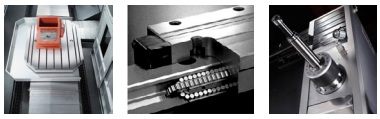
TOYODA



HB SERIES

WELE

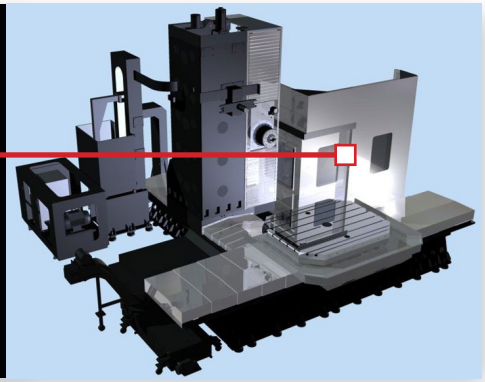
a TOYODA Strategic Alliance Company

HORIZONTAL BORING MACHINING CENTER

Operation Ergonomics

OPERATOR SAFETY ENCLOSURE

Interlocked operator doors provide easy access to the work area.



AUTOMATIC TOOL CHANGER

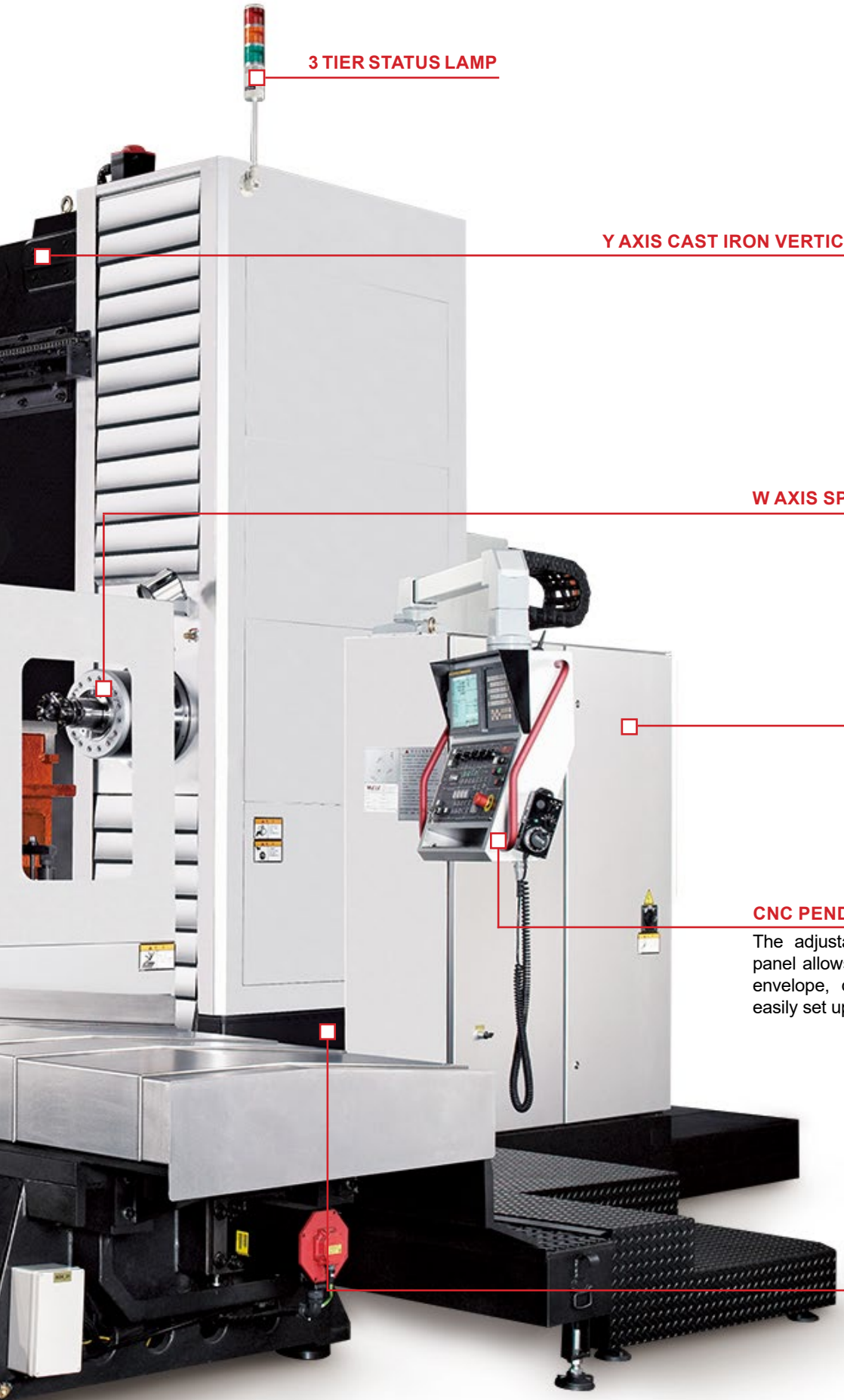
REMOVABLE TABLE CHIP GUARDING

B AXIS ROTARY TABLE

Hydrostatic axial bearings support heavy workpiece loads while Toyoda's patented backlash elimination device ensures precision on the B axis location. The hydrostatic design promotes smooth cutting and long term performance reliability.

X AXIS

The high quality Meehanite cast iron base and column provide superior structural rigidity to stabilize the machine, reduce vibration and improve machining accuracy.



