



PRECISION MACHINE TOOLS

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SHARP STA, STB, STC, STF SERIES CNC big bore flat bed lathe



CNC BIG BORE FLAT BED LATHE

Swing: 37" – 65"

Center distance: 39" – 236"

4 Series to choose from

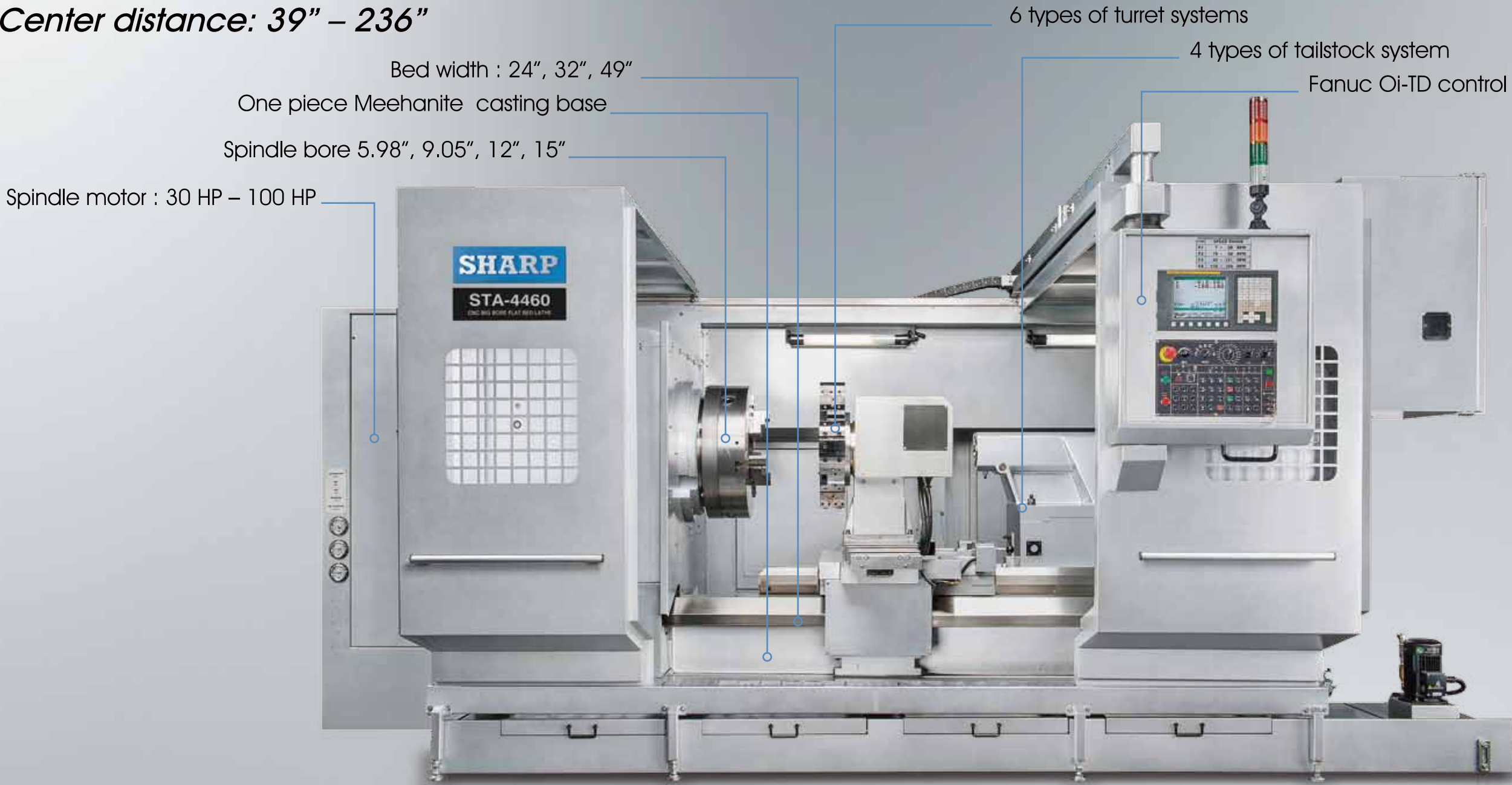


Table showing the 4 series

Series	STA	STB	STC	STF T-lathe
Swing	37", 44", 50", 55", 60"			44", 50", 55", 60"
Center Dist.	59" - 236"			40"
Spindle Bore	5.98", 9.05", 12", 15"			
Bed Width	24"	32"	49"	32"

BASIC GENERAL FEATURES



Automatic 4-step spindle speed change

- The spindle is supported at 3 points by high precision heavy duty Taper Roller and Ball bearings. Hardened and ground gears are installed for durability. Automatic speed change is performed by hydraulic system. The 4-step gear change is done by M-code command. Full power output is delivered at each speed making the machine excellent for heavy cutting operations. The headstock is equipped with Spindle oil chiller to reduce heat generated inside the gearbox and protecting the spindle and bearings.



Saddle and Tailstock connecting device

- For models with manual moving tailstock base, this device allows the heavy tailstock to be connected to the side of the saddle. When the saddle travels, it can also pull the tailstock back and forth. Models with tailstock that are motorized do not need this device.

