

The background of the entire image is a light gray gradient. In the upper left, there is a white silhouette of a commercial airplane in flight. In the upper right, there is a large, semi-transparent white turbine engine component. In the center, there is a large, semi-transparent white turbine engine component.

FH1250SX-5AXIS

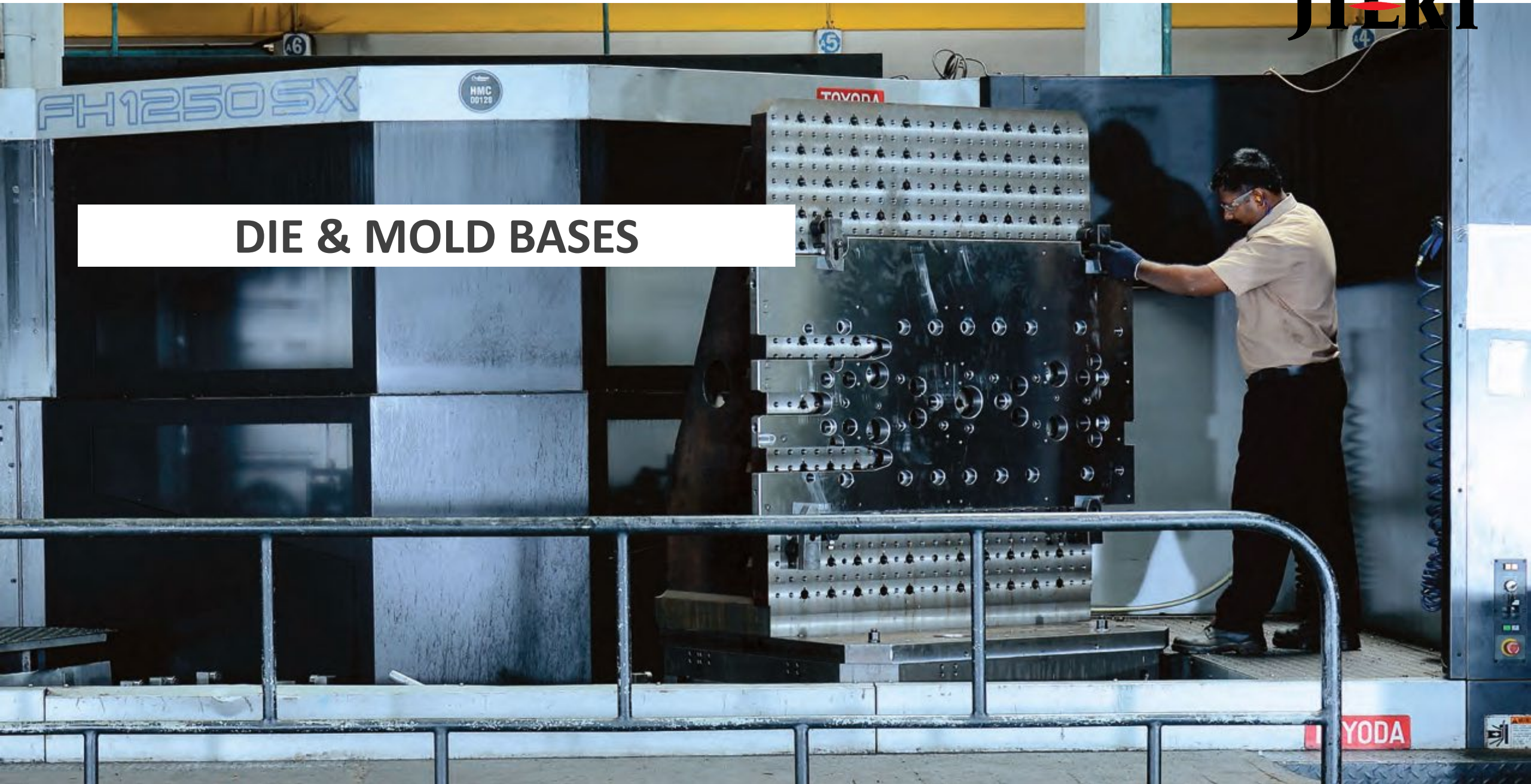
5-Axis Horizontal Spindle Machining Center



