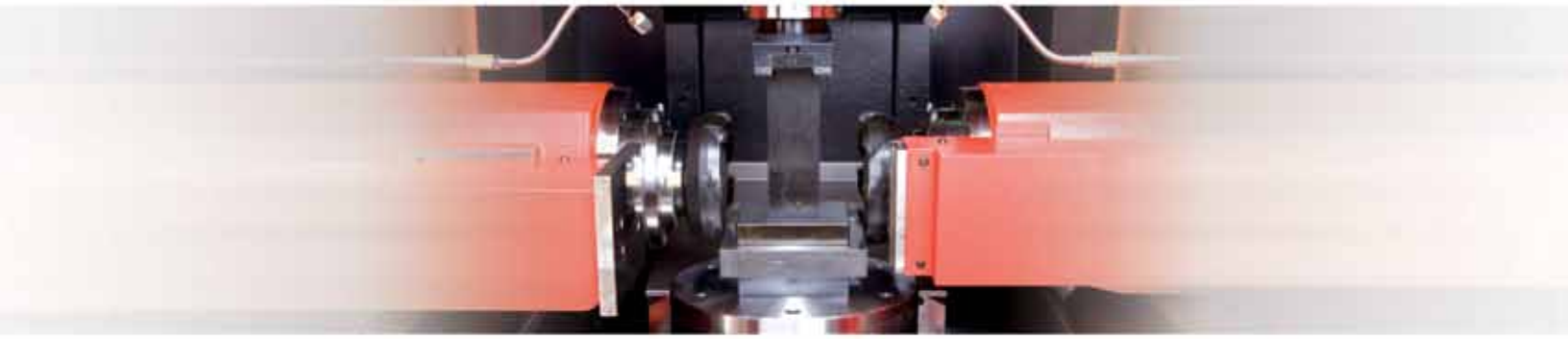
Plate Solution System

THV-Duplex Milling Machine Series



AMADA

Total Solution for Flexible Plate Manufacturing!

Print to

Order

Cutting material to the necessary size with a band saw machine.

2F Cutting

Milling top and bottom surfaces of custom plate with PLATE MILL which is a specially designed vertical milling machine.

2F Milling

Product

Finish

Milling 4 sides of custom plate with THV Series, which is a specially designed twin spindle milling machine.

4F Milling

Top and bottom surfaces can be completely finished by the grinding process of AMADA MACHINE TOOLS' products.

2F Grinding

Amada's Integrated Production System for Custom Plates Supports High Efficiency and Quality

THV Series—
Duplex Milling Machine

Why choose the THV Series?

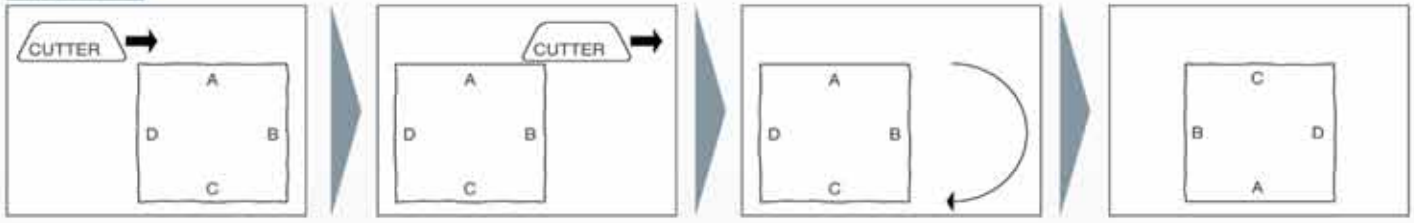
We believe you will be very satisfied with the usability and accuracy of our new twin spindle milling machine, which is much faster than the conventional milling by a vertical milling machine or machining center, and improves the accuracy of the product.

