

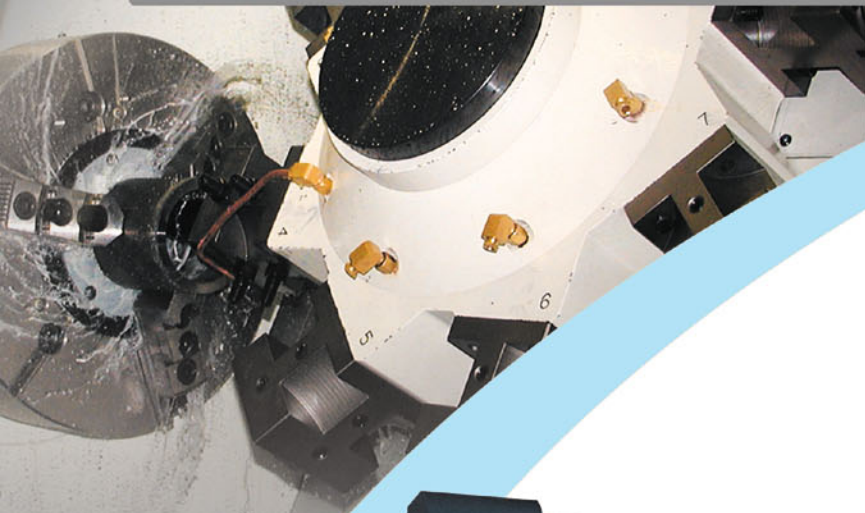


Super Turning Centers



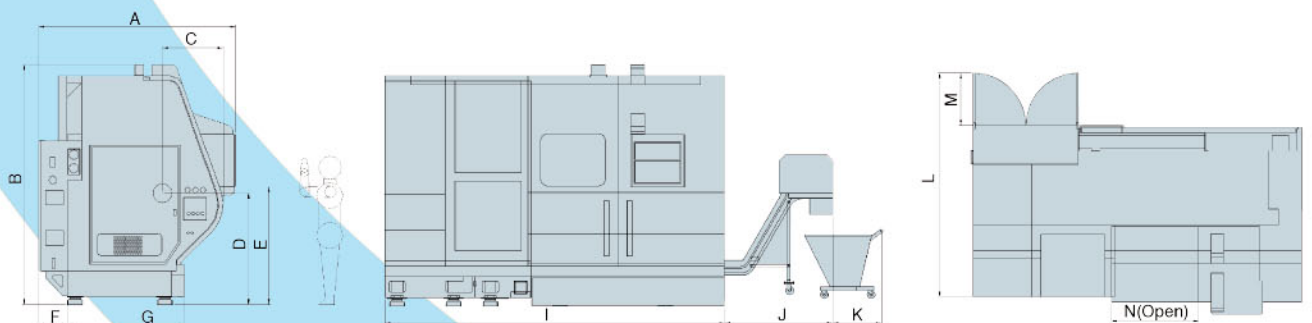
ST-40/60/70/80/100/130/160/200/240

Super Turning Center



ST-40 / 60

Dimensions





ST= SUPER TURNING CENTER

ST -



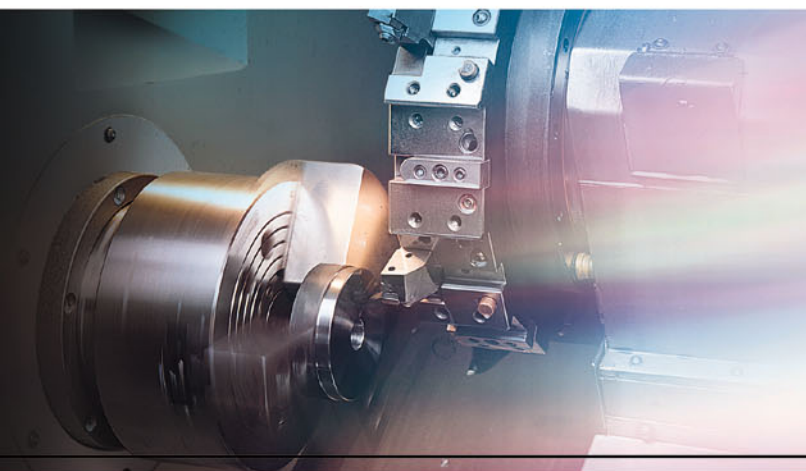
Addition Type
H-Advance
X-Opt.

Spindle Type

A-Bore ϕ 4.5" (ϕ 115 mm)/A2-8/3000 rpm
 B-Bore ϕ 5.2" (ϕ 132.5 mm)/A2-11/2000 rpm
 C-Bore ϕ 6" (ϕ 152 mm)/A2-15/1500 rpm
 D-Bore ϕ 7" (ϕ 185 mm)/A2-15/1000 rpm
 E-Bore ϕ 9.2" (ϕ 235 mm)/A2-15/750 rpm
 F-Bore ϕ 10" (ϕ 255 mm)/A2-15/600 rpm
 G-Bore ϕ 12.5" (ϕ 318 mm)/A2-20/500 rpm

Model (Z Axis Travel)

40-800 mm	130-3050 mm
60-1200 mm	160-4050 mm
70-1600 mm	200-5050 mm
80-2000 mm	240-6050 mm
100-2400 mm	



Unit: mm

Model	Item	A	B	C	D	E	F	G	I	J	K	L	M	N
ST-40 A/B/C		2270	2765	785	1315	1260	335	1350	3892	1240	560	2725	660	1030
		(89.4")	(108.9")	(30.9")	(51.8")	(49.6")	(13.2")	(53.1")	(153.2")	(48.8")	(22")	(107.3")	(26")	(40.6")
ST-60 A/B/C		2270	2765	785	1315	1260	335	1350	4292	1240	560	2725	660	1430
		(89.4")	(108.9")	(30.9")	(51.8")	(49.6")	(13.2")	(53.1")	(169")	(48.8")	(22")	(107.3")	(26")	(56.3")
ST-70 A/B/C		2290	2765	785	1315	1260	335	1350	4692	1240	560	2725	660	1825
		(90.2")	(108.9")	(30.9")	(51.8")	(49.6")	(13.2")	(53.1")	(184.7")	(48.8")	(22")	(107.3")	(26")	(71.9")

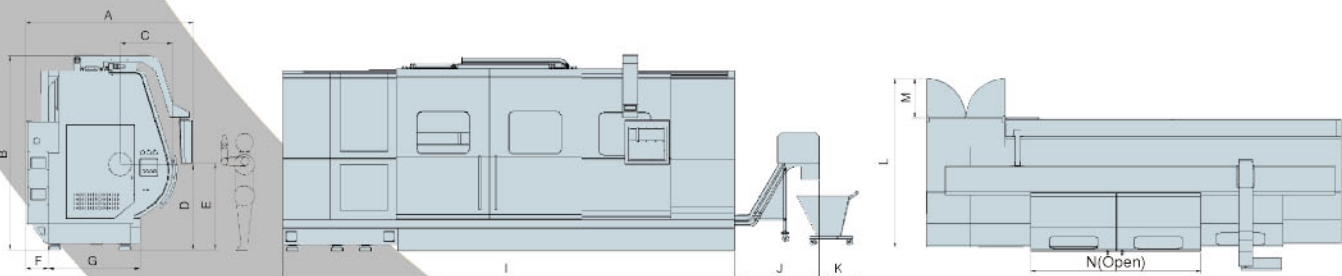
Super Turning Center



Setting the Standard for the Next Century All New
JOHNFORD ST Series CNC Turning Center

ST-130

Dimensions






The JOHNFORD ST series SUPER TURNING centers are exclusively designed to not only meet today's needs, but also future requirements. These turning centers give you the very finest in turning technology. Rugged construction assures optimum rigidity and stability for years of reliable, trouble free operation. Furthermore, these machines offer the turning accuracy and efficiency that are far beyond ordinary.

Unit: mm

Model	Item	A	B	C	D	E	F	G	I	J	K	L	M	N
ST-80	B/C/D	2460 (96.9")	2870 (113")	740 (29.1")	1270 (50")	1290 (50.8")	335 (13.2")	1350 (53.1")	5402 (212.7")	1450 (57.1")	560 (22")	2750 (108.3")	660 (26")	2455 (96.7")
ST-100	B/C/D	2460 (96.9")	2870 (113")	768 (30.2")	1270 (50")	1290 (50.8")	335 (13.2")	1350 (53.1")	5802 (228.4")	1450 (57.1")	560 (22")	2750 (108.3")	660 (26")	2595 (102.2")
ST-130	B/C/D	2460 (96.9")	2870 (113")	768 (30.2")	1270 (50")	1290 (50.8")	335 (13.2")	1350 (53.1")	6602 (259.9")	1450 (57.1")	560 (22")	2750 (108.3")	660 (26")	3222 (126.9")
ST-160	B/C/D	2500 (98.4")	2870 (113")	770 (30.3")	1270 (50")	1290 (50.8")	335 (13.2")	1350 (53.1")	8000 (315")	1450 (57.1")	560 (22")	2860 (112.6")	660 (26")	4100 (161.4")
ST-200	B/C/D	2500 (98.4")	2870 (113")	770 (30.3")	1270 (50")	1290 (50.8")	335 (13.2")	1350 (53.1")	9000 (354.3")	1450 (57.1")	560 (22")	2860 (112.6")	660 (26")	5100 (200.8")
ST-240	B/C/D	2500 (98.4")	2870 (113")	770 (30.3")	1270 (50")	1290 (50.8")	335 (13.2")	1350 (53.1")	10000 (393.7")	1450 (57.1")	560 (22")	2860 (112.6")	660 (26")	6100 (240.2")

Advanced Structure



↻ 2-speed Belt Type Gearbox (Std.)

↻ High precision spindle is the most suitable to do heavy cutting with rigid structure. It has great power exceeding the turning machines of the same grade in the industry.



