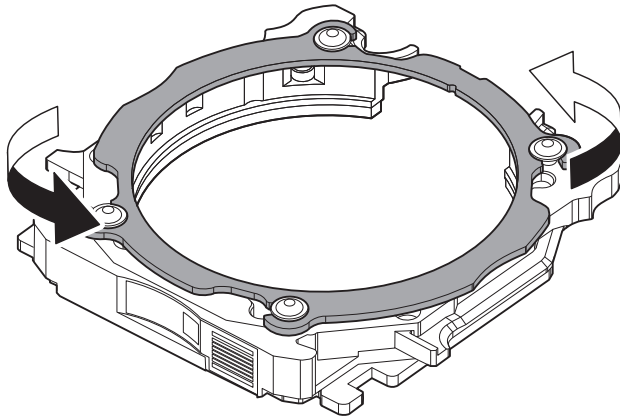
1. Use a torque screwdriver to loosen the adapter screws (in four locations), turning them approximately four times.

IMPORTANT

Use the included spare screws when a screw is lost or worn.



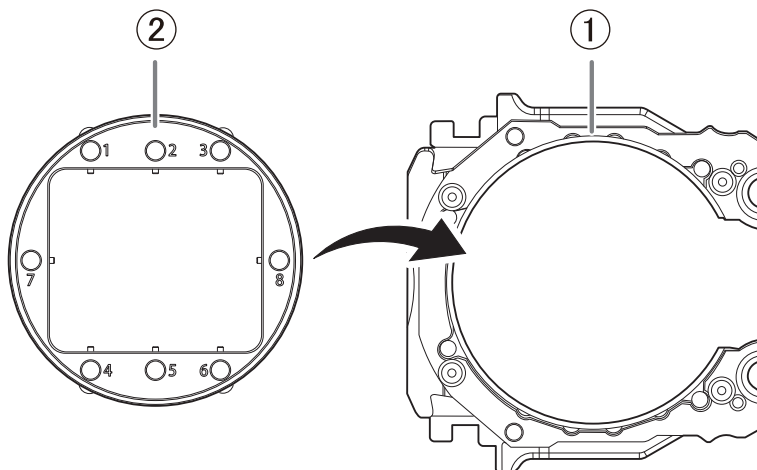
2. Turn the adapter cap in the direction of the arrows to remove it.



3. Mount the pin-type workpiece adapter on the adapter base.

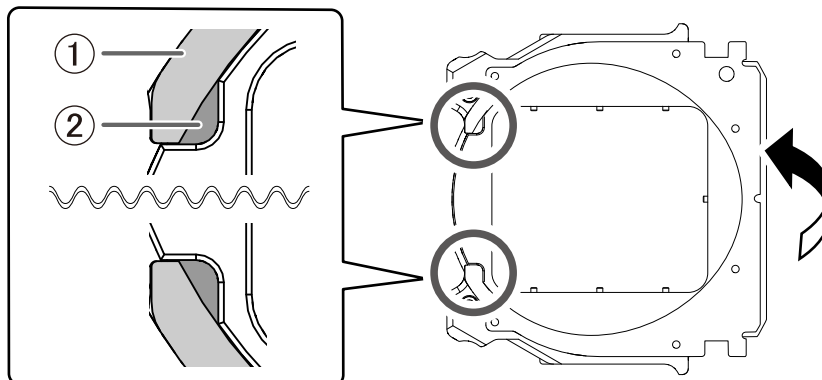
(1) Load the pin-type workpiece adapter (②) on the adapter base (①).

- Adapter base (①): Orient this part so that it looks like a "C."
- Pin-type workpiece adapter (②): Orient this part so the numbers face up.



(2) Turn over the loaded adapter, and then align the positions shown in the following figure.

Attach the pin-type workpiece adapter so that the protrusions on the adapter base (①) match the positions of the recessed parts on this adapter (②).

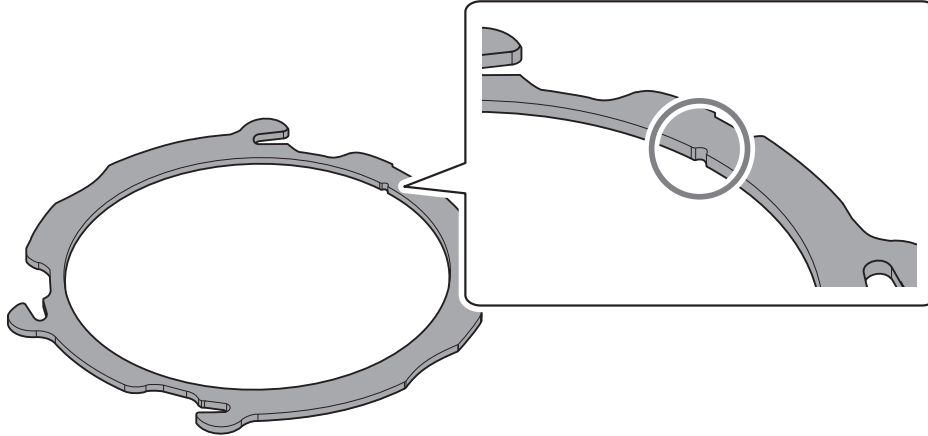


(3) Turn over the adapter so that its top faces up, and then check whether the pin-type workpiece adapter has been mounted on the adapter base without any gaps.

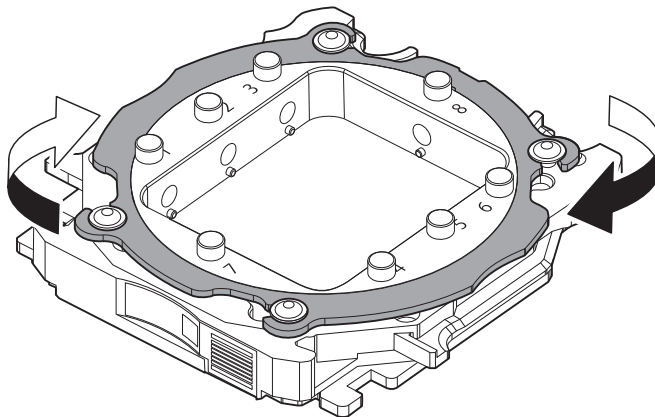
If the parts wobble, check whether the protrusions match the positions of the recessed parts again.

4. Attach the adapter cap to the adapter base.

- (1) Orient the adapter cap removed in step 2 as shown in the following figure.
Pay attention to the position of the notch.

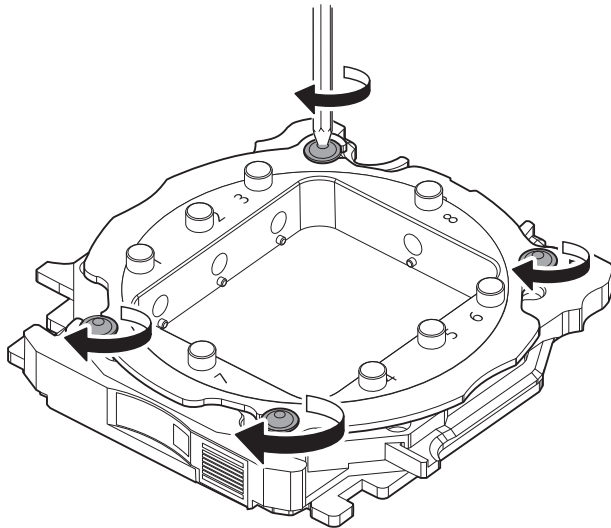


- (2) Attach the adapter cap to the adapter base, and then turn the cap in the direction of the arrow.



5. Temporarily tighten the screws (in four locations) with a torque screwdriver so that their seats come into contact with the adapter cap.

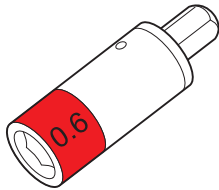
To secure the adapter cap evenly, temporarily tighten the screws before fully tightening them.



6. Use a torque screwdriver to tighten the screws in four locations in the order shown in the following figure.

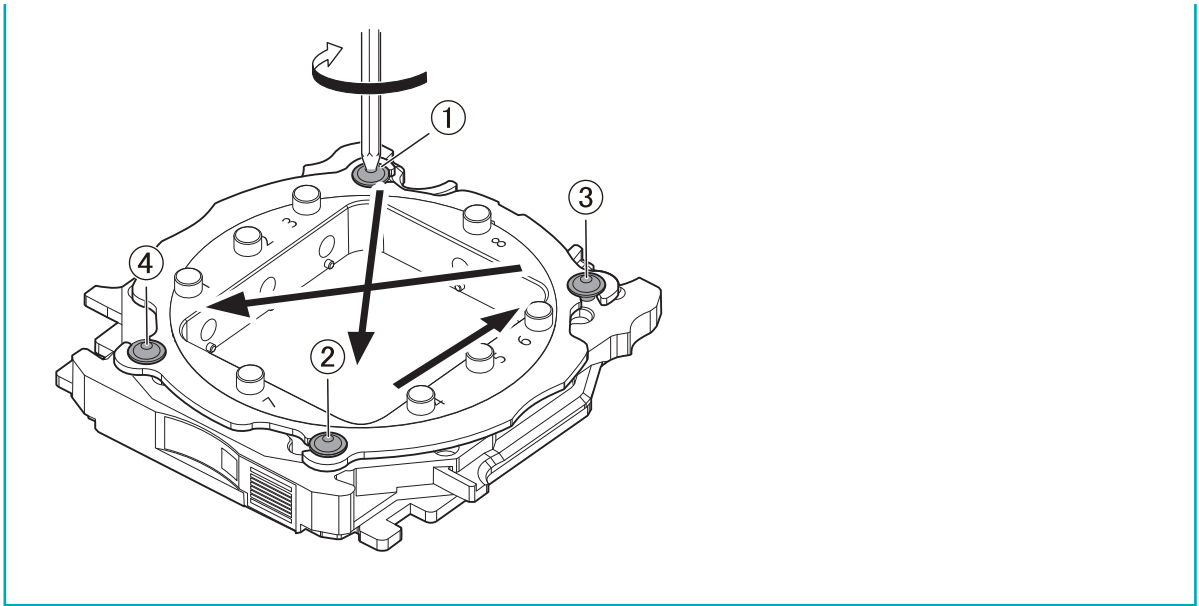
IMPORTANT

Be sure to use the 0.6 N·m torque screwdriver sleeve. Failing to do so may lead to loose screws during milling, which will affect the milling quality.



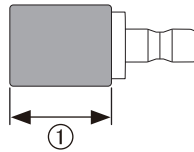
IMPORTANT

Tighten the screws until turning the handle of the torque screwdriver no longer turns the screw bit. To maintain milling quality, secure the adapter cap evenly. Be sure to tighten the screws across the diagonals.



2. Mount the workpiece on the pin-type workpiece adapter.

The following figures show the number of workpieces that can be mounted on the adapter according to their sizes. The maximum number of workpieces that can be mounted on the adapter differs depending on the workpiece length (①).



Example mounting layouts

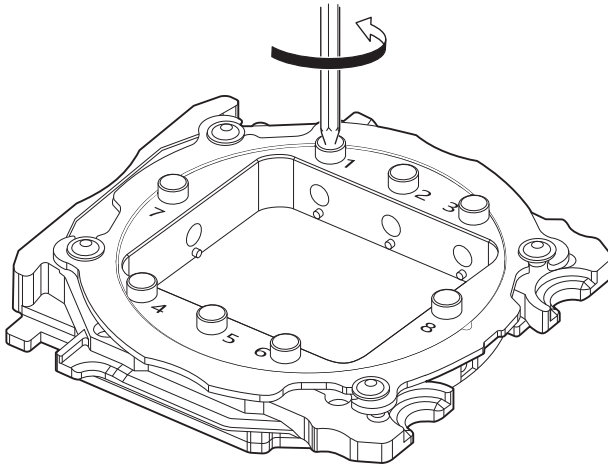
<p>① ≤ 20 mm (0.78 in.)</p>	
<p>20 mm (0.79 in.) < ① ≤ 50 mm (1.96 in.)</p>	
<p>50 mm (1.97 in.) < ①</p>	

Procedure

1. Use a torque screwdriver to loosen the screw at the mounting position for the pin-type workpiece.

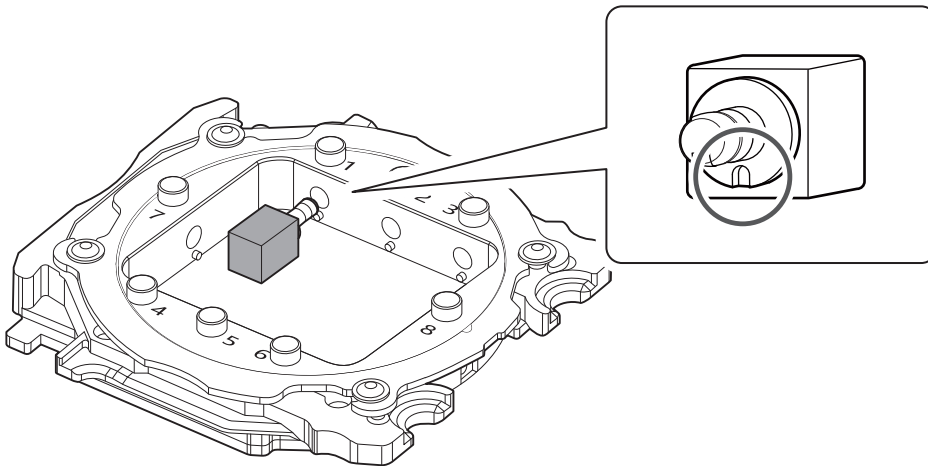
MEMO

Use the included spare screws when a screw is lost or worn.



2. Mount the pin-type workpiece on the pin-type workpiece adapter.

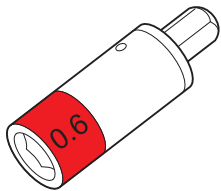
Make sure the recessed portion of the pin-type workpiece is oriented downward, align the protrusion of the pin-type workpiece adapter with this recessed portion, and then insert the workpiece all the way in.



3. Tighten the screw using a torque screwdriver.

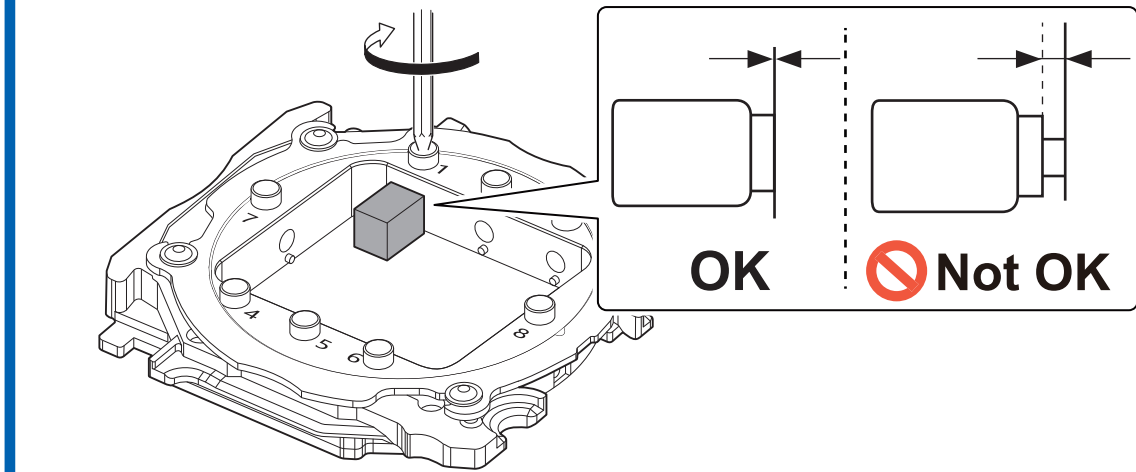
IMPORTANT

Be sure to use the 0.6 N·m torque screwdriver sleeve. Failing to do so may lead to loose screws during milling, which will affect the milling quality.



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

Check that there is no gap between the pin-type workpiece and the adapter.



Step 2: Attaching the Adapter to the Machine

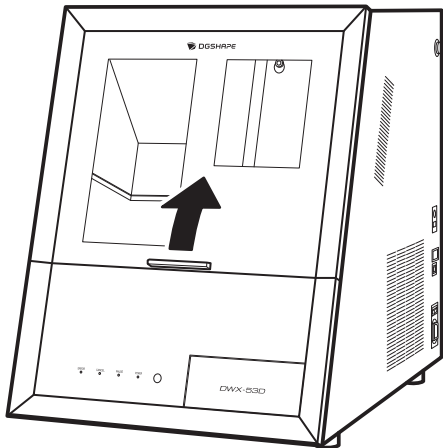
Procedure

1. 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.

2. When the initial operation is finished, open the front cover.

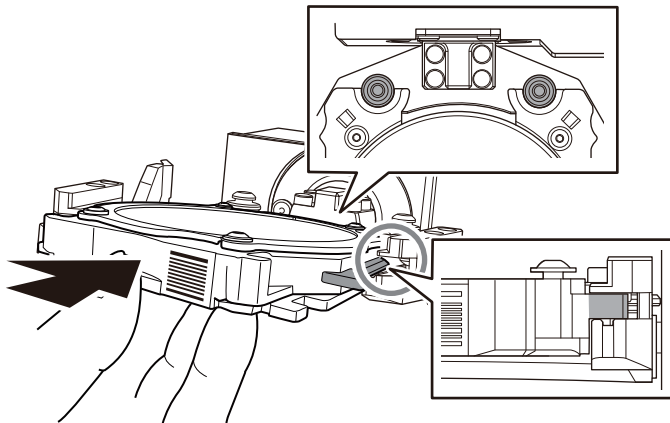
Pull until a click is heard.



3. With its adapter ID facing you, insert the adapter into the clamp.

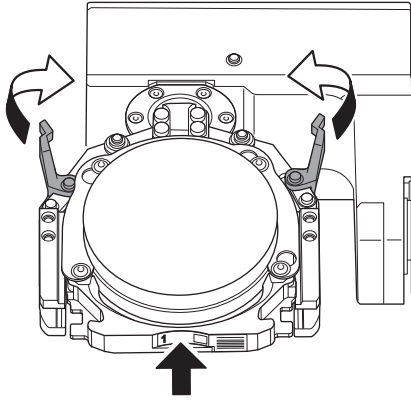
Gently push in the adapter all the way along the groove in the clamp.

