STEALTH

Stealth AA1165

Vertical Machining Center
Specifications

All specifications are subject to change without prior notice
Verification of technical changes may be confirmed after receipt of order

STEALTH

Designed and built by Wele Mechatronic in Taiwan, this machining center is sold and serviced exclusively by JTEKT Toyoda Americas Corporation and our exclusive representatives.

Machine Specifications (All Models, Unless Otherwise Indicated):

Stroke	Unit	Specifications
X Axis Travel (AA1165)	mm (in)	1,100 (43.3)
Y Axis Travel	mm (in)	650 (25.6)
Z Axis Travel	mm (in)	600 (23.6)
Distance from Spindle Nose to Table Top	mm (in)	125 - 725 (4.9 - 28.5)
Distance from Spindle Center to Column	mm (in)	650 (25.6)

Table	Unit	Specifications
Table Size: X Direction (AA1165)	mm (in)	1,300 (51.2)
Table Size: Y Direction	mm (in)	650 (25.6)
Table Load Capacity (AA1165)	kg (lb)	1,100 (2,425)
Table T-Slot Size: Width x Distance x Number	mm (in)	18 x 125 x 5 (0.71 x 4.92 x 5)
Table Height From Plant Floor	mm (in)	900 (35.4)

Spindle		
Cat # 40 Taper Geared Head	**Type**	**2 Speed Gearbox**
	Max RPM	**8,000**
	Power Nm Kw (HP) [cont. / peak 30 min]	**11 / 15 (15 / 20)**
	Max Torque Nm (Ft Lbs)	**380 (282)**
	Front Bearing Diameter mm (in)	**75 (2.95)**
Cat # 50 Taper Geared Head	**Type**	**2 Speed Gearbox**
	Max RPM	**6,000**
	Power Nm Kw (HP) [cont. / peak 30 min]	**15 / 18.5 (20 / 25)**
	Max Torque Nm (Ft Lbs)	**460 (339)**
	Front Bearing Diameter mm (in)	**85 (3.35)**
Cat # 40 Taper Direct Driven	**Type**	**Direct Drive**
	Max RPM	**12,000**
	Power Nm Kw (HP) [cont. / peak 30 min / peak 15 min]	**15/ 18.5/ 22 (20/ 25 / 30)**
	Max Torque Nm (Ft Lbs)	**125 (92)**
	Front Bearing Diameter mm (in)	**70 (2.75)**

JTEKT Toyoda Americas Corp. recommends the use of only genuine BIG-PLUS® tooling (if applicable).The BIG-PLUS® system is licensed only to certain tool holder manufacturers, please verify the authenticity of any holders used in the spindle. Failure to use certified BIG-PLUS® certified tooling (if applicable) may void your warranty.

Feed Rates	Unit	Specifications
Rapid Feedrate (X and Y Axes)	m/min (ipm)	30 (1,181)
Rapid Feedrate (Z Axis)	m/min (ipm)	24 (945)
Maximum Cutting Feedrate	m/min (ipm)	24 (945)

Accuracy (JIS)	Unit	Specifications
Positioning Accuracy	mm (in)	±.005 (±.0002)
Repeatability	mm (in)	±.003 (±.0001)

Coolant System	Unit	Specifications
Coolant Tank Capacity	gal	113.5
Flood Coolant (Gallons per Minute)	gal	20
CTS Preparation Only	Max PSI	Rotary Union: 1,000 PSI Capable

ATC - 24 Tool "Drum" Type With "S" Cam Drive	Unit	Specifications
Tool Magazine Capacity - CT40	number	24
Tool Magazine Capacity - CT50	number	24
Maximum Tool Diameter / Tool in Adjacent Pocket - CT40	mm (in)	76 (2.99)
Maximum Tool Diameter / Tool in Adjacent Pocket - CT50	mm (in)	127 (5.0)
Maximum Tool Diameter / Adjacent Pocket Empty - CT40	mm (in)	127 (5.0)
Maximum Tool Diameter / Adjacent Pocket Empty - CT50	mm (in)	229 (9.0)
Maximum Tool Length from Gage Line - CT40	mm (in)	250 (9.8)
Maximum Tool Length from Gage Line - CT50	mm (in)	300 (11.8)
Maximum Tool Weight - CT40	kg (lb)	7 (15.4)
Maximum Tool Weight - CT50	kg (lb)	15 (33)
Tool Taper	type	CAT40, CAT50
Pull Stud	type	ANSI CAT40, ANSI CAT50
Tool Change Time: Tool to Tool	sec	3
Tool Selection	type	Random
Tool Access	type	Bi-directional

Control	Unit	Specifications
Control Type	type	Fanuc 0i MF

Utilities	Unit	Specifications
Power Required	v (kVA)	3 Phase ±10% 220 (35)
Air Pressure	psi	100
Power Supply Frequency	Hz	50 / 60
Control Voltage	volt	24

Note: Machine is 220V / 3 Phase / 60 Hz. Any other voltage requires a transformer (not supplied as std.)