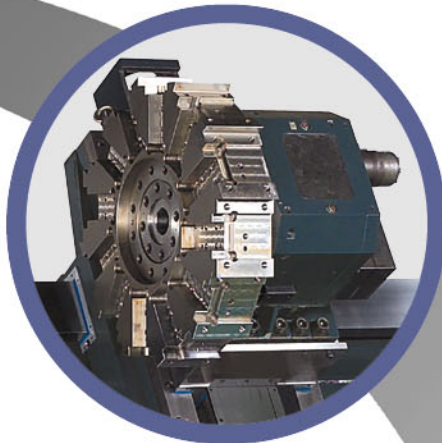
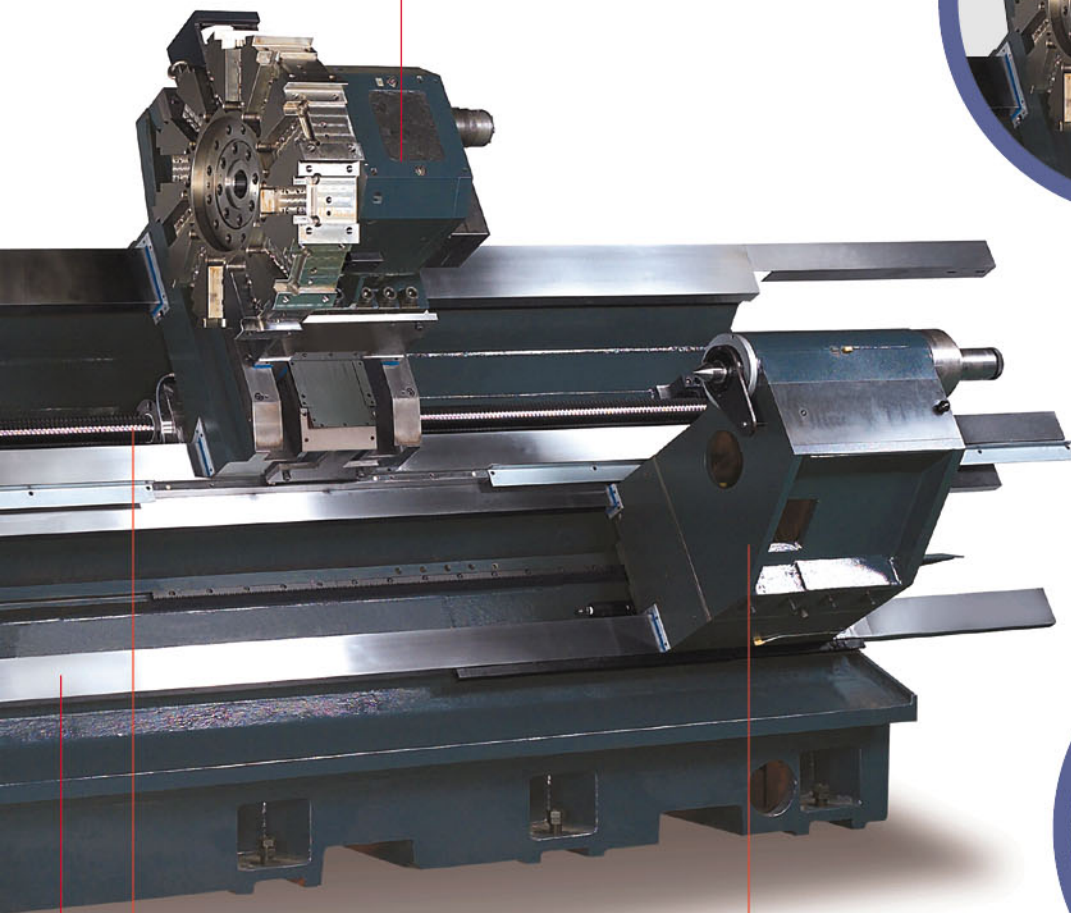
↻ 4-speed Belt Type Gearbox (Std.)



↻ 4-speed Built-in Type Gearbox (Opt.)

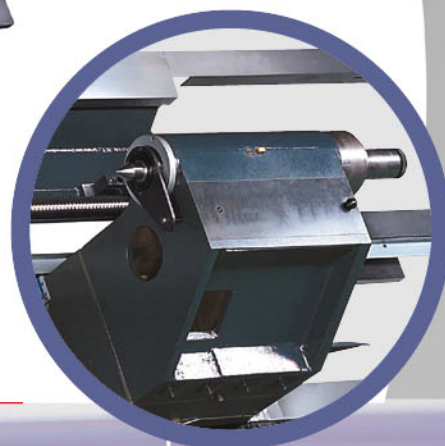
↻ The speed change gearbox is standard on all models which give high torque output for cutting. There are two types of gearboxes for your choice, which are the type of two speeds with auto Hi-Lo steps and the type of auto 4 speeds. They handle heavy duty cutting with ease and offer proper speed range for light and medium cutting as well. There are also two optional gearboxes for your choice, which are 4-speeds Built-in type and 2-speeds ZF gearboxes. If you need extra duty cutting on low speed with high torque, the 4-speeds Built-in type gearbox is your best option.

↻ The bed of machine is made from high quality Meehanite cast iron, one piece cast and scientifically constructed for high stability, rigidity, and accuracy.



↑ Turrets

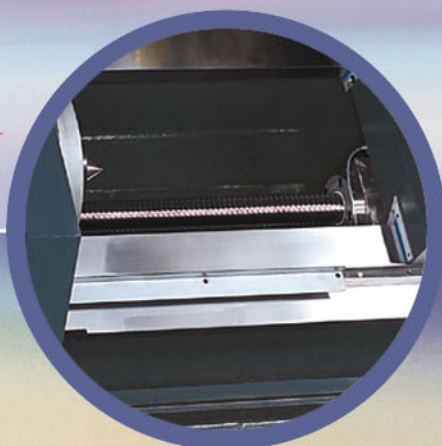
- High stiffness and accuracy (positioning $\pm 3''$ / repeatability $\pm 1''$)
- High loading capacity:
 1. \uparrow 1569 kgf-m \cdot \rightarrow 1675 kgf-m \cdot \leftarrow 800 kgf-m for CLT-160
 2. \uparrow 2512 kgf-m \cdot \rightarrow 4025 kgf-m \cdot \leftarrow 2029 kgf-m for CLT-200/300
- Clamping forces :
 1. 4200 kgf for CLT-160
 2. 11130 kgf for CLT-200 / 300



↑ Programmable hydraulic tailstock with

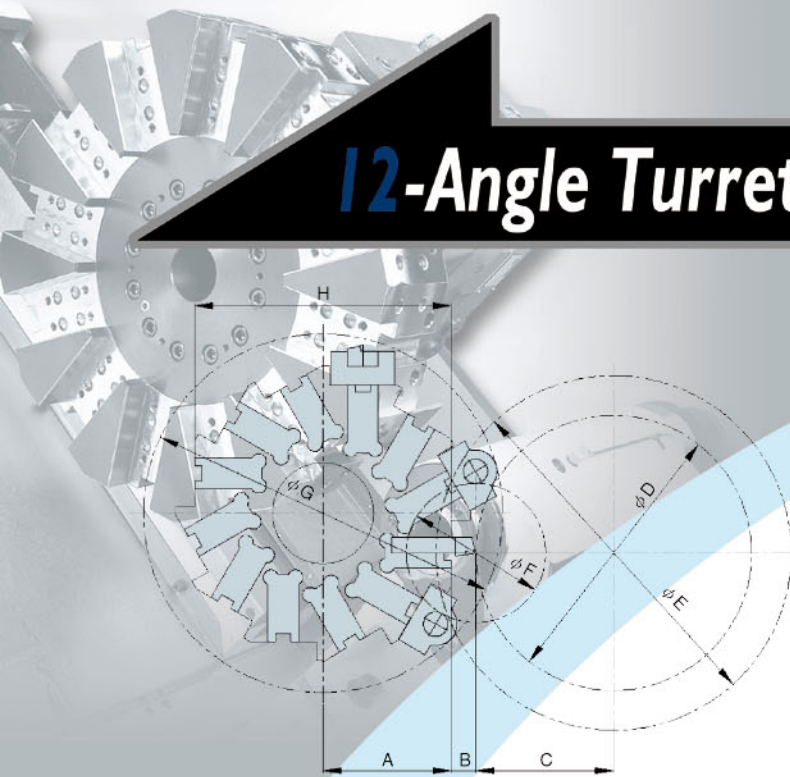
- Larger tailstock quill diameter and taper.
- Tailstock quill travel with limit switch control.
- Rotary spindle is standard.

↑ All slideways are hardened, precision ground coated with TURCITE-B plus master scraping, ensuring smoothness, accuracy and durability.

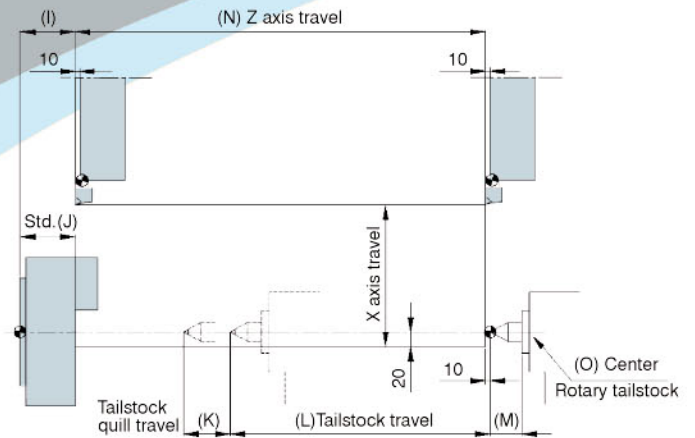


← Large diameters of ballscrews are as below:
 ST-40/60/70 ϕ 50 mm(2") for X axis and ϕ 50 mm(2") for Z axis
 ST-80/100/130 ϕ 50 mm(2") for X axis and ϕ 63 mm(2.5") for Z axis
 ST-160/200/240 ϕ 50 mm(2") for X axis and ϕ 70 mm(2.8") for Z axis
 They are pretensioned to eliminate thermal growth.

12-Angle Turret Working Capacity/Range



*See the specification.



