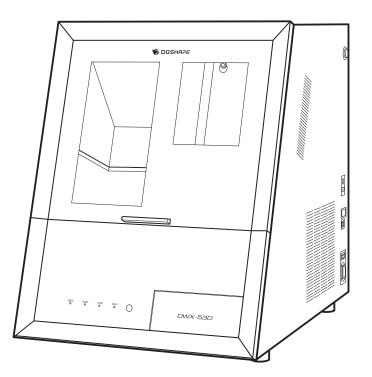# DWX-53D

## Setup Guide

Thank you very much for purchasing this product.

- To ensure correct and safe usage with a full understanding of this product's performance, please be sure to read through this manual completely and store it in a safe location.
- 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.
- DGSHAPE Corporation assumes no responsibility for any direct or indirect loss or damage that may occur through use of this product, regardless of any failure to perform on the part of this product.
- DGSHAPE Corporation assumes no responsibility for any direct or indirect loss or damage that may occur with respect to any article made using this product.

# Contents

# Getting Started

# About This Machine

## Features of This Machine

This machine is a dental cutting and milling machine that uses zirconia, PMMA, PEEK, composite resin, wax, and dental non-cast cobalt-chromium alloy to make dental prostheses including crowns, copings, and bridges.

Installing and setting up the exclusive software on your computer and connecting your computer to this machine enables you to create high-quality dental prostheses.

For the latest information on this machine, see the DGSHAPE Corporation website.

**RELATED LINKS**

- https://www.dgshape.com/

# Checks before Installation

## Placement and Installation Work
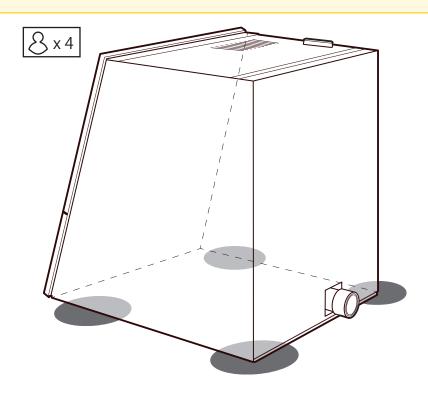
The weight of the machine alone is 105 kg (231.49 lb.). Unload and place the machine with care.

> **⚠ CAUTION**
>
> **Unloading and emplacement are operations that must be performed by 4 persons or more.**
> Tasks that require undue effort when performed by a small number of persons may result in physical injury. Also, if dropped, such items may cause injury.

> **⚠ CAUTION**
>
> **When lifting the machine, hold the locations shown in the figure.**

> **IMPORTANT**
> Do not grasp the front cover or dust collection hose attachment port when holding the machine.

## Installation Site

> ⚠ WARNING
>
> **Install the machine in a location that is level, stable, and able to bear the weight of the machine.**
> The total weight of the machine may reach 105 kg (231.49 lb.) or more. Installation in an unsuitable location may cause a major accident, including tip over, fall, or collapse.

> ⚠ WARNING
>
> **Never install in a location exposed to open flame.**
> Milling waste may ignite. Powdered material is extremely flammable, and even metal material may catch fire.

> ⚠ WARNING
>
> **Never install the machine close to any flammable object or in a gas-filled location.**
> Combustion or explosion could occur.

> ⚠ WARNING
>
> **Never install this machine outside or in any location where exposure to water or high humidity may occur.**
> Current leakage may cause electrical shock or fire.

> ⚠ WARNING
>
> **Position the machine so that the power plug is within immediate reach at all times.**
> This is to enable quick disconnection of the power plug in the event of an emergency. Install the machine next to an electrical outlet. Also, provide enough empty space to allow immediate access to the electrical outlet.

- Never install the machine in a location subject to wide fluctuations in temperature or humidity.
- Never install the machine in a location subject to shaking or vibration.
- Never install the machine in a dusty or dirty location.
- Never install the machine in a location exposed to direct sunlight or near air-conditioning or heating equipment.
- Never install the machine in a location exposed to considerable electrical or magnetic noise or other forms of electromagnetic energy.
- 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.

## Temperature and Humidity

Install this machine in a location that meets the specified conditions for temperature, humidity, and the like. Failure to do so may result in malfunction.

- Temperature: 5 to 40°C (41 to 104°F)
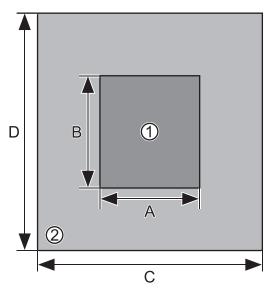- Humidity: 35 to 80%RH (no condensation)

> **IMPORTANT**
>
> Whenever possible, use the machine in an environment with a constant temperature. Large fluctuations in temperature in the installation environment may affect the milling quality.
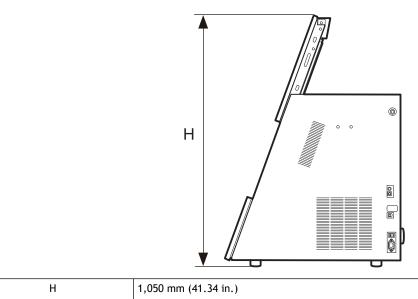
## Installation Space

Ensure that at least the following amount of space is available for the installation.

The vertical directions shown in the following figure represent the area in front of and behind the machine.



| ① | Installation space |
|---|---|
| ② | Work space |
| A | 700 mm (27.56 in.) |
| B | 1,000 mm (39.4 in.) |
| C | 1,100 mm (43.31 in.) |
| D | 1,500 mm (59.06 in.) |

Ensure that enough space is available to allow the front cover to be opened.



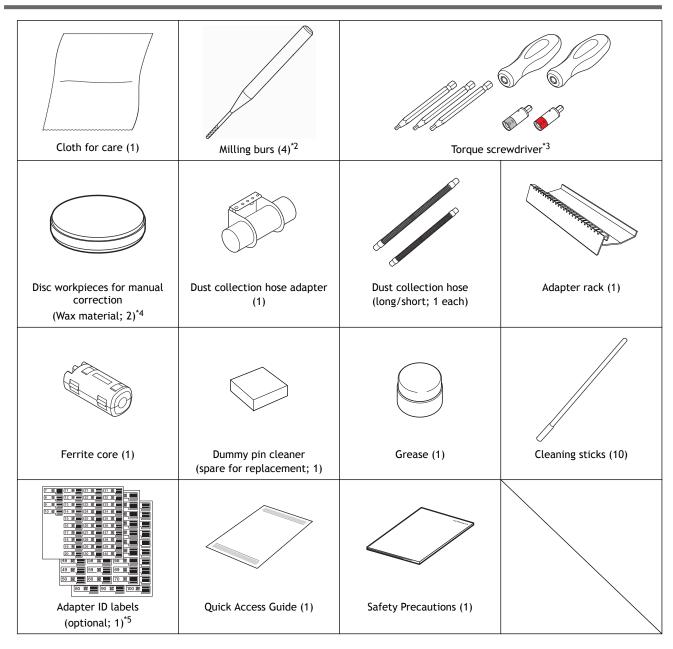| H | 1,050 mm (41.34 in.) |
|---|---|

RELATED LINKS

## Installation Location Height

**The installation location should be above the work floor by 0.6 m (23.6 in.) or more.**

This machine is a desktop-type unit. Install the machine in a location that allows easy access to areas such as the power switch during operation.

