Setting a New Standard for Desktop Rapid Prototyping

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.

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.

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.

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: Resin such as chemical wood and modelling wax (metal is not supported).
X, Y, and Z operation strokes: 305 (X) x 305 (Y) x 102 (Z) mm (12 (X) x 12 (Y) x 4 (Z) in.)
Table size: 305 (W) x 305 (D) x 12 (H) mm (12 (W) x 12 (D) x 0.5 (H) in.)
Loadable workpiece weight: 4 kg (8.8 lb)
XYZ-axis drive system: Stepping motor
Feed rate:
- X-axis: 7 to 3,000 mm/min (0.28 to 118 in/min)
- Y-axis: 7 to 1,800 mm/min (0.28 to 70.8 in/min)
- Z-axis: 7 to 600 mm/min (0.28 to 23.6 in/min)
Software resolution:
- NC-code: 0.001 mm/divider (0.00005 in/divider)
- RML: 0.001 mm/divider (0.00005 in/divider)
Mechanical resolution:
- 0.002 mm/divider (0.00008 in/divider)
Spindle motor:
- Brushless DC motor, Maximum 150 W
Spindle rotation:
- 9,000 to 24,000 rpm
- 0.002 mm/step (0.00008 in/step)
Power consumption:
- Approx. 210 W
Maximum 92.4 mm (3.64 in.)
Dimensions:
- 669 (W) x 760 (D) x 554 (H) mm (26.4 (W) x 30 (D) x 21.9 (H) in.)
Weight:
- 88 kg (194 lb)
Environment:
- Temperature: 5 to 40 °C (41 to 104 °F)
- Humidity: 35 to 80% (no condensation)
 Included items:
- User’s Manual, SRP Player installation and set up guide
- Screw drivers, Spanners, Roland Software Package CD-ROM, SRP Player CD-ROM,
- Power cord, USB cable, Collet (ZC-23-6), Z0 sensor, Hexagonal wrench, Hexagonal
- 2 (as specified by IEC 60664-1)
- Humidity: 35 to 80% (no condensation)
- Temperature: 5 to 40 F (41 to 104 F)
Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Model</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Square end-mills</td>
<td></td>
<td></td>
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<tr>
<td>2HS-100</td>
<td>High speed</td>
<td>Dia. 1.3 (0.064) x 50 (2 in) x 2NT (0.063) x 2NT</td>
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<tr>
<td>2HS-200</td>
<td>High speed</td>
<td>Dia. 1.4 (0.063) x 50 (2 in) x 2NT (0.063) x 2NT</td>
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<td>2HS-300</td>
<td>High speed</td>
<td>Dia. 1.5 (0.060) x 50 (2 in) x 2NT (0.060) x 2NT</td>
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<td>2HS-400</td>
<td>High speed</td>
<td>Dia. 1.6 (0.063) x 50 (2 in) x 2NT (0.063) x 2NT</td>
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<td>2HS-500</td>
<td>High speed</td>
<td>Dia. 1.7 (0.067) x 50 (2 in) x 2NT (0.067) x 2NT</td>
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<tr>
<td>2HS-600</td>
<td>High speed</td>
<td>Dia. 1.8 (0.071) x 50 (2 in) x 2NT (0.071) x 2NT</td>
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<td>2HS-800</td>
<td>High speed</td>
<td>Dia. 1.9 (0.075) x 50 (2 in) x 2NT (0.075) x 2NT</td>
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<tr>
<td>2HS-1000</td>
<td>High speed</td>
<td>Dia. 2.0 (0.079) x 50 (2 in) x 2NT (0.079) x 2NT</td>
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<tr>
<td>Ball end-mills</td>
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<tr>
<td>ZCB-150</td>
<td>Cemented</td>
<td>Dia. 1.5 (0.060) x 50 (2 in) x 45 (1.77 in) x 2NT</td>
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<tr>
<td>ZCB-200</td>
<td>Cemented</td>
<td>Dia. 2.0 (0.079) x 50 (2 in) x 75 (2.95 in) x 2NT</td>
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<tr>
<td>ZCB-300</td>
<td>Cemented</td>
<td>Dia. 3.0 (0.118) x 50 (2 in) x 80 (3.15 in) x 2NT</td>
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<tr>
<td>Collets</td>
<td></td>
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<tr>
<td>ZC-20</td>
<td>Dia. 3 (0.120)</td>
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<tr>
<td>ZC-30</td>
<td>Dia. 4 (0.160)</td>
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<tr>
<td>ZC-36</td>
<td>Dia. 6 (0.236)</td>
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<tr>
<td>ZC-39/3175</td>
<td>Dia. 3.175 mm</td>
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<tr>
<td>ZC-23-6.35</td>
<td>Dia. 6.35 mm</td>
<td></td>
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</tbody>
</table>

Optional Rotary Axis Unit (ZCL-40A)

- Maximum angle of rotation: ± 1,350 degrees (0.3 degrees)
- Maximum input signal: 5 V (500 mV or more recommended)
- Maximum loadable workpiece size: Inner radius (from the center of the rotary axis) by 210 mm (8.27 in.)
- Maximum loadable workpiece size: Outer radius (from the center of the rotary axis) by 177 mm (7 in.)
- Dimensions:
  - X: 271 (3.28 in), Y: 305 (12 in), Z: 68 (2.68 in)

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 64 mm (2.56 in.)
- Table load capacity: Maximum 8 kg (17.6 lb)
- Sensor:
  - Type: Roland Active Probe Sensor (APS)
  - Resolutions:
    - Tip bulb radius: 0.08 mm (0.00315 in.)
    - Lead ball radius: 0.06 mm (0.00236 in.)
- Scanning method:
  - Contacting method

- Unit: mm (in.)
- Dia. = diameter, R = radius, L = cut length, l = flute length, d = shank diameter, D = overall length, NT = number of flutes

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