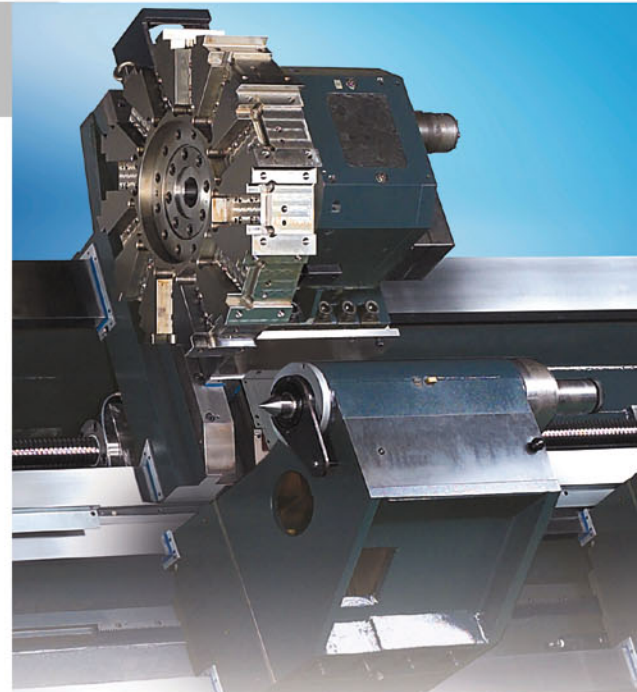
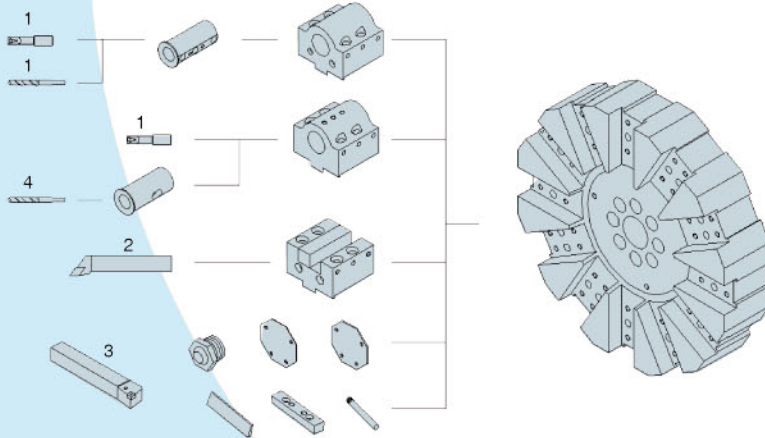
Unit: mm

Model	Item	A	B	C	D	E	F	G	H
Std. series									
ST-40/60/70		230(9")	36(1.4")	300(11.8")	600(23.6")	790(31.1")	160(6.3")	630(24.8")	460(18.1")
ST-80/100/130/160/200/240		320(12.6")	60(2.4")	350(13.8")	700(27.6")	920(36.2")	200(7.9")	875(34.4")	640(25.2")
H series									
ST-40/60/70		230(9")	36(1.4")	350(13.8")	700(27.6")	920(36.2")	160(6.3")	630(24.8")	460(18.1")
ST-80/100/130/160/200/240		320(12.6")	60(2.4")	400(15.7")	800(31.5")	1000(39.4")	200(7.9")	875(34.4")	640(25.2")
X series									
ST-40/60/70		230(9")	60(2.4")	400(15.7")	800(31.5")	1020(40.2")	200(7.9")	875(34.4")	640(25.2")
ST-80/100/130/160/200/240		320(12.6")	60(2.4")	500(19.7")	1000(39.4")	1200(47.2")	200(7.9")	875(34.4")	640(25.2")

Model	Item	K	L	M	N	O	Spindle Type
ST-40	125 (4.9")	500 (19.7")	900 (35.4")	110 (4.3")	800 (31.5")	MT.5	I / J
ST-60							
ST-70			1300 (51.2")		1600 (63")		A type
ST-80			1700 (66.9")		2000 (78.7")		B type
ST-100			2100 (82.7")		2400 (94.5")		C type
ST-130	150 (5.9")	2800 (110.2")	3750 (147.6")	126 (5")	3050 (120")	MT.7	155
ST-160							6.1"
ST-200			4750 (187")		5050 (198.8")		155
ST-240			5750 (226.4")		6050 (238.2")		6.1"

