KITAMURA®
Machining Challenges-Simplified®

MYCENTER® HX1000G
HX1250G

HORIZONTAL MACHINING CENTER

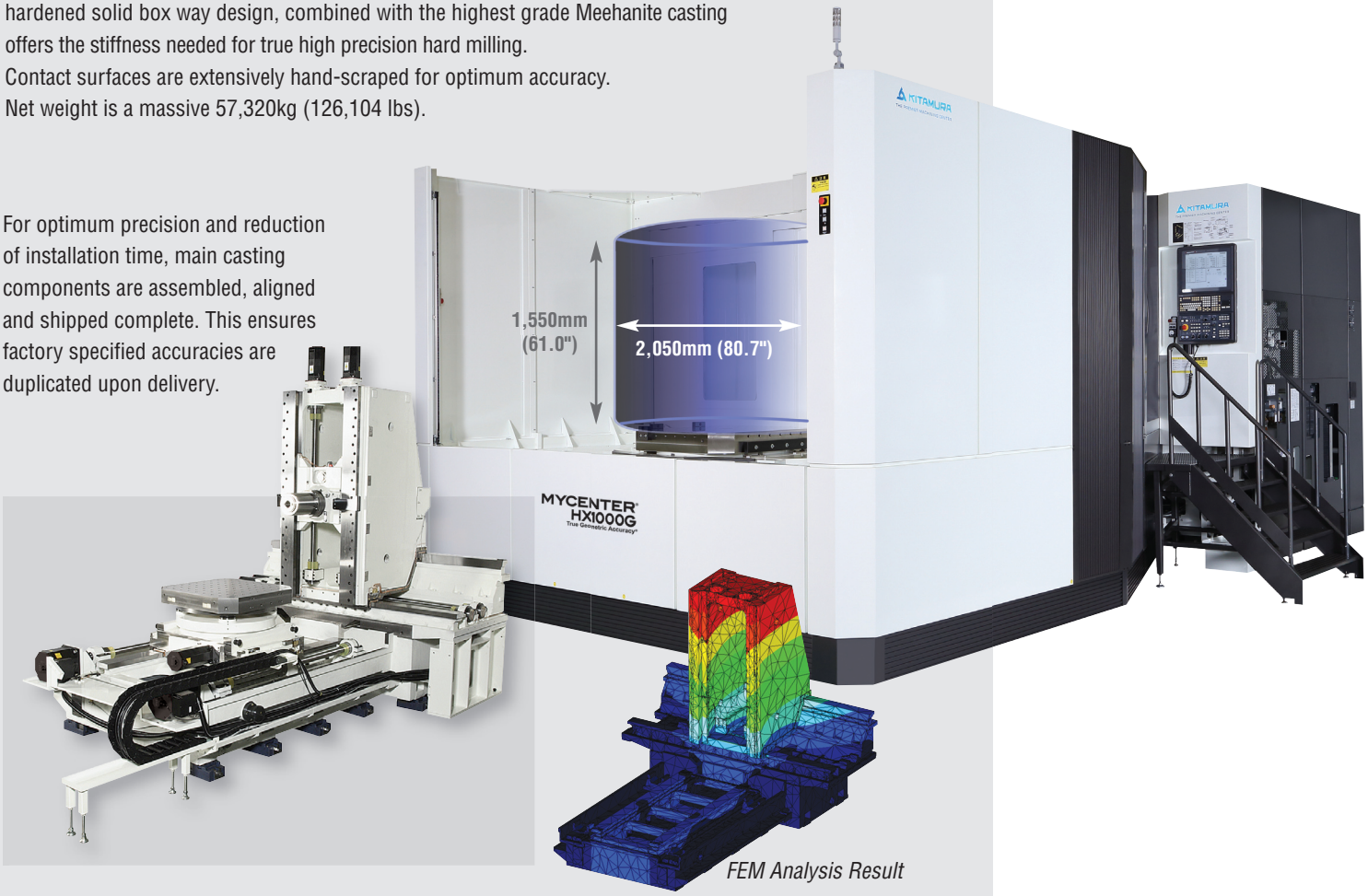
SIMPLIFY THE COMPLICATED

Rigid Box Way Construction

Ensures Accuracy and Rigidity in Large Part Machining

The **Mycenter®-HX1000G** is a productive and efficient workhorse designed for the precision necessary to produce close tolerance parts from the toughest of materials. The induction hardened solid box way design, combined with the highest grade Meehanite casting offers the stiffness needed for true high precision hard milling.
Contact surfaces are extensively hand-scraped for optimum accuracy.
Net weight is a massive 57,320kg (126,104 lbs).