* Dimensions are approximate, please verify upon ordering

Fanuc 0iMF Plus control specification		
No	Function	Specifications
1. System Functions		
1.1	Color LCD/MDI	
1.2	Control axes	4 axes (Option to 5 axes)
1.3	Simultaneously controlled axes	4 axes
1.4	Spindle axes	1 axes
1.5	Memory card interface	CF card and PCMCIA card attachment is required. Program operation on large capacity memory Function (for DNC)
1.6	Ethernet interface	Program transfer
1.7	RS-232C interface	
1.8	USB interface	Only data input and output (not DNC)
2. Axis functions		
2.1	High-speed and high-precision machining	HRV3 Control
2.2	Follow up	
2.3	Overtravel	
2.4	Software stroke check 1	
2.5	Software stroke check 2, 3	
2.6	Stroke check before movement	
2.7	Control axis detach	
3. Spindle functions		
3.1	Spindle orientation	M19
3.2	Rigid tapping	M29
3.3	FSSB High speed rigid tapping	
3.4	Constant surface speed control	
3.5	Spindle serial output	
3.6	Spindle output switching function	
3.7	Spindle synchronous control	
4. Operation functions		
4.1	Machine lock	All axes
4.2	Z lock	
4.3	Emergency stop	

4.4	Single block	
4.5	MDI Operation	
4.6	Manual handle feed	1 unit
4.7	Manual handle feed rate	X1, X10, X100
4.8	Handle interruption	
4.9	Dry run	
4.10	Program restart	
4.11	Playback	
4.12	JOG feed	
4.13	Manual reference position return	
4.14	Rapid traverse override	F0, 25%, 50%, 100%
4.15	Cutting feedrate override	0, 10%, 20%, 30%, … 200%
4.16	Spindle override	50%, 60%, 70%, … 120%
4.17	Optional block skip	
4.18	Direct input of workpiece origin offset value measured	
4.19	Manual absolute on and off	
4.20	Program protect key	
4.21	Help function	
4.22	Self-diagnosis function	
5. Editing functions		
5.1	Increment system C	0.001mm / 0.0001 inch / 0.001 deg
5.2	Backlash compensation	
5.3	DNC operation	CF card or RS-232C or Data Server attachment is required
5.4	Positioning	G00
5.5	Linear interpolation	G01
5.6	Circular interpolation cw(ccw) Helical interpolation cw(ccw)	G02, G03
5.7	Dwell, exact stop	G04
5.8	Exact stop	G09
5.9	Programmable data input	G10, G11
5.10	Polar coordinate command	G15, G16

Fanuc 0iMF Plus control specification

5.11	Plane selection	G17, G18, G19
5.12	Input in mm or inch	G20, G21
5.13	Automatic return to reference position	G28
5.14	Skip function	G31
5.15	Thread cutting	G33 (macro control is required)
5.16	Special fixed cycle	G34, G35 (macro control is required)
5.17	Cutter compensation	G40, G41, G42
5.18	Tool offset increase or decrease	G45~G59
5.19	Workpiece coordinate system	G54~G59
5.20	Addition of Workpiece coordinate system	48 pairs
5.21	Programmable mirror image	G50.1 / G51.1
5.22	Scaling cancel	G50 / G51
5.23	Single direction position	G60
5.24	Exact stop mode	G61
5.25	Automatic corner override	G62
5.26	Coordinate system rotation mode	G68, G69
5.27	Peck drilling cycle	G73, G83
5.28	Fixed cycle	G74, G76, G80, G81, G84-G89
5.29	Absolute or incremental programming	G90, G91
5.30	Workpiece coordinate system preset	
5.31	Feed per minute	G94
5.32	Feed per revolution	G95
5.33	Custom macro	
5.34	Addition of Custom macro common variables	#100~#199, #500~#999
5.35	External deceleration	
5.36	Automatic corner deceleration	
5.37	Automatic acceleration/deceleration	linear
5.38	Rapid traverse bell-shaped acceleration/deceleration	
5.39	Bell-type acceleration/deceleration after cutting feed interpolation	
5.40	Ilelical interpolation	
5.41	AI contour control II	Look-ahead blocks 200
5.42	Program cide	EIA/ISO