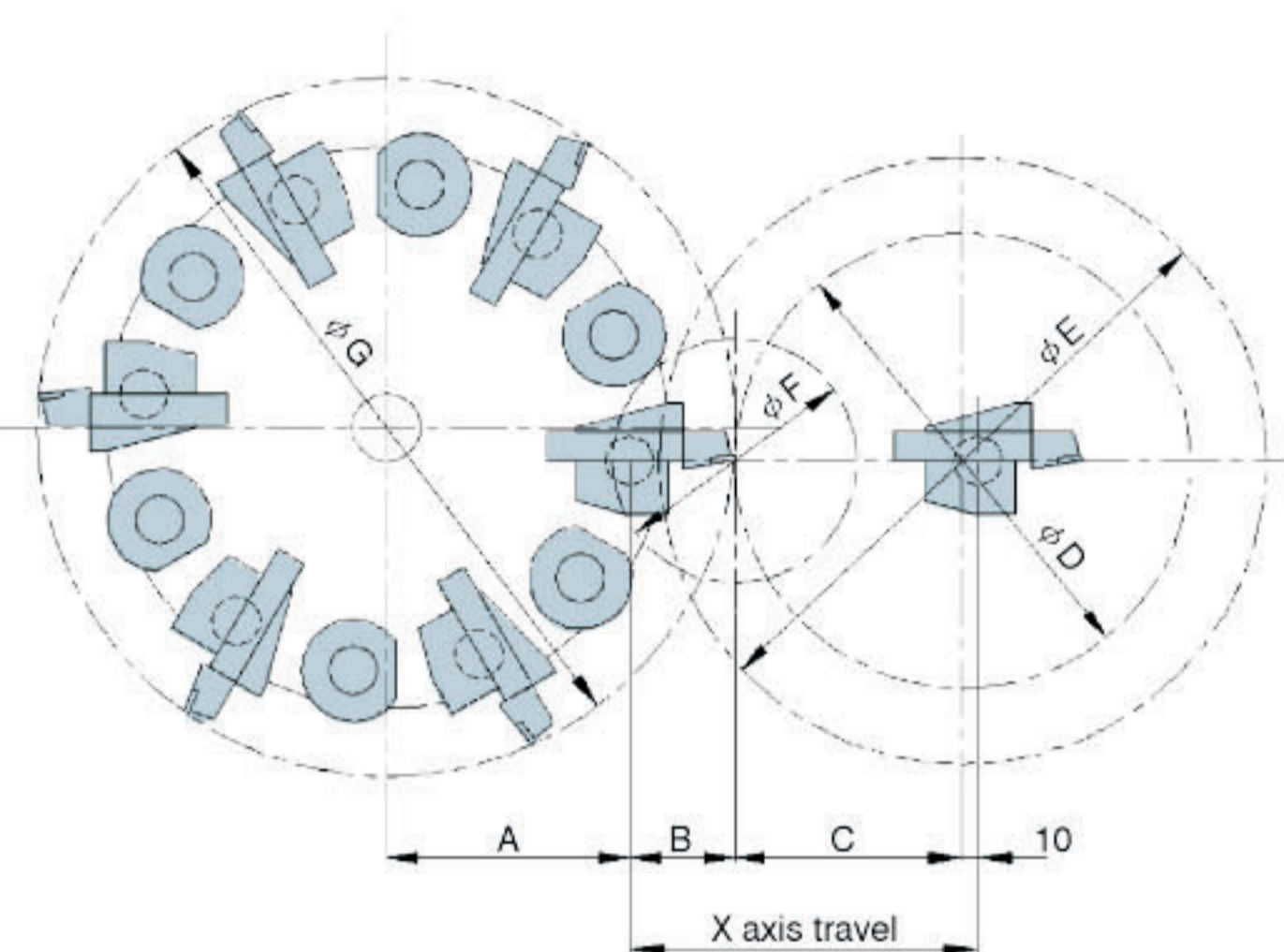
Tool

Direct Mount

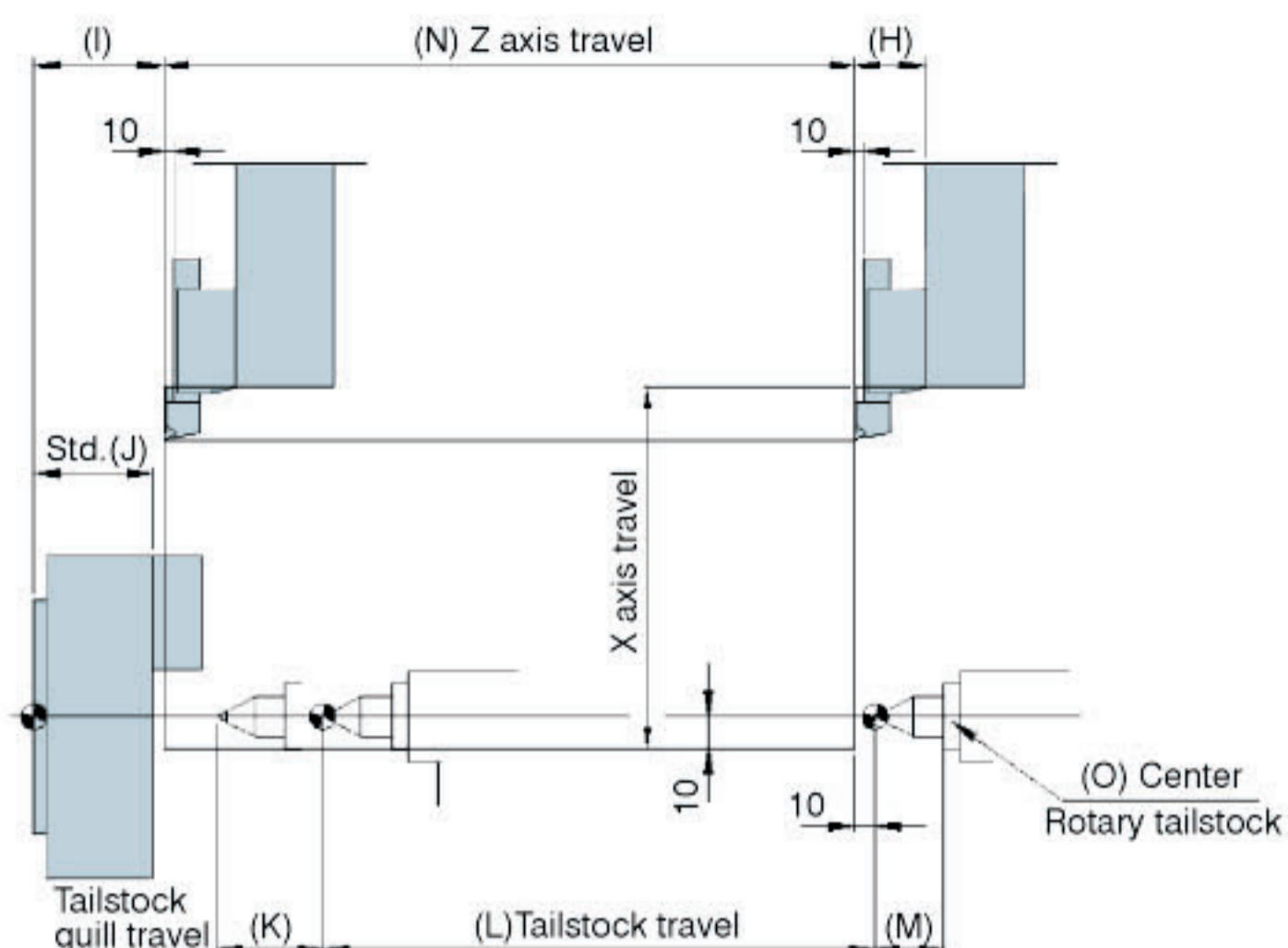


No.	Tool Model	ST-40 / 60 / 70 series		ST-80 / 100 / 130 / 160 / 200 / 240 series	
		Metric System	Empirical System	Metric System	Empirical System
1	Bore	$\phi 12, \phi 16, \phi 20, \phi 25,$ $\phi 32, \phi 40, \phi 50$	$\phi 1/2", \phi 5/8", \phi 3/4", \phi 1",$ $\phi 1-1/4", \phi 1-1/2", \phi 2"$	$\phi 12, \phi 16, \phi 20, \phi 25,$ $\phi 32, \phi 40, \phi 50, \phi 60$	$\phi 1/2", \phi 5/8", \phi 3/4", \phi 1",$ $\phi 1-1/4", \phi 1-1/2", \phi 2", \phi 3"$
2	End	<input type="checkbox"/> 32	<input type="checkbox"/> 1-1/4"	<input type="checkbox"/> 50	<input type="checkbox"/> 2"
3	Outer dia.	<input type="checkbox"/> 32	<input type="checkbox"/> 1-1/4"	<input type="checkbox"/> 32	<input type="checkbox"/> 1-1/4"
4	Drill	MT#2, #3, #4, #5		MT#2, #3, #4, #5	

12-VDI Turret Working Capacity/Range



*See the specification.

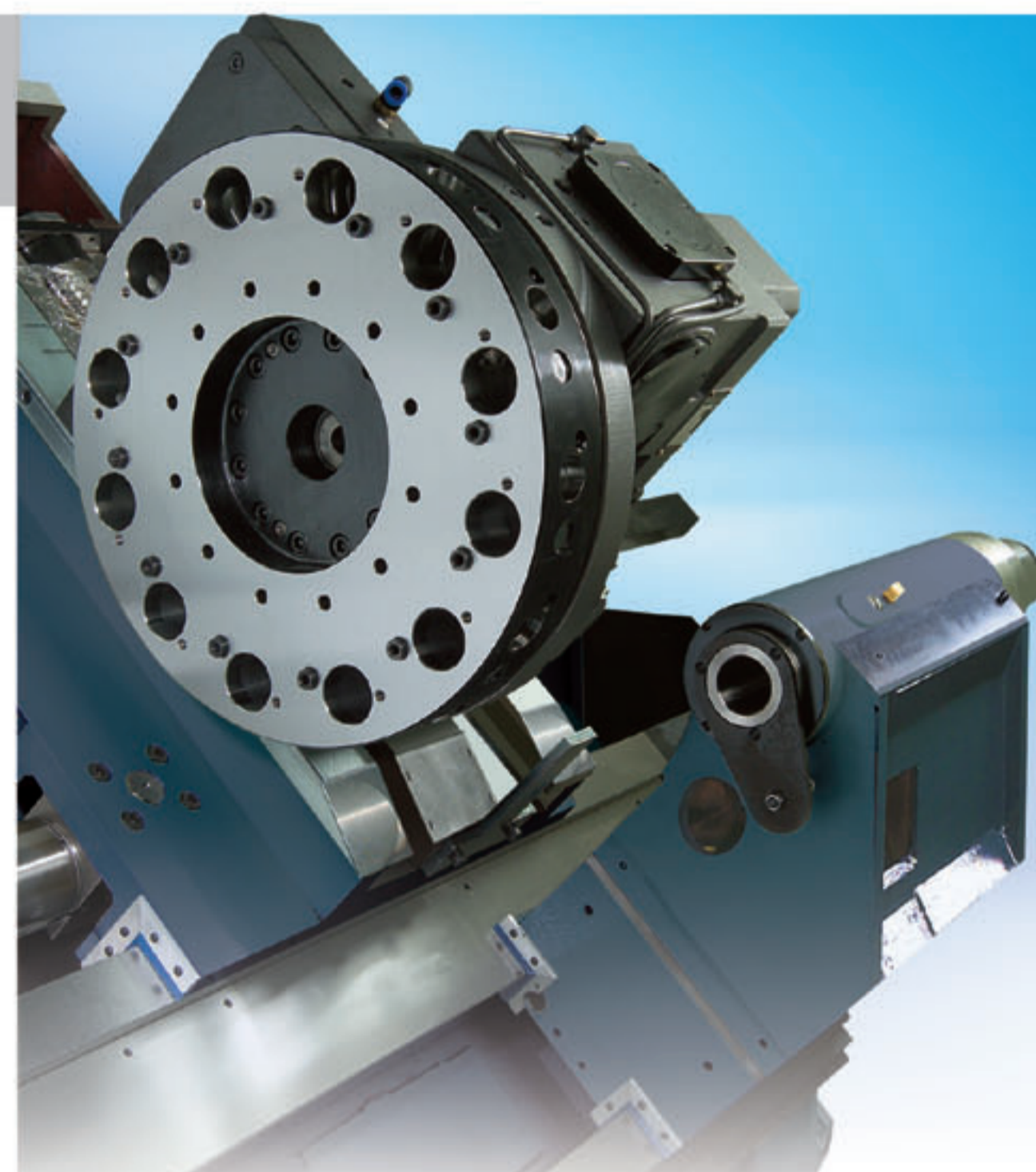
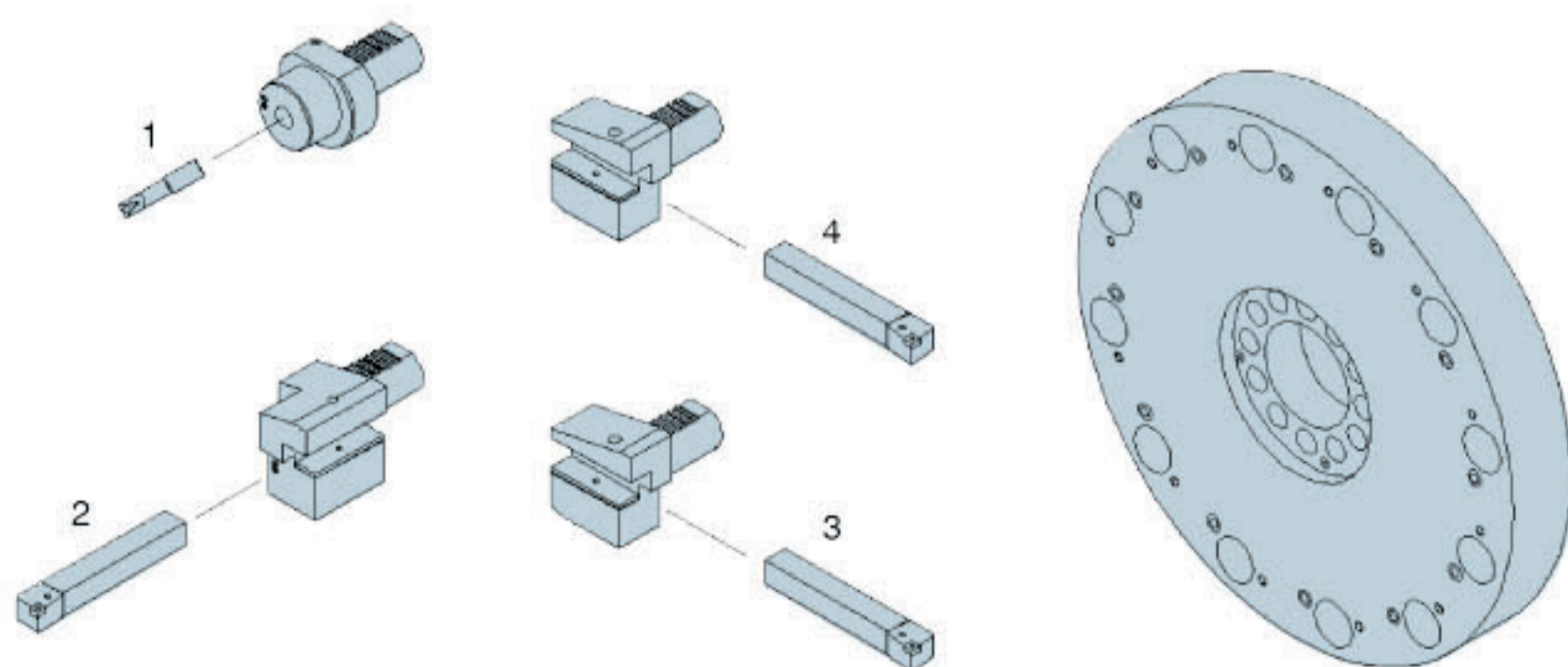