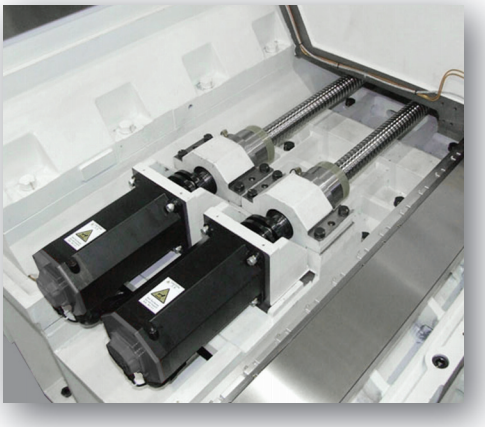
For optimum precision and reduction of installation time, main casting components are assembled, aligned and shipped complete. This ensures factory specified accuracies are duplicated upon delivery.



FEM Analysis Result

Unmatched Accuracy in its Class!

Positioning Accuracy: ±0.002mm (±0.000079") / Full Stroke Repeatability: ±0.001mm (±0.000039")



Patented Twin Ballscrew and Dual Feedback Technology (PAT. 8-355814)

Ultra-High Precision Expands Productivity

Guide ways are equipped with ultra high precision twin ballscrews and twin servo motors that provide the capability of running speeds of 36,000mm/min (1,417ipm). Linear scale feedback is a standard feature on all axes allowing for positioning accuracy of ±0.002mm (±0.000079") / Full Stroke and Repeatability of ±0.001mm (±0.000039") - Stand out, ultra high precision for a machine of this size.

Rubber/Copper way wipers prevent chip contamination to the box ways and the ballscrew cooling system incorporates chilled oil through the ballscrew shaft on the X, Y and Z-axes, both sustaining stability and reducing warm-up time in axis motion. With this added feature, the temperature of the ballscrews will maintain a constant rate and minimize thermal displacement, allowing for higher accuracy through continuous operation.

Kitamura's Intelligent Advanced Control (IAC) System further compensates for thermal displacement by a combination of regulating sensors and a machine efficiency monitor that provides data on variable compensation values to the machines offsets, minimizing displacement to less than 5µ (0.0002").

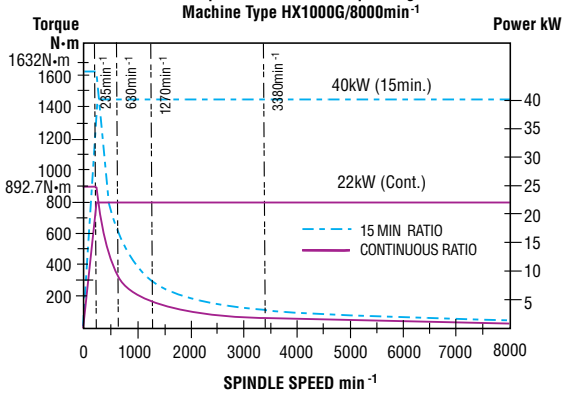
High-Torque, Gear Driven, 8,000min^{-1} Spindle

Combines Highly Efficient Cutting Performance with Low Energy Consumption.

Standard is an efficient 53HP A/C spindle motor with a 4-speed geared head. The geared head enables the Mycenter-HX1000G to reach full power at 235min^{-1} output maximum torque of 1,624.7 N•m (1,198.4 ft•lb). An 8,000min^{-1} spindle with a dual contact design is standard, offering the benefits of greater machining rigidity, improved surface finish, higher cutting accuracy and extended cutting tool life. An efficient oil chiller system is used for minimizing thermal displacement and maximizing spindle life in order to achieve the performance needed for high-speed and high accuracy machining. A 12,000min^{-1} spindle is an available option for higher speed machining requirements.