# Checking the Included Items

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

| | | | |
|---|---|---|---|
| Power cord, power plug adapter (1 each) | USB cable (1) | Regulator, drain hose, hose clamp (1 each) | Air hose (1) |
| Adapter (6) | Automatic correction jig (1) | Pin-type workpiece adapter (1) | Open edge adapter (1) [*1] |
| Milling bur positioner (1) | Milling bur holder (15) | Detection pin (1) | Tool rack (1) |
| Collet attaching/detaching jig (1) | T-shaped hexagonal screwdriver (1) | L-shaped hexagonal wrench (1) | Brush (1) |
| Mounting screws (25) | Screws (adapter spare; 8) | Screws (pin-type workpiece adapter spare; 2) | Black screws (for regulator and dust collection hose adapter; 4) |

| | | |
|---|---|---|
| Cloth for care (1) | Milling burs (4)[*2] | Torque screwdriver[*3] |
| Disc workpieces for manual correction (Wax material; 2)[*4] | Dust collection hose adapter (1) | Dust collection hose (long/short; 1 each) |
| Ferrite core (1) | Dummy pin cleaner (spare for replacement; 1) | Grease (1) |
| Adapter ID labels (optional; 1)[*5] | Quick Access Guide (1) | Safety Precautions (1) |

Note: The table above also includes "Adapter rack (1)" and "Cleaning sticks (10)" in a fourth column.

*1    Affix an (optional) adapter ID label to the adapter before using this adapter. You can use any adapter ID label number.

*2    ZRB-200D, ZPB-100D, ZPB-50D, and ZPB-30D (1 each)

*3    Handles (2), bits (1.5 mm [0.06 in.], 2.5 mm [0.1 in.], and 3.0 mm [0.12 in.]; 1 each), and sleeves (0.3 N·m, 0.6 N·m; 1 each)

*4    These are exclusively for performing manual correction of the machine. Do not perform milling with these workpieces.

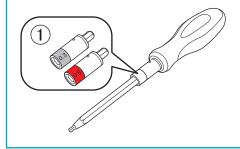*5    Use these labels when you have purchased optional adapters.

---

**IMPORTANT**

Do not loosen screws with a torque screwdriver with the sleeve (①) attached.
Doing so may damage the sleeve. Before loosening screws, remove the sleeve from the torque screwdriver.

**IMPORTANT**

Before tightening a screw that has a specified tightening torque, be sure to attach a sleeve. Check the marking on the sleeve (①) and use a sleeve that matches the tightening torque value.

Failure to attach a sleeve will cause a torque in excess of the permitted amount to be applied, which may damage parts and materials.

# Installation

# Preparing the Machine for Use

## Checks before Operations

### Dust Collector

Because this machine cuts and mills material, milling waste is generated during milling.

Use a separately prepared dust collector by inserting the dust collection hose into the dust collection pipe of the machine.

> **IMPORTANT**
>
> Milling cannot be performed without a dust collector.

> **⚠ 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.

**The dust collector must meet the following conditions.**

- Static pressure: 26 kPa or more
- 4 $m^3$/min (141.26 ft.$^3$/min) or more
- Dust collection hose

  Either the dust collection hose included with the machine or a dust collection hose that meets the following specifications can be used.
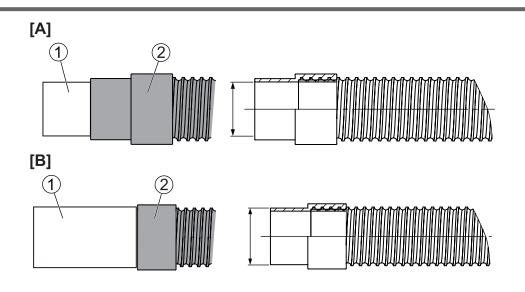
  **[A]**

  When covering the outer diameter of the dust collection pipe (①) with the dust collection hose (②)

  Dust collection hose inner diameter: 50.8 mm (2 in.)

  **[B]**

  When inserting the dust collection hose (②) into the dust collection pipe (①)

  Dust collection hose outer diameter: 45.6 mm (1.8 in.)

**[A]**

**[B]**

## Compressor (Source of Compressed Air)

This machine requires compressed air. You will need to prepare a compressor separately.

> ⚠ WARNING
>
> **The pressure of the compressed air must be 1.0 MPa or less.**
> Anything higher may result in a serious accident such as a rupture.

> ⚠ WARNING
>
> **Ensure that the supplied compressed air is not contaminated by water, oil, chemicals, or foreign objects.**
> The components may deteriorate or rupture, or the contaminants may be scattered, posing a hazard.

> ⚠ WARNING
>
> **Supply the compressed air after the air hose is connected securely.**
> Failure to do so may cause an accident.

**The compressor must meet the following conditions.**

- Control pressure: Between 0.5 and 1.0 MPa
- Air capacity: 66 l/min or more (per machine)
- Oil-free type (To prevent contamination of the compressed air by foreign material.)
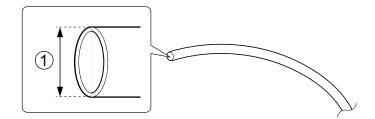- Dryer-equipped (To prevent moist air that can cause rust.)

# Air hose

The air hose (1) connects the compressor to the regulator.

**The air hose must meet the following conditions.**

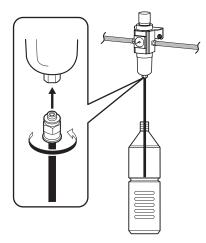- Hose outer diameter (①): 6 mm (polyurethane resin tube)

> **IMPORTANT**
> Be sure to use the included regulator to supply compressed air.



# Fluid Receptacle

Because fluid accumulated in the regulator bowl will drain out little by little, prepare a fluid receptacle.

# Installing the Machine

## Removing the Retainers

- Three retainers are attached to this machine to protect it from vibration during shipment. After installing this machine, remove all the retainers. Switching the power on with retainers attached to this machine may cause faulty operation or a breakdown.
- The retainers will be required when moving the machine to a different location. Store them carefully so that they do not get misplaced.

> **IMPORTANT**
>
> Before removing the retainers, be sure to check that the power cord is not connected.

> **IMPORTANT**
>
> Be careful to prevent screws and retainers from falling into the machine, which may damage it or lead to malfunctions.

**Required item**



Torque screwdriver
(0.6 N·m)

> **IMPORTANT**
>
> Do not loosen screws with a torque screwdriver with the sleeve (①) attached.
> Doing so may damage the sleeve. Before loosening screws, remove the sleeve from the torque screwdriver.
>
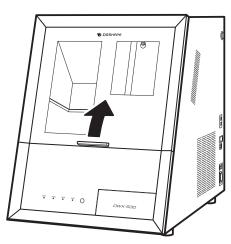> 
>
> ①

> **IMPORTANT**
>
> Before tightening a screw that has a specified tightening torque, be sure to attach a sleeve. Check the marking on the sleeve (①) and use a sleeve that matches the tightening torque value.
> Failure to attach a sleeve will cause a torque in excess of the permitted amount to be applied, which may damage parts and materials.
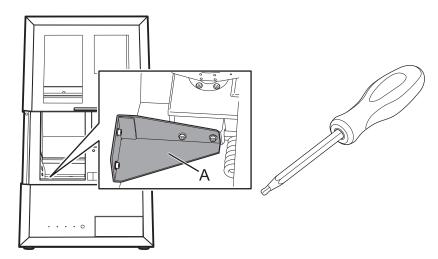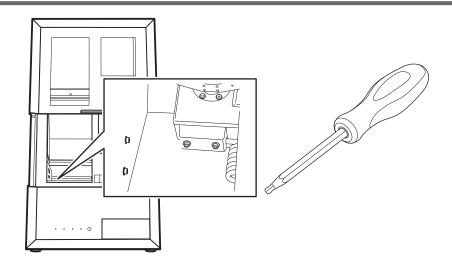
## Procedure

**1.** **Open the front cover.**

Pull until a click is heard.