Inserting it with too much force will make the adapter strike the inside of the machine, possibly leading to injury and workpiece damage.

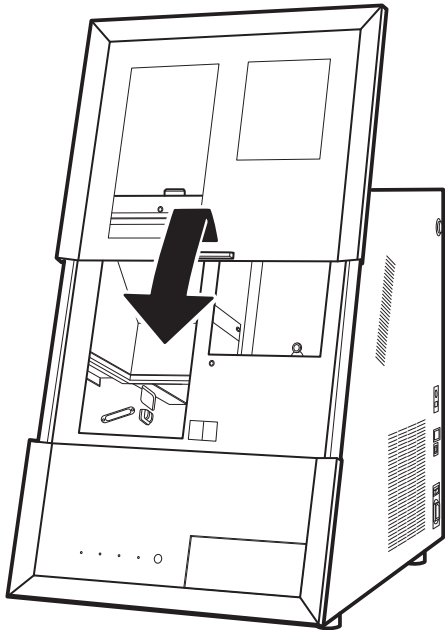


4. Secure the adapter.

As shown in the figure, close the fixing knobs (in two locations) in the directions of the arrows while pressing in on the adapter to secure the adapter.


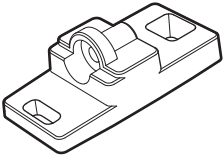
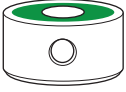

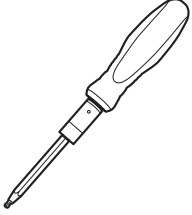


5. Lightly tug on the adapter to check that it does not come loose.
6. Close the front cover.
Gently pull up on the front cover and then lower it until a click is heard.



Step 3: Setting the Milling Bur

Required items

 <p>Milling bur</p>	 <p>Milling bur positioner</p>	 <p>Milling bur holder</p>	 <p>Mounting screw</p>	 <p>Torque screwdriver (0.3 N·m)</p>
--	---	---	---	---

Procedure

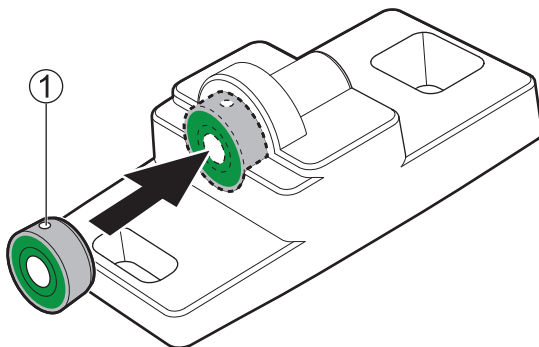
1. Attach the milling bur holder to the milling bur positioner.

- (1) Orient the milling bur holder as shown in the figure, and then insert and attach the milling bur holder so that it reaches the back of the hole.

Attach the milling bur holder with its screw hole (①) on top.

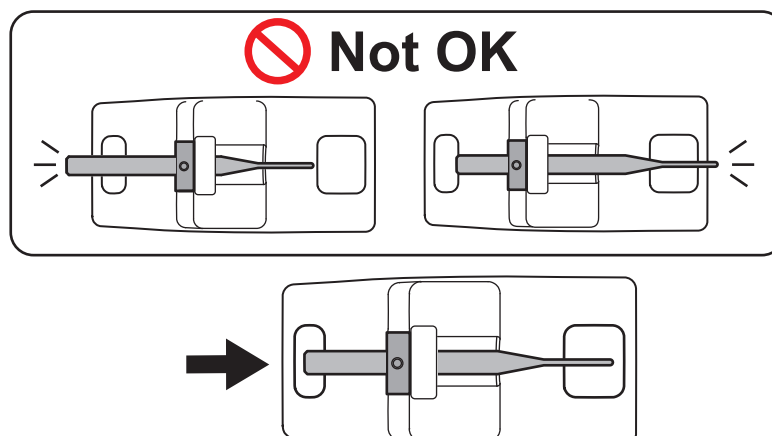
IMPORTANT

Be sure to use the included milling bur holder. Failing to do so may affect the milling quality or lead to milling bur damage during milling.



- (2) Slide the milling bur through the milling bur holder and determine the proper position.

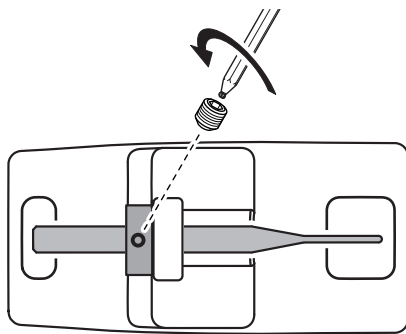
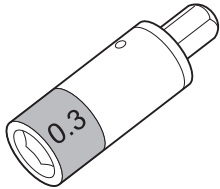
Insert the milling bur as shown in the following figure and make sure that both ends are within the areas of the milling bur positioner holes.



(3) Tighten the mounting screw using a torque screwdriver.

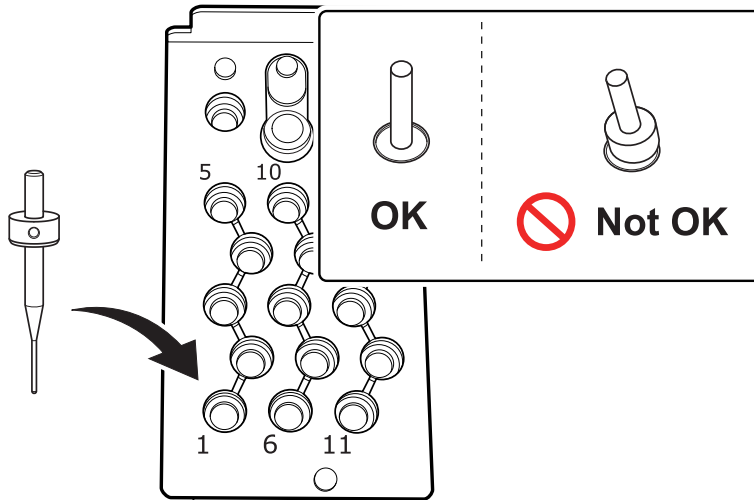
IMPORTANT

Be sure to use the 0.3 N·m torque screwdriver sleeve. Failing to do so may lead to the screw becoming loose during milling or may make it impossible to remove the screw from the milling bur.



2. Set the milling bur in the ATC magazine.

Firmly insert the milling bur as far as possible. Up to 15 milling burs can be loaded. The milling bur stocker numbers are inscribed on the surface of the ATC magazine.



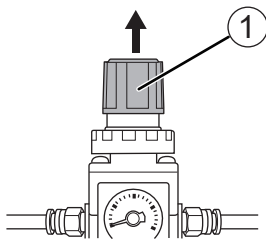
Step 4: Adjusting the Pressure of the Compressed Air

After CAM data is sent to the machine, air is supplied during the following operations. The air pressure is automatically increased or decreased to match the material to mill.

- When the spindle rotates
- When the milling bur is replaced
- When cleaning operations are performed such as those after milling finishes

Procedure

1. Pull up on the upper knob (the air pressure adjustment knob) (①).



2. Adjust the air pressure.

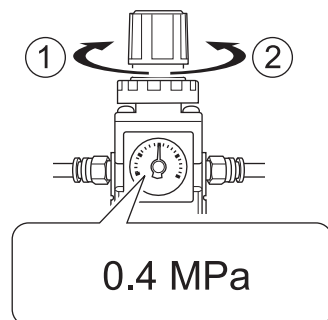
- (1) Slowly turn the upper knob to adjust the air pressure to 0.3 MPa.
- (2) Slowly turn the upper knob to increase the air pressure to 0.4 MPa.

⚠ WARNING

Turn the air pressure adjustment knob slowly and carefully. Otherwise, the machine may move suddenly, posing a risk of injury.

IMPORTANT

Be sure to adjust the air pressure setting to 0.4 MPa. An air pressure higher than 0.4 MPa may result in a malfunction. If the pressure is too low, the desired results will not be obtained.



- ①: Increase the pressure.
- ②: Decrease the pressure.

When the supply of air starts, the air starts to flow and the pressure drops temporarily. However, it is not necessary to increase the air pressure back to 0.4 MPa.

3. Push down on the upper knob.

Step 5: 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.

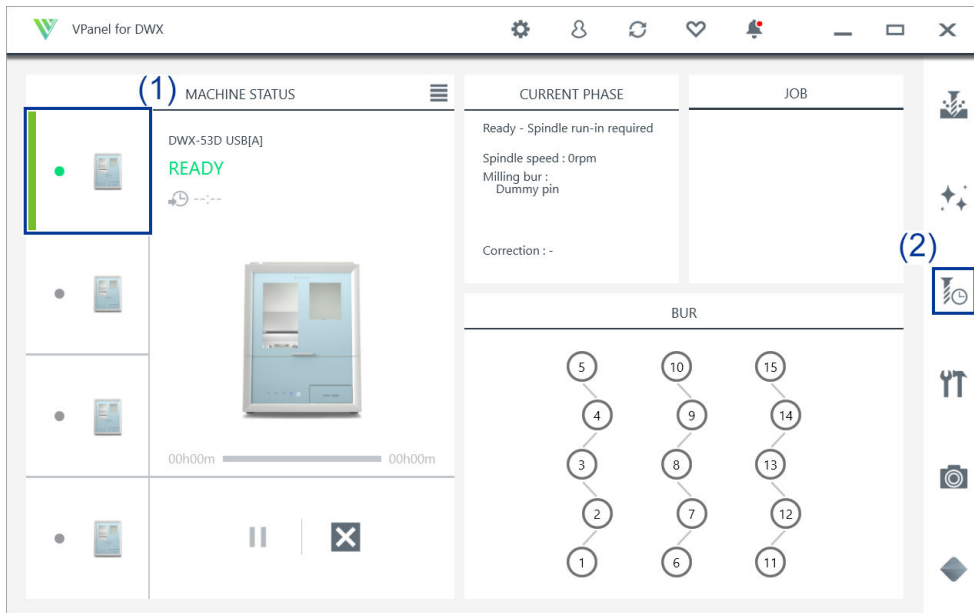
2. Open the [Milling bur registration] window.

(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].

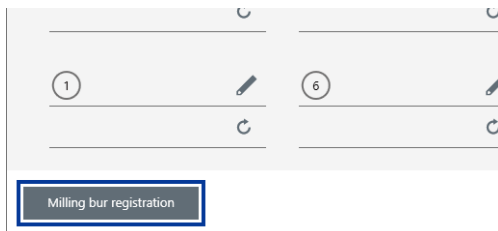
(2) Click .

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 35 milling burs.

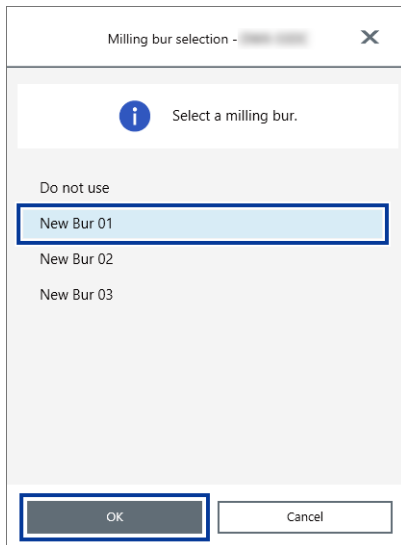
5. Click [Close].

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. 51 Automatically Switching Out the Worn Milling Bur \(Intelligent Tool Control\)](#)
- [VPanel for DWX User's Manual](#)

Starting Milling

Outputting Milling Data and Starting Milling

You can also use commercially available CAM software to output milling data. For information on compatible CAM software, contact your authorized Roland DG Corporation dealer.

WARNING

Be sure to turn on the dust collector.

Milling waste and workpieces are flammable and toxic.

WARNING

Never use a vacuum cleaner to clean up milling waste.

Picking up fine cuttings using an ordinary vacuum cleaner may result in fire or explosion.

WARNING

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

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

WARNING

Keep open flame away from the work area.

Milling waste may ignite. Powdered material is extremely flammable, and even metal material may catch fire.

Procedure

1. Check the settings of the milling data.

[P. 23 CAM Settings Necessary for Milling](#)

2. Show VPanel.

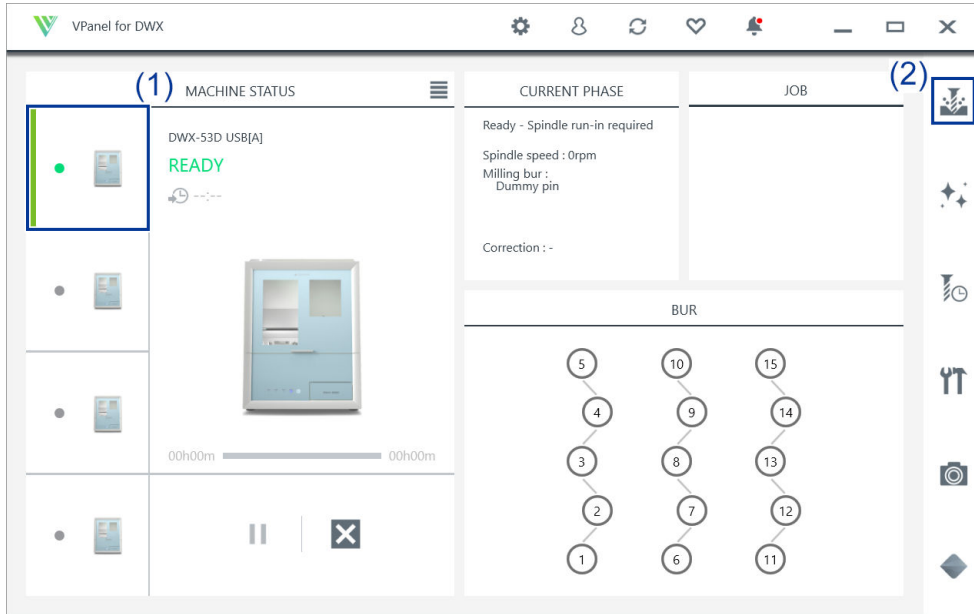
3. Open the [Output a file] window.

- (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].

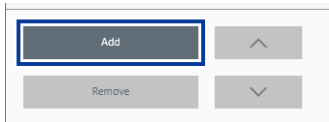
- (2) Click  .

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.



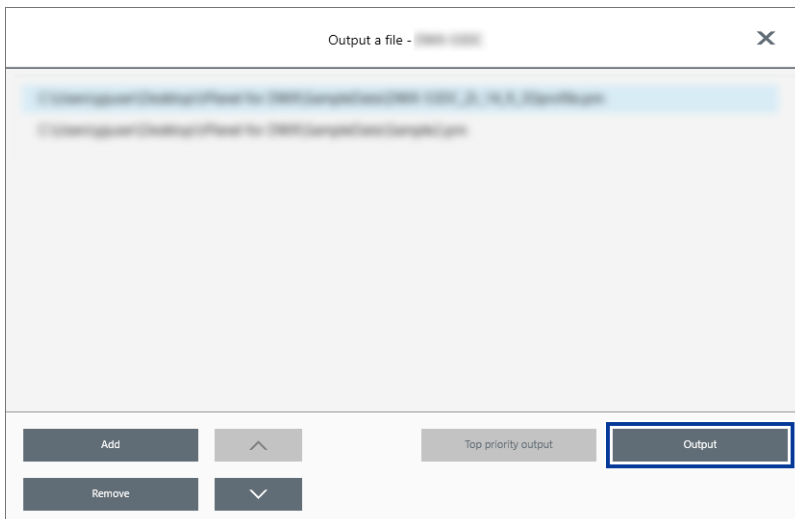
MEMO

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. Verify that the workpiece and the milling bur are set in the milling machine.



[P. 39 Setting the Milling Bur](#)

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 . (The milling data is output from the top of the data list.)

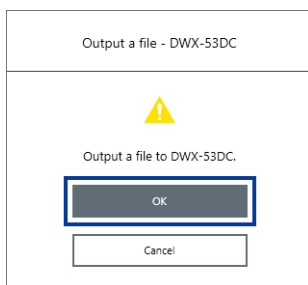
- **Removing milling data from the data list**

To remove milling data from the output list, select the milling data in the data list and click **[Delete]**.

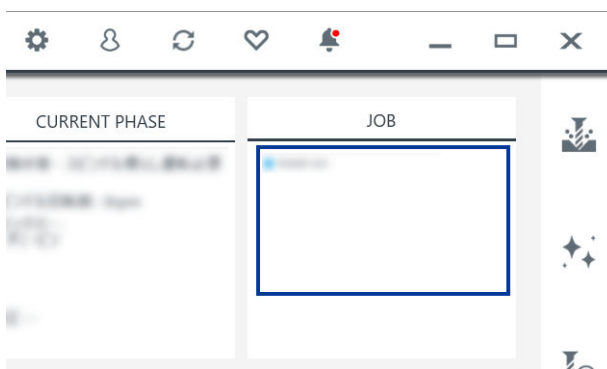
- **Adding milling data by dragging and dropping**

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.



IMPORTANT

Do not open the front cover during milling.

To ensure safety, opening the front cover while milling is in progress will cause the machine to make an emergency stop. If an error occurs, use the information provided at the following link to resolve the error.

[P. 131 \[1017-0000\]\[The front cover was opened.\]](#)

RELATED LINKS

- [VPanel for DWX User's Manual](#)

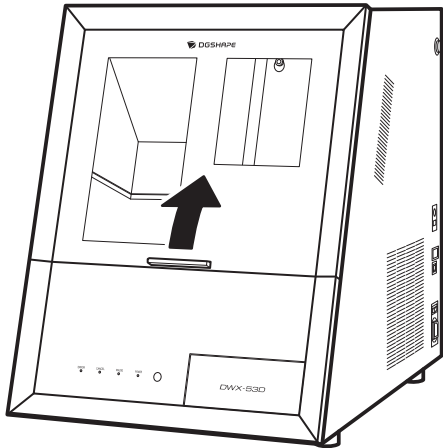
Removing the Adapter Cap from the Machine

When milling is finished, you can remove the adapter from the machine.