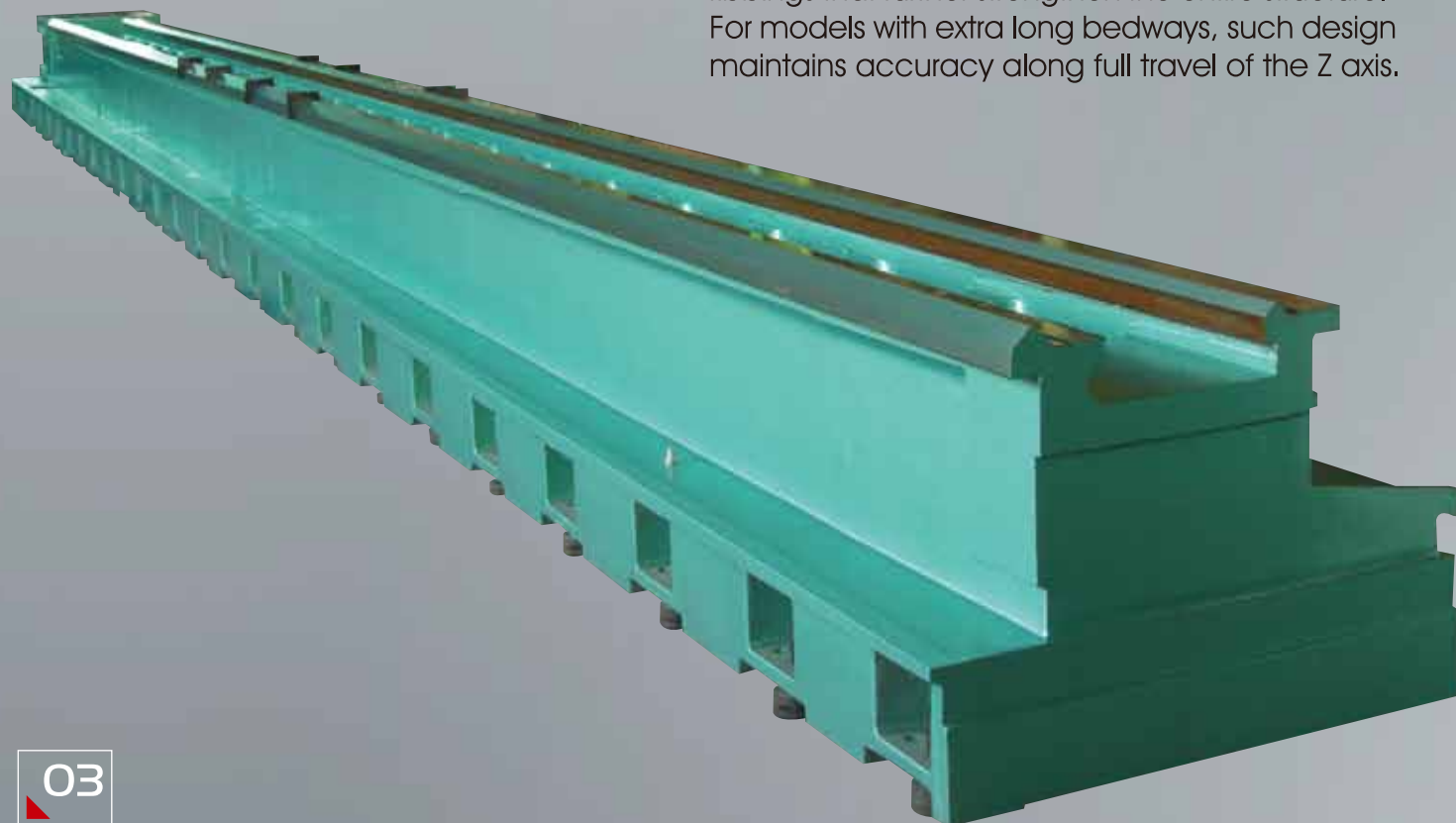


Rear chuck adapter (optional)

- With the rear chuck adapter, the user may mount an additional chuck at the rear of the spindle.
- The front and rear chucks (Double type) on one machine will dramatically increase the stability of the workpiece, especially for a long shaft.

One piece casting base and bed

- The base of the machine is made from one piece Meehanite casting offering unsurpassed rigidity. Internal castings are designed with box shaped ribbings that further strengthen the entire structure. For models with extra long bedways, such design maintains accuracy along full travel of the Z axis.



Machine bed and base is made from one piece Meehanite casting with internal box shaped ribs to increase rigidity.

STA series

CNC big bore flat bed lathe

FEATURES:

- 37" to 60" swing.
- 60" to 236" center.
- 5.98", 9.05", 12", 15" spindle bore.
- 24" wide bed.
- High precision C3 class ball screws on X and Z axes.
- Metered & centralized lubrication system for slide ways and ball screws.
- Hardened and ground 2V & 2 flat bed ways.
- Fully enclosed splash guard.
- Rear chain type chip conveyor.
- Fanuc Oi-TD control and servo drive system.
- Electronic handwheel (MPG).
- M code controlled with 4-step gear speed change.



STA series (24" wide bed)

Model number and Capacity

37.8" swing

Model	STA-3860	STA-3880	STA-38120	STA-38160	STA-38200	STA-38240
center distance	59"	78.7"	118.1"	157.5"	196.8"	236.2"

44.1" swing

Model	STA-4460	STA-4480	STA-44120	STA-44160	STA-44200	STA-44240
center distance	59"	78.7"	118.1"	157.5"	196.8"	236.2"

50.4" swing

Model	STA-5060	STA-5080	STA-50120	STA-50160	STA-50200	STA-50240
center distance	59"	78.7"	118.1"	157.5"	196.8"	236.2"

55.9" swing

Model	STA-5660	STA-5680	STA-56120	STA-56160	STA-56200	STA-56240
center distance	59"	78.7"	118.1"	157.5"	196.8"	236.2"