	THV-430	THV-800	THV-1000
Workpiece (W x L x H)	430 x 430 x 150 mm 16.93 x 16.93 x 5.91"	800 x 800 x 230 mm 31.50 x 31.50 x 9.06"	1000 x 1000 x 400 mm 39.37 x 39.37 x 15.75"
Work load capacity	230 kg / 507 lb.	1200 kg / 2646 lb.	3500 kg / 7716 lb.
Machine dimensions (W x L x H)	3320 x 2510 x 2070 mm 130.7 x 98.8 x 81.5"	4900 x 3600 x 2600 mm 192.9 x 141.7 x 102.4"	5750 x 4600 x 3140 mm 226.4 x 181.1 x 123.6"

ABOUT MILLING PLATE

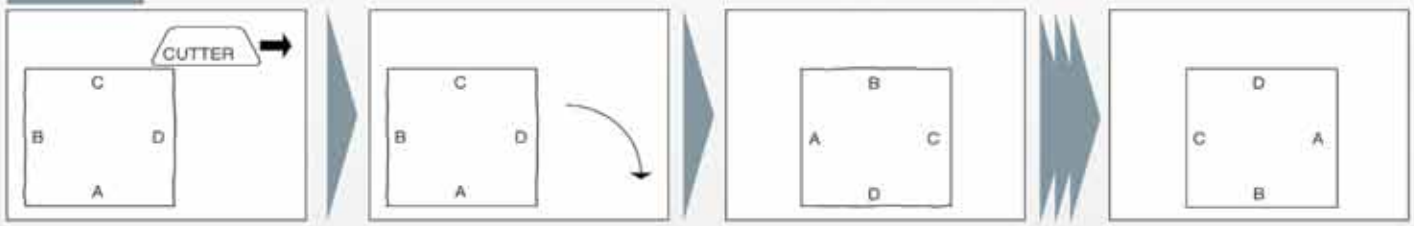
Milling plate with a general vertical milling machine or machining center has to be milled on 4 surfaces, one side at a time, and it requires 4 work settings as illustrated below:

Front view



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

Front view



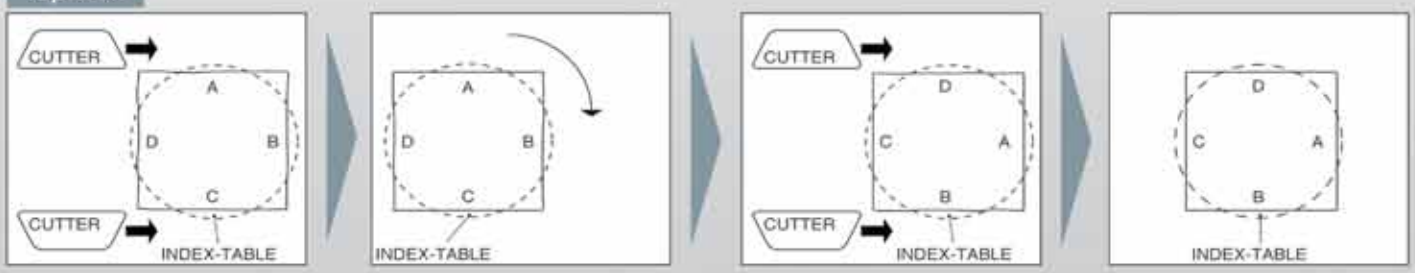
After milling the C-side, repeat the same operation for the B-side and D-side.

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

Automatic process to milling plate with a twin spindle milling machine:

1. Clamping the workpiece by the operator.
2. Milling the 2 surfaces with 2 cutters at one time automatically.
3. After milling 2 surfaces, index table is automatically rotated 90 degrees.
4. Milling the 2 remaining surfaces automatically.

Top view



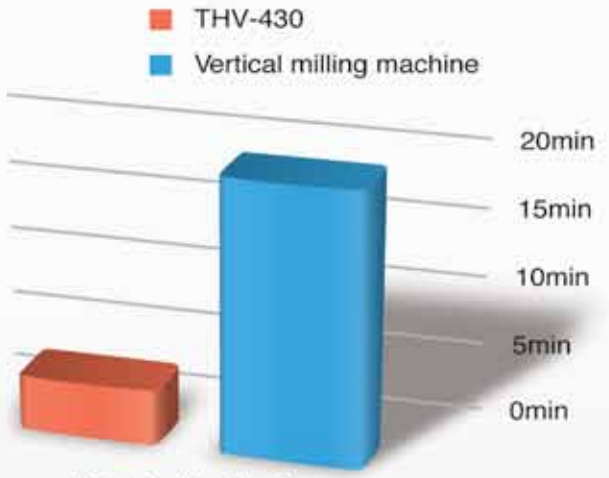
This means the twin spindle milling machine enables automatic milling of 4 surfaces with only one setting, reducing setting time, increasing efficiency and reducing running cost.

