

Android II

ULTRA PRECISION MICRO FINE 5-AXIS MACHINING CENTER

High-Rigidity Basic Structure

- A heat symmetric basic monoblock structure ensures high rigidity, high-speed, high-precision machining despite changes in the installation environment.
- Active H.I.S. (Heat Isolation System) has been implemented providing full thermal control of the machine in accordance to the environment.
- High rigidity bed with ideal rib distribution has been designed by FEA computer analysis.
- Stable positioning performance is guaranteed by using a fully closed loop system with 0.5nm linear scales / actual machining precision of $\pm 1 \mu\text{m}$.

New High-Performance Spindle

- Oil mist lubrication system and high spindle revolution speed of (3,000 through 60,000 RPM) uses ceramic ball bearings with a long-life integral AC motor.

Z-axis Balance Cylinder

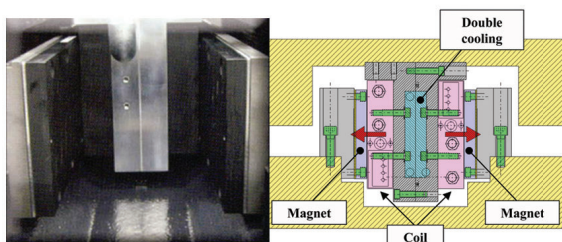
- Single Balance Cylinder, standard equipment on Android II, reduces load for the Z-axis linear motor allowing high speed, high precision tracking.

Fanuc 31i-B5 Super High-Speed Processor & AI Contour Control II

- The Fanuc 31i-B5 is a "NANO CNC System" with Intelligent Velocity Control, NANO Interpolation and NANO Smoothing. The look ahead has been expanded to 1000 blocks .

Linear Motor Drive

- Horizontally-Opposed Linear Motor Drive consists of two linear motors placed on each axis to cancel out the Cogging forces completely.
- To address the heat sources, a double cooling system is used at the interior coil location and insulation point.



ROKU-ROKU

SINCE 1903

ANDROID II 5 AXP-DD

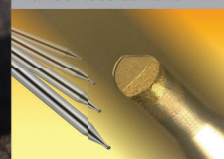


Direct Drive A/B-Axis



Surface Finish:
0.00567 $\mu\text{m Ra}$
Measured by : ZYGO
New View7100

Finishing Cutter:
50nm particle size single-phase polycrystalline diamond binder-less ball end mill.



Achieving Extreme Precision with Visualization of Machine Behavior and Fine Correction

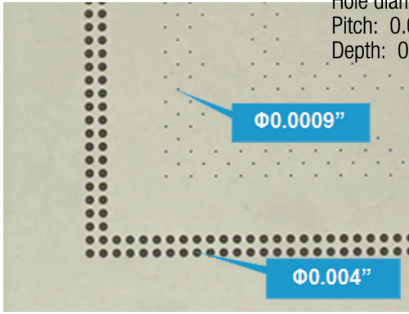
Now Available

From MC Machinery Systems, Inc.

MC MACHINERY SYSTEMS, INC.
a subsidiary of Mitsubishi Corporation

Micro Hole Drilling

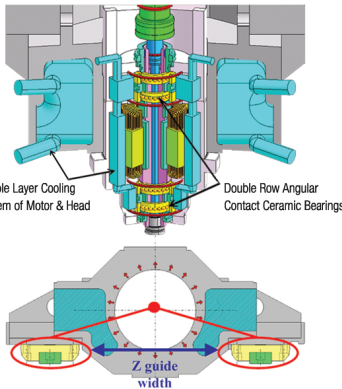
Material: Photoveel II S
 Hole diameter: $\Phi 0.0009''$
 Pitch: 0.002"
 Depth: 0.007" (Through hole)



A-H.I.S. CONTROL HIGH-PERFORMANCE SPINDLE

A dual layer cooling system is the heart of the Active Heat Isolation System on the Android. The 60,000 RPM integral motor spindle uses a direct forced oil cooling system combined with a wide-range jacket separating the spindle head from the casting, complete heat isolation can be achieved. Perfect control of the coolant temperature is provided by an in-line type oil chiller unit.

An innovative approach to the spindle head design brings the spindle centerline extremely close to the Z-axis guide-ways providing ultimate stability for high-speed Z-axis movement used in micro drilling and chop grinding. This location combined with the casting cooling jacket also suppresses displacement in the y-axis.



