TOYODA

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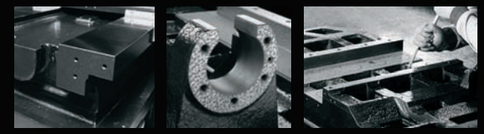

STEALTH

TOYODA

JTEKT Group

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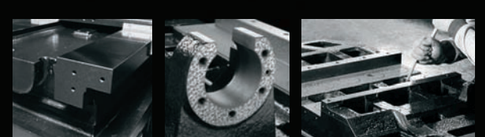

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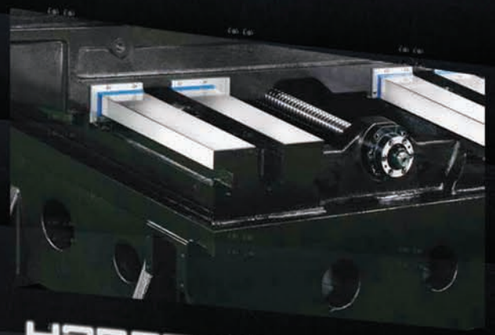
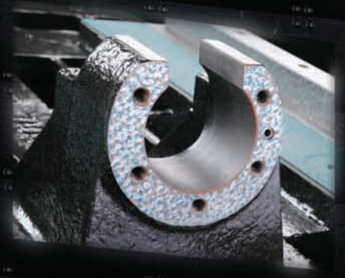
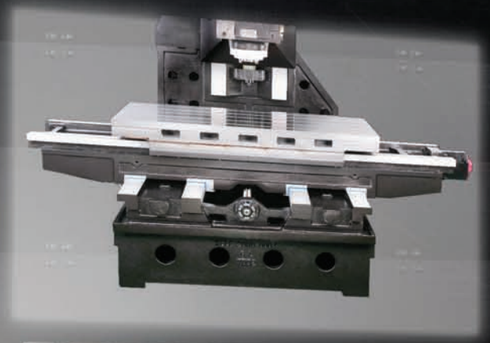


