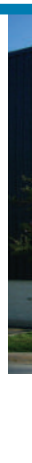
AMADA MACHINE TOOLS AMERICA, INC.

THE VISION OF PRECISION

Mid-Sized CNC Grinders

AMADA®

Contents



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.

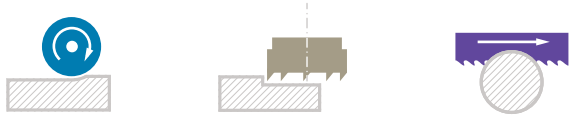
And, as technology has evolved, we've embraced CNC automation as a core strength, improving throughput and helping new operators become productive more quickly.

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

Mid-Sized CNC Surface Grinders

Built to deliver consistent repeatability on larger projects, the Techster Series grinders feature high-rigidity beds with low centers of gravity and tables without overhangs, so you can handle heavy, high-accuracy grinding with ease.

Techster 84 • 104 • 126

Techster Series 84, 104, and 126 Column Type Precision Surface Grinders

Ball Screw Drive Table

Operator Panel

Techster Series Features

Economy and Ecology

- The Techster 84. 104, and 126 grinders feature ball screw drive tables as standard. This non-hydraulic drive unit reduces noise and environmental burdens, reducing power consumption while delivering high speed and accuracy for reduced grinding times.
- The vertical axis has a linear guide way with 0.000004" (0.1µm) following for the mirror.
- A powerful 20 HP (15 kW) spindle motor delivers outstanding performance. (Optional on Techster 126.)

Techster Control

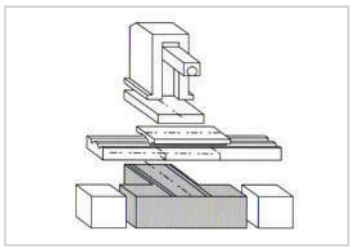
- Control FANUC Windows interface.
- Three-axis control, two-axis simultaneous.
- Meister operating system-compatible.
- Supports all canned cycles and G-code programming of Meister series.
- Supports multiple work cycles.
- Supports all dressing cycles.
- Supports creep feed canned cycle.
- Provides high precision mid-power creep feed.

Original Designed Structure

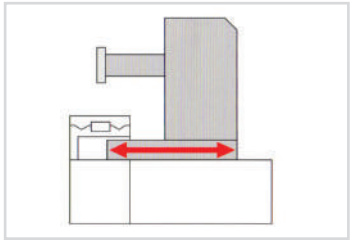
- The high-precision structure has increased mass for high rigidity.
- A long stroke cross axis on a T-type solid bed structure ensures maximum straightness over the life of the machine.
- A high-rigidity, C-type column reduces overhang on the wheel head.
- Table movement is fully guided by V-V slideways.

Safe and User-Friendly

- PC-type NC touchscreen.
- Interactive programming software.
- Three types of machine coverings.
- Supports all dressing cycles.



T-Frame Construction



Zero Overhang

User-Friendly Interactive Programming Software

On-Board Measuring Touch Probe

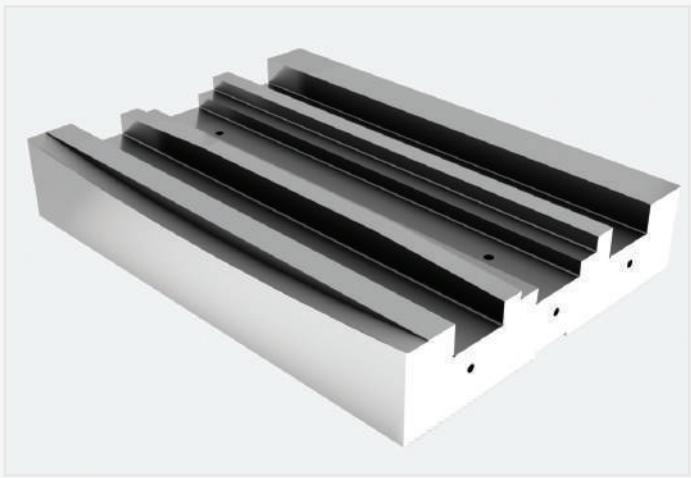
CNC Swiveling Rotary Dresser

Wide Range of Optional Features

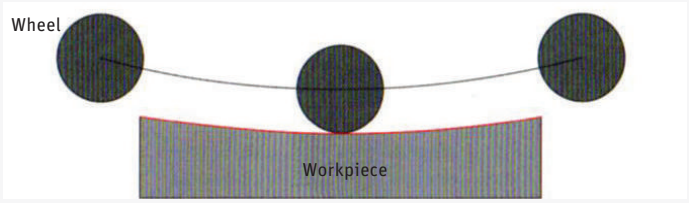
- Newly developed original software provides more efficient grinding.
- A quick and accurate on-board measuring device ensures the tightest tolerances are met.
- An automatic wheel balancer is available for Techster 104 and 126 grinders. This measuring instrument adjusts the balance of the wheel and spindle as an integral unit—perfect balancing improves the ground surface roughness.
- Each available dresser has an automatic dressing cycle program:
  - CNC swivel rotary dresser
  - High-speed rotary dresser
  - Single diamond profile dresser
  - Straight dresser

The Techster 126 in Action

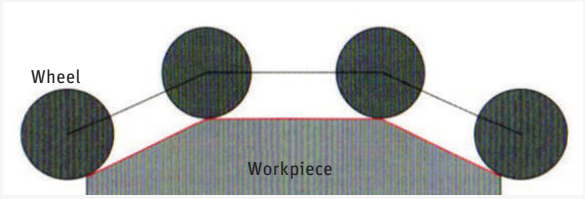
The Techster Series' combination of environmental efficiency and grinding accuracy makes mid-sized jobs easy.