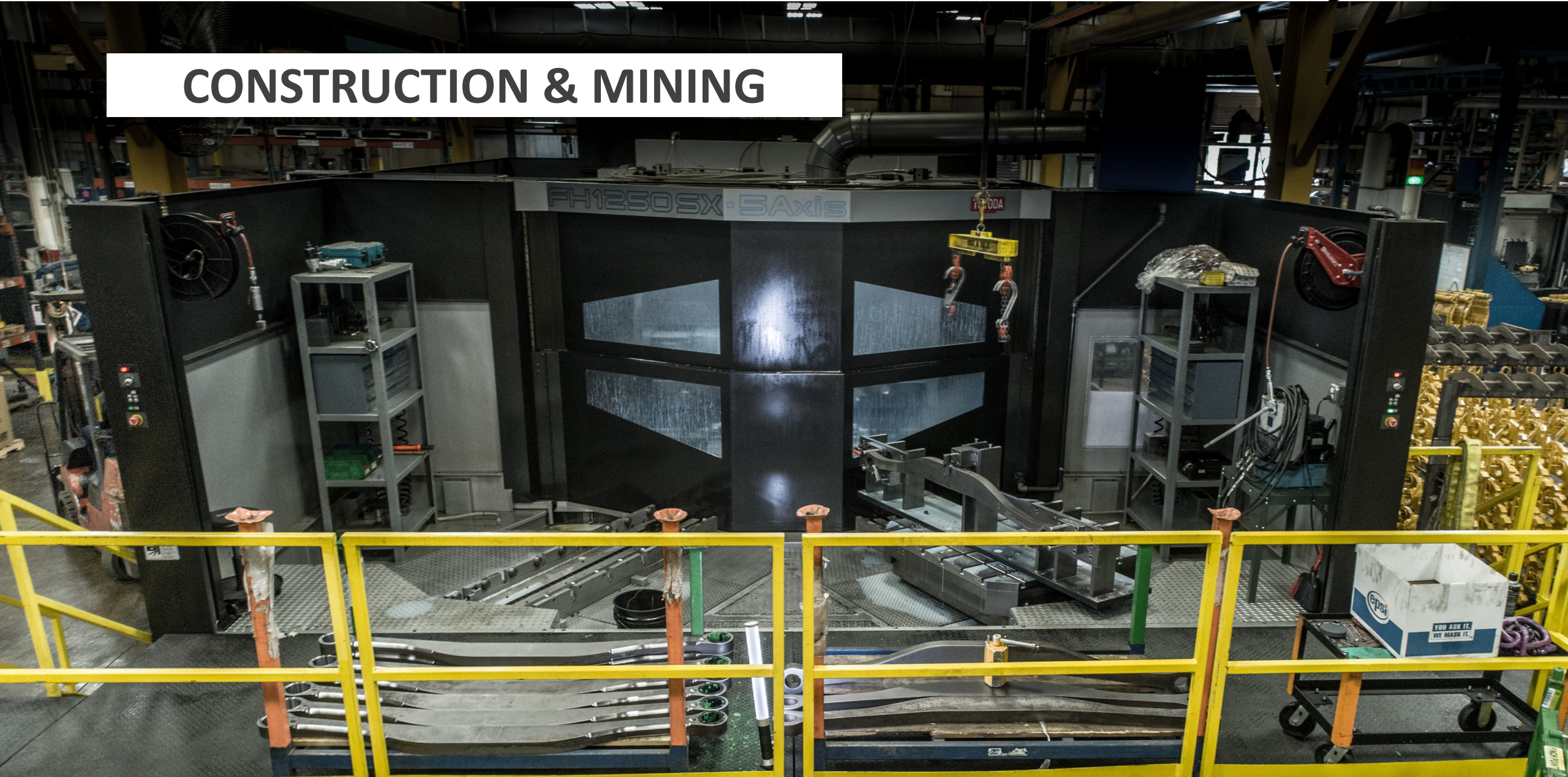
AEROSPACE



DIE & MOLD BASES



CONSTRUCTION & MINING



FH1250SX-5Axis

TOYODA

GENERAL JOB SHOP



AUTOMATION OPTIONS

JTEKT



Built For CAPACITY

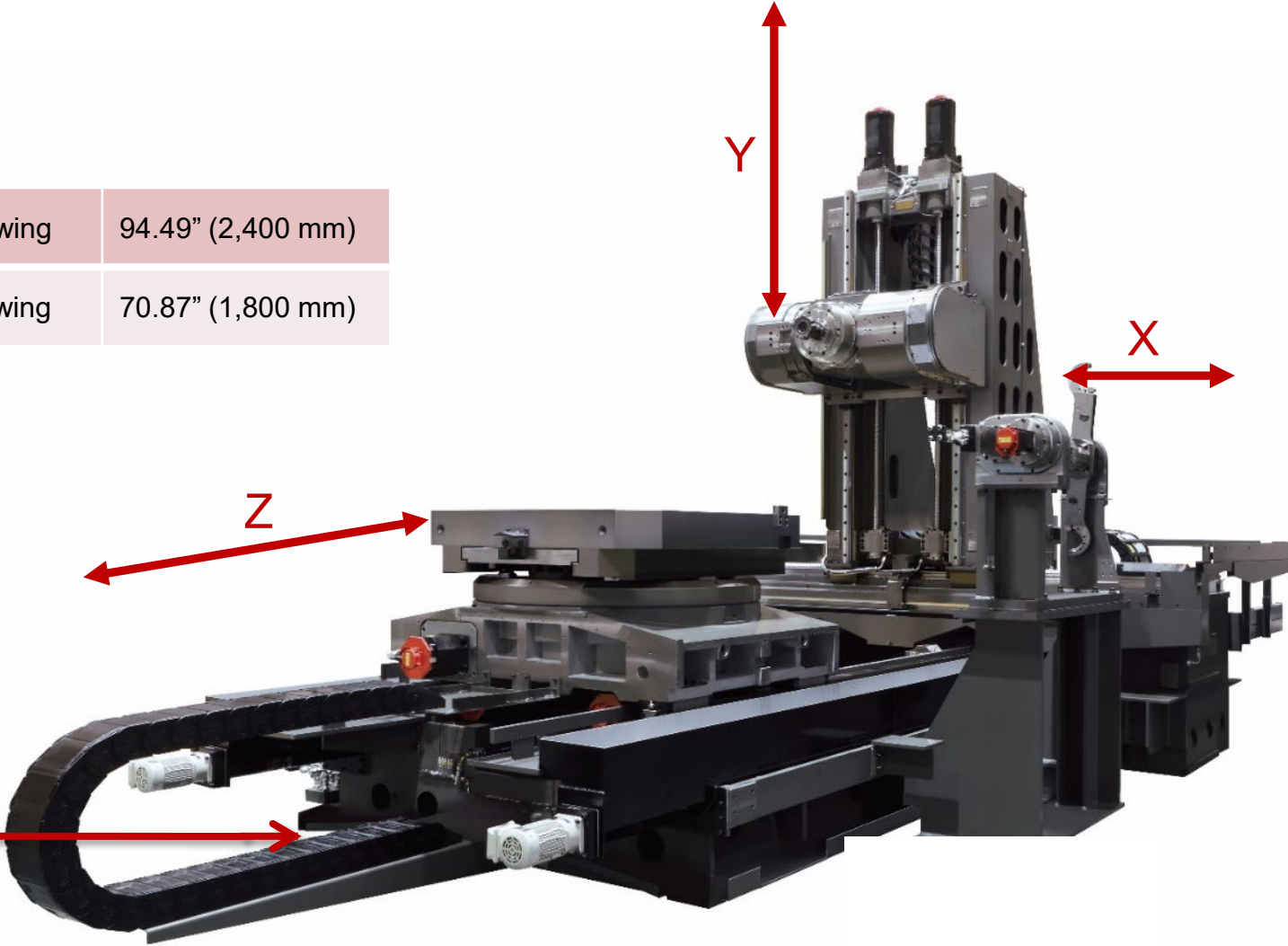
An unmatched work envelope in its price class, the FH1250SX-5AXIS offers capability for 4+1 or full simultaneous 5-Axis machining of large workpieces. Equipped standard with an automatic pallet changer, high rapid feedrates, fast tool change, powerful wide-range spindle, and excellent chip evacuation, the FH1250 platform provides next-level functionality.



Built For CAPACITY

X Travel	86.5" (2,200mm)
Y Travel	63.0" (1,600mm)
Z Travel	73.0" (1,850mm)
B-Axis	360,000° NC
Capacity	11000 lbs (5000 kg)

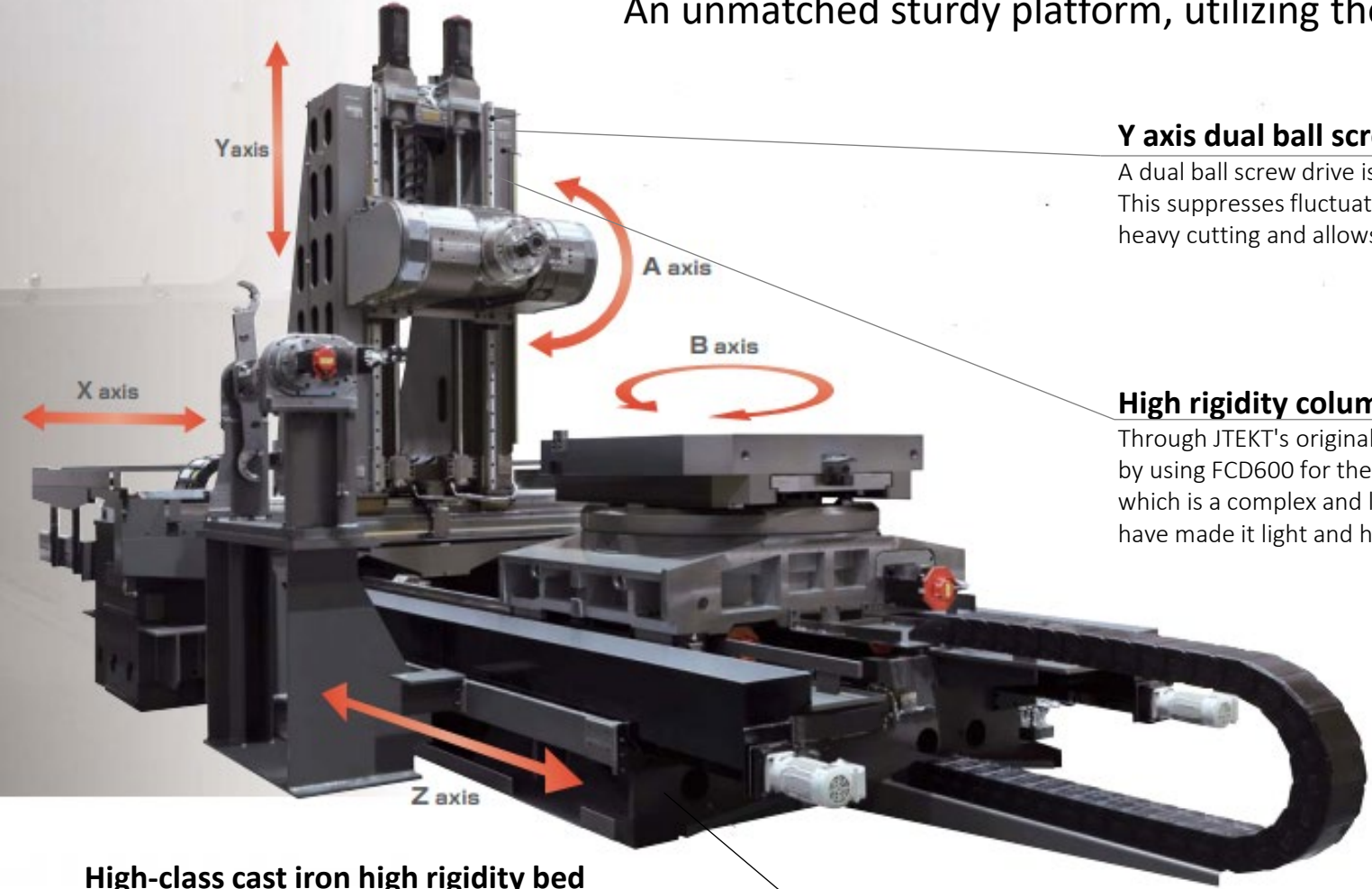
X Swing	94.49" (2,400 mm)
Y Swing	70.87" (1,800 mm)



Casting by JTEKT Okazaki Plant

- Machine Weight: 110,000 lbs

An unmatched sturdy platform, utilizing the 5-axis function to the fullest.