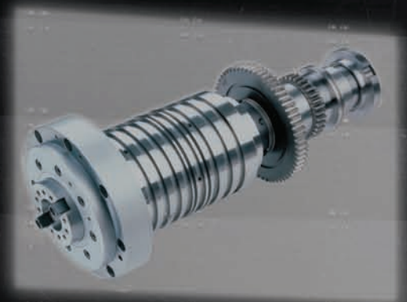
HARDENED BOX WAYS



PRECISION HAND SCRAPING



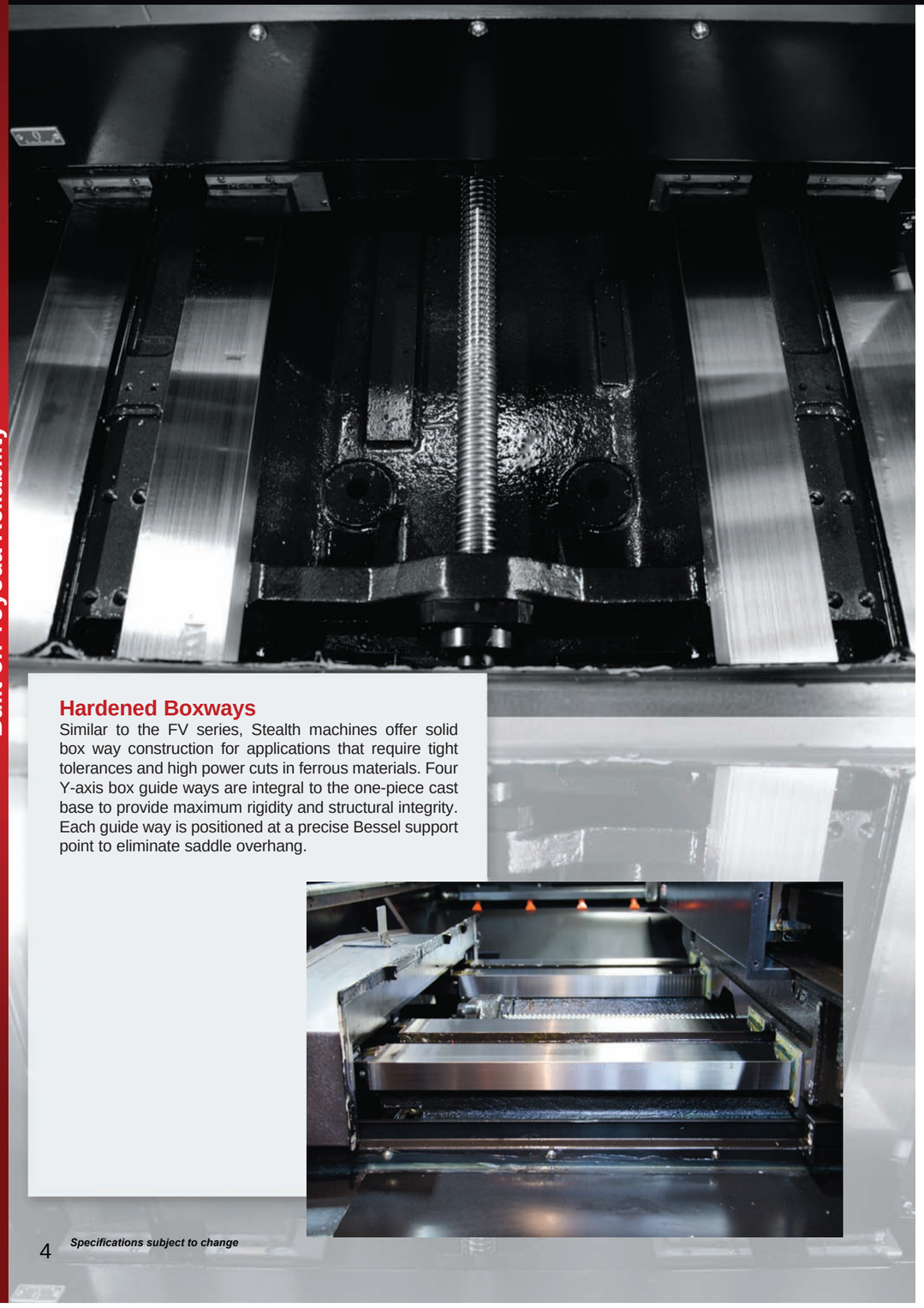
RIGID CONSTRUCTION



POWERFUL SPINDLE OPTIONS

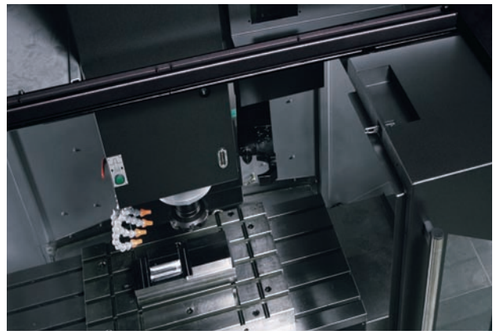
Contents

STEALTH™ Vertical Machining Centers are the new evolution in job shop performance. Engineered to precisely maneuver through challenging materials and deliver long-lasting accuracy. Reinforced by Toyoda's unsurpassed service and support. Steal business with your new strategic advantage.



Hardened Boxways

Similar to the FV series, Stealth machines offer solid box way construction for applications that require tight tolerances and high power cuts in ferrous materials. Four Y-axis box guide ways are integral to the one-piece cast base to provide maximum rigidity and structural integrity. Each guide way is positioned at a precise Bessel support point to eliminate saddle overhang.

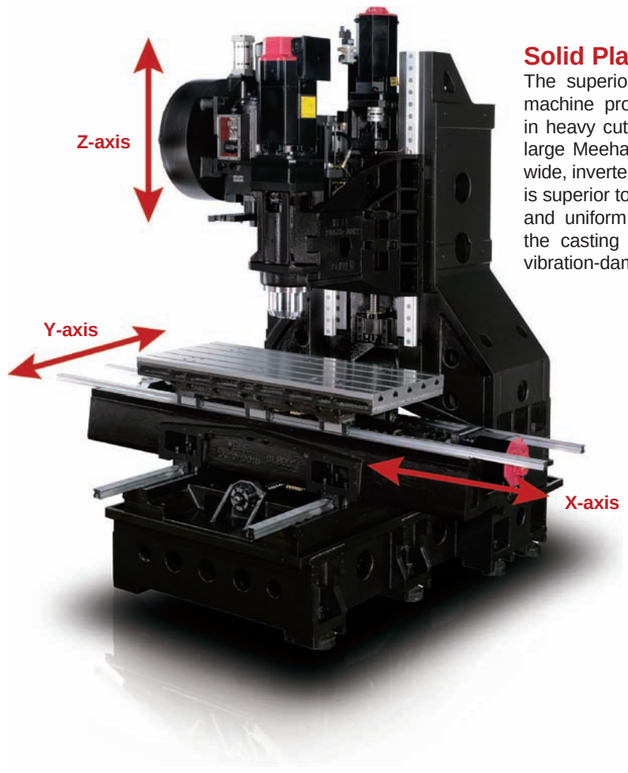


LARGEST IN CLASS

Wide Machining Range

The travel, table size and table loading mass of Stealth machines are all best-in-class making it possible to machine a diverse range of workpieces.

