

MDX-540



Roland DG Corporation

- Roland DG is a \$300 million worldwide leader in the graphic arts, engraving, 3D modeling and scanning industries.
- Products are only sold through authorized resellers
- Resellers are supported by Roland's global network of offices



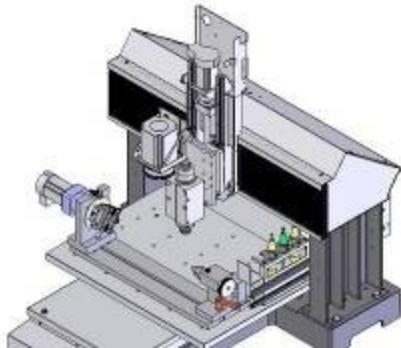
20 years of 3D innovation

- 1981 Established in Osaka as a manufacturer of computerized music peripherals and as a distributor of assembled electronic music instrument parts.
- 1986 Released CAMM-2 series SRP mill, PNC-2000.
- 1987 Released CAMM-3 series SRP mill, PNC-3000
- 1990 Roland DGA Corporation established in USA
- 1996 Released MDX-3 SRP mill.
- 1999 Received ISO 9001 certification.
- 2000 Released MDX-500 SRP mill. Received ISO 14001 certified.
- 2001 Released LPX-250 3D laser scanner
- 2002 Released MDX-15/20 SRP mill/scan.
- 2003 Released MDX-650 SRP mill
- 2004 Release LPX-1200 3D laser scanner.
- 2005 Released MDX-40 mill. Released JWX-10 mill
- 2006 Released LPX-600 3D laser scanner
- 2006 Released MDX-540 SRP mill



Investment in quality & value

- **Quality products at competitive prices:**
 - Engineered in 3D CAD and FEA software
 - High volume tooling /modular assembly lines
 - Worldwide distribution, sales and service network
- **All products backed by a 1yr factory warranty**
- **ISO 9001: 2000 and ISO 14001 Certified**



DVE
Digital Value Engineering



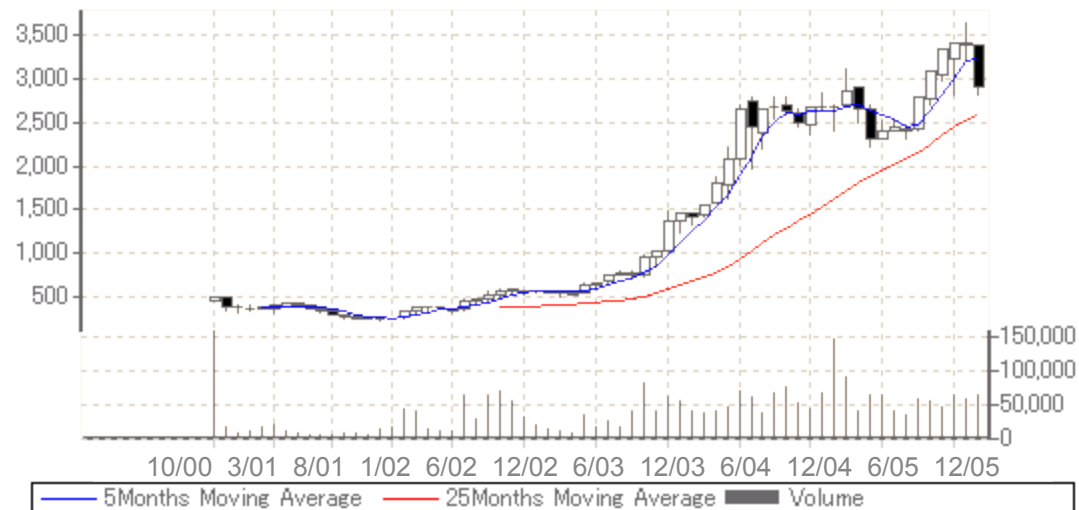
Corporate Growth

- 20% stock growth in the past 5 years
- Tokyo Stock Exchange code 6798
- Company Stock listed on Tokyo Stock Exchange 2000

Innovation

Quality

Service



(C)QUICK Corp.