- **Less Vibration**
  Kitamura's original shockless drive mechanism minimizes vibration from milling cuts. Our headstock design completely relieves the spindle bearings from unclamping thrust shock and thus ensures long-term precision of the spindle bearing.
- **Increased Accuracy**
  The use of four precise angular contact bearings at the front of the spindle and one roller bearing at the rear of the spindle enable our spindles to withstand large loads while a longer spindle nose design improves accessibility to the workpiece. Refrigerated oil circulates around the spindle cartridge maintaining constant accuracy and increasing long term reliability as well as reducing heat.

Main Spindle Power and Torque Diagram
Machine Type HX1000G/8000min^{-1}

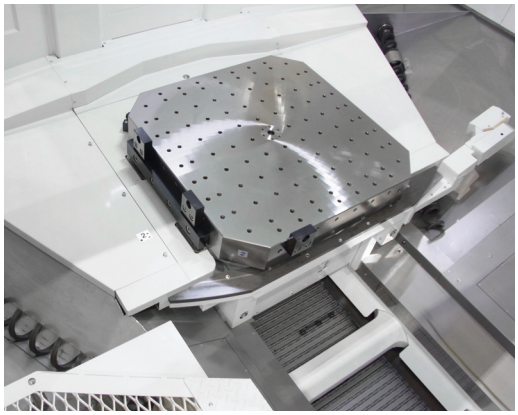


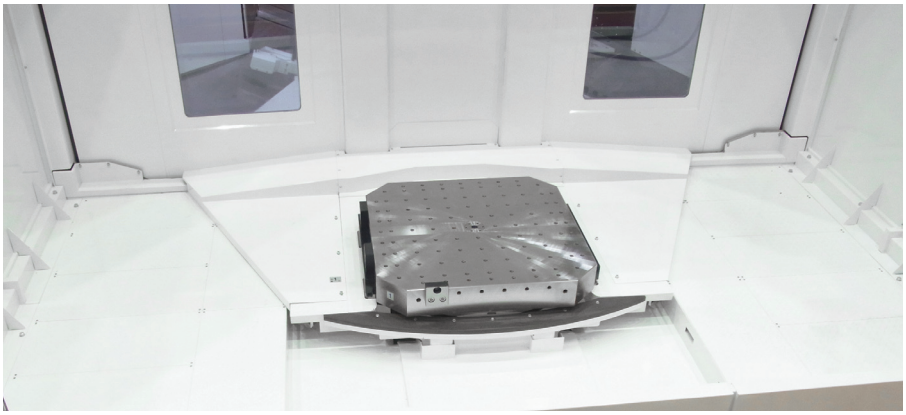
Easily Accessible, Expansive Work Envelope

More Production per Pallet Load

The Mycenter-HX1000G is built big to handle your largest part machining requirements. An efficient positive 180 degree rotating pallet change system handles four-sided tombstones up to 1,550mm (61.0") H x 1,450mm (57.1") square, weighing up to 5,000kg (11,000 lbs) each. This system provides optimum operator convenience in pallet accessibility and the loading/unloading of workpieces.

Guarding between the work envelope and pallet station allows you to perform high velocity metal removal machining while another tombstone is being safely unloaded and reloaded with new parts to be machined. This efficient system leaves operators with more time to attend to other machines or verify component quality.



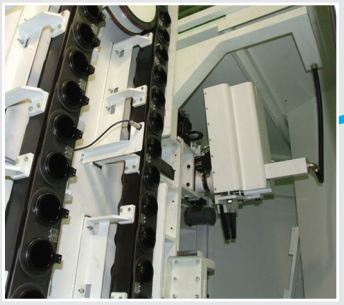


Reliable, State-of-the-Art Servo Driven ATC System

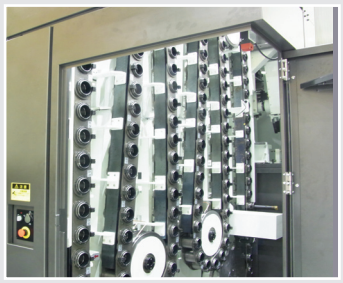
Offers Maintenance-Free Operation

With a standard 150-Tool ATC (200 optional), the Mycenter-HX1000G maximizes tool handling efficiency using Kitamura's exclusive fixed pot ATC system whereby each tool is always returned to the same tool pot and the next tool to be used is kept ready in a "stand-by" tool pot, minimizing tool change time.

The servo motor ATC drive system enables the tool change mechanism to easily adjust and better position tools by using an absolute encoder. Advantages are higher speeds and less vibration for reliable and maintenance-free tool change operation.



