

AMADA MACHINE TOOLS AMERICA, INC.



THE VISION OF PRECISION

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# Rotary Grinders



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# Amada Machine Tools America



With more than 70 years of industry experience, Amada Machine Tools America is committed to helping our customers deliver dependable service and top-quality work with exceptional grinding solutions.

Whether you need profile, forming, surface, or rotary grinding, we have the right solution for your specific needs.

**Market-Leading Quality**—We believe quality work begins with quality tools designed and built from the ground up to deliver outstanding performance, time after time.

**Customer-Driven Innovation**—Every feature, function and configuration we offer has been developed to address the needs of our customers.

**Proven Accuracy**—We help you take your work to the next level and exceed your customers' expectations.

**Reliable Productivity**—We understand productivity is the heart of your business, and we can help you optimize it in multiple ways.

## A History of Cutting-Edge Manufacturing

Since we began building profile grinders back in the 1940s, our goals have always been to provide our customers with increased accuracy and productivity. Throughout our history, we've maintained our time-honored tradition of hand-fitting our grinders to deliver the ultimate in quality and precision.

And, as technology has evolved, we've embraced CNC automation as a core strength, improving throughput and helping new operators become productive more quickly.

Today, we are uniquely positioned to help you expand your capabilities and grow your business.

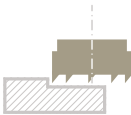
## Solutions Designed Around Customer Needs

No two manufacturing needs are exactly alike. Finding the right solution means thoroughly understanding your objectives and configuring a solution to match them precisely. Our engineers bring decades of industry experience to help you achieve your specified goals with a process that fits—and enhances—your workflow.

### TECHNOLOGIES OF AMADA



GRINDING



MILLING



SAWING

# Amada Grinding Technology



When the tightest tolerances and accurate repeatability matter, Amada is a world leader in optical profile grinding and high-precision surface and profile work. Suppliers to high-tech electronics and semiconductor manufacturers have trusted Amada grinders for years to deliver the flexibility, precision and productivity they need to stay ahead in a rapidly changing industry.

- Integrated measuring technology
- Award-winning innovation
- Maximum accuracy optimized through use of the most modern construction/design
- High speed for increased efficiency
- Integrated automation for higher efficiency
- Automatic swiveling grinding head during the grinding cycle
- External programming software to optimize part production
- Modular construction for versatile and economic specification

## Engineered to Perform

### **Optimum Balance Supports High-Reciprocating Grinding**

—As a pioneer in high-reciprocating grinding and processing, we have achieved a superb, dynamic balance between the machine and the grindstone to deliver superior performance with the widest range of work materials.

### **High-Quality Grinding that Exceeds**

**Specifications**—The accuracy of our grinding and processing work goes beyond simply measuring RZ to deliver mark-less and sharp-edge mirror finishes.

**Reliable, High-Rigidity Structure**—The form of the machine has been developed by advanced three-dimensional design and finalized through a comprehensive series of demonstration tests to create high-dimensional rigidity.

**Consistent Repeatability**—Through superior design and meticulous assembly practices, Amada grinders are engineered to account for thermal displacement, ensuring maximum accuracy throughout the working process.

**Advanced, Easy-to-Use CNC Software**—Every Amada grinder has dedicated software to allow your operators to take full advantage of each machine's capabilities.

**From Surface Grinding to Molding to Profile**—Amada's exclusive WAPS platform gives you complete control of all forming processes—rough, semi-finish, and finish processing. It also prepares charts for optical profile grinding and data for profile dressing.

**Original Measurement Technology on Equipment**—Save time and steps while ensuring maximum accuracy with built-in measurement technology.



GRINDING TECHNOLOGY

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## Rotary Grinders

The high-accuracy ram design and servo motor-driven axes of Amada rotary grinders deliver high-precision grinding and smaller environmental impact. This series guarantees stable grinding through constant grind control.

# SSR5

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## SSR5 Rotary Surface Grinder

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The proven ram structure of this machine provides enhanced usability and exceptional efficiency while the enhanced feed axis speed shortens setup time. Linear guides on both vertical and horizontal axes improve straightness, while automatic table dressing enhances accuracy. Usability is improved with teaching functions on both the right and left sides, along with a manual pulse handle.



Surface Grinding



## SSR5 Features

**Three-Fold Productivity Rate Increase**—The SSR5 has a three-fold productivity advantage compared to a horizontal-axis, square-table surface grinder with equivalent working area.

**Low Environmental Load, Non-Hydraulic Pressure**—Thermal displacement is remarkably reduced by an environment-responsive structure and non-hydraulic pressure NC specification, which also enables high accuracy.