COMPARISON OF MILLING TIME

Example of milling a 4 side work surface of 150mm (5.905") cube:

	Twin spindle milling machine THV-430	Vertical milling machine
Number of setup times	1	4
Actual milling time	about 4 min	about 20 min
Total time [actual milling time + setup time for accuracy]	about 10 min	about an hour and a half (*1)

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



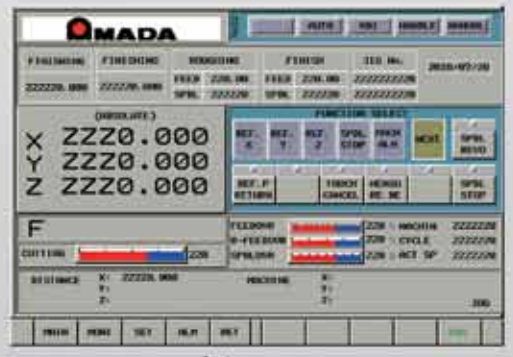
[Actual milling time]

5 times faster!

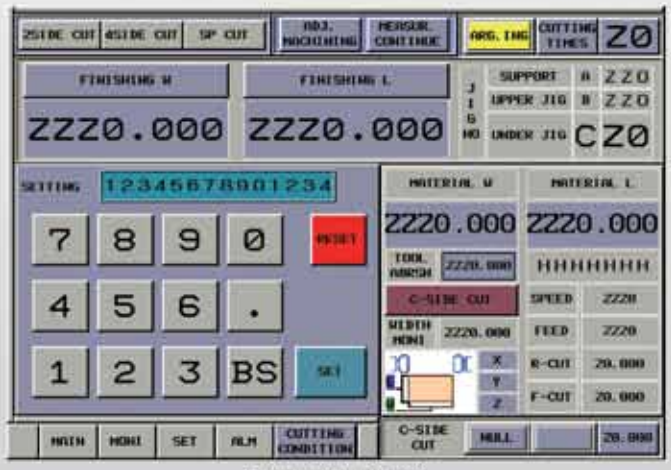
	Material	Cutter diameter (mm)	Inserts(PCS)	Spindle Speed (min^{-1})	Feed rate (mm/min)	Cutting width (mm)	Cutting depth (mm)
THV-430 (11kW Spec.)	S50C (JIS) 1049 (AISI)	ø160 ø6.299"	8	300	480	150 5.905"	2.0 0.078"

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 condition and inputs the workpiece size and finishing size. The operator does not need to have knowledge or high skill of the NC program, which enables the beginner to use the machine easily.

