CHEVALIER®

Grinding / Turning / Milling

FCL Series

Multi-Function CNC Lathes

FCL-1840 • 1860
FCL-2140 • 2160 • 2180
FCL-2540 • 2560 • 2580
FCL-3060 • 3080 • 30120

FCL-18 • 21 • 25 • 30 Series

MULTI-FUNCTION CNC LATHE

FCL-1840 • 1860
FCL-2140 • 2160 • 2180
FCL-2540 • 2560 • 2580
FCL-3060 • 3080 • 30120

MACHINE FEATURES

- A Combination of a High Precision Manual Lathe.
- A Lathe with Digital Readout.
- A Lathe with Powerfeed and Jog Modes.
- A Lathe with Teach Mode for CNC Turning.
- A Lathe with Fully CNC Capability Operation
- A Simple and complex parts can be turned more efficiently by utilizing manual, teach or CNC modes or combining these modes.
- All models are equipped with a spindle servo drive.
- Spindle speeds and feedrate are infinitely variable. Also, the spindle speeds will automatically adjust to varying diameters and keep constant surface speed, resulting in higher quality parts and longer tool life.
- Threads tapers and contours are performed faster and more efficiently while eliminating manual set-up.
- Radial and spherical surfaces can be turned easily without using special tools or attachments.
- Programming is also made easier through using canned cycles which eliminate tool-path programming by automatically figuring rough and finish passes, (tool compensation is automatic).

FCL-2160

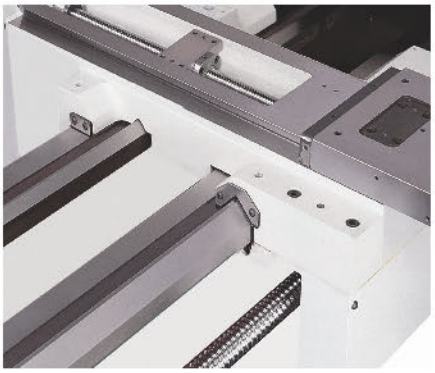
Note: Machine shown with optional accessories

FCL-2560

Note: Machine shown with optional accessories

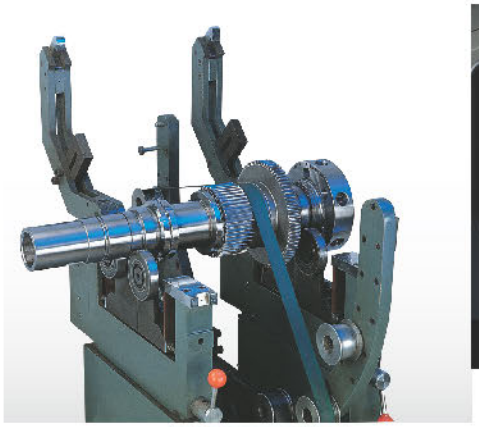
High Precision Spindle

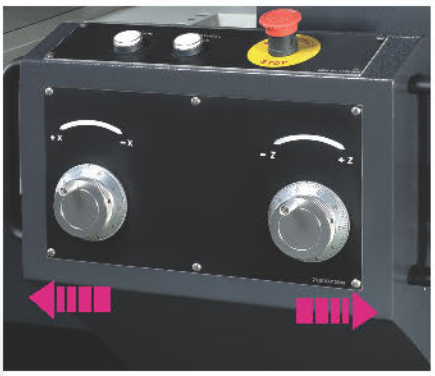
The spindle is supported by accurately measured, selected and preloaded precision taper roller bearings. The spindle is assembled in a temperature controlled clean room to ensure high accuracy and rigidity through the full RPM range.



High Accuracy Ballscrews

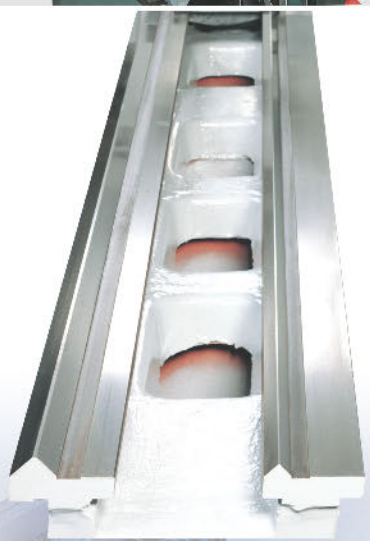
Hardened and ground precision ballscrews mounted on high precision bearings on both X and Z axes result in long life and high accuracy. These accuracies are verified by state-of-the-art laser calibration equipment.





