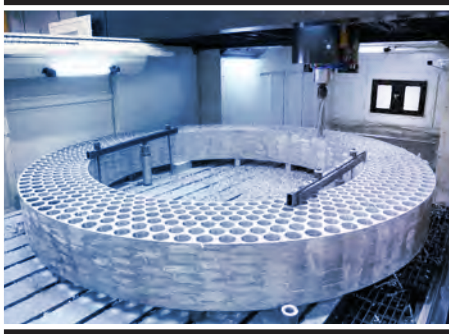
MACHINES

TECHNOLOGIES

INNOVATION



BRIDGE MILLS

SUPER-LARGE PARTS CUTTING

COMPOSITE MATERIALS

VERTICAL MILLS

DRILLING TAPPING

HORIZONTAL MACHINING

HORIZONTAL BORING

VERTICAL TURNING

TURNING CENTERS

GRINDING MACHINES

SAWING MACHINES

www.mightyviper.com

Your Better Machine Tool

BRIDGE MILLS page 10

VERTICAL MILLS page 22

HORIZONTAL page 27

PROFIT MAKING SOLUTIONS FOR A WORLD OF

Machining Projects

MIGHTY VIPER has a wide-range of machining centers that are able to satisfy the most demanding standards for precision metal cutting applications. Whether you are milling, boring or fine surface cutting, Mighty has a machine to get the job done; machines that give year-after-year operation and result in a high return-on-investment.

We take pride in a truly complete line of machining centers that offer manufacturing solutions to a world of metal applications—building modern machine tools made of premium materials and components that meet the demands of the machining industry. Integrate premium materials with high-tech design features and the result is a reliable high performance machining center from Mighty USA.

Mighty offers a wide-range of solutions to help you make the right decision:

- Super-size industrial machining
- Composite materials processing
- Bridge and C-frame mills
- 5-Axis mills
- Horizontal boring mills
- Vertical and horizontal turning centers

Our machines are on the job 24/7 filling the needs of machine shops and manufacturers from large-scale aerospace structures to small component parts for medical, electronic, computer, cellphone and dental applications. Mighty Viper offers a wide selection of choices, sizes, center distances, specifications and innovative options.

Whatever industry you work in—Mighty Viper CNC machines can help you make precision parts and clean-cut products. These machines can power the success of your shop and production line.

Aerospace and Defense • Machine structurally complex parts according to precision industry requirements. Vipers are able to meet precision standards; they are Mil-I-45208A and ISO 9001:2008 compliant. Process composite and nonferrous materials. Complete tough jobs easily on alloy steel, stainless steel, raw stock, inconel and titanium.

Energy and Oil Field • Top oil well parts manufacturers rely on Mighty's VT-series turning centers to produce long and heavy parts. Viper users are among the leading fabrication and machining shops serving the oil field industry. The heavy-duty VT-50Ax4000 has thrilled owners with high performance and reliable operation.

VERTICAL TURNING page 29

HORIZONTAL TURNING page 31

GRINDING • SAWING page 38

Automotive and Large Electronics • Machine heavy parts and molds for automotive body, engine hoods and TFT-LCD panel screens. Mighty offers the speed and power to perform heavy and fine surface cutting for large mold and die machining requirements.

Medical and Small Electronics • Mighty provides virtually vibration resistance machining that enables the production of small plastic parts for medical components. Cut hard plastic material with fast spindle speeds and high feedrates.

Machine Automation • Mighty provides total solutions that go beyond machine with robotic automation. Integrate an advanced robotic system onto your shop floor to increase your parts production and generate greater business profits. Setting up an automatic machine system with loading and unloading systems can minimize loading time and increase work shift efficiency, resulting in a larger volume of per piece parts production.

Whatever metal or parts production you may seek, Mighy offers a number of solutions to help you make the right decision. Tough materials and complex surfaces are easily cut by Mighty Viper machine tools. You could say, 'Viper is one brand that does-it-all.'

MIGHTY TOUGH

Mighty Viper cuts steel really well, no question about it! ... takes deep cuts easily, great on our tough machining jobs. A very strong machine with heavy feed rates.

Dan Lowe
D&M Precision and Machining
Oxnard, CA

We look forward to you experiencing higher levels of performance with Mighty Viper machine tools. Call 1-800-6-MIGHTY today and find out how Mighty machine tools can meet your metal application needs and help you achieve your manufacturing goals.

Viper Note

For the Mighty Viper dealer nearest you.

*Call **1-800-6-MIGHTY***

Industry Applications

Mighty USA is a solid source of metal cutting solutions for a diverse field of tough materials and complex cutting surfaces.

MIGHTY VIPER VIDEO CHANNEL

See Viper CNC in action! Scan the QR code and see cutting demos for bridge mills, vertical mills, turning centers, and much more.

Energy

The Mighty Viper Precision Boring Milling and Vertical Turning Lathe machines are well suited for production of energy generating components. Oversized parts cutting is easily achieved with available large tables and long X-travels. The turning centers have wide beds that easily hold long and heavy cylinder stock blanks, for cutting long oil rig shaft components. Mighty — helping manufacturers in the energy field to generate more parts and higher profits.

Manufacture components from tough materials for both wind and oil field energy industries.

Aircraft

High tech parts are machined with ease on Viper machining centers. Complex cutting is achieved on aluminum metals effortlessly. Tough materials like titanium are accurately machined into precision aerospace components. Volume parts production can be realized with a Mighty Viper VMC, virtually without any effort. Our machining centers are available in C-Frame VMC configurations and Double Column Bridge.

Aluminum part for military aircraft: Heavy reverse thruster jet engine component.

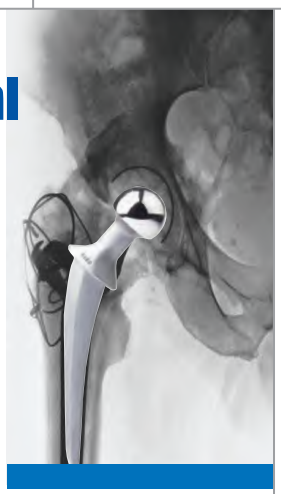
Automotive

Automotive bumper cavity mold cut from D2 tool steel material.

Automotive bumper core molds and cavity molds are efficiently cut on Viper bridge machining centers. The Mighty Viper PMC series machine is designed for efficient and effortless mold and die surface cutting.

Medical

Machine complex components for dental and medical applications.



Machine small medical and dental parts from light plastics to tough metals. Acheive tight cutting accuracy for volume production or single-piece prototyping.

Aerospace

Titanium alloy structure part for elite jet fighter: Cockpit radar housing frame.

Machine precision military parts on Viper PRO series machining centers. Achieve accurate surface cuts, and machine to precision standard specifications.

Design Features

Mighty has been a machine tool innovator from day one, offering modern high-tech design features manufacturing with premium materials and high quality components.

MIGHTY STRONG

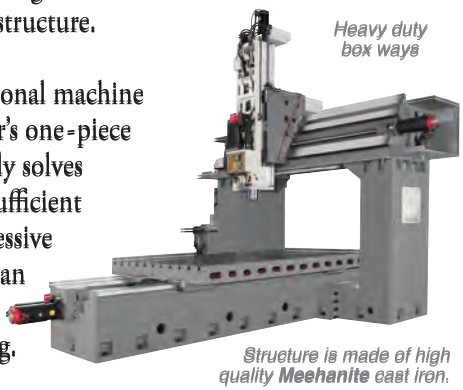
Mighty has been a good machine for us ... strong and beefy, well built ... It takes a heavy cut without stalling the spindle or losing grid.

Rick Ballard, Owner
Operating seven Viper Bridge Machines
DBR Machine, Santa Clarita, CA

Solid Built Structure

One of the most important features of the Viper Double Column Machining Centers is the one-piece base structure.

Unlike conventional machine structures, Viper's one-piece casting effectively solves problems of insufficient rigidity and excessive vibration, that can occur during heavy machining.



Heavy duty box ways

*Structure is made of high quality **Meehanite** cast iron.*

The entire structure is specially heat treated and stress relieved to ensure that the structure remains free of distortion for the life of the machine.

Powerful Spindle

Two-speed spindle with high and low range offers ample power output for low speed heavy cutting applications, and high speed for finish cut machining. Idle running allows for convenient set-up of workpiece. The maximum rotary velocity of the spindle is 6000 rpm and on select models 8000 or 10,000 rpm.

Gear Spindle Head

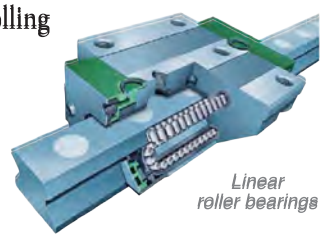
Direct-Drive Spindle Head

Choice of four spindle speeds: 4000, 6000 or 8000 rpm on the gear headstock; and 8000, 10,000 or 12,000 rpm on the pulley or DDS headstock.

Smooth Way Travel

Smooth motion control. Mighty uses both box ways and linear guideways on Viper machining centers. Each way system implemented provides accurate XYZ travel movement resulting in precision cutting.

Extra-wide box ways feature full support for more stability and less vibration, minimizing stick-slip effect and vibration for heavy workpiece machining. High speed linear guideways offer faster axial movement and improved machining accuracy. The guides provide lower rolling friction with increased moving stability.



*High speed German made **INA** linear roller guideways offer fast axial movement.*

Linear roller bearings

Robotic System

Go beyond machine — Integrate a machining center with a multi-purpose intelligent robot. Robot systems are able to move parts in-and-out of turning centers with ease and no fatique, a minimized loading time can increase work shift efficiency, resulting in greater parts productivity. Streamline your end forming operation with an automated system.

Automated machine tending with an intelligent robotic arm.

■ *Additional robot information available.*

World Class Manufacturing Facilities

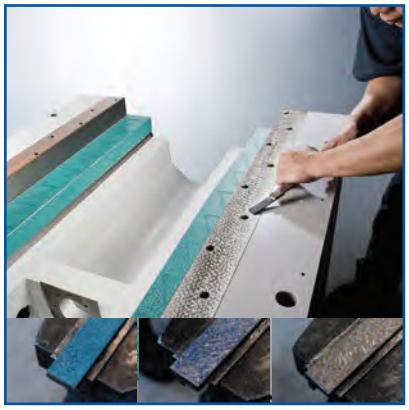
A world leader in the manufacturing of CNC machining centers

A world-class manufacturer with 45 years of experience in the research and development of precision machining centers. Our manufacturer has supplied over 30,000 machines globally, resulting in a world of satisfied customers, and a wealth of fine craftsmanship and experience.

Machine builder utilizes state-of-the-art manufacturing plant.

Viper's manufacturer employs a dedicated team of workers and has established a position as one of the world leaders in the manufacturing of CNC machining centers. In accordance with high standards — providing only the highest quality of machining centers. A wide-range of resources are utilized to constantly upgrade their in-house manufacturing technology.

Clean room assembly



Finishing by handscraping

Gearbox assembly in clean room

World class spindle bearings

High-tech assembly line

Reliable Machine Building

Reputation for being a world class manufacturer of CNC machine tools

Our manufacturers continue to spearhead the industry with specialized R&D for CNC lathes and machining centers that are widely known among world-class engineers for precision. An entirely computerized production facility occupies a space of over 11,000 square feet and has a team of over 100 professionals. Extremely rigid quality control procedures throughout operations ensure their worldwide acclaim for reliability. Leadership within the company combines an endless passion for innovation with solid experience. Mighty Viper is a highly motivated company — committed to empowering metal cutting professionals with quality, precision and reliable turning centers and production lathes.

Machine manufacturing building in Taiwan

Quality control department

SHW 5-face boring

Marufuku planar DP150W-4M

Spray painting booth (2)

Sumitomo twin head way grinder (Japan)

Yasda horizontal boring mill (Japan)

All pictures are for reference only, actual model and options may vary.

In-House Manufacturing

On-site machining equipment for making higher quality machine tools

The majority of machine tool manufacturers in Taiwan contract machining of components and accessories to outside manufacturing partners. Unlike them, Mighty USA and their machine tool building associates, continuously invest in large machining equipment, to enhance the level of their in-house production process, aiming at thorough control of quality and efficiency, thereby, creating a stronger, and more competitive manufacturing edge — a Mighty competitive edge.

Straightness inspection

Technical center

Certified technicians

Certified electrical components

Research and developement

Detailed alignment

Detailed inspection

Instock spare parts

In-house assembly

Modern assembly line

QC - Laser / pitch

QC - Squareness

SOLID QUALITY CONTROL TESTING

Testing prior to delivery includes:

- Ballbar Testing to confirm accuracy and to detect possible servo and geometric errors statically and dynamically.
- Three-Dimensional Coordinate Measurement Testing to confirm accuracy of all components.
- Static Accuracy Tests: 1) JIS 6338 VDI 3441 2) CNS 9351/9465 for reference
- Laser Test for surface accuracy measuring all standard geometric properties of the machine: linear positioning accuracy, pitch error, etc.
- Dynamic Accuracy Tests: 1) CNS 5512 2) JIS 6338 for reference
- Positioning and Repetitive Accuracy Tests: 1) JIS 6338 2) VDI 3441 3) CNS 8351/9465 for reference

Local Support and Service

Mighty USA offers a total solution for manufacturing and after-market support.

Mighty USA established in 1981 is an American machine tool company that imports high quality machining centers manufactured to state-of-the-art specifications and built with premium components.

We are a leading machine tool seller and national machining center distributor with corporate headquarters strategically located on the west coast in Southern California.

MACHINE TOOLS

As a core machinery company, we sell innovative machine tool technologies that help the CNC parts machining industries produce advanced tools and build complex parts.

We support our customers across North America with a network of factory partners and offices in the United States and along the Western Pacific Rim.