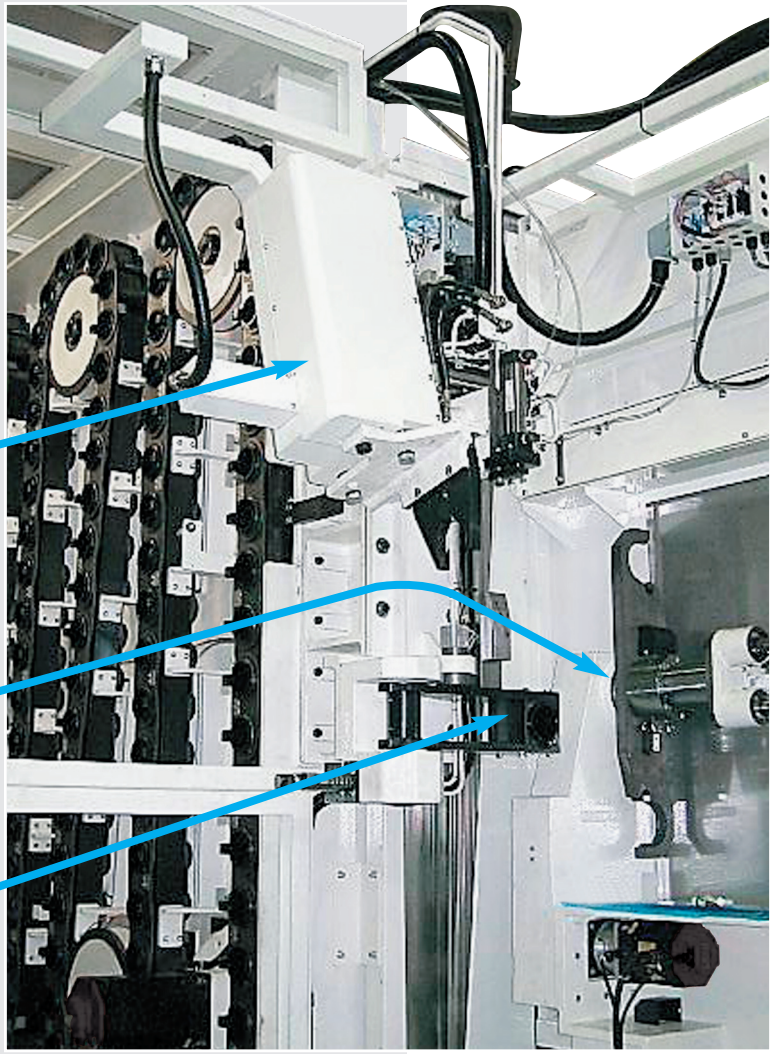
Sub Arm feeds tool to swing pot.



Tool Magazine

ATC Arm

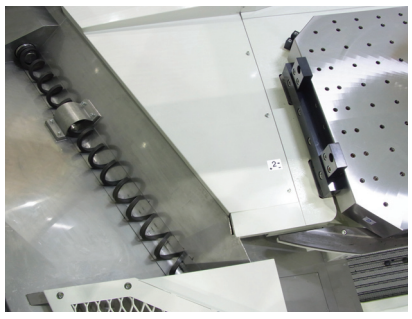
Swing Pot

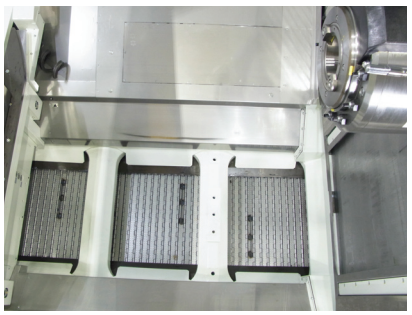


Efficient Components

Combine for Optimum Chip Discharge and Containment Promoting Better Surface Finishes and Improving Accuracy

- **Chip Augers and Internal Hinge Belt Conveyor -** Quickly and effectively captures chips from the work envelope and carries them out and away from the machining environment.
- **Overhead Shower & Base Wash Coolant Systems -** Work together to aid in washing chips to waiting internal hinge belt conveyor.
- **Double Decker Conveyor and Filtration System -** The versatile primary conveyor, with the capability to handle a variety of chips. A drum filter separates fine chips from the coolant to a 100-micron nominal, keeping the coolant clean.