Our commercial customers include:



Our education customers include:



San Francisco State University



GIA
GEMOLOGICAL INSTITUTE OF AMERICA*

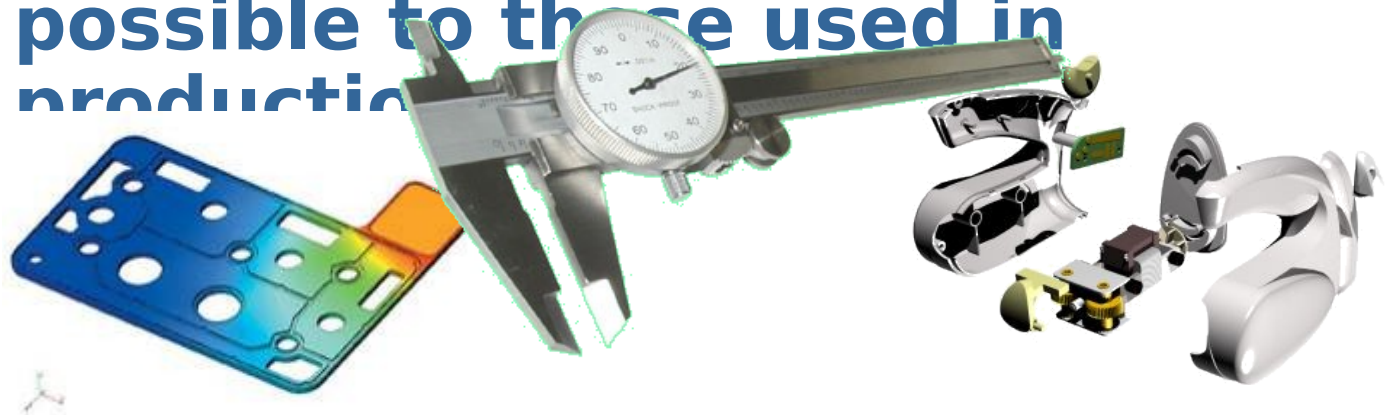


STANFORD UNIVERSITY



The problem: Companies need prototypes!

- Designs don't go into production until functional prototypes are created and tested
- To provide accurate test results functional prototypes must be made from materials as close as possible to those used in production



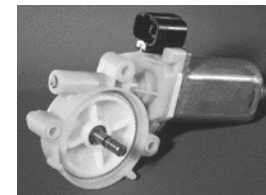
Prototype Options and Issues

- **Option A:** Additive RP parts
- **Problem:** 3D printing, SLA, SLS, and FDM will not result in true functional prototype parts. These are visual, non functional models.
- **Option B:** In-house or outsourced machined parts.
- **Problem:** High cost, long turn around time, interrupts in-house production CNC, design information is exposed to outsourced vendors.



The Roland Solution

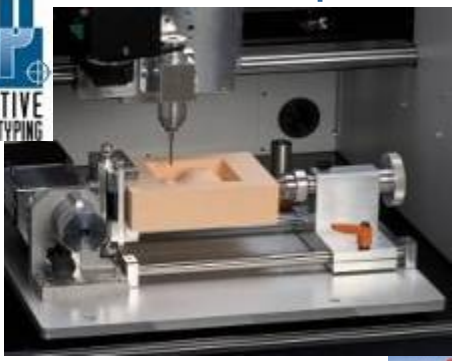
- The MDX-540 is a SRP system specifically designed to meet the needs of companies that require a wide choice of materials to create functional



SRP vs. ARP

Subtractive Rapid Prototyping:	Additive Rapid Prototyping:
<ul style="list-style-type: none"> ✓ Material selection results in true, functional prototype parts. 	<ul style="list-style-type: none"> ✗ Proprietary materials expensive, non-functional.
<ul style="list-style-type: none"> ✓ Superior precision +/- .002" 	<ul style="list-style-type: none"> ✗ Process varies precision.
<ul style="list-style-type: none"> ✓ Better surface finish with little to no secondary hand finishing. 	<ul style="list-style-type: none"> ✗ Requires secondary operations to finish parts.
<ul style="list-style-type: none"> ✓ Uses standard processes to ready 	

SRP
SUBTRACTIVE
RAPID PROTOTYPING



Independent RP benchmark

Todd Grimm, the man who wrote the book on rapid prototyping for the Society of Manufacturing Engineers, found that Roland SRP devices produce prototypes faster, better and cheaper than additive RP systems.

