

AMADA MACHINE TOOLS AMERICA, INC.



THE VISION OF PRECISION

Lineup of Milling Machines



Amada Machine Tools America

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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 milling solutions.

Whatever your plate milling requirements might be, 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 machine tools back in the 1930s, 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 solutions to deliver the ultimate in quality and precision.

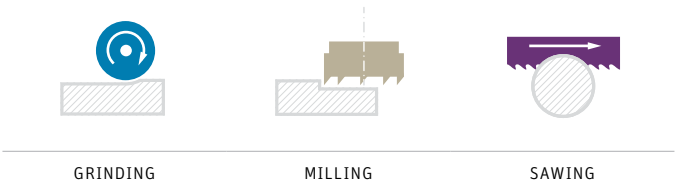
And, as technology has evolved, we’ve embraced CNC automation as a core strength, improving throughput and helping new operators become productive more quickly.

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



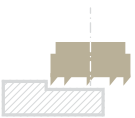
Amada Milling Technology



Amada is a leader in high-productivity duplex and plate milling machines. Machine shops the world over have trusted Amada’s proven milling technology for years. For all their milling and machining needs, manufacturers of supply parts—and companies in the energy, transportation, automotive, and aerospace industries—rely on Amada quality to provide:

- Superior design
- Integrated automation
- Meticulous assembly practices
- Maximum accuracy
- High speed and efficiency

Whether you’re performing standard plate milling or need special milling head technology, the advantages offered by the Amada THV and PMH Series of milling machines deliver the high angular accuracy, parallelism, and productivity you need to stay ahead in a rapidly changing industry.



MILLING TECHNOLOGY

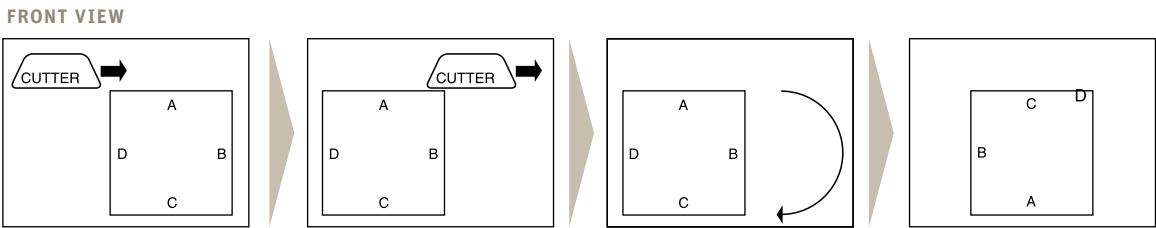
THV Series

The THV series of duplex milling machines has been delivering exceptional performance for companies working in the energy, transportation, automotive, and aerospace industries. The high-productivity duplex milling design allows for fully automatic plate machining with one material setup. And the precision engineering that goes into each Amada milling solution provides high angular accuracy and parallelism with shorter cycle times.

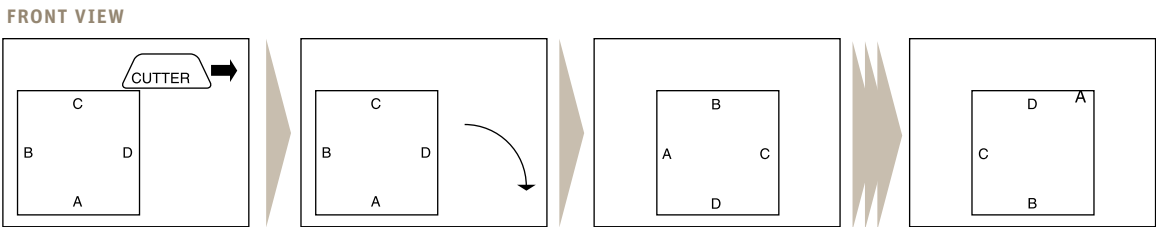
Plate Milling

Milling plate with a general vertical milling machine or machining center requires milling on four surfaces, one side at a time, and requires four work settings, as illustrated below:

Vertical Configuration



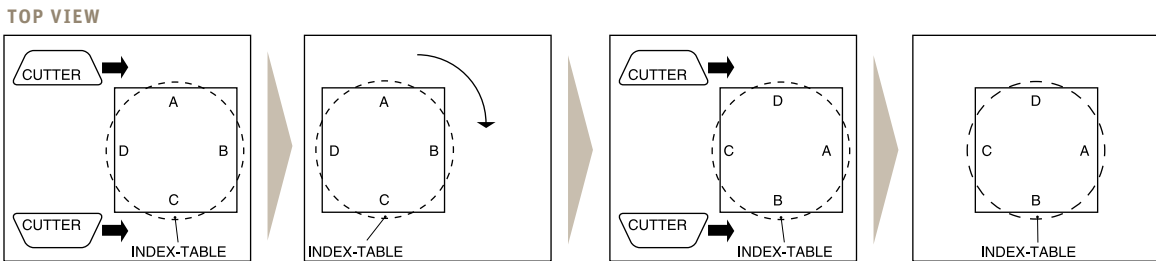
Set and mill the A-side of the workpiece, then reverse and set the C-side.



After milling the C-side, repeat the same operation for the B-side and D-side.

This means milling through 4 separate processes, which requires the operator to stay with the machine until finished.

Duplex Configuration



The duplex milling machine enables automatic milling of 4 surfaces with only one setting, reducing setting time, increasing efficiency and reducing running cost.

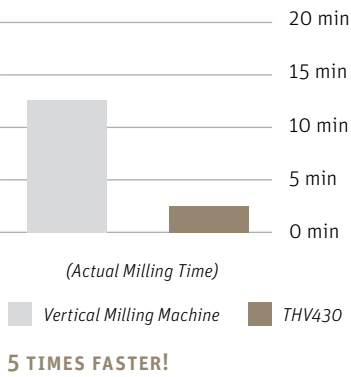
Using the THV430 as an example, it's easy to see how the THV Series can greatly increase productivity in the machine center.