3 TIER STATUS LAMP

Y AXIS CAST IRON VERTICAL COLUMN

W AXIS SPINDLE

ELECTRICAL CABINET

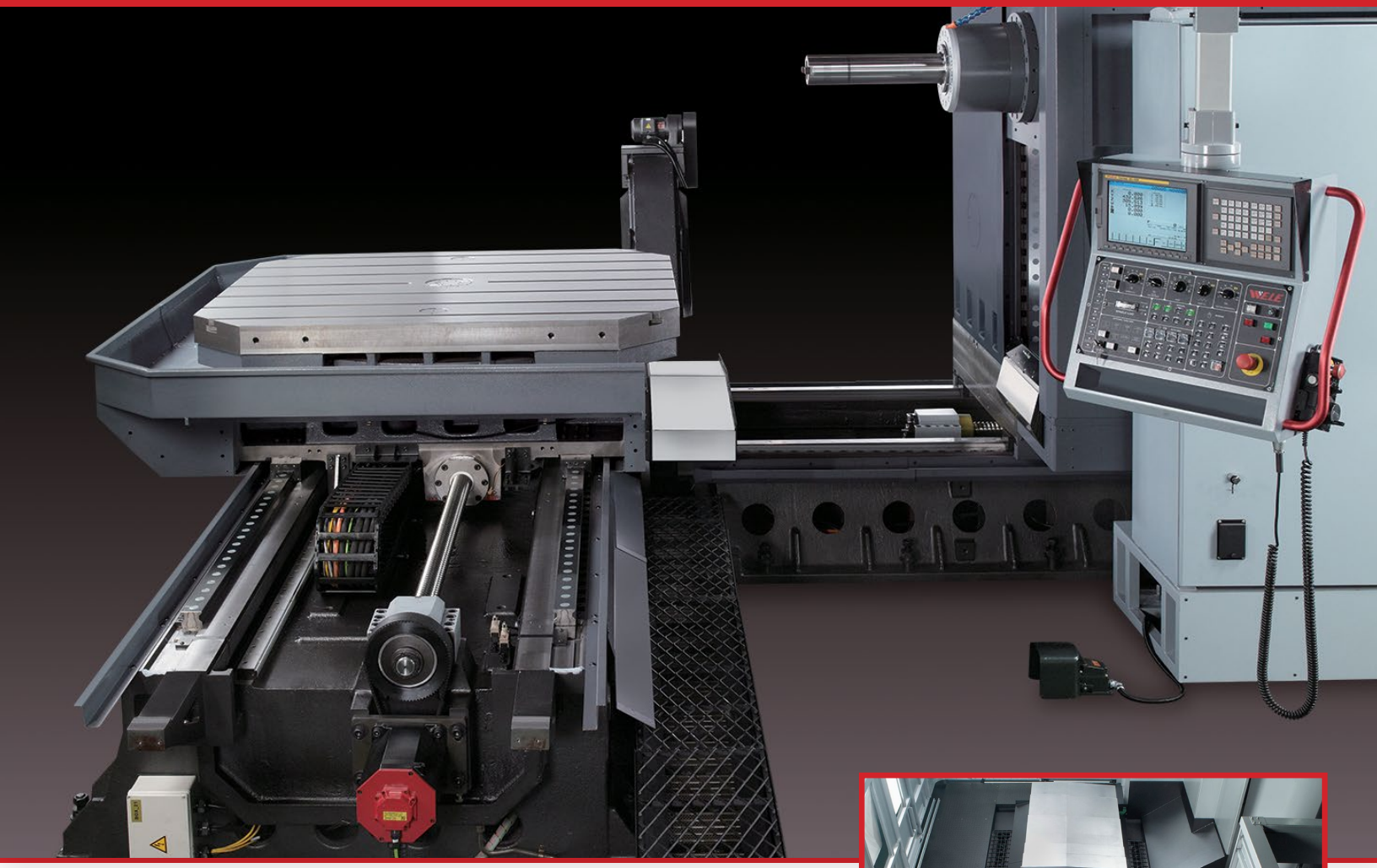
Conveniently located near the operator panel for easy access & maintenance.

CNC PENDANT

The adjustable & flexible multi-jointed operator panel allows user to easily maneuver to the work envelope, quickly conduct a tool change, and easily set up the workpiece and fixture.

Z AXIS BED

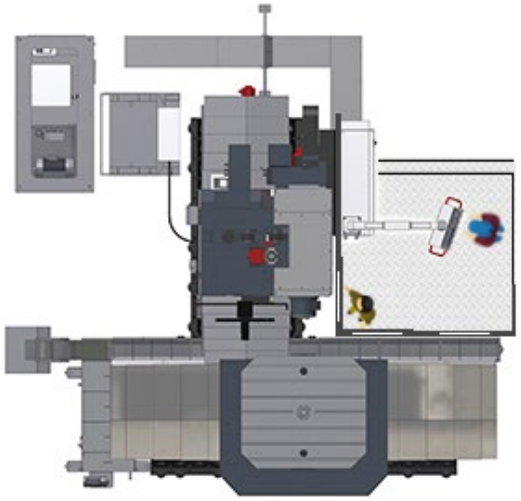
The cast iron bed features a standard linear scale feedback mechanism.



Rigid Construction & Feed System

- The HB Series' machine bed and column are made of specially formulated Meehanite cast iron for long term durability and thermal stability, ensuring machining accuracy. Structural stability and geometric accuracy are fundamental features to the design and construction of all Wele products, including the HB series.

- Heavy duty linear roller guides provide dynamic accuracy and rigidity for heavy cutting. Complete with standard linear scale feedback for all axes, the HB series is designed for accuracy & performance reliability.



Efficient Usability Features

- From the ease and convenience of the fully loaded Fanuc 0iM control, to the handy air and coolant supply at the load position, the HB series is designed to promote ease of maintenance with convenient accessibility for the operator.

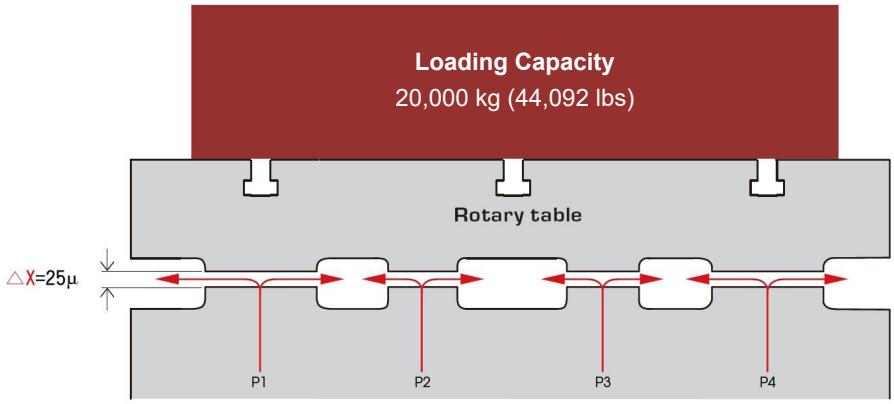
- The horizontal movable operator panel is located at the right side of the column for the operator's convenience when setting up the workpiece and tools. The conveniently located manual pulse generator promotes easy operator functionality.

- Toyoda employs a hinged belt lift-up type chip conveyor along the X axis.

Hydro-Static Bearing Design

The work table, or B axis, employs a uniquely designed hydrostatic axial bearing allowing for large workpiece table loads in excess of 40,000 lbs.