Arumatik®-Mi

Pioneering Icon CNC Operation

with interactive Touchscreen Display Technology

- 67 million Pulse Encoder technology with up to 8,192 block look-ahead processing speed
- Software upgrades throughout the life of the control
- Fanuc user-friendly
- Customizable and comfortable user experience
- Video Guidance and Visual Programming screens
- Anywhere-RemOte® mobile notification and machine monitoring suite

Kitamura Arumatik®-Mi Control Specs

4-Axes Controllable	DNC 1 Interface
19" Color LCD	Ethernet Interface
Fine Accel/Decel after Interpolation	Extended Editing (Copy,Move,Change,Merge)
Linear Interpolation (G01)	Registerable Programs, 1,000 Sets
Circular/Helical/Spline Interpolation(G02, G03)	1280M Memory
Conical Interpolation (G02.1, G03.1)	Geometric Command
3-D Circular Interpolation (G02.4, G03.4)	Inverse Time Feed
Circular Cutting (G12, G13)	Operation Screen Display
Dwell (G04)	Optional Block Skip
Scaling (G50, G51)	Playback Function
Extended Workpiece Coordinate System (96 Pairs)	Program Restart
Single Direction Positioning (G60)	RS232C Interface
Coordinate System Rotation (G68, G69)	Tangential Speed Constant Control
Rigid Tapping	Tool Life Management, 400 Sets
Deep-Hole Tapping Cycle	Tool Offset Memory C
Pecking Tapping Cycle	Tool Offset Pairs, 200 Pairs
Small-Diameter Deep-Hold Drilling Cycle	Tool Retract and Return
3-D Tool Compensation (G40, G41, G42)	USB Memory Interface
High Speed, High Accuracy Control	Backlash Compensation
NURBS Interpolation	
Super Smooth Surface Control (SSS Control)	
Background Editing	
Corner Chamfering / Corner Rounding	
Custom Macro B	
Custom Macro Common Variables, 700Pcs	
8GB Data Server	

- CNC panel swivels out for easy access and folds flat to save space. A manual pulse generator simplifies work set-up and precise positioning. *(Shown with optional steps)*

HX1000G / HX1250G Machine Standard Accessories

Machine Installation Tool Kit	Chip Conveyor (Internal Augers & Hinge Belt)	3-Step Cycle Finish Lamp
Coolant Pump & Tank	Automatic Way Lubrication	2-Station Automatic Pallet Changer
Leveling Bolts and Plates	Overhead Shower Coolant	Tool Monitoring / Adaptive Control
Spindle Orientation	Base Wash Coolant	Twin Ballscrew & Motor System
Spindle Nose Air Blow	Coolant Thru the Spindle (1.5Mpa / 220psi)	Dual Contact Spindle System
Spindle Speed & Load Meter	Linear Scale Feedback on All Axes (X, Y, Z)	Double Decker Conveyor & Filtration System with Reverse Switch
Spindle Oil Cooler	Full 4th Axis Rotary Table	High Torque Spindle, 8,000min^{-1} (4-Step Gear Driven)
Oil/Air Unit (Spindle & Each Axis)	150 Tool Magazine (Fixed Pot)	Auto Power Off Device
IAC (Intelligent Advanced Control)	Portable Manual Pulse Generator	Machine/CNC Spare Parts
Ballscrew Cooling System	Work Light	
Fully Enclosed Splash Guards		