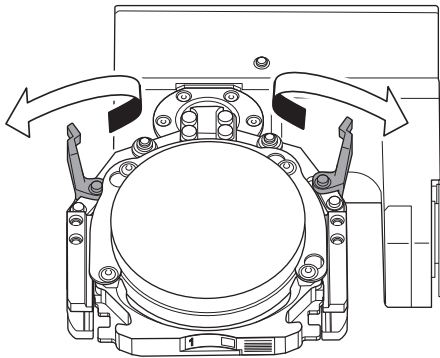
Milling is finished when [READY] or [FINISH] appears under [MACHINE STATUS] in VPanel.

Procedure

1. Open the front cover.
Pull until a click is heard.

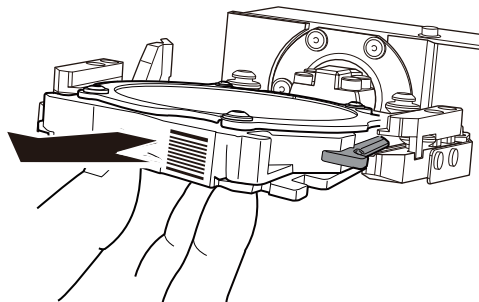


2. Open the fixing knobs (in two locations) in the directions of the arrows to release the locks.



3. Pull out the adapter slowly.


Be sure to pull out the adapter slowly. Exercise caution to avoid striking the inside of the machine with your hands or other body parts when pulling out this part.

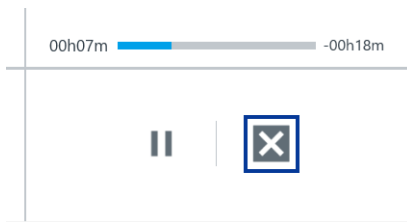


Aborting and Canceling Milling

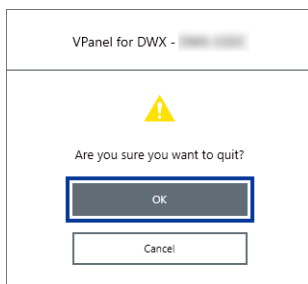
Aborting Output

Procedure

1. In the top window of VPanel, select the machine for which output will be aborted.
2. Click .



3. Click [OK].
The output of the milling data is canceled.



Removing Milling Data in Standby from the Output List

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].
You can only remove milling data in standby 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	51
Automatically Switching Out the Worn Milling Bur (Intelligent Tool Control).....	51
Purchasing Additional Adapters	53

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

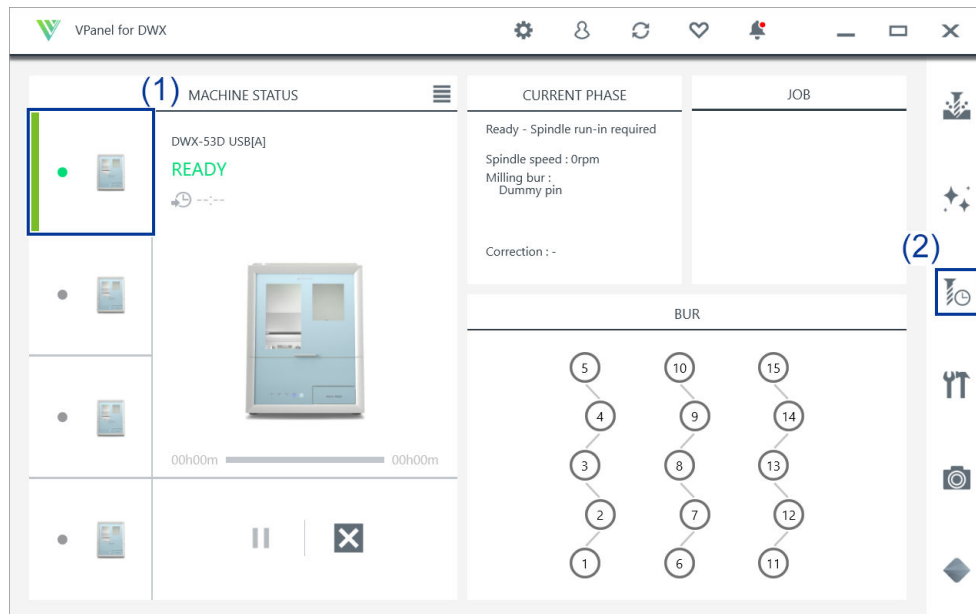
1. Open the [Milling bur management] window.

(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.

1 Zirconia-R1 <3> 	8 
000h00m / 015h00m 	
1 Zirconia-R1 <2> 	7 
000h00m / 015h00m 	
1 Zirconia-R1 <1> 	6 
000h00m / 015h00m 	

Milling bur registration

RELATED LINKS

- [P. 98 Replacing Milling Burs](#)

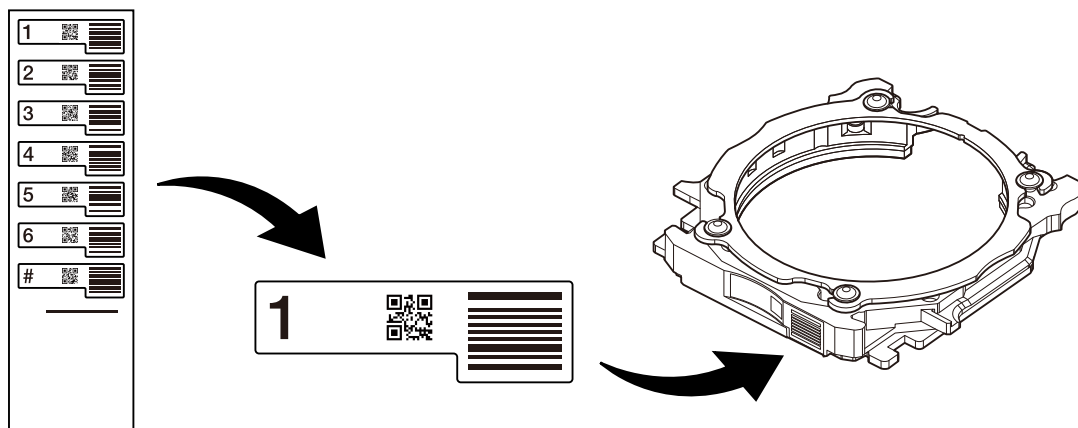
Purchasing Additional Adapters

Six adapters are included with this machine, and this machine can manage all six adapters at the same time. However, you cannot remove workpieces that are being milled from their adapters because doing so will make it impossible to manage information such as the position information in the CAM data.

To use workpieces completely, we recommend that you prepare spare adapters. You can manage up to 100 adapters (IDs: 1 to 100). Contact your authorized DGSHAPE Corporation dealer or visit our website to purchase items.

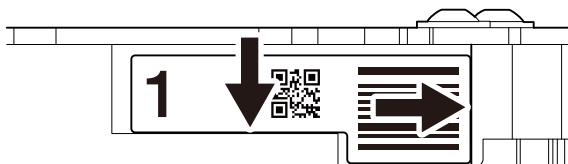
Work That Is Required after Purchasing Adapters

Adapter ID labels are not affixed to adapters that are purchased as optional products. Affix the adapter ID labels included as an optional product with this machine to the additional adapters and use the IDs to manage the work situations of workpieces.



MEMO

Affix the adapter ID labels to the adapters while pressing these labels against the adapters as shown in the following figure. If the label is affixed in the wrong position, the adapter ID may not be read correctly when using the adapter in a machine with a disc changer.



RELATED LINKS

- <https://www.dgshape.com/>

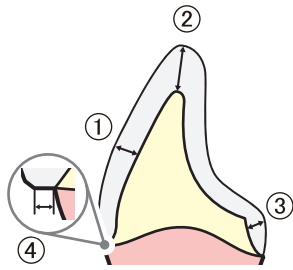
Optimizing Quality and Efficiency

Optimizing the Milling Quality

Recommended CAD Data Thickness Values	56
Correcting the Milling Position According to the Milling Results for Correction (Manual Correction)	57
Correcting for Errors Caused by Temperature Changes (Temperature Change Correction)	60

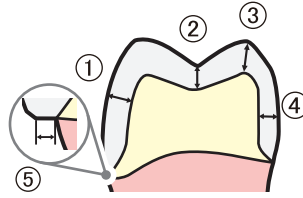
Recommended CAD Data Thickness Values

Front tooth crown



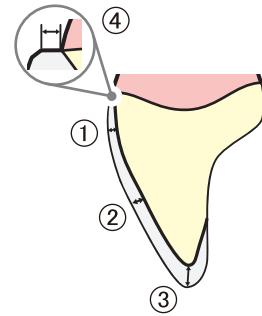
①	1.0 to 1.2 mm (39.38 to 47.24 mil)
②	1.5 mm (59.06 mil) or more
③	0.8 mm (31.50 mil) or more
④	0.2 mm (7.88 mil) or more

Molar tooth crown



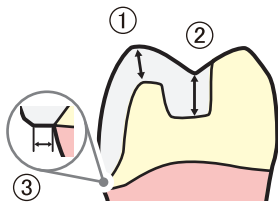
①	1.5 mm (59.06 mil) or more
②	1.0 mm (39.38 mil) or more
③	1.5 mm (59.06 mil) or more
④	0.8 mm (31.50 mil) or more
⑤	0.2 mm (7.88 mil) or more

Veneer



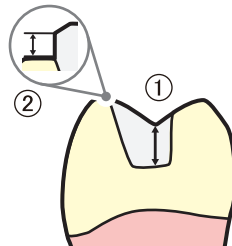
①	0.4 mm (15.75 mil) or more
②	0.6 mm (23.63 mil) or more
③	0.5 to 1.5 mm (19.69 to 59.05 mil)
④	0.25 mm (9.85 mil) or more

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

Correcting the Milling Position According to the Milling Results for Correction (Manual Correction)

Use this section to mill material for correction and manually measure the milling results. Then, correct the milling position according to the measured results. This operation is called "manual correction." Performing manual correction may reduce variations in milling accuracy. If you need milling results with higher accuracy, we recommend that you perform manual correction.

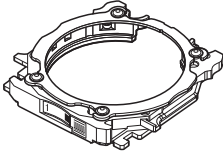
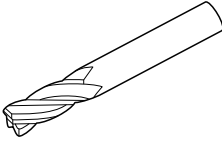

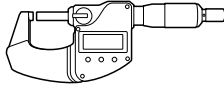
IMPORTANT

Before performing manual correction, be sure to complete automatic correction.

If you perform automatic correction after manual correction, the correction value of manual correction will be initialized.

[P. 82 Automatic correction](#)

Required items

Included item			Items to prepare yourself
			
Adapter	ZRB-200D (4 mm [0.16 in.] radius end mill) *1	Disc workpiece (wax material)	Digital micrometer*2

*1 You can also use a 4 mm (0.16 in.) square end mill (not included).

*2 Prepare a digital micrometer that meets the following specifications.

- Measurement range: 0 to 25 mm (0 to 0.98 in.) or more
- Measurement surface dimensions: Diameter: 6 mm (0.23 in.) or less

IMPORTANT

When performing manual correction, give attention to the following two points.

- Use wax material.
Manual correction has been designed assuming that it will be performed with wax material. You may not obtain correct correction results if you use other material.
- Measure in a short period of time, continuously, and fully.
Wax material is affected by temperature, which makes the dimensions of this material change easily. This can lead to incorrect correction results, so we recommend that you wear gloves when handling this material.

Procedure

1. Show VPanel.

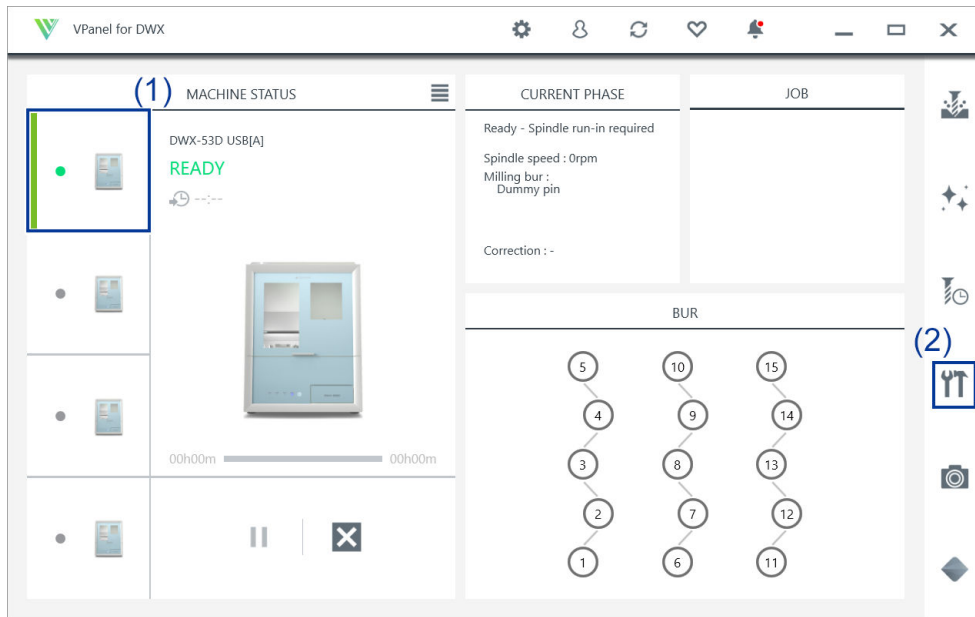
2. Open the [Machine settings] window.

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

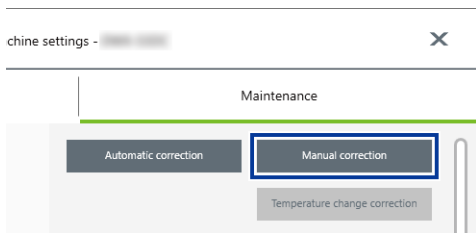
When you have connected multiple machines, you can switch to a different machine to operate by clicking its image under [MACHINE STATUS].

(2) Click .

The [Machine settings] window is displayed.



3. On the [Maintenance] tab, click [Manual correction].



4. Follow the on-screen instructions to perform manual correction.

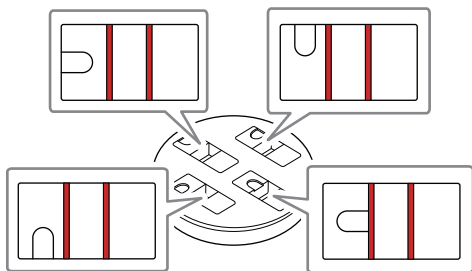
Use a digital micrometer to accurately measure the thickness of the milled locations. The machine automatically performs correction on the basis of the measured values entered into VPanel. For information on how to use the digital micrometer, refer to the documentation for the device you're using.

IMPORTANT

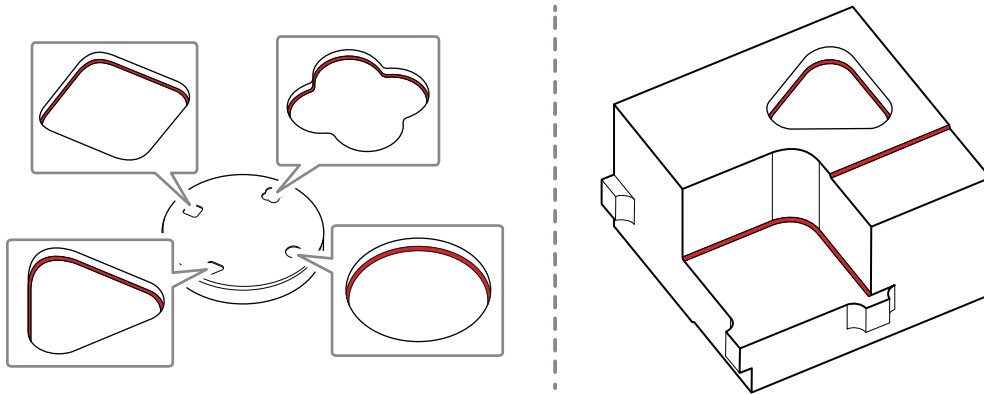
If you are milling using the ZRB-200D (4 mm [0.16 in.] radius end mill), avoid the sections indicated with red in the following figure when measuring the thickness.

The shape of the end mill tip results in 0.2 mm (7.87 mil) curved surfaces in the sections indicated with red. To accurately correct the milling position, enter in VPanel the thickness measured while avoiding these curved surfaces.

Correcting differences in surface height



Correcting differences in surface height and incorrect thickness



5. When manual correction is finished, click [Complete].
The [Manual correction] window closes. Perform actual milling and check its results.

RELATED LINKS

- [P. 82 Automatic correction](#)

Correcting for Errors Caused by Temperature Changes (Temperature Change Correction)

Large fluctuations in temperature in the machine's installation environment from the temperature when automatic correction was performed may affect the milling quality. Performing [Temperature change collection] corrects for milling errors caused by temperature changes, which may improve the milling quality.

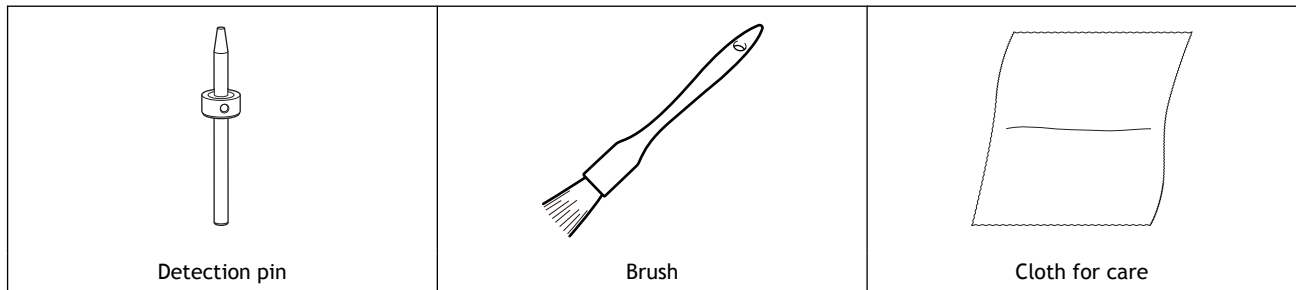
If a message prompting you to carry out [Temperature change collection] appears in VPanel in the following situations, carry out [Temperature change collection].

