



# Product Information Guide

## **DWX-52DC**



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# Market Overview

Roland DGA has been focused on the small to mid-sized laboratory since entering the dental field with our first dental mill. The DWX-52DC now also targets the large laboratory, while still providing an excellent material management option for small and mid-sized labs.

After materials like Zirconia and PMMA were introduced to CAD/CAM, newer versions have become available to the market with differences in shades, translucencies, and strength levels. The new wave of materials allows laboratories to better match the natural dental shade of a patient's tooth without additional technical steps. Unfortunately, most CAD/CAM mills on the market do not have the capability to manage milling a variety of materials on one machine without constant interaction from the user.

The DWX-52DC solves this with the addition of an automatic disc changer. Combining the ability to change multiple materials with additional housing units, plus Intelligent Tool Control, the DWX-52DC allows users to focus on other tasks, or even leave the lab, while the mill does the work for them.

## What You Need to Know

The DWX-52DC offers dental laboratories the opportunity to be more productive in their current milling environment. With the addition of an automatic disc changer and its ability to hold up to 6 adapters, laboratories now can enjoy the privilege of running jobs continuously and unattended, throughout the day, night or over the weekend. Now users have the opportunity to choose their setup:

- Working with multiple shades/translucencies of zirconia material
- Working with various types of materials (zirconia, composite resins, fiber reinforced resins, PMMA, etc.)

In addition to the multiple adapter system, the DWX-52DC has been approved to mill Chrome Cobalt sintered material. This opens the door for milling other soft metals – with proper approval – and gives laboratories the opportunity to mill metal copings, bridges & frameworks with this mill.

A brief summary of core features:

- Increased productivity with multiple adapter changer
- 5-axis simultaneous machining with fifteen housing units on the Automatic Tool Changer
- User-friendly functions adopted from previous DWX series models
- Manufacturing stipulated by the pharmaceutical law in Japan
- A cleaning tool to remove additional material waste

**The DWX-52DC is priced at \$34,995 USD MSRP**

# Key Features and Benefits

## New Disk Adapter

Material adapters are stored in the same place after all jobs are completed. If pin-based materials are desired, an additional pin clamp can be used along with the adapter for efficient milling. The chamber holds up to 6 adapters that can be interchanged between jobs automatically and enable the milling of several jobs simultaneously. Users also have the ability to remove any disk inside the adapter chamber while other jobs are in motion.

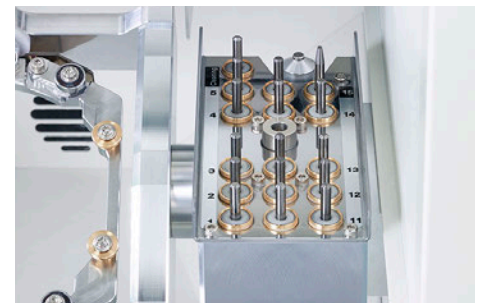


## Air Pressure Control

With previous DWX series mills, the air pressure would need to be manually adjusted for each material. Now the air pressure can be controlled by the material selected in the CAM software. Users need to have at least 0.2 MPa of air pressure to use the functionality. Currently there are only two CAM platforms with the ability to automatically control the air pressure (Millbox and Follow-Me!). Air compressors are not bundled with the mill and must be purchased as a separate accessory.

## More Housings on the Automatic Tool Changer (ATC)

The DWX-52DC now houses 15 burs and a cleaning tool. Intelligent Tool Controls, a Vpanel software update which allows the ability to swap out burs automatically when they reach their life span, and additional housing units all provide an opportunity to automatically manage burs for everyday use or interchange diamond and hybrid burs for special jobs.



## New Barcode Reader

Keeping up with the adapter and the jobs milled on the adapter is now easier than ever. The DWX-52DC provides a barcode on each adapter which allows the user to easily track the jobs on each disk based on their setup in the CAM software. In turn, removing milled units while the disk rests in the adapter will ensure no manual placement needs to be done when reinserting partially-used disks, allowing users to be more efficient when working to conserve material.

## New Cleaning Tool

Material waste can be a big deal when removing materials and cleaning out the remaining waste. The DWX-52DC comes with a 16<sup>th</sup> slot dedicated for the cleaning tool. It removes up to 98% of material waste from milled units and can be done automatically. It takes a little less than 1-minute to remove all the material waste around each unit, depending on the size of the restoration. This functionality is only available through two CAM platforms at the current time (Millbox and Follow-Me!).

## User Replaceable Spindle

With many other mills on the market, if a spindle needs repair, the mill either needs to go to a service depot or a service technician must come onsite to replace the spindle. The DWX-52DC offers a simplified spindle replacement, allowing for a remote service technician to guide the user through the spindle replacement, saving time for the user and the reseller, saving money and time over the long-term use of the mill.



### **Storage Drawer**

The DWX-52DC come with features to help aid the process of inserting material, adapters, burs, and performing basic maintenance. The storage drawer makes it easy for the user to keep track of all these items during or after milling.



## **Accessories**

### **Disk Material Adapter**

New O-Ring design fully secures disk material.