Mighty USA has a solid footing in the US with a service staff of over 40 professionals dedicated to providing reliable CNC machining solutions.

***Mighty USA** complex is strategically located in Southern California. The complex houses an on-site machine service center and a parts warehouse with Mighty Viper parts.*

Factory machining wing with dedicated machining equipment.

Parts warehouse with over $4,000,000 in parts.

Viper Machining Solutions from Mighty USA

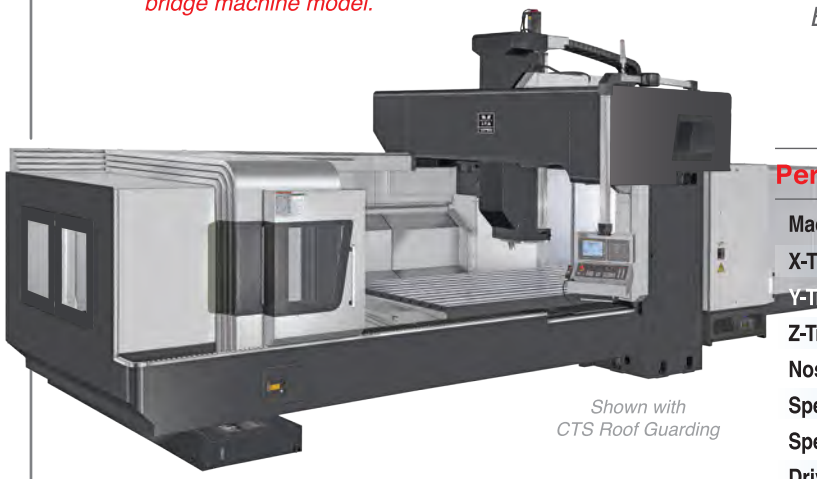
MIGHTY VIPER LINE

Gantry Bridge Milling	Vertical Milling	Horizontal Machining	Vertical Turning	Horizontal Turning	Grinding Machine	Grinding Machine	Saw Machine	Flat Bed Lathe
BCM DM PG5 / PG PMC / PM5 PMW / PMX PRH / PR5 PRL / PRO PRT / PRW Fooke Heian Homma	LR LRZ / LRZ-U RD VMC	HMC PBM MH-5TR MH-5AB	Homma VTL	RT VT VT-YM VT-YMS	JHA JHC JHD JHG JHI JHP JHT JHU JHV VG	PSGS PSGO PSRC PSGC PSGP PSRP	C H H/NC P	ML T
110 *Bridge Mill Models*	**17** *Vertical Mill Models*	**9** *Horizontal Machining Models*	**25** *Vertical Turning Models*	**30** *Horizontal Turning Models*	**20** *CNC Grinder Models*	**43** *Surface Grinder Models*	**30** *Flat Bed Lathe Models*	**15** *Flat Bed Lathe Models*

All pictures are for reference only, actual model and options may vary.

PRO series	2216 2716	3216 4216	2220 3220 2720 4220	3223 5223 4223 6023	3226 5226 4226 6026
	model numbers				

Best all around machine value. Most popular bridge machine model.



Shown with CTS Roof Guarding

- Multi-purpose cutting
- Compact footprint
- Rigid box ways

PRO *• Bridge mill offers versatile and powerful machine performance. Multi-purpose cutting, all around machining. High performance spindle. Excellent for cutting large die/mold, and fine surfaces. Great for job shop environment.*

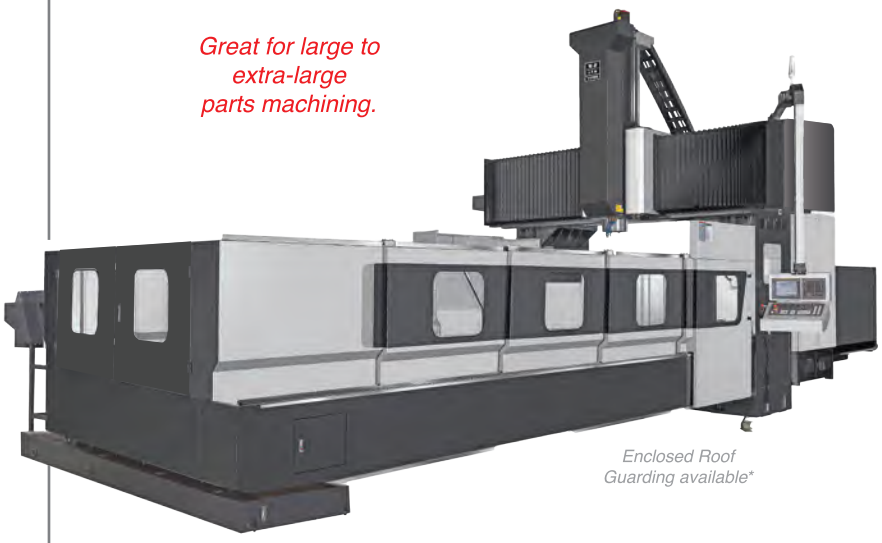
Performance Specifications

Machine Model	xx16	xx20	xx23	xx26
X-Travel	86 ~ 165	86 ~ 165	126 ~ 236	126 ~ 236
Y-Travel	63	78	90	102
Z-Travel	31 / 39*	31 / 39*	39 / 47*	39 / 47*
Nose Taper	#50			
Speed Gear (rpm)	6000			
Speed DDS (rpm)	10,000			
Drive Motor** (hp)	35 / 50*			
CNC Control	Fanuc			

Units = inch *Optional accessory **30 min. rating

PRL series	2216 2716	3216 4216	2220 3220 2720 4220	3223~6223 3226~10226	4230~10230 4235~10235	4240~10240 4245~10425
	model numbers					

Great for large to extra-large parts machining.



*Enclosed Roof Guarding available**

- Position accuracy up to ±0.0002″
- Fast rapid feedrates
- XYZ linear guideways

PRL *• Fast axial movement with linear guideways on X and Y travels. Provides a wider work table—up to 14.8 feet in width. Features a rigid structure with multiple guideways that ensure stable axial movement. Excellent for the die/mold, automotive, and aerospace industries.*

Performance Specifications

X-Travel	87 ~ 402
Y-Travel	63 ~ 177
Z-Travel	31 / 39 / 47* / 59*
Nose Taper	#50 / #40*
Speed Gear (rpm)	4500 / 6000*
Speed DDS (rpm)	8000 / 10,000
Drive Motor** (hp)	25 / 30 / 35*
CNC Control	Fanuc / Mitsubishi*

Units = inch | *Optional accessory **30 minute rating

PRT	606 1107	1607 1612 1312 2012	XYZ with 2-axis rotary table
series	model numbers		

PRT *• Uses 2-axis rotary table on a 3-axis bridge mill for performing 5-axis machining. Provides a large work envelope for 5-axis tilting and rotary applications. Enhance performance with Heidenhain linear scales.*

Well suited for die/mold, automotive, and aerospace industries.

Shown with CTS Roof Guarding

Performance Specifications

X-Travel	24 ~ 79
Y-Travel	24 / 29 / 47
Z-Travel	14 / 20 / 24 / 32
Nose Taper	HSK-E40 / HSK-A63 / BT-50
Speed DDS (rpm)	10,000
Speed Built-in (rpm)	20,000 / 30,000
Drive Motor** (hp)	10 / 20 / 25 / 30
CNC Control	Fanuc / Mitsubishi*

Units = inch | *Optional accessory **30 minute rating

- Built-in spindle
- 2-axis rotary and tilting table
- Roller linear guideways on XYZ

PRW	4228	5228 6028	4233 6233 10233 5233 8233	4238~10238 5243~10243	5248~10248 5253~10253
series	model numbers				

PRW *• Features a moving cross rail that increases spindle clearance. Absolute pulse encoders on XYZ, and Heidenhian linear scales on W-axis. Different milling heads available for flexible machining.*

Machine a super-thin workpieces or extended height parts.

Shown with Semi-guarding

Performance Specifications

X-Travel	165 ~ 402
Y-Travel	110 ~ 209
Z-Travel	39 (47 / 59*)
W-Travel	39 (49 / 59*)
Nose Taper	#50
Speed Gear (rpm)	4200 / 4500 / 6000*
Speed DDS (rpm)	8000* / 10,000*
Drive Motor** (hp)	30 / 35 (40 / 50*)
CNC Control	Fanuc / Mitsubishi*

Units = inch | *Optional accessory **30 minute rating

- 2-Axis milling head (A/C axis)
- Box ways on Z and W
- Linear guideways on XY

All pictures are for reference only, actual model and options may vary.

PRH

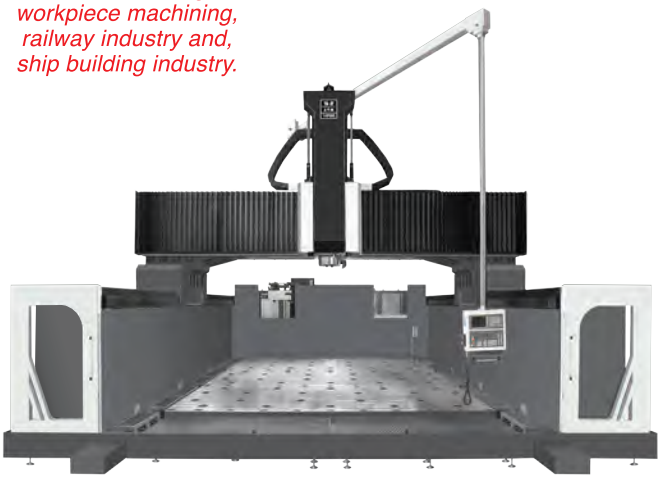
series

xx20 xx25 xx30 xx35 xx40 xx50

model number

5-Face Gantry Machine

Excellent for large workpiece machining, railway industry and, ship building industry.



Enclosed Roof Guarding available

- 2-step gear spindle
- Automated 5-face function
- Linear roller guideways

***PRH** • Gantry type bridge machine with a big work envelope for machining large parts. X travel length is up to 1417˝ (36M). And the Y travel is up to 196˝ (5M) wide. Transmission system uses rack and pinion linear motion with a German gear reducer. Twin servo motors are synchronized to eliminate backlash for optimal precision.*

Performance Specifications

X-Travel	236 ~ 1417
Y-Travel	98 ~ 196
Z-Travel	39 / 47 / 59
Nose Taper	#50
Speed Gear (rpm)	4,500 / 5,500*
Speed DDS* (rpm)	8,000 / 10,000
Drive Motor** (hp)	25 / 30 / 35*
Rapid Feed (ipm)	472 ~ 945
CNC Control	Fanuc / Siemens*

Units = inch | *Optional accessory **30 minute rating

PR5

series

3222 4222 5222 6222 3231 5231 4231 6231 3234 5234 8234 4234 6234 10234

model numbers

Perfectly matched for the aluminum parts needs of the aerospace industry.

Shown with CTS Roof Guarding

- 2-Axis milling head (A/C axis)
- XY axes gear transmission (rack and pinion type)
- Roller linear guideways on XYZ

***PR5** • Experience higher efficiency with one setup—utilizing a 2-axis swiveling spindle head for multi-face machining. Reduce cycle time, secure machining accuracy, and increase productivity.*

Performance Specifications

X-Travel	126 ~ 402
Y-Travel	86 / 122 / 134
Z-Travel	39 (47 / 59)
Nose Taper	HSK-A100 / HSK-A63*
Speed (rpm)	15,000 / 24,000*
Drive Motor** (hp)	60 / 50*
CNC Control	Heidenhain / Siemens*

Units = inch | *Optional accessory **30 minute rating

BCM	xx38 xx43 xx48 xx53	5-Axis gantry machine
series	model numbers	

***BCM** • A gantry style 5-axis machining center with moving column and crossrail. Combines fast linear guideways on XY and rigid box ways on Z and W. Heavy duty work table supports 1,000 lb / sq. ft.*

Performance Specifications

Model	xx38	xx43	xx48	xx53
X-Travel	244 ~ 1425			
Y-Travel	150	169	189	209
Z-Travel	39 (47 / 59)*			
W-Travel	39 (47 / 59)*			
Nose Taper	BT-50			
Speed (rpm)	6,000			
Feed Rate (ipm)	472 / 472 / 472 / 78			
Motor** (hp)	29 / 35 (40 / 50)*			