Y axis dual ball screw drive

A dual ball screw drive is adopted on the Y axis. This suppresses fluctuations and vibrations during heavy cutting and allows for a stable feed.

High rigidity column

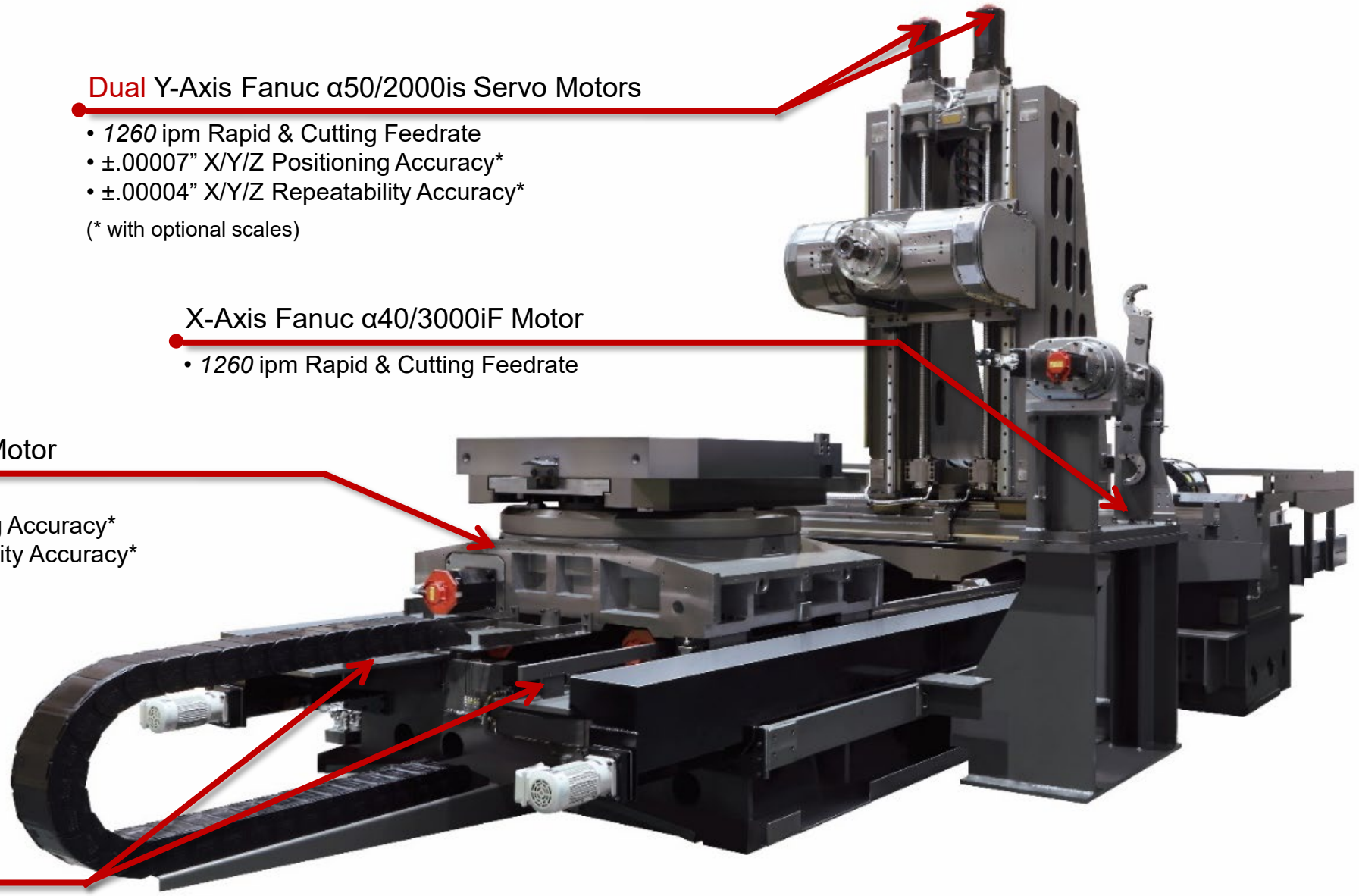
Through JTEKT's original high casting technology, by using FCD600 for the material of the column which is a complex and large component, we have made it light and highly rigid.

High-class cast iron high rigidity bed

The bed which supports movable bodies uses FEM analysis technology, securing sufficient rigidity and significantly enhancing the movable level. This has made stable axis feed possible.



Built For *Speed & Accuracy*



Dual Y-Axis Fanuc α 50/2000is Servo Motors

- 1260 ipm Rapid & Cutting Feedrate
 - \pm .00007" X/Y/Z Positioning Accuracy*
 - \pm .00004" X/Y/Z Repeatability Accuracy*
- (* with optional scales)

X-Axis Fanuc α 40/3000iF Motor

- 1260 ipm Rapid & Cutting Feedrate

B-Axis Fanuc α 30/4000is Motor

- 90° Rotation in 5.3 seconds
- \pm 3.5 arcsec B-Axis Positioning Accuracy*
- \pm 2.0 arcsec B-Axis Repeatability Accuracy*

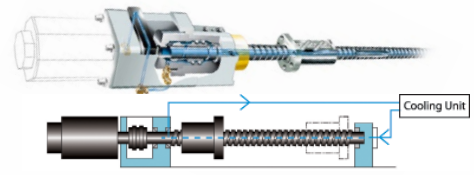
Dual Z-Axis Fanuc α 40/3000iF Motors

- 1654 ipm Rapid & Cutting Feedrate

Built For Power

Dual Y-Axis 50mm **NSK** Ballscrews

- 45mm **IKO** Linear Roller Guides
- X/Y/Z Axes Ballscrews chilled with recirculating coolant