Stroke	Unit	965	1165	1365	1565
X Axis	mm (in)	900 (35.4)	1,100 (43.3)	1,300 (51.2)	1,500 (59.1)
Y Axis	mm (in)	650 (25.6)	650 (25.6)	650 (25.6)	650 (25.6)
Z Axis	mm (in)	600 (23.6)	600 (23.6)	600 (23.6)	600 (23.6)
Table					
Table Size: X Direction	mm (in)	1,110 (43.3)	1,300 (51.2)	1,450 (57.1)	1,650 (65.0)
Table Size: Y Direction	mm (in)	650 (25.6)	650 (25.6)	650 (25.6)	650 (25.6)
Table Load Capacity	kg (lb)	900 (1,985)	1,100 (2,425)	1,300 (2,866)	1,500 (3,306)



Solid Platform Construction

The superior structural rigidity of Toyoda's Stealth machine provides precise and lasting performance in heavy cutting applications. The Stealth line has a large Meehanite cast iron base paired with an extra wide, inverted Y-shaped column. The Meehanite base is superior to ordinary cast iron due to its high density and uniform soundness. These characteristics give the casting greater tensile strength and maximum vibration-dampening capabilities.

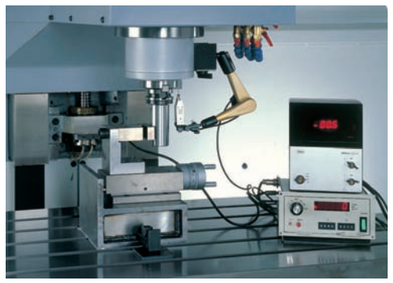
Built on Toyoda Reliability

Efficient Chip Removal

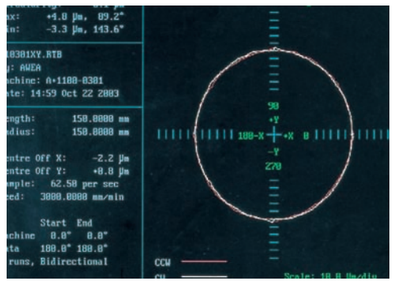
All Stealth machines include a high volume of coolant flow across the bed to accelerate chip flow. The angled bed and coolant flush chips into a dual screw-type auger for effective removal to the conveyor and less operator maintenance.

Reliability

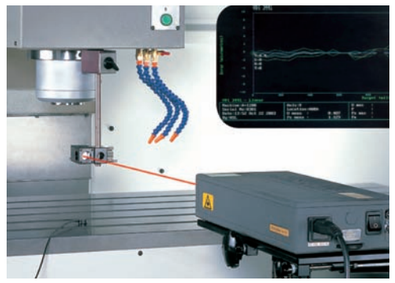
An exacting and highly accurate manufacturing process contributes to a reliable lifespan of the machine tool and its components. Toyoda's vertical machines are manufactured to strict quality assurance standards to ensure lasting performance.



Machine Structure Rigidity



Ball Bar Inspection



Laser Inspection

Built with Class

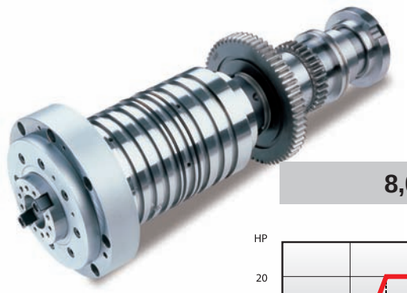
Precision Handscraping

All precision contact surfaces are hand-scraped for long-term accuracy and durability. Scraping work is carried out by experienced employees when finishing the slide way and the motor mounting face, which are both critical areas affecting the box slide.

