

# MODELA MDX-50



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# 24/7 DIGITAL FABRICATION

## AUTOMATED MODEL MAKING FOR INDUSTRY AND EDUCATION

Milling is an ideal stand-alone modelling solution and an effective complementary technology to 3D printing. Being able to mill a wide range of materials reduces the cost of model making and allows users to carry out functional testing with material properties similar to the final product. Milling will also achieve a smooth surface finish to minimise post-processing.

Since launching our first model in 1986, Roland DG has been a pioneer of desktop milling technology; a trusted provider for those involved in industrial design, offering user-friendly, safe and affordable technology.

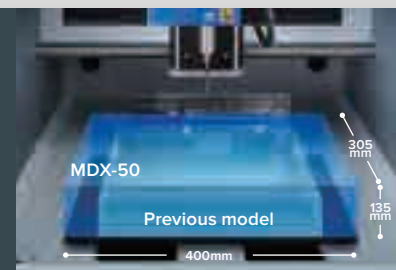
The MDX-50 digital mill delivers a new level of value in terms of automated productivity and intuitive operation.



## QUALITY AND VERSATILITY

### Exceptional quality for a superb finish on a wide range of materials

The MDX-50 mills an impressive variety of materials to produce models, vacuum forming moulds, jigs, parts, prototypes and more with smooth surface detail. Create prototypes out of materials similar to the end product to test structural and functional operations, and assembly with other parts. With a machining area of 400 (X) x 305 (Y) x 135 (Z) mm, the MDX-50 can produce large single objects or batch produce smaller multiple parts, making it ideal for a host of applications.



## AUTOMATED PRODUCTION

### Unattended operation for efficient workflow

The MDX-50 features an ATC (Automatic Tool Changer) as standard, to allow unattended operation day and night. The auto-sensing function corrects the tool length to ensure milling accuracy for every job. The optional rotary axis rotates materials automatically from 0 to 360 degrees continuously or indexes for 2-sided, 4-sided and custom angles to enable the easy and efficient production of pieces with complex surfaces. Thanks to the ATC and rotary axis units, once milling begins users can leave the device to run unattended with confidence, enabling them to get on with other jobs.



## INTUITIVE SOFTWARE

**User-friendly bundled CAM software delivers exceptional results**

Popular in Industry and Education, the intuitive “SRP Player” CAM software has been updated to match the advanced functions of the MDX-50. Milling settings can be configured in five simple steps, making operation straightforward even for those new to milling.



VPanel on PC

## EASY OPERATION

**Simple control from the MDX-50's built-in panel**

The integrated control panel on the MDX-50 makes setting up milling jobs a breeze. Adjust spindle and milling speed on the fly and receive instant updates on job status. The on-screen “VPanel” function aids production by monitoring tool life and notifying users via email when a job is completed or intervention is required.



## SAFE-TO-USE

**Outstanding safety and clean working environment**

The MDX-50 has been designed for safe and trouble-free operation, making it ideal for use in studio and educational environments. The cover ensures safe operation and waste is contained in the integrated dust tray to create a cleaner, more comfortable working environment. Current job status can be monitored from a distance with the colour-coded LED status lights and the illuminated work area makes mounting materials easier and safer.



# MODEL A MDX-50

Specifications		
Cuttable material	Resins such as chemical wood and modelling wax (metal not supported)	
Operating range	400 (X) × 305 (Y) × 135 (Z) mm (15.8 (X) × 12.0 (Y) × 5.3 (Z) in.)	
Loadable workpiece size	400 (X) × 305 (Y) × 100 (Z) mm (15.8 (X) × 12.0 (Y) × 3.9 (Z) in.)	
XYZ-axis drive system	Stepping motor	
Operating speed (feed rate)	XY-axis	7 to 3600 mm/min (0.3 to 141.7 in./min)
	Z axis	7 to 3000 mm/min (0.3 to 118.1 in./min)
Software resolution		0.001 mm/step (0.039 mil/step: RML-1)
		0.001 mm/step (0.039 mil/step: NC code)
Mechanical resolution	0.01 mm/step (0.39 mil/step: half step)	
Spindle motor	Brushless DC motor	
Spindle rotation	4500 to 15000 rpm	
Number of tools housed	6 (However, one of the tools is also used as the detection pin.)	
Attachable tool	"mm" specifications	Shank diameter: 6 mm, tip diameter: 6 mm or less, length: 30 to 90 mm Tools with shank diameters of 3 mm or 4 mm can be used by installing them in the included tool holder.
	"inch" specifications	Shank diameter: 6.35 mm (0.25 in.), tip diameter: 6.35 mm (0.25 in.) or less, length: 30 to 90 mm (1.18 to 3.54 in.) Tools with shank diameters of 3.175 mm (0.125 in.) can be used by installing them in the included tool holder.
Interface	USB	
Control command sets	RML-1, NC code	
Power requirements	AC 100 to 240 V ±10%, 50/60 Hz (overvoltage category: II, IEC 60664-1), 1.2 A	
Power consumption	Approx. 95 W	
Operating noise	During operation	60 dB (A) or less (when not cutting)
	During standby	45 dB (A) or less
External dimensions	760 (W) × 900 (D) × 732 (H) mm (29.92 (W) × 35.43 (D) × 28.82 (H))	
Weight	122 kg (269 lb.)	
Installation environment	Indoor use at altitudes	Up to 2000 m
	Temperature	5 to 40°C (41 to 104°F)
	Humidity	35 to 80%RH (no condensation)
	Ambient pollution degree	2 (as specified by IEC 60664-1)
	Short-term temporary overvoltage	1440 V
	Long-term temporary overvoltage	490 V
Included items	Power cable, USB cable, manual, Roland DG Software Package CD, detection pin, hexagonal screwdriver, hexagonal wrench, wrench, tool holders (6x 6mm, 1x 4mm, 1x 3mm), tool positioner, Z0 sensor.	