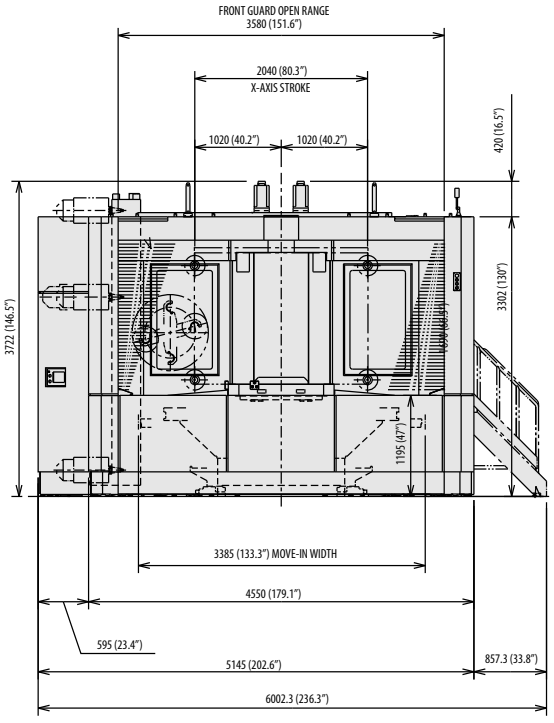
SPECIFICATIONS

	MYCENTER-HX1000G	MYCENTER-HX1250G
Table		
Table Work Area (W x L)	1,000mm x 1,000mm (39.37" x 39.37")	1,250mm x 1,250mm (49.21" x 49.21")
Table Thickness	200mm (7.87")	
Tapped Hole Size	M20 x 2.5 - 81	
Table Indexing	0.001°	
Max. Workpiece Size (Dia x H)	2,050mm x 1,550mm (80.71" x 61.02")	
Table Load Capacity	5,000kg (11,000 lbs)	
Travel		
X-Axis	2,040mm (80.31")	
Y-Axis	1,350mm (53.15")	
Z-Axis	1,370mm (53.94")	
B-Axis	0 to 360 degrees (0.001° Increments)	
Distance from Table Surface to Spindle Center	50 to 1,400mm (1.97" to 55.12")	
Distance from Table Center to Spindle Nose	150 to 1,520mm (5.91" to 59.84")	275 to 1,645mm (10.83" x 64.76")
Spindle		
Spindle Taper	#50 NST	
Spindle Speed	35~8,000min^{-1} (35~12,000min^{-1} Option)	
Spindle Acceleration (0-8,000rpm)	2.2 Seconds	
Drive Method	Gear Drive, 4-Step	
Spindle Motor	AC 40kw (53HP)	
Maximum Torque	1,624.7 N•m (1,198.4 ft•lbs)	
Feed		
Rapid Feed Rate X, Y, Z	36,000 mm/min (1,417ipm)	
Cutting Feed Rate	0-36,000 mm/min (0-1,417ipm)	
APC		
Number of Pallets	2	
APC Drive System	Servo Motor Driven	
APC Change Time	75.3 Seconds	
Pallet Clamping Power	9 Tons (24,213 lbs)	
ATC		
Tool Storage Capacity	150 Tools (200 Optional)	
Tool Selection Method	Random, Bi-Directional, Fixed Pot	
Tool Holder Style	CT (BT) 50	
Max. Tool Size (D x L)	Ø125 x 650mm (Ø4.92" x 25.59")	
- With Neighboring Pots Empty	Ø300 x 650mm (Ø11.81" x 25.59")	
Max. Tool Weight	30kg (66 lbs)	
Tool Change Time (T-T)	6.7 Seconds	
Tool Change Time (C-C)	12.0 Seconds (minimum)	
Utilities		
Power Requirement	85KVA (200V AC, 3 Phase)	
Machine Dimensions		
Required Space (L x W)	6,002 x 9,878mm (236.3" x 388.9")	
Machine Height	3,772mm (146.5")	
Machine Weight		
Machine Net Weight	57,320 Kg (126,104 lbs)	
Control	Arumatik-Mi	

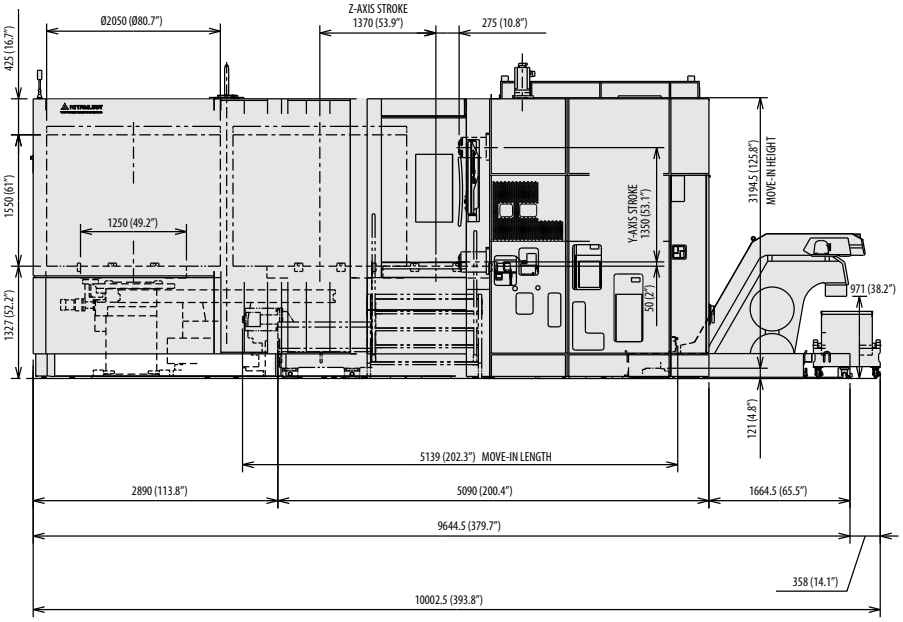
All specifications subject to change without notice.