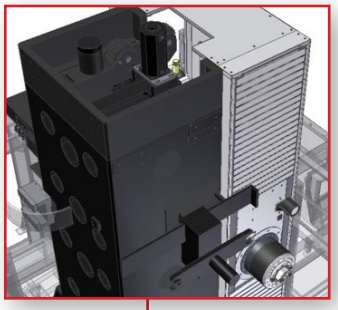
The B axis has 360 dg. Continuous rotation, incremental indexing of 0.001 dg.

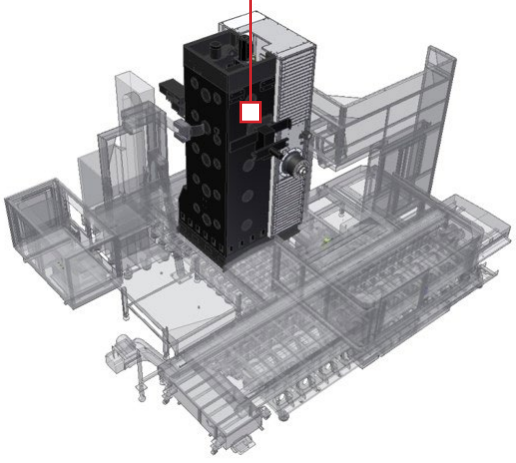


SPECIFICATION	UNIT	HB1416-110	HB1620-130
Dimensions	mm (in)	1,440 x 1,600 (63.0 x 56.7)	1,600 x 2,000 (78.7 x 63.0)
Table Load Capacity	kg (lb)	8,000 (17,600)	20,000 (44,092)
Indexing Angle	degree	.001	

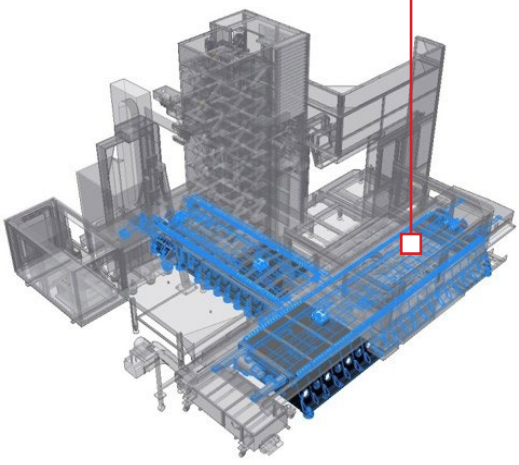
Design Features

COLUMN

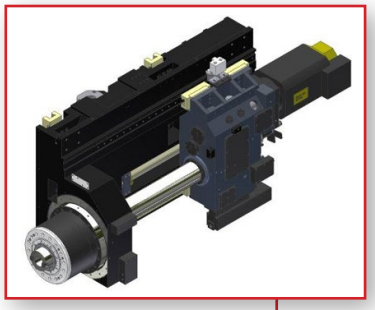


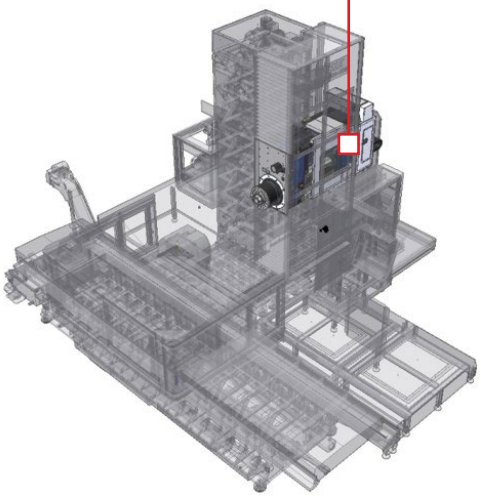


BED



W AXIS FEED SYSTEM

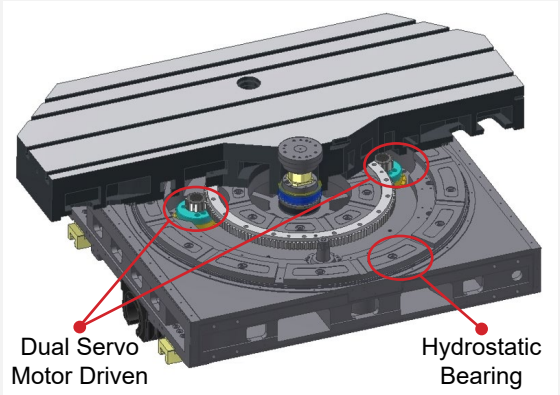


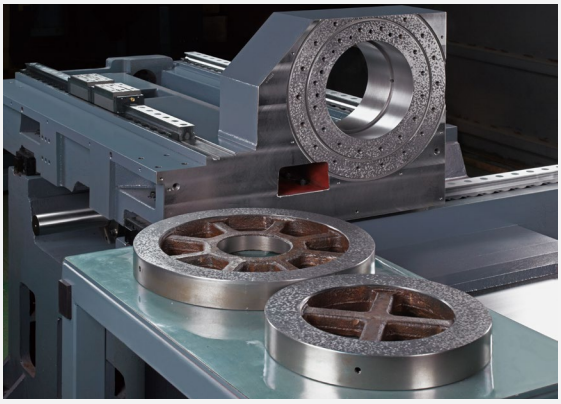


Innovative Technology & Craftsmanship

All contact surfaces are hand-scraped by experienced craftspeople in order to achieve ultimate geometric precision - allowing critical components to mate perfectly within millionths of an inch.