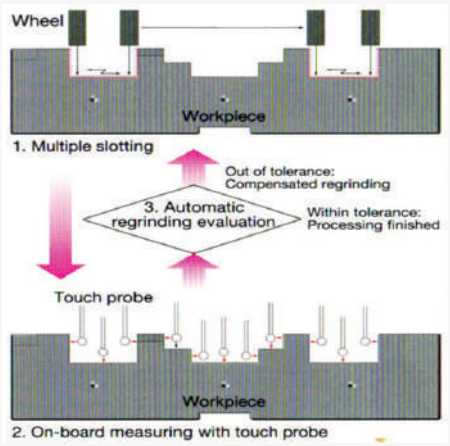
Machine Component



Crowning Grinding (Concave Curving)



Crowning Grinding (Slant and Straight)



Programmable Measuring and Auto Re-Grinding

Mirror Finishing Example

GRINDING ACCURACY

15 pieces surface grinding	Parallelism 2.0 µm
Longest work surface grinding	Straightness 3.0 µm
Face grinding	Straightness 3.0 µm

Machine Specifications

			TECHSTER 84	TECHSTER 104	TECHSTER 126
CAPACITY	Max. longitudinal travel		39.3" (1000 mm)	47.2" (1200 mm)	59" (1500 mm)
	Max. cross travel		17.7" (450 mm)	18.1" (460 mm)	25.9" (660 mm)
	Max. spindle center height from table		19.6" (500 mm)	29.5" (750 mm)	33.4" (850 mm)
	Standard chuck size (L x W x H)		31.4" x 15.7" x 3.9" (800 x 400 x 100 mm)	39.4" x 15.7" x 3.9" (1000 x 400 x 100 mm)	47.2" x 23.6" x 3.9" (1200 x 600 x 100 mm)
TRAVEL	Longitudinal feed		10~131 ft/min (3~40 m/min.)		
	Max. no. of reciprocation (15 mm stroke)		120 min^{-1}		
	Traverse guide way/drive		V-V sliding guide way/ball screw direct drive		
CROSS	Rapid cross feed (jog)		0-15, 19, 78, 196 ft/min (0~400, 500, 2000, 5000 m/min.)		
	Handle feed	Per rev.	0.0004", 0.004", 0.04", 0.4" (0.01, 0.1, 1.0, 10.0 mm)		
		Per grad.	0.000004", 0.00004", 0.0004", 0.004" (0.0001, 0.001, 0.01, 0.1 mm)		
	Minimum input increment		0.000010" (0.0001 mm)		
	Position detection system		Linear scale/deviation: 0.05 µm (OP)		
	Cross guide way/drive		Linear roller guide way/ball screw direct drive		
WHEEL HEAD	Rapid wheel head feed (jog)		3.9, 78"/min (100, 2000 mm/min)		
	Handle feed	Per rev.	0.0004", 0.004", 0.04", 0.157" (0.01, 0.1, 1.0, 4.0 mm)		
		Per grad.	0.000004", 0.00004", 0.0004", 0.0015" (0.0001, 0.001, 0.01, 0.04 mm)		
	Minimum input increment		0.000010" (0.0001 mm)		
	Position detection system		Linear scale/deviation: 0.05 µm (OP)		
			Linear roller guide way/ball screw direct drive		
WHEEL SPINDLE	Size (OD x width x bore)		Ø14 x 1.5~2 x Ø5" (Ø355 x 38~50 x Ø127 mm)	Ø14 x 1.5~2 x Ø5" (Ø355 x 38~50 x Ø127 mm)	Ø20 x 38~50 x Ø5" (Ø510 x 38~50 x Ø127 mm)
	Wheel spindle speed		300~2500 min^{-1}	300~2500 min^{-1}	300~1500 min^{-1}
	Motor requirement		10HP~4P (7.5~4 kWP)	10HP~4P (7.5~4 kWP) 11~6 kWP (option)	15HP~6P (11~6 kWP) 15~6 kWP (option)
NC CONTROL AXIS				Simultaneous 2 axis + Table 1 axis	
FLOOR SPACE (W X L X H)			133" x 102" x 81" (3380 x 2615 x 2075 mm)	151" x 131" x98" (3850 x 3330 x 2495 mm)	179" x 142" x 109" (4550 x 3630 x 2780 mm)
MACHINE NET WEIGHT			11,000 lb (5000 kg)	16,500 lb (7500 kg)	27,500 lb (12,500 kg)

**The table speed depends on work load on the table.*

Dimensions

	TECHSTER 84	TECHSTER 104	TECHSTER 126
WIDTH	133" (3380 mm)	151" (3850 mm)	179" (4550 mm)
DEPTH	102" (2615 mm)	131" (3330 mm)	142" (3630 mm)
HEIGHT	81" (2075 mm)	98" (2495 mm)	109" (2780 mm)
OPENING		61" (1555 mm)	83" (2115 mm)
TO TOP OF COVER		86" (2190 mm)	98" (2490 mm)
REQUIRED FLOOR PLAN	29ft^2 (9 m^2)	39ft^2 (12 m^2)	52ft^2 (16 m^2)

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.

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.

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