FLOOR PLANS Mycenter®-HX1000G

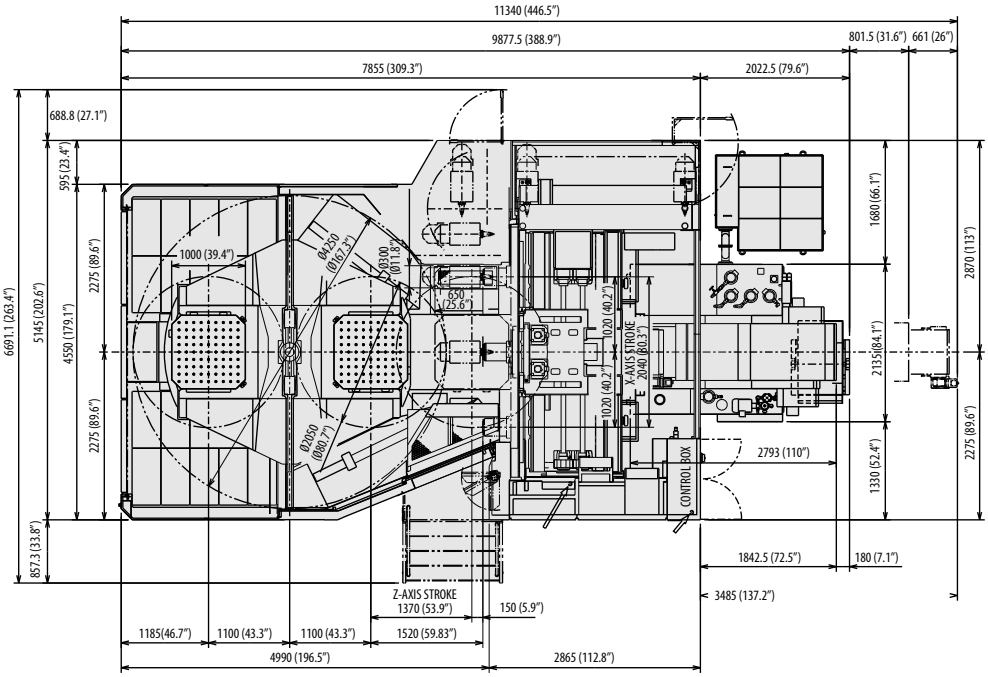
Front View



Side View

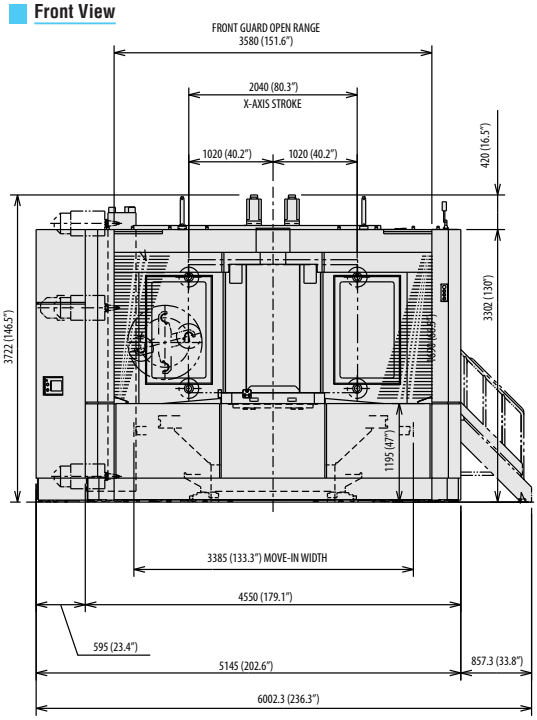


Layout View

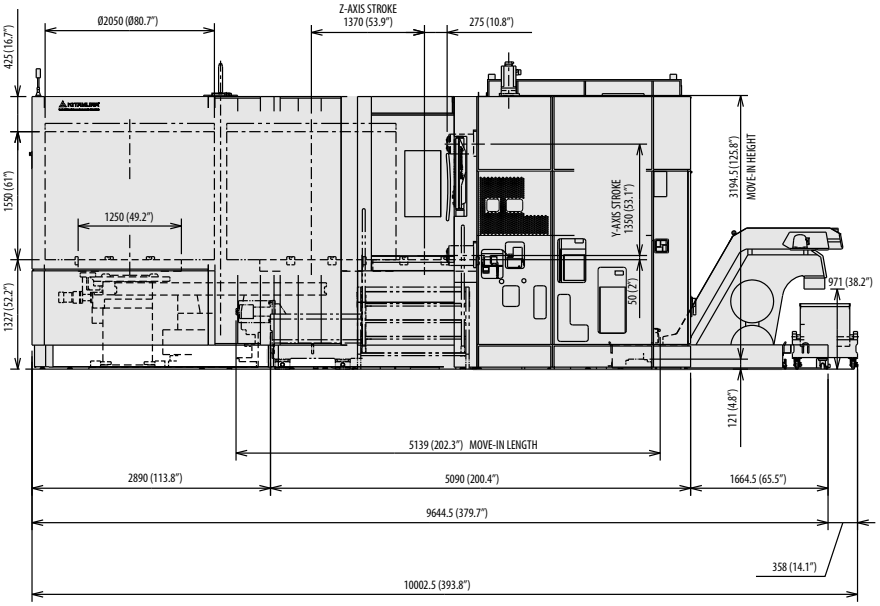