X-Axis 63.5mm **NSK** Ballscrew

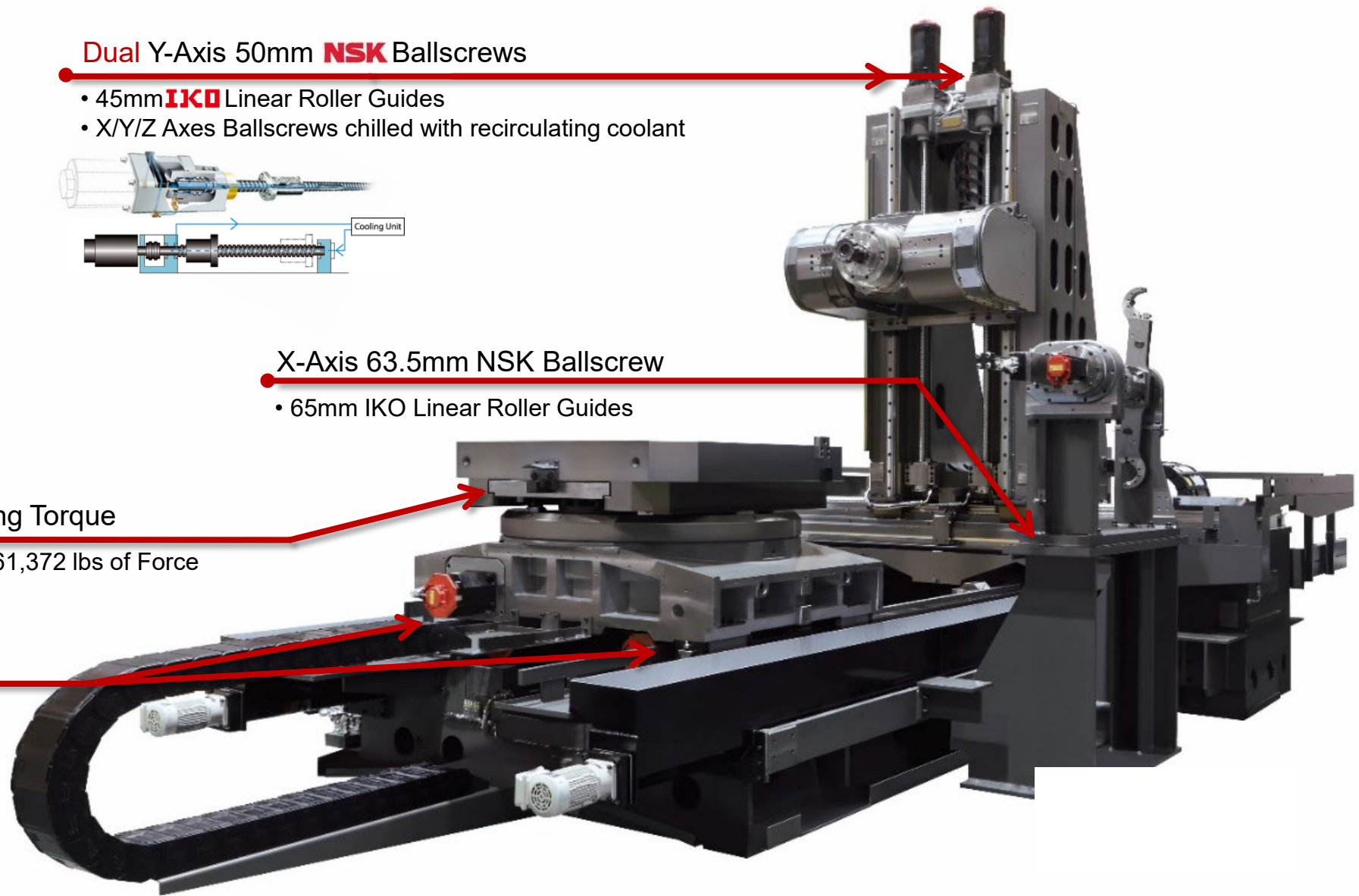
- 65mm **IKO** Linear Roller Guides

NC Table 1,445 ft-lb Contouring Torque

- Full-plate clamping of pallet with 61,372 lbs of Force

Dual Z-Axis 50mm **NSK** Ballscrews

- 65mm **IKO** Linear Roller Guides



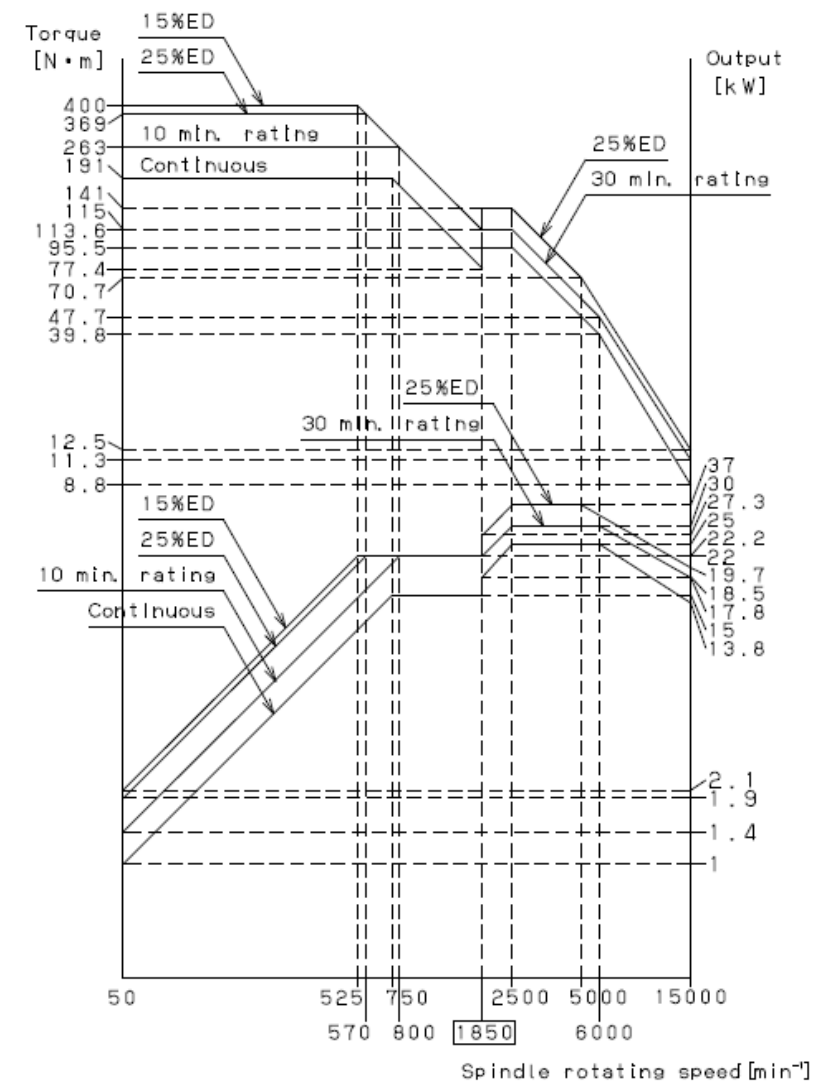
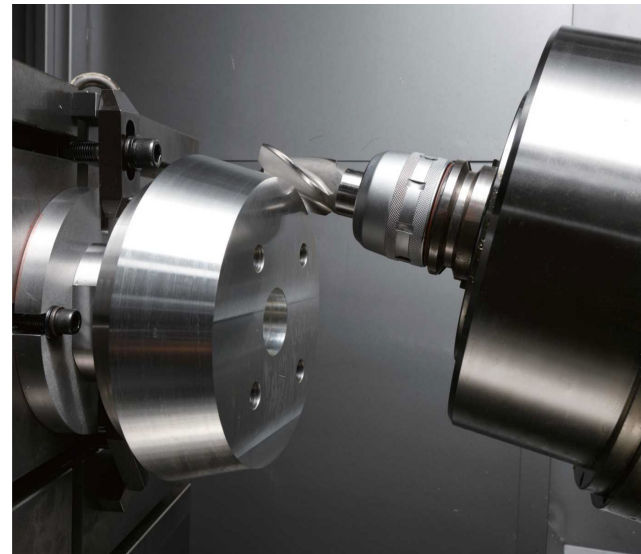
Tilt Spindle (A axis)

- Direct Drive motor
- FANUC D1000/250is
- Speed 30 RPM
- 1000 Nm (Peak) /463 Nm (Cont.)
- Dual disk Brake
- Clamping torque 5000 Nm



Spindle

- 15,000 RPM Wide-range High Torque
- #50 CAT, Big Plus, or HSK-A100
- 50 HP (37 KW)
- 300 FT-LB (400 Nm)
- Front Bearings 110mm I.D.