59.8" swing

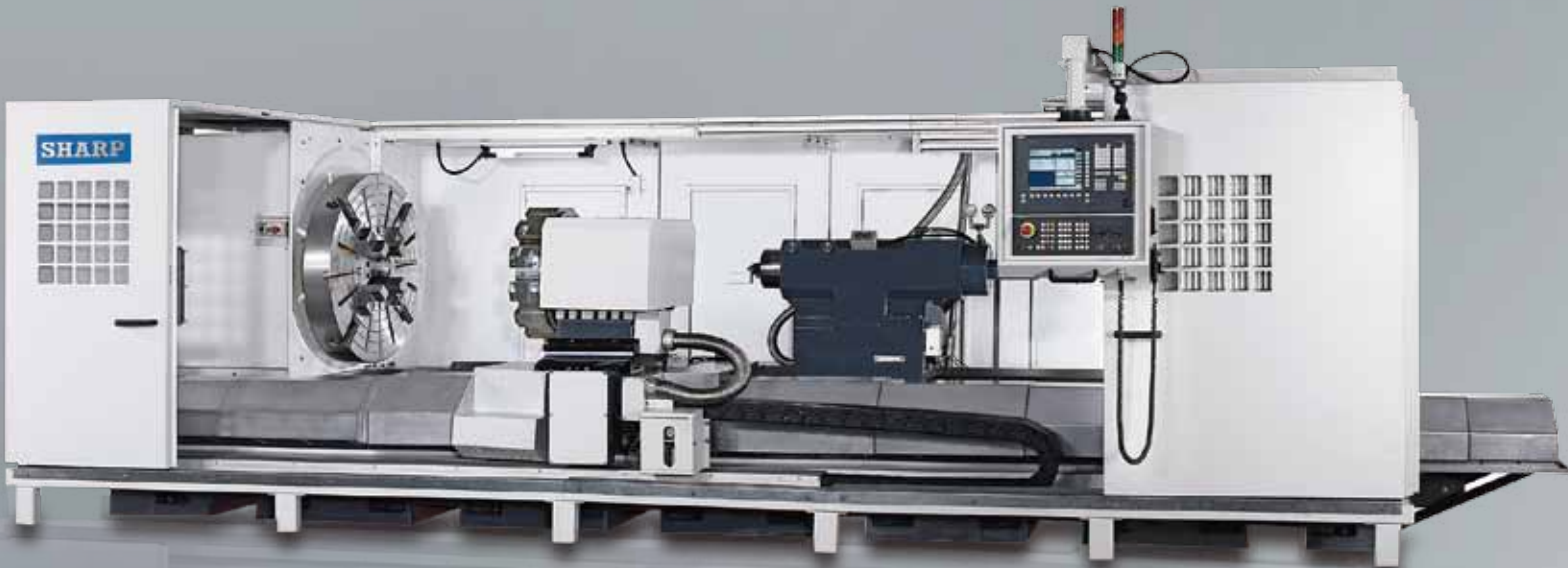
Model	STA-6060	STA-6080	STA-60120	STA-60160	STA-60200	STA-60240
center distance	59"	78.7"	118.1"	157.5"	196.8"	236.2"

STB series

CNC big bore flat bed lathe

FEATURES:

- 37" to 65" swing.
- 60" to 236" center.
- 5.98", 9.05", 12", 15" spindle bore.
- 32" wide bed.
- High precision C3 class ball screws on X and Z axes.
- Metered & centralized lubrication system for slide ways and ball screws.
- Hardened and ground 2V & 2 flat bed ways.
- Fully enclosed splash guard.
- Rear chain type chip conveyor.
- Fanuc Oi-TD control and servo drive system.
- M code controlled with 4-step gear speed change.



STB series (32" wide bed)

Model number and Capacity

37.8" swing

Model	STB-3860	STB-3880	STB-38120	STB-38160	STB-38200	STB-38240
center distance	59"	78.7"	118.1"	157.5"	196.8"	236.2"

44.1" swing

Model	STB-4460	STB-4480	STB-44120	STB-44160	STB-44200	STB-44240
center distance	59"	78.7"	118.1"	157.5"	196.8"	236.2"

50.4" swing

Model	STB-5060	STB-5080	STB-50120	STB-50160	STB-50200	STB-50240
center distance	59"	78.7"	118.1"	157.5"	196.8"	236.2"

55.9" swing

Model	STB-5660	STB-5680	STB-56120	STB-56160	STB-56200	STB-56240
center distance	59"	78.7"	118.1"	157.5"	196.8"	236.2"

59.8" swing

Model	STB-6060	STB-6080	STB-60120	STB-60160	STB-60200	STB-60240
center distance	59"	78.7"	118.1"	157.5"	196.8"	236.2"

65.3" swing

Model	STB-6560	STB-6580	STB-65120	STB-65160	STB-65200	STB-65240
center distance	59"	78.7"	118.1"	157.5"	196.8"	236.2"