Built on Toyoda Reliability

High Performance Spindle

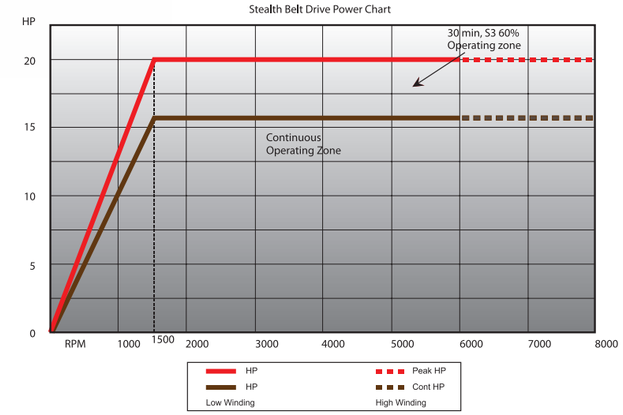
Stealth's robust cast-iron head stock is paired with a precision belt-drive or gear-driven spindle. All offer high revolution accuracy, thermal stability and maximum vibration dampening characteristics. Large precision spindle bearings increase rigidity and sustain higher load capacities.

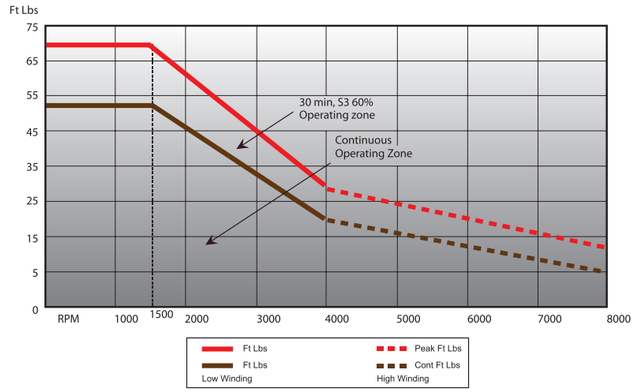


Stealth 965/1165/1365/1565

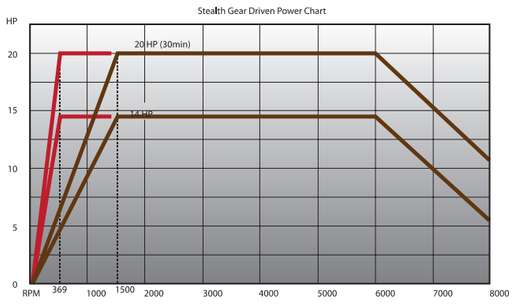
Standard offering is a powerful 20 hp, belt-driven, 8000 rpm temperature-controlled spindle that delivers 282 ft-lb of torque.

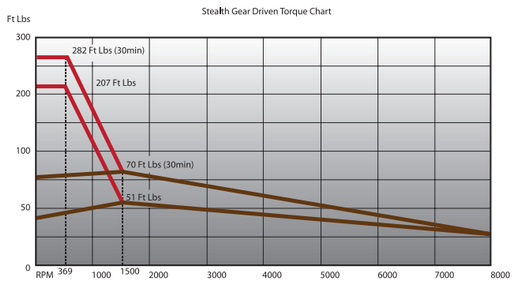
8,000 rpm CAT40 Belt-drive Chart [Standard]





8,000 rpm CAT40 and 6,000 rpm CAT50 Gear-driven Chart [Option]