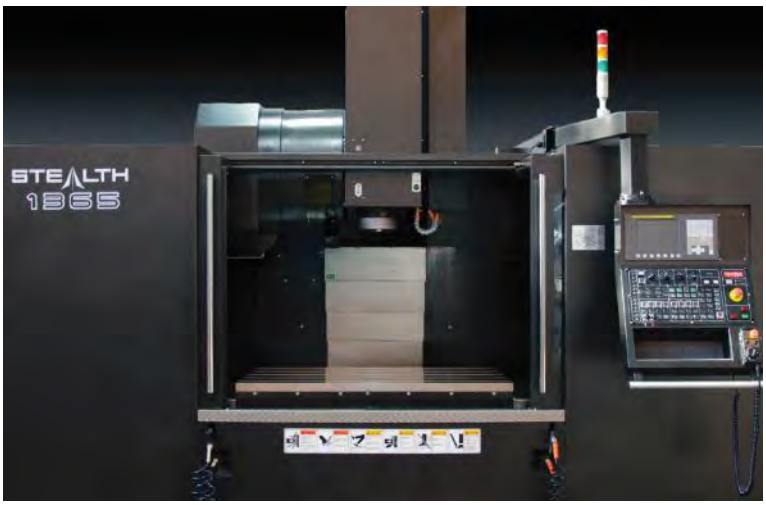
Fanuc 0iMF Plus control specification

5.43	Parity check	
5.44	Program file name	32 characters
5.45	Sequence number	N8 digit
5.46	Decimal point programming/pocket calculator type decimal point programming	
5.47	Rotary axis designation	
5.48	Optional chamfering/corner R	
5.49	Number of registerable programs	1000 programs
5.50	Part program storage size	2M byte
5.51	Part program editing	
5.52	Extended part program editing	
5.53	Feedrate override reset	
5.54	Max. programmable dimension	+/- 9 digits
5.55	Sub program call	10 folds nested
5.56	M, S, T function	
5.57	Program stop / Optional stop	M00, M01
5.58	Program end	M02, M30
5.59	Air blow on	M07
5.60	Auto power off	
5.61	Calling subprogram stored in external memory	M198
5.62	Tool function	T8 digit
5.63	Tool offset pairs	400 pairs
5.64	Tool offset memory C	
5.65	Tool length offset	
5.66	Tool radius offset	
5.67	Tool length measurement	
5.68	Tool life management	
5.69	Backlash compensation for each rapid traverse and cutting feed	
5.70	Stored pitch error compensation	
5.71	Alarm display	
5.72	Alarm history display	
5.73	Operator message display	
5.74	Operator message history display	

5.75	Run hour and parts count display	
5.76	Actual cutting feedrate display	
5.77	Status display	
5.78	Clock function	
5.79	Spindle speed function	
5.80	Servo setting screen	
5.81	Spindle setting screen	
5.82	Current position display	
5.83	Program comment display	Program name 31 characters
5.84	Parameter setting and display	
5.85	Multi-language display	
5.86	Dynamic display langauge switching	
5.87	Parameter setting support screen	
5.88	Display of hardware and software configuration	
5.89	Servo information screen	
5.90	Spindle information screen	
5.91	External machine zero point shift	
5.92	External message	
5.93	Screen hard copy	
5.94	Manual guide 0i	
5.95	Reference position return function	
5.96	Rigid tapping bell-shaped acceleration/deceleration	
5.97	Fine surface machining	
5.98	Macro executor/C language executor	
5.99	Dynamic graphic display	
6. Optional functions		
6.1	AI contour control II	Look-ahead blocks 400
6.2	Manual guide i	
6.3	Fast data Server	Suggest use item 1-5 (Program operation on large capacity memory function)
6.4	3-dimensional Coordinate systems conversion	

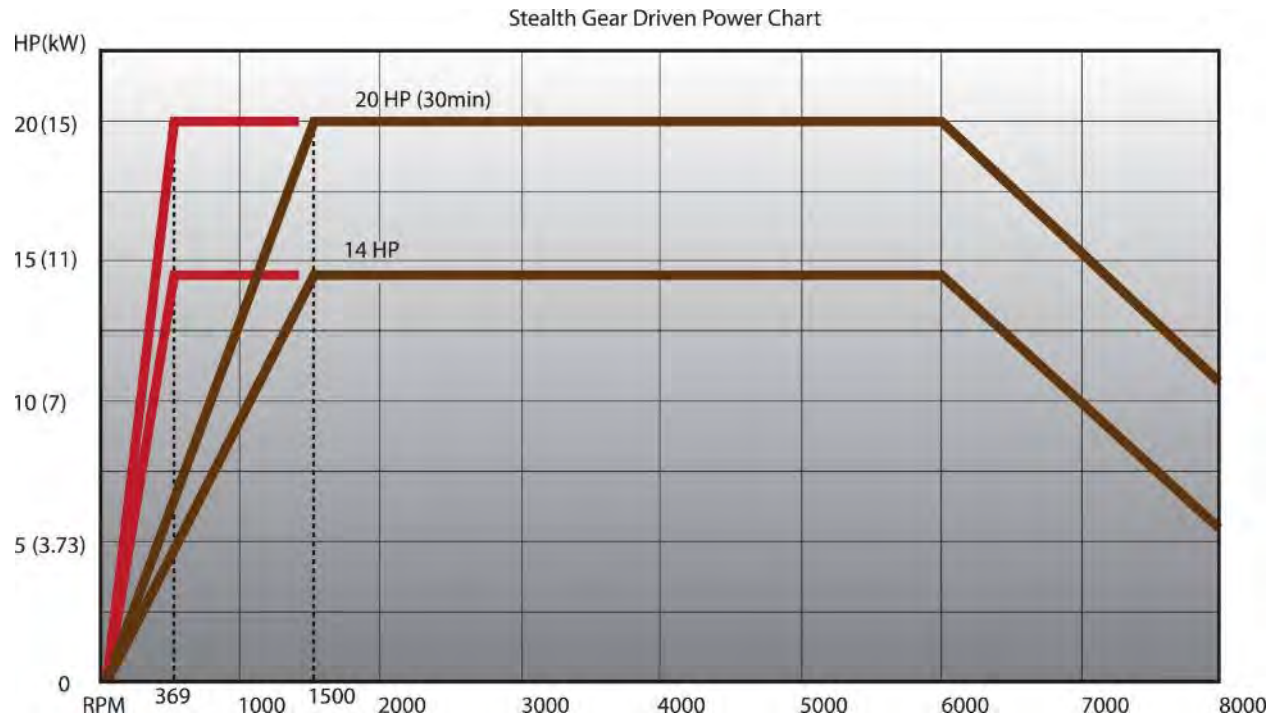
Included with this Model:

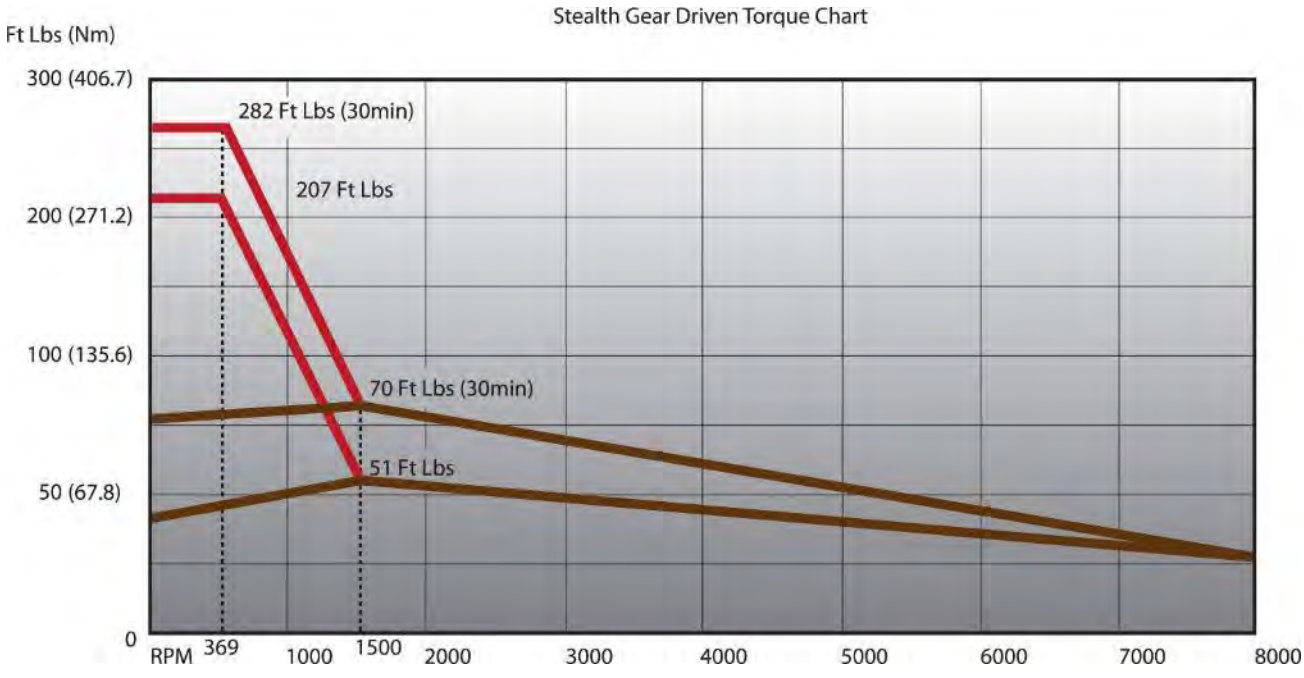
1. Color LCD Display
2. Chip Wash Down Coolant
3. Chip Wash Gun
4. Conversational FANUC Manual Guide 0i
5. Coolant System including tank & pumps
6. Plumbing for Coolant Through Spindle up to 70 bar (1000 PSI)
7. Dual Chip Auger Each Side of Table
8. Full Enclosure Splash Guard
9. Hand Tool Box
10. Helical Interpolation
11. Lift Up Type Hinged Belt Chip Conveyor (47“ drop height)
12. Manual Pulse Generator (Hand Wheel)
13. Operation and Maintenance Manual, Fanuc Manuals
14. External Programmable Air Blast
15. Rigid Tapping
16. Ethernet RJ45 Interface
17. Spindle Oil Cooler
18. 24 Pocket ATC (#40 or #50 taper)
19. Three (3) Tier Status / Alarm Lamp
20. Fixed & Adjustable Work Light



