Imagine.
Roland®

DVE
Digital Value Engineering

3D Milling Machine
MODELA Series

MDX-40A

Setting a New Standard for Desktop Rapid Prototyping

CAM Software Included

SRP Player

Photo: MDX-40A and optionally available ZCL-40A rotary axis unit

Remote control prototype

Prototype of an MP3 Player cover

Automotive gearshift prototype assembled with parts milled on the MDX-40A

The Roland MDX-40A 3D milling machine is an affordable, easy-to-use prototyping solution that supports a wide range of materials including resin. A new optional rotary axis unit is available, supporting larger materials.

Compact and Affordable, the MDX-40A is the Perfect Tool for Desktop Prototyping

Much smaller than NC machines, the MDX-40A features a compact footprint of 669mm(W) x 760mm(D) x 554mm(H) (26.4"x 30" x 21.9") and operates on standard household power supplies. With the MDX-40A, you can produce high-quality product prototypes right at your desktop. Support for G-code NC programming language makes the MDX-40A well suited for both professional and educational applications.

No Special Training Required

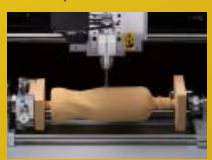
Roland SRP Player CAM software is included and features simple step-by-step settings for easy operation and high quality milling. With SRP Player, you can preview your job on-screen to confirm the cutting path for superior results every time. In addition, every MDX-40A includes ClickMILL™ software, allowing you to easily complete surfacing work. You can round edges, add pockets and holes, make fixtures and add last minute modifications, all without your CAD software.

SRP Player

ClickMILL

New Rotary Axis Unit for Larger Applications

In addition to a flat work table, the MDX-40A features a new optional rotary axis unit that supports materials up to 270mm (10.63") long by 120mm (4.72") in diameter, four times the capacity of the previous model. You can now mill a 500ml (16.9oz.) PET bottle. Objects can be milled unattended at any angle from 0 to 360 degrees.



Enhancements for Maximum Ease-of-Use

Designed for greater ease-of-use, the MDX-40A supports a new on-screen operation panel that allows you to adjust the location of the endmill and quickly program settings. Using this panel, you can move the cursor in vertical, horizontal and oblique directions and to the desired position for the most efficient tool path. You can also adjust the speed of cursor movements for easier origin setting. The MDX-40A saves time and material by allowing you to adjust milling conditions such as spindle rotation and speed while the unit operates (override function).

Specifications

Acceptable material	Resins such as chemical wood and modeling wax (metal not supported)
X, Y, and Z operation strokes	305 (X) x 305 (Y) x 105 (Z) mm (12 (X) x 12 (Y) x 4.13 (Z) in.)
Distance from collet tip to table	Maximum 123 mm (4.84 in.)
Table size	305 (W) x 305 (D) mm (12 (W) x 12 (D) in.)
Loadable workpiece weight	4 kg (8.8 lb)
XYZ-axis drive system	Stepping motor
Feed rate	XY-axis: 7 to 3,000 mm/min. (0.28 to 118 in./m) Z-axis: 7 to 1,800 mm/min. (0.28 to 70.8 in./m) *2 mm/min step for 7 to 60 mm/min(0.28 to 2.36in./m) *60 mm/min step for 60 to 3,000 mm/min(2.36 to 118in./m)
Software resolution	NC-code: 0.001mm/step (0.000039 in./step), RML-1: 0.01 mm/step (0.00039 in./step)(RML-1)
Mechanical resolution	0.002 mm/step (0.000078 in./step) (micro-step control)
Spindle motor	Brushless DC motor, Maximum 100 W
Spindle rotation	4,500 to 15,000 rpm
Tool chuck	Collet method
Interface	USB*1 (compliant with Universal Serial Bus Specification Revision 1.1)
Control command sets	NC-code, RML-1
Power requirements	AC100 to 240 ±10%, 2.1 A, 50/60 Hz (Overvoltage category II, IEC 60664-1)
Power consumption	Approx. 210 W
Acoustic noise level	No-load operation: 56 dB (A) or less, Standby: 42 dB (A) or less
Dimensions	669 (W) x 760 (D) x 554 (H) mm [26.4 (W) x 30 (D) x 21.9 (H) in.]
Weight	65 kg (144 lb)
Environment	Temperature: 5 to 40 °C (41 to 104 °F), Humidity: 35 to 80% (no condensation)
Nonconductive pollution degree	2 (as specified by IEC 60664-1)
Included items	Power cord, USB cable, collet (ZC-23-6), Z0 sensor, hexagonal wrench, hexagonal screw drivers, spanners, Roland Software Package CD-ROM, SRP Player CD-ROM, user's manual, SRP Player installation and setup guide