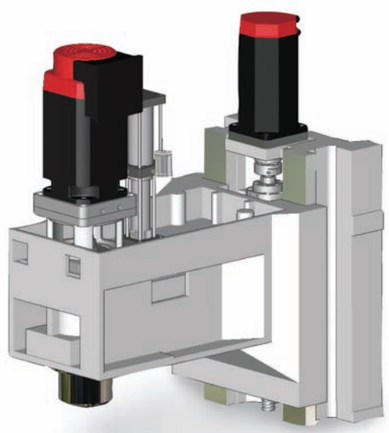
Built for Speed

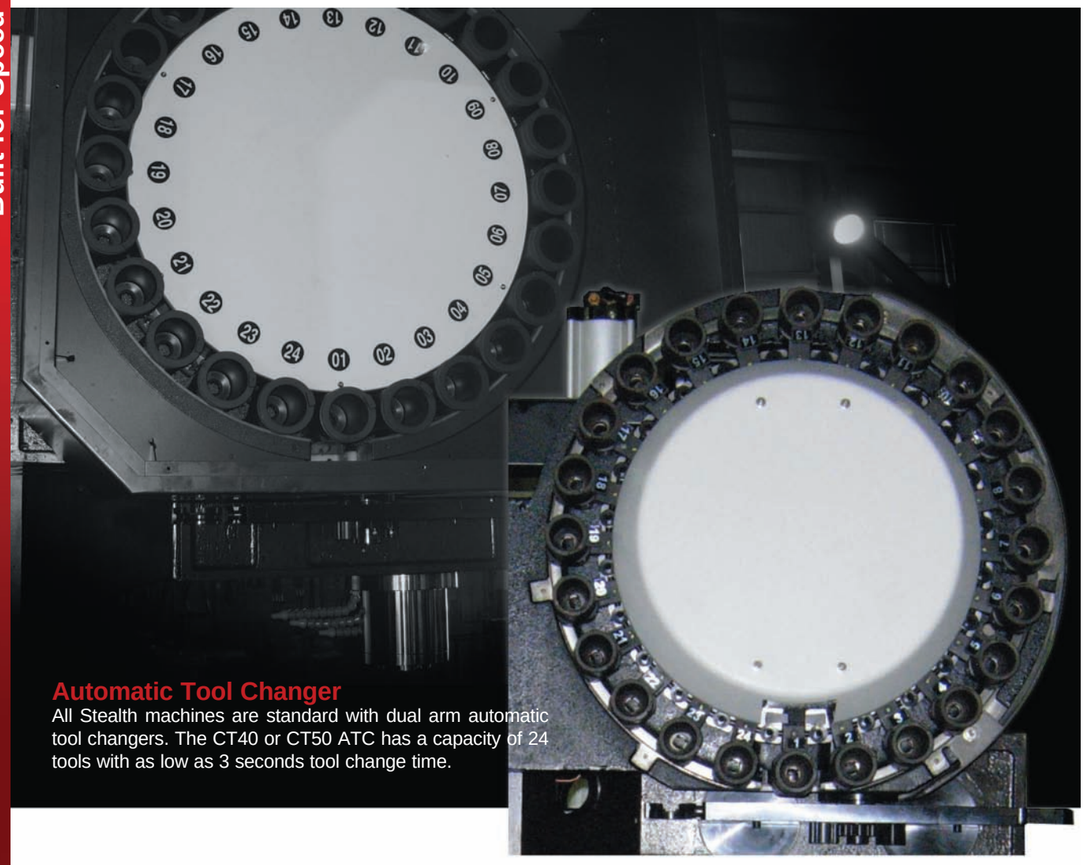
Built for Speed

Powerful Drive Motors

Large AC servo motors in all three axes, are controlled by an advanced digital signal for faster processing of position feedback. They are joined to the ballscrew with highly rigid axial couplings to support high thrust loads and instantaneous response without backlash.The result is a smoother surface finish and higher accuracy in the finished part.

Combination of precision ball screws and large AC servo motors eliminate the need for a mechanical counter balance on the Z axis. The thick ball screws are pre-tensioned and supported on both ends by angular contact thrust bearings for outstanding repeatability and thermal stability.



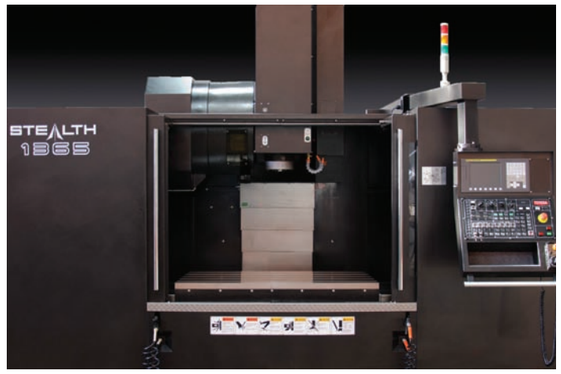


Automatic Tool Changer

All Stealth machines are standard with dual arm automatic tool changers. The CT40 or CT50 ATC has a capacity of 24 tools with as low as 3 seconds tool change time.

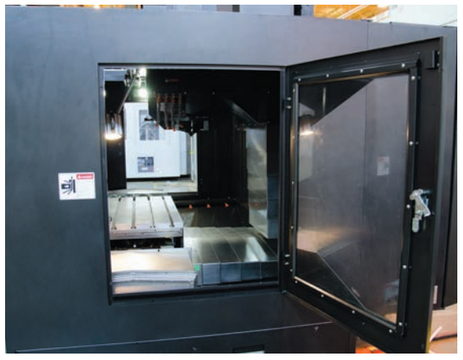
Advanced Control System

The Stealth series relies on the Fanuc 0i MD CNC control, capable of a wide range of machining demands. Coupled with the latest FANUC drive technology, the 0i model can control up to 4 axes simultaneously + 1 positioning axis. The new more powerful generation 0i series includes features and advanced functionalities like Jerk Control, Nano Smoothing and AI Contour Control II, with colored 8.4" LCD.