Spindles

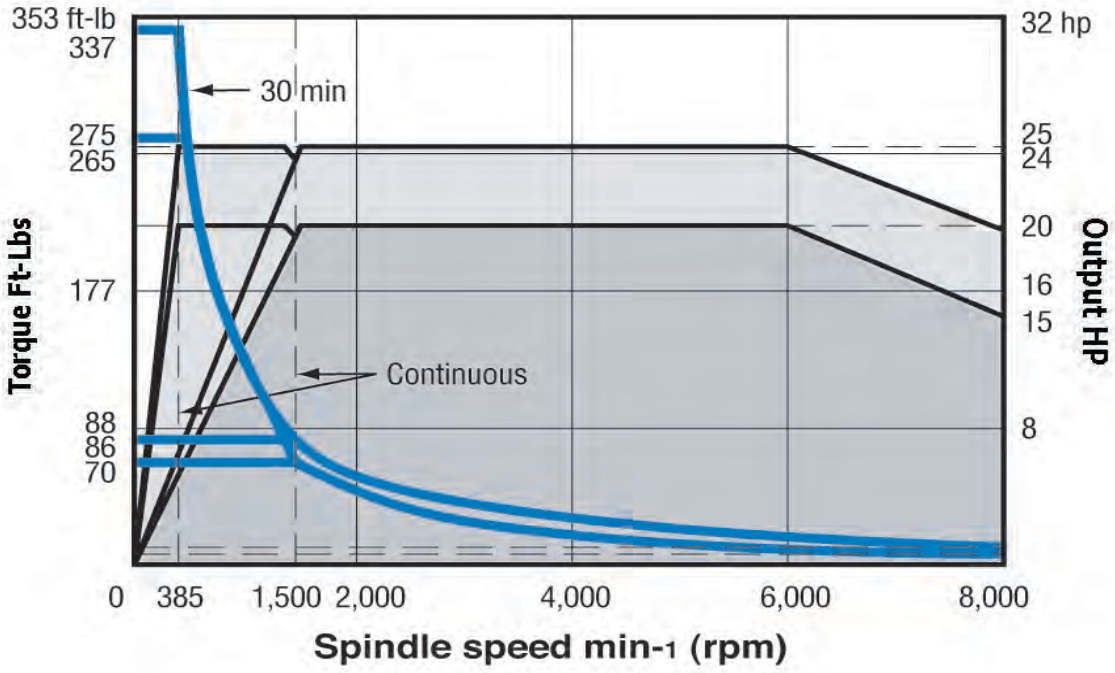
Power& Torque CAT40 or CAT50 GH (Standard)