- When VPanel starts
- During standby
- When milling starts

IMPORTANT

If you perform automatic correction after temperature change correction, the correction value of temperature change correction will be initialized.

Required items



Procedure

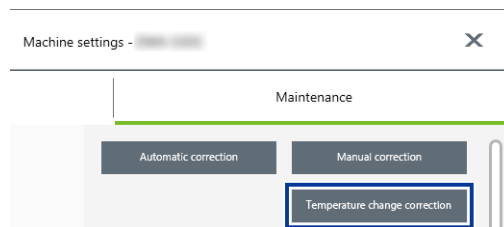
1. Show VPanel.
2. Open the [Temperature change collection] window.

- When VPanel starts or during standby

a. Click .

The [Machine settings] window is displayed.

b. On the [Maintenance] tab, click [Temperature change collection].



- When milling starts

a. If a message prompting you to perform [Temperature change collection] appears when milling starts, click [Yes].

MEMO

If you click [No], milling will start without performing [Temperature change collection]. However, the milling quality may decrease.

3. Follow the on-screen instructions to perform temperature change correction.

When cleaning, first use the included brush, and then use the included cloth for care to carefully wipe away the milling waste. Any milling waste not removed may affect the correction results.

4. When temperature change correction is complete, click [OK].

RELATED LINKS

- [P. 82 Automatic correction](#)

Optimizing Operation Management

Checking the Workpiece Milling Status.....63

Checking the Workpiece Milling Status

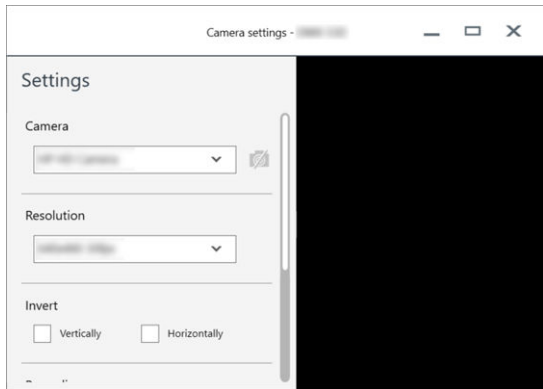
A camera is installed in the milling area of the machine, making it possible to check the workpiece milling status in VPanel. Images are automatically saved to the computer only when an error occurs. The images are useful in checking the milling status and in identifying the causes of errors.

Procedure

1. Start VPanel.

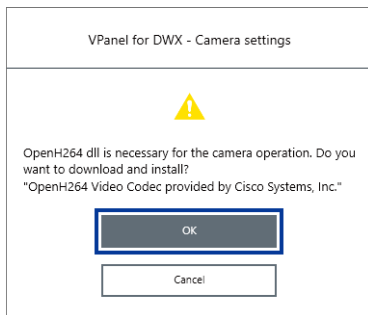
2. Click .

The [Camera Settings] window is displayed.



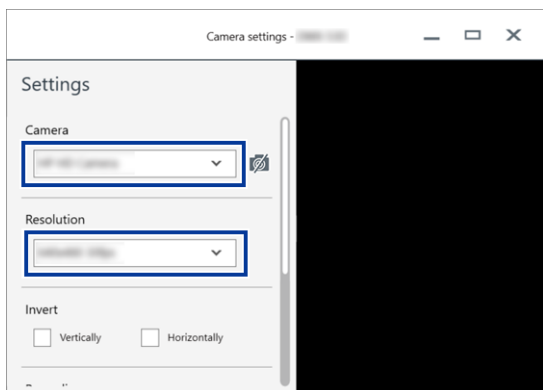
The following window may appear the first time you click this icon.

If the following window appears, click [OK].



3. Select the type and resolution of the camera to use.

The image of the milling area is displayed in the [Camera Settings] window.



Maintenance

Getting Started

Maintenance Precautions	66
Maintenance Precautions	66

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.

WARNING

Never use a vacuum cleaner to clean up milling waste.

Picking up fine cuttings using an ordinary vacuum cleaner may result in fire or explosion.

WARNING

Do not touch the spindle unit or the surrounding areas immediately after milling has ended.

Doing so may result in burns.

CAUTION

Be careful around the milling tool.

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

- 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 or ionizer damage.

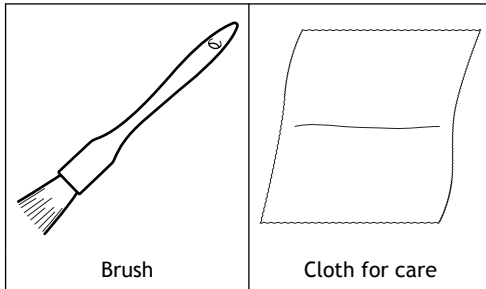
Daily Maintenance

Cleaning after Milling Finishes.....	68
Cleaning the Milling Area	68
Cleaning the Tool Area	72
Cleaning the Milling Bur/Adapter	74
Care and Storage of Detection Pin and Automatic Correction Jig	76

Cleaning after Milling Finishes

Clean this machine every day after milling finishes. Using this machine without maintaining it sufficiently may affect the milling results and may even damage the machine.

Required items



Cleaning the Milling Area

Procedure

1. Check that the machine is in the ready status.

If the status light at the top of the machine or in the milling area is lit in blue, the machine is in standby.

[P. 11 Statuses Indicated by Status Light Color](#)

2. Make sure that the dust collector is connected to the machine.

When using a dust collector with built-in linking function, make sure the linking cable is connected to the expansion port on the machine.

3. Show VPanel.

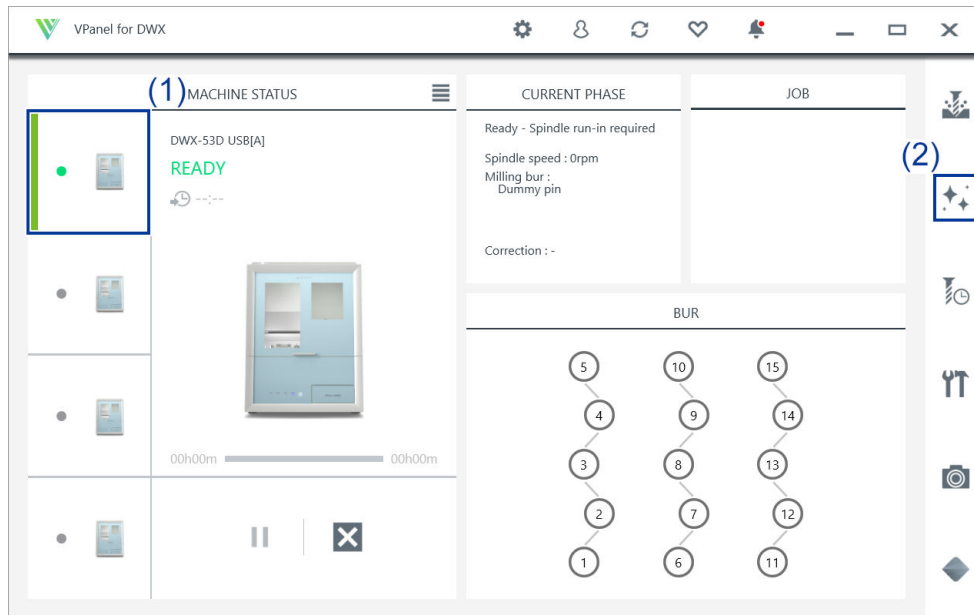
4. Open the [Milling area cleaning] window.

- (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.

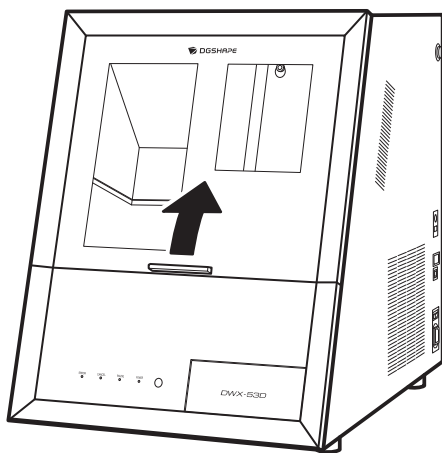


5. Turn the dust collector on.

- **When using a dust collector with built-in linking function**
The dust collector turns on automatically.
- **When using other dust collectors**
Turn the dust collector on manually.

6. Open the front cover.

Pull until a click is heard.



7. Follow the on-screen instructions to clean each part.

Use the included brush to carefully remove the milling waste. Any milling waste not removed may affect the milling quality. Use the dust collector to pick up the removed milling waste.

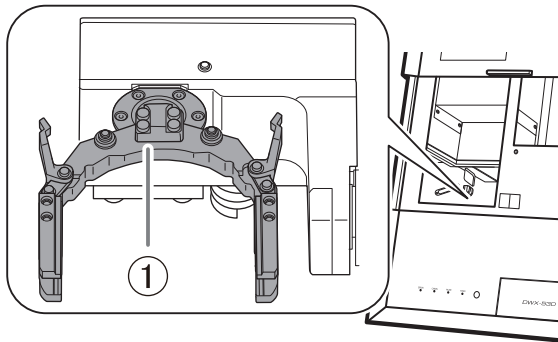
IMPORTANT

Do not directly touch the inside of the ionizer.



- **Front**

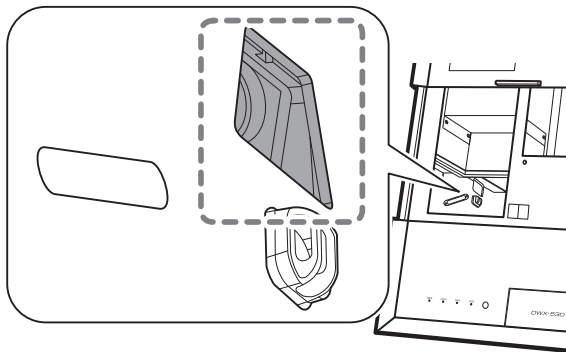
Clean the clamp (①).



- **Rear**

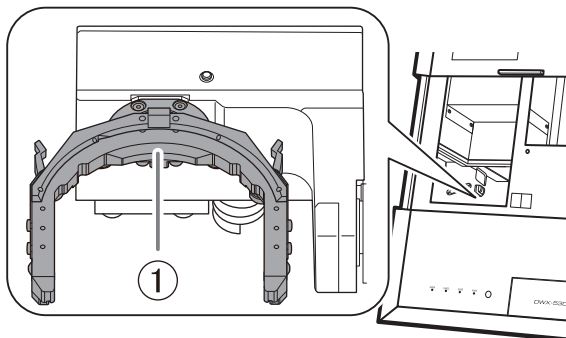
Use the included cloth for care to wipe off the camera cover.

If it is dirty, the captured images will be indistinct, which may make it impossible to check the milling status and the situation when an error occurs.



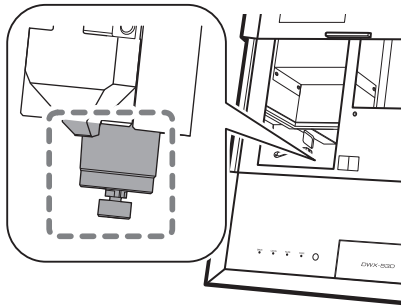
- **Reverse side**

Clean the reverse side of the clamp (①).



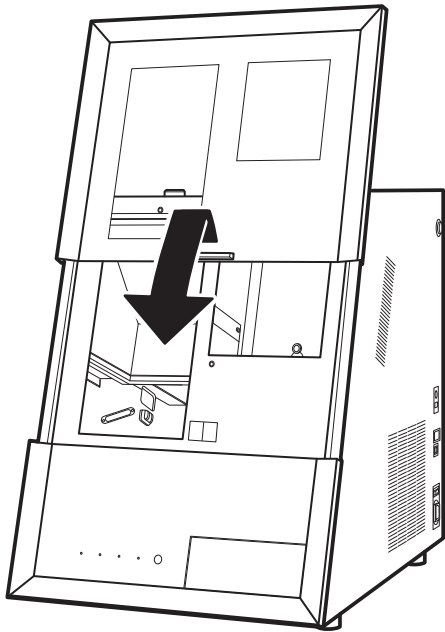
- **Spindle**

Clean the tip of the spindle. Also remove any milling waste that remains in the gap between the dummy pin or collet and the milling bur holder.



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

Gently pull up on the front cover and then lower it until a click is heard.



9. **Click [Close].**

10. **Turn the dust collector off.**

- **When using a dust collector with built-in linking function**

Closing the [Milling area cleaning] window in VPanel automatically turns off the dust collector.

MEMO

The dust collector can also be turned off by pressing the touch sensor on the built-in panel.

- **When using other dust collectors**

Manually turn the dust collector off.

RELATED LINKS

- [DWX-53D Setup Guide](#)

Cleaning the Tool Area

Procedure

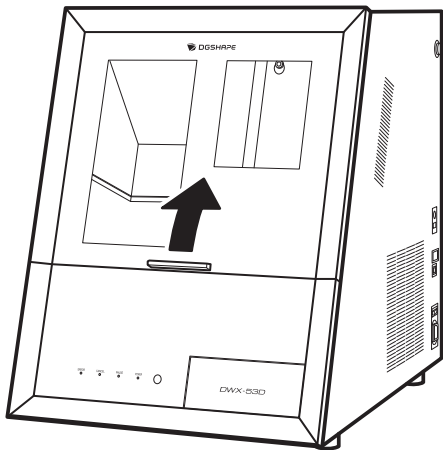
1. Check that the machine is in the ready status.

If the status light at the top of the machine or in the milling area is lit in blue, the machine is in standby.

[P. 11 Statuses Indicated by Status Light Color](#)

2. Open the front cover.

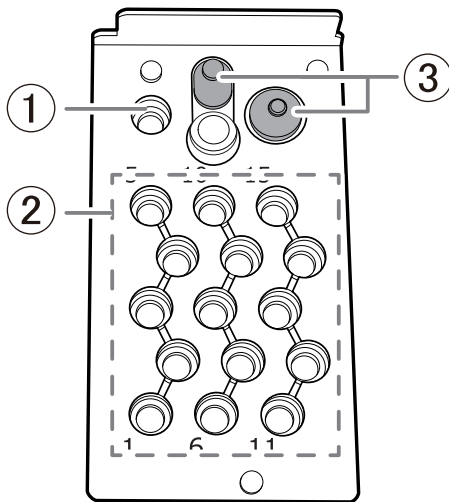
Pull until a click is heard.



3. Clean the tool area.

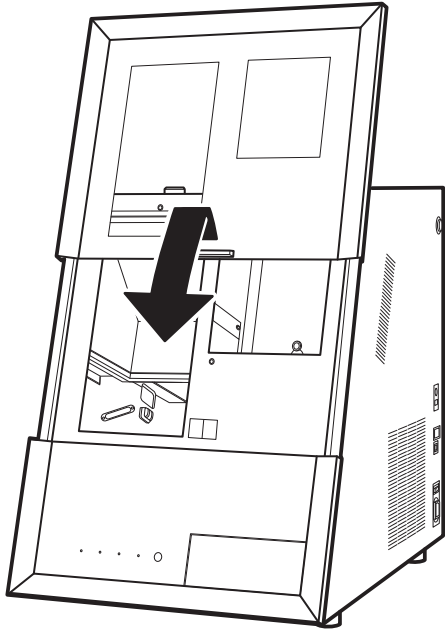
Use the included brush when cleaning. Use the included cloth for care to carefully wipe away the milling waste from the dummy pin stocker (①), milling bur stocker (②), and around the milling bur sensor (③).

Any milling waste not removed may affect the milling quality.



4. Close the front cover.

Gently pull up on the front cover and then lower it until a click is heard.



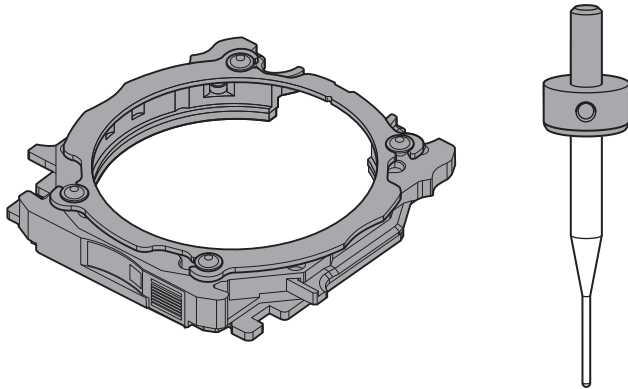
RELATED LINKS

- [DWX-53D Setup Guide](#)

Cleaning the Milling Bur/Adapter

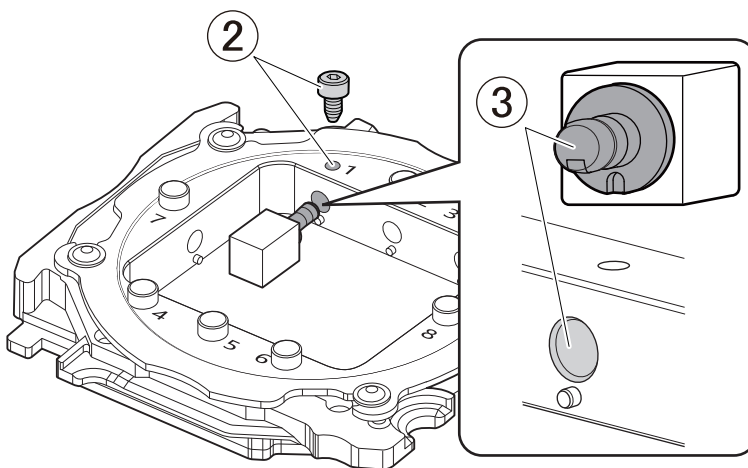
Procedure

1. Use the included cloth for care to wipe off any dirt from the gray portions indicated in the following figures.



When using a pin-type workpiece adapter, carefully wipe off the securing screw section (②) and the pin insertion section (③). Exercise special care when cleaning the securing screw and the hole in which the pin is inserted because it is easy for milling waste to remain in these areas.

