

| Specifications   | MDX-540  | MDX-540A   |
|--|--|--|
| Cuttable material  | Plastic, resin and light metal   |  |
| XYZ-axis travels   | 500 mm (X) x 400 mm (Y) x 155 mm (Z) [19.6 (X) x 15.7 (Y) x 6.1 (Z) in.]   | 400 mm (X) x 400 mm (Y) x 155 mm (Z) [15.7 (X) x 15.7 (Y) x 6.1 (Z) in.]   |
| Distance from spindle nose to table                        | Maximum 254 mm (10 in.)  |  |
| Table size   | 550 mm (W) x 420 mm (D) [21.7 (W) x 16.5 (D) in.]  |  |
| Loadable workpiece weight                                  | At acceleration of 0.2 G: maximum 12 kg (26 lb.), 0.1 G: 20 kg (44 lb.), 0.05 G: 20 kg (44 lb.)  |  |
| XYZ-axis drive system                                      | AC servo motor, 60 W   |  |
| Operating speed  | Maximum 7.5 m/min (295 in./min)  |  |
| Acceleration   | 0.2 G, 0.1 G, 0.05 G   |  |
| Software resolution  | RML-1 mode: 0.01 mm (0.0004 in.), NC-code mode: 0.001 mm (0.00004 in.)   |  |
| Mechanical resolution                                      | 0.001 mm (0.00004 in.)   |  |
| Positioning accuracy                                       | ±0.1 mm/300 mm (±0.004 in./12 in.), under no-load conditions   |  |
| Repeat accuracy  | ±0.05 mm (±0.002 in.), under no-load conditions  |  |
| Origin reproducibility (when the power is switched on/off) | ±0.05 mm (±0.002 in.)  |  |
| Spindle motor  | DC brushless motor, maximum 400 W  |  |
| Spindle speed  | 400 to 12,000 rpm; 400 to 3,000 rpm for positioning and centering  |  |
| Tool chuck   | Collet method, maximum tool diameter: 10 mm (0.4 in.)  | Tool holder format, Taper shank: JBS4002 15T 7/24 taper; Pull stud: JBS4002 15P (45°), special   |
| 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: 7 A (100 to 120 V)/4 A (220 to 240 V)  |  |
| Power consumption  | Approx. 700 W  |  |
| Acoustic noise level                                       | During operation (no cutting): 65 dB (A) or less, during standby: 45 dB (A) or less (according to ISO 7779)  |  |
| Dimensions   | 745 mm (W) x 955 mm (D) x 858 mm (H) [29.3 (W) x 37.6 (D) x 33.8 (H) in.]  |  |
| Weight   | 102 kg (225 lb.)   | 109 kg (240 lb.)   |
| Operating temperature                                      | 5 to 40°C (41 to 104°F)  |  |
| 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 Software Guide, SRP Player Installation and Setup Guide, and NC Code Reference Manual | 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 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) Specifications |   |
|---|---|
| Number of tools housed                          | 4   |
| Maximum tool length                             | 110 mm (4.3 in.)  |
| Maximum tool diameter                           | 10 mm (0.4 in.)   |
| Maximum tool weight                             | 350 g (0.77 lb.)  |
| Tool-holder format                              | Taper shank: JBS4002 15T 7/24 taper. Pull stud: JBS4002 15P (45°), special.   |
| Tool-selection method                           | Direct-changing type, fixed-address specification   |
| Compatible compressed air                       | 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  | 6.8 kg (15 lb.) (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 this unit is installed, the X-axis travels of the MDX-540 are as follows: •Standard table, no rotary axis unit: 400 mm (15.7 in.)  
•Standard table, rotary axis unit present: 270 mm (10.6 in.)/325 mm (12.7 in.) (with expanded X-axis travel) •T-slot table, no rotary axis unit: 400 mm (15.7 in.)  
•T-slot table, rotary axis unit present: 203 mm (7.9 in.)/258 mm (10.1 in.) (with expanded X-axis travel)