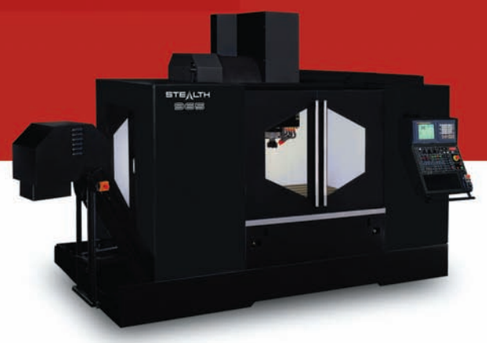
Workability

Stealth machines are designed with features that contribute to the productivity, efficiency, safety and ease of use for the operator. The wide front door opening simplifies loading and unloading of the workpiece. Doors are installed on both the left and right sides of the machine for maintenance.



Built for the Operator

STEALTH



STROKE	UNIT	965	1165	1365	1565
X Travel (left & right)	mm (in)	900 (35.4)	1,100 (43.3)	1,300 (51.2)	1,500 (59.1)
Y Travel (in & out)	mm (in)	650 (25.6)	650 (25.6)	650 (25.6)	650 (25.6)
Z Travel (up & down)	mm (in)	600 (23.6)	600 (23.6)	600 (23.6)	600 (23.6)
Distance between Spindle Nose to Table Top	mm	125 - 725	125 - 725	125 - 725	125 - 725
	(in)	(4.9 - 28.5)	(4.9 - 28.5)	(4.9 - 28.5)	(4.9 - 28.5)

TABLE	UNIT	965	1165	1365	1565
Table size (X direction)	mm (in)	1,100 (43.3)	1,300 (51.2)	1,450 (57.1)	1,650 (65.0)
Table size (Y direction)	mm (in)	650 (25.6)	650 (25.6)	650 (25.6)	650 (25.6)
Table load capacity	kg (lbs)	900 (1,985)	1,100 (2,425)	1,300 (2,866)	1,500 (3,306)
Table T slot size	mm	18 x 125 x 5	18 x 125 x 5	18 x 125 x 5	18 x 125 x 5
	(in)	(0.71x 4.92 x 5)	(0.71x 4.92 x 5)	(0.71x 4.92 x 5)	(0.71x 4.92 x 5)

SPINDLE	UNIT	965		1165		1365		1565	
Spindle Motor (cont./30 min rating)	kW (hp)	11/15 (15/20)		11/15 (15/20)		11/15 (15/20)		11/15 (15/20)	
Spindle Speed	rpm	15~8000 min-1	15~6000 min-1	15~8000 min-1	15~6000 min-1	15~8000 min-1	15~6000 min-1	15~8000 min-1	15~6000 min-1
Spindle Output Torques	Nm (ft-lb)								
Belt Drive		95 (70)		95 (70)		95 (70)		95 (70)	
Gear Drive		383 (282)		383 (282)		383 (282)		383 (282)	
Spindle Taper	-	CAT40	CAT50	CAT40	CAT50	CAT40	CAT50	CAT40	CAT50
Spindle Bearing Diameter	mm (in)	75 (2.95)	85 (3.35)	75 (2.95)	85 (3.35)	75 (2.95)	85 (3.35)	75 (2.95)	85 (3.35)

ATC	UNIT	965		1165		1365		1165	
Tool Magazine Capacity	-	24	24	24	24	24	24	24	24
Max Tool Diameter/	mm	76/127	127/229	76/127	127/229	76/127	127/229	76/127	127/229
Adjacent Pocket Empty	(in)	(2.99/5.0)	(5.0/9.0)	(2.99/5.0)	(5.0/9.0)	(2.99/5.0)	(5.0/9.0)	(2.99/5.0)	(5.0/9.0)
Max. Tool Length	mm (in)	250 (9.8)	300 (11.8)	250 (9.8)	300 (11.8)	250 (9.8)	300 (11.8)	250 (9.8)	300 (11.8)
Max. Tool Weight	kg (lbs)	7 (15.4)	15 (33)	7 (15.4)	15 (33)	7 (15.4)	15 (33)	7 (15.4)	15 (33)
Tool Taper	-	CAT40	CAT50	CAT40	CAT50	CAT40	CAT50	CAT40	CAT50
Pull Stud	-	ANSI CAT40	ANSI CAT50	ANSI CAT40	ANSI CAT50	ANSI CAT40	ANSI CAT50	ANSI CAT40	ANSI CAT50