Units = inch | *Optional accessory **30 minute rating

EFFICIENT 5-AXIS MACHINING
Moving Column and Moving Crossrail

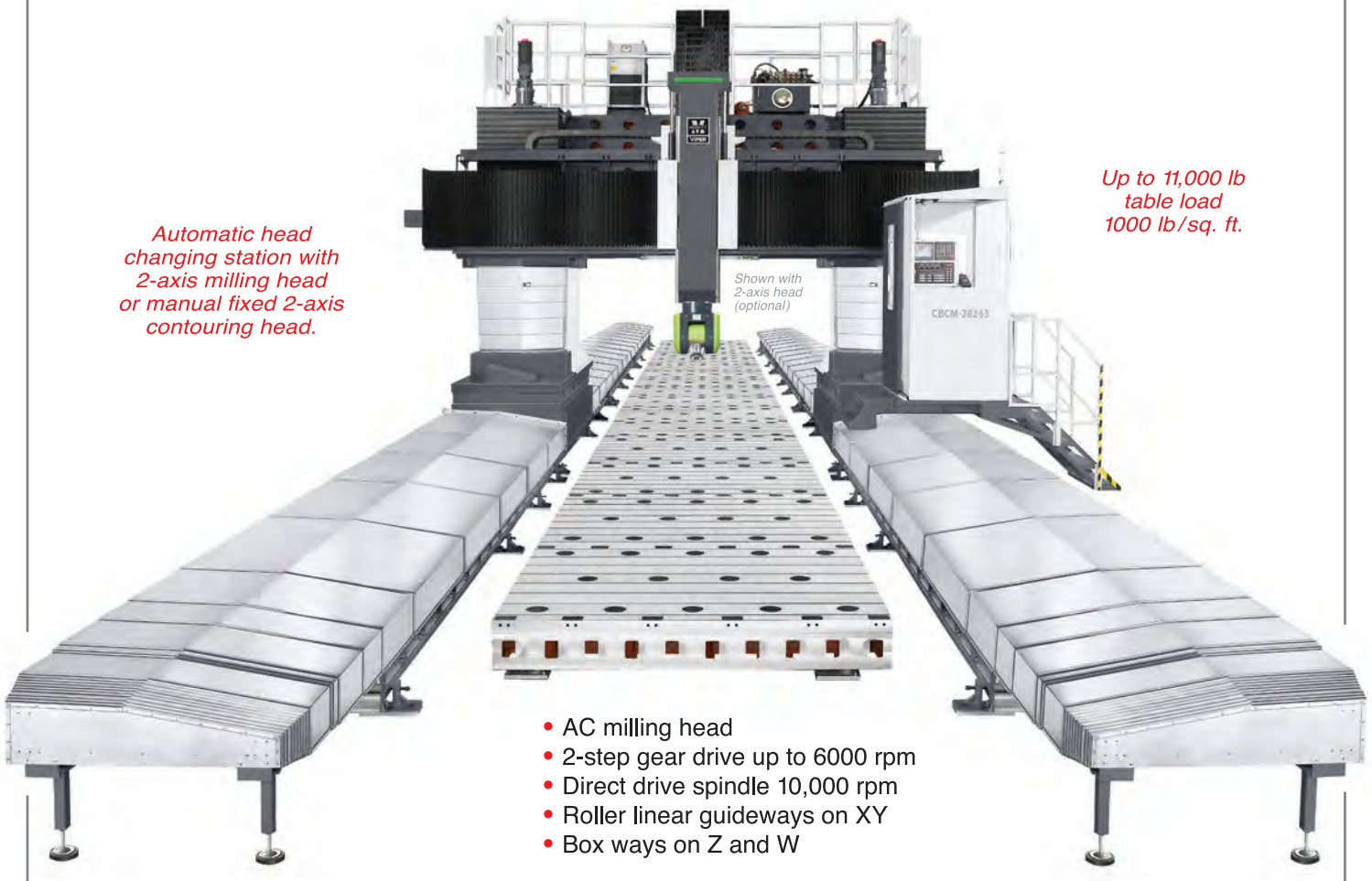
The **BCM** gantry machining center has a W-axis that allows the crossrail to move vertically over a range of 59″ (1.5M). Progressive hydraulic clamping ensures accurate W-axis movement during cutting. Nose to table distance has up to 10 feet of clearance under the spindle.

Perform five-face machining with an angular head or 5-axis machining with a 2-axis contouring head. Smooth axial movement along hardened and rigid box ways on both the W-axis and Z-axis.

PERFORMANCE FEATURES
- Rigid tapping
- X/Y/Z absolute encoder
- Table sizes up to 1417″ (L) × 138″ (W)

Automatic head changing station with 2-axis milling head or manual fixed 2-axis contouring head.

Up to 11,000 lb table load 1000 lb / sq. ft.



- AC milling head
- 2-step gear drive up to 6000 rpm
- Direct drive spindle 10,000 rpm
- Roller linear guideways on XY
- Box ways on Z and W

All pictures are for reference only, actual model and options may vary.

PMC	2012 3012	2015 3015	2618 4118 3118 5118	2622~10122 3127~10127	4131~10131 4140~10140	5147~10147 5152~10152
series	model numbers					

Larger capacity and heavy cutting. Deeper Y-travel for wider workpieces (up to 17-feet across).

Shown with CTS Roof Guarding

- Wider work table
- Larger work envelope
- Linear roller guideways on XY

***PMC** • Bridge mill features a larger Y-axis for an expanded work table surface. Heavy-duty linear guideways on XY axes and box ways on Z-axis. Flexible machining with manual milling heads: 30° angular, 90° angular, universal, and extension.*

Performance Specifications

X-Travel	83~398
Y-Travel	47~204
Z-Travel	31/35/39/43*/47*
Nose Taper	#50
Speed Gear (rpm)	6000/4000*
Speed DDS (rpm)	10,000/8000*
Drive Motor** (hp)	35/50*
CNC Control	Fanuc

Units = inch *Optional accessory **30 min. rating

PM5	3135 4135 5135 6135	5-Axis bridge machine
series	model numbers	

Reduced setups, improved accuracy, and higher productivity.

- A/C axis spindle
- 5-Axis simultaneous machining
- Linear roller guideways

***PM5** • This series with the A/C axis is built specifically for efficient machining of complex structure workpieces using simultaneous 5-axis machining. Symmetrical machine design balances cutting load and thermal equilibrium.*

Performance Specifications

X-Travel	122 ~ 240
Y-Travel	138
Z-Travel	43 / 51
Nose Taper	HSK-A100
Speed (rpm)	12,000
Drive Motor (hp)	35/40
CNC Control	Fanuc / Mitsubishi*

Units = inch *Optional accessory **30 min. rating

PMX series	**2622 2627** model numbers	3122 5122 4122	3127 ~ 10127 3135 ~ 10135	4140 ~ 10140 4142 ~ 10142	5147 ~ 10147 5152 ~ 10152

PMX *• Fully automated five-face machining capability using multiple milling heads—no need for manual assistance. Efficiently machine parts utilizing an automatic head changer. Single setup machine operation reduces cycle time and produces more finished parts.*

Automatic spindle head changer enables fast five-surface machining.

Enclosed Roof Guarding available.

Performance Specifications

X-Travel	102 ~ 398
Y-Travel	91 ~ 204
Z-Travel	43 / 51* (39 / 47*)
Nose Taper	#50
Speed Gear (rpm)	6000 / 4000*
Speed Built-In (rpm)	6000 / 8000*
Drive Motor** (hp)	30 / 35 / 40* / 50* / 60
CNC Control	Fanuc / Mitsubishi*

Units = inch | *Optional accessory **30 minute rating

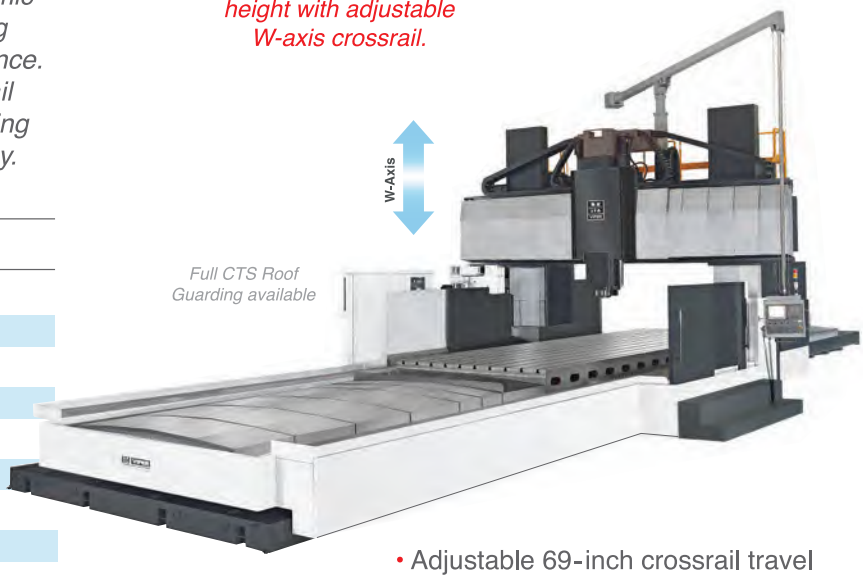
- Variety of spindle heads available
- Auto Vertical / Horizontal ATC
- Linear roller guideways on XY

PMW series	**4232** model numbers	5232 8232 6232 10232	4237 6237 10237 5237 8237	4242 6242 10242 5242 8242

PMW *Bridge Mill — Features a dynamic adjustable height crossrail. Allowing operator to vary spindle-to-table distance. Four clamping locks secure crossrail vertical travel (W-axis) against slipping to ensure travel and cutting accuracy.*

Extend work envelope height with adjustable W-axis crossrail.

Full CTS Roof Guarding available



Performance Specifications

X-Travel	160 ~ 401
Y-Travel	126 / 145 / 165
Z-Travel	35 / 43*
W-Travel	39 / 69*
Nose Taper	#50
Speed Gear (rpm)	4000 / 6000*
Speed Built-in (rpm)	10,000*
Drive Motor** (hp)	30 / 50*
CNC Control	Fanuc / Mitsubishi*

Units = inch | *Optional accessory **30 minute rating

- Adjustable 69-inch crossrail travel
- Wider span between columns
- Heavy-duty linear guideways

All pictures are for reference only, actual model and options may vary.

DM series — 1100 1300 1800 2300 model numbers — Mold and die

Die and mold specialty machine.

Shown with CTS Roof Guarding

- 3-Axes linear scales
- Built-in spindle
- XYZ linear roller guideways

***DM** • Specially designed bridge mill—engineered for die and mold machining. Built-in spindle reduces effects of vibration and thermal displacement. Linear scales on 3 axes utilize a closed-loop system that aid in high-precision positioning and contour machining. Excellent for machining of automotive molds.*

Performance Specifications

Machine Model	1100	1300	1800	2300
X-Travel	43	51	71	91
Y-Travel	24	39	51	51
Z-Travel	18	28	28	28
Nose Taper	#50	HSK-A63	HSK-A63	HSK-A63
Speed Built-In (rpm)	15,000 ~ 24,000			
Drive Motor** (hp)	35 ~ 40*			
CNC Control	Fanuc			

Units = inch *Optional accessory **30 min. rating

PG5 / PG series — 2025 3025 4025 5025 6025 3030 5030 4030 6030 model numbers — 5-Axis

Designed for large-sized and heavyweight workpieces.

- AC milling head
- Dual ballscrews on X and Z axes
- Linear roller guideways

***PG5** bridge mill — Gantry style 5-axis machining center features a German made Kessler dual axes milling head with integral spindle. With A/C-axis head, it can achieve 5-axis machining and high-efficiency manufacturing.*

Performance Specifications

X-Travel	79 ~ 236
Y-Travel	98 / 118
Z-Travel	39
Nose Taper	HSK-A63 / HSK-A100
Speed (rpm)	12,000 / 15,000 / 24,000
Drive Motor** (hp)	50 / 60* / 80 / 120*
CNC Control	Fanuc / Mitsubishi* Heidenhain* / Siemens*

Units = inch *Optional accessory **30 min. rating

Nissei Homma Machinery - JAPAN

Buildilng large-scale industrial machine tools

HOMMA Machinery

Homma head office and factory in Akashi, Japan.

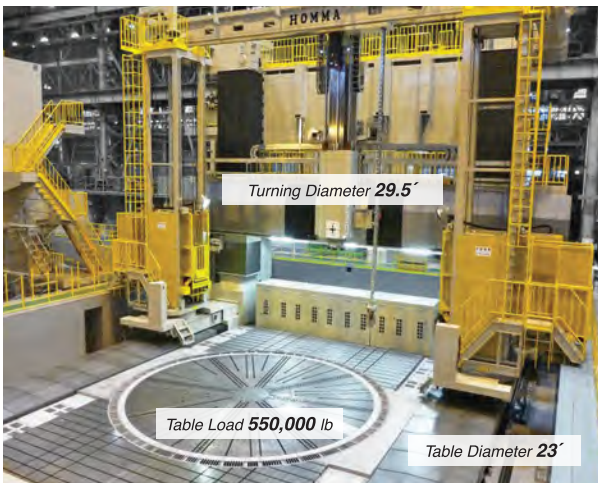
As a top manufacturer of large and super-large machine tools, **Nissei Homma** has exported more than 500 machines and provided technical services in countries all around the globe. The Nissei Homma name is trusted by customers in over 24 nations. Having already established a solid reputation in their field, they have their sights set on becoming an international leader in large and super-large NC machine tools.

Nissei Homma's own original technologies play a key role in their plant engineering business. They not only provide machine tools, but also combine their advanced technologies with other manufactures' equipment to organize systems that meet the machining needs of companies in domestic and overseas markets.

Nissei Homma also boasts a comprehensive system of after-sales maintenance service for the equipment supplied to customers. This assures a quick response to maintenance requests.

Super-Large Parts Cutting

Machining of large-scale structures for heavy industrial needs



HTM - 7.0/9.0 GTN Gantry style 4-axis turning center.

Hybrid Machining Technologies

Homma Machinery offers a wide range of large scale machining solutions that are built to meet your application specific needs. Super-large machines are realized through hybrid technologies and advanced robotic automation.

Homma meets the demand for machining of large structures and special processing in industries such as aviation, aerospace, energy, shipbuilding, automotive, railways, and bridge construction. They supply fully customized mother machines to customers' production sites where large-scale specialized machines are required for heavy industrial machining.

MACHINE FEATURES

- Super-large turn mill
- Super-large vertical turning lathe
- Traveling gantry
- Linear guideways

All pictures are for reference only, actual model and options may vary.

Fooke Engineering Works

Over 120 years of experience–made in Germany

Fooke GmbH head office in Germany.

FOOKE GmbH is a medium-sized family business located in Borken, in the west of Germany's Münsterland region. It was founded in 1904 and is currently run by 4th generation Managing Director Johannes Fooke.

FOOKE has been manufacturing large and very large 5-axis milling machines for over 30 years.

These tooling machines are often used as gantry milling machines in various designs.

Demanding and ambitious customers from a wide range of industries, such as aerospace, rail and automotive industries trust in FOOKE's reliable, high-performance ENDURA® machines.