*1 System requirements for USB connection must be the model preinstalled with Windows Vista(32-bit) or Windows XP(32-bit), or upgraded computer originally preinstalled with Windows XP(32-bit). Use the included USB cable.

System Requirements for Inlcuded Software

OS	Windows Vista®(32-bit) or Windows® XP(32-bit)*2 and Internet Explorer 6.0 or later
CPU	Pentium® 4, 2.4GHz or faster recommended
RAM	1GB or more recommended (2GB or more recommended for Windows Vista®)
Video card and monitor	A resolution of 1024 x 768 or more recommended (video card compatible with OpenGL recommended) and at least 16-bit highcolor
Free hard-disk space	72MB or more recommended
Optical drive	CD-ROM drive

*2 It does not support Windows Vista(64-bit) or Windows XP(64-bit).

Optional Rotary Axis Unit (ZCL-40A)

Maximum angle of rotation	±99999.999 degrees
X,Y, and Z operation strokes	271 (X) x 305 (Y) x 68 (Z) mm (10.67 (X) x 12.01 (Y) x 2.68 (Z) in.)
Maximum loadable workpiece size	Items within the range of a 60 mm(2.36 in.) radius from the center of the rotary axis by 270 mm(10.7 in.)long.*3
Maximum size holdable by workpiece clamp	Thickness: 10 to 45 mm (0.39 to 1.77 in.) Diameter: 20 to 50 mm (0.79 to 1.97 in.)
Loadable workpiece weight	1kg (2.2 lb) (including clamps)
Feed rate	Maximum 11.79 rpm
Software resolution	0.001 degrees
Mechanical resolution	0.005625 degrees/step (micro-step cotrol)
Dimensions	470 (W) x 286 (D) x 115 (H) mm (18.5 (W) x 11.3 (D) x 4.53 (H) in.)
Weight	7.5 kg (16.5 lb)
Included items	Detection bar, detection pin, center drill, live center, cap screws, rubber cap, and user's manual

*3 The range that can actually be cut is limited by the amount of tool extention and interference between the loaded workpiece and the tool or spindle.

Optional 3D Scanning Sensor Unit (ZSC-1)

Maximum scanning area		305 (X) x 305 (Y) x 60 (Z) mm (12 (X) x 12 (Y) x 2.36 (Z) in.)
Distance from probe tip to table		Maximum 92.4 mm (3.64 in.)
Table load capacity		Maximum 4 kg (8.8 lb)
Sensor	Type	Roland Active Piezo Sensor (RAPS)
	Effective probe length	60 mm (2.36 in.)
	Tip bulb radius	0.08 mm (0.00315 in.)
Scanning method		Contacting, mesh-point height-sensing