Unit: mm

Model	Item	A	B	C	D	E	F	G	H	Model	Item	K	L	M	N	O	Spindle Type
ST-40/60/70	Std.	200(7.9")	64(2.5")	246(9.7")	492(19.4")	790(31.1")	170(6.7")	720(28.3")	57(2.2")	ST-40		125	500 (19.7")	110	800 (31.5")	MT.5	I / J
ST-80/100	Std.	200(7.9")	64(2.5")	296(11.67")	592(23.3")	920(36.2")	170(6.7")	820(32.3")	57(2.2")	ST-60	(4.9")	900 (35.4")	(4.3")	1200 (47.2")	A type		
ST-100/130/160/200/240	C/D Type	245(9.6")	76.5(3")	283.5(11.2")	567(22.3")	920(36.2")	212(8.3")	820(32.3")	62(2.4")	ST-70		1300 (51.2")		1600 (63")	MT.7	B type	149 (5.9")
ST-40/60/70	H series	200(7.9")	64(2.5")	296(11.7")	592(23.3")	920(36.2")	170(6.7")	820(32.3")	57(2.2")	ST-80		1700 (66.9")		2000 (78.7")			C type
ST-80/100	H series	200(7.9")	64(2.5")	346(13.6")	692(27.2")	1000(39.4")	170(6.7")	900(35.4")	57(2.2")	ST-100		2100 (82.7")		2400 (94.5")	MT.7	D type	155 (6.1")
ST-100/130/160/200/240	H series C/D	245(9.6")	76.5(3")	333.5(13.1")	667(26.3")	1000(39.4")	212(8.3")	900(35.4")	62(2.4")	ST-130	150	2800 (110.2")	126	3050 (120")			
ST-40/60/70	X series	200(7.9")	64(2.5")	346(13.6")	692(27.2")	1020(40.2")	170(6.7")	900(35.4")	57(2.2")	ST-160	(5.9")	3750 (147.6")	(5")	4050 (159.4")			
ST-80/100	X series	200(7.9")	64(2.5")	446(17.6")	892(35.1")	1200(47.2")	170(6.7")	1000(39.4")	57(2.2")	ST-200		4750 (187")		5050 (198.8")			
ST-100/130/160/200/240	X series C/D	245(9.6")	76.5(3")	433.5(17")	867(34.1")	1200(47.2")	212(8.3")	1000(39.4")	62(2.4")	ST-240		5750 (226.4")		6050 (238.2")			

Tool

VDI (Opt.)

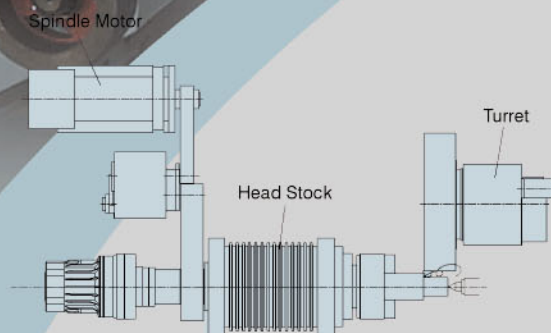


Tool Model	ST-40 / 60 / 70 series	ST-80 / 100 / 130 / 160 / 200 / 240 series
1 Bore	ϕ 12, ϕ 16, ϕ 20, ϕ 25, ϕ 30, ϕ 32, ϕ 40, ϕ 50	ϕ 12, ϕ 16, ϕ 20, ϕ 25, ϕ 30, ϕ 32, ϕ 40, ϕ 50, ϕ 60
2 End	<input type="checkbox"/> 32	<input type="checkbox"/> 32 / <input type="checkbox"/> 40
3 Outer dia.	<input type="checkbox"/> 32	<input type="checkbox"/> 32 / <input type="checkbox"/> 40
4 Drill	MT#1, #2, #3	MT#2, #3, #4

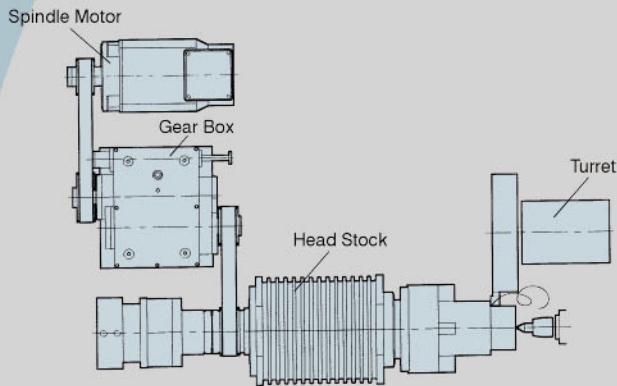
Spindle Power & Torque Chart

There are any other different kinds of spindle speed for your choice.