Comparison of Milling Time

Shorter Cycle Times

	DUPLEX MILLING MACHINE (THV430)	CONVENTIONAL MILLING MACHINE
Number of setup times	1	4
Actual milling time	About 4 minutes	About 20 minutes
Total time (actual milling time + setup time for accuracy)	About 10 minutes	Up to 45 minutes*

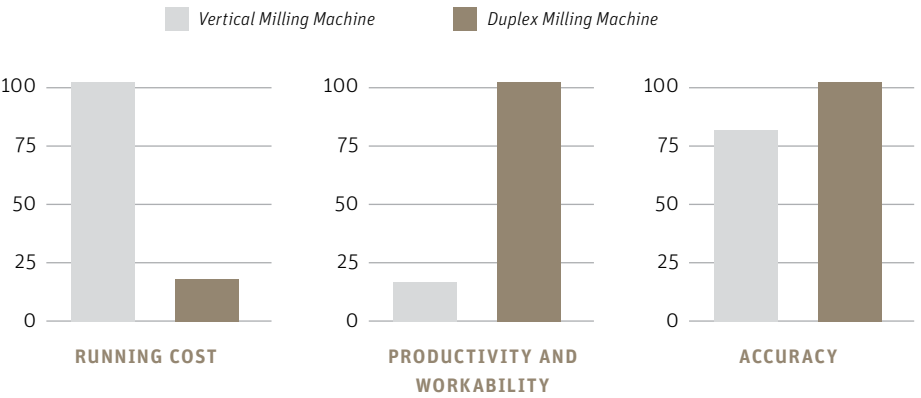
*Setup time of the vertical milling machine includes changing the program, measuring and setting the workpiece. Setup time and accuracy are highly dependent on the skill level of the operator.



Machine Specifications

	MATERIAL	CUTTER DIAMETER	INSERTS (PCS)	SPINDLE SPEED (MIN-1)	FEEDRATE	CUTTING WIDTH	CUTTING DEPTH
THV430 14.7 HP (11 kW)	C45	Ø160 mm Ø6.299"	8	300	480 mm/min 18.9 in/min	150 mm 5.905"	2.0 mm 0.07

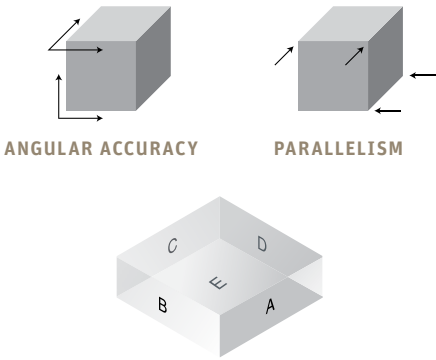
Maximum Efficiency



Maximum Precision

The THV Series duplex milling machines are not only fast and easy to use, but also maintain high accuracy for dimension, squareness and parallelism.

ACCURACY	ALLOWANCE	ACHIEVED VALUE
Parallelism of A-C Parallelism of B-D	Less than 0.0008" (0.02 mm) over a length of 11.8" (300 mm)	0.00023" 0.006 mm
Angular accuracy of sides A, B, C, D in relation to each other	Less than 0.0008" (0.02 mm) over a length of 11.8" (300 mm)	0.00027" 0.007 mm
Angular accuracy of sides A, B, C, D in relation to face E	Less than 0.0012" (0.03 mm) over a length of 3.9" (100 mm)	0.00039" 0.010 mm



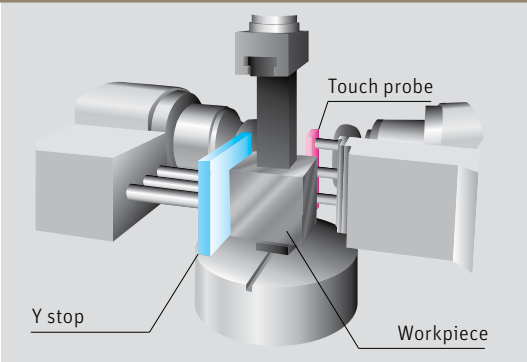
THV Series



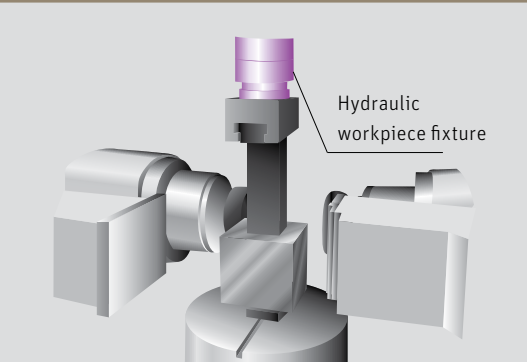
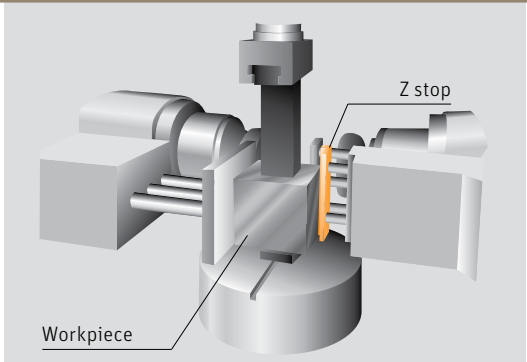
Easy Menu Screen



Auto Screen



Hydraulic Clamping System



Features

User-Friendly Graphical Interface—With the THV Series’ user-friendly conversational interface, it’s easy to machine the workpiece. The operator simply chooses the cutting conditions and inputs the workpiece size and finishing size. Operators do not need knowledge or great skill with the NC program, enabling beginners to easily use the machine.