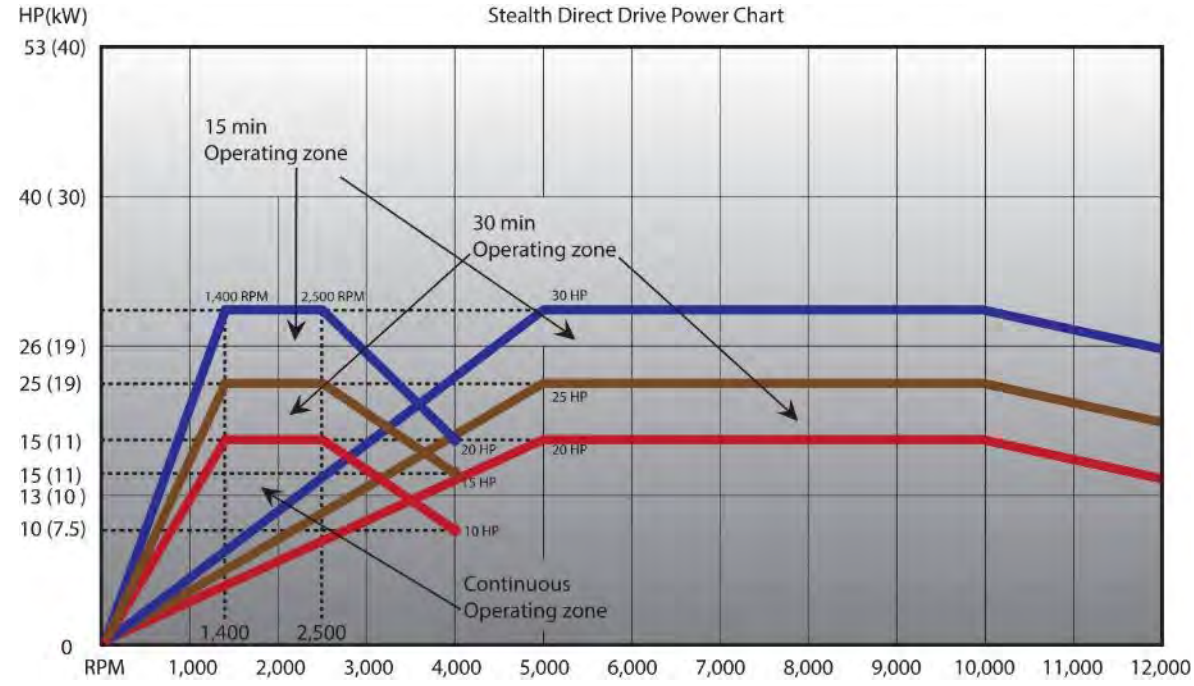
Spindles

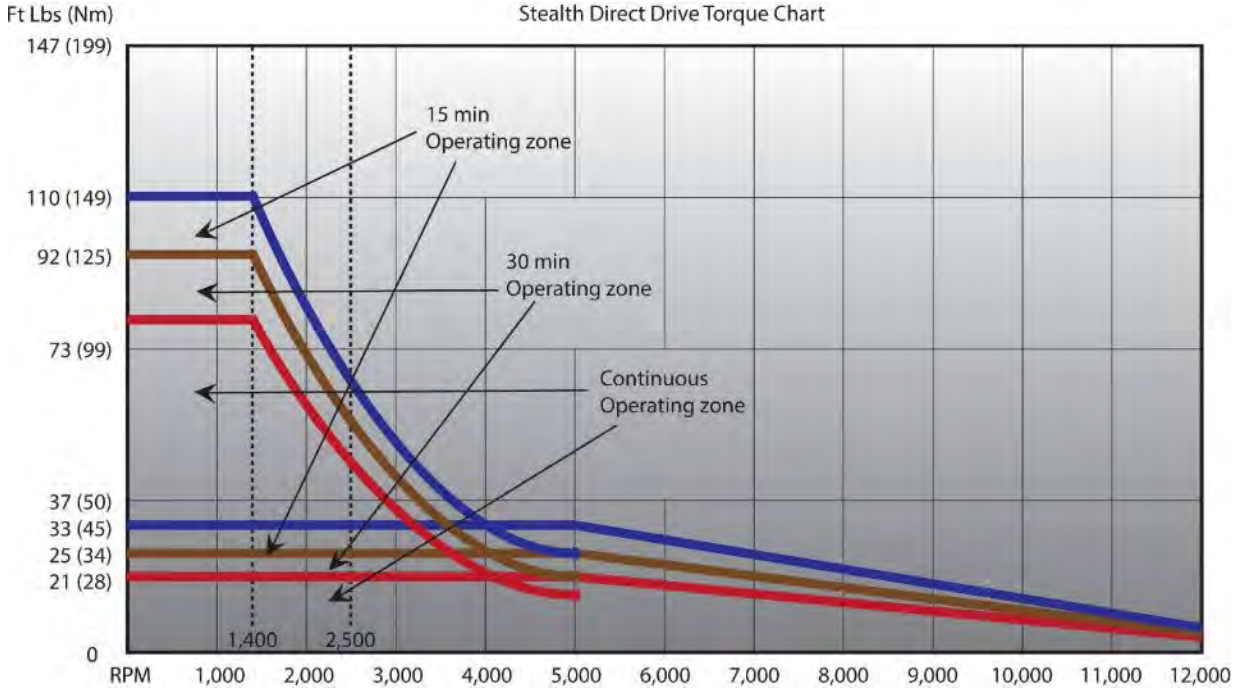
Power& Torque CAT 50 6K /CAT 40 8K GH (Optional 20/25 Hp)



Spindles

Power & Torque CAT40 12,000 Direct Driven (Optional)





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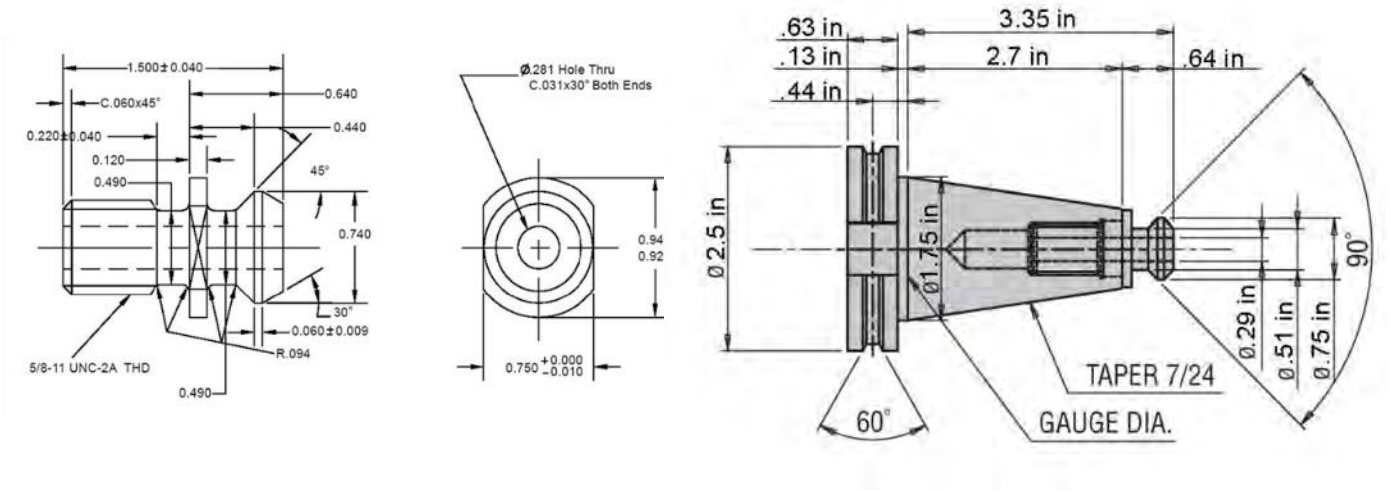
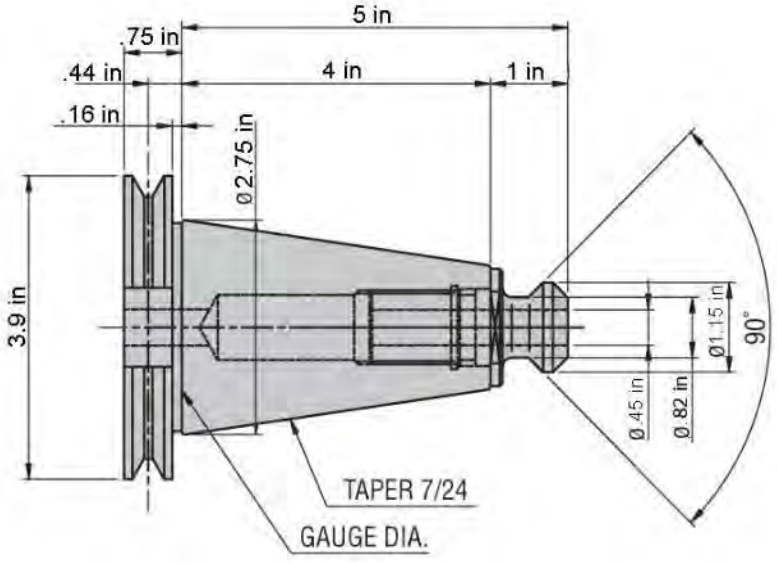
Retention Knob & Tool Assembly CAT40