**Every Spindle Shifts to NC**—Amada's dedicated rotary software allows automatic table dressing and automatic measurement functions.

**Linear Guides**—Both the vertical and horizontal axes feature linear guides for improved straightness.

**Teaching Function**—A teaching function on both the right and left sides, combined with a manual pulse handle, improves usability.

**Automatic Table Dressing**—Included as standard equipment, automatic table dressing functions enhance dimensional accuracy.

**Servo Controlled Rotary Table**—Enables superior surface finish over entire workpiece face through constant surface speed function.

**Constant Surface Footage**—Table rotation inverter enables synchronization of ram feed and table RPM. Feed speed and ram feed automatically increase to provide optimum surface footage across the face of the part for superior surface finish.



## Machine Specifications

CAPACITY	Diameter of solenoid chuck valve			20" (508 mm)		
	Distance between chuck upper surface and gnnding wheel lower surface			4.9" (125 mm)		
	Maximum swing in table cover			21.6" (550 mm)		
TABLE	Effective diameter of electromagnetic chuck			16.5" (420 mm)		
	Rotation speed/rotation speed range conversion number			50~300 min <sup>-1</sup> /21 step		
	Vertical travel distance			7.4" (190 mm)		
	Maximum angle of inclination			±3°		
	Manual	Handle feed amount	Magnification Off, x0.1, x1, x10, x40	By a rotation	0.0004", 0.004", 0.04", 0.015" (0.01, 0.1, 1.0, 4.0 mm)	
				By a scale	0.000004", 0.00004", 0.0004", 0.0015" (0.0001, 0.001, 0.01, 0.04 mm)	
		Jog feed		328, 1640, 3280, 6560 ft/min (100, 500, 1000, 2000 m/min)		
		Operation method			Jog lever pulse handle	
	Automatic	Feed speed	Fast feed	78"/min (2000 mm/min)		
			Grinding feed	0.004"~39" (0.1~1000 mm/min)		
	Minimum setting unit			0.000010" (0.0001 mm)		
	RAM	Travel distance			13.1" (335 mm)	
		Manual	Handle feed amount	Magnification Off, x0.1, x1, x10, x40	By a rotation	0.0004", 0.004", 0.04", 0.015" (0.01, 0.1, 1.0, 4.0 mm [OP])
					By a scale	0.000004", 0.00004", 0.0004", 0.0015" (0.0001, 0.001, 0.01, 0.04 mm [OP])
Jog feed			0~31", 39", 78", 157"/min (0~800, 1000, 2000, 4000 mm/min)			
Operation method			Jog lever pulse hande [OP]			
Automatic		Feed speed	Fast feed	196"/min (5000 mm/min)		
			Grinding feed	0.004~196"/min (0.1~5000 mm/min)		
Minimum setting unit			0.000010" (0.0001 mm)			
GRINDING WHEEL	Outside diameter x width x inside diameter			14" x 1.5" x 5" (355 x 38 x 127 mm)		
	Rotation speed			0~2500 min <sup>-1</sup>		
ELECTRIC DEVICE	Gnnding wheel axis			10 HP/ 11 P (7.5 /11 kW-P)		
	For table rotation			2.4 HP (1.8 kW)		
	For vertical feed			1.8 HP (1.4 kW)		
	For ram actuation			1.6 HP (1.2 kW)		
	Automatic lubrication pump			0.03 HP (25 W)		
	Electric capacity			17 kVA		
DIMENSIONS / WEIGHT	Dimensions (length x width x height)			83" x 45" x 63" (2120 x 1154 x 1602 mm)		
	Required floor space (including dust collection and coolant equipment and maintenance space)			110" x 82" (2800 x 2095)		
	Machine total weight			5830 lb (2650 kg)		



## Control Unit Specifications

<b>CONTROL UNIT MODEL</b>	F-OiT (FANUC)
<b>CONTROLLED AXES</b>	Single axis x 2, table rotation axis x 1 (X-axis: cross feed, Z-axis: vertical, B-axis: table rotation)