Compared to conventional single-head milling machines, the THV series delivers:

- Shorter handling times
- Lower error rates with automatic material width calibration
- Automatic indexing of the workpiece
- User-friendly operation

Standard Equipment

Workpiece Positioning Device—Our patented positioning device helps the operator set the workpiece easily, and when the workpiece size is input into the operational panel, the machine automatically calculates and moves the device to the correct position. The operator only sets the workpiece so it touches the positioning device.

Hydraulic Clamper System—Our patented hydraulic clamper system clamps the workpiece tightly, and restrains the movement of the workpiece during the rotation of the index table.

Work Clamp Pad and Upper/Lower Jig Fixtures—The jig fixtures come standard with the machine, so the operator does not need to make any jig fixtures.

Workpiece Measuring Device—Our patented measuring device measures the workpiece size and automatically calculates and finds the workpiece center. Even if the workpiece is not set to center, two cutters move to the correct position and cut the same depth. This function is called the “Automatic Centering System.”

If the workpiece center is out of alignment and the machine does not adjust to the center position, the machine cuts only one side. However, if the Automatic Centering System is deployed, the machine calculates the center and moves the cutters to the correct position after measuring the workpiece, and then cuts the same depth on both sides.



THV150

The THV150 is a specially designed duplex milling machine for milling four sides of custom plates.



Working Area



Material Stop



FANUC Control Unit-THV Series

Features

- With the THV150, milling all four sides of a plate is a simple process:
1. The workpiece is clamped by the operator.
 2. Two surfaces are milled with two cutters at one time automatically.
 3. After milling two surfaces, the index table is automatically rotated 90 degrees.
 4. The two remaining surfaces are milled automatically.

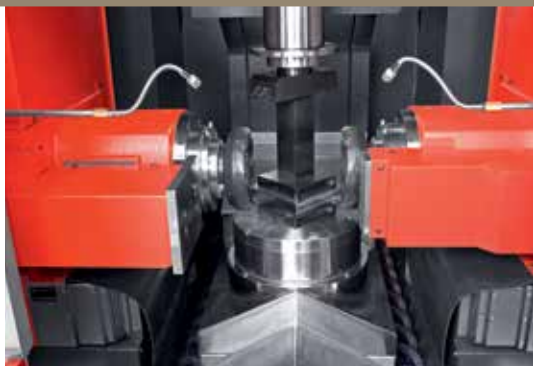
THV150 Machine Specifications

CUTTING CAPACITY (W X L X H)	Max.	5.906" x 5.906" x 2.047" (150 x 150 x 52 mm)
	Min.	0.276" x 0.276" x 0.276" (7 x 7 x 7 mm)
WORK LOAD CAPACITY	44.1 lb (20 kg)	
DIMENSIONS (W X L X H)	59.06" x 59.06" x 70.87" (1500 x 1500 x 1800 mm)	



THV430

The THV430 has been designed for high-quality machining of plates measuring up to 16.9" x 16.9" (430 mm x 430 mm) with a maximum height (option) of 7.48" (190 mm). In most applications, no further machining is required due to the extremely high surface finish of the machined parts.