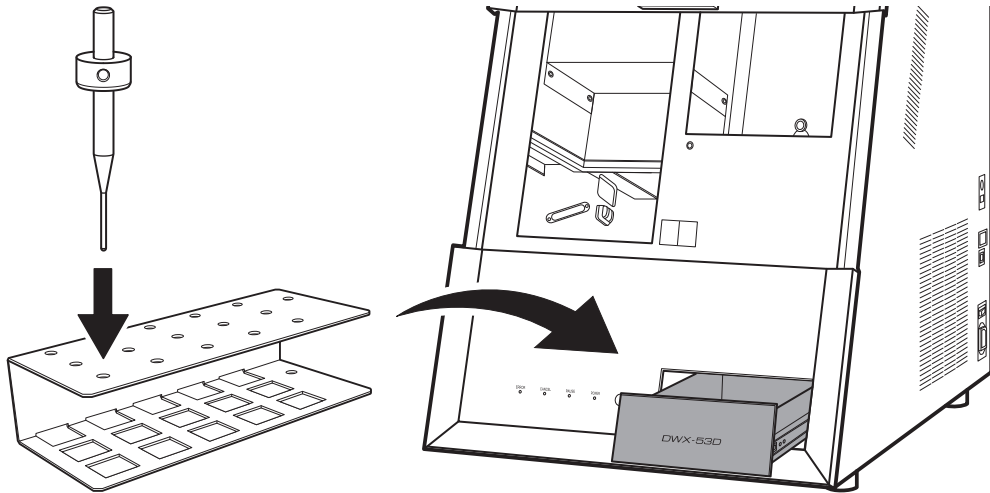
Any milling waste not removed may prevent the material from being secured correctly, affecting the milling quality.



2. Store the milling bur and the adapter.

MEMO

The milling bur in the milling bur holder can be stored in the bottom storage by standing it in the tool rack with it oriented with its circular holes on the top.



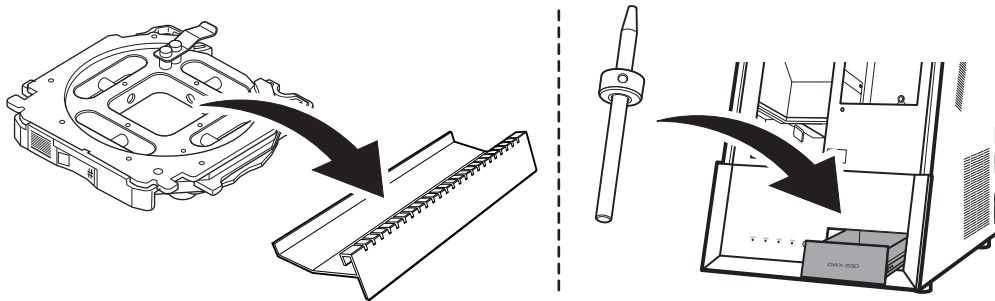
You can store unused milling burs in their cases by standing them in the tool rack with it oriented with its square holes on the top. In this situation, the tool rack will not fit in the bottom storage, so place it next to the machine.

Care and Storage of Detection Pin and Automatic Correction Jig

For automatic correction, use the detection pin and the automatic correction jig. The presence of rust, scratches, or grime on the detection pin or the automatic correction jig makes accurate correction impossible, which in turn may affect the milling results or damage the machine.

Procedure

1. Use the included cloth for care to carefully wipe off the entirety of the detection pin and the automatic correction jig.
Check that the parts are free of rust, scratches, and grime.
2. Press the bottom storage cover at the bottom of the machine to open this cover.
3. Store the automatic correction jig and detection pin.
Set the automatic correction jig in the adapter rack, and store the detection pin in the bottom storage.



Periodic Maintenance

When Maintenance Is Required	78
Spindle Run-in (Warm-up)	79
Correcting the Milling Position	81
Automatic correction	82
Retightening the Collet	91
Regulator Maintenance	94
Cleaning the Bowl	94

When Maintenance Is Required

When installing the machine	P. 79 Spindle Run-in (Warm-up) P. 81 Correcting the Milling Position
When replacing the spindle unit	
When the machine has not been used for a prolonged period	P. 79 Spindle Run-in (Warm-up)
Before milling on days when the ambient temperature is low	
When moving the machine to a different installation site	P. 81 Correcting the Milling Position
When the milling position is misaligned	
When symptoms such as a hole in the Z direction occur	
Once a month	P. 91 Retightening the Collet
When the working time of the spindle exceeds 200 hours	
When water or dust accumulates on the regulator	P. 94 Cleaning the Bowl

Spindle Run-in (Warm-up)

Spindle run-in (warm-up) may be required to stabilize the rotation of the spindle.

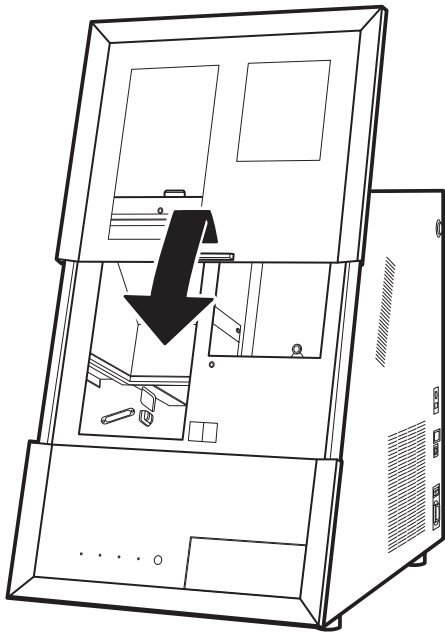
Situations Requiring This Work

- When installing the machine
- When replacing the spindle unit
- When the machine has not been used for a prolonged period
- Before use on days when the ambient temperature is low

Procedure

1. Close the front cover.

Gently pull up on the front cover and then lower it until a click is heard.



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.

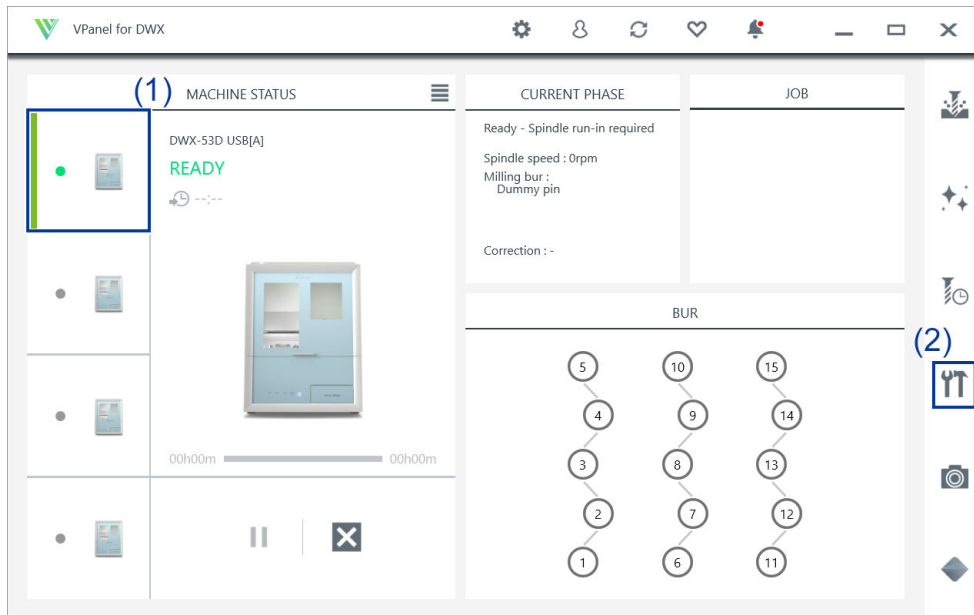
- (1) In the top window of VPanel, select the machine to operate.

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

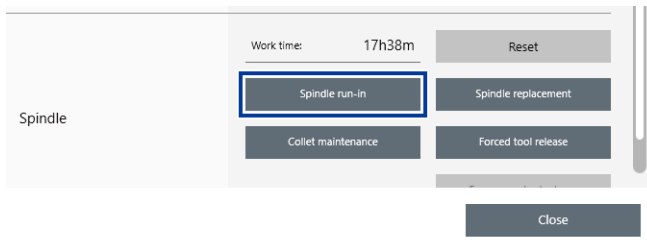
- (2) Click .

The [Machine settings] window is displayed.

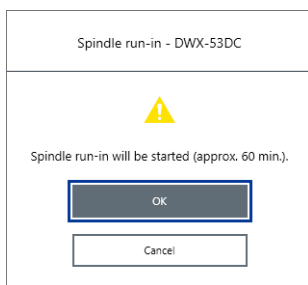
Spindle Run-in (Warm-up)



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



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](#)


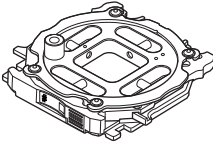
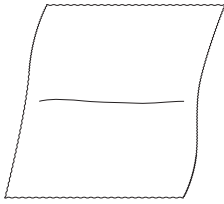
Correcting the Milling Position

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 level difference or a hole in the Z direction occur in the milling results

Required items

 <p>Detection pin</p>	 <p>Automatic correction jig</p>	 <p>Cloth for care</p>
--	---	---

IMPORTANT

If automatic correction does not correct the milling position or if you need milling results with higher accuracy, we recommend that you perform manual correction.

If you perform automatic correction after manual correction, the correction value of manual correction will be initialized.

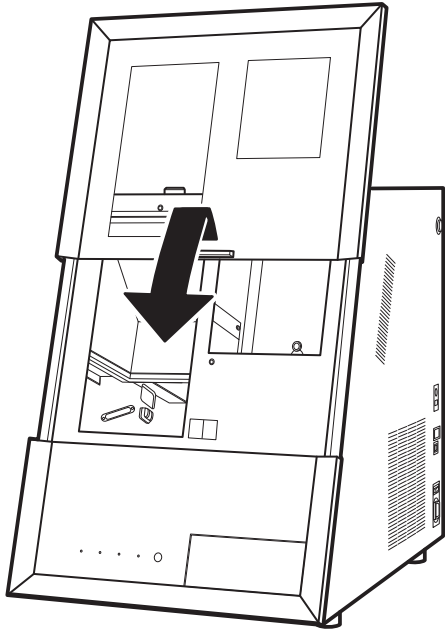
RELATED LINKS

- [P. 57 Correcting the Milling Position According to the Milling Results for Correction \(Manual Correction\)](#)

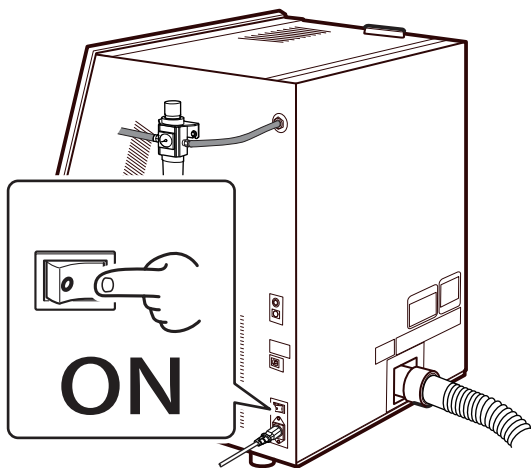
Automatic correction

Procedure

1. Close the front cover if it is open.
Gently pull up on the front cover and then lower it until a click is heard.



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.

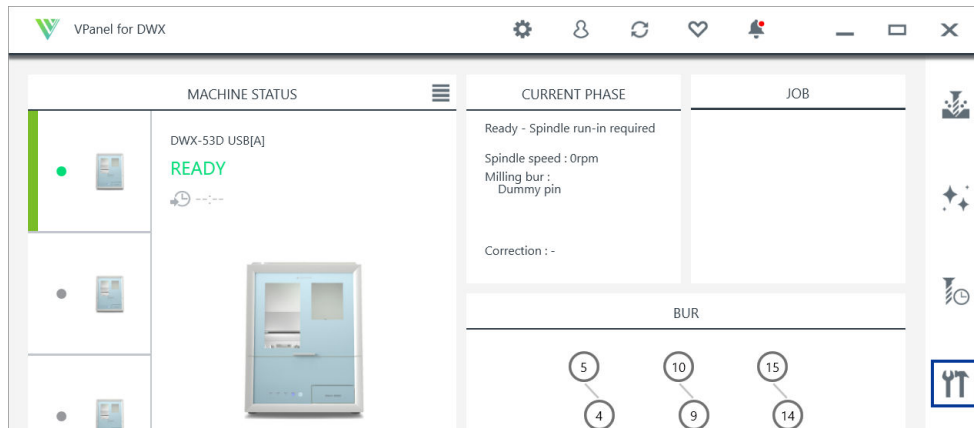


IMPORTANT

Do not open the covers during the initial operations.

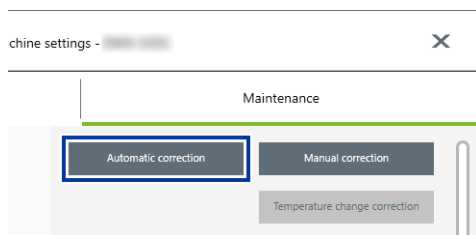
3. Show VPanel.

4. Click  .



The [Machine settings - DWX-53D] window will appear.

5. On the [Maintenance] tab, click [Automatic correction].



The [Automatic correction - DWX-53D] window is displayed.

6. Follow the on-screen instructions to perform automatic correction.

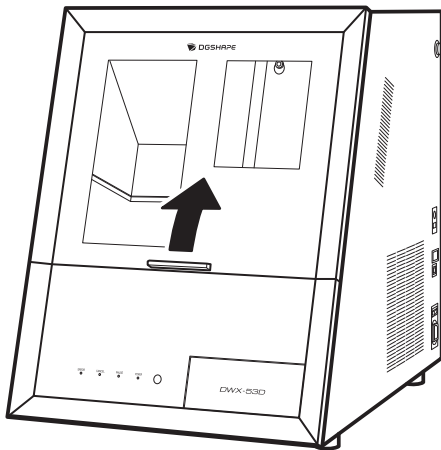
After cleaning the machine, attach the detection pin and automatic correction jig and perform automatic correction.

Perform cleaning and installing parts according to the following procedures.

1. Install the detection pin.

Procedure

1. Open the front cover.
Pull until a click is heard.



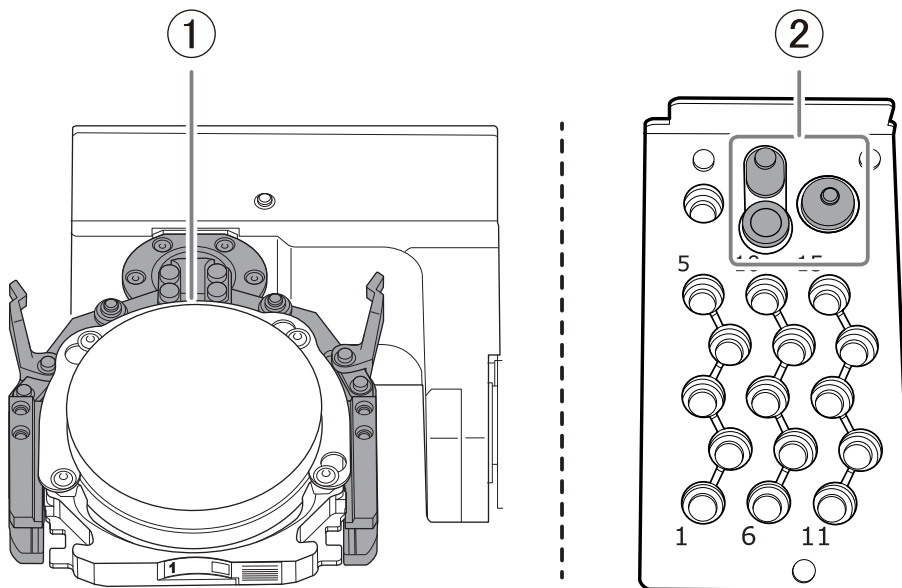
2. Clean off any milling waste from the rotary axis unit and ATC magazine.
[P. 68 Cleaning after Milling Finishes](#)

3. Use the included cloth for care to wipe the clamp (①) and the area around the milling bur sensor (②) clean.

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

IMPORTANT

Also wipe the bottom of the clamp (①) clean.

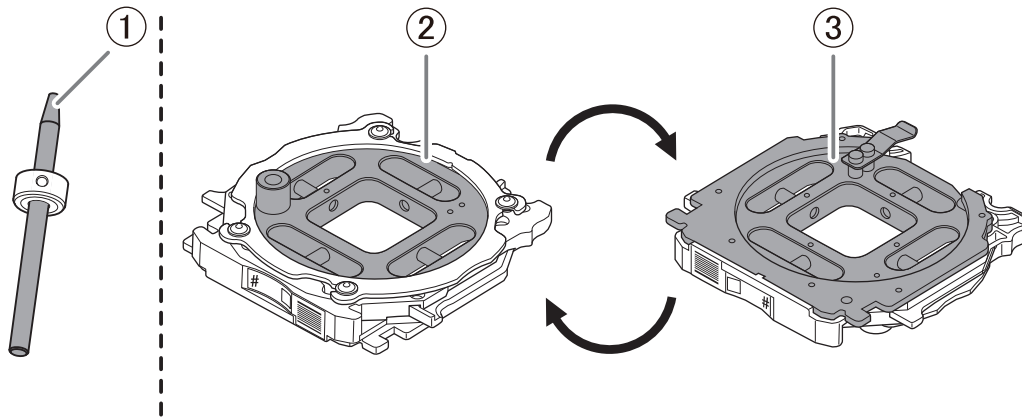


4. Wipe the detection pin (①) and the top (②) and bottom (③) of the automatic correction jig clean.

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

IMPORTANT

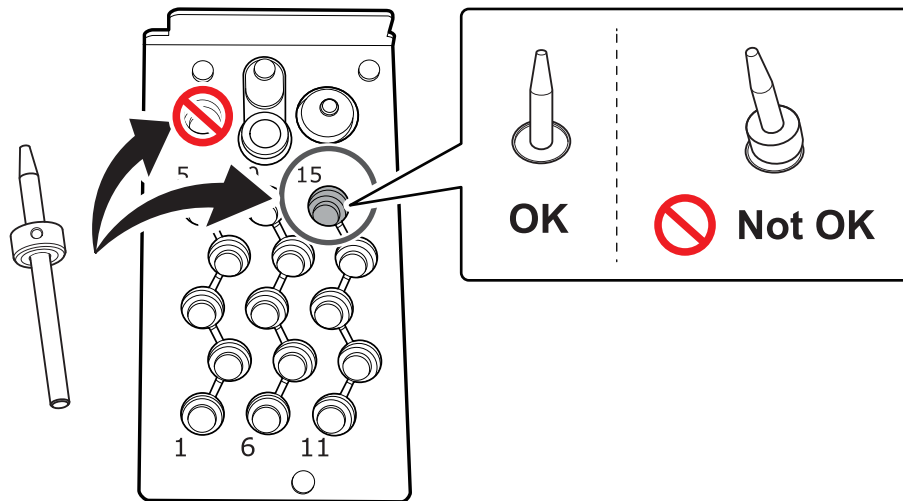
Also wipe the shaft of the automatic correction jig clean.