Download a copy of the report:
www.rolandasd.com



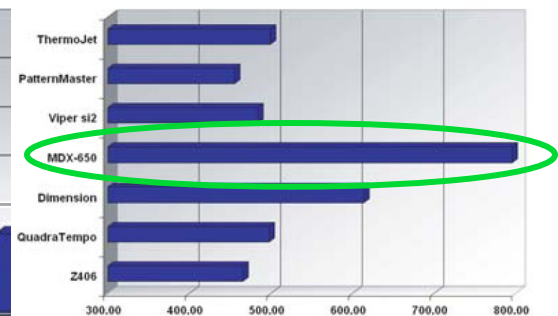
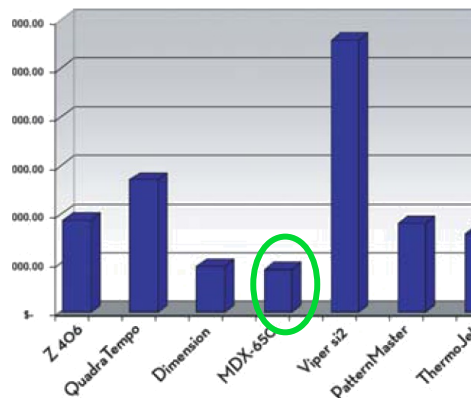
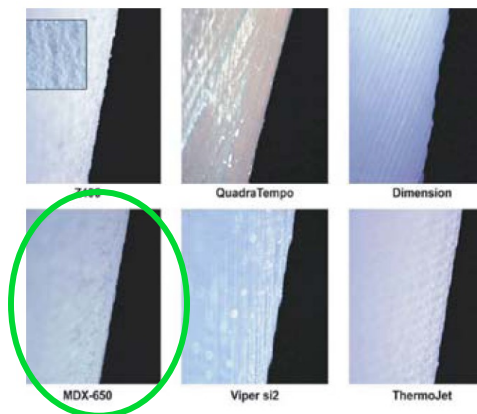
Master Level Certificate for Rapid Prototyping & Manufacturing.
 Awarded by Society of Manufacturing Engineers.

Roland SRP solutions lead with:

Finer Surface Finish

Lower Operating Cost

Better Functionality



Roland SRP Solut

↑
Functionality



MDX-20 \$4,495

MDX-15 \$2,995



MDX-40

\$10,995



MDX-540

\$19,995/ \$29,995

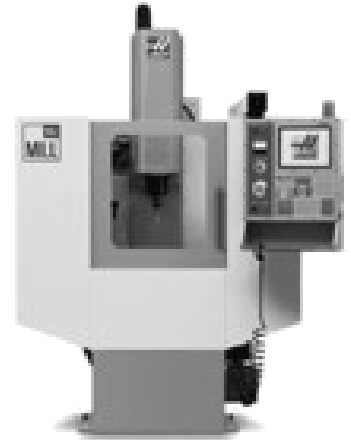
Price →

Position in market

↑
Functionality



Roland MDX-540 \$20K +



Milling Centers \$45K +

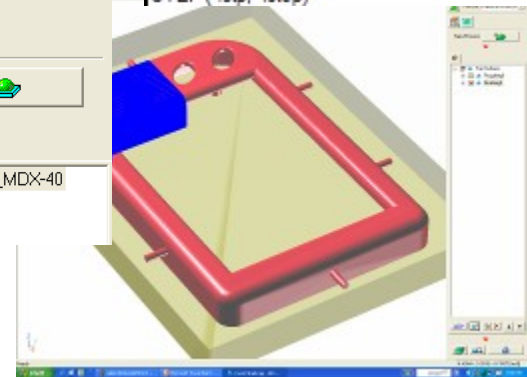
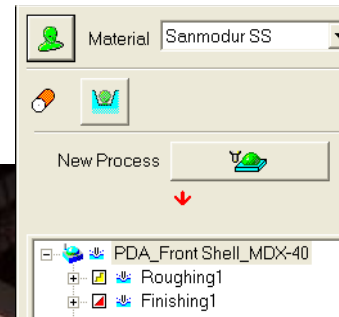
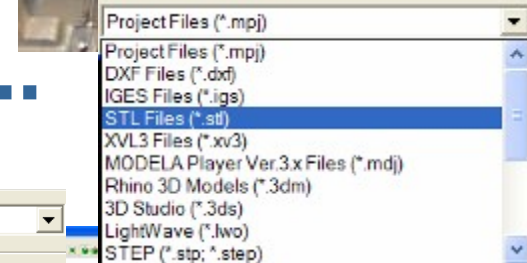
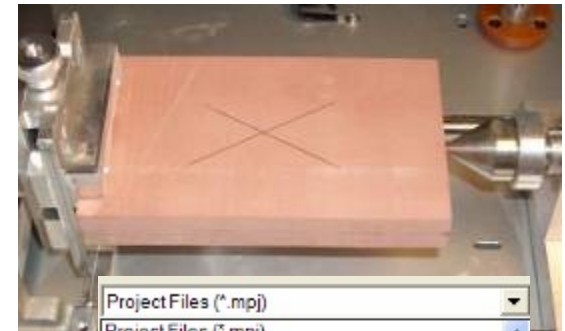