Chamfering



Matching Steps



External Measuring Table

Features

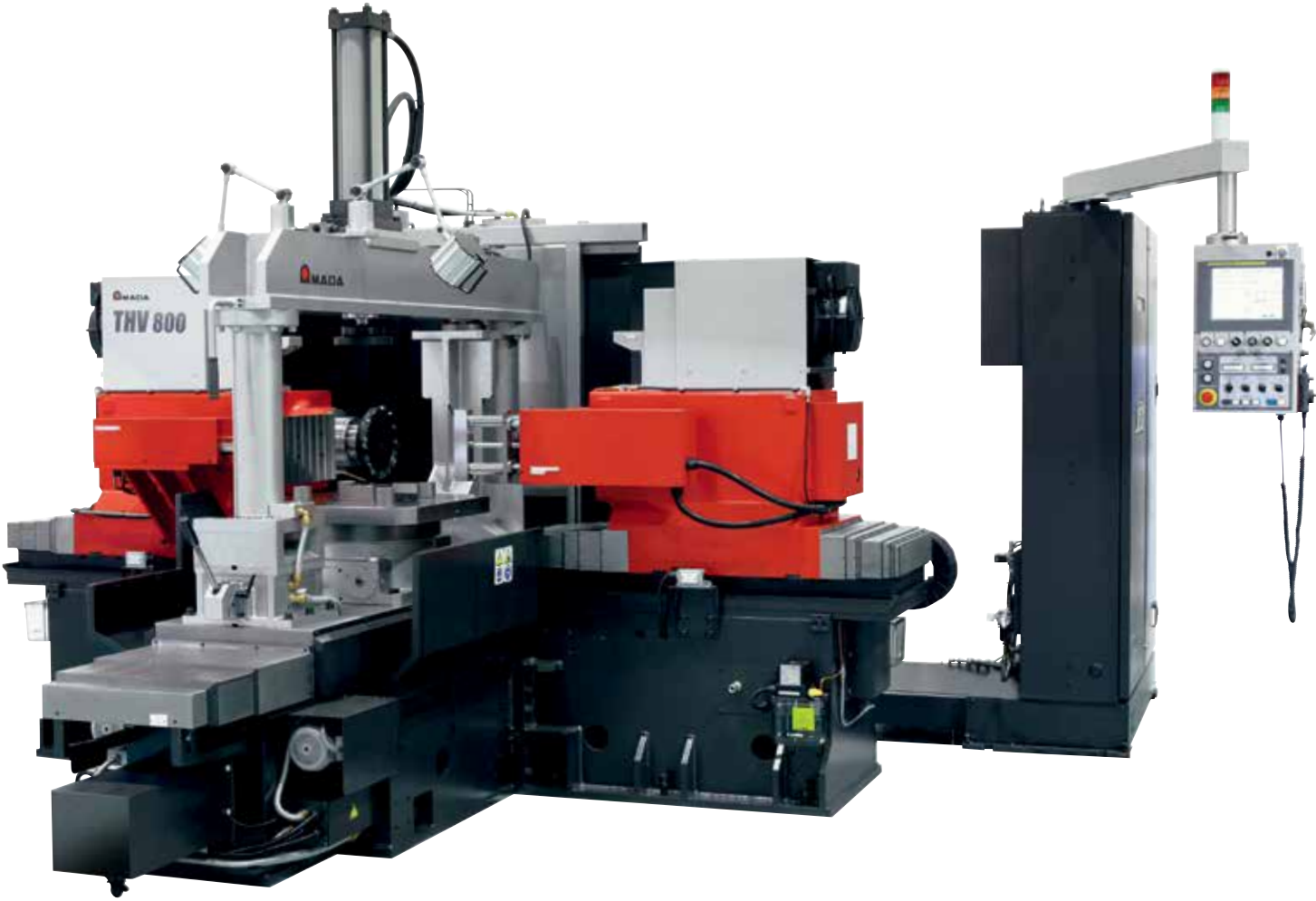
User-Friendly Operation

- Easy to operate using interactive controls
- For setting up the automatic manufacturing process, only the input of initial dimensions, finished dimensions, and material grade is required
- NC and cutting skills are not needed

CNC Control—The THV430 is equipped with the E.C.O.S. operating system, which simplifies the operation of the machine to such an extent that even untrained staff can produce professional results.

THV430 Machine Specifications

CUTTING CAPACITY (W X L X H)	Max.	16.93" x 16.93" x 5.91" (430 x 430 x 150 mm)
	Min.	0.787" x 0.787" x 0.394" (20 x 20 x 10 mm)
WORK LOAD CAPACITY	507 lb (230 kg)	
DIMENSIONS (W X L X H)	130.7" x 117.2" x 81.3" (3320 x 2978 x 2065 mm)	



THV800

An innovative, patent-registered material clamping system is just one of several features that enhance productivity and accuracy on the THV800.



Patent-Registered Material Clamping--Side Machining



9.8" Milling Head of the THV800



Material Support of the THV-800

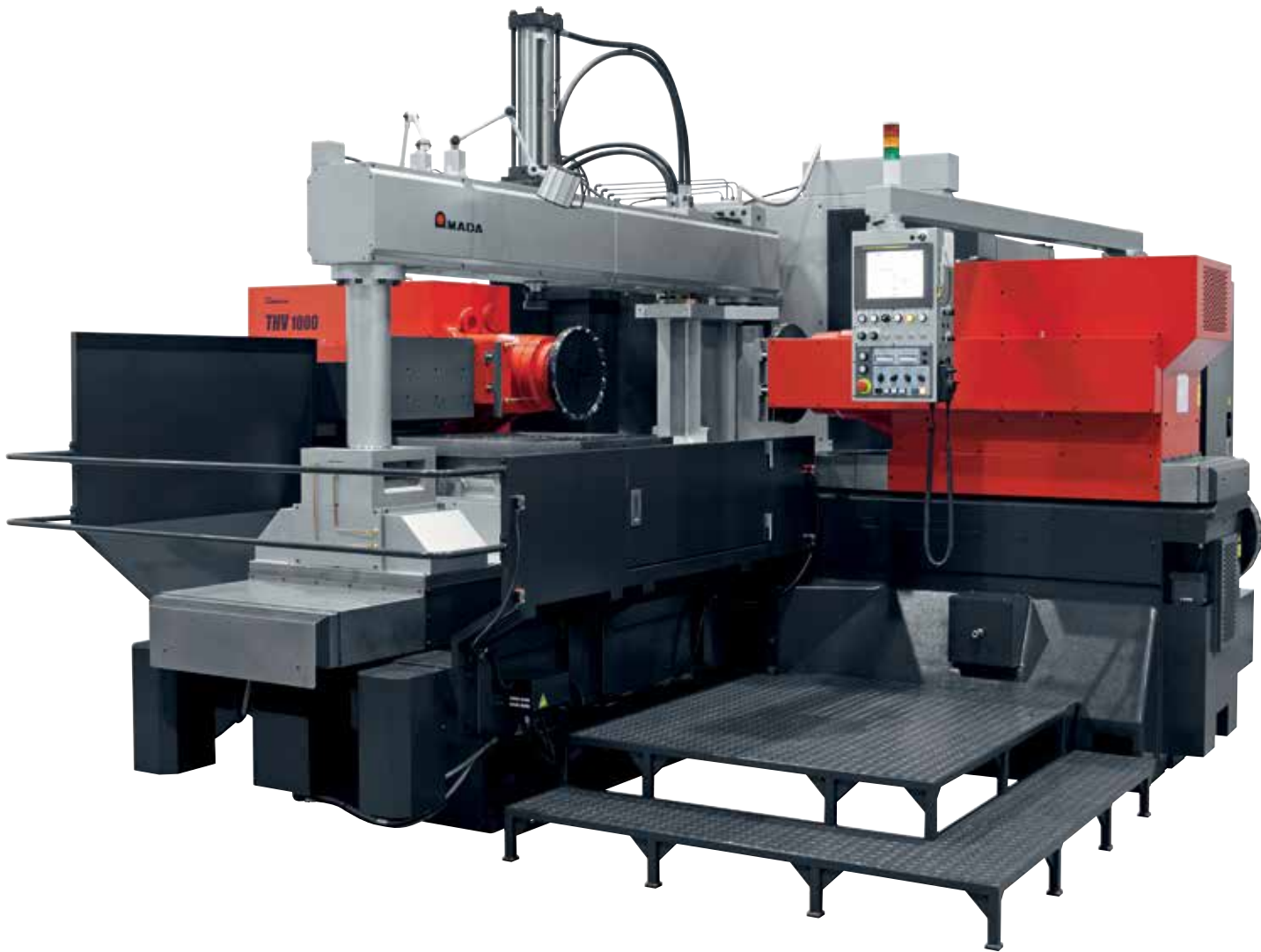
Features

The workpiece fixture and the appropriate material supports can be easily changed, and the correct workpiece fixture for the material