5. Load the detection pin in the ATC magazine's number 15 position.

MEMO

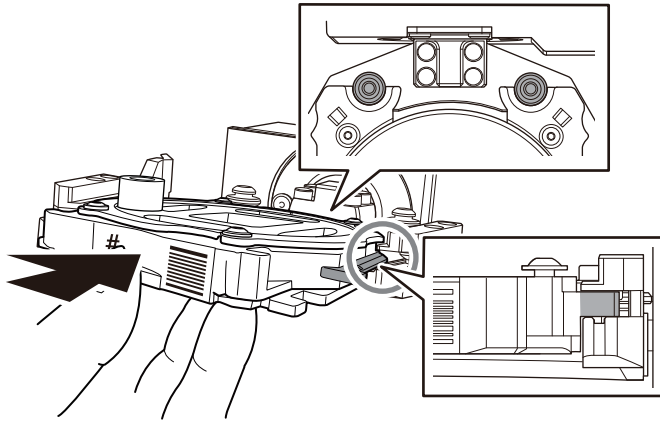
Insert the detection pin firmly into the ATC magazine. If the pin is loaded in the wrong position or is tilted, an error or malfunction may occur, which could damage the machine.



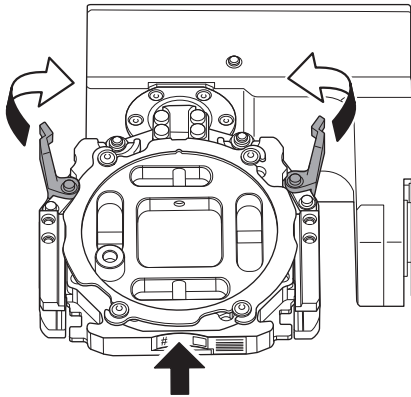
2. Attach the automatic correction jig.

Procedure

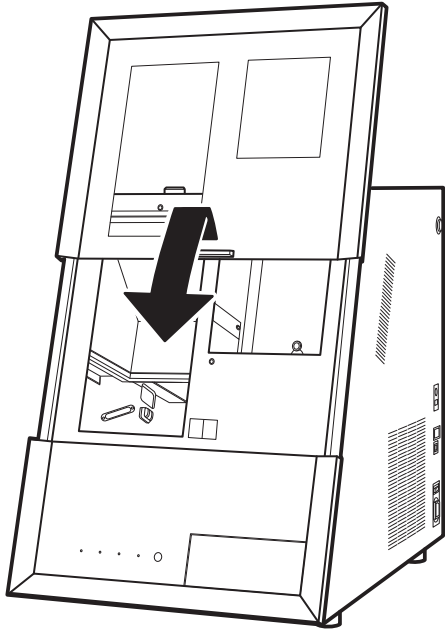
1. With its adapter ID facing you, insert the automatic correction jig into the clamp.
Gently push in the automatic correction jig all the way along the groove in the clamp.
Inserting it with too much force will make the automatic correction jig strike the inside of the machine, possibly leading to injury and jig damage.



2. Secure the automatic correction jig.
As shown in the figure, close the fixing knobs (in two locations) in the directions of the arrows while pressing in on the automatic correction jig to secure the automatic correction jig.



3. Lightly tug on the automatic correction jig to check that it does not come loose.
4. Close the front cover.
Gently pull up on the front cover and then lower it until a click is heard.



3. Perform automatic correction.

Procedure

1. After performing the work displayed in the window, click [OK].
Automatic correction will start.



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

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

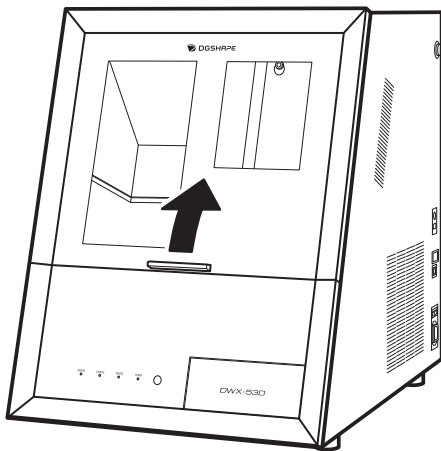
Once correction is complete, remove the detection pin and the automatic correction jig, clean them, and then store them.

CAUTION

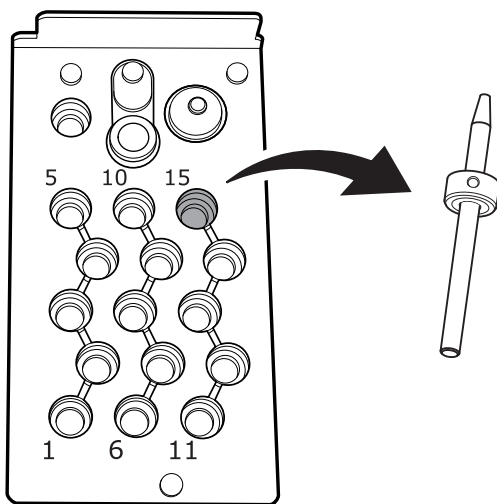
Do not pull the adapter with excessive force when removing it. Doing so may result in injury arising from your hand or arm hitting something.

Procedure

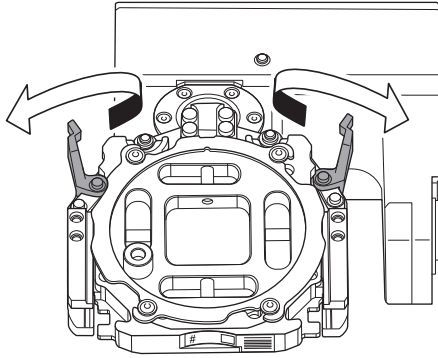
1. Open the front cover.
Pull until a click is heard.



2. Remove the detection pin from the tool stocker.

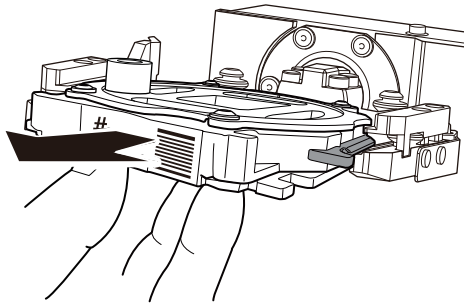


3. Remove the automatic correction jig.
(1) Open the fixing knobs (in two locations) in the directions of the arrows to release the locks.



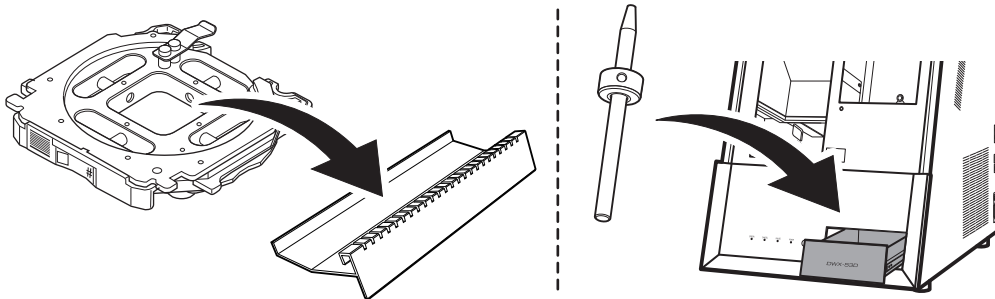
(2) Pull the automatic correction jig out slowly.

Pull the jig out slowly. Exercise caution to avoid striking the inside of the machine with your hands or other body parts when pulling out this part.



4. Store the automatic correction jig and detection pin.

Set the automatic correction jig in the adapter rack, and store the detection pin in the bottom storage.



RELATED LINKS

- [P. 76 Care and Storage of Detection Pin and Automatic Correction Jig](#)

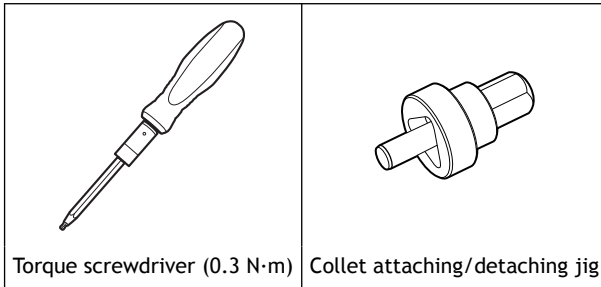
Retightening the Collet

Continuous milling will cause the collet to become loose, making it easy for the milling bur to come off. Periodically retighten the collet.

Recommended Interval for This Work

- Once a month, or when the total work time of the spindle exceeds 200 hours (with slight variation depending on the work situation).

Required items



Procedure

1. Show VPanel.

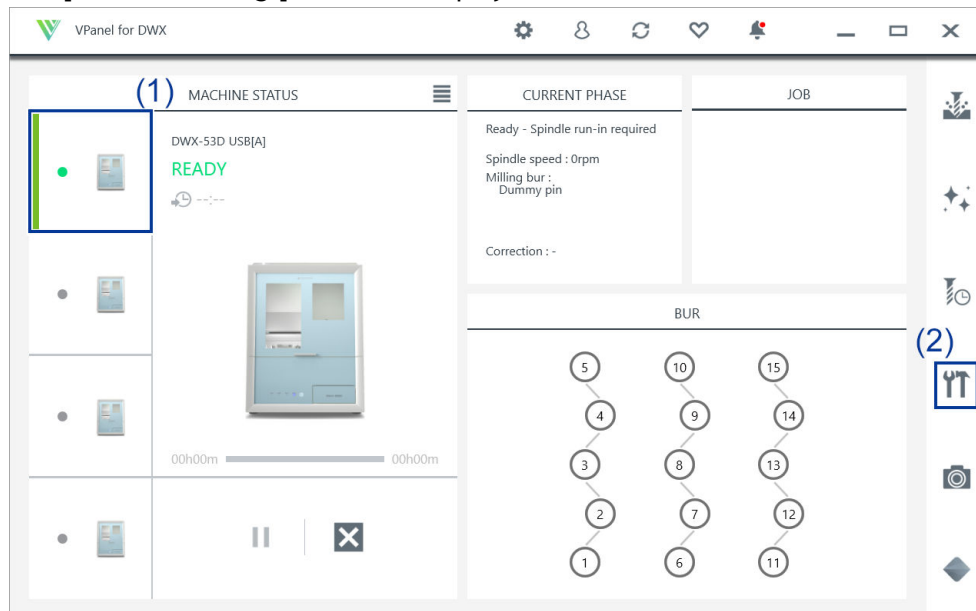
2. Open the [Machine settings] window.

(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].

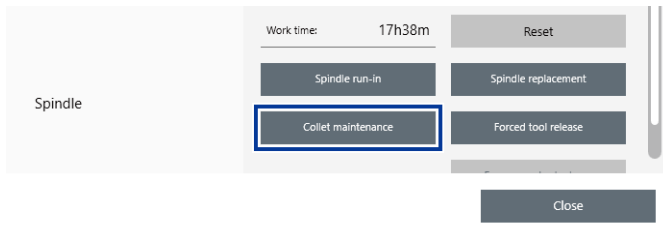
(2) Click .

The [Machine settings] window is displayed.

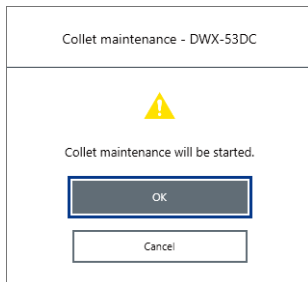


3. On the [Maintenance] tab, click [Collet maintenance].

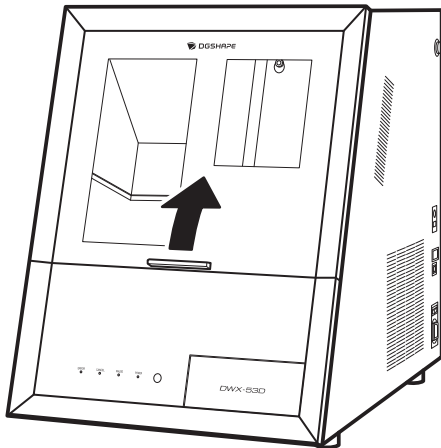
Retightening the Collet



4. When the window in the following figure is displayed, click [OK].
The spindle unit will move to the milling area.



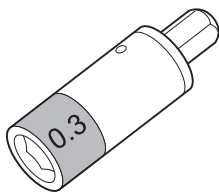
5. Open the front cover.
Pull until a click is heard.

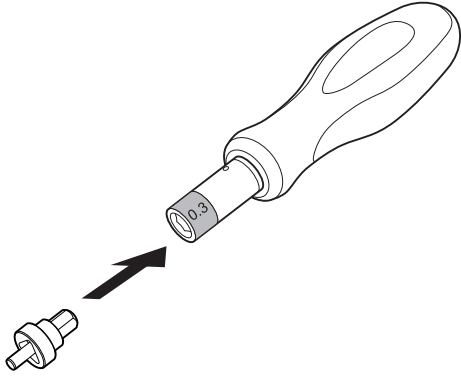


6. Remove the bit from the torque screwdriver and attach the collet attaching/detaching jig to it.

IMPORTANT

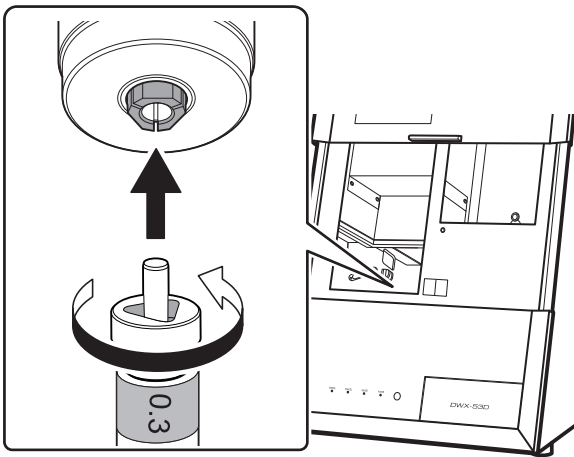
Be sure to use the 0.3 N·m torque screwdriver sleeve. Failing to do so may lead to a loose collet during milling, which will affect the milling quality and damage the collet.





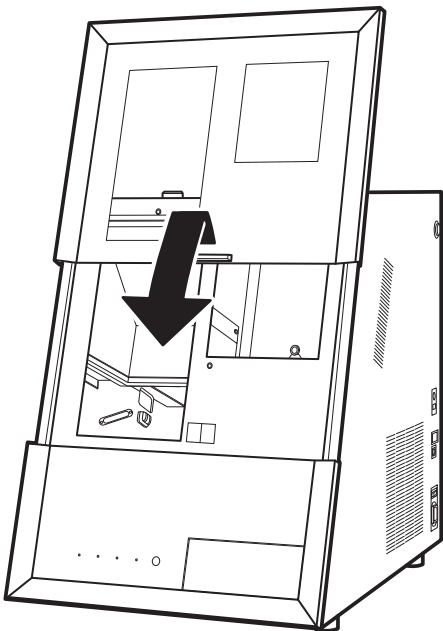
7. Use the torque screwdriver to retighten the collet.

Align the collet with the groove in the collet attaching/detaching jig. Tighten the screws until turning the handle of the torque screwdriver no longer turns the screw bit.



8. Close the front cover.

Gently pull up on the front cover and then lower it until a click is heard.



The retightening of the collet is complete when the spindle unit moves to its original position and [The operation is complete.] is displayed.

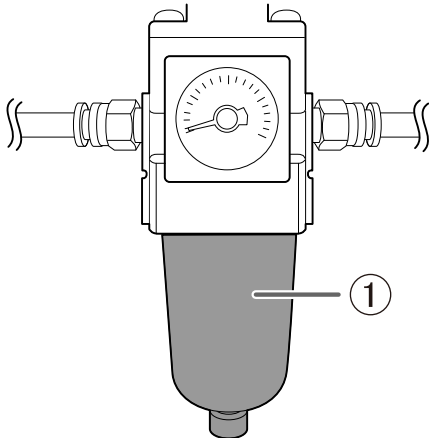
Regulator Maintenance

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.

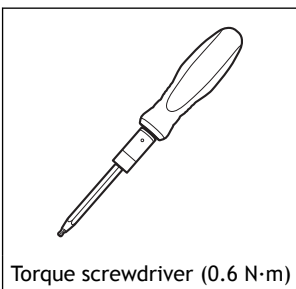
⚠ WARNING

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.