**2.** **Make sure that no sleeve is attached onto the torque screwdriver.**

If a sleeve has been attached, remove it.

**3.** **Use a torque screwdriver with the sleeve removed to remove the four screws.**
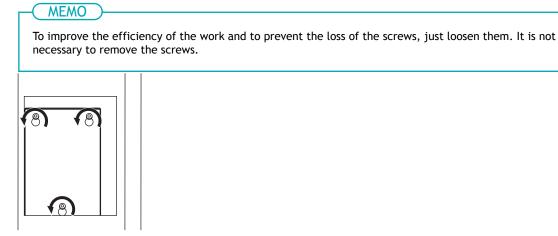
Remove retainer A.



**4.** **Tighten the four screws that you removed.**

(1) **Install the four screws that you removed.**

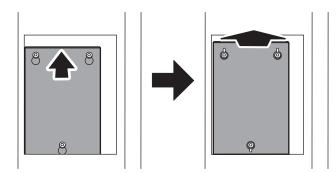(2) **Use a torque screwdriver with the sleeve removed to tighten the screws.**

**5.** **Remove the maintenance cover.**

a. By hand, loosen the screws securing the maintenance cover by about two rotations.

> **MEMO**
>
> To improve the efficiency of the work and to prevent the loss of the screws, just loosen them. It is not necessary to remove the screws.
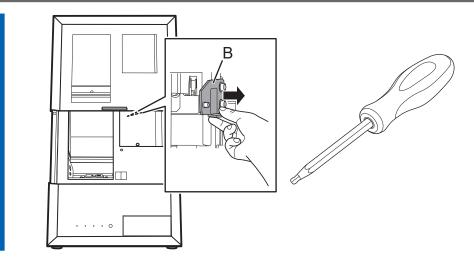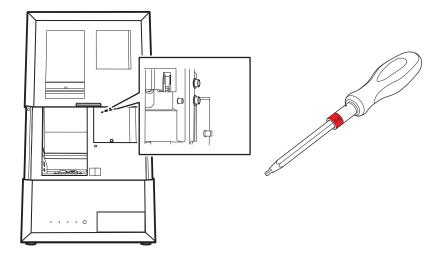


b. Remove the maintenance cover.

Lift the maintenance cover up until it is at a position where the screws can pass through the holes, and then pull the maintenance cover toward you to remove it.
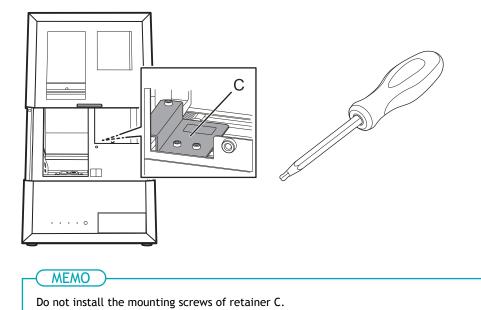


**6.** **Use a torque screwdriver with the sleeve removed to remove the two screws.**

Remove retainer B.

**7.** Attach the 0.6 N·m, red sleeve onto the torque screwdriver.

**8.** Tighten the two screws that you removed.

(1) Install the two screws that you removed.

(2) Use a torque screwdriver with the sleeve attached to tighten the screws.



**9.** Remove the sleeve from the torque screwdriver.

**10.** Use a torque screwdriver with the sleeve removed to remove the three screws.

Remove retainer C.

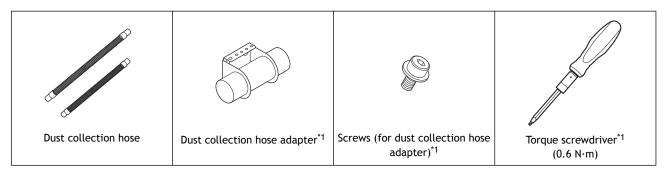**MEMO**

Do not install the mounting screws of retainer C.

Retainers and the mounting screws will be required when moving the machine to a different location. Store them somewhere safe.

## Connecting a Dust Collector

This section contains the procedure for connecting a dust collector with built-in linking function to the machine. If you are using a dust collector that does not have a linking function, connect the collector to the machine according to the documentation for the dust collector.
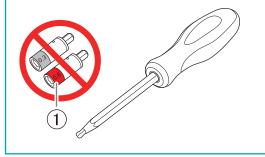
**Required items**

| | | | |
|---|---|---|---|
|  |  |  |  |
| Dust collection hose | Dust collection hose adapter[*1] | Screws (for dust collection hose adapter)[*1] | Torque screwdriver[*1] (0.6 N·m) |

[*1]    Use when attaching the dust collection hose adapter.
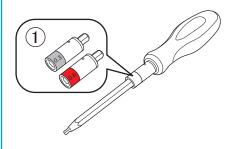
> **IMPORTANT**
>
> Do not loosen screws with a torque screwdriver with the sleeve (①) attached.
> Doing so may damage the sleeve. Before loosening screws, remove the sleeve from the torque screwdriver.
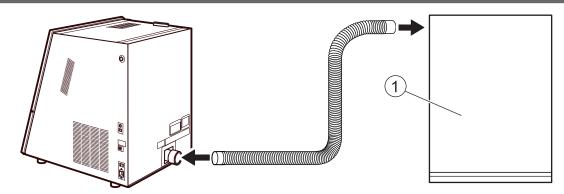>
> 

> **IMPORTANT**
>
> Before tightening a screw that has a specified tightening torque, be sure to attach a sleeve. Check the marking on the sleeve (①) and use a sleeve that matches the tightening torque value.
> Failure to attach a sleeve will cause a torque in excess of the permitted amount to be applied, which may damage parts and materials.
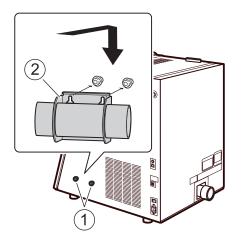>
> 

### Procedure

**1.   Attaching the dust collection hose.**

- Connecting the Dust Collector Directly to the Machine

     Connect the dust collector (①) to the machine as shown in the following figure.

- **Connecting the dust collector to the machine with the dust collection hose adapter**

  a. Temporarily tighten the two screws (for dust collection hose adapter) (①) on the right or left side of the machine.
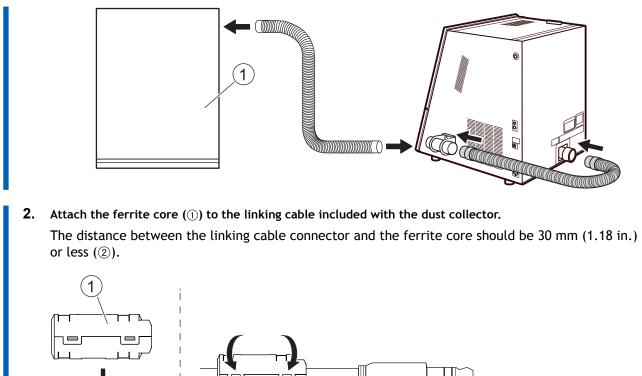
  Turn the screws approximately 3 times by hand.

