

MDX-540 | 4 Axis Desktop CNC | CNC Mill | Rapid Prototype Machines

MDX-540 Milling Machine Specifications

MODEL	MDX-540	MDX-540S
Usable Materials	Plastic, resin, wood and non-ferrous metals	
XYZ-Axis Travel	19.6(X) x 15.7(Y) x 6.1"(Z)[500 (X) x 400 (Y) x 155 mm (Z)]	
Loadable workpiece size with optional rotary axis (ZCL-540) *	7.0" Diameter x 14.6" Length [177.8mm Diameter x 370.8mm Length] Actual milling area is smaller	
Distance From Spindle Nose to Table	Maximum 10" (254mm)	
Table Size	21.7(W) x 16.5"(D) [550(W) x 420mm (D)]	
Loadable workpiece weight	At acceleration of 0.2G: maximum 26lb (12kg), 0.1G: 44lb (20kg), 0.05G: 44lb (20kg)	
XYZ-axis drive system	AC servo motor, 60W	AC servo motor, 80W
Operating speed	Maximum 295ipm (7.5m/min)	
Acceleration	0.2G, 0.1G, 0.05G	
Software resolution	RML-1 mode: 0.0004"(0.01mm), NC-code mode: 0.00004" (0.001mm)	
Mechanical resolution	0.00004" (0.001mm)	
Positioning accuracy	+/-0.004"/12"(+/-0.1mm/300mm), under no-load conditions	
Repeat accuracy	+/-0.0019"(+/-0.05mm), under no-load conditions	+/-0.0008"(+/-0.02mm), under no-load conditions
Origin reproducibility (when the power is switched on/off)	+/-0.0019" (+/-0.05mm)	+/-0.0008" (+/-0.02m)
Spindle motor	DC brushless motor, maximum 400W	

Spindle speed	400 to 12,000 rpm; 400 to 3,000 rpm for positioning and centering	
Tool chuck	Collet method, maximum tool diameter: 0.4" (10mm)	
Control command sets	RML-1 and NC codes	
Interface	USB (compliant with Universal Serial Bus Specification Revision 1.1)	
Power supply	Voltage and frequency: AC 100 to 120 V/220 to 240 V +/-10%, 50/60 Hz Required power capacity: 7A (100 to 120V)/4A (220 to 240V)	
Power consumption	Approx. 700W	
Acoustic noise level	During operation (no cutting): 65dB (A) or less, during standby: 40dB (A) or less (according to ISO 7779)	
Dimensions	Width x depth x height: 29.3 x 37.6 x 33.8Z" (745 x 955 x 858mm)	Width x depth x height: 30.1 x 37.6 x 33.8Z" (765 x 955 x 858mm)
Weight	225lb (102kg)	
Operating temperature	41 to 104F (5 to 40C)	
Operating humidity	35 to 80% (no condensation)	
Included items	Handy panel, power cord, tool sensor, sensor cable, nut, nut wrench, wrench, hexagonal wrenches, Roland Software CD-ROM, SRP Player CD-ROM, User's Manual, Roland Software Guide, SRP Player Installation and Setup Guide, and NC Code Reference Manual	

MODEL	MDX-540A	MDX-540SA
Usable Materials	Plastic, resin, wood and non-ferrous metals	
XYZ-Axis Travel	15.7(X) x 15.7(Y) x 6.1"(Z)[400 (X) x 400 (Y) x 155 mm (Z)]	
Loadable workpiece size with optional rotary axis (ZCL-540) *	7.0" Diameter x 14.6" Length [177.8mm Diameter x 370.8mm Length] Actual milling area is smaller	
Distance From Spindle Nose to Table	Maximum 10" (254mm)	
Table Size	21.7(W) x 16.5"(D) [550(W) x 420mm (D)]	

Loadable workpiece weight	At acceleration of 0.2G: maximum 26lb (12kg), 0.1G: 44lb (20kg), 0.05G: 44lb (20kg)	
XYZ-axis drive system	AC servo motor, 60W	AC servo motor, 80W
Operating speed	Maximum 295ipm (7.5m/min)	
Acceleration	0.2G, 0.1G, 0.05G	
Software resolution	RML-1 mode: 0.0004"(0.01mm), NC-code mode: 0.00004" (0.001mm)	
Mechanical resolution	0.00004" (0.001mm)	
Positioning accuracy	+/-0.004"/12"(+/-0.1mm/300mm), under no-load conditions	
Repeat accuracy	+/-0.0019"(+/-0.05mm), under no-load conditions	+/-0.0008"(+/-0.02mm), under no-load conditions
Origin reproducibility (when the power is switched on/off)	+/-0.0019" (+/-0.05mm)	+/-0.0008" (+/-0.02m)
Spindle motor	DC brushless motor, maximum 400W	
Spindle speed	400 to 12,000 rpm; 400 to 3,000 rpm for positioning and centering	
Tool chuck	Tool holder format, Taper shank: JBS4002 15T	
Control command sets	RML-1 and NC codes	
Interface	USB (compliant with Universal Serial Bus Specification Revision 1.1)	
Power supply	Voltage and frequency: AC 100 to 120 V/220 to 240 V +/-10%, 50/60 Hz Required power capacity: 7A (100 to 120V)/4A (220 to 240V)	
Power consumption	Approx. 700W	
Acoustic noise level	During operation (no cutting): 65dB (A) or less, during standby: 40dB (A) or less (according to ISO 7779)	
Dimensions	Width x depth x height: 29.3 x 37.6 x 33.8" (745 x 955 x 858mm)	Width x depth x height: 30.1 x 37.6 x 33.8" (765 x 955 x 858mm)
Weight	249lb (109kg)	
Operating temperature	41 to 104F (5 to 40C)	

Operating humidity	35 to 80% (no condensation)
Included items	Handy panel, power cord, tool sensor, sensor cable, nut, nut wrench, wrench, hexagonal wrenches, Roland Software CD-ROM, SRP Player CD-ROM, User's Manual, Roland Software Guide, SRP Player Installation and Setup Guide, NC Code Reference Manual, and Automatic Tool Changer (Refer to the ZAT-540 specs below.)

Automatic Tool Changer (ZAT-540)

Number of tools housed	4
Maximum tool length	4.3" (110mm)
Maximum tool diameter	0.4" (10mm)
Maximum tool weight	0.77lb (350g)
Tool-holder format	Taper shank: JBS4002 15T
Tool-selection method	Direct-changing type, fixed-address specification
Compatible compressed air	102 to 145 psi, 1.8CFM (0.7 to 1.0 MPa, 50 L/min or higher)
Spindle speed	400 to 12,000 rpm; 400 to 3,000 rpm for positioning and centering
Weight	15lb (6.8kg) (total weight including spindle, magazine, control box, etc.)
Included items	Control box, magazine unit, ATC spindle, air cylinder, base plate, Z-origin sensor, spacer, cap screws, hexagonal wrenches, retaining bands, cable retainers, and user's manual

* When the T-slot table is installed, length is 297 mm (11.7 in.).

When the ZCL-540 is installed, the X-axis travels of the MDX-540 are as follows.

- Standard table, no ATC unit: 285 mm (11.2 in.)/325 mm (12.7 in.) (with expanded X-axis travel)
- Standard table, ATC unit present: 270 mm (10.6 in.)/325 mm (12.7 in.) (with expanded X-axis travel)
- T-slot table, no ATC unit: 218 mm (8.5 in.)/258 mm (10.1 in.) (with expanded X-axis travel)
- T-slot table, ATC unit present: 203 mm (7.9 in.)/258 mm (10.1 in.) (with expanded X-axis travel)