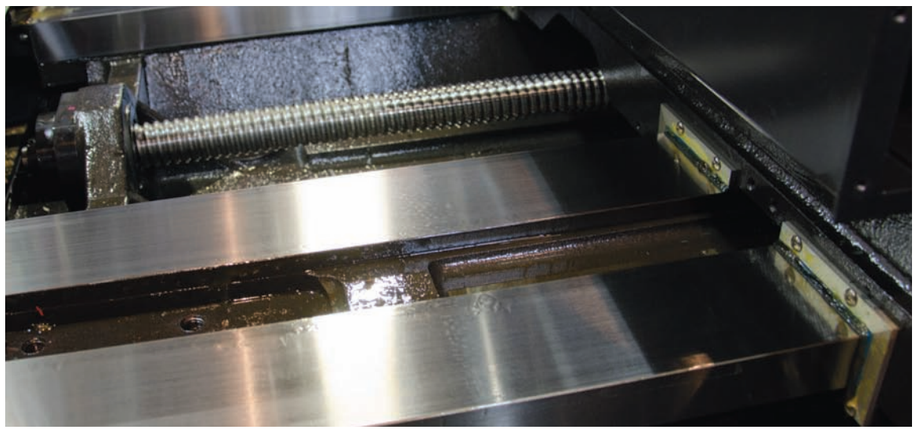
FEEDS MAX.	UNIT	965	1165	1365	1565
Rapid Feedrate X, Y Axes	m/min (ipm)	30 (1181)	30 (1181)	30 (1181)	24 (945)
Rapid Feedrate Z Axes	m/min (ipm)	24 (945)	24 (945)	24 (945)	18 (708)
Cutting Feedrate (max)	m/min (ipm)	24 (945)	24 (945)	24 (945)	18 (708)

ACCURACY	UNIT	965	1165	1365	1565
Positioning Accuracy (JIS)	mm	±0.005	±0.005	±0.005	±0.005
	(in)	(±0.0002)	(±0.0002)	(±0.0002)	(±0.0002)
Repeatability (JIS)	mm	±0.003	±0.003	±0.003	±0.003
	(in)	(±0.0001)	(±0.0001)	(±0.0001)	(±0.0001)

UTILITIES	UNIT	965	1165	1365	1565
Total Power Required	v	220	220	220	220
Total kVA Required	kVA	35	35	35	35
Air Pressure	psi	100	100	100	100

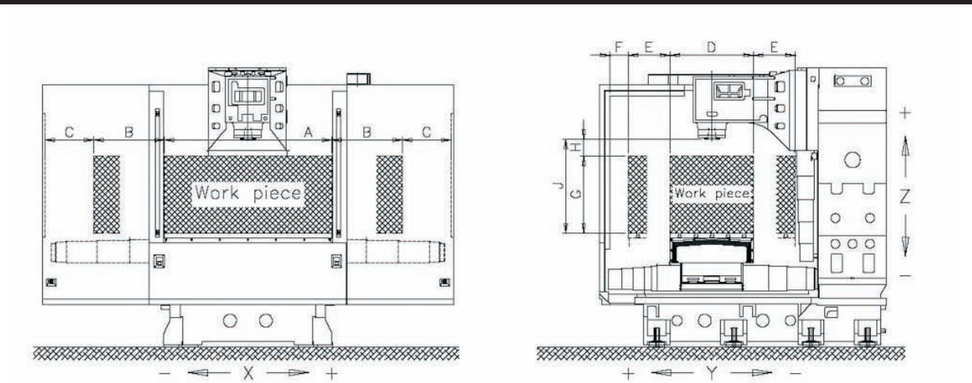
DIMENSIONS & WEIGHT	UNIT	965	1165	1365	1565
Axis Guide-ways	-	Box Way	Box Way	Box Way	Box Way
Machine Weight	kg (lbs)	7,000 (15,432)	7,200 (15,873)	7,600 (16,755)	8,100 (17,857)
Machine Size L x W x H *including coolant tank and operator control, standard magazine*	mm (in)	4048 x 2990 x 2940 (159.4x 117.8 x 115.7)	4308 x 2990 x 2940 (169.6x 117.8 x 115.7)	4738 x 2990 x 2940 (186.5x 117.8 x 115.7)	5218 x 2990 x 2940 (205.4x 117.8 x 115.7)