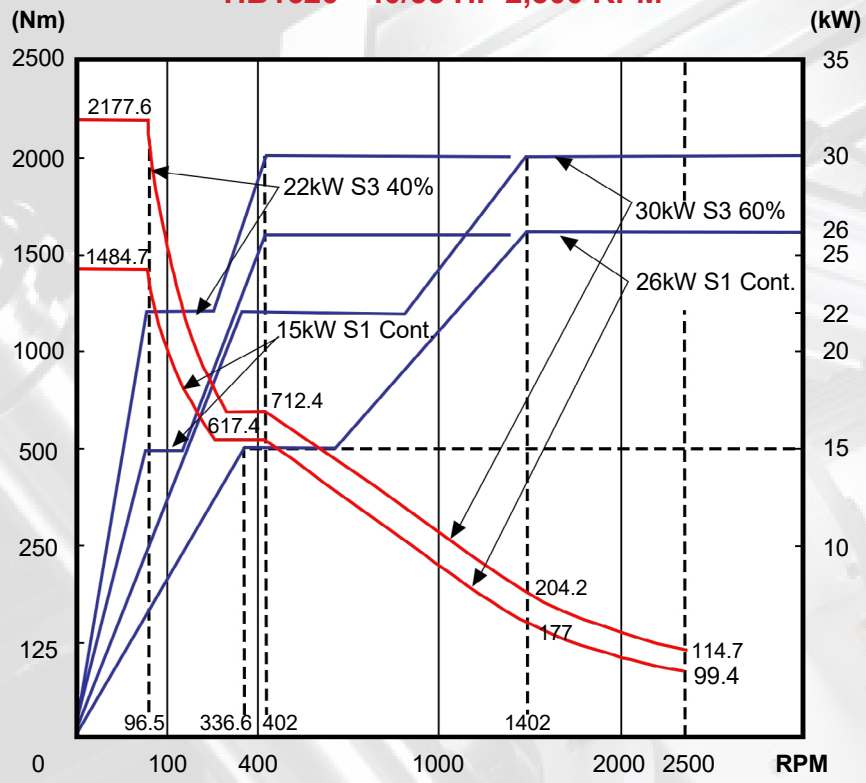
The rotary table features a patented mechanism designed to eliminate backlash while the hydrostatic bearing table is designed to combat the challenging parameters of extra-heavy loads.