### Standard Functions

- Automatic demagnetizing device
- Electromagnetic/permanent magnetic chuck supported
- Simplified permanent chuck demagnetizing function
- Stepless magnetic force adjustment knob
- Electric leakage breaker (sensed current: 30mA)
- 7.2-inch monochrome CD/MDI unit
- Dressing interval (in-grinding dressing)
- Z-axis (vertical) manual handle
- Manual reference point returning
- Stored stroke limit
- Table rotation override 0—100%
- Ram actuation override 0—100%
- Constant table rotation speed control
- Grinding wheel speed S command
- Self-diagnostic function
- Alarm and alarm history display
- Actual speed display
- Clock display
- Current position display
- Servo adjustment image
- Ram position teaching push button
- Operation time/number of parts display
- Chuck workpiece/workpiece reference push button
- Relative coordinate origin push button
- End message
- Buzzer (volume adjustable)
- Automatic table dressing function

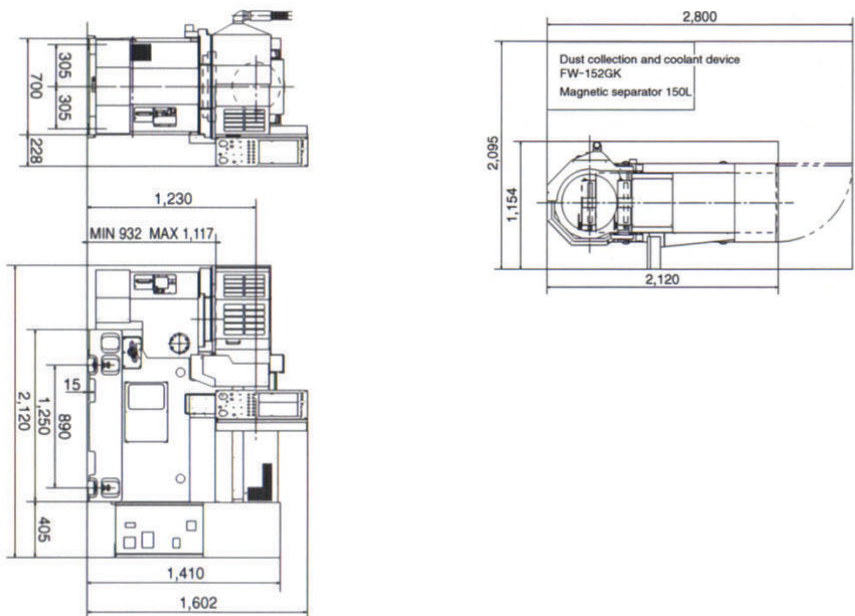
### Optional Functions

- X-axis (ram) manual handle
- Handle interruption
- Interruption dressing
- Running timer
- Warning light (1 color [yellow])
- Warning light (3 colors [red, yellow, green])
- Operation time display
- AC100V power outlet (2P)
- Imperial units available

## Special Accessories

CHUCK	Electromagnetic chuck table (ring pole P = 8)
	Electromagnetic chuck table (star pole)
	Electromagnetic chuck table (star and ring pole)
	Vacuum adsorption chuck device (not including adapter plate)
COOLANT EQUIPMENT	Magnetic separator type dust collection and coolant device (150 liters) FW-152-GK
	Paper and magnetic separator type dust collection and coolant device (150 liters)
	Grinding fluid temperature control device
DRESSER	Electric dresser
SPINDLE	Balancing arbor
	Optional grinding wheel flange
	Grinding wheel width 50 mm
OTHER	Balance board
	Working lamp
	Specified color

## External View



## See Amada Grinders at Work



The AMTA Technical Center was created to provide a unique environment for visitors to experience the latest manufacturing technology in action. This stunning 40,000-square-foot facility houses the latest Amada technology in each product group. Much more than just an exhibit, every machine, automation accessory, and software program in the facility is fully operational and ready to empower customers to solve their most challenging manufacturing applications.

The information in this catalog is as of August 2013. Specifications and other contents are subject to change without notice.

There may be differences between the specifications described in this catalog and the Amada products actually shipped. Please ask our staff for more detail.

The products in the catalog may be subject to the provisions of foreign exchange and the Foreign Trade Law. When exporting cargo subject to such controls, permission pursuant to regulation is required. Please contact our business representative in advance when exporting products overseas.

When using our products, safety equipment is required depending on the operational task.

For safe and correct operation, ensure thorough reference to the Instruction Manual prior to operation.

The cutting performance data in this catalog may be affected by temperature, the cutting materials, tool materials, and cutting conditions, etc. Please note that such data are not guaranteed.



At **AMADA MACHINE TOOLS AMERICA**, we're committed to your success. More than just a provider of precision metalworking solutions, we're a partner who can help you meet the advanced engineering and manufacturing challenges unique to your industry. Together, we can create the right solution to meet your needs today and empower you to build your business for the future.

**AMADA MACHINE TOOLS AMERICA, INC.**

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