| Rotary axis unit (ZCL-540) Specifications       |   |
|---|---|
| Supported workpiece                             | Resin (metal not supported)   |
| Maximum angle of rotation                       | ±21,474,836.47° (±59,652.3 turns)   |
| Loadable workpiece size *1                      | Items within the range of a 90 mm (3.5 in.) in radius from the center of the rotary axis by 371 mm (14.6 in.) long. The actual cuttable range is smaller than this.   |
| Workpiece thickness holdable by workpiece chuck | 15 to 100 mm (0.6 to 3.9 in.)   |
| Loadable workpiece weight                       | Maximum 5 kg (11 lb.), maximum moment of inertia: 0.02 kgm <sup>2</sup><br>Center drill used: Maximum 1.5 kg (3.3 lb.)  |
| Control method                                  | Simultaneous 4-axis control   |
| Feed rate                                       | Feed rate Maximum 20 rpm  |
| Software resolution                             | RML-1 mode: 0.1°, NC-code mode: 0.01°   |
| Mechanical resolution                           | 0.002°  |
| Static precision                                | Backlash: 0.05°, Eccentricity: 0.3 mm (0.012 in.) or less   |
| Dimensions                                      | 720 mm (W) x 100 mm (D) x 195 mm (H) [28.3 (W) x 3.9 (D) x 7.7 (H) in.]   |
| Weight  | 6.5 kg (14.5 lb.) (total weight including drive unit, tailstock, base plates, etc.)   |
| Included items                                  | Drive unit, tailstock, base plates, live center, center drill, Y-origin sensor, Z-origin sensor, spacer, origin-detection pin, cap screws, T-slot nuts, hexagonal wrenches, retaining band, and user's manual |

\*1 When the T-slot table is installed, the length is 297 mm (11.7 in.)  
\* When this unit 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)

| Software requirements Roland SRP Player |   |
|---|---|
| OS                                      | Windows® 2000/XP and Internet Explorer 6.0 or later |
| CPU                                     | Pentium® 4 recommended                              |
| RAM and hardware space                  | 1GB (RAM) or more and 20MB (HDD) are recommended    |

| Options                     | Model    | Description   |
|-----------------------------|----------|---|
| High Precision Spindle Unit | ZS-540TY | For replacement   |
| Automatic Tool Changer      | ZAT-540  | Refer to the specifications above   |
| Rotary Axis Unit            | ZCL-540  | Refer to the specifications above   |
| T-Slot Table                | ZTT-540  | 550 mm (W) x 420 mm (D) x 35 mm (H), 9 kg [21.7 (W) x 16.5 (D) x 1.4 (H) in., 20 lb.]     |
| Safety Cover                | ZBX-540E | 1042 mm (W) x 1030 mm (D) x 978 mm (H), 68 kg [41 (W) x 40.6 (D) x 38.5 (H) in., 150 lb.] |

### 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 DG is actively working to abolish organic solvents in production, to reduce and recycle waste, to reduce power use, and to purchase recycled products. Roland DG constantly strives to provide the most highly reliable products available.



Roland reserves the right to make changes in specifications, materials or accessories without notice. Your actual output may vary. For optimum output quality, periodic maintenance to critical components may be required. Please contact your Roland dealer for details. No guarantee or warranty is implied other than expressly stated. Roland shall not be liable for any incidental or consequential damages, whether foreseeable or not, caused by defects in such products. Three-dimensional shapes may be protected under copyright. Customers are responsible for observing laws and ordinances when scanning. PostScript is a trademark of Adobe Systems Incorporated. All other trademarks are the property of their respective owners.

**Roland®** AUTHORIZED DEALER:  
**YARHAMVILLE PTY LTD**  
1300 136 359

Printed in Japan. RDG-416005999 '06 AUG. A-4 P-S

**Roland®**

# MODELAPROII MDX-540 MDX-540A



**3DD™**  
**URP**  
SUBTRACTIVE  
RAPID PROTOTYPING

Introducing A Major Advancement in Rapid Prototyping





# Create Precision Models and Prototypes Quickly and Easily In Your Office Environment Using Roland SRP® Technology

## MODELA PRO II MDX-540 Features:

- Precision benchtop milling machine produces high-quality parts and models using Roland's Subtractive Rapid Prototyping (SRP) technology
- Simple on-screen menus and operation panel make setup and production easier than ever
- Cutting area of 500 mm (X) x 400 mm (Y) x 155 mm (Z) (19.6 (X) x 15.7 (Y) x 6.1 (Z) in.) accommodates larger prototypes
- Advanced software optimizes your 3D CAD data for flawless molds and parts
- In-house milling shortens the design/development cycle and lowers product development costs



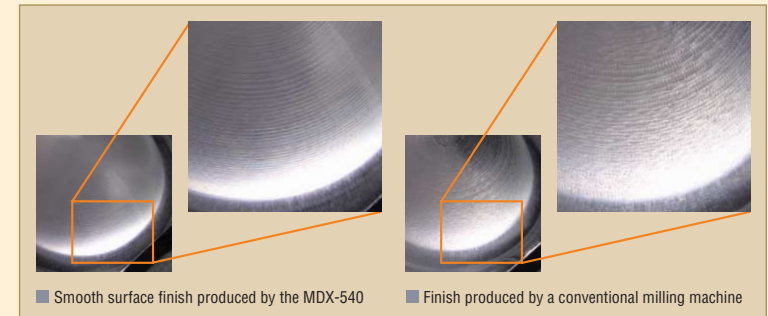
The MDX-540 mills even the most intricate details.