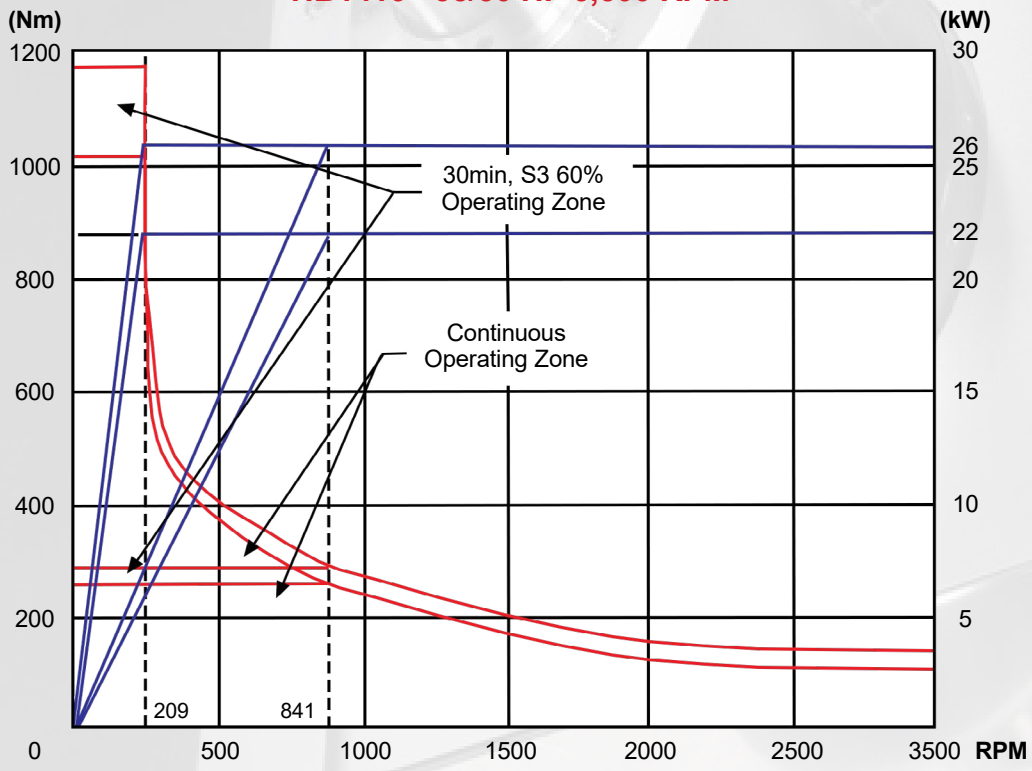


Spindle Output Torque Chart

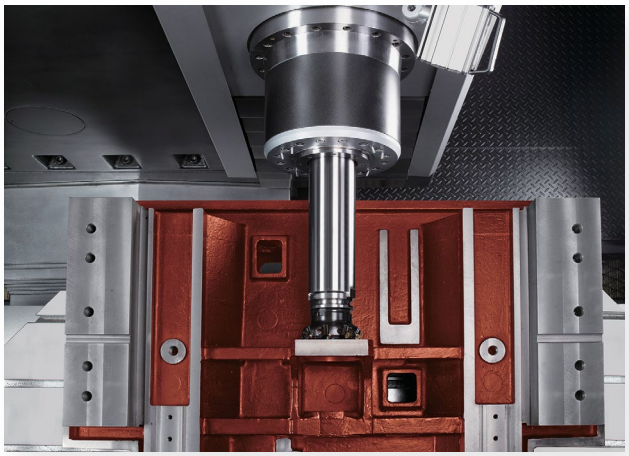
HB1620 - 40/35 HP 2,500 RPM

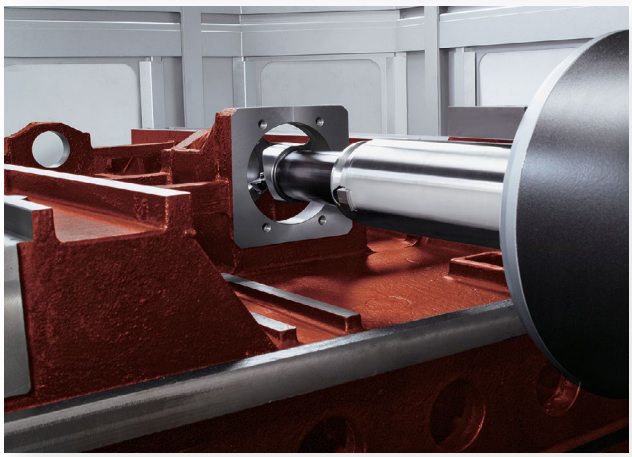


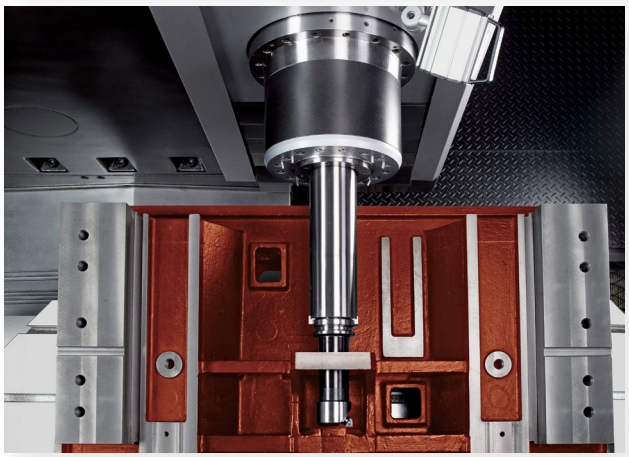
HB1416 - 35/30 HP 3,500 RPM

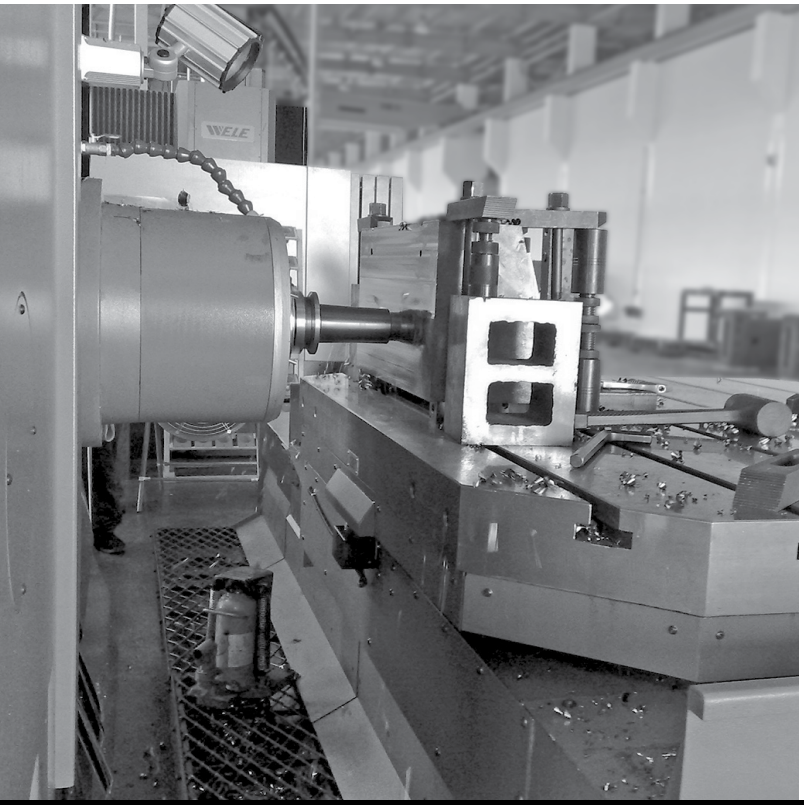


Applications





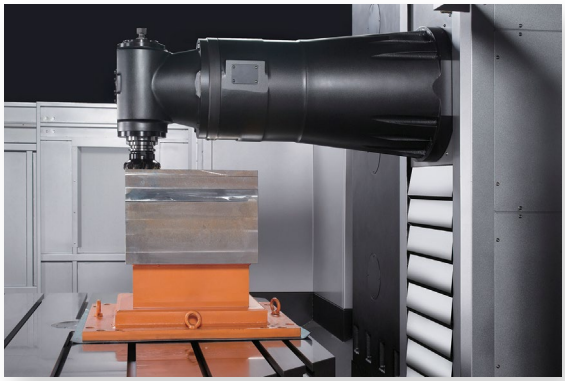




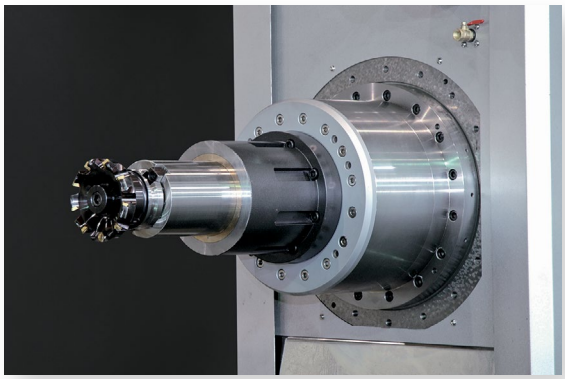
Special Options Accessories

60 or 90 Tool ATC.

Clamping Seat

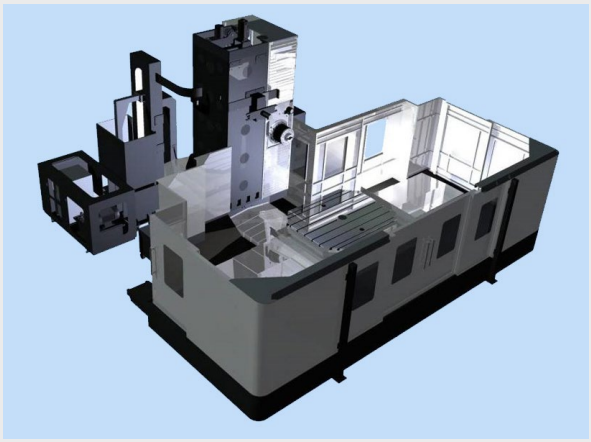


Manual 90° Angle Extension Attachment

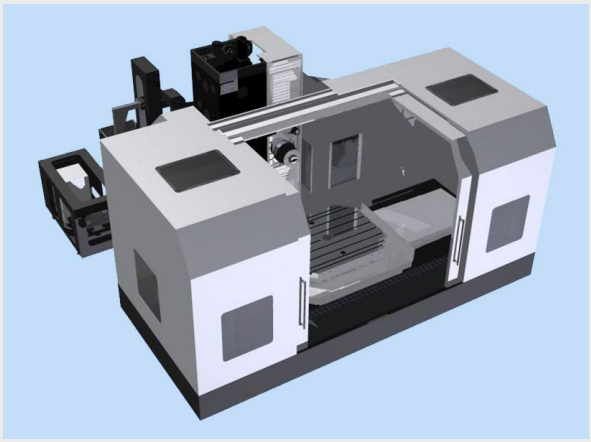


Spindle Quill Support Sleeve

Optional Machine Enclosures



Wrap Around Chip Guarding

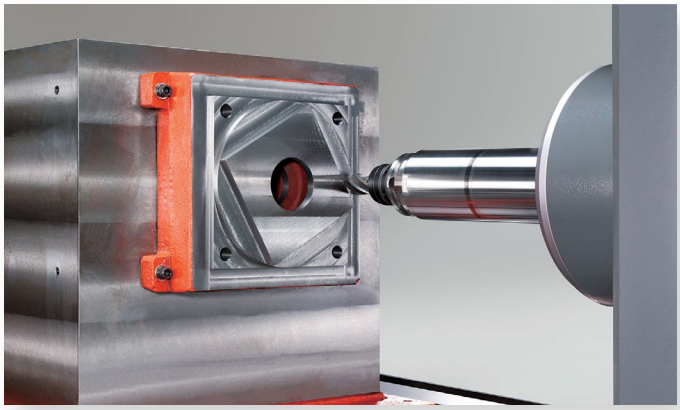


Entire Work Area Enclosed with Roof Cover

Quality Standards

Positioning measurement (VD13441 standard.)