size to be machined is automatically displayed after entering the material data. A keyway on the fixture ensures the correct selection.

THV800 Machine Specifications

CUTTING CAPACITY (W X L X H)	Max.	31.50" x 31.50" x 9.06" (800 x 800 x 230 mm)
	Min.	2.76" x 2.76" x 0.394" (70 x 70 x 10 mm)
WORK LOAD CAPACITY	2646 lb (1200 kg)	
DIMENSIONS (W X L X H)	173.6" x 177.2" x 106.4" (4410 x 4500 x 2702 mm)	



THV1000

Automatic positioning and measuring devices on the THV1000 make workpiece handling quick and easy.



Patent-Registered Material Clamping-Chamfering

Material Stop

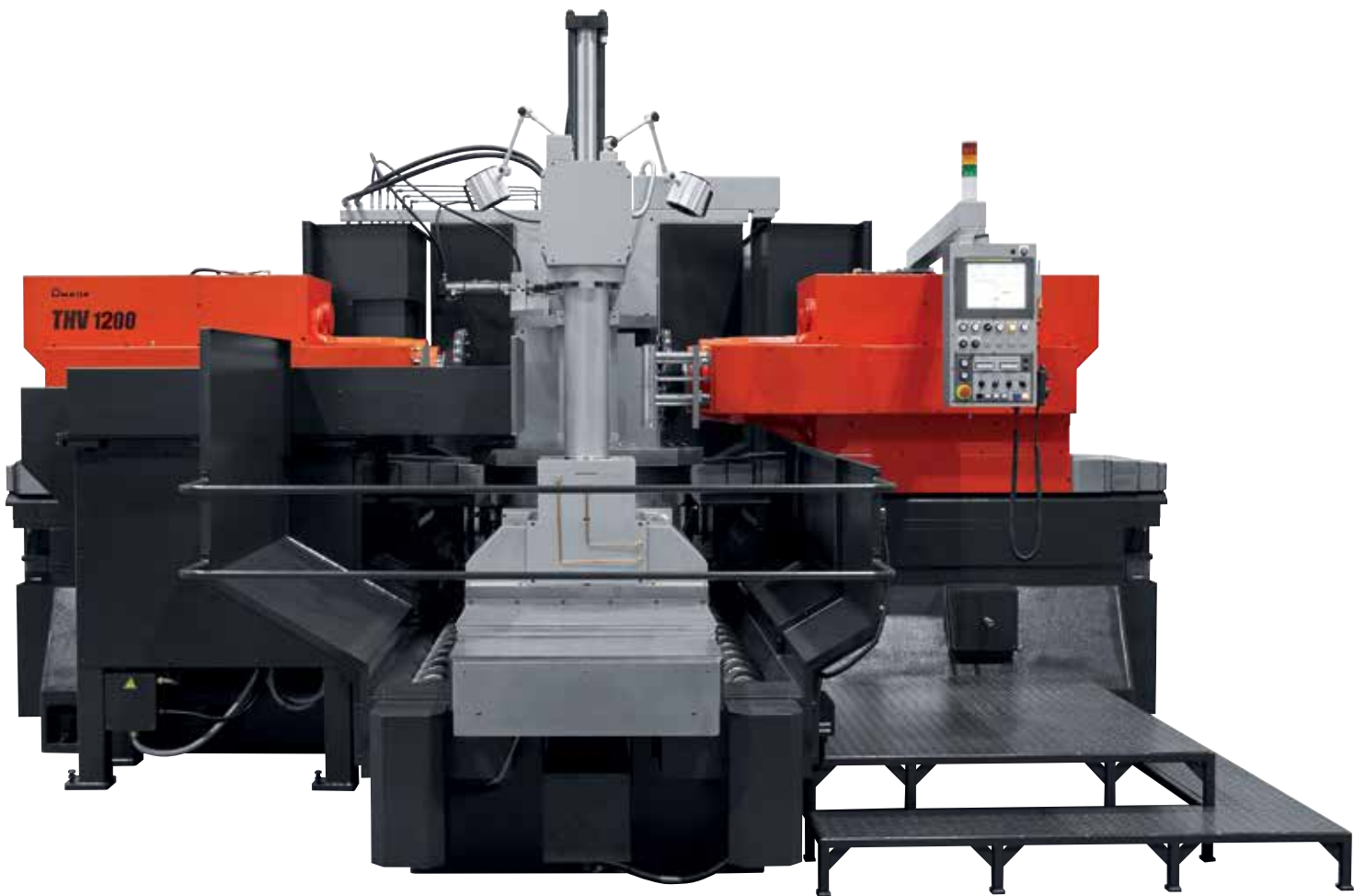
Features

Correct loading of the workpiece into the working area is simplified by back and side stopper plates. After the material size has been entered, the workpiece is automatically fed.

And, before the machining process is started, the measuring device automatically checks the workpiece width.