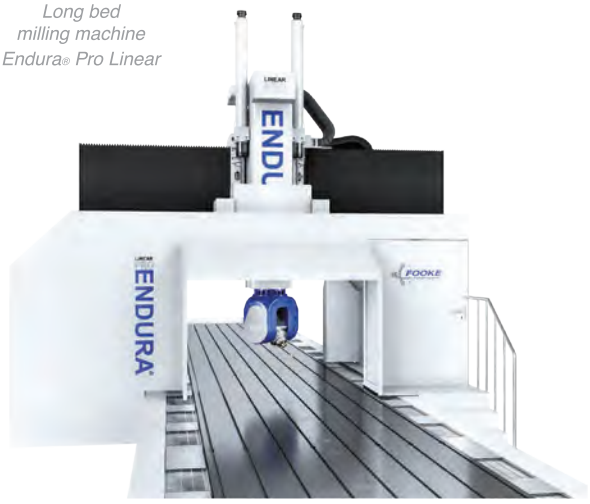
Especially in the automotive and aerospace industries, model, prototype building as well as tool and mould construction are the most common applications.

Based on customers' individual requirements, holistic engineering services are among FOOKE's core competences. In this regard, FOOKE has great experience in cutting, designing and constructing structural components for motion systems, as well as in the design and integration of feed drives and the complete commissioning of complex tooling machines.

Endura Gantry Machines

The impression of precise positioning and repeatability

Long bed milling machine Endura® Pro Linear



A long bed milling machine designed for high-performance cutting of profile structure elements. Features a secondary workpiece machine area for process-parallel load and unloading.

Traveling column Endura® 1000Linear

A traveling column gantry machine designed for large-volume workpieces. Features ergonomic loading, and a traveling operator cabin for optiomal process monitoring.

Tool and Mould Application

Designed for machining of solid and high-strength materials

*The Endura® **7000Linear** is an overhead tool milling machine, specially designed for the heavy-duty rough machining of solid and high-strength materials. It has a dimensionally stable and compact design. The gantry has a large processing volume with a relatively small footprint, this means the machine does not need to be placed on foundations.*

Compact gantry milling machine
Endura® 7000Linear

Machining of High Strength Materials

The Endura® **7000Linear** is designed for high-performance machining of high strength material. Naturally rigid compact machine with enclosed machine bed. Gantry can be installed without additional foundation.

MACHINE FEATURES

- Compact design
- Large machining chamber
- Small installation area
- Highly dynamic linear motors on XYZ
- Plane cover / Sound insulation enclosure*

**Optional accessories*

All pictures are for reference only, actual model and options may vary.

Heian Corporation, Hamamatsu, Japan

Reputation for engineering and innovative excellence

Heian Miyakoda system research center located in Shizouka, Japan.

Mighty USA is pleased to offer you a full line of machining solutions from **Heian Corporation**, a leading manufacturer of CNC machining centers and routers for both non-ferrous materials and composite materials.

Mighty USA is the exclusive US distributor for Heian of Hamamatsu, Japan. Originally founded by Mr. Sempei Suzuki in 1939, Heian produced the world's first circular cutting NC router in April 1969. Today under the leadership of the founder's son, Mr. Yukitomo Suzuki, the expanded manufacturing program encompasses customized CNC solutions, all designed and built in-house, including the highly renowned Heian spindle.

Heian consistently delivers a high level of innovation. More recent development has concentrated on producing ever more versatile, flexible flat table machining centers that combine multi-axis routing, boring units, automatic tool changing, sawing and moulding functions, as required, together with fully robotic handling. The company's is a key supplier of production machinery to the aerospace industry.

3-Axis and 5-Axis Machining Centers

Processing of composite and plastic materials

NG-151MC-3165

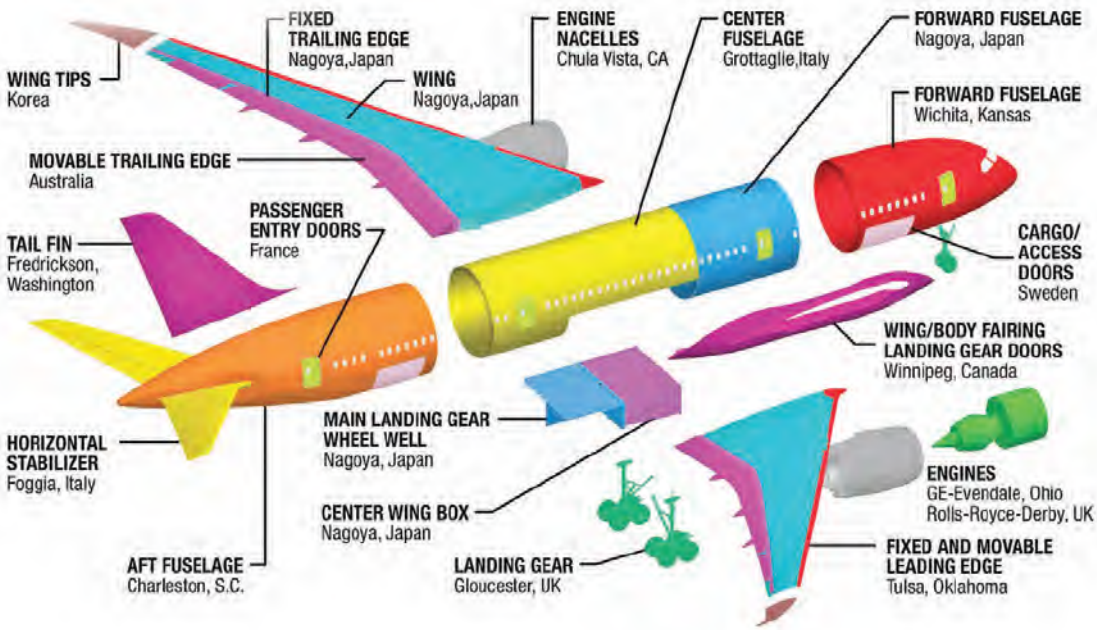
NG 5-axis gantry machining center for processing full-scale clay model of a motor vehicle. It produces complex 3D-surface of the design, and you can cut the design as a full-scale model—to 'feel' it.

NC-151MC-2050

NC is a simultaneous 5-axis controlled bridge style machining center for processing a variety of model forming. Machine can be used for cutting, drilling, and tapping.

Aerospace Industry Applications

Providing flexible machining solutions with Heian machines



HEIAN MACHINES IN USE AROUND THE WORLD

USA	CANADA	AUSTRALIA	JAPAN	KOREA	EUROPE
Boeing	Boeing	Boeing	Kawasaki	KAL-ASD	Messier-Dowdy
Spirit	Messier-Dowdy		Mitsubishi		Rolls-Royce
Vought			Fuji		Latecoere
GE					Alenia
Goodrich					Saab

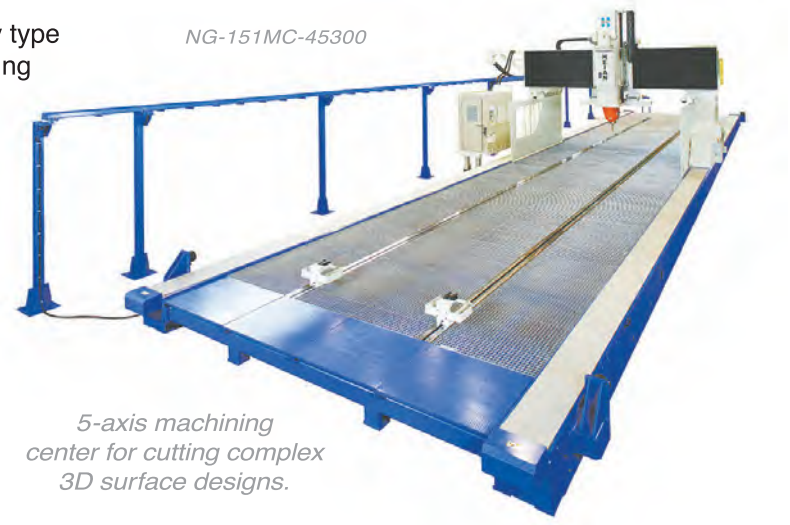
Machining Composite Materials

Mighty Viper offers a full line of Heian gantry type machining centers designed for the processing of composites and plastic materials. Typical applications range from the machining of high tolerance flat panel products to the trimming and drilling of 3D formed parts.

MACHINE FEATURES

- Composite material machining
- Nonferrous material machining
- Long parts processing
- Automated loading / unloading system
- Dust resistant design

NG-151MC-45300



5-axis machining center for cutting complex 3D surface designs.

All pictures are for reference only, actual model and options may vary.

VMC series — 1160 1265 model numbers

Box ways on XYZ

Powerful machining on a small footprint.

- 40 or 50-taper spindle
- 43″ and 50″ X-travel
- Box ways

VMC-1160 *and* ***VMC-1265*** *• Built with a box structure body casting that yields high rigidity. Spindle configurations available in direct drive, belt and gear to meet any application needs.*

Performance Specifications

Machine Model	1160	1265
X-Travel	43	50
Y-Travel	23	25
Z-Travel	25	25
Nose Taper	#40 / #50*	
Speed Gear (rpm)	6000 / 8000*	
Speed Belt* (rpm)	8,000 / 10,000	
Speed DDS* (rpm)	10,000 / 12,000	
Drive Motor** (hp)	15 / 20	
CNC Control	Fanuc	

Units = inch *Optional accessory **30 min. rating

VMC series — 1370 model numbers

Box ways on XYZ

Reduced cycle times Higher parts volume.

- 50-taper spindle
- 55″ X-travel
- Box ways

VMC-1370 *• Built with a box structure body casting that yields high rigidity. Bed base uses four high rigidity slide ways for heavy loading capacity, and superior cutting.*

Performance Specifications

X-Travel	55
Y-Travel	27
Z-Travel	27
Nose Taper	#50
Speed Gear (rpm)	6000 / 7000* / 8000*
Speed DDS* (rpm)	10,000
Drive Motor** (hp)	20 / 25
CNC Control	Fanuc

Units = inch *Optional accessory **30 min. rating

VMC series	1688 model numbers	Box ways on XYZ

VMC-1688 *• Four slide ways under the Y-axis saddle provide heavy loading capacity. Utilizes a box structure body casting that yields high rigidity. And a one-piece casting ensures no leakage and excellent chip removal.*

Heavy-duty machining with shorter production time.

Performance Specifications

X-Travel	63
Y-Travel	35
Z-Travel	28 / 35*
Nose Taper	#50
Speed Gear (rpm)	8000
Speed DDS* (rpm)	10,000
Drive Motor** (hp)	20 / 25
CNC Control	Fanuc

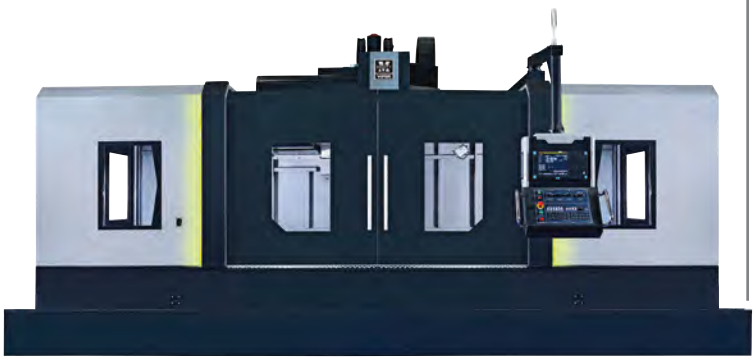
Units = inch *Optional accessory **30 min. rating

- 50-taper spindle
- 63″ X-travel
- Box ways

VMC series	2100 2600 3100 4100 model numbers	Box ways on XYZ

VMC-2100 ~ VMC-4100 *• Six slide ways under the Y-axis saddle provide high rigidity, and heavy loading capacity, along with superior cutting. Dual ballscrews on Y-axis generate fast traverse rates and high-speed acceleration.*

Powerful high speed spindle. Choice of gear or direct drive.



Performance Specifications

X-Travel	83 / 102 / 122 / 161
Y-Travel	40
Z-Travel	42
Nose Taper	#50
Speed Gear (rpm)	8000 / 6000 / 4000
Speed DDS* (rpm)	10,000
Drive Motor** (hp)	35
CNC Control	Fanuc

Units = inch *Optional accessory **30 min. rating

- 50-taper spindle
- 83″ to 161″ X-travel
- Box ways

All pictures are for reference only, actual model and options may vary.

LR series — 900 1100 1200 1370 1685 model numbers — XY linear and Z box way

Superior feed system reduces machining time.

- 40 or 50-taper spindle
- 35″ to 63″ X-travel
- XY linear and Z box ways

***LR-900 ~ LR-1685** • Body casting has a high rigidity structural design. Optional high torque low noise two-speed gearbox. Spindle available in gear, belt or direct drive configurations.*

Performance Specifications

X-Travel	35 ~ 63
Y-Travel	24 ~ 33
Z-Travel	24 ~ 31
Nose Taper	#40 / #50*
Speed Gear / Belt (rpm)	6000 / 8000
Speed DDS (rpm)	10,000
Drive Motor** (hp)	10 / 15 / 20 / 25
CNC Control	Fanuc

Units = inch *Optional accessory **30 min. rating

LRZ series — 900APC model numbers — Linear guideways on XY • Box ways on Z

High production with fast APC.