Retention Knob & Tool Assembly CAT50



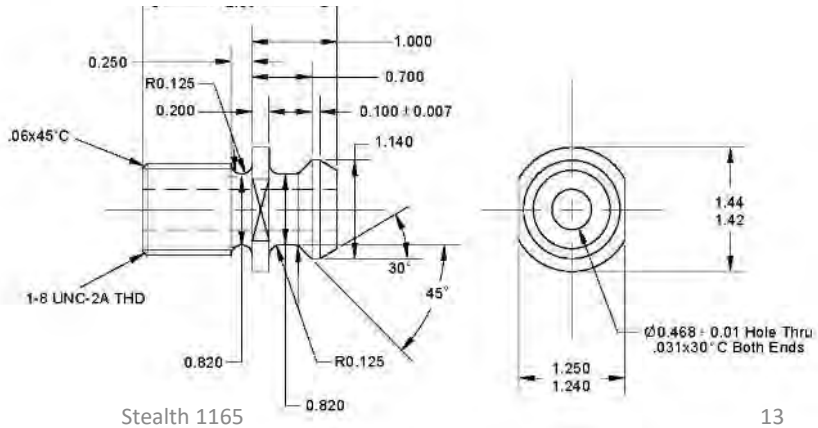


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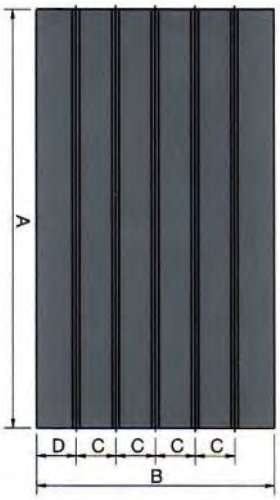
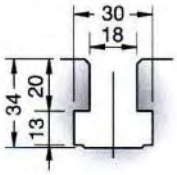
Table Dimensions

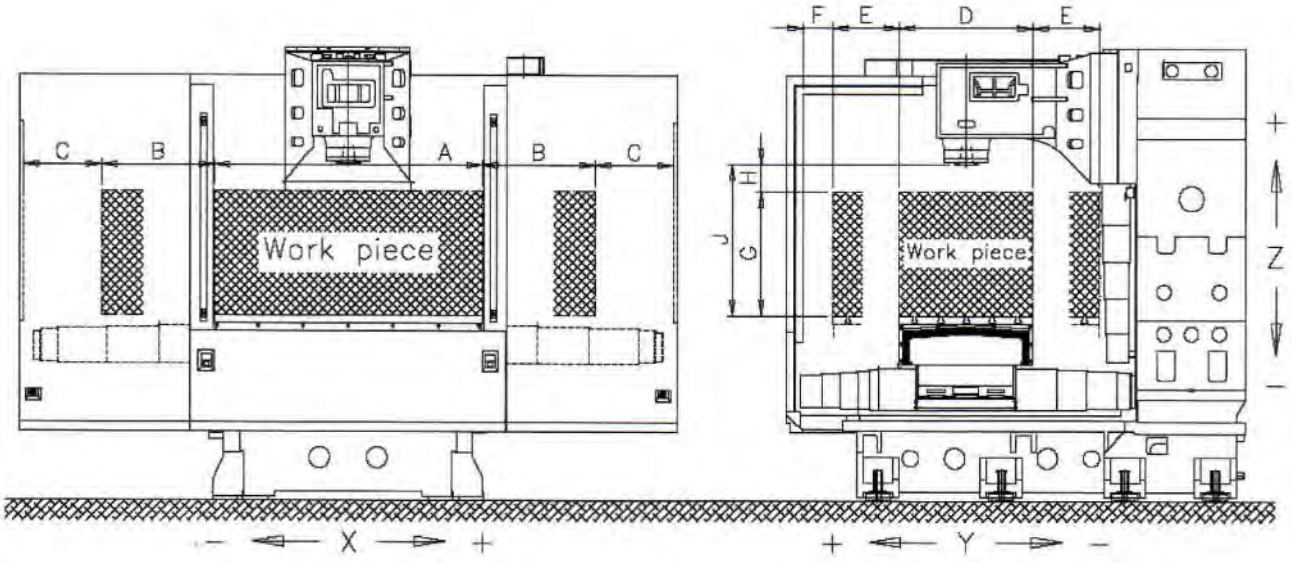


Model	A	B	C	D
AA965	1,100 mm (43.3")	650 mm (25.6")	125 mm (4.9")	75 mm (2.9")
AA1165	1,300 mm (51.2")	650 mm (25.6")	125 mm (4.9")	75 mm (2.9")
AA1365	1,450 mm (57")	650 mm (25.6")	125 mm (4.9")	75 mm (2.9")
AA1565	1,650 mm (65")	650 mm (25.6")	650 mm (25.6")	75 mm (2.9")