THV1000 Machine Specifications

CUTTING CAPACITY (W X L X H)	Max.	39.37" x 39.37" x 15.75" (1000 x 1000 x 400 mm)
	Min.	4.72" x 4.72" x 0.394" (120 x 120 x 10 mm)
WORK LOAD CAPACITY	7716 lb (3500 kg)	
DIMENSIONS (W X L X H)	227.2" x 233.1" x 116.1" (5770 x 5920 x 2950 mm)	



Patent-Registered Material Clamping-Chamfering



Material Stop

Features

The Automatic Centering System ensures smooth two-sided machining and guarantees the angular accuracy and parallelism of the workpiece. Milling plate with the THV1200 duplex milling machine is much faster than

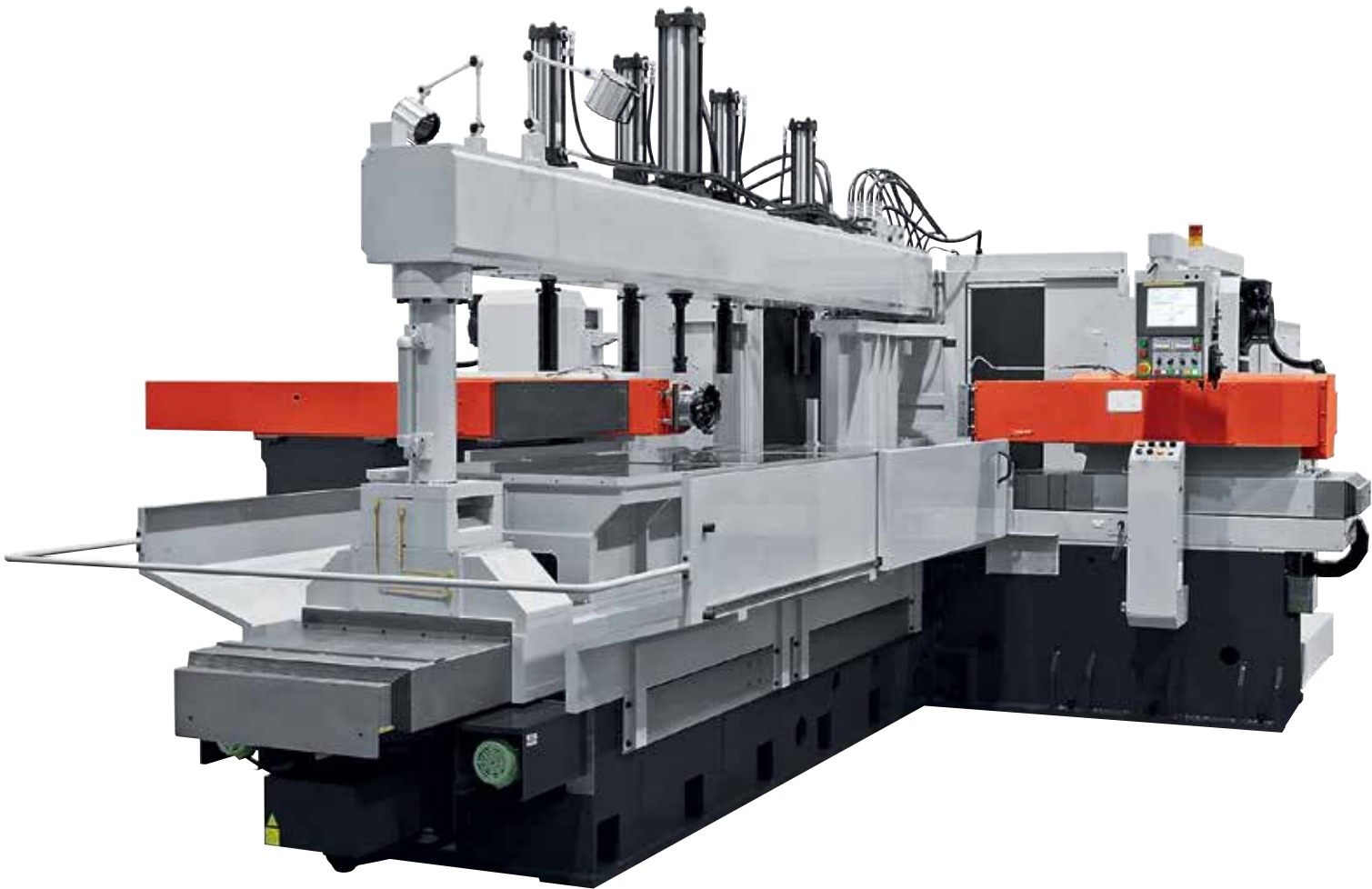
conventional milling with a vertical machine or machining center, since it enables the automatic milling of four surfaces with only one setting.

THV1200 Machine Specifications

CUTTING CAPACITY (W X L X H)	Max.	47.24" x 47.24" x 15.75" (1200 x 1200 x 400 mm)
	Min.	12.6" x 12.6" x 0.394" (320 x 320 x 10 mm)
WORK LOAD CAPACITY	7716 lb (3500 kg)	
DIMENSIONS (W X L X H)	231.1" x 233.1" x 116.1" (5870 x 5920 x 2950 mm)	