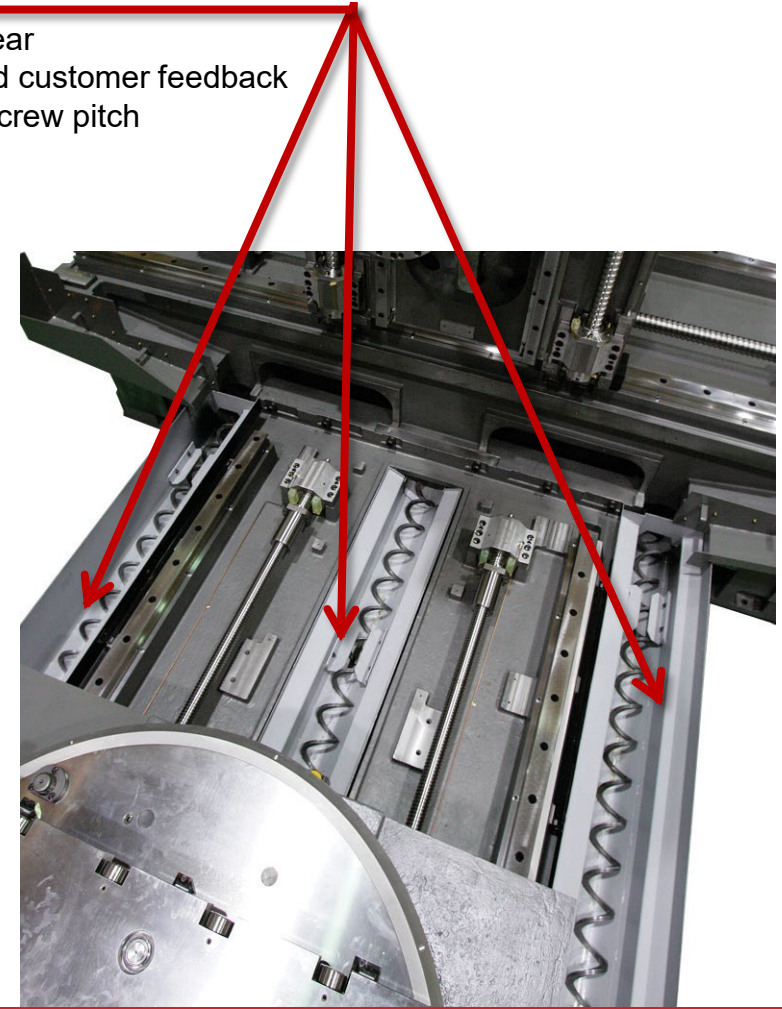
Chip Removal – Engineered Design

Triple-trough Chip Removal Design

- Chips exit machine to the rear
- *Kaizen*-design: Incorporated customer feedback to upgrade auger motor & screw pitch

A Conveyor for every type of chip:

- Steel
- Aluminum
- Ductile
- Cast
- Exotic



Chip Removal – Engineered Design

Rolling X-Axis Waycover

- No telescoping joints for chips to bind in
- Compare to:

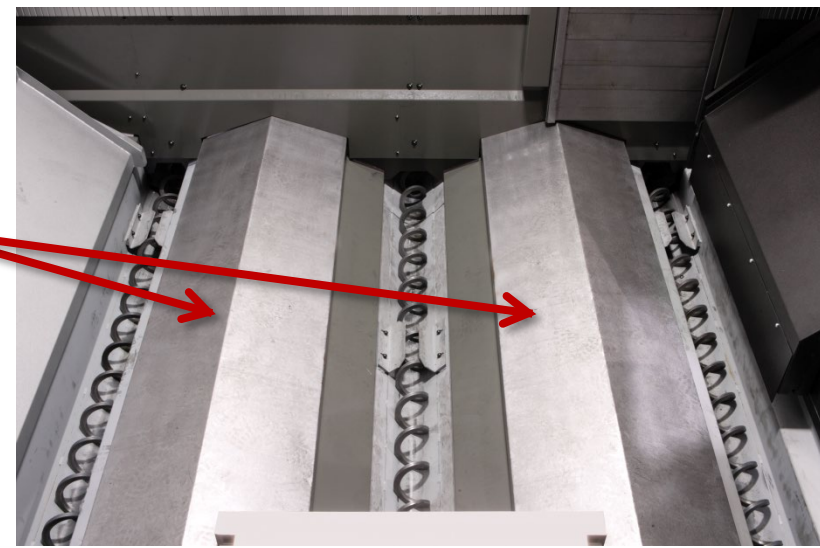
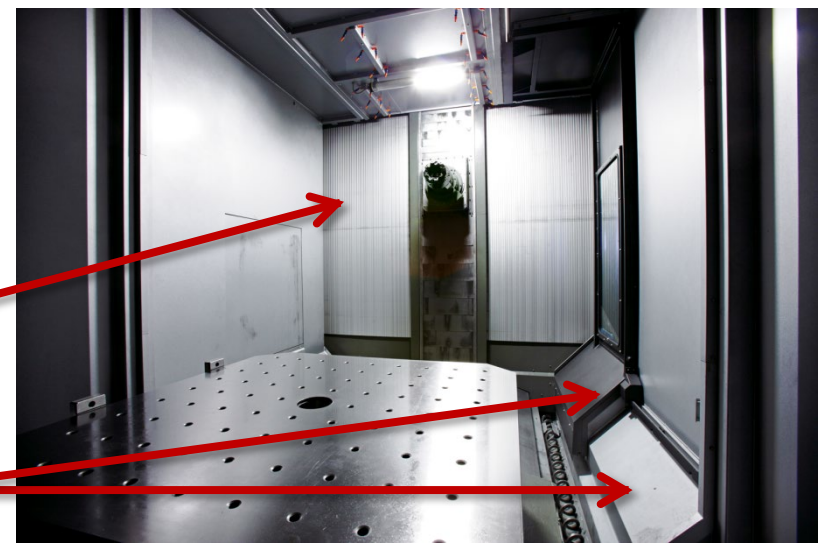
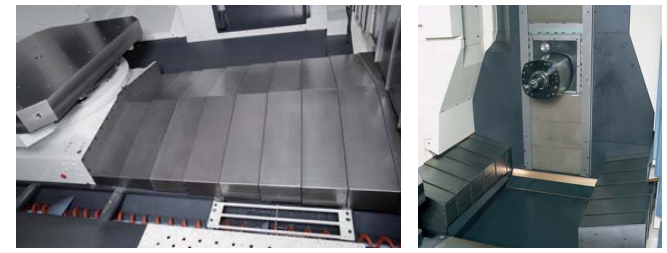


Sloped, Clear Surfaces

- No catch points for chips
- Shield for operator ledge provides dry surface to stand on when door is opened

Single-piece Z-Axis Waycover

- No telescoping joints for chips to bind in
- Compare to:

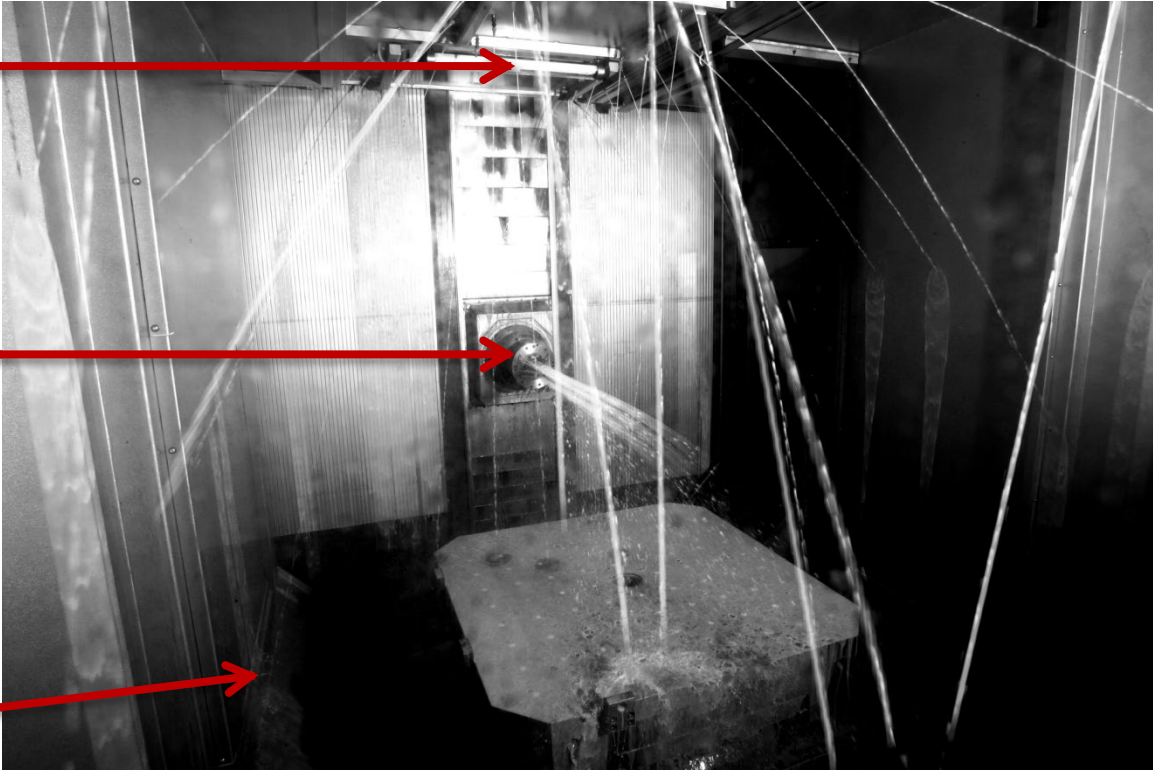


Chip Removal – Engineered Design

- Overhead Shower Coolant
 - 38 Configurable nozzles
 - Can be divided into multiple M-Codes