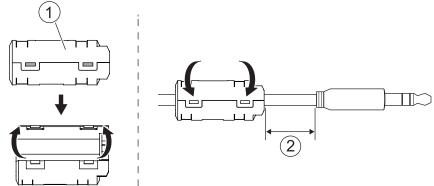  b. Mount the dust collection hose adapter (②) onto the screws temporarily tightened.



  c. Attach the 0.6 N·m, red sleeve onto the torque screwdriver.
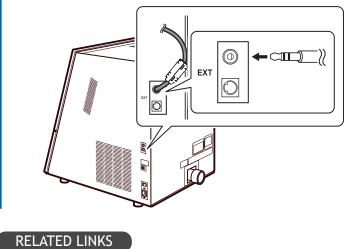


  d. Tighten the screws until turning the handle of the torque screwdriver no longer turns the screw bit.

  e. Attach the dust collection hose as shown in the figure to connect the machine and the dust collector (①).

2. **Attach the ferrite core (①) to the linking cable included with the dust collector.**

   The distance between the linking cable connector and the ferrite core should be 30 mm (1.18 in.) or less (②).



3. **Insert the linking cable into the expansion port on the machine.**



RELATED LINKS

- P. 60 Expansion Ports

## Connecting the Power Cord

⚠ WARNING

**Connect to an electrical outlet that complies with this machine's ratings (for voltage, frequency, and current).**
Incorrect voltage or insufficient current may cause fire or electrical shock.

⚠ WARNING

**Handle the power cord, plug, and electrical outlet correctly and with care. Never use any article that is damaged.**
Using a damaged article may result in fire or electrical shock.

⚠ WARNING

**When using an extension cord or power strip, use one that adequately satisfies the machine's ratings (for voltage, frequency, and current).**
Use of multiple electrical loads on a single electrical outlet or of a lengthy extension cord may cause fire.
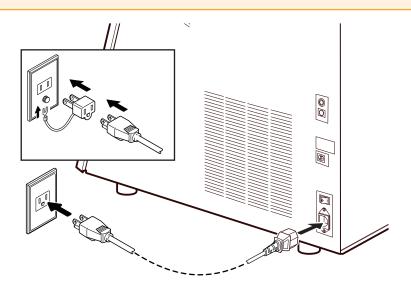
⚠ WARNING

**Connect to ground.**
This can prevent fire or electrical shock due to current leakage in the event of malfunction.

⚠ WARNING

**Connect this machine to an electrical outlet. Never connect this machine directly to a power distribution panel or other such fixed wiring equipment.**
Doing so increases the risk of fire or electrical shock.



IMPORTANT

The machine ID needs to be changed when connecting more than one machine.

If you will connect more than one unit of this machine to a single computer, be sure to follow the procedure under "Connecting Multiple Units." Connecting before changing the ID may render the machine unusable.

RELATED LINKS

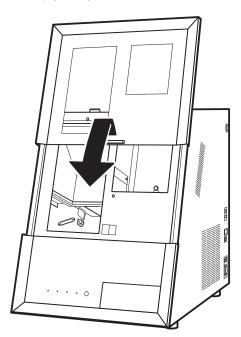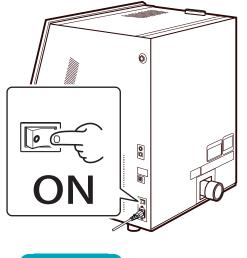- P. 41 Connecting Multiple Units

## Switching the Power On

### Procedure

**1. Close the front cover.**

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.



ON

> IMPORTANT
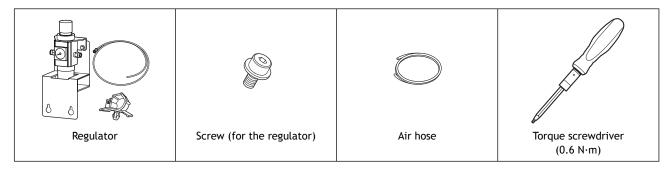>
> Do not open the covers during the initial operations.

## Attaching the Regulator

⚠ WARNING

**Supply the compressed air after the air hose is connected securely.**
Failure to do so may cause an accident.

**Required items**

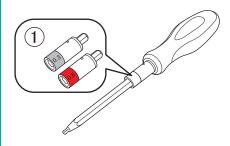| | | | |
|---|---|---|---|
| Regulator | Screw (for the regulator) | Air hose | Torque screwdriver (0.6 N·m) |

IMPORTANT

Do not loosen screws with a torque screwdriver with the sleeve (①) attached.
Doing so may damage the sleeve. Before loosening screws, remove the sleeve from the torque screwdriver.
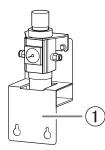
IMPORTANT

Before tightening a screw that has a specified tightening torque, be sure to attach a sleeve. Check the marking on the sleeve (①) and use a sleeve that matches the tightening torque value.
Failure to attach a sleeve will cause a torque in excess of the permitted amount to be applied, which may damage parts and materials.
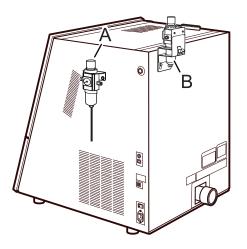
## 1. Attaching the Regulator to the Machine

The regulator can be attached in one of two locations on the machine: the right side (A) or the back (B).

If necessary, remove the stay (①) before attaching the regulator to the machine.

This section explains how to attach the regulator to the right side (A) of the machine with the stay removed.

To attach the regulator to the back (B) of the machine, substitute the attachment position when performing the work.
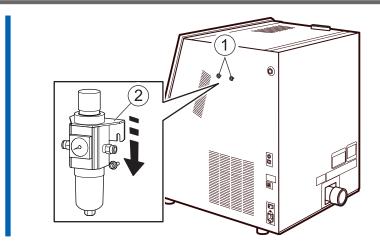


## Procedure

**1.** **Attach the 0.6 N·m, red sleeve onto the torque screwdriver.**
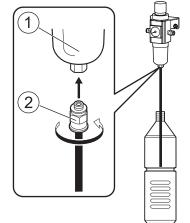


**2.** **Temporarily tighten the two screws (for the regulator) (①) on the right side of the machine.**

Turn the screws approximately 3 times by hand.

**3.** **Mount the regulator bracket (②) onto the screws temporarily tightened in step 2.**

**4.** **Use a torque screwdriver with the sleeve attached to fully tighten the screws.**

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

**5.** **Attach the drain hose (②) to the regulator bowl (①).**

Any fluid that collects in the bowl will drain from the drain hose. Set the fluid receptacle in place.
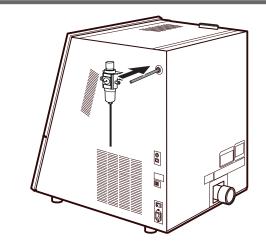


**6.** **Insert the air hose into the machine.**

> ⚠ WARNING
>
> **Securely insert the air hose as far as it will go. Lightly tug the hose to make sure it does not come loose.**
> If it is not inserted securely, it may come loose.

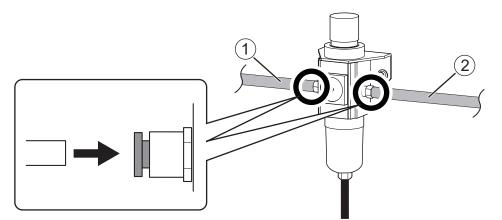Attach the air hose included with the machine.