3D Printers \$25K +

→
Price

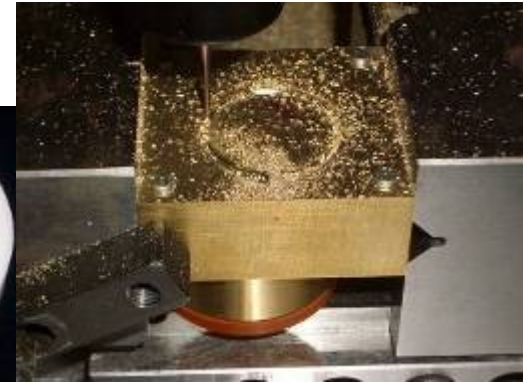
Part creation

- Select your material...
- Load the MDX-540...
- Open a CAD file...
- **Generate processes...**
- Create parts!



Your Parts, In Your Materials

The MDX-540 works with:
Brass, Aluminum, ABS,
Delrin, Acrylic, Nylon,
Polycarbonate, Wood
Urethane Foam,
Polyester
Phenolic, MDF,
Plaster
Machinable Wax
and more...



Industry Standard Tooling

Ball End Mills (Solid Micrograin Carbide)

BM-250-2F-250	(1/4" Shank, 2 Flute, 1/4" Mill, 3" Overall Length)
EMB-125-3F-125	(1/8" Shank, 3 Flute, 1/8" Mill, 2.5" Overall Length)
EMB-125-3F-063	(1/8" Shank, 3 Flute, 1/16" Mill, 2.5" Overall Length)
EMB-125-3F-031	(1/8" Shank, 3 Flute, 1/32" Mill, 2.5" Overall Length)
EMB-125-3F-016	(1/8" Shank, 3 Flute, 1/64" Mill, 2.5" Overall Length)

Flat End Mills (Solid Micrograin Carbide)

EM-250-2F-250	(1/4" Shank, 2 Flute, 1/4" Mill, 3" Overall Length)
EMF-125-3F-125	(1/8" Shank, 3 Flute, 1/8" Mill, 2.5" Overall Length)
EMF-125-3F-063	(1/8" Shank, 3 Flute, 1/16" Mill, 2.5" Overall Length)
EMF-125-3F-031	(1/8" Shank, 3 Flute, 1/32" Mill, 2.5" Overall Length)
EMF-125-3F-016	(1/8" Shank, 3 Flute, 1/64" Mill, 2.5" Overall Length)

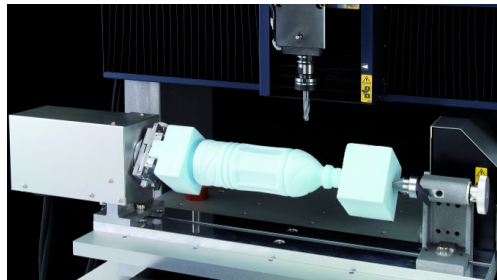
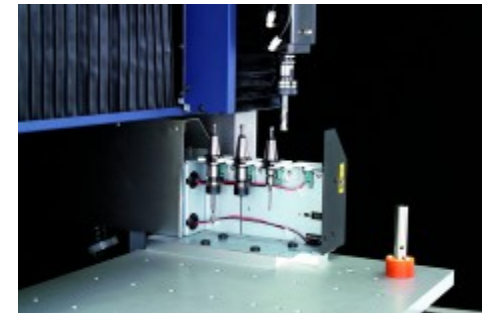


Included Items

- **New SRP Player CAM Software**
- **New Handy Panel hand held controller**
- **Power Cord**
- **Tool Sensor**
- **Assorted wrenches**
- **Roland Software CD Bundle**
- **ATC unit includes:**
 - (4) 1/4", 7mm, tool holders, (1) tool setting clamp, **(1) tool setting wrench, (1) air hose**

Available Options

- **ZCL-540 Rotary Axis** (\$4995)
- **ZAT-540 Automatic Tool Changer** (\$9,995)
- **ZTT-540 T-Slot Table** (\$1,295)
- **ZBX-540E Safety Cover Box**