- 40-taper spindle
- 35″ X-travel
- XY linear and Z box ways

***LRZ-900APC** features automatic pallet changer (APC)*

***LRZ-900APC** • Has an APC that can speed-up volume parts production, each pallet holds a maximum load of 660 lb. Fast rapid traverse rates on XYZ are 1890 / 1890 / 945 ipm.*

Performance Specifications

X-Travel	35
Y-Travel	24
Z-Travel	22
Nose Taper	#40
Speed Belt / Gear (rpm)	6000 / 8000
Speed DDS (rpm)	10,000 / 12,000* / 15,000*
Drive Motor** (hp)	15 / 20* / 25*
CNC Control	Fanuc

Units = inch *Optional accessory **30 min. rating

LRZ-U series — 400 500 model numbers

5 Face machining (3+2 axis)

LRZ-U *• Features a rotary table that enables single setup parts machining. A/C axis rotary table offers 4+1 axis angle 5-face machining.Tilt axis and rotary axis coordinate with linear scale to ensure optimized positioning and repeatability.*

Optimized positioning and repeat accuracy with tilt/rotary linear scales.

Performance Specifications

Machine Model	400	500
X-Travel	26	22
Y-Travel	24	25
Z-Travel	20	24
A-Axis Tilting Range	+30° ~ -120°	
C-Axis Tilting Range (cont.)	360°	
Nose Taper	#40	
Speed DDS (rpm)	12,000 / 15,000*	
Speed Built-In (rpm)	20,000	
Drive Motor** (hp)	10 / 15	
CNC Control	Fanuc	

Units = inch *Optional accessory **30 min. rating

- 40-taper spindle
- A/C rotary table
- XYZ linear guideways

LRZ series — 800 900 1000 1100 1265 1400 1600 1685 model numbers

Linear roller ways

LRZ *• Economically priced high speed production models with a smaller machine footprint. Table lengths up to 68″ long. Table load holds up to 3,300 lb.*

Reduced cycle times, higher parts volume.

Performance Specifications

X-Travel	34 ~ 63
Y-Travel	20 ~ 33
Z-Travel	19 ~ 31
Nose Taper	#40 / #50*
Speed Belt (rpm)	8000
Speed DDS (rpm)	10,000 / 12,000* / 15,000*
Drive Motor** (hp)	15 / 20 / 25
CNC Control	Fanuc

Units = inch *Optional accessory **30 min. rating

- 40 or 50-taper spindle
- 34″ to 63″ X-travel
- XYZ linear guideways

All pictures are for reference only, actual model and options may vary.

RD	500 700	Drilling and tapping center
series	model numbers	

Speed and power in a compact layout.

- 30-taper spindle
- 20″ or 27″ X-travel
- XYZ linear guideways

RD *• Features a powerful spindle and multi-station turret. Solid construction yields smooth drilling and tapping—versatile machine design provides milling operations.*

Performance Specifications

Machine Model	500	700
X-Travel	19.6	27.5
Y-Travel	15.7	15.7
Z-Travel	11.8	11.8
Nose Taper	#30	#30
Speed DDS (rpm)	12,000 / 15,000 / 20,000* / 24,000*	
Drive Motor** (hp)	7 / 5*	
CNC Control	Fanuc / Mitsubishi	

Units = inch *Optional accessory **30 min. rating

Excellent Production Value

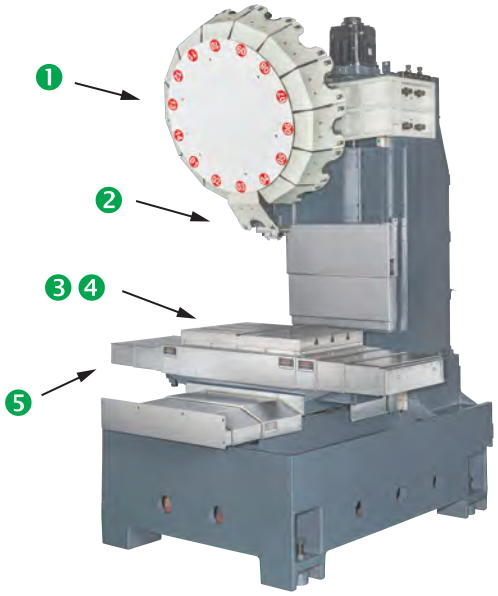
RELIABLE JOB-AFTER-JOB MACHINE PERFORMANCE

New Mighty Viper RD series rapid drilling and tapping center is a powerful machine on a compact footprint. Solid construction yields smooth drilling and tapping. The versatile RD machine design also provides milling operations. Boasting a powerful spindle and multi-station turret, the RD drilling and tapping machine is ready for the toughest machining jobs.

High Performance Design

Features that yield more overall production

1. 14 tool ATC turret, optional 21 tools
2. Powerful spindle:
   24,000 / 20,000 / 15,000 / 12,000 rpm
3. Table size 31″ × 16″ and 24″ × 16″
4. Table Load 550 lb
5. Telescopic way cover on XYZ



PBM series — 115 135A 135B model numbers — Horizontal milling

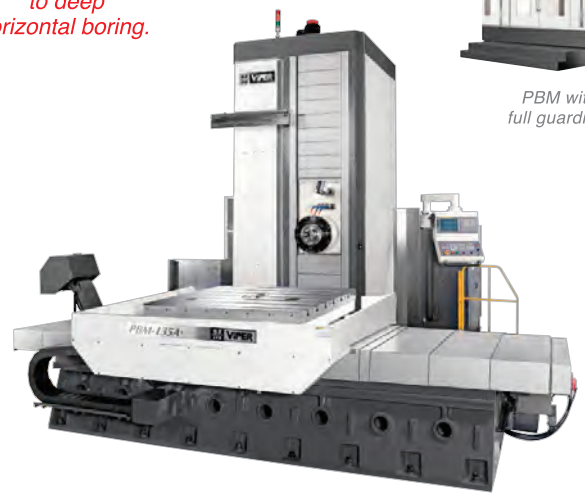
***PBM** • Precision horizontal boring and milling machine. W-axis provides up to 27.5″ of horizontal travel. Comes with full B-axis. Table holds 26,400 lb load.*

Performance Specifications

Machine Model	115	135A	135B
X-Travel	79	98	98
Y-Travel	63	79	75
Z-Travel	59	59	59
W-Travel	20	27.5	27.5
B-Axis Rapids (rpm)	2	2	2
Table Size	55x63	55x63	63x71
Quill Diameter	4.3	5.0	5.0
Nose Taper	#50	#50	#50
Speed Gear (hp)	3000	2500	2500
Drive Motor** (hp)	25 / 35*	35 / 50*	35 / 50*
XYZ Rapid (ipm)	590	394	394

Units = inch *Optional accessory **30 min. rating

Rigid W-axis opens the way to deep horizontal boring.



PBM with full guarding.

- 50-taper spindle
- True 4-step gear spindle
- 4680 ft-lb torque (50 hp*)
- Box ways

HMC series — 500 630 800 1000 model numbers — Horizontal machining

***HMC** • Horizontal machining center is designed with high rigidity on all three axes. Features a precision built-in spindle.*

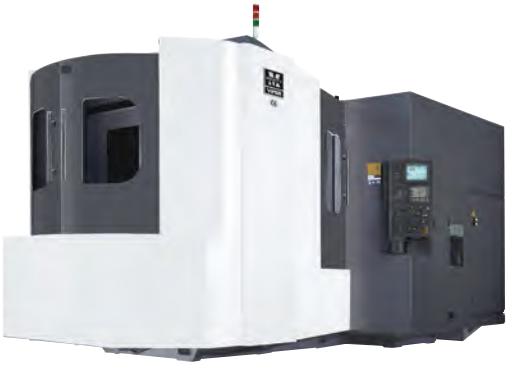
Performance Specifications

Machine Model	(#40) 500	(#50) 500	630	800	1000
X-Travel	28	28	41	55	67
Y-Travel	25	25	32	47	55
Z-Travel	25	25	32	52	60
Pallet Size	20 x 20	20 x 20	25 x 25	31 x 31	39 x 39
Nose Taper	#40	#50	#50	#50	#50
Speed DDS (rpm)	10,000	6,000	6,000	—	—
Speed Built-in (rpm)	15,000*	10,000*	10,000*	10,000	10,000
Speed Gear (rpm)	—	—	—	6,000*	6,000*
Drive Motor**	15 / 20*	35 / 40*	35 / 40*	30 / 35*	30 / 35*
Speed Built-in (rpm)	15,000*	10,000	10,000	10,000	10,000
Drive Motor**	25 / 30*	35 / 40*	35 / 40*	35 / 40*	35 / 40*

Units = inch *Optional accessory **30 min. rating

High speed 15,000 rpm built-in spindle.

HMC with 6-pallet changer.



- 50 or 40-taper spindle
- 6-pallet changer*
- Heavy duty linear guideways

All pictures are for reference only, actual model and options may vary.

MH-5TR

series

630 800 1100 1300

model numbers

Tilting rotary table

5-Axis horizontal machining center.

- 50-taper spindle
- Trunnion table
- Box ways

***MH-5TR** • Horizontal spindle coupled with A-axis trunnion table and a B-axis rotary table performs precision machining for complex horizontal parts.*

Performance Specifications

X-Travel	35 ~ 67
Y-Travel	35 ~ 65
Z-Travel	47~ 65
A-Travel	±120° / -30° ~ +120°
B-Travel	±360°
Table Diameter	Ø25 ~ Ø51
Nose Taper	#50
Speed Gear (rpm)	6000
Speed DDS (rpm)	8000
Drive Motor** (hp)	25 / 30 / 47
CNC Control	Fanuc / Siemens

Units = inch *Optional accessory **30 min. rating

MH-5AB

series

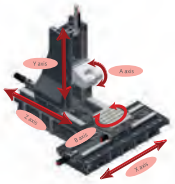
800 1200 1400 1600

model numbers

A-axis head + rotary table

5-Axis horizontal machining center.

- 50-taper spindle
- Tilting head and rotary table
- Box ways



***HM-5AB** • A-axis spindle with a B-axis rotary table performs precision machining for horizontal parts application.*

Performance Specifications

X-Travel	50 ~ 110	
Y-Travel	43 ~ 75	
Z-Travel	53 ~ 96	
A-Travel	+60° ~ -110°	
B-Travel	±360° / 0.001°	
Table Diameter	Ø47 ~ Ø71	
Nose Taper	#50	HSK-A1000*
Speed Gear (rpm)	4000	—
Speed Gear (rpm)	6000	—
Speed Built-In (rpm)	—	12,000
Drive Motor** (hp)	30	56
CNC Control	Fanuc / Siemens	

Units = inch *Optional accessory **30 min. rating

VTL series — 1620 2025 2734 model numbers

Vertical turning

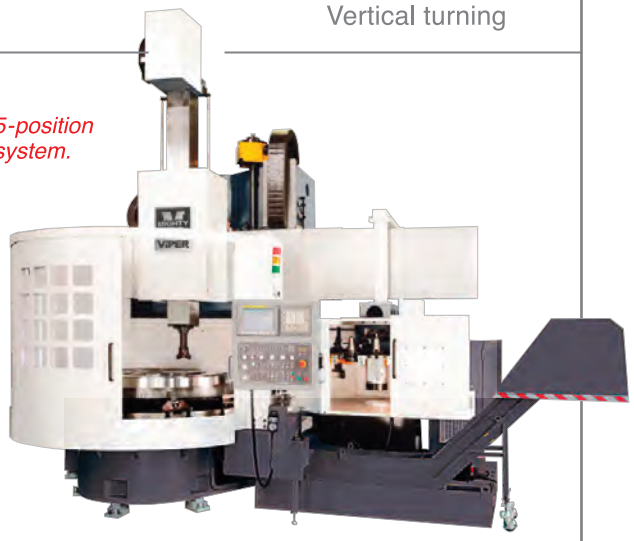
VTL-1620 ~ VTL-2734 *• Designed for large parts turning and features an optional milling function. Specially made for handling heavy table loads.*

Performance Specifications

Machine Model	1620	2025	2734
Table Diameter	63	78	106
Turning Diameter Max.	78	96	133
Swing Max.	78	98	133
Table Load Max. (lb)	33,000	44,000	55,000
X-Travel	64	70	105
Z-Travel	39	39	59
Crossrail Stroke	31.5	31.5	39.5
Crossrail Levels inch x step	7.8 x 5	7.8 x 5	7.8 x 6
Speed Range 2-step (rpm)	1~250	1~200	1~100
Main Table Motor** (hp)	60	60	100
ATC Tools	18	18	18

Units = inch *Optional accessory **30 min. rating

Adjustable 5-position crossrail system.



- 50-taper spindle
- Up to 55,000 lb table load
- Box ways

VTL-1400 and VTL-1600

VTL series — 1400 1600 2000 model numbers

VTL-1400 ~ VTL-2000 *• Designed for large parts turning and features an optional milling function. The 1400 ~ 2000 models have a geared table drive that generates powerful table torque.*

Performance Specifications

Machine Model	1400	1600	2000
Table Diameter	40	50	63
Turning Diameter Max.	55	63	79
Swing Max.	55	63	79
Table Load Max. (lb)	9,900	12,980	17,600
X-Travel	47	55	64
Z-Travel	32	39	39
Table Speed 2-step (rpm)	1 ~ 400	1 ~ 350	1 ~ 250
Crossrail Stroke	Fixed	24	32
Crossrail Levels	Fixed	7.8 x 4	7.8 x 5
Main Table Motor** (hp)	50/40	50/40	60/50
ATC Tools	12	18	18

Units = inch *Optional accessory **30 min. rating

Powerful 2-speed geardriven table.