Construction



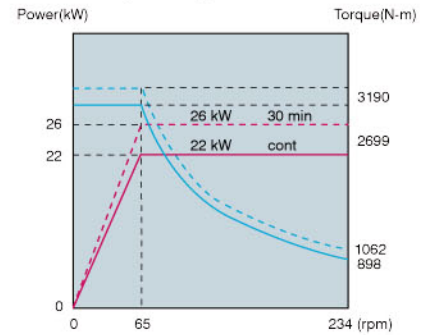
With Auto 2-speed gear box drive



With Auto 4-speed drive

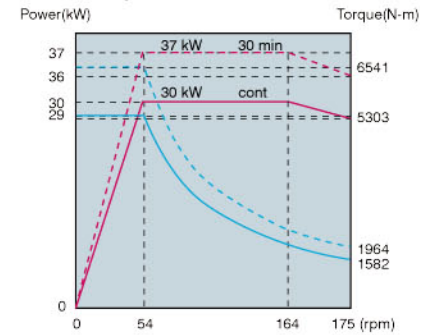
ST-B Series with Auto 4-speed

Low speed SI, ratio=0.0519



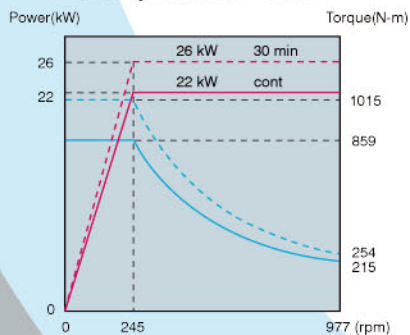
ST-C Series with Auto 4-speed

Low speed SI, ratio=0.04697

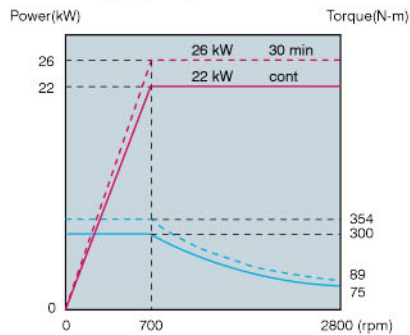


ST-A Series with Auto 2-speed Gear Box

Low speed, ratio=0.163

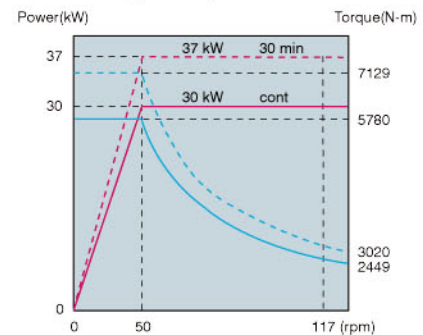


High speed, ratio=0.467



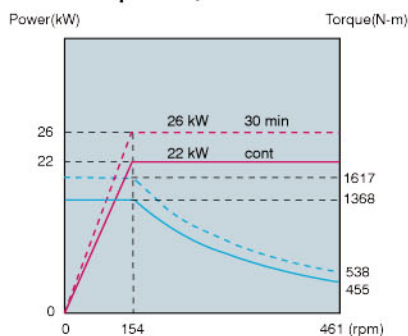
ST-D Series with Auto 4-speed

Low speed SI, ratio=0.0431

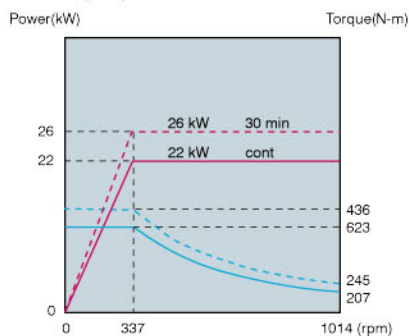


Gear Box

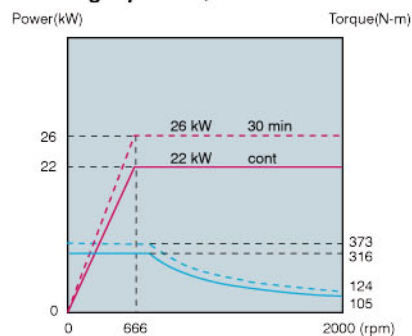
Low speed S2, ratio=0.1024



High speed S3, ratio=0.2249

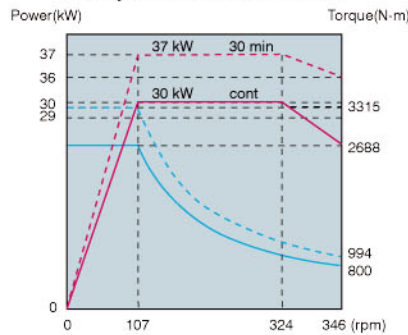


High speed S4, ratio=0.4437

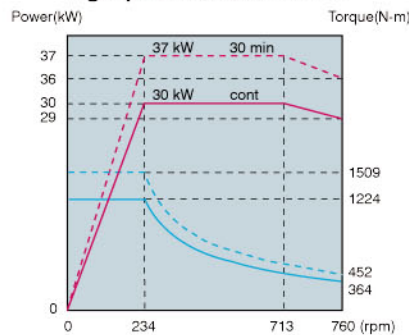


Gear Box

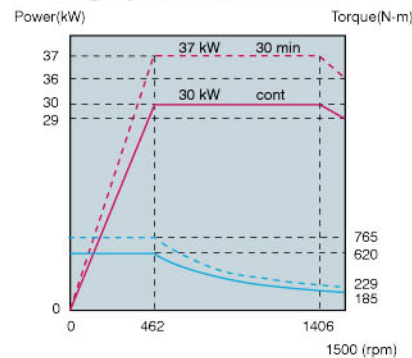
Low speed S2, ratio=0.09267



High speed S3, ratio=0.2036

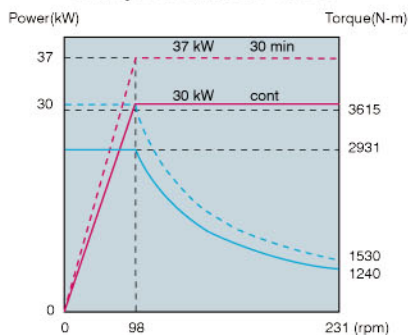


High speed S4, ratio=0.4017

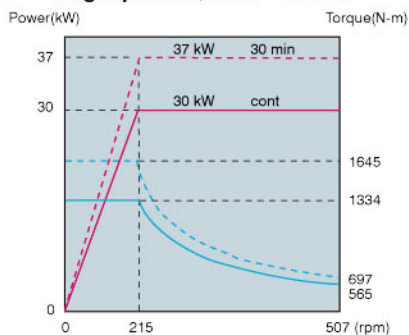


Gear Box

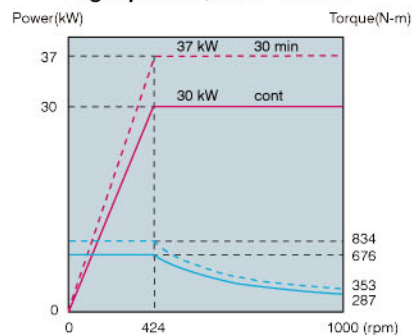
Low speed S2, ratio=0.085



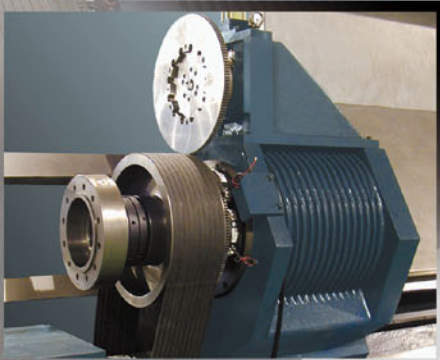
High speed S3, ratio=0.1868



High speed S4, ratio=0.3685



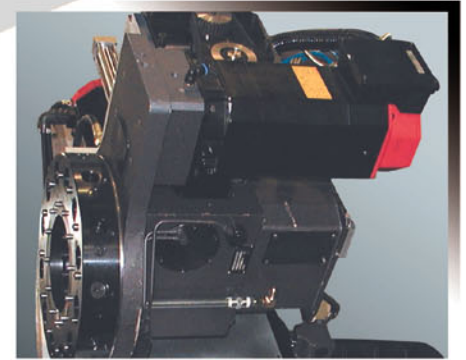
Power Turret with C-Axis/C+Y-Axis Function



C.F. Axis



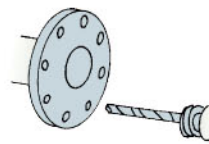
Power Turret with C-Axis



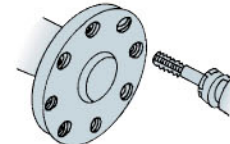
Power Turret with C+Y-Axis

C-axis or C+Y-axis provides flexible turning performance for handling cam or special profiled parts that need milling / drilling / tapping operations. 0.001 degree indexing allows accurate circular positioning.

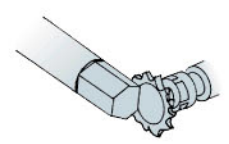
Examples for Machining with Live Tools



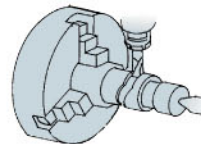
Drilling



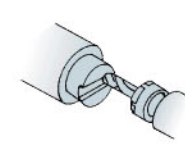
Thread cutting



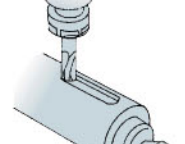
Face cutting



Cam cutting

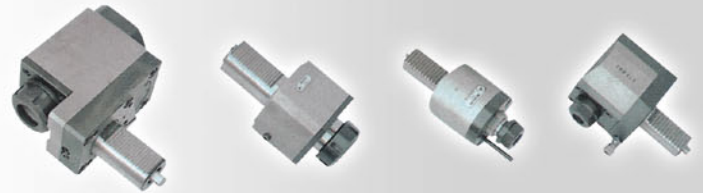


Slot cutting



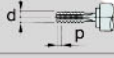


Key way cutting

Live Tooling



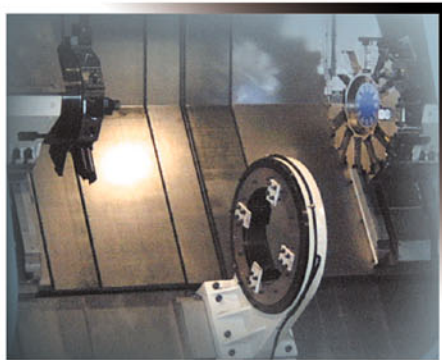
Standard Features-Great Equipment

Item	Model	ST-40/60/70/80 A, B, C Series ST-100/130/160/200/240 A, B Series	ST-100/130/160/200/240 C Series ST-80/100/130/160/200/240 D Series	ST-40~240 (All Series with Y-Axis)
Power turret model		TBMA 250	TBMA 320	TBYA 250
Max. speed of turret		3276 rpm	2000 rpm	3276 rpm
Twist drilling	$d \times a$ (mm)x(mm/°)	 22 x 0.20	25 x 0.5	22 x 0.20
Slot milling	$d \times P \times a$ (mm)x(mm)x(mm/min)	 25 x 20 x 40 (0.98" x 0.79" x 1.57")	40 x 20 x 35 (1.57" x 0.79" x 1.38")	25 x 20 x 40 (0.98" x 0.79" x 1.57")
Tapping	$d \times p$ (mm)x(mm)	 M18 x 2	M24 x 3	M18 x 2
Toolholder shaft size		φ50	φ60	φ50
Motor horsepower		AC 5.5 / 3.7 kW	AC 7.5 / 5.5 kW	AC 5.5 / 3.7 kW

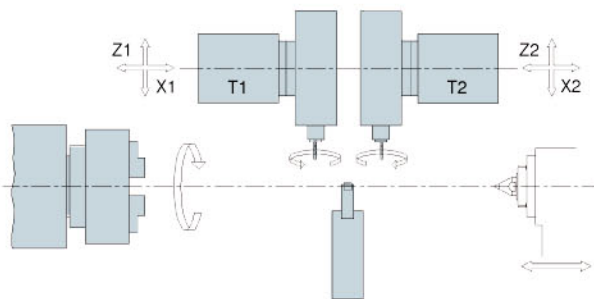
Twin-Turret CNC Lathes



Option Application-
LH: Grinding Head
RH: Y Axis+Power Turret
Steady Rest (Auto Self-centering)



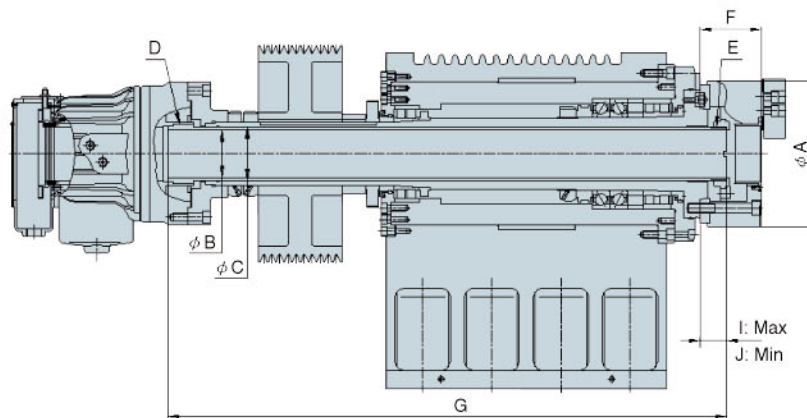
Option Application-
LH: VDI Turret
RH: 12-Angle Turret
Steady Rest (Special Order Made)



Features:

- The ST series machines can be constructed with one spindle plus two turrets. By the two systems, these machines can make the same or different machining on both sides of workpiece.
- For example, when a quill or a tube is machining on this kind of ST machine, it can cut the workpiece on the outer diameter and the inner diameter at the same time to achieve good circularity and performance.
- For performance, this ST machine is constructed like combining two lathes into one. The two systems are not only operated individually but also can work together to finish all of the machining jobs of a workpiece.
- Using this machine is the same as operating two lathes, but it can reduce the floor area on machine, worker employment, and the time for workpiece handling and operation.
- All of the machining jobs of a workpiece can be finished at a time to get good circularity.
- Equipping with a power turret, the ST machine can also do the machining of drilling, milling, or grinding.

Spindle Construction



Unit: mm

Model	Dimension	ϕA	ϕB	ϕC	D	E	F	G	I	J
ST-40/60/70, A	Std.	304 (12")	$\phi 91$ (3.6")	$\phi 115$ (4.5")	M100 x P2.0	M100 x P2.0	122 (4.8")	1178 (46.4")	54 (2.1")	31 (1.2")
	Opt.	381 (15")					160 (6.3")			
ST-40/60/70, B	Std.	381 (15")	$\phi 116$ (4.6")	$\phi 132.5$ (5.2")	M130 x P2.0	M130 x P2.0	149 (5.9")	1088 (42.8")	72 (2.8")	49 (1.9")
	Opt.	450 (17.7")					183 (7.2")			
ST-40/60/70, C	Std.	510 (20.1")	$\phi 139$ (5.5")	$\phi 152$ (6")	M175 x P3.0	M150 x P2.0	155 (6.1")	1264 (49.8")	76 (3")	53 (2.1")
	Opt.	610 (24")					183 (7.2")			
ST-80/100/130/160/200/240, B	Std.	381 (15")	$\phi 116$ (4.6")	$\phi 132.5$ (5.2")	M130 x P2.0	M130 x P2.0	149 (5.9")	1088 (42.8")	72 (2.8")	49 (1.9")
	Opt.	450 (17.7")					183 (7.2")			
ST-80/100/130/160/200/240, C	Std.	510 (20")	$\phi 139$ (5.5")	$\phi 152$ (6")	M175 x P3.0	M150 x P2.0	155 (6.1")	1264 (49.8")	76 (3")	53 (2.1")
	Opt.	610 (24")					183 (7.2")			
ST-80/100/130/160/200/240, D	Std.	510 (20")	$\phi 165$ (6.5")	$\phi 185$ (7.3")	M175 x P3.0	M175 x P3.0	155 (6.1")	1108 (43.6")	76 (3")	53 (2.1")
	Opt.	610 (24")					183 (7.2")			
ST-80/100/130/160/200/240, E	Std.	510 (20")	$\phi 204$ (8")	$\phi 236$ (9.3")	M215 x P3.0	M215 x P3.0	155 (6.1")	1105 (43.5")	76 (3")	53 (2.1")
	Opt.	610 (24")					183 (7.2")			