**7.** While pressing the regulator ring in, insert the air hoses into the regulator.

> ⚠ WARNING
>
> **Securely insert the air hose as far as it will go. Lightly tug the hose to make sure it does not come loose.**
> If it is not inserted securely, it may come loose.

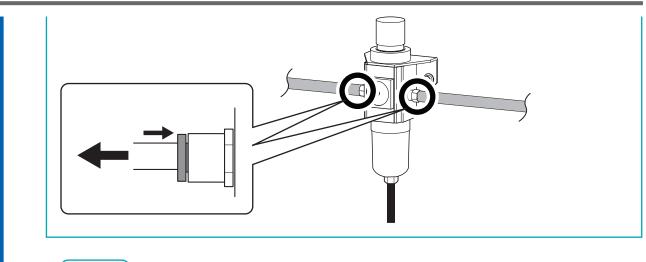Attach to the left side of the regulator the air hose (①) included with the compressor you are using. Attach to the right side of the regulator the opposite side of the air hose (②) attached to the machine.



**8.** Supply compressed air and verify that air does not leak from the connections or any other location.
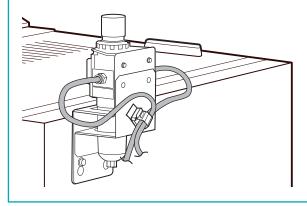
> MEMO
>
> To remove an air hose from the regulator, pull the hose out slowly while pressing the regulator ring in.

**MEMO**

When attaching the regulator to the back of the machine, use the hose clamp attached to the stay to bundle the air hoses together.
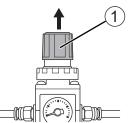
# 2. Setting the Air Pressure

MEMO

When CAM data is received by the machine, it automatically adjusts the air pressure to match the workpiece to mill.

## Procedure

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



**2.** **Adjust the air pressure.**
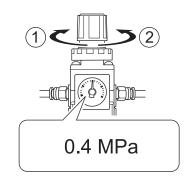
   a. Slowly turn the upper knob to adjust the air pressure to 0.3 MPa.

   b. 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.



0.4 MPa

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

**3.** **Push down on the upper knob.**

# Connecting to the Computer

## System Requirements

For the latest information, see the DGSHAPE Corporation website.

| Operating system (OS) | Windows 11, Windows 10 (64-bit) |
|---|---|
| CPU | Core i5 4th generation or equivalent |
| Memory | 8 GB or more |
| Video card and monitor | A video card that supports at least 256 colors and a resolution of 1,024 × 768 or more is recommended. |
| Hard disk | The following free hard-disk space is required.<br>• Installation destination: 200 MB or more<br>• Error video recording function: 20 GB or more |

- This software is a 32-bit application and therefore runs in WOW64 (Windows-On-Windows 64) when running on 64-bit versions of Windows operating systems.

RELATED LINKS
- https://www.dgshape.com/

## The Software You Can Install and Set Up

| | |
|---|---|
| VPanel for DWX | This is the dedicated software for controlling this machine. This software is used to operate the machine and configure various settings. The term "VPanel" is used in this manual.<br>For details on the windows displayed in VPanel and for an explanation of its functions, refer to the VPanel User's Manual. |
| Dental Driver<br>(DWX-53D driver) | This is a Windows-based driver required for sending data from a computer to the machine. |

RELATED LINKS

· VPanel for DWX User's Manual

## Installing the Software

Download the driver and the software from the DGSHAPE Corporation website, and then install the driver and the software all at once. You can also install the driver and each piece of software separately.

### Procedure

**1.** Before installation, confirm that the machine and the computer are not connected with the USB cable.

**2.** Log on to Windows as the [Administrator] or an "Administrators" account.

**3.** Access the following URL.

https://downloadcenter.rolanddg.com/DWX-53D#software

**4.** Download the following pieces of software.

- [DGSHAPE Dental Driver for Windows]>[Windows Driver [Ver. xx.xx]]
- [VPanel for DWX]>[Installer/Updater [xxxx-xx-xx, Ver.xx.xx.x]]

Click ⬇ on the right of the software name to download the software.

**5.** Install the driver.

Double-click [**Windows Driver [Ver. xx.xx]**] to start the installation.

Follow the on-screen instructions to carry out the installation.

**6.** Install VPanel.

Double-click [**Installer/Updater [xxxx-xx-xx, Ver.xx.xx.x]**] to start the installation.

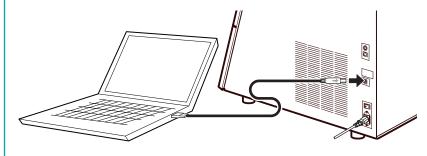Follow the on-screen instructions to carry out the installation.

RELATED LINKS
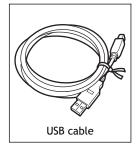
- https://downloadcenter.rolanddg.com/DWX-53D#software

## Connecting to the Computer

> **IMPORTANT**
>
> - Before connecting the machine to the computer using a USB cable, be sure to install the driver.
> - If connecting more than one unit of this machine to a single computer, see "Connecting Multiple Units."
> - Use the included USB cable.
> - If you will connect a conversion cable, separately prepare a USB cable whose total length, including the length of the conversion cable, is 3 m (118.11 in.) or less. A longer total cable length may lead to malfunctions.
> - Do not use a USB hub. Connection may not be possible.
> - Do not bind the USB cable and power cord. Binding the USB cable and the power cord may produce noise or the like, resulting in a malfunction.
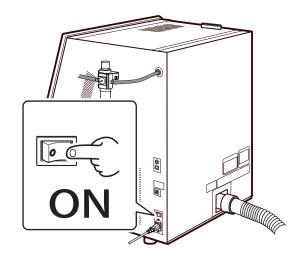>
> 

**Required item**



USB cable

### Procedure

1. **If the machine's power switch is off, switch it on.**

   When the power switch is switched to on, the machine starts the initial operations. When the status light stops flashing and remains steadily lit, the initial operations are complete.

   

2. **Connect the machine to the computer using a USB cable.**

Using a USB cable to connect the machine and a computer on which the driver has been installed adds the DWX-53D to [**Devices and Printers**], enabling the use of the machine.

RELATED LINKS

- P. 41 Connecting Multiple Units

## Displaying VPanel

**VPanel serves as resident software.**

VPanel works as resident software that is constantly working to manage the milling machine, send emails, and so on. It is recommended to configure the settings so that VPanel starts automatically when the computer starts.

> **MEMO**
>
> VPanel sends emails to notify the user of milling completion and errors that occur.
>
> Also, clicking ✕ in the upper-right corner of the top window will minimize the program to the task tray. The window will disappear from the screen, but the program will not be exited. While VPanel is running, ▣ is constantly displayed in the task tray.

**RELATED LINKS**

- [Mail] Tab
- [General] tab

## Displaying VPanel from the Task Tray

**Procedure**

**1.** Click ▣ (the VPanel icon) 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] screen (or the [Start] menu).

**RELATED LINKS**

## Displaying VPanel from the Start Screen
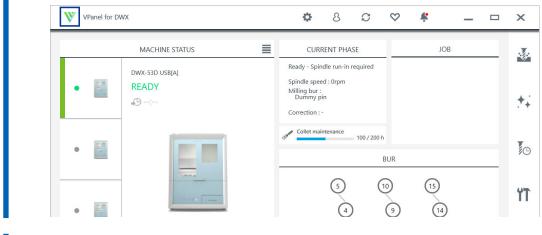
**Procedure**

**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 ⊡ (the VPanel icon) in the task tray on the desktop.



**2.** Click [Exit].

# Connecting Multiple Units

This section explains how to configure the settings to allow more than one machine of the same model to connect to one computer. Up to four machines can be connected.