Ball bar Circular interpolation measurement.



NAS test piece approval.

Spindle vibration and noise checking.

Quality Control

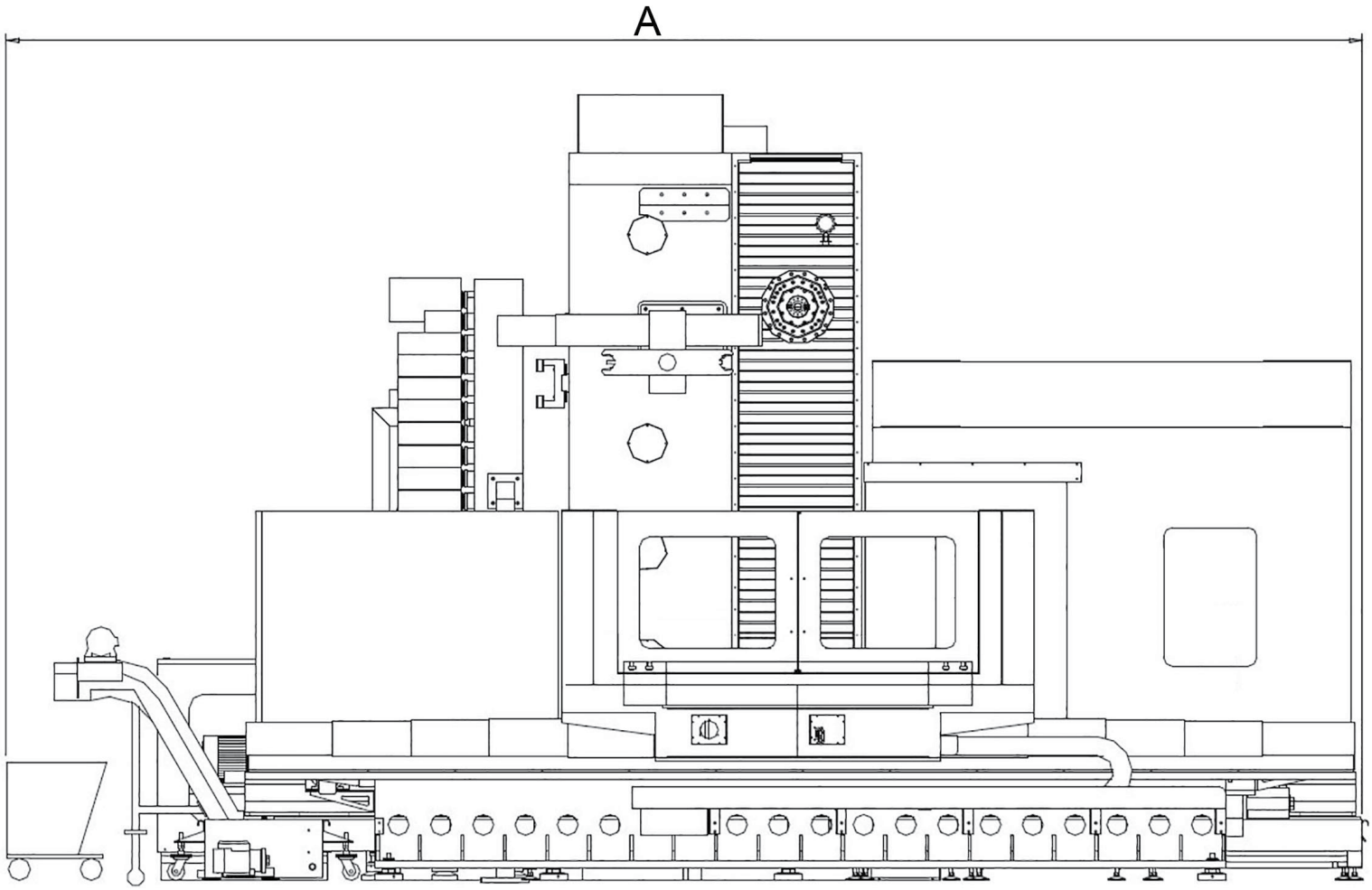
Every WELE machine goes through a thorough quality control run and inspection process.

Inspection documentation is supplied with the shipment of each machine.