System Requirements for Included Software	
OS	Windows 10, 8.1, 7 (32- or 64-bit version)*1,*2,*3
CPU	Minimum required CPU for the operating system
Memory	Minimum amount of required RAM for the operating system
Optical drive	CD-ROM drive
Video card and monitor	A display with at least 16-bit colour and a resolution of 1024 × 768 or more is recommended (a video card that supports Open GL is recommended).

(\*1) 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.

(\*2) Internet Explorer 8.0 or later is required.

(\*3) Operations have not been verified in virtual Windows environments such as Hyper-V and Virtual PC.

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Accessories	
Rotary Axis Unit (ZCL-50)	
Cuttable material	Resins such as chemical wood and modelling wax (metal not supported)
Operating range	363 (X) × 305 (Y) × 125 (Z) mm (14.29 (X) × 12.01 (Y) × 4.92 (Z) in.) A: ±2146680° (approximately ±5963 rotations)
Loadable workpiece size	Items within the range of a 60 mm (2.36 in.) radius from the centre of rotation by a length of 380 mm (14.96 in.)
Workpieces that can be secured by the rotary centre vice	Thickness: 10 to 65 mm (0.39 to 2.56 in.) or diameter of 20 to 68 mm (0.79 to 2.68 in.)
Operating speed	A: Maximum 15 rpm
Mechanical resolution	0.0225°/step (half step)
External dimensions	578 (W) × 190 (D) × 128 (H)mm (22.76 (W) × 7.48 (D) × 5.04 (H) in.)
Weight	7 kg (15.43 lb.)
Included items	Detection bar, cap screws, user's manual.

Consumables		
Item	Model	Description
Square end-mills	ZHS-100	High speed steel dia. 1.3 (I) × 6 (d) × 50 (L) × 2NT
	ZHS-200	High speed steel dia. 2.6 (I) × 6 (d) × 50 (L) × 2NT
	ZHS-300	High speed steel dia. 3.10 (I) × 6 (d) × 50 (L) × 2NT
	ZHS-400	High speed steel dia. 4.12 (I) × 6 (d) × 50 (L) × 2NT
	ZHS-500	High speed steel dia. 5.15 (I) × 6 (d) × 55 (L) × 2NT
	ZHS-600	High speed steel dia. 6.15 (I) × 6 (d) × 55 (L) × 2NT
	ZHS-3015	High speed steel dia. 3.15 (I) × 6 (d) × 50 (L) × 2NT, including 2 pcs.
Ball end-mills	ZCB-150	Cemented Carbide R1.5 25 (I) × 2.4 (Lc) × 65 (L) × 6 (d) × 2NT
	ZCB-200	Cemented Carbide R2 25 (I) × 3.2 (Lc) × 70 (L) × 6 (d) × 2NT
	ZCB-300	Cemented Carbide R3 30 (I) × 4.8 (Lc) × 80 (L) × 6 (d) × 2NT

\* Unit: mm, dia. = flute diameter, R = flute radius, Lc = cutting length, I = flute length, d = shank diameter, L = overall length, NT = number of flutes.

Item	Model	Description
Modelling wax	ZW-200	10 pcs
Chemical wood	ZSM-SX	5 pcs
Double-side adhesive sheet	AS-10	10 sheets

Item	Model	Description
Spindle unit	ZS-50-6	Incl. dia. 6mm collet and spindle belt
	ZS-50-1/4	Incl. dia. 1/4inch (6.35mm) collet and spindle belt
Collet	ZC-50-6	dia. 6mm
	ZC-50-1/4	dia. 1/4inch (6.35mm)
Tool holders	ZH-6	Tool shank for dia. 6mm, for ZS-50-6 and ZC-50-6
	ZH-4	Tool shank for dia. 4mm, for ZS-50-6 and ZC-50-6
	ZH-3	Tool shank for dia. 3mm, for ZS-50-6 and ZC-50-6
	ZH-1/4	Tool shank for dia. 1/4inch (6.35mm), for ZS-50-1/4 and ZC-50-1/4
	ZH-1/8	Tool shank for dia. 1/8inch (3.175mm), for ZS-50-1/4 and ZC-50-1/4