Before connecting multiple machines, assign each of them a unique ID (A to D). These IDs allow the machines to be differentiated from each other.

> **MEMO**
>
> When connecting the machine to a Windows 11 PC, this feature is available on Ver. 22H2 or later devices.

## Registering a Different Machine

> **IMPORTANT**
>
> - Configure the connection settings one machine at a time. Be sure to connect only the machine to be configured. Simultaneously connecting multiple machines with the same ID may lead to the computer shutting down or it being impossible to install the driver.
> - Use the included USB cable.
> - If you will connect a conversion cable, separately prepare a USB cable whose total length, including the length of the conversion cable, is 3 m (118.11 in.) or less. A longer total cable length may lead to malfunctions.
> - Do not use a USB hub. Connection may not be possible.

### Procedure

**1.** Show VPanel.

**2.** Turn off the power of the connected machine, and then disconnect the USB cable from the computer.

**3.** Check that the icon under [MACHINE STATUS] is displayed in gray and that "OFFLINE" is displayed.



**4.** Switch on the power of the machine to be newly connected, and then connect the USB cable to the computer.

**5.** Click ⛏.

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

**6.** Click [Set] next to [Machine ID Setting] on the [General] tab.



The [**Machine ID setting - DWX-53D**] window will appear.

**7.** Select an unused ID, and then click [OK].

[A] is assigned as the ID of the machine by default. Since [A] is assigned to the first machine, be sure to select an ID from [B] to [D] for subsequent machines.

> **IMPORTANT**
>
> Do not set duplicate IDs. Simultaneously connecting multiple machines with the same ID may lead to the computer shutting down or it being impossible to install the driver.



**8.** When the following window appears, click [OK].

The machine will restart, and then the driver for the machine with the new ID will be installed automatically.



9. **Restart VPanel.**

    a. Exit VPanel.

    Right-click ⬛ in the task tray and click [**Exit**].

    

    b. Start VPanel.

    c. Select the machine added from [**Usable Machine**], and then click [**OK**].

    The selected ID is now enabled. Check that the machine has been added below [**MACHINE STA-TUS**]. Verify that the selected ID is displayed on the top window.

    

    > **IMPORTANT**
    >
    > You can connect all the machines with configured settings to the computer using the USB cables. At this point, connecting more than one machine with the same ID at the same time may cause the computer to shut down.

10. **To connect a third or fourth machine, repeat Steps 2 to 9.**

## Switching the Machine to Operate in VPanel

In VPanel, switch the machine to operate. A green bar is displayed to the left of the currently selected machine, as shown below.

When switching the machine to operate, click the image of the machine to operate in the list of machines.



RELATED LINKS

· P. 45 Changing the Name and Image of the Machine Displayed on VPanel

## Changing the Name and Image of the Machine Displayed on VPanel

Changing the names and images of the machines displayed in VPanel makes it easier to select the machine to operate.



- ①: Machine image
- ②: Machine name

## Changing the Name of the Selected Machine

### Procedure

1. **Open the [Devices and Printers] folder.**
   - **Windows 11**
     - a. Click [**Start**]>[**All Apps**]>[**Windows Tool**].
     - b. Double-click [**Contorol Panel**].
     - c. Click [**View device and printers**].
   - **Windows 10**
     - a. Click [**Start**]>[**Windows System**]>[**Contorol Panel**].
     - b. Click [**View device and printers**].

2. **Select the name of the model (printer) being used, and then change its name.**

3. **Exit VPanel.**

   Right-click 🖥 in the task tray and click [**Exit**].

   

4. **Start VPanel.**

   P. 39 Displaying VPanel from the Start Screen

5. **Select the machine to operate from VPanel.**
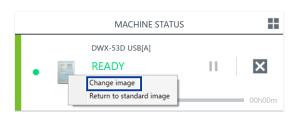
   The changed name appears on the top window.

RELATED LINKS

# Changing the Image of the Machine Displayed on VPanel

## Procedure

**1.** Display the top window of VPanel.

**2.** Right-click the image of the machine that is displayed under [MACHINE STATUS], and then click [Change image].



**3.** In the [Open] window, select the image file that you want to display.

The changed image appears in the top window.

# Before Starting Operations

## Selecting the Machine to Use in VPanel

### Procedure

1. **Start VPanel.**
   - **Windows 11**
     a. Click [**Start**]>[**All Apps**].
     b. Click [**VPanel for DWX**].
   - **Windows 10**
     a. From the [**Start**] menu, click [**All Apps**] (or [**All Programs**]).
     b. Click [**VPanel for DWX**]>[**VPanel for DWX**].

2. **Select the machine to operate.**

   Click the image of the DWX-53D displayed in the [**Usable Machine**].
   The machine to operate from VPanel is displayed in the lower row.

   

   If you do not want to display the [**Machine Selection**] screen when VPanel starts, select the [**Do not display this dialog box the next time the VPanel starts.**] check box.
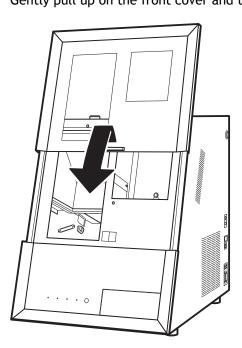
3. **Click [OK].**

## Performing Spindle Run-in

Perform spindle run-in to apply grease to the sliding parts in the spindle, stabilizing its rotation.

### Procedure

**1.** **Close the front cover.**

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



**2.** **Show VPanel.**

P. 39 Displaying VPanel

**3.** **Click [wrench icon].**



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

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

5. **When the window in the following figure is displayed, click [OK].**
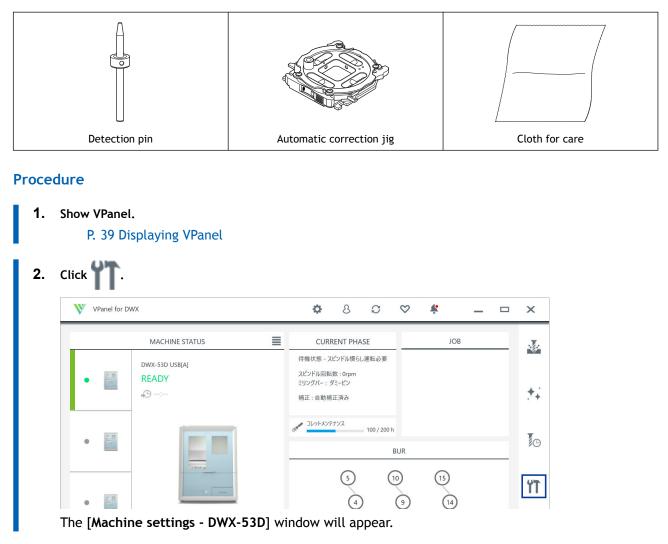
   Start spindle run-in.

   

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

## Automatically Correcting the Cutting Position

This section explains how to correct positions such as the milling origin by comparing values calculated from the sensor with the actual values.

**Required items**

| | | |
|---|---|---|
| Detection pin | Automatic correction jig | Cloth for care |

### Procedure

1. **Show VPanel.**

   P. 39 Displaying VPanel

2. **Click** 🔧.

   

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

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

   

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

4. **Follow the on-screen instructions to perform automatic correction.**
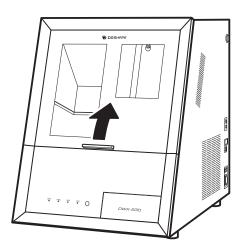
   After cleaning the machine, attach the detection pin and automatic correction jig and perform automatic correction.