CONTROL	UNIT	965	1165	1365	1565
Control Type	-	Fanuc Oi M-D	Fanuc Oi M-D	Fanuc Oi M-D	Fanuc Oi M-D

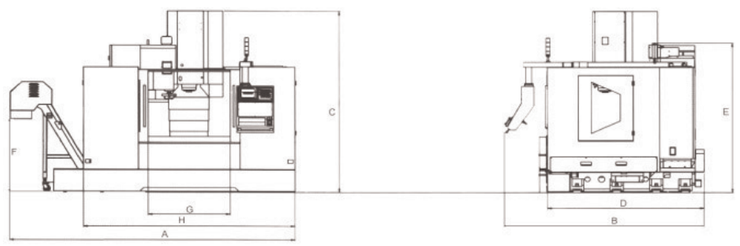


		965	1165	1365	1565
TABLE	A	1,100 mm (43.3")	1,300 mm (51.2")	1,450 mm (51.2")	1,650 mm (51.2")
	B	650 mm (25.6")			
	C	125 mm (4.9")			
	D	75 mm (2.9")			
TABLE AREA		1,100 x 650 mm (43.3x25.6")	1,300 x 650 mm (51.2x25.6")	1,450 x 650 mm (57.1x25.6")	1,650 x 650 mm (64.9x25.6")
T-SLOT SIZE		5 Slots: .7" wide x 4.92" center-to-center (17.78 x 125 mm)			
TRAVEL X/Y/Z		900/650/600 mm (35.4/25.6/23.6")	1100/650/600 mm (43.3/25.6/23.6")	1450/650/600 mm (51.2/25.6/23.6")	1650/650/600 mm (59.1/25.6/23.6")
WORK ENVELOPE	A	1,100 mm (43.3")	1,300 mm (51.2")	1,450 mm (57.1")	1,650 mm (64.9")
	B	449 mm (17.7")	548 mm (21.6")	650 mm (25.6")	749 mm (29.5")
	C	449 mm (17.7")	378 mm (14.9")	419 mm (16.5")	459 mm (18.1")
	D	650 mm (25.6")			
	E	325 mm (12.8")			
	F	132 mm (5.2")			
	G	594 mm (23.4")			
	H	129 mm (5.1")			
	J: Min ~ Max	124 ~ 724 mm (4.9~28.5")			
FLOOR SPACE	A	4,048 mm (159.4")	4,308 mm (169.6")	4,738 mm (186.5")	5,218 mm (205.4")
	B	2,990mm (117.8")			
	C	2,940mm (115.7")			
	D	2,370mm (93.3")			
	E	2,425mm (95.5")			
	F	1,185mm (46.7")			
	G	1,120 mm (44.1")	1,320 mm (52.0")	1,470 mm (57.9")	1,670 mm (65.8")
	H	2,940 mm (115.7")	3,200 mm (126.0")	1,670 mm (65.8")	4,110 mm (161.8")

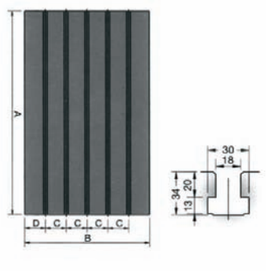
WORK ENVELOPE



FLOOR SPACE



TABLE



Production Experience

Toyoda is one of the world's largest machine tool builders. But we also have a successful production side to our business. Every year, Toyoda manufactures and sells more than $1.5 billion in steering and driveline systems to automotive OEMs around the world. This gives our company unique insight into the shop floor challenges our customers face every day.

Proven Technology

Our 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 or grinder 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 US, Canada and Mexico. And our extensive spare parts inventory ($20 million) ensures that virtually any replacement part will be shipped to you in 24 hours.

THE TOYODA DIFFERENCE

Toyoda Machinery USA

The 100,000 square foot plant in Arlington Heights, Illinois, (just northwest of Chicago) is the Toyoda Machinery USA headquarters. Toyoda's facility outside of Detriot, Michigan provides rebuild, remanufacturing, and service support for the machine tool industry.