Conclusion

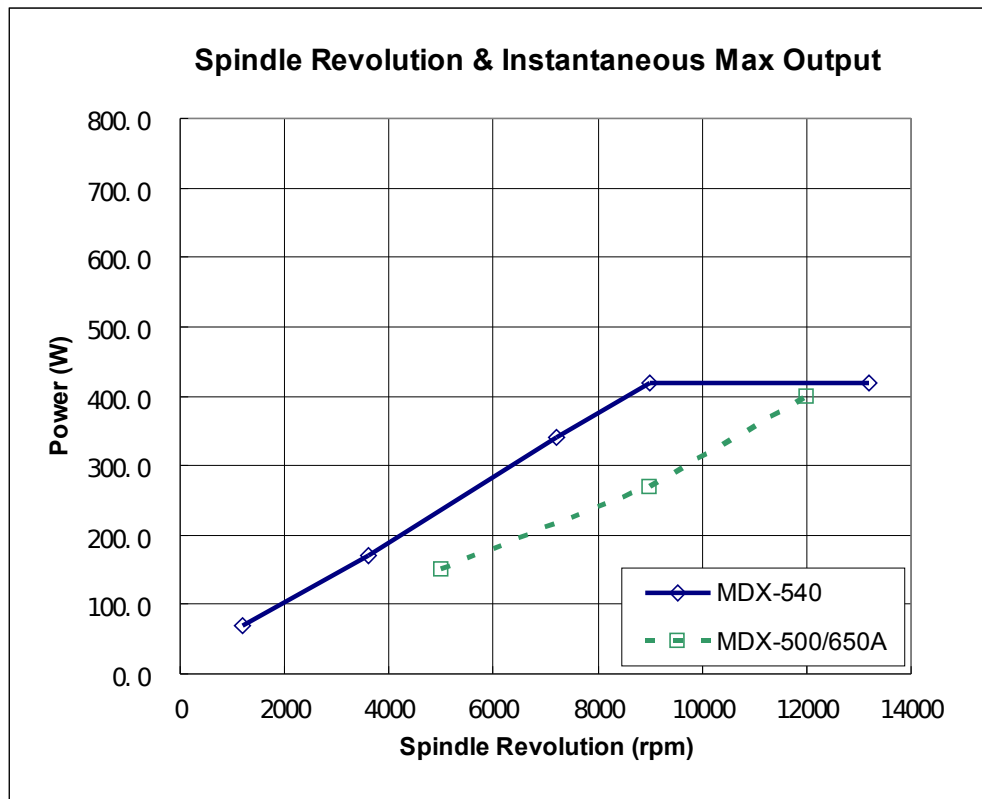
- **A high quality, SRP solution starting at \$19,995**
- **SRP provides:**
 - Choice of materials for true, functional prototypes
 - Speed, precision, high quality surface finish
- **Price includes SRP Player CAM software**
- **Max build area 19.6" x 15.7" x 6.1"**
- **Spindle speed: 12,000 RPM for fine detail work**
- **Rigid, lightweight, system plugs into standard outlet for precision and portability**
- **Designed specifically for people who need to produce functional prototype parts quickly and easily**

Evolution: MDX-650 to MDX-540

- **47% faster feed rate: 125mm/sec, 295 inch per minute!**
- **150% more torque than MDX-650**
- **Upgraded motor controller maintains max torque at all speeds.**
- **Positive airflow spindle for extended durability**
- **USB interface and virtual control panel**
- **New Handy Panel puts power and control in the palm of your hand**
- **New SRP Player software now 5 times faster than Modela Player 4**
- **Fits through a standard doorway:**
 - 29.3" wide, 37.6" deep, 33.8" high