   Perform cleaning and installing parts according to the following procedures.
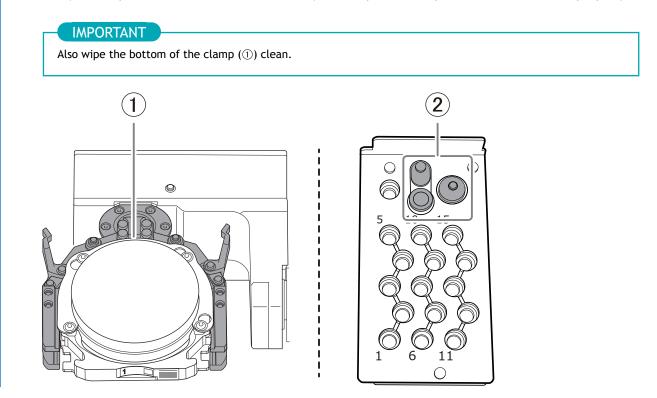
## 1. Install the detection pin.

### Procedure

**1.** **Open the front cover.**

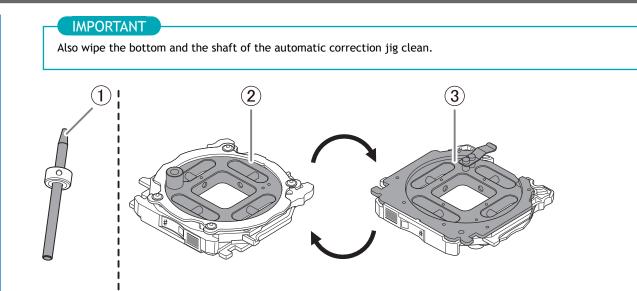Pull until a click is heard.

**2.** **Remove any debris that is present around the clamp.**

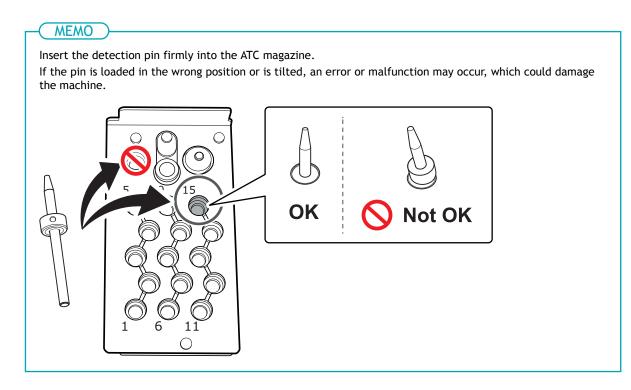**3.** **Use the included cloth for care to wipe the clamp (①) and the area around the milling bur sensor (②) clean.**

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 bottom and 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.

OK          Not OK
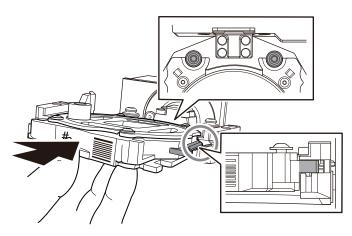
## 2. Attach the automatic correction jig.

### Procedure

1.  **With its adapter ID facing you, insert the automatic correction jig into the clamp.**
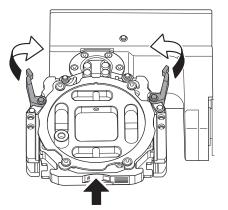
    Gently push in the automatic correction jig all the way along the groove in the clamp.

    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.
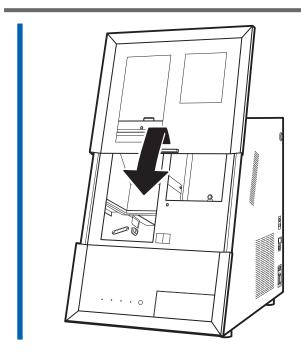
    

2.  **Secure the automatic correction jig.**

    Close the fixing knobs (in two locations) in the directions of the arrows while pressing the automatic correction jig into the clamp 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.

    | OK | Cancel |
    |---|---|

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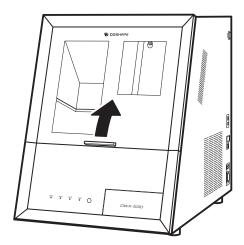
> ⚠ **CAUTION**
>
> **Do not pull the adapter with excessive force when removing it.**
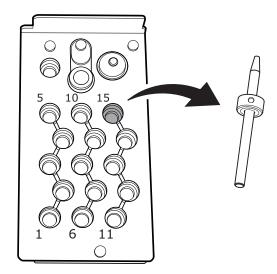> Doing so may result in injury arising from your hand or arm hitting something.
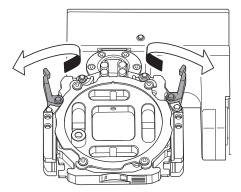
## Procedure

**1.** **Open the front cover.**

Pull until a click is heard.



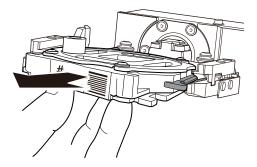**2.** **Remove the detection pin.**



**3.** **Remove the automatic correction jig.**

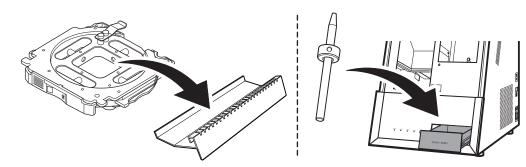(1) **Open the fixing knobs (in two locations) in the directions of the arrows to release the locks.**

(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.
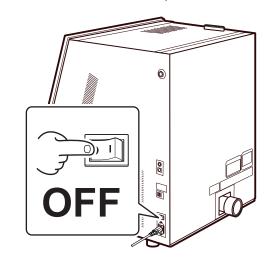


**4.** **Store the automatic correction jig and detection pin.**

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

## Switching the Power Off

### Procedure

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

# Appendix

# Specifications

## Expansion Ports

This machine is equipped with two expansion ports. When using a dust collector with built-in linking function, make sure you correctly understand the following specifications before connecting the dust collector's linking cable to the appropriate expansion port.
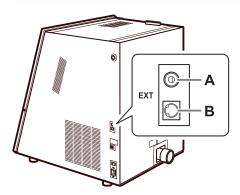
> **IMPORTANT**
>
> Before connecting or disconnecting the cable, be sure to turn off the machine's power. Connecting cables to or disconnecting cables from the milling machine while its power is on may cause malfunctions.
> * We are not responsible for devices connected to this port.

> **IMPORTANT**
>
> - Be sure to use the expansion port within the rated range.
> - Do not apply an additional voltage to the connector.
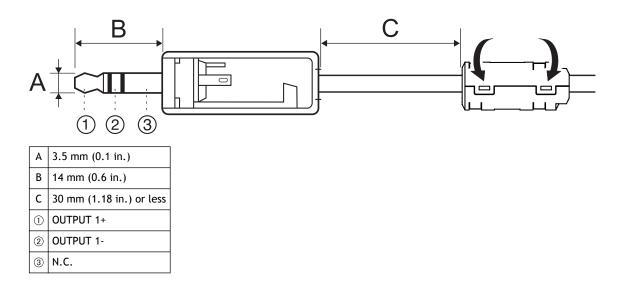> - Do not short-circuit the connector to ground.