- Coolant Through Spindle
 - Up to 1000 PSI
 - Flood Coolant from Spindle Face
 - Available Air-Through-Tool
 - Available Air from Spindle Face

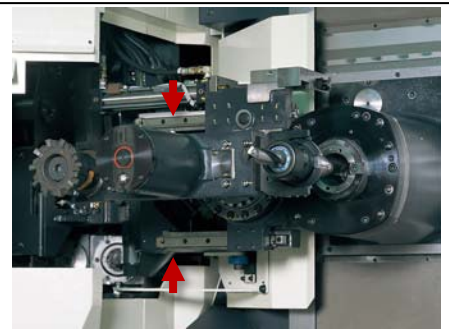
- Bed Wash Flush
 - Flood Nozzles on sloped surfaces



Tool Management

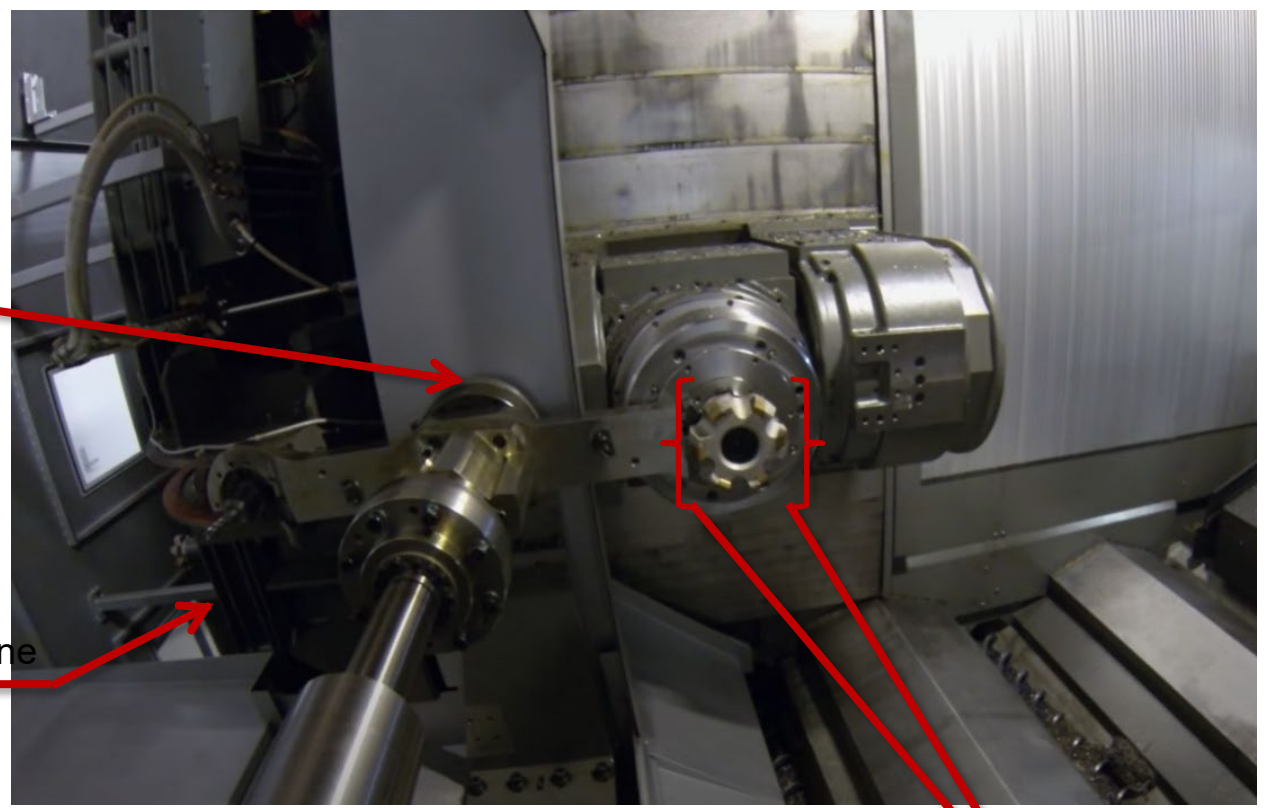
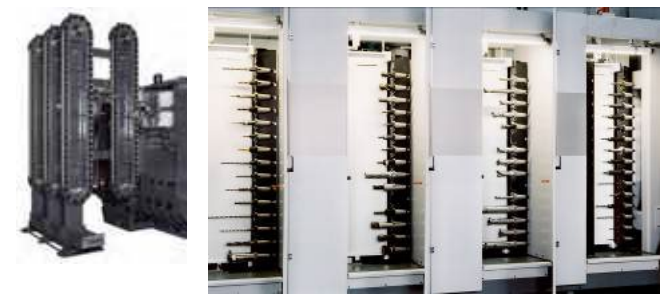
Tool-to-Tool Change: **2.7 Seconds**

- Spindle can position directly for ATC arm
- No transfer slide required
- Compare to (competitor pictured below):



1.) Single-chain Serpentine Magazine

- 60-, 121- Capacity Available
- No transfer slide required
- Compare to (competitor pictured below):



Best-in-Class Tool "Limitations"

Max Tool Length	31.5"
Max Std Tool Width	13.8"
Max Tool Weight	77 lbs

Tool Management

2.) Robotic Matrix Magazines

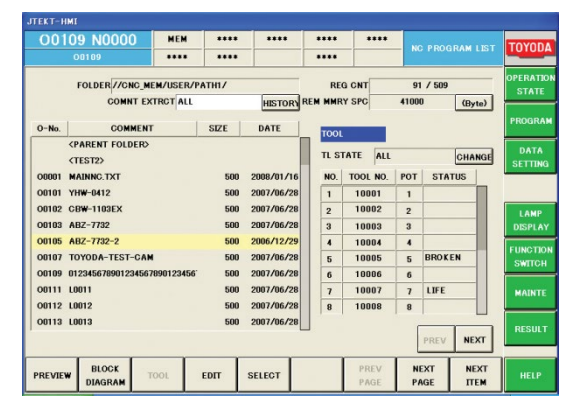
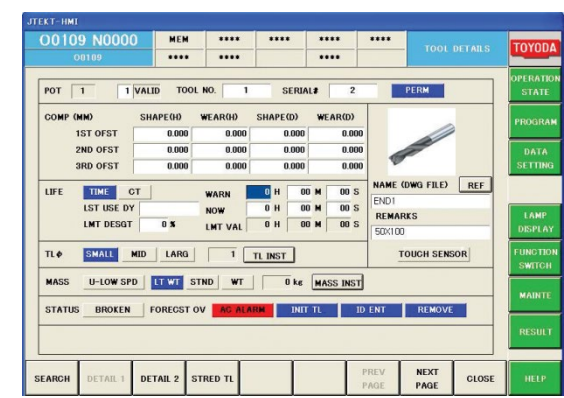
- Large 330T Capacity Available
- 6-position loading does not interrupt operation
- RFID Tool Management Available on Matrix or chain-style magazines



Tool Management

FANUC 310i Control

- Detailed, User-friendly HMI
- Available OP Supporter Program & Tool Management:
 - Tool Geometry Compensation / Setting
 - Tool Life Monitoring & Control
 - Adaptive Control feed rate monitoring per tool
 - Tool Number Conversion
 - Tool-change speed control based on Tool weight
 - Feedrate & Rotation Speed settings per Tool
 - Tool availability pre-check prior to machining
 - + 147 additional FANUC features



Operator Ergonomics & Maintenance Accessibility

Full Access for Operator

- Door opening is 108" H x 39" W
- Full diamond plate for operator steps and access around pallets
- Table travels for Z-Axis motion, so column does not impair operator visibility during machining



Ergonomics & Maintenance Accessibility

• FANUC 310i HMI includes detailed maintenance procedures:

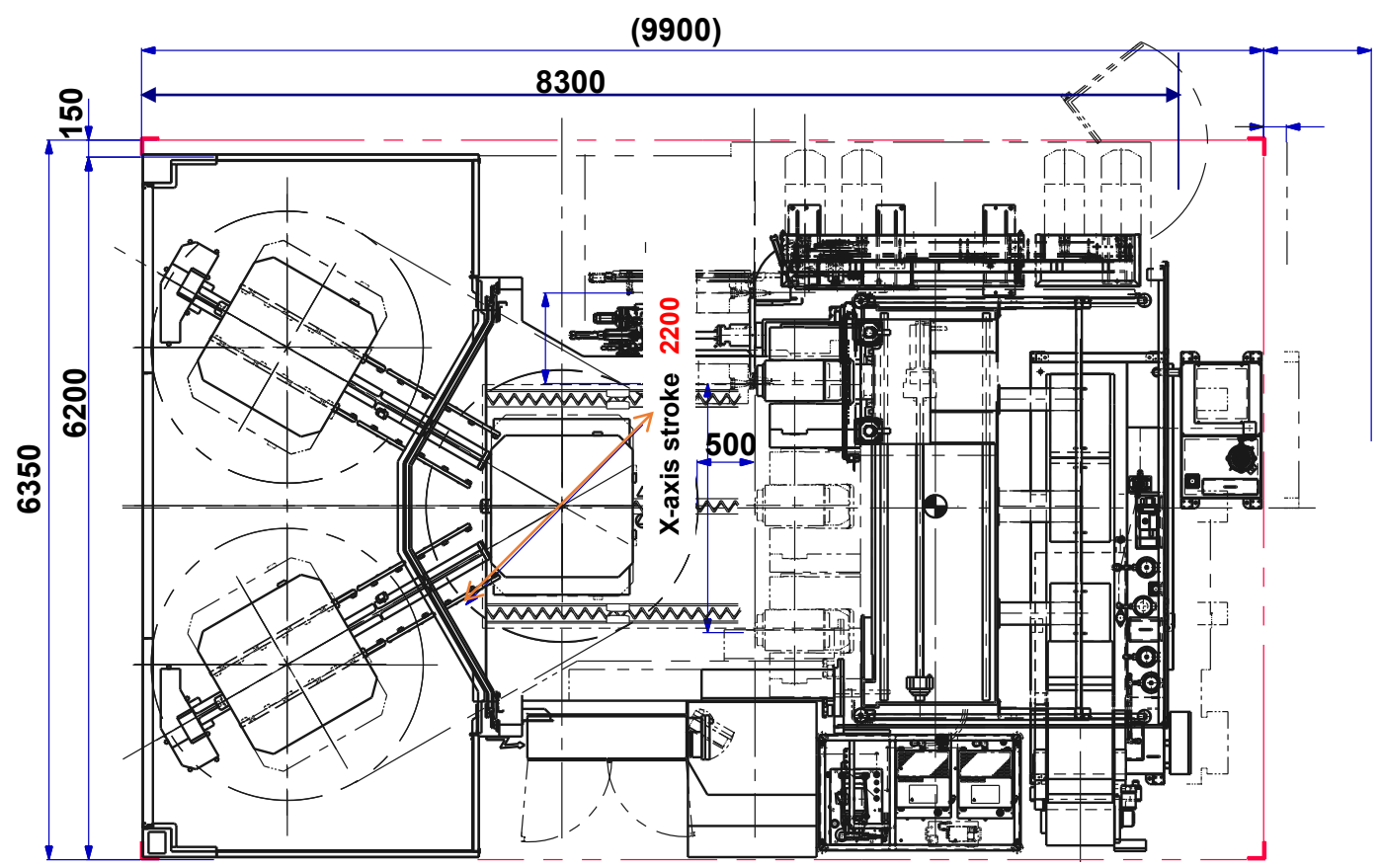


Easy Access for Maintenance

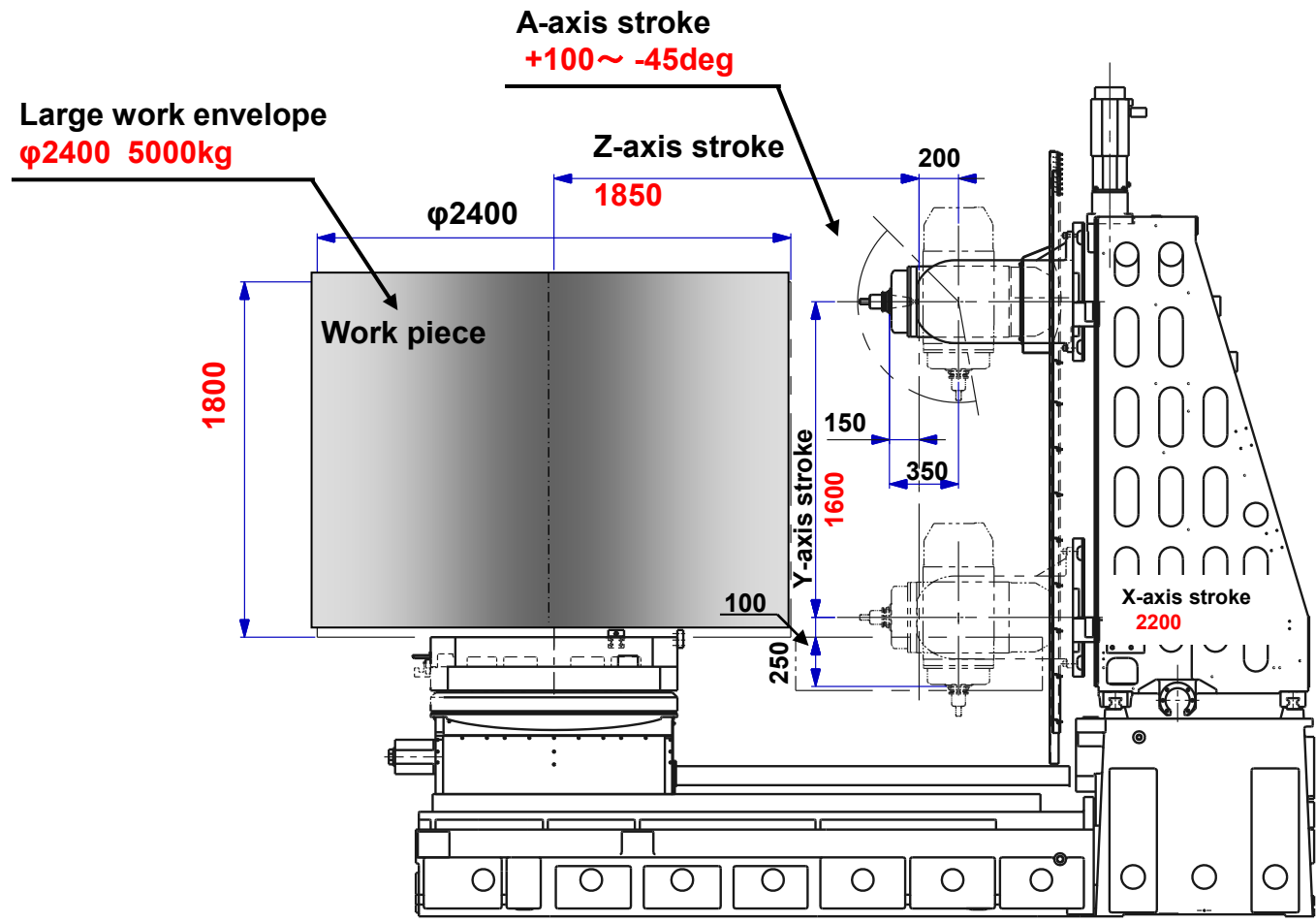
- Fluid refills located above waist-height
- Hydraulic valves & gauging located conveniently
- AC Motors positioned for ease of maintenance access,
 - X-Axis motor positioned on operator-side behind removable sheet metal panel
 - Y-axis motors readily available:



Floor Layout



Elevation View

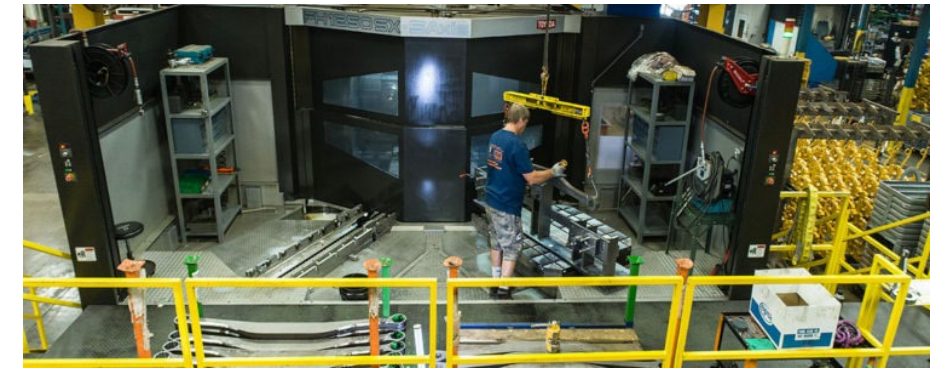


On to Bigger Things—Metalcraft of Mayville Amps Up Machining [Case study](#)

Metalcraft of Mayville, Wisconsin is known by most as the OEM of SCAG Power Equipment, but at their 230,000 square foot West Bend facility, they also maintain large-scale welding and fabrication operations for other OEM customers like John Deere, Oshkosh Truck, Lockheed Martin, and Caterpillar. When large part contracts became available, adding competitive machining proved crucial over just traditional fabrication services to become a one-stop shop. [read more](#)

John Grotelueschen, Mfg Manager

“The accuracy on the machines is fantastic. We need accuracy when you are working with high-cost parts,” said Grotelueschen. “The Toyoda’s are very precise and consistent in production. They easily do what we couldn’t achieve by other means. It is a highspeed, high accuracy machine. There are tools that have been on there since the beginning that I haven’t had to change, which is unusual for a machine of that size and application.”



Related Case Studies:

Lee Specialties – FH1250SX “MEGATRON”

“The most pleasant surprise is the consistency and rigidity of the machine. The build of this machine allows you to push your tooling to the limit and maximize production. We have been able to reduce production time by 30% on average. These results have been outstanding for us as we can now reduce lead times and get more production through the machine.”



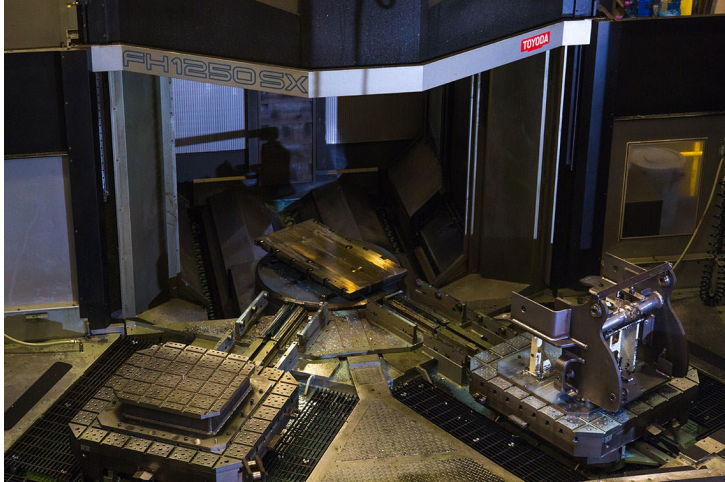
Farrell - 114 Hour Cycle Time Down to 18 Hours

“14 operations could be cut to just seven, inter-shop transfers cut from nine to four, and lead times slashed from 16-18 weeks to less than nine.”



D&S Mfg - Double The Output

“When D&S decided to add a Toyoda FH1250SX to its horizontal machine lineup, it knew production would increase. But the machine—combined with the company’s advanced shop setup—gave operators the ability to double their output in a given shift. We were kind of amazed... Productivity has exceeded expectations.”



Videos

[Toyoda FH1250SX 5-axis | Steel Wheel](#)

[FH1250SX 5-axis HMC](#)

[Toyoda Large Machines On Display](#)

Other Presentations

[FH1250SX - FH1250SX-i 5Axis - FH1250SW Presentation](#)

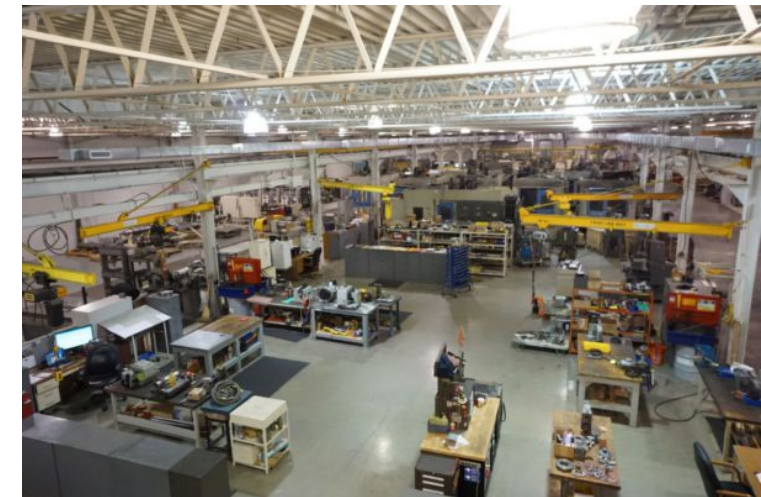
[FH1250SX-SX5-SW](#)



JTEKT Rebuild, Retool & Retrofit Services

Total lifecycle support for machine tools that operate well into 30+ years

- Full mechanical rebuild of entire CNC machines, or individual sub-assemblies:
 - Spindles, B-Axis Tables, Gearboxes, Ballscrews, Boxways, Guideways, Workhead & Tailstocks, Many More, Just Ask
- Factory-certified technicians & OEM drawings allow for warrantied rebuilds
- CNC Control Retrofits for FANUC & Toyopuc GC/MC Series Controls
- Engineered Retools for new production applications with runoff facilities & climate-controlled QC lab with Zeiss Prismo CMM, Adcole Inspection, Jenoptik Waveline Roughness & Counter measurement, and other unique capabilities
- In-field evaluation services and machine health checks available at request
- Looking to Upgrade? [Ask about Buyback/Trade-In of your aged Toyoda](#)
- Looking for a Machine that's already Rebuilt? [Check our Rebuilt Toyoda Inventory](#)

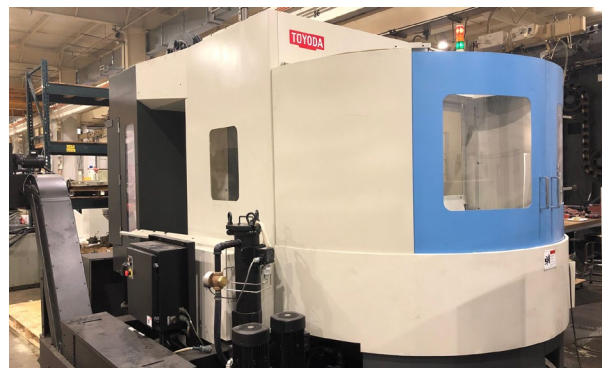


75,000 sq ft facility just outside Detroit (Wixom, MI)

FA630 Before



FA630 After



FANUC or Toyoda control retrofits



JTEKT Factory-trained Handscrapping



About JTEKT Toyoda Americas Corporation



THE TOYODA DIFFERENCE

Proven Technology

Our own experience with high-volume production helps us design and build machine tools that perform under pressure. We continually refine processes, build reliable machines and test them in our own factories. So when you decide to buy a Toyoda machining center, grinder, or make use of our services for your business, you can be confident that you are investing in proven technology.

Customer Support

Toyoda works closely with its nation-wide dealer network to keep local servicemen on call should you ever need them. In addition, our own factory-trained service engineers are stationed across the Americas. And our extensive spare parts inventory (\$20 million) ensures that virtually any replacement part will be shipped to you in 24 hours.

Corporate Headquarters

The 100,000 square foot plant in Arlington Heights, Illinois (just northwest of Chicago) is the JTEKT Toyoda Americas Corporation headquarters, providing a range of horizontal machining centers, factory automation systems, and the widest array of production cylindrical grinders in the industry.



Repair, Rebuild & Remanufacture Division

Toyoda's Repair, Rebuild, and Remanufacturing division, located just outside of Detroit, Michigan, specializes in serving the needs of automotive OEMs and other high-volume parts suppliers.