Specifications

Item	Model	ST-40A/60A/70A	ST-40B/60B/70B	ST-40C/60C/70C	ST-80B/100B/130B 160B/200B/240B	ST-80C/100C/130C 160C/200C/240C	ST-80D/100D/130D 160D/200D/240D
Swing over bed (mm)		790 (31.1")	790 (31.1")	790 (31.1")	920 (36.2")	920 (36.2")	920 (36.2")
Swing over cross slide (mm)		600 (23.6")	600 (23.6")	600 (23.6")	700 (27.6")	700 (27.6")	700 (27.6")
Chuck size (mm)		304 (12") (Std.) 381 (15") (Opt.)	381 (15") (Std.) 450 (17.7") (Opt.)	510 (20.1") (Std.) 610 (24") (Opt.)	381 (15") (Std.) 450 (17.7") (Opt.)	510 (20.1") (Std.) 610 (24") (Opt.)	510 (20.1") (Std.) 610 (24") (Opt.)
Bar capacity (mm)		91 (3.6") (Std.) 102 (4") (Opt.)	116 (4.6")	139 (5.5")	116 (4.6")	139 (5.5")	165 (6.5")
Spindle nose		A2-8 / A2-11 (Opt.)	A2-11	A2-15	A2-11	A2-15	A2-15
Spindle bore (mm)		115 (4.5")	132.5 (5.2")	152 (6")	132.5 (5.2")	152 (6")	185 (7.3")
Spindle speed, step (s)		Auto Hi-Lo	Auto 4 speeds	Auto 4 speeds	Auto 4 speeds	Auto 4 speeds	Auto 4 speeds
Spindle speed range (rpm)		3000 for 12" (91) chuck 2800 for 12" (102) chuck 2500 for 15" (102) chuck	2000	1500 (Std.) 1400 (Opt.)	2000	1500 (Std.) 1400 (Opt.)	1000
Spindle motor (kW) (30 min / con.)		22 / 26	22 / 26 (Std.) 30 / 37 (Opt.)	30 / 37 (Std.) 37 / 45 (Opt.)	22 / 26 (Std.) 30 / 37 (Opt.)	30 / 37 (Std.) 37 / 45 (Opt.)	30 / 37 (Std.) 37 / 45 (Opt.)
Spindle bearing diameter (mm)		160 (6.3")	180 (7.1")	200 (7.9")	180 (7.1")	200 (7.9")	240 (9.4")
No. of tools		12					
Cross travel (X-axis) (mm)		320 (12.6")			370 (14.6")		
Y-axis travel (Opt.) (mm)		±75 (3")					
Longitudinal travel (Z-axis)(mm)		800 / 1200 / 1600 (31.5" / 47.2" / 63")			2000 / 2400 / 3050 (78.7" / 94.5" / 120.1") 4050 / 5050 / 6050 (159.4" / 198.8" / 238.2")		
Rapid traverse (m/min)		X: 15 Z: 18			X: 10 Z: 12		
Tailstock travel (mm)		500 / 900 / 1300 (19.7" / 35.4" / 51.2")			1700 / 2100 / 2800 (66.9" / 82.7" / 110.2") 3750 / 4750 / 5750 (147.6" / 187" / 226.4")		
Tailstock quill travel (mm)		125 (4.9")			150 (5.9")		
Tailstock quill diameter (mm)		φ 125 (4.9")			φ 200 (7.9")		
Tailstock Spindle taper (kW)		MT#5			MT#7		
Servo motor (X-axis) (kW)		4			7		
Servo motor (Y-axis)(Opt.) (kW)		3					
Servo motor (Z-axis) (kW)		4			7		
Bed inclination		60°					
Weight (kg) (lb)		11000 / 12000 / 13100 (24200/26400/28820)	11000 / 12100 / 13200 (24200/26620/29040)	11150 / 13150 / 13250 (24530/ 28930/ 29150)	15000 / 16500 / 20100 (33000/ 36300/ 44220) 24100 / 28100 / 32100 (53020/ 61820/ 70620)	15300 / 16800 / 20300 (33660/ 36960/ 44660) 24200 / 28200 / 32200 (53240/ 62040/ 70840)	15500 / 17000 / 20500 (34100/ 37400/ 45100) 24500 / 28500 / 32500 (53900/ 62700/ 71500)
Machine dimensions (mm)	W x H	2270 x 2765 (89.4" x 108.9") 2290 x 2765 (90.2" x 108.9") (for ST-70)			2460 x 2870 (96.9" x 113")		
	L	5132 / 5532 / 5932 (202" / 217.8" / 233.5")			6852 / 7252 / 8052 / 9450 / 10450 / 11450 (269.8" / 285.5" / 317" / 372" / 411.4" / 450.8")		

■ All data subject to change without notice.

■ VDI turret working capacity / Range (see page 8).

■ All the specifications are listed with the FANUC CNC system and 12-angle turret.

Item	Model	ST-40AH/ 60AH / 70AH	ST-40BH/ 60BH / 70BH	ST-40CH/ 60CH / 70CH	ST-80BH/100BH/130BH 160BH/200BH/240BH	ST-80CH/100CH/130CH 160CH/200CH/240CH	ST-80DH/100DH/130DH 160DH/200DH/240DH
Swing over bed (mm)		920 (36.2")	920 (36.2")	920 (36.2")	1000 (39.4")	1000 (39.4")	1000 (39.4")
Swing over cross slide (mm)		700 (27.6")	700 (27.6")	700 (27.6")	800 (31.5")	800 (31.5")	800 (31.5")
Chuck size (mm)		304 (12") (Std.) 381 (15") (Opt.)	381 (15") (Std.) 450 (17.7") (Opt.)	510 (20.1") (Std.) 610 (24") (Opt.)	381 (15") (Std.) 450 (17.7") (Opt.)	510 (20.1") (Std.) 610 (24") (Opt.)	510 (20.1") (Std.) 610 (24") (Opt.)
Bar capacity (mm)		91 (3.6") (Std.) 102 (4") (Opt.)	116 (4.6")	139 (5.5")	116 (4.6")	139 (5.5")	165 (6.5")
Spindle nose		A2-8/ A2-11 (Opt.)	A2-11	A2-15	A2-11	A2-15	A2-15
Spindle bore (mm)		115 (4.5")	132.5 (5.2")	152 (6")	132.5 (5.2")	152 (6")	185 (7.3")
Spindle speed, step (s)		Auto Hi-Lo	Auto 4 speeds	Auto 4 speeds	Auto 4 speeds	Auto 4 speeds	Auto 4 speeds
Spindle speed range (rpm)		3000 for 12"(91) chuck 2800 for 12"(102) chuck 2500 for 15"(102) chuck	2000	1500 (Std.) 1400 (Opt.)	2000	1500 (Std.) 1400 (Opt.)	1000
Spindle motor (kW) (30 min / con.)		22 / 26	22 / 26 (Std.) 30 / 37 (Opt.)	30 / 37 (Std.) 37 / 45 (Opt.)	22 / 26 (Std.) 30 / 37 (Opt.)	30 / 37 (Std.) 37 / 45 (Opt.)	30 / 37 (Std.) 37 / 45 (Opt.)
Spindle bearing diameter (mm)		160 (6.3")	180 (7.1")	200 (7.9")	180 (7.1")	200 (7.9")	240 (9.4")
No. of tools		12					
Cross travel (X-axis) (mm)		370 (14.6")			420 (16.5")		
Y-axis travel (Opt.) (mm)		±75 (3")					
Longitudinal travel (Z-axis) (mm)		800 / 1200 / 1600 (31.5" / 47.2" / 63")			2000 / 2400 / 3050 (78.7" / 94.5" / 120.1") 4050 / 5050 / 6050 (159.4" / 198.8" / 238.2")		
Rapid traverse (m/min)		X: 15 Z: 18			X: 10 Z: 12		
Tailstock travel (mm)		500 / 900 / 1300 (19.7" / 35.4" / 51.2")			1700 / 2100 / 2800 (66.9" / 82.7" / 110.2") 3750 / 4750 / 5750 (147.6" / 187" / 226.4")		
Tailstock quill travel (mm)		125 (4.9")			150 (5.9")		
Tailstock quill diameter (mm)		φ 125 (4.9")			φ 200 (7.9")		
Tailstock Spindle taper (kW)		MT#5			MT#7		
Servo motor (X-axis) (kW)		7					
Servo motor (Y-axis)(Opt.) (kW)		3					
Servo motor (Z-axis) (kW)		7					
Bed inclination		60°					
Weight (kg) (lb)		11000 / 12100 / 13200 (24200/26620/29040)	11200 / 12200 / 13300 (24640/ 26840/ 29260)	11250 / 13250 / 13350 (24750/29150/29370)	15100 / 16600 / 20200 (33220/ 36520/ 44440) 24200 / 28200 / 32200 (53240/ 62040/ 70840)	15400 / 16900 / 20400 (33880/ 37180/ 44880) 24400 / 28400 / 32400 (53680/ 62480/ 71280)	15600 / 17100 / 20600 (34320/ 37620/ 45320) 24600 / 28600 / 32600 (54120/ 62920/ 71720)
Machine dimensions (mm)	W x H	2270 x 2765 (89.4" x 108.9") 2290 x 2765 (90.2" x 108.9") (for ST-70)			2460 x 2870 (96.9" x 113")		
	L	5132 / 5532 / 5932 (202" / 217.8" / 233.5")			6852 / 7252 / 8052 / 9450 / 10450 / 11450 (269.8" / 285.5" / 317" / 372" / 411.4" / 450.8")		

■ All data subject to change without notice.