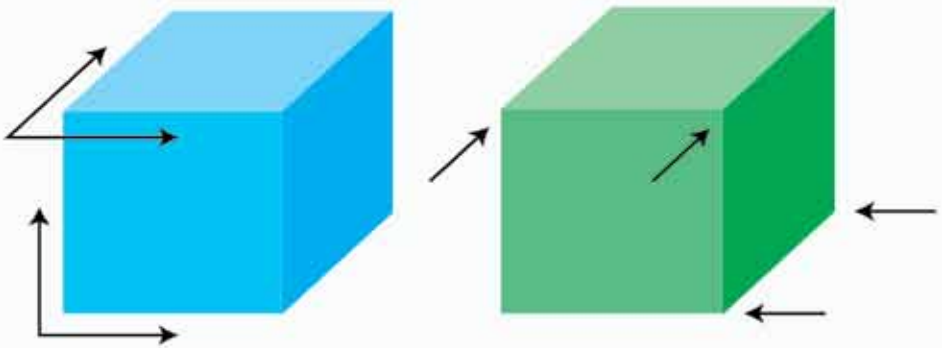


Auto screen



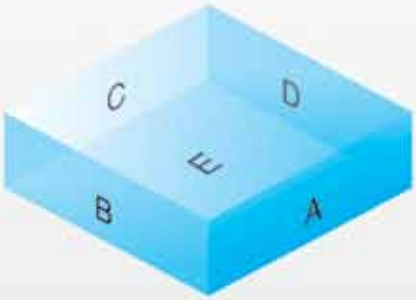
Easy menu screen

ACCURACY



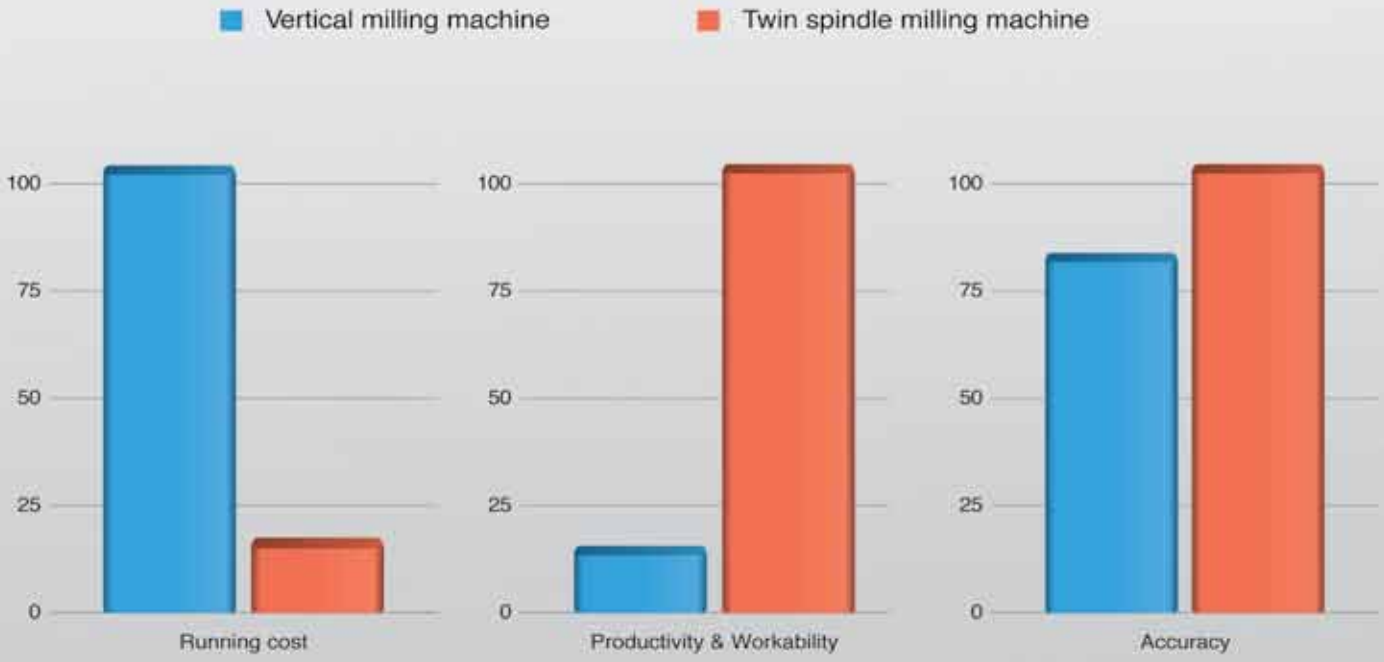
Squareness Parallelism

The THV Series twin spindle milling machine is not only fast and easy to use, but also maintains high accuracy for dimension, squareness and parallelism.

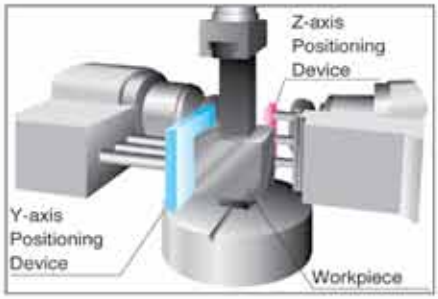


Accuracy	Allowance (mm)	Measured value (mm)
Parallelism of A · C Parallelism of B · D	less than 0.02 (0.0007") (at 300 (11.811"))	0.006 (0.00023")
Squareness of each corner of A · B · C · D surface	less than 0.02 (0.0007") (at 300 (11.811"))	0.007 (0.00027")
Squareness of each corner of A · B · C · D surfaces against E surface	less than 0.03 (0.0011") (at 100 (3.937"))	0.010 (0.00039")