# Expansion port A: Phone jack

**Port type**

Phone jack (3.5 mm [0.1 in.])*1

**No. of pins**

3



| A | 3.5 mm (0.1 in.) |
|---|---|
| B | 14 mm (0.6 in.) |
| C | 30 mm (1.18 in.) or less |
| ① | OUTPUT 1+ |
| ② | OUTPUT 1- |
| ③ | N.C. |

*1 Use only terminal ① and ②. Do not use terminal ③.
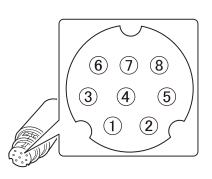
## Expansion port B: Mini-DIN

**Port type**

Mini-DIN

**No. of pins**

8
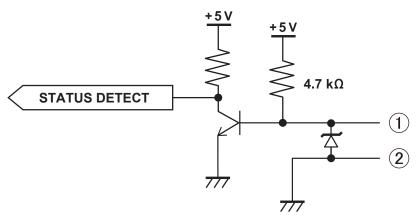


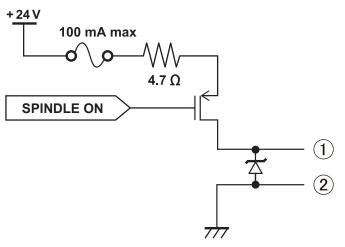| | |
|---|---|
| ① | INPUT 2- |
| ② | INPUT 2+ |
| ③ | INPUT 1- |
| ④ | INPUT 1+ |
| ⑤ | OUTPUT 2- |
| ⑥ | OUTPUT 2+ |
| ⑦ | OUTPUT 1- |
| ⑧ | OUTPUT 1+ |

# Internal circuit diagrams

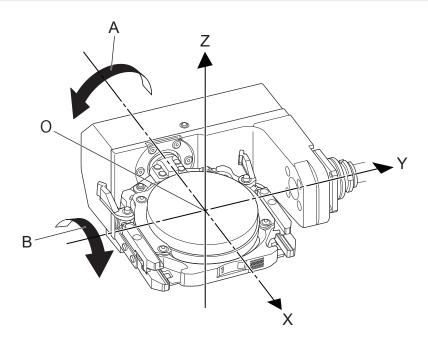The internal circuitry is the same for both expansion ports.

### Input



- ①: INPUT 1+ or INPUT 2+
- ②: INPUT 1- or INPUT 2-

### Output



- ①: OUTPUT 1+ or OUTPUT 2+
- ②: OUTPUT 1- or OUTPUT 2-

## Coordinates
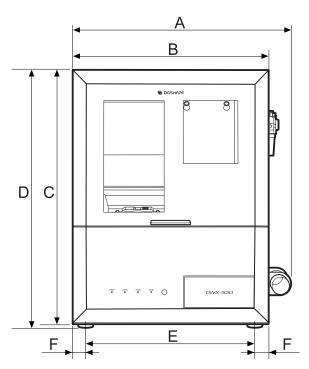


| A | A axis |
|---|--------|
| B | B axis |
| O | Origin |
| X | X direction |
| Y | Y direction |
| Z | Z direction |

## Dimensional Drawings
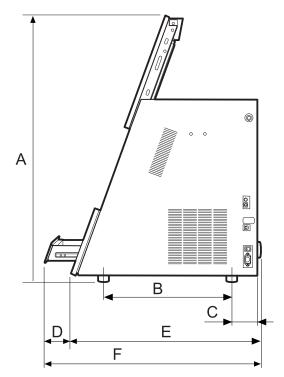
## External Dimensions

<u>Front</u>
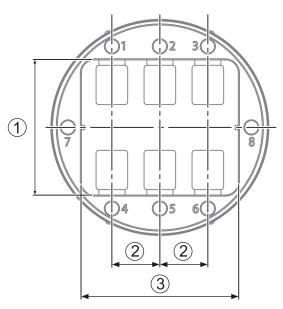


| A | 635 mm (25 in.) |
| B | 555 mm (21.85 in.) |
| C | 677 mm (26.65 in.) |
| D | 705 mm (27.76 in.) |
| E | 495 mm (19.49 in.) |
| F | 30 mm (1.18 in.) |

## Side
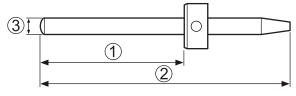


| | |
|---|---|
| A | 1,050 mm (41.34 in.) |
| B | 490 mm (19.29 in.) |
| C | 97 mm (3.82 in.) |
| D | 190 mm (7.48 in.) |
| E | 725 mm (28.54 in.) |
| F | 915 mm (36.02 in.) |

## Pin-type Workpiece Adapter Dimensions



| | |
|---|---|
| ① | 62 mm (2.44 in.) |
| ② | 22 mm (0.9 in.) |
| ③ | 72 mm (2.83 in.) |

## Detection Pin Dimensions



| | |
|---|---|
| ① | 33 mm (1.3 in.) |
| ② | 60 mm (2.4 in.) |
| ③ | ø4 mm (ø0.16 in.) |

# Specifications

| | DWX-53D |
|---|---|
| Millable material*1 | Zirconia, PMMA, PEEK, composite resin, wax, dental non-cast cobalt-chromium alloy (unsintered) (Zirconia, wax, PMMA, composite resin, PEEK, CoCr sintered metal, glass-fiber-reinforced resin, PEKK, polycarbonate) |
| Loadable workpiece shape | Disk-type (with step) workpiece — 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 workpiece — Pin diameter: 6 mm (0.24 in.) |
| Loadable workpiece weight | 850 g (1.87 lb.) or less |
| Number of loadable adapters | 1 |
| Operating speed | X, Y: 3,000 mm/min (118.11 in./min) max., Z: 2,700 mm/min (106.29 in./min) max. |
| Spindle motor | Brushless DC motor |
| Spindle rotating speed | 6,000 to 30,000 rpm |
| Rotary axis travel angle | A: ±360°, B: ±35° |
| Number of milling burs housed | 15 |
| Attachable milling bur | Shank diameter: 4 mm (0.16 in.), length: 40 to 55 mm (1.57 to 2.17 in.) |
| Compatible compressed air | 0.4 MPa |
| Interface | USB |
| Control command sets | RML-1, NC code |
| Power requirements | 100 to 240 VAC ± 10%, 50/60 Hz (overvoltage category: II, IEC 60664-1), 1.8 A |
| Power consumption | Approx. 170 W |
| Operating noise | During operation: 70 dB (A) or less (when not cutting) During standby: 48 dB (A) or less |
| External Dimensions | Width × depth × height: 555 × 725 × 705 mm (21.85 × 28.54 × 27.76 in.) |
| Weight | 105 kg (231.49 lb.) |
| Installation environment | Indoor use at altitudes up to 2,000 m Temperature: 5 to 40°C, humidity: 35 to 80 % (no condensation) Ambient pollution degree: 2 (as specified by IEC 60664-1) Short-term temporary overvoltage: 1,440 V, long-term temporary overvoltage: 490 V |
| Included items | Power cord, power plug adapter, USB cable, Safety Precautions, Quick Access Guide, detection pin, automatic correction jig, torque screwdriver, T-shaped hexagonal screwdriver, L-shaped hexagonal wrench, collet attaching/detaching jig, milling bur holder, milling bur positioner, regulator, adapter ID labels, standard adapter, open edge adapter, adapter rack, pin-type workpiece adapter, milling burs, etc. |

*1    Even when made from the described materials, some workpieces cannot be milled due to specifications or physical properties. For more information, contact your authorized Roland DG Corporation dealer.