VTL-2000

- 50-taper spindle
- Up to 17,600 lb table load
- Box ways

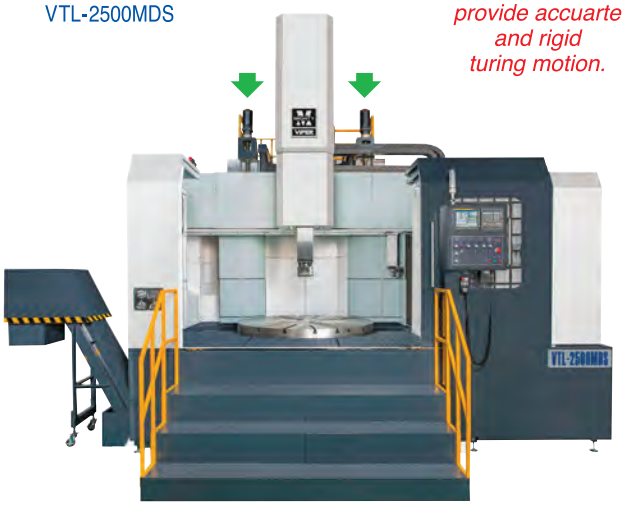
All pictures are for reference only, actual model and options may vary.

VTL-MDS series — 2500 4000 model number0

Powerful and smooth turning

VTL-2500MDS

Dual ballscrews provide accuarte and rigid turing motion.



- 50-taper spindle
- 2-speed gear driven table
- Box ways

VTL-2500MDS** and **VTL-4000MDS
Designed for large parts vertical turning with an optional milling function. Features a W-axis with dual columns, and dual ballscrews.

Performance Specifications

Machine Model	2500MDS	4000MDS
Table Diameter	78	118
Turning Diameter Max.	96	157
Swing Max.	98	157
Table Load Max. (lb)	44,000	66,000
X-Travel	70	161
Z-Travel	39	59
Table Speed 2-step (rpm)	200	80
W-Axis Crossrail Stroke	32	59
Crossrail Levels	—	9.8 x 7 levels
Main Table Motor** (hp)	50 x 2	60 x 2
ATC Tools	18	18

Units = inch *Optional accessory **30 min. rating

*VTL-4000MDS is in use at **Nidec ARISA** in Logroño, Spain. Nidec is a maker of transfer presses.*

VTL-4000MDS

Vertical Turning Accuracy and Power

Designed for heavy duty turning of large parts—the **VTL** is engineered for the manufacturing of parts that require high rigidity and stability. With an optional milling function feature, the VTL is well suited for aerospace, power, and oil field industries.

The **VTL-MDS** model has a symmetrical dual column design that distributes the weight of the spindle evenly over the base. This model comes equipped with dual ballscrews to ensure smooth and accurate movement. Class 3 ballscrews are driven by servo motors for high precision turning.

The VTL-MDS boast a geared table drive that generates powerful table torque. The driving gear is made from high grade nickle-chrome alloy steel.

Dual spindle motors and dual **Redex** (French made) gearboxes that yield zero backlash. The dual setup ensures higher accuracy and high rigidity in C-axis and turning motion.

PERFORMANCE FEATURES

- Dual 2-speed gearboxes
- Two table motors 2x50 HP or 2x60 HP
- Twin drive solution with C-axis
- Live spindle speed 25,000 RPM
- Movable crossrail (5 to 7 steps)
- Wide table up to 118″ in diameter
- 120 HP / 65,135 lb gear transmission

VTL series — 600 750 900 1100 model numbers — Vertical turning

VTL-600 ~ VTL-1100 • *Vertical turning lathe provides efficient cutting coupled with high precision accuracy. Viper feed capacity provides excellent vibration absorption and chatter-free cutting.*

Performance Specifications

Machine Models	600	750	900	1100
Chuck Diameter	15	18	24	32
Turning Diameter Max.	24	30	35	43
Swing Max.	28	35	39	51
Turning Height Max.	16	30	33	39
X-Travel	14	16	19	23
Z-Travel	16	39	33	39
Nose Type	A2-8	A2-11	A2-15	A2-15
Speed Range 2-step (hp)	1~2500	1~2000	1~1800	1~850
Drive Motor** (hp)	40	50	60	75
Tooling Station (Static)	12	12	12	12

Units = inch *Optional accessory **30 min. rating

BMT milling turret for drilling and tapping applications.

- Up to 32-inch chuck
- 2-Step gear transmission
- Box ways

VT series — 8 10 12 model numbers — Gang style production lathe

VT-8 *and* ***VT-10*** • *Perform accurate and fast turning of small parts. Choice of gang tooling, turret tooling or BMT live turret.*

Performance Specifications

Machine Model	8	10	12
Swing Over Bed	12.6	13.78	15.75
Turning Diameter Max.	4.72	7.87	7.08
Swing Over Cross Slide	4.72	4.72	4.72
Turning Length Max.	3.54	8.26	5.9
X-Travel	8.26	9.84	11.8
Z-Travel	7.08	9.25	18.1
Nose Type	A2-4	A2-5	A2-6
Chuck	5	6	8
Bar Capacity	1	1.65	2
Speed Range (rpm)	6,000	5,000	5,000
Drive Motor** (hp)	5	7.5	15
Turret (Type)	gang	gang	gang

Units = inch *Optional accessory **30 min. rating

Fast set-up and accurate small parts cutting.

Automate Viper lathe with a ***Robotic Arm*** *system.*

Shown with ***parts catcher*** *accessory.**

- Up to 8-inch chuck
- BMT live turret*
- Box ways

VT series — 15L 17L 17XL 18L model numbers — Production lathe

Tooling holders for BMT live turret.

Perform hard turning on a small machine footprint.

***VT-15L ~ VT-18L** • Able to handle a wide-range of turning, milling or center work. Features a 12-tool turret with a tool change speed of 0.5 seconds.*

- Up to 10-inch chuck
- BMT-45 live turret*
- Box ways

Performance Specifications

Machine Model	15L	17L	17XL	18L
Swing Over Bed	18.9	18.9	20.4	20.4
Turning Diameter Max.	15.7	15.7	16.9	16.9
Turning Length Max.	16.3	14.6	25.6	25.6
X-Travel	7.9	7.9	8.9	8.9
Z-Travel	18.5	18.5	29.5	29.5
Spindle Nose	A2-5	A2-6	A2-6	A2-8
Chuck	6	8	8	10
Bar Capacity	1.7	2.0	2.0	2.5
Speed (rpm)	6000	5000	5000	4500
Drive Motor** (hp)	15/20*	15/20*	20	20
Tool Number	12/10*	12/10*	12	12

Units = inch *Optional accessory **30 min. rating

VT series — 21 23 model numbers — Production lathe

Fast set-up and high precision cutting.

***VT-21** and **VT-23** • Easier set-up for shorter more productive cycle times. Features a 24 inch swing. Fast rapid rates of 787 ipm and 945 ipm.*

- 8 or 10-inch chuck
- BMT-65 live turret*
- Box ways

Performance Specifications

Machine Model	21	23
Swing Over Bed	24.4	
Turning Diameter Max.	15.35	
Turning Length Max.	24	
X-Travel	7.3+1.6	
Z-Travel	24.4	
Type of Spindle Nose	A2-6	A2-8
Chuck	8	10
Bar Capacity	2.0	2.6
Speed (hp)	5000	4500
Drive Motor** (hp)	35	
Tool Number	12	

Units = inch *Optional accessory **30 min. rating

VT series — 27G 28 30G 33 model numbers

Turning lengths 21.7 to 120-inches

VT-27G ~ VT-33 • *Performs extraordinary metal removal and provides excellent surface finishes. Live turret and a sub-spindle (optional).*

Ideal for big diameter and long turning jobs.

VT-27G *has 2-step gear spindle*

Performance Specifications

Machine Model	27G	28	30	33
Swing Over Bed		27		
Turning Diameter Max.		19		
Turning Length Max.		22 ~ 118		
X-Travel		9.4		
Z-Travel		23 ~ 118		
Chuck	12	12	12	15
Bar Capacity	3	3	3	4.5
Nose Type	A2-8	A2-8	A2-11	A2-11
Speed (rpm)	3500	3500	3000	2400
Motor** (hp)		35 / 50*		
Tool Number		12		

Units = inch *Optional accessory **30 min. rating

- 15 or 12-inch chuck
- BMT-65 live turret*
- Box ways

VT series — 36B 36BL 36CL model numbers

Turning lengths 23 to 120-inches

VT-36 • *Turning center provides a wide boring diameter, up to 7-inches. Rigid bed structure available up to 115-inches long.*

Perform a full-range of turning operations.

Performance Specifications

Machine Model	36B	36C
Swing Over Bed	31.5	31.5
Turning Diameter Max.	24.8	24.8
Turning Length Max.	37~116	
X-Travel	12	
Z-Travel	37 ~ 116	
Nose Type	A2-11	A2-15
Bar Capacity	4.5	6.3
Through Hole	5.15	7.28
Speed *** (rpm)	2000	1000
Motor** (hp)	50	50

Units = inch *Optional accessory **30 min. rating • ***The actual spindle speed will be limited to chuck manufacturer specifications.

- Up to 24-inch chuck
- BMT-75 live turret*
- Box ways

All pictures are for reference only, actual model and options may vary.

VT series — 40A 40B+ 50A+ 50B 70A model numbers

Z-Travel 39 to 157 inches

Rear chuck guarding (optional accessory)

Easier turning for heavy and long parts application.

VT-40 ~ VT-70 *• Accommodates long and heavy workpieces; provides deep hole boring capacity with a large diameter.*

- Up to 40-inch chuck
- Boring tailstock available
- BMT-85 live turret*
- Box ways

Performance Specifications

Machine Model	40A / 40B+	50A+ / 50B	70A
Swing Over Bed	39	39	45
Turning Diameter Max.	35	35	39
Turning Length Max.		37 / 77 / 116 / 155	
X-Travel	17	17	21
Z-Travel		39 / 78 / 118 / 157	
Through Hole	5 / 8	10 / 12	10
Nose Type	A2-11 / A2-15	A2-20	A2-15
Speed (rpm)	2500 / 1890	1100 / 850	750
Motor** (hp)	60	60	60

Units = inch *Optional accessory **30 min. rating

VT series — 1500/500YMS model numbers

Production lathe

Drastically reduce cycle times with higher machining accuracy.

VT-1500/500 *• Twin spindle lathe with a Y-axis. Features main and sub spindle. 12-position VDI live turret. Fast rapid rates up to 1181 ipm.*

- 6-inch hydraulic chuck
- VDI-30 live turret
- Y-axis
- Box ways

Performance Specifications

Swing Over Bed	13.0
Turning Diameter Max.	11.8
Turning Length Max.	19.7
X-Travel (Main Spindle)	6.3
Y-Travel (Main Spindle)	+1.6 / -1.2
Z-Travel (Main Spindle)	19.6
W-Travel (Sub Spindle)	19.6
Nose Type	A2-5
Chuck Main Spindle	6
Chuck Sub Spindle	5
Through Hole	2.4
Motor Main Spindle** (hp)	15
Motor Sub Spindle** (hp)	10

Units = inch *Optional accessory **30 min. rating

VT series — 2600/700YMS model number — Multi-tasking mill-turn

2600/700YMS *• Perform turning and milling. Turret is seated on a 30° Y-slide that moves bi-directional on a 30° X-sliding saddle offering single or two axes simultaneous movement.*

Y-axis and two C-axes on a small footprint with live tooling.

Performance Specifications

Swing Over Bed	33
Turning Diameter Max.	14
Turning Length Max	28
Slideway Slant Angle	30° + 30°
XYZ-Travel	7.8 × ±2.0 × 31.3
W-Travel (Sub)	28.9
Nose Type	A2-8
Through Hole	3.5
Bar Capacity	3.1
Motor Main Spindle** (hp)	30
Motor Sub Spindle** (hp)	30

Units = inch *Optional accessory **30 min. rating

- 10-inch main chuck
- BMT-65 live turret
- Y-axis
- Box ways

VT series — 2100 2300 2800 3000 3300 model numbers — Y-axis mill-turn

VT-2100 ~ VT-3300 *• Features a Y-axis that provides vertical tool positioning for performing a wide range of machining operations: drilling, boring, and tapping.*

Machine a wider range of turning applications with Y-axis and sub-spindle capabilities.

Performance Specifications

Swing Over Z Way Cover	25.6
Turning Diameter Max.	15.7
Swing Over Cross Slide	14.9
Turning Length Max.	22 ~ 120
Y-Travel	-55
Spindle Nose (Main)	A2-6 / A2-8 / A2-11
Chuck	8 ~ 15
Bar Capacity	2 ~ 4.5
Motor** (hp)	20 / 35
Speed (rpm)	2400 ~ 5000
Spindle Nose (Sub)	A2-5
Chuck (Sub)	6 / 8
Bar Capacity (Sub)	1.6 / 2
Tool Number	12

Units = inch *Optional accessory **30 min. rating

- 8, 10, 12 or 15-inch chuck
- BMT live turret
- Box ways

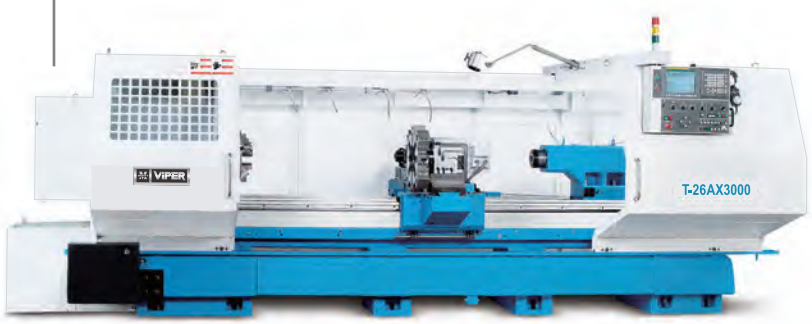
All pictures are for reference only, actual model and options may vary.

T 26 — CNC flat bed lathe

series | model numbers

Large machine structure, built for heavy cutting.

T-26 • A powerful, heavy duty CNC lathe with a flatbed construction—best suited for large work piece turning applications.