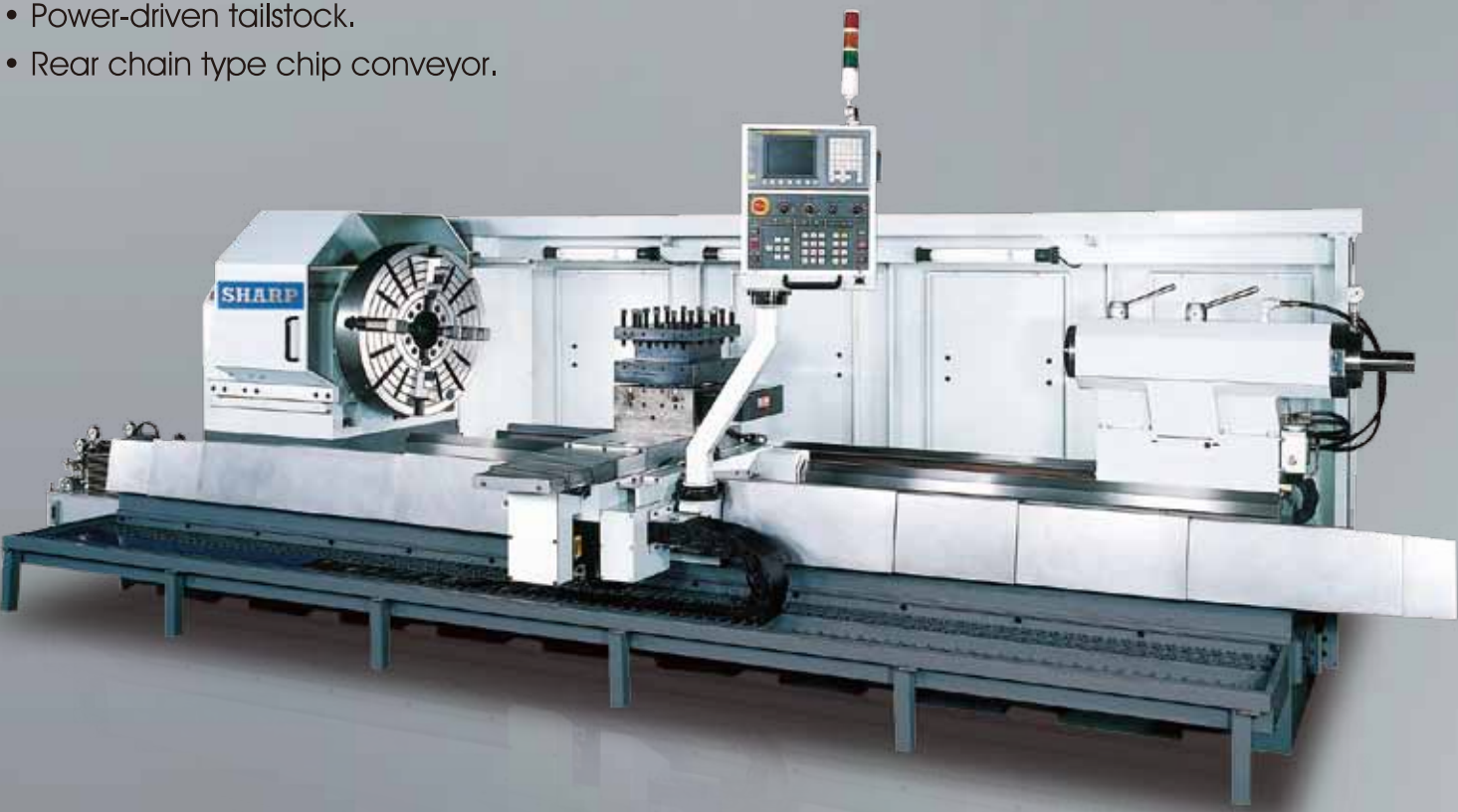
STC series

CNC big bore flat bed lathe

Built for machining large size mandrels, rollers, shafts and similar workpieces.
Cross slide travels on separate ways from tailstock.
Tools do not pass spindle center line.

FEATURES:

- 37" to 60" swing.
- 78" to 196" cutting length.
- 32" to 59" cutting diameter.
- 5.98", 9.05", 12", 15" spindle bore.
- 49" wide bed.
- Cross slide and tailstock travel on separate bed ways.
- 6 bed ways (1V & 5 flat)
- Linear guide ways in addition to ball screws for longer beds.
- High precision C3 class ball screw is installed between bed ways.
- Fanuc Oi-TD control and servo drive system.
- Electronic handwheel (MPG).
- M code controlled with 4-step gear speed change.
- Power-driven tailstock.
- Rear chain type chip conveyor.



STC series (49" wide bed)

Model number and Capacity

37.8" swing

Model	STC-3880	STC-38120	STC-38160	STC-38200
center distance	78.7"	118.1"	157.5"	196.8"

44.1" swing

Model	STC-4480	STC-44120	STC-44160	STC-44200
center distance	78.7"	118.1"	157.5"	196.8"

50.4" swing

Model	STC-5080	STC-50120	STC-50160	STC-50200
center distance	78.7"	118.1"	157.5"	196.8"

55.9" swing

Model	STC-5680	STC-56120	STC-56160	STC-56200
center distance	78.7"	118.1"	157.5"	196.8"

59.8" swing

Model	STC-6080	STC-60120	STC-60160	STC-60200
center distance	78.7"	118.1"	157.5"	196.8"

STC series Special Features



Motor-driven tailstock

- Tailstock body is moved by a geared motor for adding convenience.
- Quill position can be locked by screw with a location key to hold workpiece in place.
- Hydraulic quill is available (Optional).

Self-rotating quill

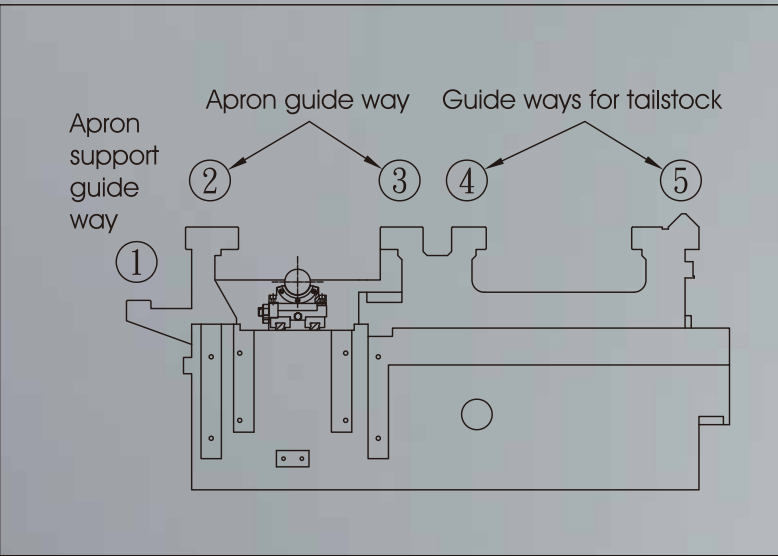
- It is mounted on taper roller bearings to support heavy cutting load. It rotates simultaneously with the main spindle to reduce the tailstock load, while increasing the stability during cutting.

Hydraulic tailstock with locking device on gear rack (optional)

- Hydraulic tailstock with lock bolt is available as an option. The gear rack allows the tailstock body to be locked down during heavy cutting.



One V & Five flat way construction



Linear guide way is used on models with leadscrews that are 157" and over in length

- The linear guide way is installed on models with screws that are 157" long and more.
- The additional linear guide way effectively reduces the wear on the lead screw, while increasing the support capacity of the cross slide and maintaining high accuracy of the machine.



Robust bed One V & Five flat bed ways

- Cross slide travels on separate box ways from tailstock to redistribute cutting force onto the machine body.
- No interference between cross slide and tailstock during machining.
- Separate guide way for supporting apron and reducing load on other bed ways.

STF series

CNC big bore flat bed lathe

Facing lathe (T-lathe, No tailstock)

Specially designed for turning large flanges, aluminum alloy rings, valves, tire molds and mold bases.