SPECIFICATIONS

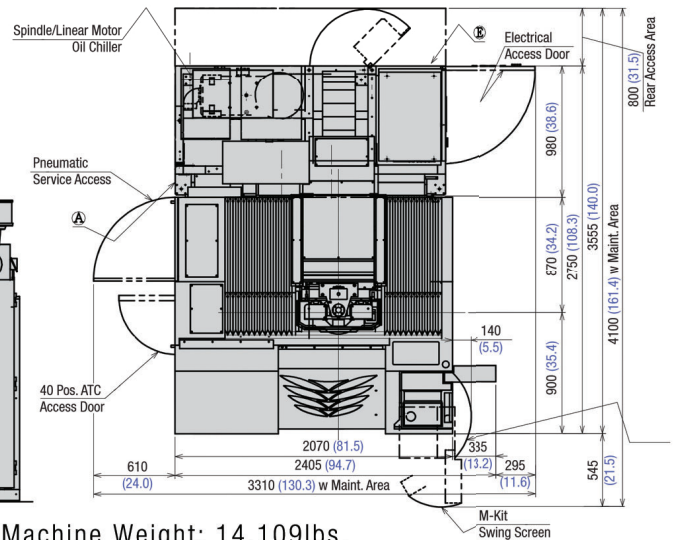
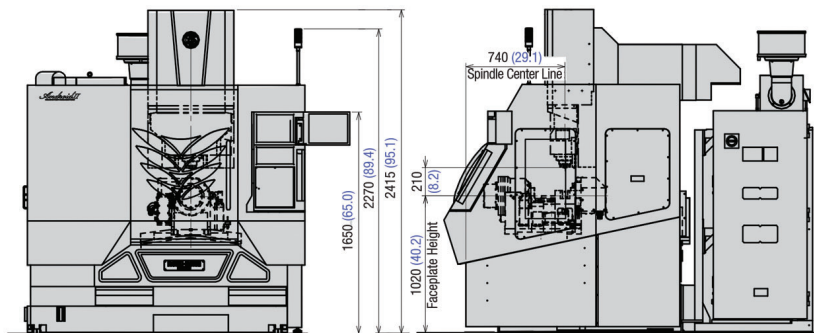
Android II 5AXP-DD	
X x Y x Z Travels (in.)	17.7 x 8.8 x 7.9
Machine Table Work Area (in.)	21.6 x 13.8
Max. Load on Table (lb.)	220
Rotary Faceplate to Spindle Nose (in.)	8.27
Max. Workpiece Weight Rotary (lb.)	66
Rotary Table Faceplate Dia. (in.)	5.9
Max. A-Axis Tilt Angle (deg.)	-90 ~ +5
Max. A-Axis Rotation Speed	100 RPM
Max. C-Axis Rotation Speed	150 RPM
Max. Part Dia. on Faceplate	7.87
Rotary Table Indexing Accuracy (arc sec.)	± 4 (Both Axis)
Linear Scales X, Y, Z-axes	Heidenhain 0.00002mm Standard
Positioning Accuracy Full Stroke	± 0.000039 ($\pm 1.0\mu\text{m}$)
Repeatability	± 0.000079 ($\pm 0.2\mu\text{m}$)
Actual Measured Circularity (2.0" dia. at 8 IPM)	0.000039" (1.0 μm)
Spindle Speed	3,000~40,000 (60,000 RPM w Opt.)
Spindle Taper	HSK-E25
Spindle Air Purge	Standard
ATC (Automatic Tool Changer)	40 Position Standard (60 w option)
Rapid Traverse Speed	590"/min.
Cutting Speed (Normal Mode)	0.01 ~ 394"/min.
Cutting Speed (GR Super PC Mode)	590"/min.
Machine Weight (lb.)	14,109
Machine Height (in.)	95.1
Required Floor Space w Options W x D	81.5" x 108.5"
Control Unit	Fanuc 31i-B5 with 5-axis package
Power Required	200~220VAC 27.5 kVA w options
Air Supply	9 cu.ft./min. @ 72 psi

DIMENSIONS

Android II 5 AXP-DD

Units: mm (inch)

- (A) Pneumatic Source: 9 cu'ft./min. @ 72 psi.
Height from Floor: 500 (19.7)
- (E) Power Source: 200-220 VAC 27.5 kVA
Height from Floor: 150 (6.0)



Machine Height: 95.1" Installation Footprint: 81.5" x 108.3" Machine Weight: 14,109lbs.
 Power Requirement: 200V +/-10%, 60Hz, 27kVA Compressed Air Supply: 9.0 cu.ft./min. @ 72psi.