*Disc material specifications: Step section: 98.5mm with 10mm step*

*SKU: ZMA-52DC*

### **Pin-type Material Adapter**

Pin-type material (block) can also be used on the DWX-52DC. Each unit comes with one pin-type material adapter. Additional pin-type adapters can be purchased separately.

*Pin-type material specifications: 6mm pin/mandrel*

*SKU: ZV-52DC*

### **Cleaning Tool**

An additional slot in the ATC (slot 16) houses the cleaning tool. The tool will remove up to 98% of material waste from each restoration within a minute or less. By removing material from the restoration, technicians will spend less time prepping the restoration for sintering/crystallization or stain and glaze processing. One cleaning tool comes with each unit. Additional cleaning tools are sold separately.

*SKU: ZCT-4D*

### **Spindle Unit**

The DWX-52DC comes with a user replaceable spindle which allows for dealers to remotely guide the user through the replacement process. The warranty covers one spindle replacement within the first two years of use. Each spindle has a MTBF of 2,000 hours and will be listed as a service part (not available for user purchase in the Roland DGA online store).

*SKU: ZS-4D*

### **Collet**

The collet for the DWX-52DC is an additional service part. If the collet becomes bent or warped due to milling or collet tightening it can be replaced.

*SKU: ZC-4D*

### **Spindle Belt**

The collet for the DWX-52DC is an additional service part. If the collet becomes bent or warped due to milling or collet tightening it can be replaced.

*SKU: ZSB-170*

## Vacuum

A vacuum will be necessary for the removal of material waste from the DWX-52DC. Two vacuum hoses are sent with each unit to ensure proper fitting. Roland DGA offers optional BOFA vacuum units that work well with all Roland dental mills.

SKUs: BOFA-DPBASE / BOFA-DPBASE-BC / BOFA\_DUSTPRO

## Air Compressor

Compressed air is required to run the DWX-52DC. The compressor needs enough pressure to maintain at least 0.2 MPa of air flowing through the machine. Roland DGA sells a BOFA vacuum with a built-in air compressor (BOFA-DPBASE-BC) that works well with DWX series dry mills.

Air Pressure Specifications: 0.05 – 0.2 MPa

## Milling Burs

Carbide, diamond, and hybrid milling burs can be used on the DWX-52DC. Carbide burs are good for soft material like wax, while diamond is better for harder materials like zirconia. Hybrid tools are used for composite resin based materials. Up to fifteen milling burs can be housed in the DWX-52DC at one time and all slots can be used strategically based on Vpanel setup and CAM software.

Bur Specifications: Shank – 4mm diameter, Length – 40-55mm

Carbide Bur SKUs: ZCB-100D-US (2.0mm), ZCB-50D-US (1.0mm), ZCB-30D-US (0.6mm), ZCB-15D-US (0.3mm); Diamond Bur SKUs: ZDB-100D-US (2.0mm), ZDB-50D-US (1.0mm), ZDB-30D-US (0.6mm);

Hybrid Bur SKUs: ZDB-100D-HY (2.0mm), ZDB-50D-HY (1.0mm), ZDB-30D-HY (0.6mm)

## Materials

On previous Roland dry dental mills, a user could develop dental restorations in zirconia, wax, PMMA, composite resin, PEEK, and Gypsum based materials. In addition to those materials, the DWX-52DC also has the ability to mill soft metals like Chrome Cobalt and fiber reinforced resins successfully.

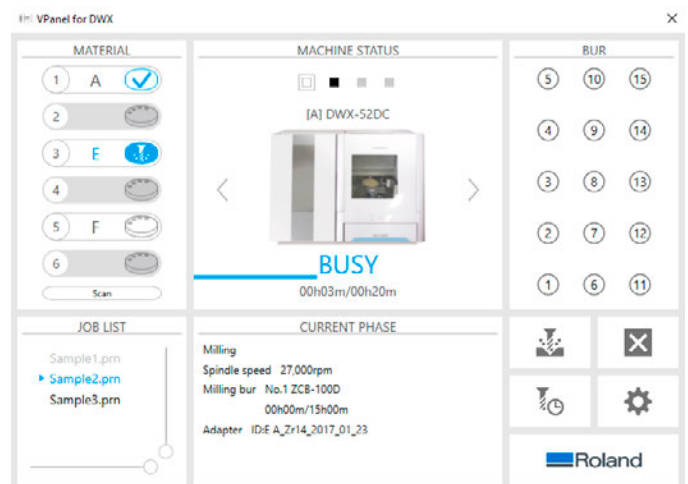
# Software

## Vpanel

Vpanel allows the user to manage bur and spindle life, set Intelligent Tool Control parameters, perform various maintenance procedures, clean the machine, troubleshoot errors and machining issues, and more. All maintenance steps can be easily followed with a pop-up diagram/dialogue box and step-by-step instruction. Vpanel comes bundled with the purchase of each DWX-52DC and updates are free and available for download on the Roland DGA website.