COMPARISON

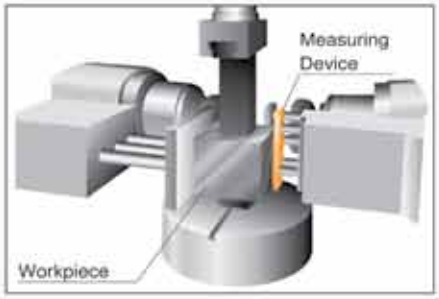


STANDARD EQUIPMENT



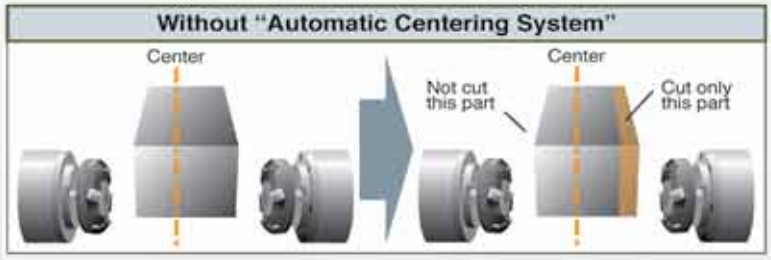
Workpiece Positioning Device (PAT.)

The positioning device helps the operator set the workpiece easily, and when they input the workpiece size to the operational panel, the machine automatically calculates and moves the device to the suitable position. The operator only sets the workpiece so it touches the positioning device.



Workpiece Measuring Device (PAT.)

The 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 "Automatic Centering System".



If the workpiece center if out of alignment and the machine does not adjust to the center position, the machine cuts only one side.

However, if the machine has the automatic center adjustment system, the machine can calculate the center and move the cutters to the correct position after measuring the workpiece, then cuts the same depth on both sides.

Hydraulic Clamper System (PAT.)

The hydraulic clamper system clamps the workpiece tightly, and during the rotation of the index table, this clamper system restrains the movement of the workpiece.

Work Clamp Pad, Upper & Lower Jig Fixtures

The jig fixtures are standard with the machine, so the operator does not need to make and jig fixtures.

BAND SAW Series

PCSAW-430AX

WHAT'S THE DIFFERENCE?

Pulse Cutting

Single pulse cutting cancels the vibrations that result from the penetration force during a cut. This technology decreases the cutting resistance while increasing the blade life and cutting rates. Increased blade life is now guaranteed without sacrificing productivity.

High Speed Cutting

The PCSAW series machine enables cutting at overwhelmingly high speeds by combining the pulse cutting technology with a variety of functions and features. It can double the cutting rate and extend the blade's life to 1.5 times longer then compared to the conventional model machine.

AXCELA Carbide Tipped Blades

The AX series can extend the wear life of the carbide tipped blade, and can enhance production with such functions as the high power motor and servo positioning feed system.

		PCSAW-430AX	PCSAW-530AX	PCSAW-700
Cutting capacity	Round (Diameter)	430 mm 16.93"	530 mm 20.87"	700 mm 27.56"
	Rectangle (W x H)	430 x 430 mm 16.93 x 16.93"	530 x 530 mm 20.87 x 20.87"	800 x 700 mm 31.50 x 27.59"
Work load capacity		3000 kg / 6613 lb.	4600 kg / 10141 lb.	8000 kg / 17637 lb.
Machine dimensions (W x L x H)		2850 x 2113 x 2285 mm 112.2 x 83.2 x 90.0"	3240 x 2113 x 2600 mm 127.6 x 83.2 x 102.4"	4701 x 2501 x 2859 mm 185.1 x 98.5 x 112.6"

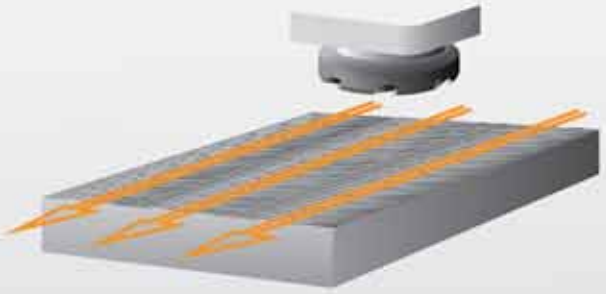
PLATE MILL Series

PMH -1308

WHAT'S THE DIFFERENCE?