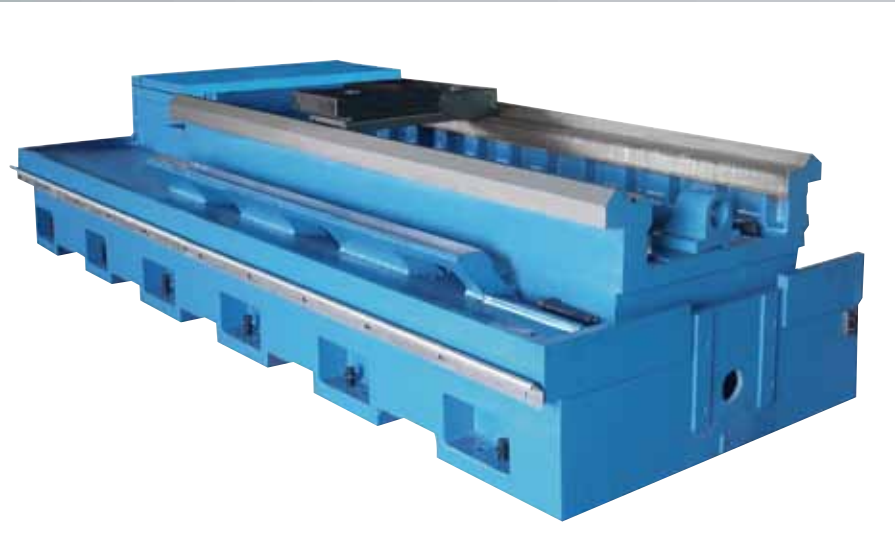
FEATURES:

- Swing: 44", 50", 56", 60".
- Center distance: 40".
- Spindle bore: 5.98", 9.05", 12", 15".
- No tailstock.
- M code controlled with 4-step gear spindle speed change.
- High precision C3 class ball screws on X and Z axes.
- Bed width: 32".
- 30HP is standard.
- 50HP is optional.
- Fanuc 0i-TD control.
- Fully enclosed sheet metal cover (Standard).
- Rear chain type chip conveyor (Standard).



- Center-mounted ball screw**
- The ball screw that drives the carriage is installed between the bed ways.
 - Unlike conventional design with the ball screw installed in front of the bed, this design disperses the driving force of the carriage between two bed ways, resulting in a more balanced and smooth travel during machining as well as extended ball screw life.

- Robust bed**
- One-piece construction bed and base provide a solid support for the entire machine and ensure outstanding stability.



STF series (32" wide bed)

Model number and Capacity

Model	STF-4440	STF-5040	STF-5540	STF-6040
Swing x center distance	44.1" x 39.4"	50.4" x 39.4"	55.9" x 39.4"	59.8" x 39.4"

Optional accessories



Hydraulic 4-way tool turret (H4)
(Standard accessory)



Hydraulic 4-way tool turret (H4-VDI)



Tailstock with self rotating quill



8-position hydraulic turret (V-8)



Servo-driven power turret

A wide range of optional accessories is available to extend operational flexibility and increase productivity.



Hydraulic steady rest



Customized tailstock with chuck



Hydraulic Tailstock with synchronizing quill movement

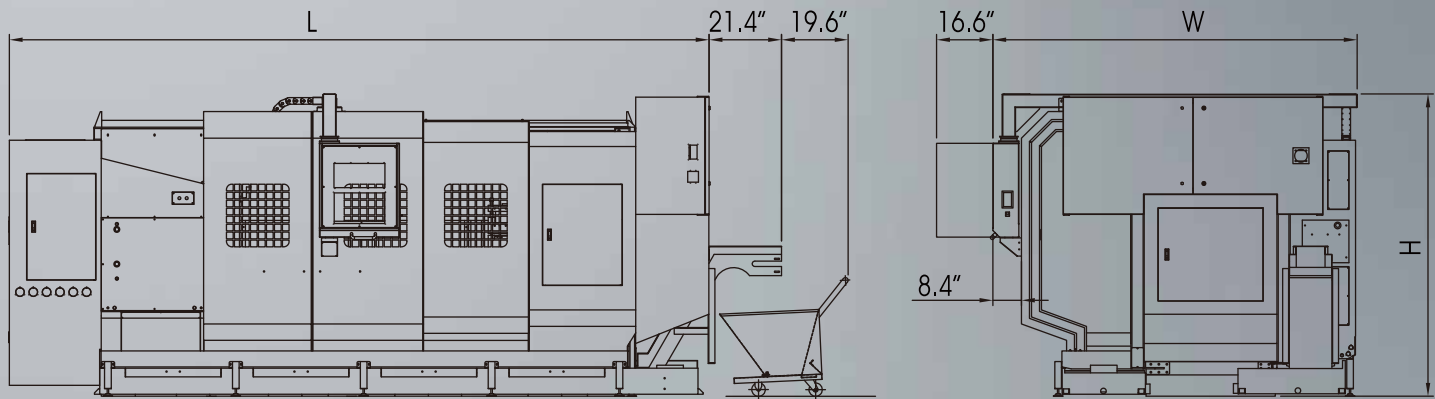


12-position hydraulic turret (V-12)



Fully enclosed splash guard
(For STC series lathe)

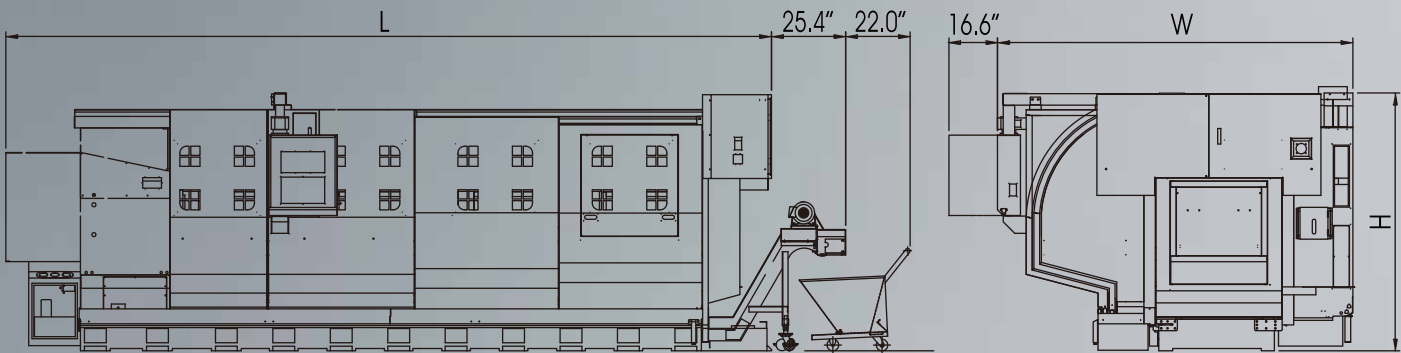
STA series
CNC big bore flat bed lathe



MODEL	STA-3860 4460 / 5060 5660 / 6060	STA-3880 4480 / 5080 5680 / 6080	STA-38120 44120 / 50120 56120 / 60120	STA-38160 44160 / 50160 56160 / 60160	STA-38200 44200 / 50200 56200 / 60200	STA-38240 44240 / 50240 56240 / 60240
L	188.0"	206.8"	246.2"	285.6"	325.0"	364.4"
W	107.7"	107.7"	107.7"	107.7"	107.7"	107.7"
H	89.4"	89.4"	89.4"	89.4"	89.4"	89.4"