Unit: Inch



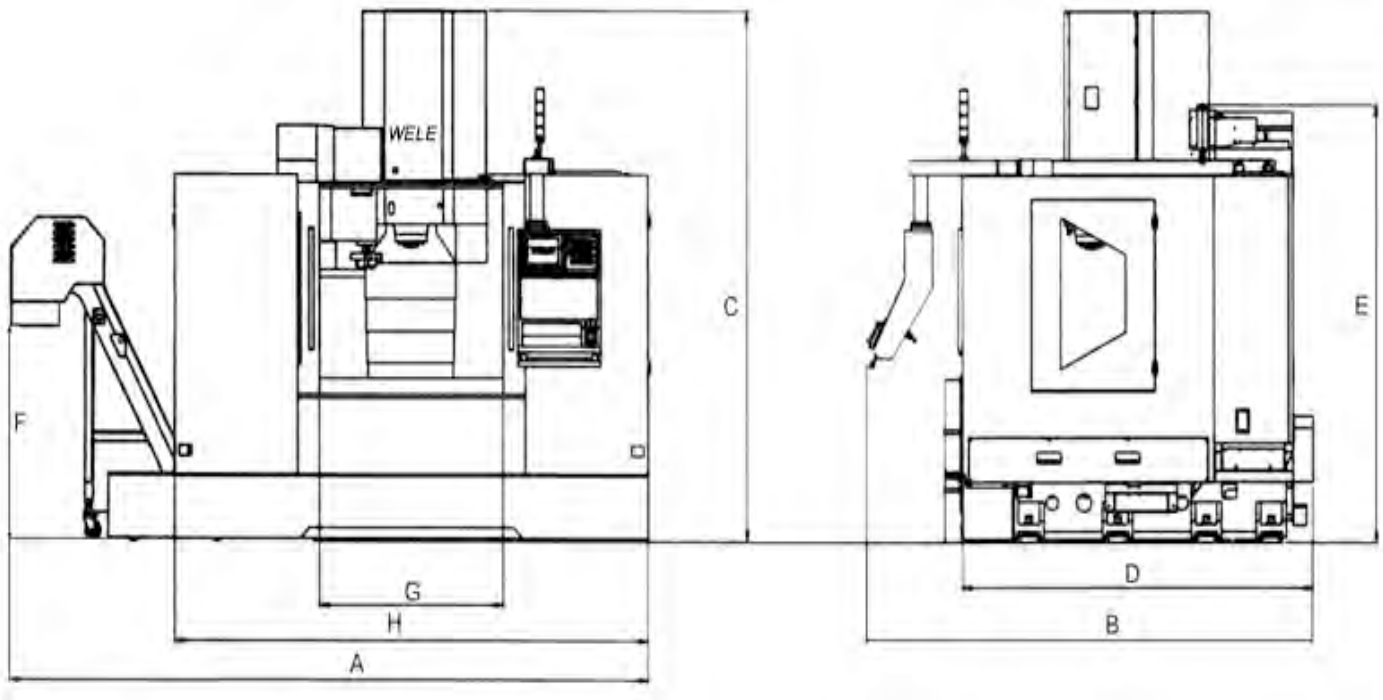
Work Envelope



Model	Table Area	T-Slot Size	Travel X / Y / Z	TRAVEL								
				A	B	C	D	E	F	G	H	J: Min ~ Max
AA965	43.3 x 25.6	5 x .7 x 4.92	35.4 / 25.6 / 23.6	43.3	17.7	17.7	25.6	12.8	5.2	23.4	5.1	4.9 ~ 28.5
AA1165	51.2 x 25.6	5 x .7 x 4.92	43.3 / 25.6 / 23.6	51.2	21.6	14.9	25.6	12.8	5.2	23.4	5.1	4.9 ~ 28.5
AA1365	57.1 x 25.6	5 x .7 x 4.92	51.2 / 25.6 / 23.6	57.1	25.6	16.5	25.6	12.8	5.2	23.4	5.1	4.9 ~ 28.5
AA1565	64.9 x 25.6	5 x .7 x 4.92	59.1 / 25.6 / 23.6	64.9	29.5	18.1	25.6	12.8	5.2	23.4	5.1	4.9 ~ 28.5

Unit: Inch

Floor Space Requirement



Model	A	B	C	D	E	F	G	H
AA965	4,048 mm	2,990 mm	2,940 mm	2,370 mm	2,425 mm	1,185 mm	1,120 mm	2,940 mm
	159.4"	117.8"	115.7"	93.3"	95.5"	46.7"	44.1"	115.7"
AA1165	4,308 mm	2,990 mm	2,940 mm	2,370 mm	2,425 mm	1,185 mm	1,320 mm	3,200 mm
	169.6"	117.8"	115.7"	93.3"	95.5"	46.7"	52.0"	126.0"
AA1365	4,738 mm	2,990 mm	2,940 mm	2,370 mm	2,425 mm	1,185 mm	1,470 mm	3,630 mm
	186.5"	117.8"	115.7"	93.3"	95.5"	46.7"	57.9"	143.0"
AA1565	5,218 mm	2,990 mm	2,940 mm	2,370 mm	2,425 mm	1,185 mm	1,670 mm	4,110 mm
	205.4"	117.8"	115.7"	93.3"	95.5"	46.7"	65.8"	161.8"