## CAM Software

The DWX-52DC is an open system/architecture based CAD/CAM milling machine. There are currently two CAM platforms with the ability to take advantage of all DWX-52DC functions – Millbox (CIMsystem) and Follow-Me! (hyperdent). Other CAM software applications may work, but features like air pressure control and the cleaning tool are not included.







## Applications

The DWX-52DC takes productivity to a new level yet still employs the ability of previous DWX-Series Mills in developing restorative options. Here's a list of how all the machines stack up.

	DWX-4W	DWX-51D	DWX-52DC	DWX-4	DWP-80S
Crown	XX	XX	XX	XX	
Bridge	XX	XX	XX	XX	
Inlay/Onlay	XX	XX	XX	XX	
Veneer	XX	XX	XX	XX	
Abutment		XX	XX		
Bar		XX	XX	XX	
Model		X	X		
Bite Splint		X	X		
Surgical Guide		X	X		
Perfactory Framework					X
Custom Tray					X
Base Plate					X

## Competitive Snapshot

The addition of the adapter changer places the DWX-52DC against high-end mills from our competitors.

Made	Japan	Germany	Germany	Germany
Manufacturer	<b>Roland DG</b>	<b>vhf</b>	<b>imes-icore</b>	<b>Wieland</b>
				
Model	<b>DWX-52DC</b>	<b>CAM5-S2</b>	<b>CORiTEC 350i</b>	<b>Zenotec select</b>
Target MSRP				
<b>USD</b>	<b>34,000 USD</b>	Very little presence in the US	<b>48,000 USD</b>	Sold only as a package in the US
<b>EUR</b>	<b>30,000 EUR</b>	<b>42,500 EUR (w/CAM)</b>	<b>49,950 EUR (w/CAM)</b>	<b>36,500 EUR</b>
No. of milling axes				
	5 axes	5 axes	5 axes	5 axes
No. of adapters stored				
	6 adapters	8 adapters	12 adapters	8 adapters
No. of burs housed				
	15 burs	16 burs	10 burs	16 burs

Overall the DWX-52DC rates higher than our competition with purchase price as our main advantage. Additional competitive advantages include the design, usability, maintenance features, and reliability.

The following ratings (1 to 5, with 5 being best) show an overall comparison:

Manufacturer	Roland DG	VHF	Weiland	Imes-Icore
CAD/CAM Mill	DWX-52DC	CAM5-S2	Zenotec Select	CORiTEC 350i
Adapters	3	2	2	5
Bur Housings	4	5	5	3
Productivity	3	3	3	5
Material Versatility	2	3	3	5
Rigidity	2	3	3	5
Design	5	3	5	4
Usability	5	3	3	3
Maintenance	5	3	3	3
Reliability	5	3	4	4
Machine Size	4	4	4	2
Price	5	4	4	2
<b>Overall Rating</b>	<b>43</b>	<b>36</b>	<b>39</b>	<b>41</b>

## Service and Support

### Two-Year Trouble-Free Warranty\*



Roland is offering a Two-Year Trouble-Free Warranty when the product is registered within 60 days of delivery. Owners may extend this peace-of-mind for up to five years with an optional service contract.

*\* Requires product registration, only valid in US, Canada and Latin America regions*

# Specifications

Cutable Material	Zirconia, Wax, PMMA, Composite resin, PEEK, Gypsum, Fiber reinforced resin, Chrome Cobalt sintered metal	
Loadable workpiece shape	Step Section	98.5 mm (diameter), height 10mm
	Body Section	95 mm (diameter), height max 35mm
	Pin Diameter	6 mm
Loadable workpiece weight	Up to 850 g	
Number of adapters housed	6	
Operating speed	XYZ axis	6 to 1,800 mm/min. (0.24 to 70.9 in./min.)
Spindle motor	Brushless DC Motor	
Spindle speed	6,000 to 30,000 rpm	
Rotary axis travel angle	A	±360°
	B	±30°
Number of burs housed	15	
Attachable bur	Shank 4 mm (diameter), 40-55 mm (length)	
Compatible compressed air	0.2 MPa	
Interface	USB	
Control command set	RML-1, NC code	
Power requirements	AC 100 V to 240 V ±10%, 50/60 Hz, 2.0 A (overvoltage category II, IEC60664-1)	
Power consumption	Approximately 200 W	
Operating noise	During Operation	70 dB(A) or less (when not cutting)
	During Standby	45 dB(A) or less
External dimensions	Width	880 mm (34.6 in)
	Depth	660 mm (26.0 in)
	Height	600 mm (23.6 in)
Weight	105 kg (231.5 lbs.)	
Installation environment	Altitude	Up to 2,000m (6,562 ft.)
	Temperature	5 to 40°C (41 to 104 °F)
	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, manuals, Roland DG software package CD, detection pin, automatic correction jig, pin-type material adapter, hexagonal driver, spanner, milling bur holders, milling bur positioner, dust collection hoses, dust collection hose adapter, regulator, cleaning tool, option adapter labels, material adapters	
Operating system	Windows® 7/8/8.1/10 (32 or 64 bit)	
USB cable	Use the included USB cable	