■ VDI turret working capacity / Range (see page 8).

■ All the specifications are listed with the FANUC CNC system and 12-angle turret.

Item	Model	ST-40AX 60AX/70AX	ST-40BX 60BX/70BX	ST-40CX 60CX/70CX	ST-80BX/100BX/130BX 160BX/200BX/240BX	ST-80CX/100CX/130CX 160CX/200CX/240CX	ST-80DX/100DX/130DX 160DX/200DX/240DX
Swing over bed (mm)		1020 (40.2")	1020 (40.2")	1020 (40.2")	1200 (47.2")	1200 (47.2")	1200 (47.2")
Swing over cross slide (mm)		800 (31.5")	800 (31.5")	800 (31.5")	1000 (39.4")	1000 (39.4")	1000 (39.4")
Chuck size (mm)		304 (12") (Std.) 381 (15") (Opt.)	381 (15") (Std.) 450 (17.7") (Opt.)	510 (20.1") (Std.) 610 (24") (Opt.)	381 (15") (Std.) 450 (17.7") (Opt.)	510 (20.1") (Std.) 610 (24") (Opt.)	510 (20.1") (Std.) 610 (24") (Opt.)
Bar capacity (mm)		91 (3.6") (Std.) 102 (4") (Opt.)	116 (4.6")	139 (5.5")	116 (4.6")	139 (5.5")	165 (6.5")
Spindle nose		A2-8 / A2-11 (Opt.)	A2-11	A2-15	A2-11	A2-15	A2-15
Spindle bore (mm)		115 (4.5")	132.5 (5.2")	152 (6")	132.5 (5.2")	152 (6")	185 (7.3")
Spindle speed, step (s)		Auto Hi-Lo	Auto 4 speeds	Auto 4 speeds	Auto 4 speeds	Auto 4 speeds	Auto 4 speeds
Spindle speed range (rpm)		3000 for 12"(91) chuck 2800 for 12"(102) chuck 2500 for 15"(102) chuck	2000	1500 (Std.) 1400 (Opt.)	2000	1500 (Std.) 1400 (Opt.)	1000
Spindle motor (kW) (30 min / con.)		22 / 26	22 / 26 (Std.) 30 / 37 (Opt.)	30 / 37 (Std.) 37 / 45 (Opt.)	22 / 26 (Std.) 30 / 37 (Opt.)	30 / 37 (Std.) 37 / 45 (Opt.)	30 / 37 (Std.) 37 / 45 (Opt.)
Spindle bearing diameter (mm)		160 (6.3")	180 (7.1")	200 (7.9")	180 (7.1")	200 (7.9")	240 (9.4")
No. of tools		12					
Cross travel (X-axis) (mm)		420 (16.5")			520 (20.5")		
Y-axis travel (Opt.) (mm)		±75 (3")					
Longitudinal travel (Z-axis) (mm)		800 / 1200 / 1600 (31.5" / 47.2" / 63")			2000 / 2400 / 3050 (78.7" / 94.5" / 120.1") 4050 / 5050 / 6050 (159.4" / 198.8" / 238.2")		
Rapid traverse (m/min)		X: 12 Z: 16			X: 10 Z: 10		
Tailstock travel (mm)		500 / 900 / 1300 (19.7" / 35.4" / 51.2")			1700 / 2100 / 2800 (66.9" / 82.7" / 110.2") 3750 / 4750 / 5750 (147.6" / 187" / 226.4")		
Tailstock quill travel (mm)		125 (4.9")			150 (5.9")		
Tailstock quill diameter (mm)		φ 125 (4.9")			φ 200 (7.9")		
Tailstock Spindle taper (kW)		MT#5			MT#7		
Servo motor (X-axis) (kW)		7					
Servo motor (Y-axis)(Opt.)(kW)		3					
Servo motor (Z-axis) (kW)		7					
Bed inclination		60°					
Weight (kg) (lb)		11200 / 12200 / 13300 (24640/26840/29260)	11300 / 12300 / 13400 (24860/ 27060/ 29480)	11350 / 13350 / 13450 (24970/29370/ 29590)	15200 / 16700 / 20300 (33440/ 36740/ 44660) 24300 / 28300 / 32300 (53460/ 62260/ 71060)	15500 / 17000 / 20600 (34100/ 37400/ 45320) 24300 / 28300 / 32300 (53460/ 62260/ 71060)	15700 / 17200 / 20700 (34540 / 37840 / 45540) 24700 / 28700 / 32300 (54340/ 63140 / 71060)
Machine	W x H	2270 x 2765 (89.4" x 108.9") 2290 x 2765 (90.2" x 108.9") (for ST-70)			2715 x 3105 (106.9" x 122.2") (for ST-80) 2645x 3175 (104.1" x 125") (for ST-100 / 130) 2685x 3175 (105.7" x 125") (for ST-160 / 240)		
Dimensions (mm)	L	5132 / 5532 / 5932 (202" / 217.8" / 233.5")			6852 / 7252 / 8052 / 9450 / 10450 / 11450 (269.8" / 285.5" / 317" / 372" / 411.4" / 450.8")		

■ All data subject to change without notice.

■ VDI turret working capacity / Range (see page 8).

■ All the specifications are listed with the FANUC CNC system and 12-angle turret.

Standard Accessories:

- | | |
|-------------------------------------|--|
| 1. Coolant system | 6. Tool box and various manuals |
| 2. Splash guard | 7. Tool holders (direct mounting type) |
| 3. Through hole 3-jaw chuck | 8. Auto lubrication with alarm |
| 4. Programmable hydraulic tailstock | 9. Halogen working lamp |
| 5. Chain type chip conveyor | 10. FANUC Oi-TC controller |

Optional Accessories:

- C-axis (C.S axis without gear box / C.F axis with gear box)
- Touch sensor (manual tool presetter)
- Tool holders (VDI type)
- Twin spindle
- Manual guide 0i (0i TC) ; Manual guide i (18i T / 21i T)
- Big bore spindle: φ 236, φ 318, φ 360, φ 410, φ 510 for H,X series.
- Steady rest (manual or auto self-centering)

CNC Control Specs

O: Std. Δ: Opt. -: Nil

Item	Function	Specifications	SIEMENS	FANUC		
			810D / 840D	18iT	21iT	0iTC
Control axes	Standard number of control axes	axes	2	2	2	2
	No. of simultaneously controlled axes	axes	2	2	2	2
Input commands	Least detection increment	1μ	1μ	1μ	1μ	1μ
	Least programmable increment	1μ	1μ	1μ	1μ	1μ
	Inch/metric conversion	G20/G21	0	0	0	0
	Absolute/incremental command		0	0	0	0
	Diameter/radius designation		0	0	0	0
	ISO/EIA automatic identification		0	0	0	0
	RS232-C interface		0	0	0	0
Interpolation	Positioning (interpolation)	G00	0	0	0	0
	Linear interpolation	G01	0	0	0	0
	Circular interpolation	G02/G03	0	0	0	0
	Variable lead thread cutting		0	Δ	Δ	0
	Continuous thread cutting		0	0	0	0
Program	Memory capacity	Meter	640	640	640	640
	No. of programs stored		unlimited	200	200	200
	Background editing		0	0	0	0
Spindle functions	S code output 4-digit BCD-binary	S4BCD	0	0	0	0
	Constant peripheral speed control	G96/G97	0	0	0	0
	Spindle rate	%	0-200	50-150	50-150	50-150
Feed	Per-revolution		0	0	0	0
	Per-minute		0	0	0	0
	Rapid traverse rate	low25%,50%,100%	0	0	0	0
	Cutting speed rate	%	0-200	0-200	0-200	0-200
	Handle feed rate	x1,x10,x100	0	0	0	0
Miscellaneous function	M-code	M2(BCD)	0	0	0	0
Coordinate system	Automatic coordinate system setting		0	0	0	0
	Machine coordinate system		0	0	0	0
	Work coordinate system	G54-G59	0	Δ	Δ	0
	Coordinate system setting	G50	0	0	0	0
	Manual reference point return		0	0	0	0
	Automatic reference point return	G28/G29	0	0	0	0
	2nd reference point return	G30	0	0	0	0
Reference point return verify	G27	0	0	0	0	
Tool function	Tool command	T4 digit	0	0	0	0
	Shape/wear differentiated compensation		0	0	0	0
	Nose radius compensation	G40/G41/G42	0	0	0	0
	Number of offset sets		unlimited	16	16	64
Operation	Single block		0	0	0	0
	Block skip		0	0	0	0
	Dry run		0	0	0	0
	Machine lock		0	0	0	0
	Option stop	M01	0	0	0	0
	Miscellaneous function lock	M.S.T.lock	0	0	0	0
	Manual/Absolute ON/OFF		0	0	0	0
PLC switch		0	0	0	0	
Programming support function	Sub-program control	M98, M99	0	0	0	0
	Corner chamfering/corner rounding		0	0	0	0
	Canned cycle for drilling	G80-G89	0	0	0	0
	Multiple repetitive canned cycle for lathe	G70-G79	0	0	0	0
	User macro		0	0	0	0
	No. of variable command sets		unlimited	100	100	500
	Backlash compensation		0	0	0	0
Memory-type pitch error compensation		0	0	0	0	
Direct drawing dimension program		-	0	0	0	
Measurement function	Skip function		0	0	0	0
	Direct input of offset value measured A		0	0	0	0
	Automatic tool offset		Δ	Δ	Δ	Δ
Safe protect	Emergency stop		0	0	0	0
	Travel protection		0	0	0	0
	Program protection		0	0	0	0
Other	CRT		9.5" LCD	10.4" LCD	10.4" LCD	7.2" mono LCD
	MDI	Full key	0	0	0	small type
	Languages	English/Japanese	7	7	7	7
	Run hour and parts count		0	0	0	0
	Graphic display		0	0	0	0
	Menu programming		0	0	0	0
	Conversational programming with graphic		Δ	Δ	Δ	Δ
	Touch sensor (tool setter)		Δ	Δ	Δ	Δ
	Chinese, French, German, Italian, Spanish		0	0	0	0
Data server (HD)		Δ	Δ	Δ	Δ	
Ethernet interface		0	Δ	Δ	Δ	

■ All data subject to change without notice.



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