Precision Motor Controller

- Maintains maximum torque through full speed range



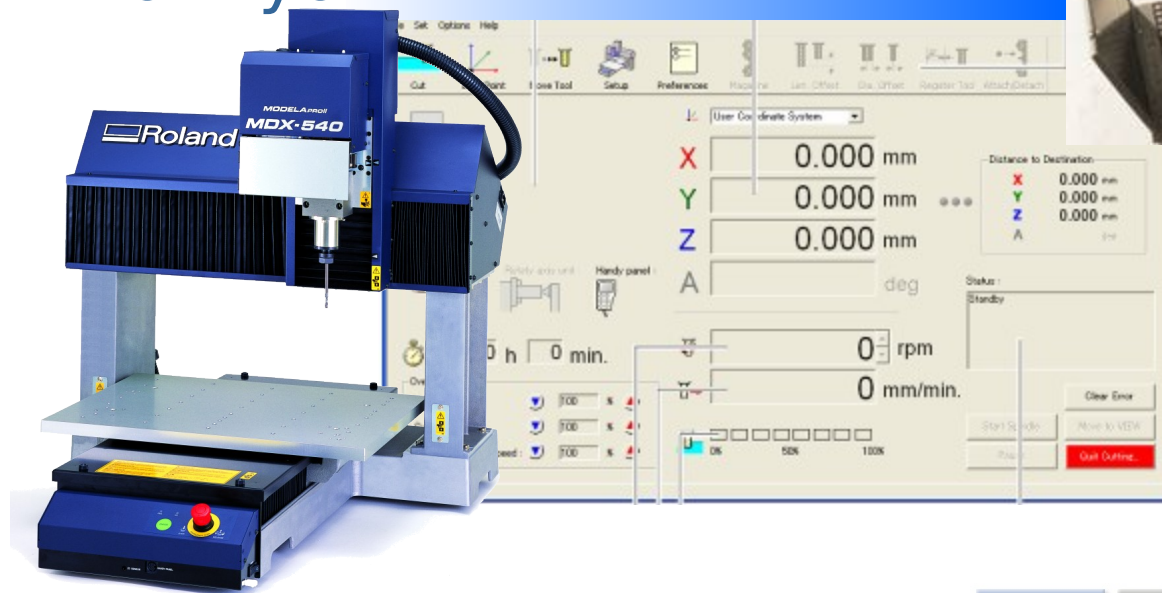
Handy Panel

- Roland power and control in the palm of your hand.



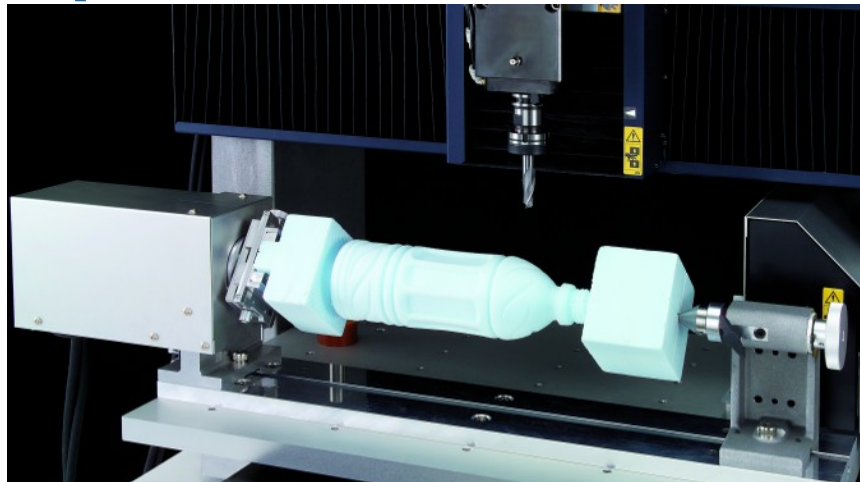
Virtual Control Panel

- **Interface directly with your PC desktop**
 - Monitor machine speed, position, motor load, and run time directly from your PC



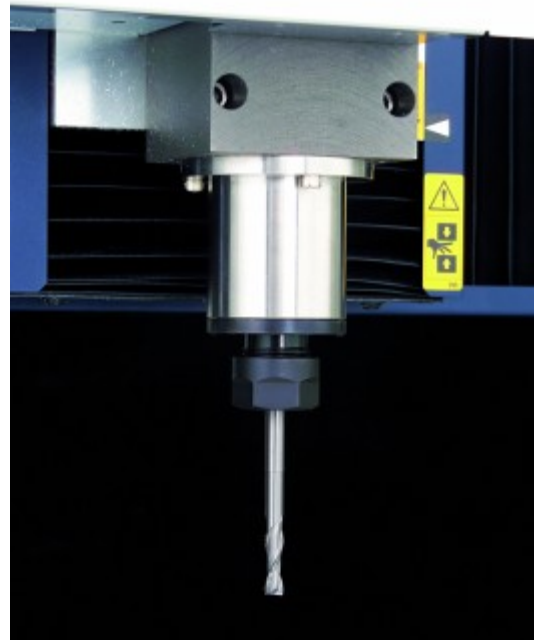
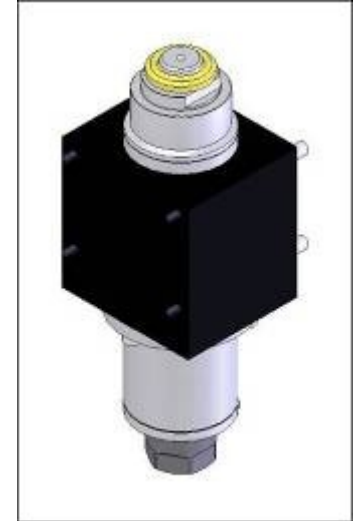
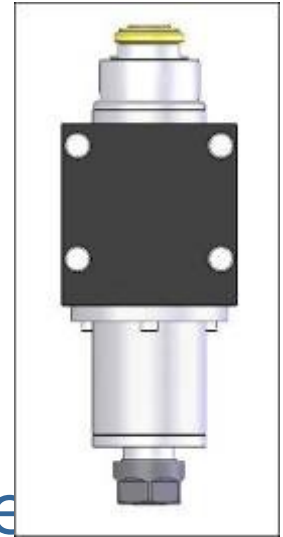
Rotary Axis Unit (Optional)