FLOOR PLANS Mycenter®-HX1250G

Front View



Side View



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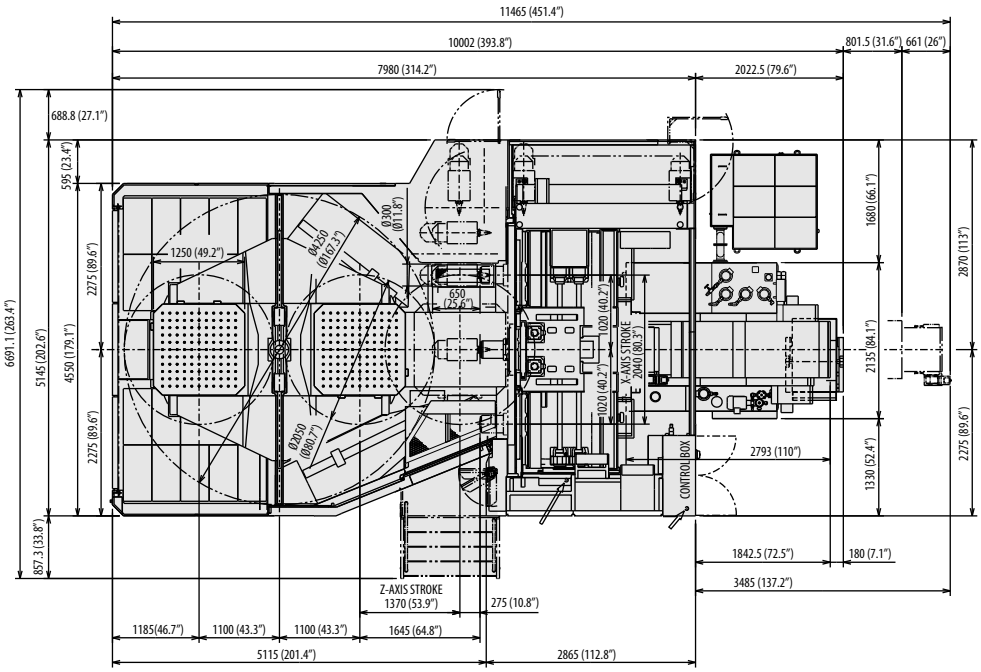

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