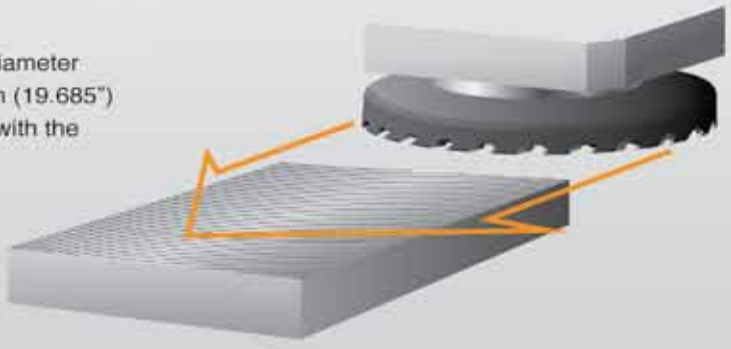
Conventional Cutting with Small Diameter Cutters

When cutting a large plate with a smaller diameter cutter, it requires multi-pass cutting, and when the cutting-pass is increased, the machining time becomes even longer. Also, the multi-pass cutting can leave ridges between the cutting tracks, which requires highly skilled programmers to run the machine.



Cutting with the PMH-1308

This machine is equipped with a large 525mm (20.669") diameter cutter, which enables the one-pass cutting of up to 500mm (19.685") in width, eliminating the ridges that are made with cutting with the smaller diameter cutter.



	PMH-1308	PMH-3015
Workpiece (W x L x H)	1300 x 800 x 300 mm 51.181 x 31.496 x 11.811"	3000 x 1500 x 350 mm 118.110 x 59.055 x 13.779"
Table loading capacity	3500 kg / 7716 lb.	13000 kg / 28660 lb.
Machine dimensions (W x L x H)	4000 x 2550 x 2800 mm 157.480 x 100.393 x 110.236"	8150 x 4100 x 3150 mm 320.866 x 161.417 x 124.015"

GRINDER Series

TECHSTER-D3

WHAT'S THE DIFFERENCE?

Independent Trihedral Rigid Column Structure

T-Shaped heavy rigid bed with integrated guide surface, excellent operability while maintaining high linear accuracy, allowing for long term stable operation.

No Right or Left Overhang

Right and left feeding realizes a high 1.5 μm linear accuracy with a no-overhang hybrid sliding face. The vertical axis utilizes a direct operated roller. Mirror finish is facilitated by submicron trackability.