Optionally Available Items

Item	Model	Description
Square end-mills	ZHS-100	High speed steel dia 1 3(l) x 6(d) x 50(L) x 2NT
	ZHS-200	High speed steel dia 2 6(l) x 6(d) x 50(L) x 2NT
	ZHS-300	High speed steel dia 3 10(l) x 6(d) x 50(L) x 2NT
	ZHS-400	High speed steel dia 4 12(l) x 6(d) x 50(L) x 2NT
	ZHS-500	High speed steel dia 5 15(l) x 6(d) x 55(L) x 2NT
	ZHS-600	High speed steel dia 6 15(l) x 6(d) x 55(L) x 2NT
	ZHS-3015	High speed steel dia 3 15(l) x 6(d) x 50(L) x 2NT, including 2 pcs.
Ball end-mills	ZCB-150	Cemented carbide R1.5 25(l) x 2.4(Lc) x 6(d) x 65(L) x 2NT
	ZCB-200	Cemented carbide R2.0 25(l) x 3.2(Lc) x 6(d) x 70(L) x 2NT
	ZCB-300	Cemented carbide R3.0 30(l) x 4.8(Lc) x 6(d) x 80(L) x 2NT
Collets (for end-mills)	ZC-23	dia 3 mm, dia 4 mm, dia 5 mm, dia 6 mm, including 1 pc. each
	ZC-23-3	dia 3 mm
	ZC-23-4	dia 4 mm
	ZC-23-6	dia 6 mm
	ZC-23-3175	dia 3.175 mm
	ZC-23-6.35	dia 6.35 mm

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

Item	Model	Description
Engraving cutters (for plastic)	ZEC-A4013	Cemented carbide dia 4.36 x 165(L) x 0.127(W)*4
	ZEC-A4025	Cemented carbide dia 4.36 x 165(L) x 0.254(W)*4
	ZEC-A4051	Cemented carbide dia 4.36 x 165(L) x 0.508(W)*4
	ZEC-A4076	Cemented carbide dia 4.36 x 165(L) x 0.762(W)*4
	ZEC-100	Cemented carbide dia 6 x 50(L) x 0.225(W)*5
Engraving cutters, quarter round (for plastic)	ZEC-A4013-QR	Cemented carbide dia 4.36 x 165(L) x 0.13(W)*4
	ZEC-A4025-QR	Cemented carbide dia 4.36 x 165(L) x 0.25(W)*4
Engraving cutters, parallel (for plastic)	ZEC-A4150	Cemented carbide dia 4.36 x 165(L) x 1.52(W)*4
	ZEC-A4190	Cemented carbide dia 4.36 x 165(L) x 1.91(W)*4
	ZEC-A4230	Cemented carbide dia 4.36 x 165(L) x 2.29(W)*4
	ZEC-A4320	Cemented carbide dia 4.36 x 165(L) x 3.175(W)*4
	ZEC-A4380	Cemented carbide dia 4.36 x 165(L) x 3.81(W)*4
	ZEC-A4430	Cemented carbide dia 4.36 x 165(L) x 4.34(W)*4
Solid collet	ZC-E436	dia 4.36 mm
Adhesive sheet for securing material	AS-10	210 mm x 140 mm, including 10 sheets

*4 Solid collet(ZC-E436) is required.
*5 Collet(ZC-23-6) is required.

dia = shank diameter, L = overall length, W = blade width

Item	Model	Description
Rotary axis unit	ZCL-40A	See the above specifications
3D Scanning sensor unit	ZSC-1	See the above specifications
Replacement spindle unit	ZS-40	
Dust box	ZDX-40	669 (W) x 769 (D) x 97 (H) mm [26.33(W) x 30.27(D) x 3.8(H) in.]

Roland DG products that feature this environmental label meet the company's criteria for environmental consciousness, a set of standards based on ISO 14021 self-declaration type II. For more information, please visit www.rolanddg.com.

ECO

ISO 14001:2004 and ISO 9001:2000 Certified

Roland pursues both environmental protection and continuous quality improvement. Under the philosophy of preserving the environment and human health, Roland is actively working to abolish organic solvents in production, to reduce and recycle waste, to reduce power use, and to purchase recycled products. Roland constantly strives to provide the most highly reliable products available.

JMA REGISTRATION CENTER QMS,EMS JMAQA-270 JMAQA-E089

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