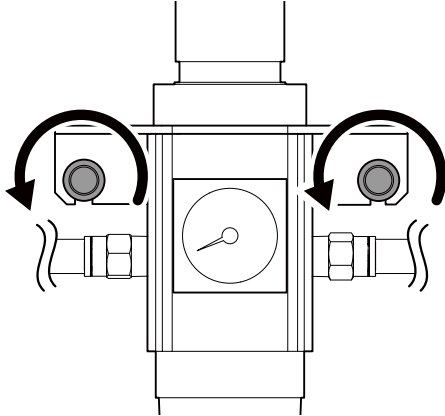
Required item



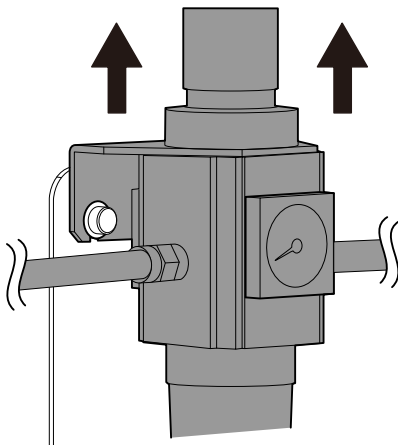
Torque screwdriver (0.6 N·m)

Procedure

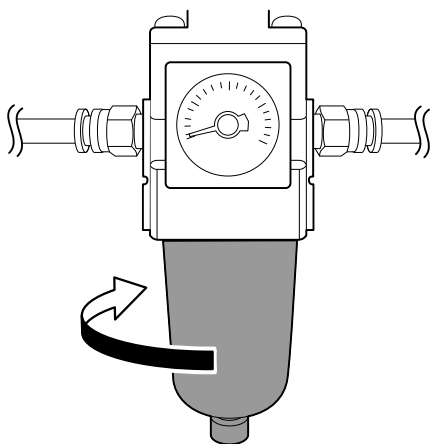
1. Stop the supply of compressed air.
2. Use a torque screwdriver to loosen the screws in the two locations shown in the following figure by about three turns.



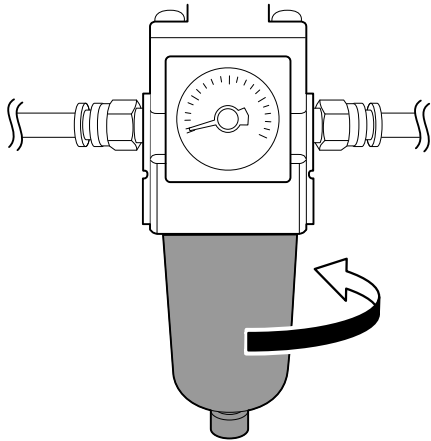
3. Remove the regulator.



4. Remove the bowl from the regulator.



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

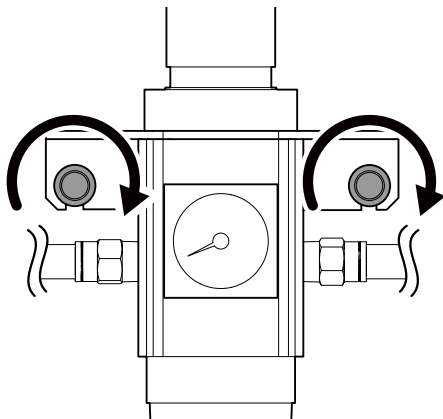
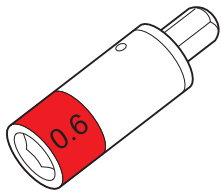


7. Attach the regulator to the machine.

8. Use a torque screwdriver to tighten the screws in the two locations shown in the following figure. Tighten the screws until turning the handle of the torque screwdriver no longer turns the screw bit.

IMPORTANT

Be sure to use the 0.6 N·m torque screwdriver sleeve. Failing to do so may cause the regulator to come loose from the machine, damaging it and injuring the operator.



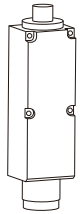
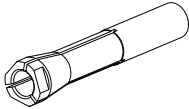

9. Resume the supplying of compressed air.

Replacing Consumable Parts

Replacing Parts Used in Milling	98
Replacing Milling Burs	98
Replacing the Dummy Pin Cleaner	99

Replacing Parts Used in Milling

Contact your authorized DGSHAPE Corporation dealer or visit our website to purchase items.

Part name	Replacement time/Guideline
 <p data-bbox="263 573 384 600">Spindle unit</p>	<p data-bbox="491 342 1450 396">When the total work time of the spindle exceeds 2,000 hours (with variation depending on the work situation).</p> <p data-bbox="491 398 1417 452">You can use VPanel to view the working time of the spindle. For information on how to perform replacement, refer to the replacement instruction manual included with the part.</p> <ul data-bbox="499 461 1091 488" style="list-style-type: none"> <li data-bbox="499 461 1091 488">• The replacement spindle unit comes with a collet and belt.
 <p data-bbox="293 846 354 873">Collet</p>	<p data-bbox="491 618 746 645">If the collet is deformed.</p> <p data-bbox="491 647 1442 701">If an overload error or other error occurs, the collet may be deformed. For information on how to perform replacement, refer to the replacement instruction manual included with the part.</p>
 <p data-bbox="263 1120 384 1146">Spindle belt</p>	<p data-bbox="491 893 762 920">If the spindle belt is worn.</p> <p data-bbox="491 922 1433 976">For information on how to perform replacement, refer to the replacement instruction manual included with the part.</p>

RELATED LINKS

- <https://www.dgshape.com/>

Replacing Milling Burs

Replace milling burs at appropriate intervals.

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.

Replacing the Dummy Pin Cleaner

Replace the dummy pin cleaner if it becomes damaged and when the recommended replacement time is reached.

When the dummy pin cleaner reaches the recommended replacement time, a message reminding the user to replace the cleaner will be displayed in VPanel.

IMPORTANT

Do not continue using the dummy pin cleaner if it is damaged or if the recommended replacement time has passed. Continuing to use the cleaner may affect the milling quality and lead to machine malfunctions.

Procedure

1. Show VPanel.

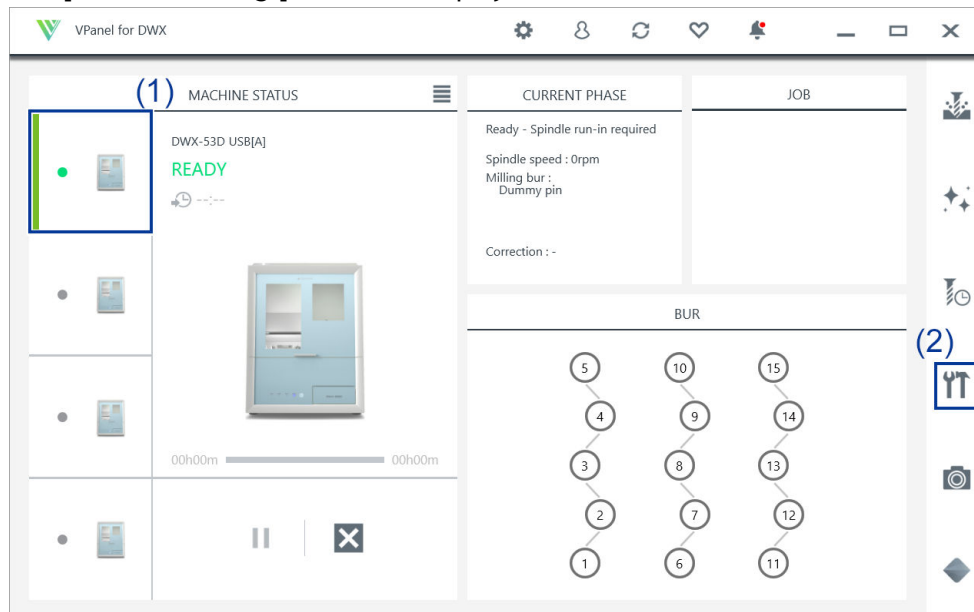
2. Open the [Machine settings] window.

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

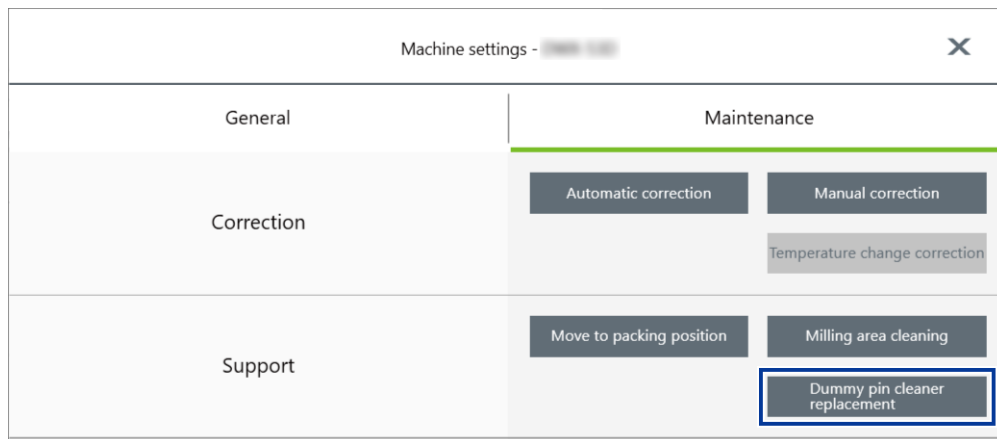
When you have connected multiple machines, you can switch to a different machine to operate by clicking its image under [MACHINE STATUS].

(2) Click .

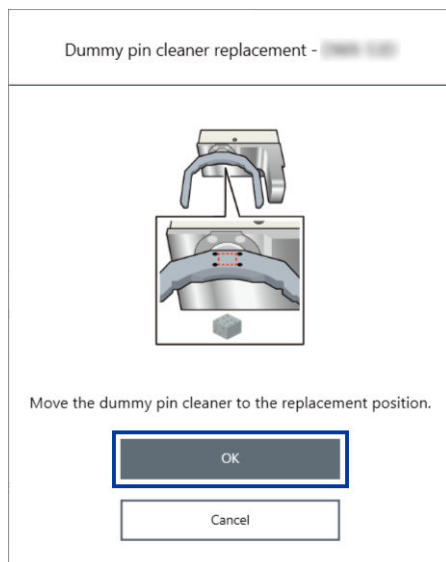
The [Machine settings] window is displayed.



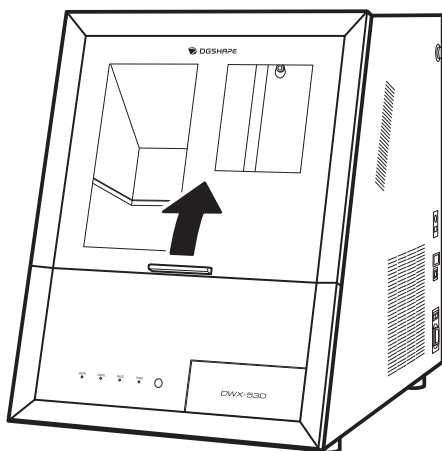
3. On the [Maintenance] tab, click [Dummy Pin Cleaner Replacement].



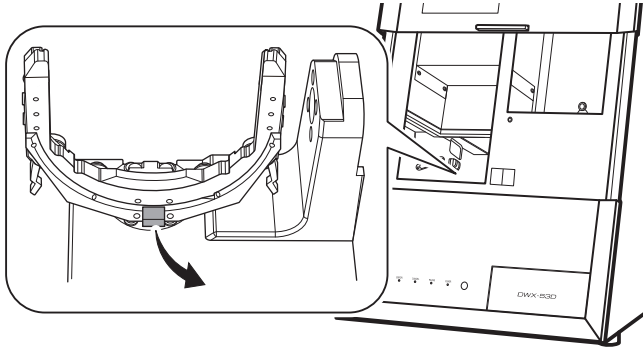
4. When the window shown in the following figure appears, click [OK].
The rotary axis unit will move to a position that allows for work.



5. Open the front cover.
Pull until a click is heard.

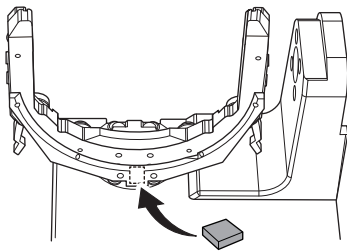


6. Slowly peel off the dummy pin cleaner affixed to the clamp.
If milling waste is found where the dummy pin cleaner was removed, wipe it off with the included cloth for care.



7. Remove the backing paper protecting the adhesive surface of the new dummy pin cleaner and affix the cleaner in the position indicated below.

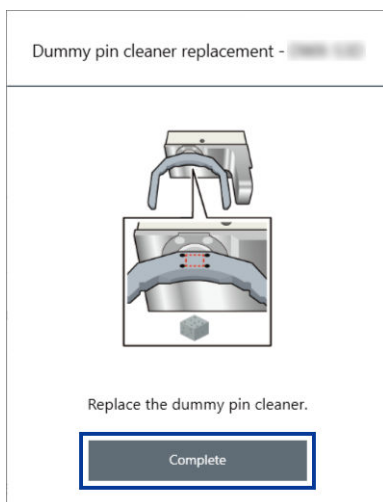
Gently fold and affix the dummy pin cleaner to cover the clamp bottom and slope.



MEMO

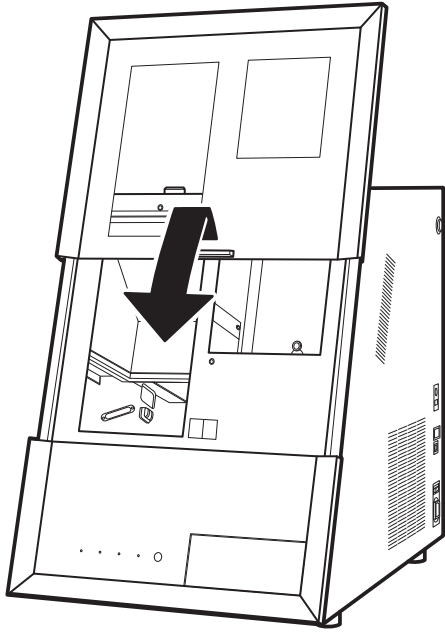
Affix the dummy pin cleaner so that the adhesive surface does not protrude beyond the outer circumference of the clamp.
If the adhesive surface protrudes from the clamp, it may interfere with operation of the machine during milling, which may affect milling quality.

8. After affixing the new dummy pin cleaner to the clamp, click [Complete].



9. Close the front cover.

Gently pull up on the front cover and then lower it until a click is heard.



Dummy pin cleaner replacement is complete when the rotary axis unit moves to its original position and [The operation is complete.] is displayed.

Troubleshooting Methods

Machine Trouble

Initialization is Not Performed or Initialization Fails	105
Is the front cover open?	105
Is the milling bur caught on anything?	105
Is anything caught on the spindle unit or rotary axis unit?	105
Non-responsive Built-in Panel Touch Sensor	106
Is the front cover open?	106
Are you wearing gloves?	106
VPanel Does Not Recognize the Machine	107
Is the cable connected?	107
Is the driver installed correctly?	107
Did you verify the connection procedure when connecting more than one machine?	107
Was the machine ID changed?	107
No Data Can Be Output to the Machine or the Machine Does Not Operate Even Though Data Is Being Output	108
Is the front cover open?	108
Does VPanel recognize the machine?	108
If multiple machines are connected, is the correct machine selected?	108
Is operation paused?	108
Is initialization or a data cancel in progress?	108
Is the milling data correct?	108
Has an error occurred?	108
The Computer Shuts Down When Connecting Multiple Machines	109
Are machines with the same ID connected to the computer at the same time?	109
The spindle does not rotate.	110
Is the spindle belt damaged or disconnected?	110
The Ionizer Is Ineffective	111
Is the workpiece being milled a PMMA workpiece?	111
Is there milling waste around the ionizer?	111
Is the machine grounded?	111
Compressed Air Does Not Come Out	112
Does the operation require compressed air?	112
Is the regulator properly connected and are the pressure settings correctly configured?	112
Is the knob at the bottom of the regulator open?	112
Automatic Correction Fails	113
Is the automatic correction jig, detection pin, ATC magazine, or clamp dirty?	113
Is the automatic correction jig properly attached?	113
Is the detection pin properly attached?	113

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?

Open the maintenance cover and make sure that no workpiece or milling waste is caught on these units.

Non-responsive Built-in Panel Touch Sensor

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 touch sensor 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 "Setup Guide" ("Connecting the Cable") to perform the work.

RELATED LINKS

- [DWX-53D 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 the "Setup Guide" ("Installing the Software") to perform the work.

RELATED LINKS

- [DWX-53D 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 the "Setup Guide" ("Connecting Multiple Units") to perform the work.

RELATED LINKS

- [DWX-53D Setup Guide](#)

Was the machine ID changed?

When you change the machine ID, restart VPanel.

RELATED LINKS

- [VPanel for DWX User's Manual](#)

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 touch sensor to start milling.

Does VPanel recognize the machine?

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

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.

You can press the touch sensor on the machine to cancel the pause. Holding down the touch sensor 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. 11 Statuses Indicated by Status Light Color](#)

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. 130 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 the "Setup Guide" ("Connecting Multiple Units") to perform the work.

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-53D Setup Guide](#)

The spindle does not rotate.

Is the spindle belt damaged or disconnected?

Check inside the maintenance cover. If the spindle belt is damaged, replace it.

RELATED LINKS

- [P. 98 Replacing Parts Used in Milling](#)

The Ionizer Is Ineffective

Is the workpiece being milled a PMMA workpiece?

The ionizer (static electricity eliminator) is only effective with PMMA. It has no effect on zirconia and wax workpieces.

Is there milling waste around the ionizer?

If milling waste is found around the ionizer, remove the waste with the included brush, and then clean up the milling waste with a dust collector. The ionizer's effectiveness will decrease if milling waste is present. Do not touch the inside of the ionizer.

RELATED LINKS

- [P. 68 Cleaning the Milling Area](#)

Is the machine grounded?

Ground the unit with the ground wire. The ionizer will not function properly if the machine is not grounded.

RELATED LINKS

- [DWX-53D Setup Guide](#)

Compressed Air Does Not Come Out

Does the operation require compressed air?

Compressed air is only supplied during some operations, such as when the spindle is rotating or when replacing the milling bur.

Is the regulator properly connected and are the pressure settings correctly configured?

- Check the regulator's connection.
- Check that the pressure has been set to 0.4 MPa.