- 7-inch Spindle bore
- 2 Spindle speeds
- 3-Jaw hydraulic chuck*
- Three V slideways and one flat way

Performance Specifications

Swing Over Bed	26
Swing Over Cross Slide	15
Distance Between Ctrs.	42 ~ 169
Width of Bed	18
Spindle Bore	4.7 (A2-11, 6 ~ 1600 rpm)
	7.3 (A2-15, 3 ~ 1000 rpm)
Spindle Motor** (hp)	30 / 25
Turret Type	V8 / H4* / H6*
Travel X-Axis	21
Travel Z-Axis	37 ~ 164

Units = inch *Optional accessory **30 min. rating

T 35 — Large bore CNC flat bed lathe

series | model numbers

Large machine structure, built for heavy cutting.

T-35 • A powerful, heavy duty CNC lathe with a flatbed construction—best suited for large work piece turning applications.

- 14-inch Spindle bore
- 2 Spindle speeds
- 3-Jaw hydraulic chuck*
- Three V slideways and one flat way

Performance Specifications

Swing Over Bed	35
Swing Over Cross Slide	20
Distance Between Centers	40 ~ 249
Width of Bed	22
Spindle Bore	4.7 (A2-11, 6 ~ 1600 rpm)
	7.3 (A2-15, 3 ~ 1000 rpm)
	10.16 (A2-15, 3 ~ 650 rpm)
	14.76 (A2-20, 4 ~ 500 rpm)
Spindle Motor** (hp)	30 / 25
Turret Type	V8 / H4* / H6*
Travel X-Axis	20.47
Travel Z-Axis	37 ~ 243

Units = inch *Optional accessory **30 min. rating

T series — 45 60 model numbers — Large bore CNC flat bed lathe

***T-45** and **T-60** • A powerful, heavy duty CNC lathe with a flatbed construction—best suited for large work piece turning applications.*

Large machine structure, built for heavy cutting.

Performance Specifications

Machine Model	T-45	T-60
Swing Over Bed	45	59
Swing Over Cross Slide	28	35
Distance Between Centers	40~276	82~239
Width of Bed	29	39
Spindle Bore	7.1 (A2-15, 6~650 rpm)	
	10.0 (A2-15, 6~650 rpm)	
	14.7 (A2-20, 4~500 rpm)	
	20.8 (A2-28, 2~300 rpm)	
Spindle Motor** (hp)	30 / 25	
Turret Type	V8 / H4* / H6*	
Travel X-Axis	22	29
Travel Z-Axis	37~273	78~235

Units = inch *Optional accessory **30 min. rating

- 20-inch Spindle bore
- 2 Spindle speeds
- 3-Jaw hydraulic chuck*
- Three V slideways and one flat way

ML series — 1730 1742 1766 model numbers — Manual flat bed lathe

***ML-1730 ~ ML-1766** • High speed lathe with a one meter bed. Rigid headstock provides maximum machine stability.*

Built to deliver high precision and easy operation.

Performance Specifications

Swing Over Bed	17
Swing Over Carriage	11
Swing Over Gap	24
Maximun Turning Diameter	15
Distance Between Centers	30~66
Width of Bed	12
Stroke of Tool Post	6
Stroke of Cross Slide	10
Spindle Bore	2 / 3*
Spindle Nose	A1-6 / D1-6
	(A2-6 / D2-6 / D1-8)*
Spindle Motor** (rpm)	5 / 7.5*
Spindle Speed (hp)	Ø2: 1~79 / Ø3: 1~65*

Units = inch *Optional accessory **30 min. rating

- 10-inch Chuck*
- 12 Spindle speeds
- High torque motor*
- Double V slideways

All pictures are for reference only, actual model and options may vary.

ML series

3459 3479 3498 34138 34216 34295 34177 34256 34335 model numbers

Manual flat bed lathe

Extra powerful heavy cutting capacity.

- 6-inch spindle bore
- 12 spindle speeds
- High torque motor*
- Double V slideways

ML-3459 ~ ML-34335 *• Heavy duty lathe with a four meter bed. Easily holds long and large parts that need a wider swing diameter.*

Performance Specifications

Swing Over Bed	34
Swing Over Carriage	24
Swing Over Gap	45
Maximun Turning Diameter	30
Distance Between Centers	59~335 (MT5)
	56~332 (MT6)
Width of Bed	22
Stroke of Tool Post	9
Stroke of Cross Slide	20
Spindle Bore	4 / 6
Spindle Nose	A2-8 / A2-11
Spindle Motor (rpm)	15 / 20
Spindle Speed (hp)	15~100 / 10~700

Units = inch *Optional accessory **30 min. rating

VG series

600 model numbers

CNC vertical grinder

Handles complex shapes and contours with ease.

- 15-inch chuck
- BBT40 grinding wheel
- Grinding wheel ATC*
- Box ways

VG-600 *• Vertical grinder allows for easy access to the workpiece, which can be clamped in place and rotated as needed. Excellent for industries that need tight tolerances and high-quality finishes.*

Performance Specifications

OD Grinding Size	24
ID Grinding Height Max.	12
OD Grinding Height Max.	12
Swing Diameter Max.	15
Workpiece Height Max.	12
Workpiece load max. (lb)	1100
Spindle Speed (rpm)	10,000
Table Speed (rpm)	250
Work Spindle (hp)	15
Grinding Spindle (hp)	15

Units = inch *Optional accessory **30 min. rating

JHV series — 1006CNC 1008CNC model numbers — CNC vertical grinder

JHV *• Vertical grinding machine designed for a variety of grinding applications: OD, ID and face grinding. Features angular axis—spindle head can be rotated* ±30° to grind the taper of a workpiece.

Vertical grinding machine for precision grinding applications.

Performance Specifications

Range of ID Grinding	Ø2 ~ Ø31
OD Grinding Max.	Ø39
OD Grinding Height Max.	31
ID Grinding Height Max.	13 (Ø2 ~ Ø10)
	31 (Ø10 ~ Ø31)
Swing Diameter Max.	39
Workpiece Height Max.	31
Distance from Table to Spindle	71

Units = inch

- ±30° Head spindle rotation - manual
- 6 Tool ATC
- Linear guideways

JHU series — 2706 2710 2715 2720 3510 3506 3515 model number — CNC universal grinder

JHU *• Universal grinding machine—The wheel headstock provides 120° of swivel angle. And the worktable swivels 5°~11° CCW and 3°~6° CW. Tailstock sleeve movement is hydraulically operated for convenient workpiece loading and unloading.*

Ideal for internal and external grinding operations.

Performance Specifications

Workpiece Swing Max.	11 / 14
Grinding Length Max.	24 ~ 79
Grinding Diameter Max.	10 / 13
Workpiece Weight Max. (lb)	154 / 286
Grinding Wheel Motor (hp)	5

Units = inch

- Automatic grinding cycle
- Hydraulic tailstock
- CNC contol

All pictures are for reference only, actual model and options may vary.

JHC — 12 18 20 24 — CNC centerless grinder

series | model number

Excellent for high-volume production runs.

- Wheel spindle - high torsion resistant
- CNC / NC / Manual
- Fully automated loading / unloading

JHC • *Centerless grinder—Uses a hydrostatic wheel spindle coupled with high pressure oil film for added precision under heavy loads. Grinder does not require center holes, drivers or workhead fixtures. Grinding applications: cylindrical, tapered, or formed.*

Performance Specifications

Standard Work Rest	0.04 ~ 9
Special Work Rest	1 ~ 4
Grinding Wheel Size	12 ~ 24
Regulating Wheel Size	8 ~ 12
Grinding Wheel Speed (rpm)	1050 ~ 1900
Wheel Motor (hp)	7.5 ~ 20

Units = inch

JHA / JHP — 2003 3506 3510 4006 4010 — CNC angular / plunge grinder

series | model numbers

Combines angular and plunge grinding applications in one CNC grinding machine.

- Plunge wheel head
- Angular wheel head
- CNC control

JHA / JHP • *CNC cylindrical grinding machine performs both angular and plunge grinding functions. High resolution linear scale for close-loop feedback. Custom NC grinding cycles with edit processing mode.*

Performance Specifications

Workpiece Swing Max.	7.9 / 14 / 16
Grinding Length Max.	12 ~ 39
Grinding Diameter Max.	7.9 ~ 15
Workpiece Weight Max. (lb)	176 / 330
Distance Between Centers	11.8 / 23 / 39
Center Height	3.9 / 6.9 / 7.9

Units = inch

JHI series — 150 3006 3012 model numbers — CNC internal grinder

JHI *• Internal grinding machine— Utilizes a rigid high precision, and quiet running spindle head. Spindle swivels ±8° for taper grinding applications. Versatile cyclic grinding motions: spark-free grinding, coarse grinding trimming, fine grinding, and automatic grinding. CNC controller uses macro machining programs.*

Suitable for mass production and ensures precision grinding oninner diameter surfaces.

Performance Specifications

Range of ID Grinding	0.2 ~ 12
Grinding Depth Max.	6 ~ 12
Holding Length Max.	8 ~ 47
Swing Over Bed	19 ~ 21
Swing In Chuck Guard	11 / 14

Units = inch *Optional accessory **30 min. rating

- Versatile cyclic grinding
- NC / CNC contol
- Built-in spindle*

JHD series — 1503 3205 model numbers — Two spindle grinder

JHD *• Double spindle grinding machine —uses a 3-jaw chuck coupled with an* ***OD wheel*** *spindle and* ***ID wheel*** *spindle. The two spindles can grind two different surfaces simultaneously or two different pieces at the same time. Ideal for precision grinding and polishing of small and medium-sized workpieces.*

Shorten grinding time, improve grinding accuracy, and expand grinding range.

Performance Specifications

Machine Model	1503	3205
ID Hole Depth	0.25 ~ 8 x 6	0.25 ~ 5 x 3
Grinding Diameter Max.	5.9	12.5
Grinding Length Max. (OD & ID)	4 / 5	8 / 4
Swing Over Bed Max.	12	20
Workpiece Weight Max. (lb)	220	287
Chuck Size	6	8

Units = inch *Optional accessory **30 min. rating

- Two side-by-side spindles
- 3-jaw chuck
- CNC control

JHG series — 1015 1020 1510 model numbers — Center hole grinder

Excellent for critcal center point machining.

- Planetary motion of wheel spindle
- Synchronized grinding motion
- NC control available

***JHG** • Center hole grinding machine — Based on three-axis simutaneous grinding action, a stable machine that automatically locates center. Features a smaill oil groove design that prevents non-film stick with the center, reducing unnecessary error. Provides precision center hole accuracy for high quality cylindrical grinding applications.*

Performance Specifications

Workpiece Diameter Max.	0.02 ~ 4.9
Workpiece Length Max.	2 ~ 78
Workpiece Weight Max. (lb)	220
Center Hole Angle	60°
Diameter of Center Hole	0.1 ~ 2.4
Wheel Spindle Travel	6
Wheel Spindle Speed (rpm)	2000
Wheel Spindle Motor** (hp)	0.5

Units = inch *Optional accessory **30 min. rating

JHT series — 4010 model numbers — CNC thread grinding

Automated spindle ±30° rotation with CNC control for thread grinding.

- ±30° Grinding wheel swivel angle
- Hydrostatic guideways
- CNC control

***JHT** • Designed for precision thread grinding. Equipped with an Italian made built-in spindle with water cooling for high stability. Hydrostatic guideways for fast movement, low noise, and low vibration.*

Performance Specifications

Max. Work Size (OD x L)	16 x 39
Grinding Wheel Size (OD x W x ID)	20 x 2 ~ 4 x 8
Grinding Wheel Speed (rpm)	3500
Wordhead spindle speed (rpm)	10 ~ 300
Center	MT4
Grinding wheel swivel angle	CCW30°~CW30°
Work table swivel angle	CCW7°~ CW4°
Grinding wheel motor (hp)	40
Work head motor (hp)	3.6
Wheel table feeding motor (hp)	4

Units = inch *Optional accessory **30 min. rating

PSGS

series

1535 1545 2045 3060 2550 4080

model numbers

Saddle suface grinder

PSGS *• This machine features a unique saddle-moving structure and advanced features that make it ideal for precision grinding applications.*

Precision grinding solution for superior surface finishes.

Performance Specifications

Max. Travel (C×L)	7 ~ 18 × 15 ~ 35
Spindle Height from Table	17 ~ 24
Table Top to Wheel Bottom	13 ~ 17
Table Grinding Surface	6 × 14 ~ 16 × 31

Units = inch C × L = Cross × Longitudinal

- Up to 14″ grinding
- Up to 3600 rpm spindle
- Double V ways

PSGC

series

50100 50120 60120 60220 50150 60150 60250

model numbers

Column suface grinder

PSGC *• The machine is capable of surface, slot, side face, and profile grinding with superior straightness, flatness, and mirror finish.*

Grind on a variety of materials: metals, plastics, ceramics.

Performance Specifications

Max. Travel (C×L)	22 × 45 ~ 65 / 26 × 53 ~ 104
Spindle Height from Table	28
Table Top to Wheel Bottom	21
Table Grinding Surface	20 × 39 ~ 59
Table Grinding Surface	24 × 47 ~ 98

Units = inch C × L = Cross × Longitudinal

- 14″ Grinding wheel
- Up to1800 rpm spindle
- Double V ways

All pictures are for reference only, actual model and options may vary.

PSGO series — 60150 75150 75220 75300 model numbers — Over arm suface grinder

Over arm design provides easy access to work piece.