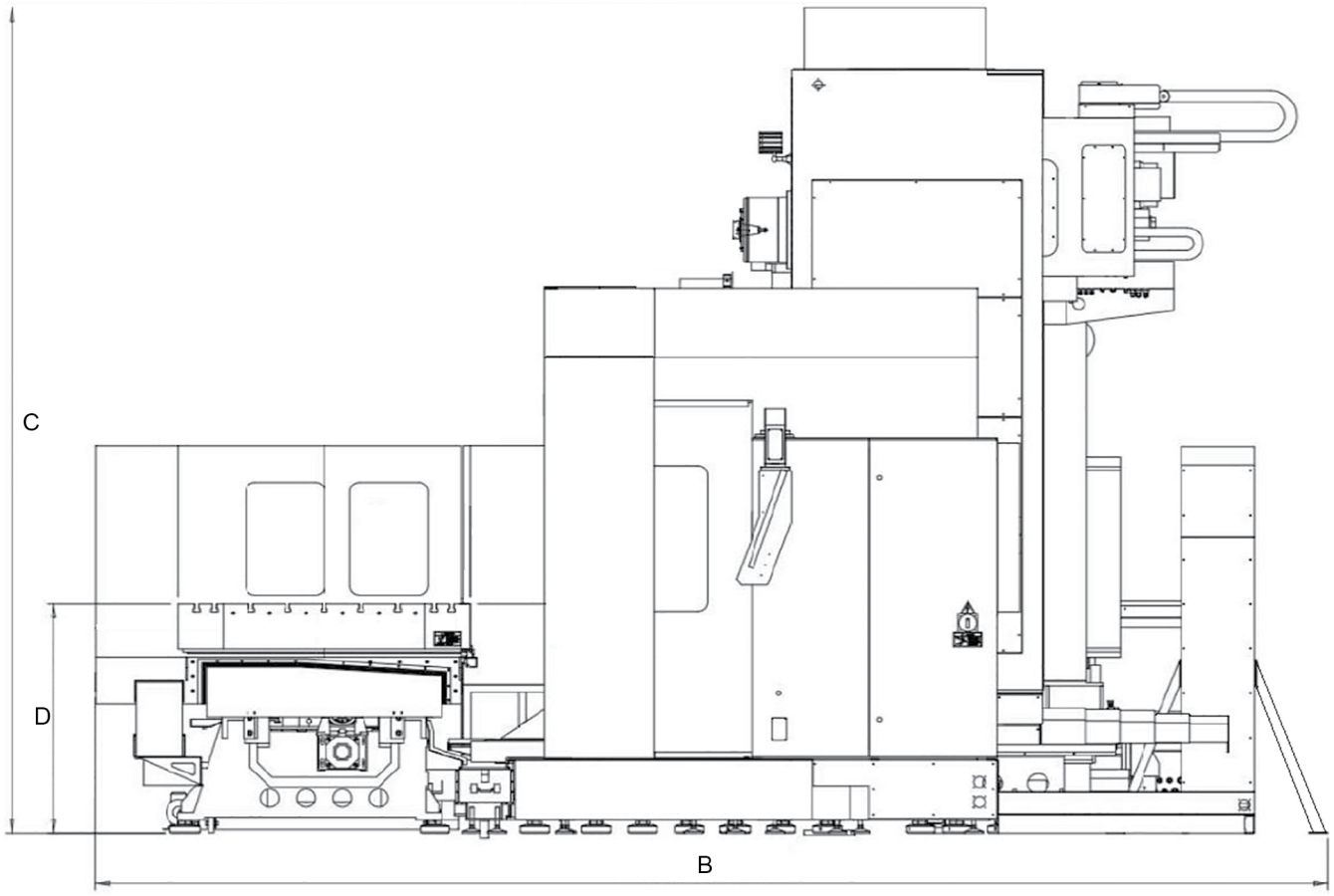
SPECIFICATION	UNIT	HB1416-110	HB1620-130
Travel			
Quill Diameter	mm (in)	110 (4.3)	130 (5.1)
X Travel	mm (in)	2,000 (78.7)	3,000 (118.1)
Y Travel	mm (in)	1,800 (70.9)	2,100 (82.6)
Z Travel	mm (in)	1,300 (51.2)	1,500 (59.1)
W Travel	mm (in)	500 (19.7)	700 (27.5)
Distance from Spindle Nose to Center of Rotary Table	mm (in)	200 – 2,000 (7.9 – 78.8)	80 – 2,280 (3.14 – 89.7)
Distance Between Table Top and Floor	mm (in)	1,190 (46.8)	1,260 (49.6)
Table			
Table Dimension	mm (in)	1,600 x 1,440 (63.0 x 56.7)	2,000 x 1,600 (78.7 x 62.9)
Table Indexing Positioning Accuracy	degree	0.001	
Table Load Capacity	kg (lb)	8,000 (17,600)	20,000 (44,092)
Table T Slot Size (W x Distance x Number)	mm (in)	22 x 200 x 7 (0.87 x 7.87 x 12)	22 x 200 x 9 (0.87 x 7.87 x 12)
Spindle			
Spindle Motor (cont. / 30 min. rating)	kW (HP)	22 / 26 (30 / 35)	26 / 30 (35 / 40)
Spindle Speed (Two Steps Geared)	rpm	10 ~ 3,500	10 ~ 2,500
Spindle Torque (cont. / 30 min. rating)	Nm (ft-lb)	1,187.8 (876.3)	2,177 (1,606)
Spindle Taper		BCV (Big Plus CT #50)	
Feedrate			
Rapid Traverse Rate (X/Z Axis)	mm (in) / min	15,000 (590.6)	
Rapid Traverse Rate (Y Axis)	mm (in) / min	12,000 (472.4)	
Rapid Traverse Rate (W Axis)	mm (in) / min	5,000 (196.9)	
Rapid Traverse Rate (B Axis)	rpm	5	
Cutting Feedrate (maximum)	mm (in) / min	1 ~ 5,000 (0.4 ~ 196.9)	
Axes Guideways		Linear Roller Guideway	
Tool Magazine			
Tool Magazine Capacity	pockets	40 (Opt. 60, 90)	
Max. Tool Diameter / Adjacent Pocket Empty	mm (in)	125 / 250 (4.9 / 9.8)	
Max. Tool Length (From Gauge Line)	mm (in)	400 (15.7)	
Max. Tool Weight	kg (lb)	25 (55.1)	
Accuracy			
Positioning Accuracy (JIS 6338)	mm (in)	±.015 (± .00059)	
Repeatability Accuracy (JIS 6338)	mm (in)	±.003 (± .0001)	
Space Requirement & Weight			
Machine Length	mm (in)	6,325 (249)	7,795 (306.9)
Machine Width	mm (in)	6,292 (247.7)	6,772 (266.6)
Machine Height	mm (in)	4,165 (163.9)	4,534 (178.5)
Machine Weight	kg (lb)	32,500 (71,650)	36,000 (79,366)

Machine Dimensions

Side Machine Layout



Front Machine Layout



MODEL	UNIT	Length (A)	Width (B)	Height (C)	Table Top to Floor Height (D)
HB1416	mm (in)	6,325 (249)	6,292 (247.7)	4,165 (163.9)	1,190 (46.8)
HB1620		7,795 (306.9)	6,772 (266.6)	4,534 (178.5)	1,260 (49.6)

About JTEKT Corporation

JTEKT was formed in 2006 from the merger of two Japanese companies with a long-time presence in North America. The merger combined the steering and bearing expertise of Koyo Seiko (operating in North America since 1958), and the machine and driveline expertise of Toyoda Machine Works (operating in North America since 1977).