Various Table Sizes

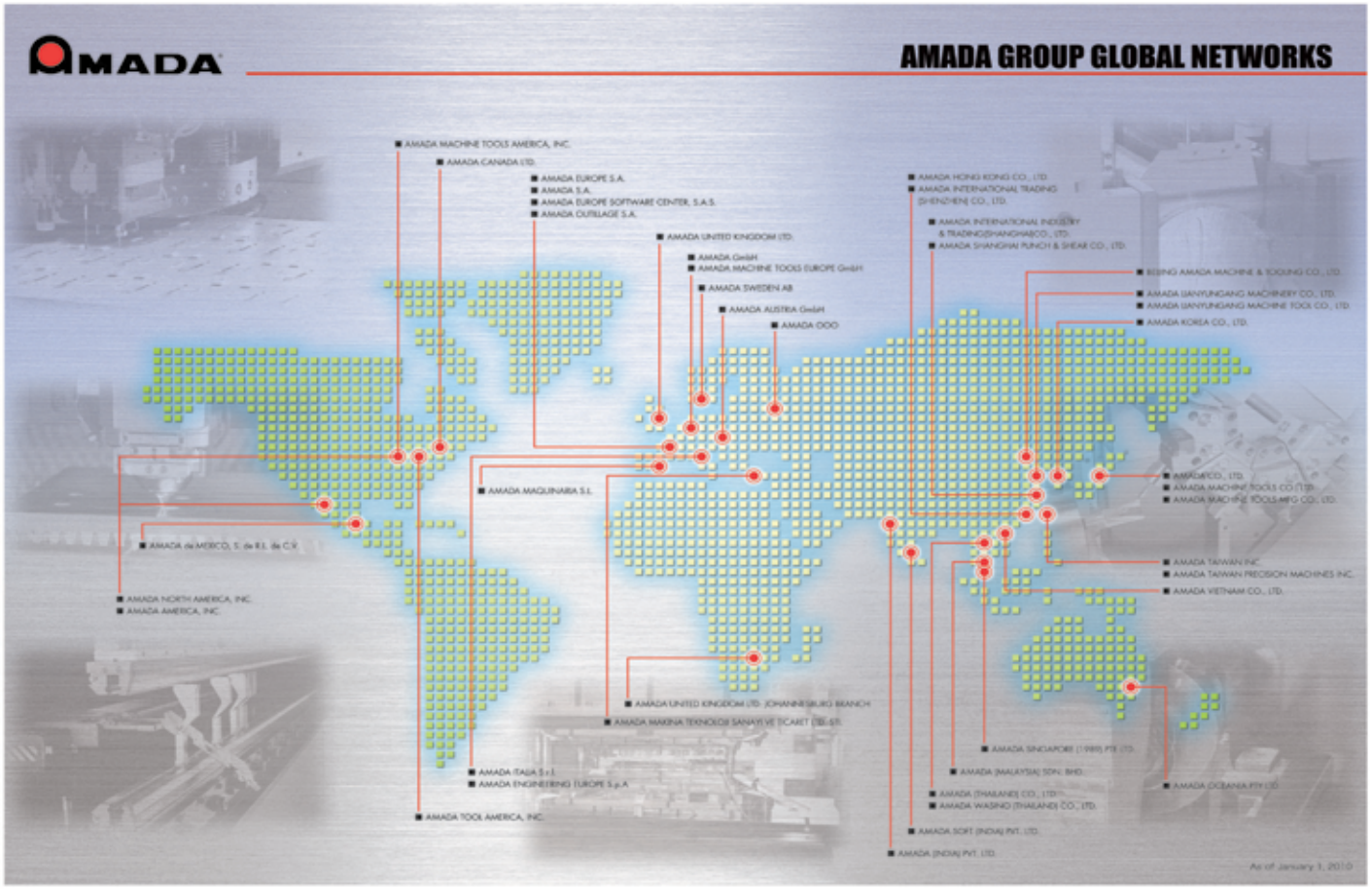
6 models adapted to processing size. Selection of optimal chuck size from 700 x 400 mm to 1200 x 600 mm.

A Range of Original Software

Operability is improved by a redesigned original operation panel, and equipped with Amada Machine Tools' well established software which improves processing efficiency.

	TECHSTER-D3	TECHSTER-84	TECHSTER-105
Chuck size (W x L)	700 x 400 mm 15.75 x 27.56"	800 x 400 mm 31.50 x 15.75"	1000 x 500 mm 39.37 x 19.69"
Work load capacity	350 kg / 772 lb.	1000 kg / 2205 lb.	1500 kg / 3307 lb.
Machine dimensions (W x L x H)	2400 x 2240 x 2080 mm 94.5 x 88.2 x 81.9"	3500 x 2600 x 2480 mm 137.8 x 102.4 x 97.6"	4200 x 3100 x 2650 mm 165.4 x 122.0 x 104.3"

	TECHSTER-106	TECHSTER-125	TECHSTER-126
Chuck size (W x L)	1000 x 600 mm 39.37 x 23.62"	1200 x 500 mm 47.24 x 19.69"	1200 x 600 mm 47.24 x 23.62"
Work load capacity	1500 kg / 3307 lb.	1500 kg / 3307 lb.	1500 kg / 3307 lb.
Machine dimensions (W x L x H)	4200 x 3100 x 2650 mm 165.4 x 122.0 x 104.3"	4550 x 3500 x 2780 mm 179.1 x 137.8 x 109.4"	2240 x 1770 x 2000 mm 88.2 x 69.7 x 78.7"



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- 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.
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