Generate smooth curves and surfaces without handwork.

## Unmatched Quality and Performance

The new MDX-540 features numerous upgrades including a more rugged body design, faster arithmetic processing, improved smoothing functions, a streamlined worktable and more. Nearly every part and feature have been upgraded for superior all-around performance. Curved and rounded surfaces are smoother than ever for flawless finishes every time. The MDX-540 features a combination of Digital AC Servo motors and Feed Forward Processing (DAC-FFP) commonly used in larger, more expensive NC machines. This advanced technology ensures optimum torque and speed throughout the production process for powerful, high-speed milling. \*Milling quality may vary depending on software resolution, materials used and other criteria.

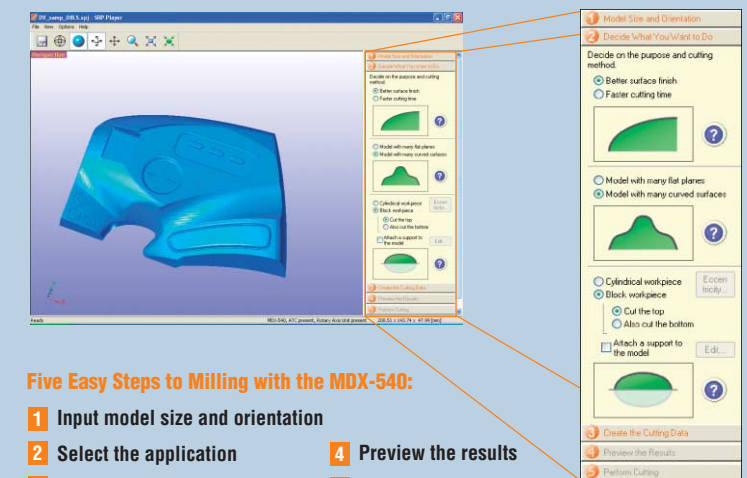


■ Smooth surface finish produced by the MDX-540    ■ Finish produced by a conventional milling machine



## Advanced, Easy-To-Use Software

The introduction of Roland's MODELA PRO II and SRP Player software allow even novices to operate the MDX-540 for professional results. Every MDX-540 comes equipped with Roland SRP Player, which was developed exclusively for the MDX-540. Simply enter the required information into five setting groups and SRP Player does the rest, automatically determining the best tools and other details required to generate the optimum tool path. To prevent costly and time-consuming errors, SRP Player allows you to preview your job on-screen to confirm the cutting path for quality results every time. SRP Player is compatible with Windows® 2000/XP.

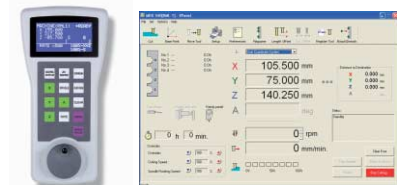


### Five Easy Steps to Milling with the MDX-540:

- 1 Input model size and orientation
- 2 Select the application
- 3 Determine the cutting data
- 4 Preview the results
- 5 Produce the model

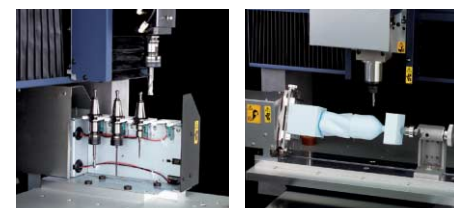
## User-Friendly Operation

Designed from the ground up for ease of use, the MDX-540 features a handy control panel that simplifies the setup and production processes by strategically grouping the most commonly used settings. Using a jog-dial, you can quickly and easily reposition tools and adjust spindle speeds without interrupting the milling process. For other settings, simply access the MDX-540's on-screen operation panel featuring clear, easy-to-navigate icons.



## Powerful Options for High Production Demands

Four powerful options let you build on your MDX-540 for even greater performance and unattended operation. These include an Automatic Tool Changer (ATC), rotary axis unit, T-slot table and safety cover. The optional ATC holds up to four tools while the rotary axis unit facilitates 360 degree and multiple-surface cuts.



■ Automatic Tool Changer (ATC)    ■ Rotary axis unit

## Able to Mill a Wide Variety of Materials

With the MDX-540, you can produce molds and parts for small lot production quickly and inexpensively from a wide range of materials, including chemical woods, resin, ABS and non-ferrous metals such as aluminum, brass and copper.\*

\* The MDX-540 cannot mill light metals with the rotary axis unit.



Photo: MDX-540A, ATC-included model and safety cover

# MODELA PRO II

## Standard SRP Model MDX-540



## With Built-in Automatic Tool Changer MDX-540A

Includes a factory-installed Automatic Tool Changer that has been tested for milling accuracy, allowing you to begin milling immediately without lengthy accuracy adjustments.