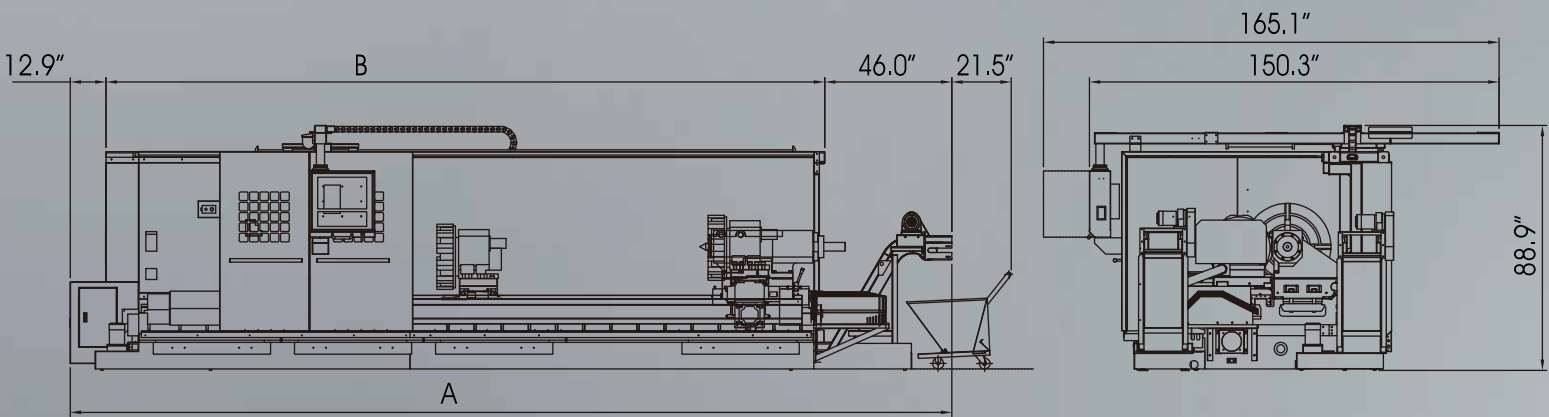
STB series
CNC big bore flat bed lathe

* Machine height increases with larger swing.
* Please re-confirm the size before ordering.



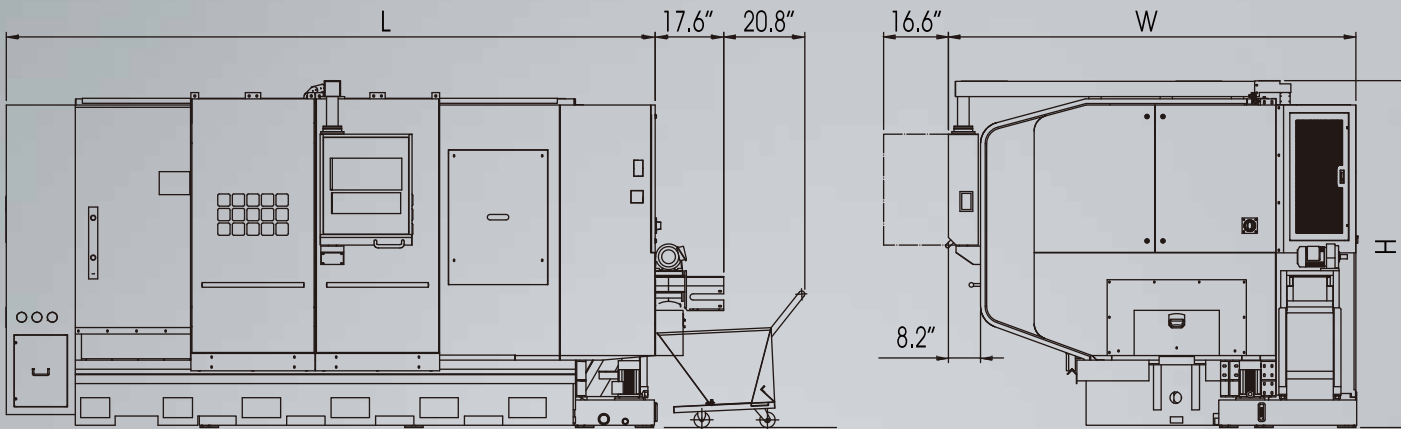
MODEL	STB-3860 / 4460 5060 / 5660 6060 / 6560	STB-3880 / 4480 5080 / 5680 6080 / 6580	STB-38120 / 44120 50120 / 56120 60120 / 65120	STB-38160 / 44160 50160 / 56160 60160 / 65160	STB-38200 / 44200 50200 / 56200 60200 / 65200	STB-38240 / 44240 50240 / 56240 60240 / 65240
L	183.8"	223.2"	262.6"	301.9"	341.4"	380.7"
W	122.0"	122.0"	122.0"	122.0"	122.0"	122.0"
H	89.4"	89.4"	89.4"	89.4"	89.4"	89.4"

STC series
CNC big bore flat bed lathe



MODEL	STC-3880 4480 / 5080 5680 / 6080	STC-38120 44120 / 50120 56120 / 60120	STC-38160 44160 / 50160 56160 / 60160	STC-38200 44200 / 50200 56200 / 60200
A	242.1"	281.5"	320.8"	360.2"
B	183.1"	222.5"	261.8"	301.2"

STF series
CNC big bore flat bed lathe
Facing lathe (T-lathe)



MODEL	STF-4440	STF-5040	STF-5540	STF-6040
L	166.7"	166.7"	166.7"	166.7"
W	98.8"	104.7"	104.7"	106.7"
H	83.3"	89.1"	89.1"	91.1"

STA Series Sharp Big Bore CNC Lathes (Flat Bed)