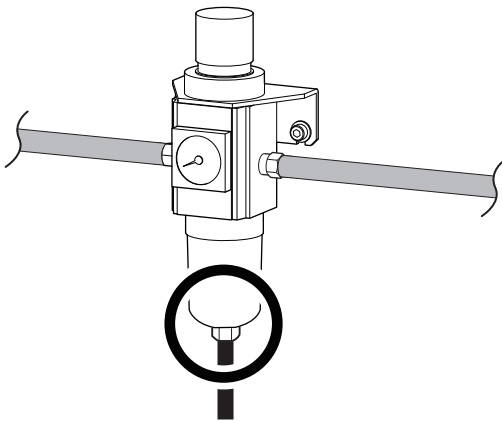
If the set pressure of the regulator is zero, compressed air will not be supplied.

RELATED LINKS

- [P. 41 Adjusting the Pressure of the Compressed Air](#)

Is the knob at the bottom of the regulator open?

The compressed air will escape if the knob at the bottom of the regulator is open.



Automatic Correction Fails

Is the automatic correction jig, detection pin, ATC magazine, or clamp dirty?

Clean away any grime on the automatic correction jig, the detection pin, the ATC magazine, and the clamp. These items being dirty due to a buildup of milling waste or the like may impede correct sensor operation, making detection impossible.

RELATED LINKS

- [P. 82 Automatic correction](#)

Is the automatic correction jig properly attached?

Verify that the automatic correction jig is properly attached.

RELATED LINKS

- [P. 86 Attach 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 "Setup Guide" ("Dimensional Drawings" (Detection Pin Dimensions)) for details.

RELATED LINKS

- [DWX-53D Setup Guide "Dimensional Drawings" - "Detection Pin Dimensions"](#)

Milling Quality Problems

The Milled Surface Is Not Attractive	115
Is the workpiece secured loosely?	115
Is the milling bur worn?	115
Are the milling conditions too strict?	115
There Is a Line of Level Difference in the Milling Results	116
Is the machine out of correction?	116
Are the CAM milling conditions correct?	116
Chipping (edges of milling products become chipped) occurs.....	117
Is the installation base of the machine secure?	117
Is the workpiece secured loosely?	117
Is the milling bur worn?	117
Are the milling conditions too strict?	117
Is the thickness specified in the CAD data excessively thin?	117
A Hole Opens in the Milling Results	118
Do the milling bur diameter and the milling bur stocker number match the CAM settings?	118
Is the machine out of correction?	118
Are the milling conditions too strict?	118
The Dimensions of the Milling Results Do Not Match	119
Does the milling bur diameter match the CAM settings?	119
Is the CAM shrinkage factor setting appropriate for the workpiece?	119
Do the settings of the sintering program match the workpiece?	119

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 misalignment.

RELATED LINKS

- [P. 24 A. Mounting Disc Workpieces on Adapters](#)
- [P. 29 B. Mounting Pin-type Workpieces on Adapters](#)

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.

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, perform manual correction.

RELATED LINKS

- [VPanel for DWX User's Manual](#)
- [P. 81 Correcting the Milling Position](#)

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-53D 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 misalignment.

RELATED LINKS

- [P. 24 A. Mounting Disc Workpieces on Adapters](#)
- [P. 29 B. Mounting Pin-type Workpieces on Adapters](#)

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 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.

RELATED LINKS

- [P. 56 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, perform manual correction.

RELATED LINKS

- [VPanel for DWX User's Manual](#)
- [P. 81 Correcting the Milling Position](#)

Are the milling conditions too strict?

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

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	121
Installing the Driver in Windows 11 (Procedure A)	121
Installing the Driver in Windows 11 (Procedure B)	122
Installing the Driver in Windows 10 (Procedure A)	123
Installing the Driver in Windows 10 (Procedure B)	124
Uninstalling the Driver	125
Uninstalling the Driver in Windows 11	125
Uninstalling the Driver in Windows 10	126
Uninstalling VPanel	127
Uninstalling VPanel in Windows 11	127
Uninstalling VPanel in Windows 10	128

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.)

Installing the Driver in Windows 11 (Procedure A)

Procedure

1. Connect the machine to the computer with the USB cable and turn on the machine.
2. Click [Desktop].
3. Click [Start]>[All Apps]>[Windows Tool].
4. Click [Control Panel].
5. Click [Devices and Printers].
6. Check that the model you are using is displayed under [Unspecified].
7. Right-click the icon of the model you are using, and then click [Remove device].
8. When the message [Are you sure you want to remove this device?] is displayed, click [Yes].
9. Check that the icon for the model you are using is no longer displayed under [Unspecified].
10. 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. 122 Installing the Driver in Windows 11 \(Procedure B\)](#)

Installing the Driver in Windows 11 (Procedure B)

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. Click [Desktop].
4. Right-click the [Start] button, and then click [Device Manager].
5. When the [User Account Control] window appears, click [Continue].
[Device Manager] appears.
6. From the [View] menu, click [Show hidden devices].
7. Search the list for [Printers] or [Other devices], and then double-click it.
The name of your machine or [Unknown device] appears below the selected item. Click the name to select it.
8. From the [Action] menu, click [Uninstall].
9. In the [Confirm Device Uninstall] window, click [OK].
The [Device Manager] will close automatically.
10. Remove the USB cable from the computer, and then restart Windows.
11. Uninstall the driver.
Carry out the steps from step 3 in the following topic to uninstall the driver.
[P. 125 Uninstalling the Driver in Windows 11](#)
12. Reinstall the driver according to the procedure in the Setup Guide ("Installing the Software").

RELATED LINKS

- [DWX-53D Setup Guide "Installing the Software"](#)

Installing the Driver in Windows 10 (Procedure A)

Procedure

1. Connect the machine to the computer with the USB cable and turn on the machine.
2. Click [Desktop].
3. Click the [Start] button, and then click [Windows System]>[Control Panel].
4. Click [View devices and printers] or [Devices and Printers].
5. Check that the model you are using is displayed under [Unspecified].
6. Right-click the icon of the model you are using, and then click [Remove device].
7. When the message [Are you sure you want to remove this device?] is displayed, click [Yes].
8. Check that the icon for the model you are using is no longer displayed under [Unspecified].
9. 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. 124 Installing the Driver in Windows 10 \(Procedure B\)](#)

Installing the Driver in Windows 10 (Procedure B)

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. Click [Desktop].
4. Right-click the [Start] button, and then click [Device Manager].
5. When the [User Account Control] window appears, click [Continue].
[Device Manager] appears.
6. From the [View] menu, click [Show hidden devices].
7. Search the list for [Printers] or [Other devices], and then double-click it.
The name of your machine or [Unknown device] appears below the selected item. Click the name to select it.
8. From the [Action] menu, click [Uninstall].
9. In the [Confirm Device Uninstall] window, click [OK].
The [Device Manager] will close automatically.
10. Remove the USB cable from the computer, and then restart Windows.
11. Uninstall the driver.
Carry out the steps from step 3 in the following topic to uninstall the driver.
[P. 126 Uninstalling the Driver in Windows 10](#)
12. Reinstall the driver according to the procedure in the Setup Guide ("Installing the Software").

RELATED LINKS

- [DWX-53D Setup Guide "Installing the Software"](#)

Uninstalling the Driver

When uninstalling the driver, perform the following procedure.

Uninstalling the Driver in Windows 11

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. Click [Start]>[All Apps]>[Windows Tool].
4. Click [Control Panel].
5. Click [Uninstall a program] (or [Programs and Features]).
6. Select the driver of the machine to delete by clicking it, and then click [Uninstall].
If the [User Account Control] window appears, click [Allow].
7. If a message prompting you to confirm deletion appears, click [Yes].
8. Click [Start]>[Desktop].
9. 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://www.dgshape.com/>
10. Double-click [SETUP64.EXE].
11. If the [User Account Control] window appears, click [Allow].
The setup program for the driver starts.
12. Click [Uninstall]. Select the machine you want to delete, and then click [Start].
13. If you need to restart the computer, a window prompting you to do so is displayed. Click [Yes].
14. After the computer has restarted, open Control Panel again, and then click [View devices and printers] or [Devices and Printers].
15. 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

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. Click [Desktop].
4. Click the [Start] button, and then click [Windows System]>[Control Panel].
5. Click [Uninstall a program] (or [Programs and Features]).
6. Select the driver of the machine to delete by clicking it, and then click [Uninstall].
If the [User Account Control] window appears, click [Allow].
7. If a message prompting you to confirm deletion appears, click [Yes].
8. Click [Start]>[Desktop].
9. 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://www.dgshape.com/>
10. Double-click [SETUP64.EXE].
11. If the [User Account Control] window appears, click [Allow].
The setup program for the driver starts.
12. Click [Uninstall]. Select the machine you want to delete, and then click [Start].
13. If you need to restart the computer, a window prompting you to do so is displayed. Click [Yes].
14. After the computer has restarted, open Control Panel again, and then click [View devices and printers] or [Devices and Printers].
15. If you can see the icon of the machine to delete, right-click it, and then click [Remove device].

Uninstalling VPanel

When uninstalling VPanel, perform the following procedure.


Uninstalling VPanel in Windows 11

Procedure

1. Exit VPanel.
(Right-click  in the task tray and select [Exit].)
2. Click [Start]>[All Apps]>[Windows Tool].
3. Click [Control Panel].
4. Click [Uninstall a program].
5. Select [VPanel for DWX], and then click [Uninstall].
6. Follow the on-screen instructions to uninstall VPanel.

Uninstalling VPanel in Windows 10

Procedure

1. Exit VPanel.
(Right-click  in the task tray and select [Exit].)
2. Click the [Start] button, and then click [Windows System]>[Control Panel].
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	130
[1000-****][The % limit switch was not found.]	130
[1006-02**][The % axis position has been shifted.]	130
[1017-0000][The front cover was opened.]	131
[101C-0000][The milling bur sensor was not found.]	131
[101D-00**][The % milling bur cannot be released.]	131
[101D-01**] [The % milling bur cannot be released. It might be broken from the root.]	132
[101E-****][The % milling bur might be broken.]	133
[101F-****][The % milling bur chucking has slipped out.]	133
[1020-****][The % milling bur is too long.]	134
[1021-****][The % milling bur is too short.]	134
[1022-****][The % milling bur was not found.]	135
[1023-0000] to [1028-0000] [Milling data error.]	135
[1029-0000][The spindle experienced an overload.]	136
[102A-0000][The spindle experienced an overload.]	136
[102B-0000][The spindle motor temperature is too high.]	137
[102D-0000][The spindle can not be turned.]	137
[102D-0001][The spindle abnormally stopped during milling.]	137
[102E-0000][A moving part has collided with other components.]	137
[1030-0001][The dust collector filter needs to be replaced.]	138
[1038-0000][Milling data error. No milling bur is selected.]	138
[103B-0000][The automatic correction is not yet finished.]	138
[103D-0000][Milling data error. The milling bur cannot reach the milling position.]	139
[105F-****][The pressure of the compressed air for blowing away the mill- ing waste is out of range.]	139
[****-****][An unknown error occurred.]	140
Other Error Messages	141
[A machine that has the same ID has been connected.]	141

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 Roland DG Corporation dealer.

[%] in these messages indicates information such as axis [X], [Y], [Z], [A], or [B], or a milling bur stocker number from 1 to 15.

RELATED LINKS

- <https://www.dgshape.com/>

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

The name of the axis ([X], [Y], [Z], [A], [B] 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], [B] 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 touch sensor 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 touch sensor on the built-in panel.
This will clear the error.
2. Review the CAM settings and the shape specified in the CAD data.

[1017-0000][The front cover was opened.]**Situation/Error Cause**

The front cover was opened during spindle rotation. For safety, the machine comes to an emergency stop if the front cover is opened while the spindle is rotating.

Do not open the front cover while the spindle is rotating. Doing so may affect the milling results.

Procedure

1. Close the front cover.
2. Clearing Errors
 - If the error occurred during milling
Press [OK] in the error display window in VPanel, and click ►.
Milling will resume.
 - If the error occurred while the machine was on standby
Press [OK] in the error display window in VPanel, and click ✕.
This will clear the error.

[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 [16] or [0].

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. Hold down the touch sensor on the built-in panel.
This will clear the error.
2. Carry out [Forced tool release] in VPanel.
The collet will open.
3. Remove the milling bur.

4. Clean the ATC magazine.

[P. 68 Cleaning after Milling Finishes](#)

Situation/Error Cause 2

The collet and milling bur are affixed together and cannot be separated. The inside of the collet might be dirty.

Procedure

1. Retighten the collet.

[P. 91 Retightening the Collet](#)

Situation/Error Cause 3

The milling bur may not have been removed from the spindle unit after [Forced tool release] was executed. Be sure to remove the milling bur before cleaning the ATC magazine.

If the Error Occurs Again

The collet may be deformed. In this case, replace the collet.

[P. 97 Replacing Consumable Parts](#)

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

[%] indicates a milling bur stocker number from [1] to [16].

Situation/Error Cause 1

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

Procedure

1. Hold down the touch sensor on the built-in panel.

This will clear the error.

2. Carry out [Forced tool release] in VPanel.

The collet will open.

3. Remove the milling bur.

4. Clean the ATC magazine.

[P. 68 Cleaning after Milling Finishes](#)

Situation/Error Cause 2

The milling conditions may be excessively strict.

Procedure

1. Hold down the touch sensor 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 be deformed. In this case, replace the collet.

[P. 97 Replacing Consumable Parts](#)

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

[%] indicates a milling bur stocker number from [1] to [16].

Situation/Error Cause 1

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

Procedure

1. Hold down the touch sensor 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. 39 Setting the Milling Bur](#)

Situation/Error Cause 2

The milling conditions may be excessively strict.

Procedure

1. Hold down the touch sensor 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. 97 Replacing Consumable Parts](#)

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

[%] indicates a milling bur stocker number from [1] to [16].

Situation/Error Cause 1

The collet may have come loose.

Procedure

1. Hold down the touch sensor on the built-in panel.

This will clear the error.

2. Retighten the collet.

[P. 91 Retightening the Collet](#)

Situation/Error Cause 2

The milling conditions may be excessively strict.

Procedure

1. Hold down the touch sensor 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. 97 Replacing Consumable Parts](#)

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

[%] indicates a milling bur stocker number from [1] to [16].

Situation/Error Cause

There is a possibility that the position of the milling bur holder is not correct.

Procedure

1. Check the milling bur.
Check that the milling bur length is appropriate (40 to 55 mm [1.58 to 2.16 in.]).
2. Check the position of the milling bur holder.
[P. 39 Setting the Milling Bur](#)

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

[%] indicates a milling bur stocker number from [1] to [15].

Situation/Error Cause

There is a possibility that the position of the milling bur holder is not correct.

Procedure

1. Check the milling bur.
Check that the milling bur length is appropriate (40 to 55 mm [1.58 to 2.16 in.]).
2. Check the position of the milling bur holder.
[P. 39 Setting the Milling Bur](#)

3. Clearing Errors

- **If the error occurred during milling**
Press [OK] in the error display window in VPanel, and click ►.
Milling will resume.
- **If the error occurred while the machine was on standby**
Press [OK] in the error display window in VPanel, and click ✕.
This will clear the error.

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

[%] indicates a milling bur stocker number from [1] to [16].

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 [OK] in the error display window in VPanel, and click ►.
Milling will resume.
 - **If the error occurred while the machine was on standby**
Press [OK] in the error display window in VPanel, and click ✕.
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. 81 Correcting the Milling Position](#)

If the Error Occurs Again

The collet may have worn out. Replace the collet. If the error occurs again even after you replace the collet, replace the spindle unit.

[P. 97 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.
- [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 not defined.
- [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. Press [OK] in the error display window in VPanel, and click .
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. 51 Automatically Switching Out the Worn Milling Bur \(Intelligent Tool Control\)](#)

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

Situation/Error Cause

- 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.

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

Situation/Error Cause

- 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.

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

Situation/Error Cause

- 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.

[102D-0000][The spindle can not be turned.]

Situation/Error Cause

The cable may be broken or the spindle unit may be defective.
Turn off the power and contact your authorized Roland DG Corporation dealer.

[102D-0001][The spindle abnormally stopped during milling.]

Situation/Error Cause

The cable may be broken or the spindle unit may be defective.
Turn off the power and contact your authorized Roland DG Corporation dealer.

[102E-0000][A moving part has collided with other components.]

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.
Remove any pieces of cutting waste and foreign objects that have affixed to the clamp or adapter.
3. Turn on the power.

[1030-0001][The dust collector filter needs to be replaced.]

Situation/Error Cause

- The dust collector filter has deteriorated.
- There is a problem with the connection between the machine and the dust collector.

Procedure

1. **Replace the dust collector filter.**
For information on how to replace the dust collector filter, refer to the dust collector's documentation.
2. **Restart the dust collector.**
3. **Press the touch sensor on the built-in panel.**
Milling will resume.

[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 touch sensor 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.**

[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 touch sensor on the built-in panel.**
This will clear the error.
2. **Perform automatic correction.**
[P. 81 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/>

[103D-0000][Milling data error. The milling bur cannot reach the milling position.]**Situation/Error Cause**

If the milling bur is too short, or if the angle of the A axis and B axis are too large, the milling bur may not reach the milling position in the Z direction.

Procedure

1. Hold down the touch sensor 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. 39 Setting the Milling Bur](#)
3. Review the CAM settings and decrease the angles of the A axis and the B axis.

[105F-**][The pressure of the compressed air for blowing away the milling waste is out of range.]****Situation/Error Cause**

The air pressure in the milling area may not be appropriate.

Procedure

1. Review the regulator settings.
[P. 41 Adjusting the Pressure of the Compressed Air](#)
2. Clear the error or resume milling.
 - If the error occurred during milling
Press the touch sensor on the built-in panel.
Milling resumes.
 - If the error occurred while the machine was on standby
Hold down the touch sensor on the built-in panel.
This will clear the error.

If the Error Occurs Again

Contact your authorized Roland DG Corporation dealer.

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

Restart the machine.

If the Error Occurs Again

Contact your authorized Roland DG Corporation dealer.

Other Error Messages

[A machine that has the same ID has been connected.]

Procedure

1. Remove all the USB cables that are connected to the computer.
2. Delete unnecessary devices from [Devices and Printers].
Delete the unnecessary devices according to the following procedure.
[P. 121 Driver Installation Is Impossible](#)
3. Refer to the Setup Guide to redo the settings for connecting multiple units.

RELATED LINKS

- [DWX-53D Setup Guide](#)