- **ZCL-540 Rotary Axis Unit**
 - Self centering clamp
 - AC Servo Motor
 - 7.0" maximum diameter
 - **14.6" maximum length**
(Ø180mm x 325mm)



Features

- **Spindle Motor**
 - 400watt DC Brushless motor
 - 150% higher torque vs. **MDX-500/650**
 - 400 ~ 12,000 rpm spindle speed



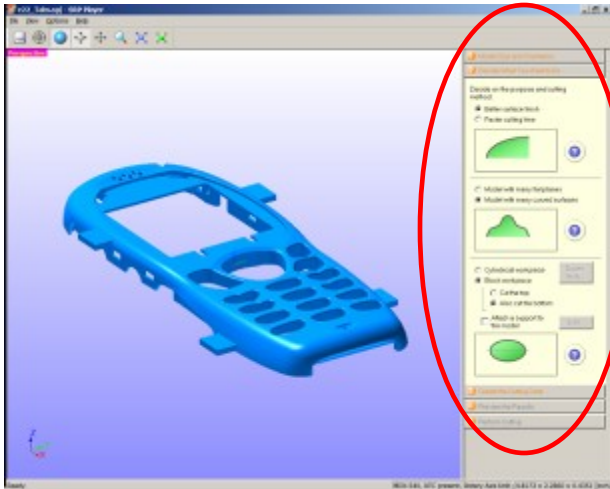
SRP Player Software



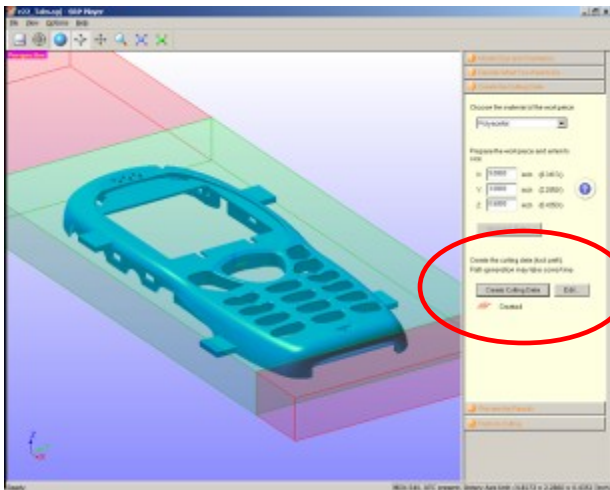
- **Easy to use CAM software**
- **Wizard like commands make it easy to program parts**
- **New tool path generation algorithm**
 - Better quality and increased milling speed
- **Up to 5 times faster file import over MP4**
- **Up to 5 times faster tool path generation over MP4**
- **Requires 25% less memory than MP4**



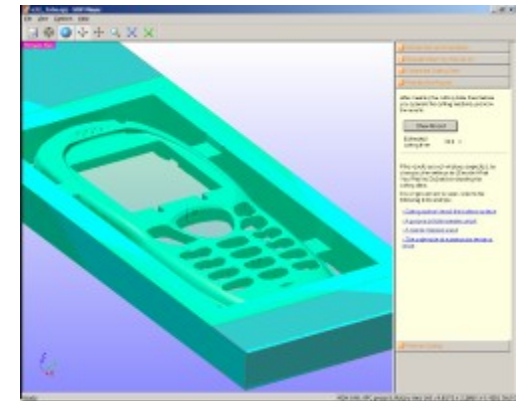
SRP Player Software



Wizard like menus guide you through the software.



One button will create all tool paths necessary, both rough and finish.