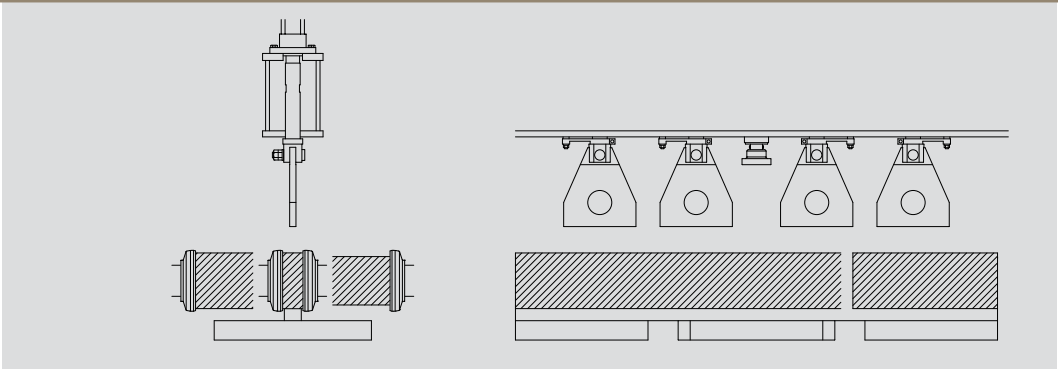
THV1200

The THV1200 delivers high angular accuracy and parallelism with duplex milling heads. Before the machining begins, the automatic centering system positions the material on the rotary table so the duplex mill can machine the two opposite sides of the material simultaneously. The cutting conditions are stored in the control unit. However, they can be replaced with customized values.



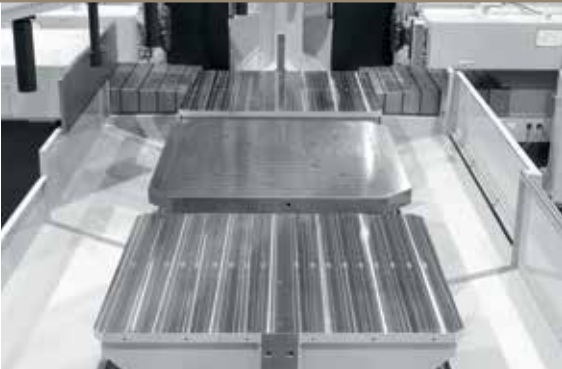
THV1200 (30-T)

The THV-T series was developed to enable both precision plate and bar stock machining with one machine. For both applications, an automatic material stop system simplifies the setup of the machine.



Material Fixture for Bar Stock–Front View

Lateral View



Material Support with Patent-Registered Indexing Unit

Features

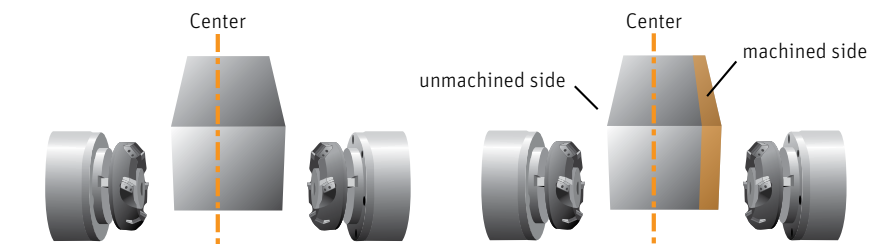
For machining of bar stock with a length of up to 118" (3000 mm), two additional work tables are used to support the material, and four material fixtures are automatically used. Just as in plate machining, the bar stock is aligned by means of a 42.5" (1080 mm) stop

plate, which automatically adapts to the actual dimensions during machine setup. The bridge for the upper material clamping can be adjusted from a central control station for quick and easy setup.

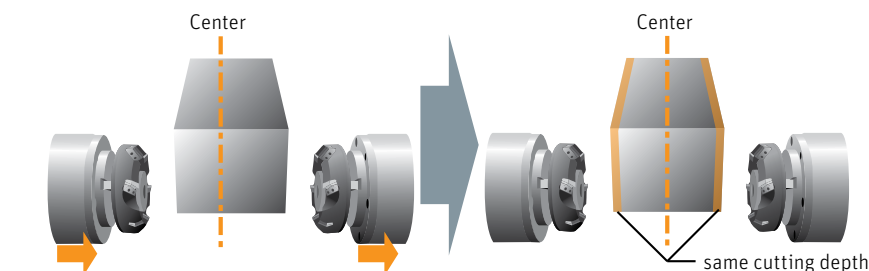
THV1200 (30-T) Machine Specifications

CUTTING CAPACITY (W X L X H)	4 sided milling	Max.	47.24" x 47.24" x 9.06" (1200 x 1200 x 230 mm)
		Min.	9.84" x 9.84" x 0.394" (250 x 250 x 10 mm)
		Work load capacity	5500 lb (2500 kg)
	2 sided milling	Max.	47.24" x 118.1" x 9.06" (1200 x 3000 x 230 mm)
		Min.	3.15" x 47.24" x 9.06" (80 x 1200 x 230 mm)
		Work load capacity	13,200 lb (6000 kg)
DIMENSIONS (W X L X H)		216.7" x 384.4" x 118.1" (5503 x 9763 x 3000 mm)	

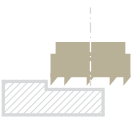
Automatic Centering System



WITHOUT AUTOMATIC CENTERING SYSTEM
Without automatic centering, only one side may be machined.



WITH AUTOMATIC CENTERING SYSTEM
The Automatic Centering System enables the two milling heads to always have the same distance to the workpiece and thus to mill with the same cutting depth.



MILLING TECHNOLOGY

PMH Series

The PMH Series features specially designed vertical milling machines that can process the top and bottom surfaces of custom plates quickly and easily.