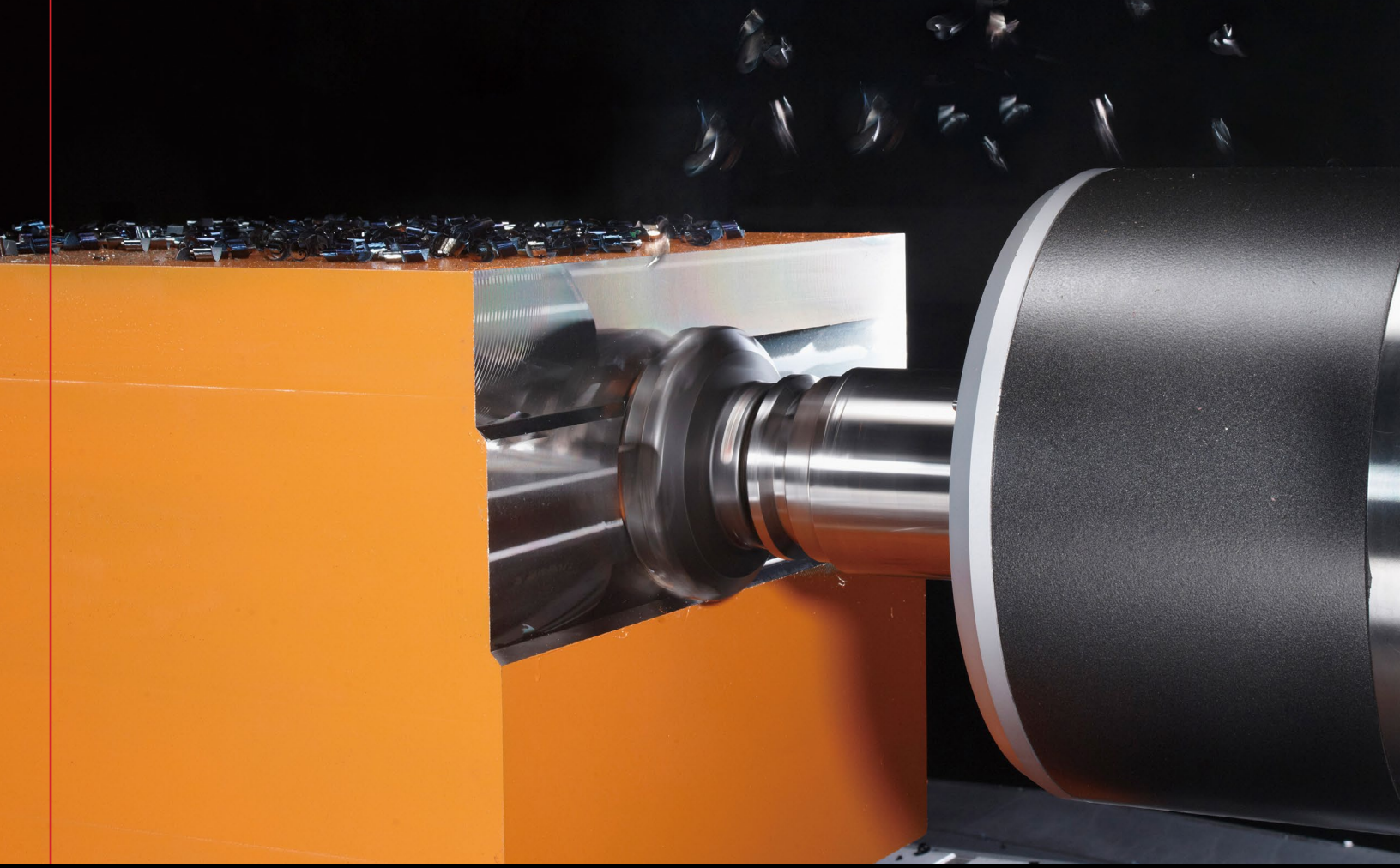
The merger created a global company capable of providing a diverse array of technology-driven, high-quality products to the world's leading automakers.

About WELE: A Toyoda Strategic Alliance Company

The story of WELE Mechatronic Co., Ltd. begins in 1973 with Mr. Y. C. Kuan. In hopes of taking Taiwanese manufacturing to an international level, the manufacturing professor began working closely with American machine tool builders to study advanced machining techniques.

Equipped with extensive machining knowledge and experience, Mr. Kuan and his team left the institute to begin their own CNC machinery company. This equipment had proven to be a strong competitor in domestic and international markets, and in 2005, Toyoda Machinery USA became the company's exclusive North American importer.

Mr. Kuan and his team parted ways with the company in 2007 to start WELE Mechatronic Co., Ltd. Backed by the JTEKT Corporation, WELE was operational within the year. As a Toyoda Strategic Alliance Company, WELE began exporting machines for Toyoda's C-frame and bridge mill lineups. Since then, WELE has expanded the product offering to moving cross rail mills, boring and gantry mills, vertical turning centers, and multi-milling turning centers. As a majority shareholder, JTEKT Corporation holds WELE products to the same quality standards as the Toyoda lineup.



THE **TOYODA** DIFFERENCE

For over 70 years, Toyoda has served as one the world's leaders in machine tool manufacturing. From our roots in grinding machine technology to the advanced capabilities of our ever-increasing product lineup, we've consistently provided **quality** machines built to excel in even the toughest manufacturing environments.

At Toyoda, every detail is carefully considered — from the solid cast iron bases to the operator-friendly ergonomic design — to help maximize production across metal cutting industries. Toyoda machines are engineered for innovators, and built with the speed, strength, precision, and capacity to get you there. From job shop applications to high-volume production, our machines continue to exceed customer's expectations while redefining industry standards.

In today's highly competitive and unpredictable market, it takes more than a quality machine to set your business apart from your competitors. Behind every Toyoda machine purchase, our customers are armed with Toyoda's commitment, product support, industry expertise and resources - confidently pushing their business forward while remaining competitive and profitable.

WHAT STANDS BEHIND EVERY TOYODA MACHINE?

EXPERIENCED SPINDLE DEPARTMENT

- Team of factory trained certified spindle technicians
- Dedicated state-of-the-art spindle rebuild facility
- Over 9,000 readily available O.E.M. bearings and spare parts
- Over 200 spindles, in-stock, ready for immediate delivery
- Average turnaround time of 6-8 days

INNOVATIVE ENGINEERING TEAM

Toyoda's dedicated in-house design & application departments build total turnkey packages including:

- Fixturing
- Part Handling
- Tooling and Programming
- Full Systems Integration

$26 MILLION IN PARTS INVENTORY

Within Toyoda's 100,000 sq. ft. corporate facility, we house over 100,000 unique part numbers - enabling customers to promptly receive the replacement parts they need to keep their business running

Access to www.toyodaparts.com allows customers to place orders online, *24 hours a day, 7 days a week.*

55+ DEDICATED SERVICE MEMBERS

Toyoda's growing team of certified machine specialists service customers in the United States, Mexico, Canada and Brazil.

Services include preventative maintenance packages, training courses, and over-the-phone technical solutions with Toyoda's team of machine experts..

TOYODA

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HB SERIES

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