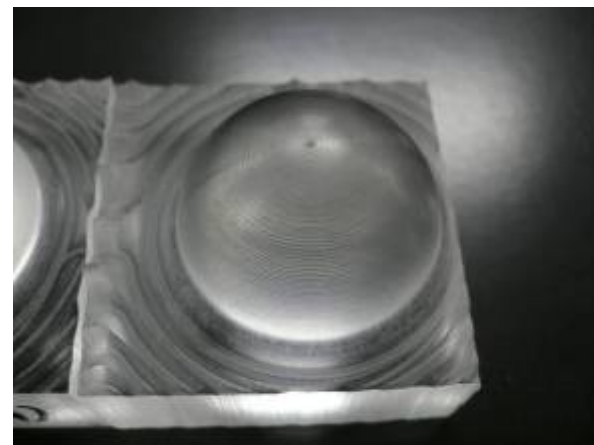


New simulator with 3D viewing from any angle.

Cutting Quality

- **MDX-540**

- Rough Cutting:
 - 9m20s. F1833mm/min, Z pitch 3mm, S10200rpm
- Fine Cutting
 - 7m10s. F1200mm/min, Contour pitch 0.3mm, S10200rpm
- Comment: Great surface finish



MDX-540

- **MDX-650A**

- Rough Cutting
 - 10m0s F1833mm/min, Z pitch 3mm, S10200rpm
- Fine Cutting
 - 6m55s. F1200mm/min, Contour pitch 0.3mm, S10200rpm
- Comment: Good surface finish



MDX-650A

MDX-540 Specifications

MODEL	MDX-540
Table Size	21.7 x 16.5 in. (550 mm x 420 mm)
XYZ-Axis Travel*	19.6(X) x 15.7(Y) x 6.1(Z) in. (500 mm (X) x 400 mm (Y) x 155 mm (Z))
Distance From Spindle Nose to Table	Maximum 10 in. (254mm)
XYZ Motor	AC servo motor
Feed Rate	X, Y, Z-axis: Maximum 295 in./min.(7.5 m/min.)
Acceleration	Up to 0.2G, 0.1G, 0.05G
Software Resolution	[When RML-1 has been selected] 0.0004 in. (0.01 mm) [When NC codes has been selected] 0.00004 in. (0.001 mm)
Mechanical Resolution	0.00004in. (0.001 mm)
Spindle Motor	DC brushless motor, maximum 400 Watts
Revolution Speed	400 to 12,000 rpm
Revolution Speed, Positioning and Centering	400 to 3,000 rpm
Tool Chuck	Collet method, maximum tool diameter: 0.4in (10mm)
Positioning Accuracy	±0.004 in. (0.1 mm) / 12 in. (300 mm) (Under no-load conditions)
Repeat Accuracy	±0.002 in. (0.05 mm) (Under no-load conditions)
Origin-point Reproducibility (When the power is switched on/off)	0.002 in. (±0.05 mm)
Possible Table Load Weight	At acceleration of [0.2G] Maximum 26 lb. (12 kg), [0.1G] 44 lb. (20 kg), [0.05G] 44 lb. (20 kg).
Interface	USB (Compliant with Universal Serial Bus Specification Rev1.1)
Control Command Sets	RML-1 and NC codes
Power Supply	Voltage and Frequency: AC100 to 120V/220 to 240V ± 10%, 50/60Hz Required Power Capacity: 7A (100 to 120V)/4A (220 to 240V)
Power Consumption	Approximately 700 Watts
Weight/Dimensions	225 lb. (102 kg) / 29.3(W) x 37.6(D) x 33.8(H) in. (745 mm (W) x 955 mm (D) x 858 mm (H))
Operating Temperature/Humidity	41° to 104° F (5° to 40° C) / 35 to 80% (no condensation)
Acoustic Noise Level	During operation (no cutting): 65 dB (A) or less, during standby: 40 dB (A) or less (according to ISO 7779)
Included Items	Handy panel, power cord, tool sensor, sensor cable, nut, nut wrench, wrench, hexagonal wrenches, Roland Software Package CD-ROM, SRP Player CD-ROM, User's Manual, Roland Software Package Software Guide, SRP Player Installation and Setup Guide, NC Code Reference Manual
*When only the ATC is installed: 15.7(X) x 15.7(Y) x 6.1(Z) in. (400(X) x 400(Y) x 155(Z)mm) When the Rotary Axis Unit is installed, refer to the maximum workpiece size in the ZCL-540 specifications.	