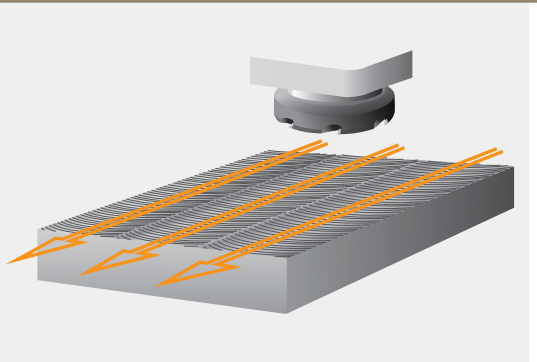
PMH Series



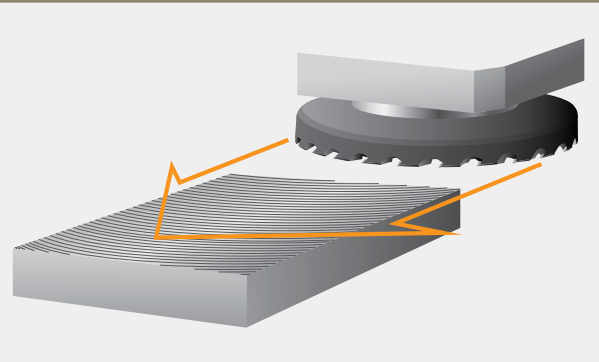
20.6" (525 mm) Milling Head



Automatic Measuring System



Conventional Small Cutter Head Increases Cycle Time



Cutting with Larger Cutter Head Reduces Cycle Time

Features

Special Milling Head Technology—When milling pieces using small milling heads, multiple milling processes are needed, which can cause steps in the surface and apply excess strain to the material. This type of work also requires an experienced operator and complex NC programming.

By contrast, the PMH series features a 20.67" (525 mm) milling head, allowing plates with a width of up to 19.68" (500 mm) to be milled in

a single pass, eliminating transitions and steps and dramatically reducing cycle times.

Larger Milling Head—The larger milling head also provides additional benefits when it comes to workpiece quality:

- No chatter marks
- Equally distributed thermal load
- Excellent surface finish

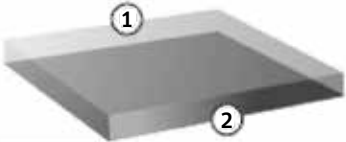
High Machining Quality

MEASURING POINT	MEASURING RESULT*
1	0.0005" (0.0137 mm)
2	0.0006" (0.0169 mm)

MEASURING POINT	MEASURING RESULT*
Upper to lower surface	0.0007" (0.0192 mm)

TYPE	SIZE*
Ra	0.40 μm
Ry	2.87 μm
Rz	2.10 μm

*Material ST52 9.6" x 9.6" x 0.9" (245 x 245 x 23 mm)



PARALLELISM



FLATNESS



SURFACE FINISH



PMH1308

The large milling head that comes standard with the PMH1308 significantly reduces cutting times by eliminating the need for the multiple cutting passes required by small-diameter cutters. The multiple passes of small-diameter cutters introduce steps, transitions and bumps between the cutting tracks and surfaces, which are also eliminated by the one-pass cutting capabilities of the PMH1308.



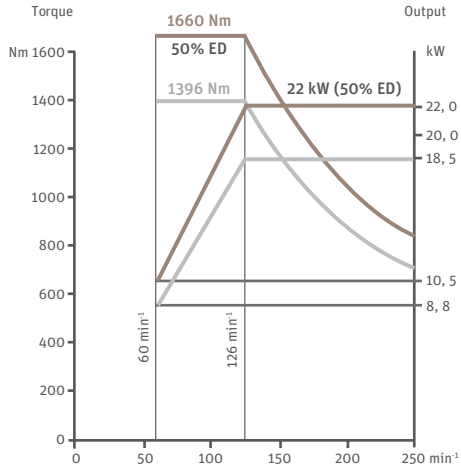
20.6" (525 mm) Milling Head



Automatic Measuring System

Features

The PMH1308 is equipped with a high-capacity spindle with a JIS No. 60 taper. On comparable conventional milling machines and machining centers, the spindle size corresponds to JIS No. 40 or JIS No. 50. A conventional milling machine with driving power of 30 HP and a No. 50 spindle generates a torque of 600 Nm, whereas the PMH1308—with the same power of 30 HP and a No. 60 spindle with a high-capacity gear unit—is able to generate a torque of 1660 Nm.



PMH1308 Machine Specifications

CUTTING CAPACITY (W X L X H)	51.1" x 31.4" x 11.8" (1300 x 800 x 300 mm)
WORK LOAD CAPACITY	7716 lb (3500 kg)
DIMENSIONS (W X L X H)	155.9" x 139.8" x 112.2" (3960 x 3550 x 2850 mm)



PMH3015 and PMH4020

For machining workpieces up to 157.5" x 78.4" x 13.8" (4000 x 2000 x 250 mm), the PMH3015 and PMH4020 deliver uncompromising performance and excellent parallelism, flatness, and finish.



Input Screen

Features

The PMH3015 and PMH4020 have all the features, accuracy and efficiency of the PMH1308, but can cut workpieces up to five times the weight and about 3x the length and width.

With the impressive power of their 40 HP motor, you can be assured that the PMH3015 and PMH4020 are equipped to handle the really big jobs that smaller machines can't do.

PMH3015 Machine Specifications

CUTTING CAPACITY (W X L X H)	118.1" x 59" x 13.8" (3000 x 1500 x 350 mm)
WORK LOAD CAPACITY	28,660 lb (13,000 kg)
DIMENSIONS (W X L X H)	320.9" x 181.5" x 124.0" (8150 x 4610 x 3150 mm)

PMH4020 Machine Specifications

CUTTING CAPACITY (W X L X H)	157.5" x 78.4" x 13.8" (4000 x 2000 x 250 mm)
WORK LOAD CAPACITY	44,092 lb (20,000 kg)
DIMENSIONS (W X L X H)	407.9" x 205.9" x 129.9" (10,360 x 5230 x 3300 mm)

See Amada Mills at Work



The AMTA Technical Center was created to provide a unique atmosphere 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.

Specifications may change without notice at the sole discretion of Amada's Engineering Department.

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.

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