Capacity					
Swing over bed	37.8"	44.1"	50.4"	55.9"	59.8"
Swing over cross slide	23.6"	30"	36.2"	41.7"	45.7"
Distance between centers	59", 78.7", 118.1", 157.5", 196.8", 236.2",				
Spindle bore	5.98", 9.05", 12", 15"				
Main motor	30 HP (std.) , 40 HP, 60 HP (opt.)				
CNC Control	FANUC Oi-TD				
Headstock					
Spindle nose	A2-11, A2-15, A2-20,				
Spindle bore	5.98", 9.05" 12", 15"				
Range of speeds (5.98" bore)	6-500 rpm (may vary by chuck size or motor HP)				
Range of speeds (9"-15" bore)	7-350 rpm (may vary by chuck size or motor HP)				
Steps of speeds	4 steps of gear, command by M code, hydraulic driven				
Axes travel (ballscrew)					
X axis travel (varies by different turrets installed)	23.6" (based on 4 way hyd turret installed on carriage)				
Z axis travel (varies by turrets, chucks, tailstocks installed)	59", 78.7", 118.1", 157.5", 196.8", 236.2"				
X axis ballscrew diameter	1-1/4"				
Z axis ballscrew diameter	2-1/2"				
Feeds					
X axis feed rate	118 ipm				
X axis rapid	197 ipm				
Z axis feed rate	118 ipm				
Z axis rapid	197 ipm				
Tool Turret					
Hydraulic driven types	4 tools (H4), 8 tools (V8),12 tools (V12), also VDI (coolant access)				
Servo driven types	available				
Tool shank sizes	1.23" x 1.23", 1.57" x 1.57"				
Tool holder bore	1.97"				
Bed					
Bedway construction	2 V, 2 Flat ways				
Bed width	24"				
Bed length	134", 154", 193", 232", 272", 311"				
Tailstock					
Tailstock body movement	attached to saddle (std.), or Motorized (opt.)				
Tailstock body lock type	manual (std.), or hydraulic (opt.)				
Quill diameter	4.92"				
Quill travel	11.8"				
Quill taper	MT #6				
Quill movement	manual (std.), motorized (opt)				
Motor					
Spindle motor	30 HP (std, Fanuc alpha 22), 40 HP (opt), 60 HP (opt.)				
X axis servo motor	4 HP (Fanuc AC servo)				
Y axis servo motor	5.3 HP (Fanuc AC servo)			9.3 HP (Fanuc AC servo)	
Hydraulic pump	2 HP				
Coolant pump	1.7 HP				
Machine Wt. (lbs.)					
59" center distance	24,400	26,700	28,000	29,100	29,800
79" center distance	25,600	27,800	29,100	30,200	30,900
118" center distance	27,800	30,000	31,300	32,400	33,100
157" center distance	30,000	32,200	33,500	34,600	35,400
196" center distance	32,200	34,400	35,700	36,800	37,600
236" center distance	34,400	36,600	37,900	39,000	39,800
Dimensions					
Length	with chip conveyor				
59" center distance	18 ft				
79" center distance	19.6 ft				
118" center distance	23 ft				
157" center distance	26.3 ft				
196" center distance	29.5 ft				
236" center distance	32.8 ft				
width x height	9 ft x 7.5 ft			9 x 7.33 ft	9 ft x 8.12 ft

* Proper foundation and environmental controls are required.

• Specifications subject to change without notice.

STB Series Sharp Big Bore CNC Lathes (Flat Bed)

Capacity						
Swing over bed	37.8"	44.1"	50.4"	55.9"	59.8"	65.3"
Swing over cross slide	21.6"	27.55"	33.8"	39.3"	43.3"	48.8"
Distance between centers	59", 78.7", 118.1", 157.5", 196.8", 236.2",					
Spindle bore	5.98", 9.05", 12", 15"					
Main motor	30 HP (std.) , 40 HP, 60 HP (opt.)					
CNC Control	FANUC Oi-TD					
Headstock						
Spindle nose	A2-11, A2-15, A2-20,					
Spindle bore	5.98", 9.05" 12", 15"					
Range of speeds (5.98" bore)	6-500 rpm (may vary by chuck size or motor HP)					
Range of speeds (9"-15" bore)	7-350 rpm (may vary by chuck size or motor HP)					
Steps of speeds	4 steps of gear, command by M code, hydraulic driven					
Axes travel (ballscrew)						
X axis travel (varies by different turrets installed)	23.6" (based on 4 way hyd turret installed on carriage)					
Z axis travel (varies by turrets, chucks, tailstocks installed)	59", 78.7", 118.1", 157.5", 196.8", 236.2"					
X axis ballscrew diameter	1.57"					
Z axis ballscrew diameter	2-1/2"					
Feeds						
X axis feed rate	118 ipm					
X axis rapid	197 ipm					
Z axis feed rate	118 ipm					
Z axis rapid	197 ipm					
Tool Turret						
Hydraulic driven types	4 tools (H4), 8 tools (V8),12 tools (V12), also VDI (coolant access)					
Servo driven types	available					
Tool shank sizes	1.23" x 1.23", 1.57" x 1.57"					
Tool holder bore	1.97"					
Bed						
Bedway construction	2 V, 2 Flat ways					
Bed width	32"					
Bed length	134", 154", 193", 232", 272", 311"					
Tailstock						
Tailstock body movement	attached to saddle (std.), or Motorized (opt.)					
Tailstock body lock type	manual (std.), or hydraulic (opt.)					
Quill diameter	7.9"					
Quill travel	11.8"					
Quill taper	MT #6					
Quill movement	motorized (std.) hydraulic (opt)					
Motor						
Spindle motor	30 HP (std, Fanuc alpha 22), 40 HP (opt), 60 HP (opt.)					
X axis servo motor	4 HP (Fanuc AC servo)					
Y axis servo motor	5.3 HP (Fanuc AC servo)			9.3 HP (Fanuc AC servo)		
Hydraulic pump	2 HP					
Coolant pump	1.7 HP					
Machine Wt. (lbs.)						
59" center distance	28,600	30,800	32,400	33,700	34,600	35,700
79" center distance	30,000	32,200	33,700	35,000	35,900	37,000
118" center distance	32,600	34,800	36,300	37,700	38,500	39,600
157" center distance	35,200	37,400	39,000	40,300	41,200	42,300
196" center distance	37,900	40,100	41,600	43,000	43,800	44,900
236" center distance	40,500	42,700	44,300	45,600	46,500	47,600
Dimensions						
Length	with chip conveyor					
59" center distance	18 ft					
79" center distance	19.6 ft					
118" center distance	23 ft					
157" center distance	26.3 ft					
196" center distance	29.5 ft					
236" center distance	32.8 ft					
width x height	10.17 ft x 7.48 ft		10.17 x 7.48 ft		10.17 x 8.46 ft	

* Proper foundation and environmental controls are required.