- 14″ Grinding wheel
- Up to1800 rpm spindle
- Double V ways

PSGO *• A fixed-beam large size surface grinder excellent for grinding of big, heavy work pieces. Solid machine structure ensures full contact with the workpiece as the table travels to either end, even in the table limit position.*

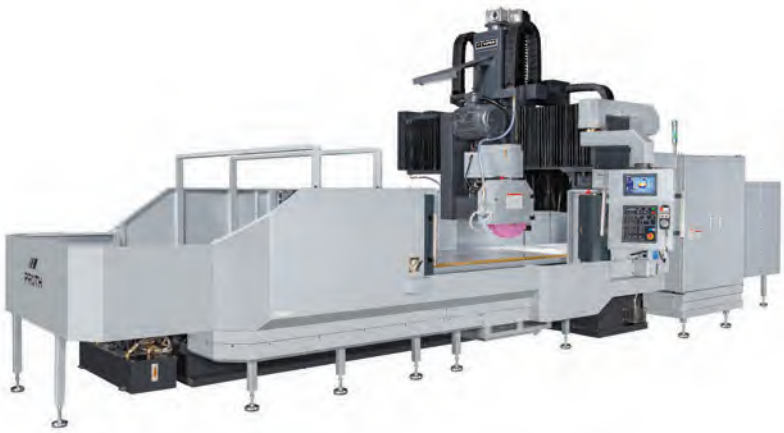
Performance Specifications

Max. Travel (C×L)	26 x 65 / 32 x 65 ~ 124
Spindle Height from Table	28 (37)
Table Top to Wheel Bottom	21
Table Grinding Surface	24 x 59
Table Grinding Surface	30 x 59 ~ 118

Units = inch C x L = Cross x Longitudinal

PSGP series — 1015 1020 1025 1030 1050 1040 1060 model numbers — Double column suface grinder

Ideal for large plate, die/mold and ceramic plates grinding with high accuarcy results.



- 20″ Grinding wheel
- 1150 rpm spindle
- Double V ways

PSGP *• Grinder offers working capacities from 47″ x 65″ to 47″ x 242″. This large, heavy-duty fixed beam surface grinder is built solid and is excellent for die/mold, and high precision grinding applications.*

Performance Specifications

Max. Travel (C×L)	47 x 65 ~ 242
Wheel to Table	0 ~ 30
Spindle Height from Table	43
Table Top to Wheel Bottom	33
Table Grinding Surface	39 x 59 ~ 236

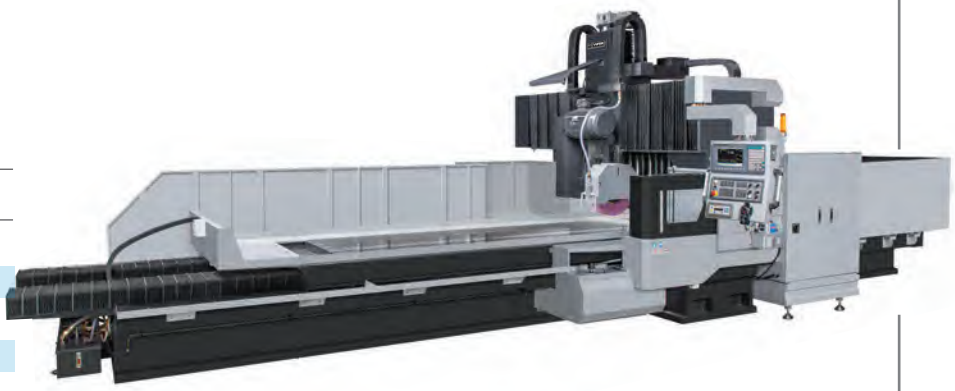
Units = inch C x L = Cross x Longitudinal

PSGP series — 1215 1220 1225 1230 1250 1240 1260 model numbers

Double column surface grinder

PSGP *• Designed for applications that demand speed, accuracy, rigidity and a very large grinding area. The machine base features hardened and ground double 'V' slideways for optimum straightness and smooth table movement.*

Perfect for grinding medium to large parts for automotive, aircraft, and power generation.



Performance Specifications

Max. Travel	55 x 65 ~ 242
Wheel to Table	0 ~ 30
Spindle Height from Table	43
Table Top to Wheel Bottom	33
Table Grinding Surface	47 x 59 ~ 236

Units = inch *Optional accessory **30 min. rating

- 20″ Grinding wheel
- Second spindle head option
- Double V ways

PSGP series — 1522 1530 1540 1550 1560 model numbers

Double column surface grinder

PSGP *• This machine has a wider table and a rigid gantry structure which allows grinding of very large parts. The machine base features hardened and ground double 'V' slideways for optimum straightness and smooth table movement.*

Versatile production provides vertical and horizontal grinding.

Performance Specifications

Max. Travel	75 x 93 ~ 242
Wheel to Table	4 ~ 32 (14 ~ 39)
Spindle Height from Table	43 (53)
Table Top to Wheel Bottom	33
Table Grinding Surface	59 x 86 ~ 236
Horizontal Motor** (hp)	15 (20*/25*)
Vertical Motor** (hp)	10

Units = inch *Optional accessory **30 min. rating

- 20″ Grinding wheel
- Two spindle heads
- Double V ways

All pictures are for reference only, actual model and options may vary.

PSRC — 500 600 800 1000 — Rotary surface grinder

series | model numbers

Maintain close tolerances and reduce process time.

***PSRC** • Grinder is best suited for high precision surface grinding of medium and big parts. And for high accuracy circular parts where one piece is ground at a time flat or with a radial taper.*

- 14″ Grinding wheel
- Hydrostatic rotary table
- Double V ways

Performance Specifications

Max. Grinding Radius	11 ~ 22
Spindle Center to Table	20
Table Top to Wheel Bottom	13
Table Diameter	20 ~ 39

Units = inch *Optional accessory **30 min. rating

PSRP — 1000 1200 1500 — Double Column Rotary surface grinder

series | model numbers

Two spindle heads provide single setup machining.

***PSRP** • Excellent alternative to a reciprocating machine for reducing production time. Good for machining batches of small parts that are ground with a high degree of parallelism and high surface finish.*

- 20″ Grinding wheel
- Hydrostatic rotary table
- Double V ways

Performance Specifications

Max. Grinding Radius	24 ~ 31
Vertical Grinding Diameter	8 ~ 59
Spindle Center to Table	35 (43*)
Table Top to Wheel Bottom	25
Table Diameter	43 ~ 59

Units = inch *Optional accessory **30 min. rating

S series — 250HB — 300HB 460HB 400HB — Fully automatic band saw

model numbers

S-Series *• Saw frame raising and lowering controlled by single lifting cylinder. Base structure is solid and stable for high precision cuts and reliable performance.*

User friendly NC touch screen.

Fully automated production reduces factory lead time.

Performance Specifications

Capacity ●	10 ~ 18
Capacity ■	12 x 10 ~ 18 x 18
Bundle Cutting Width	5.7 ~ 14
Bundle Cutting Heigth	1.2 ~ 9
Blade Speed** (fpm)	65 ~ 330
Motor Blade Drive (hp)	5 ~ 7.5
Motor Hydraulic Pump (hp)	1 ~ 2
Motor Coolant Pump (hp)	1/8 ~ 1/4
Blade Size	138 x 1.3 x 0.042 ~ 184 x 1.6 x 0.05

Units = inch

- Pivot type construction
- Hydraulic blade tension
- Shuttle type automatic feed

H series — 260HB — 360HB 560HA 460HB 7056HA — Fully automatic band saw

model numbers

H-Series *• The newly designed HB model offers double column saw frame. Compared to the single column model with an auxiliary square post, the HB model provides higher stability in the saw frame downfeed with high cutting performance.*

User friendly NC touch screen.

The perfect choice for better performance and higher productivity.

Performance Specifications

Capacity ●	10.25 ~ 20
Capacity ■	11.5 x 10 ~ 27.5 x 22
Bundle Cutting Width	6 ~ 12
Bundle Cutting Heigth	1.2 ~ 9
Blade Speed** (fpm)	65 ~ 330
Motor Blade Drive (hp)	5 ~ 10
Motor Hydraulic Pump (hp)	1 ~ 3
Motor Coolant Pump (hp)	1/8 ~ 1/4
Blade Size	155 x 1.3 x 0.042 ~ 267 x 2.1 x 0.063

Units = inch

- Column type construction
- Heavy duty cutting
- Cylinder with auxiliary square post design

All pictures are for reference only, actual model and options may vary.

H / NC series — 700HA model numbers — 800HA 1100HA 1070HA — Fully automatic band saw

Ideal for cutting a variety of materials from small to large lots.

User friendly NC touch screen.

Series-H *• The automatic sawing machine combines large capacity with a powerful drive system. Fully equipped with NC controls for fast setup and maximum production.*

- Guide arm on linear guideways
- Heavy duty transmission
- Auto trim cut and initial cut positioning

Performance Specifications

Capacity ●	27.5 ~ 40
Capacity ■	31.5 x 27.5 ~ 43.3 x 40
Blade Speed** (fpm)	50 ~ 250
Motor Blade Drive (hp)	10 ~ 15
Motor Hydraulic Pump (hp)	3 ~ 5
Motor Coolant Pump (hp)	1/4 ~ 1/2
Blade Size	315 x 2.1 x 0.063 ~ 437 x 3 x 0.063

Units = inch

H series — 360SA model numbers — 5550 7056 7050 1010 — Semi-automatic billet saw

Excellent for cutting large material.

Variable blade ed controller.

Series-H *• The semi-automatic column type horizontal sawing machine is built with a heavy duty construction. A nesting fixture set for bundle cutting makes it possible to cut multiple pieces at one time.*

- Great cutting range
- Hydraulic shuttle table feeding
- Double column type saw frame

Performance Specifications

Capacity ●	14 ~ 40
Capacity ■	31.5 x 27.5 ~ 43.3 x 40
Blade Speed** (fpm)	50 ~ 250
Motor Blade Drive (hp)	10 ~ 15
Motor Hydraulic Pump (hp)	3 ~ 5
Motor Coolant Pump (hp)	1/4 ~ 1/2
Blade Size	315 x 2.1 x 0.063 ~ 437 x 3 x 0.063

Units = inch

H series — 1300L model numbers — 1613 1816 1616 2116 — Semi automatic billet saw

Variable blade speed controller.

Eliminates extensive set-up using programmable control.

H-Series *• The semi-automatic column type horizontal sawing machine is built with a heavy duty construction. A nesting fixture set for bundle cutting makes it possible to cut multiple pieces at one time.*

Performance Specifications

Capacity ●	52 ~ 63
Capacity ■	52 x 52 ~ 82.7 x 63
Blade Speed** (fpm)	50 ~ 200
Motor Blade Drive (hp)	20
Motor Hydraulic Pump (hp)	5 ~ 7.5
Motor Coolant Pump (hp)	1/4 ~ 1/2
Blade Size	484 x 3 x 0.063 ~ 649.6 x 3 x 0.063

Units = inch

- Great cutting range
- Hydraulic shuttle table feeding
- Double column type saw frame

H series — 8276V 1100V model numbers — Semi automatic billet saw

Variable blade speed controller.

Automatic raising and lowering of saw head reduces operator stress.

H-Series *• The semi-automatic column type horizontal sawing machine is built with a heavy duty construction. Features a hydraulic blade tension devise that permits the workpiece to be automatically indexed reducing remnant size.*

Performance Specifications

Capacity ●	30 ~ 40
Capacity ■	32.3 x 30 ~ 43.3 x 40
Blade Speed** (fpm)	50 ~ 250
Motor Blade Drive (hp)	10 ~15
Motor Hydraulic Pump (hp)	3 ~ 5
Motor Coolant Pump (hp)	1/4
Blade Size	315 x 2 x 0.063 ~ 437 x 3 x 0.063

Units = inch

- Out of square detector option
- Hydaulic vise feeding
- Double column type saw frame

All pictures are for reference only, actual model and options may vary.

P series — 50ILA 75ILA model numbers

Fully automatic circular saw

Direct drive saw head for higher cutting performance.

User friendly NC touch screen.

***P-Series** • Ultra high speed billet sawing system with linear feed to the sawblade. This machine is unbeatable for performance with a cut finish that can eliminate the need for a second process. Cut yields a micro grain quality surface finish.*

- High power blade motor
- Automatic loading table
- Hydraulic sorting chute

Performance Specifications

Capacity ●	0.315 ~ 2.95
Capacity ■	0.315 ~ 2.13
Blade Speed** (fpm)	50 ~ 220
Blade Size	9.84 x 0.47 x 0.07 ~ 11 x 0.47 x 0.07
Motor Blade Drive (hp)	10
Motor Hydraulic Pump (hp)	2
Motor Sawhead Feed Servo (hp)	1.34 ~ 2
Motor Material Feed Servo (hp)	1.34 ~ 2
Sawhead Feed System	Servo motor and ball screw
Automatic Feed Length	0.236 ~ 27.56 Single Feed
Automatic Feed Length	118 Multiple Feed

Units = inch

P series — 100ILA 150ILA 460ILA model numbers

Fully automatic circular saw

High capacity, high efficiency metal cutting circular saw.

User friendly NC touch screen.

***P-Series** • Ultra high speed billet sawing system with linear feed to the sawblade. This machine is unbeatable for performance with a cut finish that can eliminate the need for a second process. Cut yields a micro grain quality surface finish.*

- High power blade motor
- Automatic loading table
- Hydraulic sorting chute

Performance Specifications

Capacity ●	0.591 ~ 9.05
Capacity ■	0.591 ~ 6.4
Blade Speed** (fpm)	20 ~ 160
Blade Size	14 x 0.496 x 0.09 ~ 29.5 x 0.543 x 0.126
Motor Blade Drive (hp)	15 ~ 40
Motor Hydraulic Pump (hp)	3 ~ 5
Motor Sawhead Feed Servo (hp)	2 ~ 4.7
Motor Material Feed Servo (hp)	2 ~ 4.7
Sawhead Feed System	Servo motor and ball screw
Automatic Feed Length	0.315 ~ 27.5 Single Feed
Automatic Feed Length	118 Multiple Feed

Units = inch

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