• Specifications subject to change without notice.

STC Series Sharp Big Bore CNC Lathes (Flat Bed)

Capacity					
Swing over bed	37.8"	44.1"	50.4"	55.9"	59.8"
Max roll cutting diameter	32.7"	38.2"	43.3"	48.0"	51.2"
Min roll cutting diameter	4.7"	12.6"	20.5"	24.4"	28.3"
Max cutting length	78.7", 118.1", 157.5", 196.8",				
Spindle bore	5.98", 9.05", 12", 15"				
Main motor	30 HP (std.) , 40 HP, 60 HP, 75 HP, 100 HP (opt.)				
CNC Control	FANUC Oi-TD				
Headstock					
Spindle nose	A2-11, A2-15, A2-20,				
Spindle bore	5.98", 9.05" 12", 15"				
Range of speeds (5.98" bore)	6 - 500 rpm (may vary by chuck size or motor HP)				
Range of speeds (9"-15" bore)	7 - 350 rpm (may vary by chuck size or motor HP)				
Steps of speeds	4 steps of gear, command by M code, hydraulic driven				
Axes travel (ballscrew)					
X axis travel (varies by different turrets installed)	15.7''' (based on 4 way hyd turret installed on carriage)				
Z axis travel (varies by turrets, chucks, tailstocks installed)	78.7", 118.1", 157.5", 196.8",				
X axis ballscrew diameter	1.57"				
Z axis ballscrew diameter	2.5"				
Feeds					
X axis feed rate	118 ipm				
X axis rapid	197 ipm				
Z axis feed rate	118 ipm				
Z axis rapid	197 ipm				
Tool Turret					
Hydraulic driven types	4 tools (H4), 8 tools (V8),12 tools (V12), also VDI (coolant access)				
Servo driven types	available				
Tool shank sizes	1.23" x 1.23", 1.57" x 1.57"				
Tool holder bore	1.97"				
Bed					
Bedway construction	1 V, 5 Flat ways				
Bed width	49"				
Bed length	157", 196", 236", 275"				
Tailstock					
Tailstock body movement	motorized (1/2 HP) (std.)				
Tailstock body lock type	manual (std.), or hydraulic (opt.)				
Quill diameter	7.9"				
Quill travel	11.8"				
Quill taper	MT #6				
Quill movement	manual / motorized (1/4HP)(std.), hydraulic (opt)				
Motor					
Spindle motor	30HP (std) up to 100 HP (opt)		50 HP (std), up to 100 HP (opt)		
X axis servo motor	4 HP (Fanuc AC servo)				
Y axis servo motor	5.3 HP (Fanuc AC servo)			9.3 HP (Fanuc AC servo)	
Hydraulic pump	2 HP				
Coolant pump	1.7 HP				
Machine Wt. (lbs.)					
79" center distance	34,100	35,900	37,700	39,200	40,300
118" center distance	38,500	40,300	42,100	43,600	44,700
157" center distance	43,000	44,700	46,500	48,000	49,100
196" center distance	47,400	49,100	50,900	52,400	53,500
Dimensions					
Length	with chip conveyor				
79" center distance	21.8 ft				
118" center distance	25.1 ft				
157" center distance	28.3 ft				
196" center distance	31.6 ft				
width x height	12.53 ft x 7.4 ft		12.53 ft x 7.67 ft	12.53 ft x 7.9 ft	12.53 ft x 8.07 ft

* Proper foundation and environmental controls are required. • Specifications subject to change without notice.

STF Series Sharp Big Bore CNC Lathes (Flat Bed)
Facing Lathe (T - Lathe)

Capacity				
Swing over bed	44.1"	50.4"	55.9"	59.8"
Swing over cross slide	27.5"	33.8"	39.4"	43.3"
Distance between centers	39.4"			
Spindle bore	5.98", 9.05", 12", 15"			
Main motor	30 HP			
CNC Control	FANUC Oi-TD			
Headstock				
Spindle nose	A2-11, A2-15, A2-20,			
Spindle bore	5.98", 9.05" 12", 15"			
Range of speeds (5.98" bore)	4 - 420 rpm (may vary by chuck size or motor HP)			
Range of speeds (9"-15" bore)	4 - 350 rpm (may vary by chuck size or motor HP)			
Steps of speeds	4 steps of gear, command by M code, hydraulic driven			
Axes travel (ballscrew)				
X axis travel (varies by different turrets installed)	19.7''' (based on 4 way hyd turret installed on carriage)			
Z axis travel (varies by turrets, chucks, tailstocks installed)	39.37"			
X axis ballscrew diameter	1.57"			
Z axis ballscrew diameter	2.5"			
Feeds				
X axis feed rate	118 ipm			
X axis rapid	197 ipm			
Z axis feed rate	118 ipm			
Z axis rapid	197 ipm			
Tool Turret				
Hydraulic driven types	4 tools (H4), 8 tools (V8),12 tools (V12), also VDI (coolant access)			
Servo driven types	available			
Tool shank sizes	1.23" x 1.23", 1.57" x 1.57"			
Tool holder bore	1.97"			
Bed				
Bedway construction	2 V, 2 Flat ways			
Bed width	32"			
Bed length	135.8"			
Motor				
Spindle motor	30HP			
X axis servo motor	4 HP (Fanuc AC servo)			
Y axis servo motor	5.3 HP (Fanuc AC servo)		9.3 HP (Fanuc AC servo)	
Hydraulic pump	2 HP			
Coolant pump	1.7 HP			
Machine Wt. (lbs.)	26,000	27,500	28,900	29,900
Length x Width x Height	15.5 ft x 8.3 ft x 7.5 ft			

* Proper foundation and environmental controls are required. • Specifications subject to change without notice.