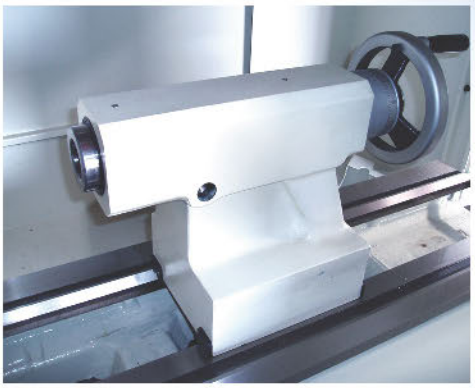
Versatile Apron Controls

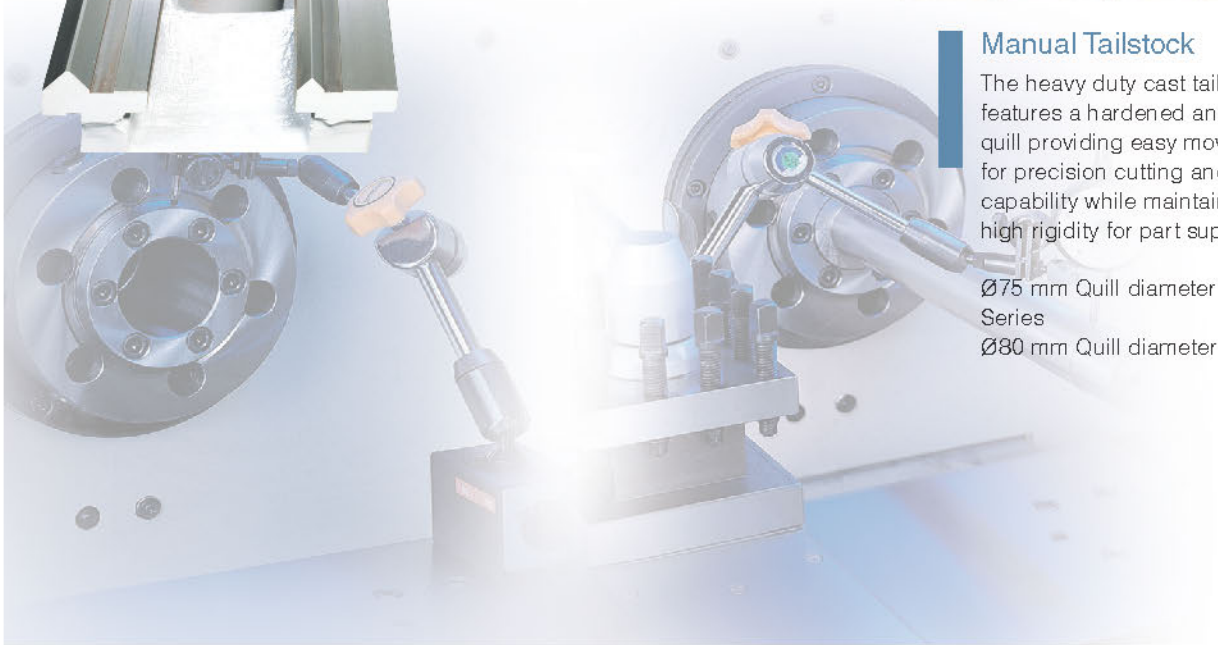
Specially designed handwheels with simultaneous movement of both X and Z axes and adjustable resolutions available.
It can be shifted to left or right hand side.



Wear Resistant Ways

The machine guide ways, saddle and spindle bore are hardened and ground. The contact surface of the guide ways are also hand scraped and automatically lubed. Therefore, because of lower friction and reduced wear, high accuracy results can be obtained.





Manual Tailstock

The heavy duty cast tailstock features a hardened and ground quill providing easy movement for precision cutting and drilling capability while maintaining high rigidity for part support.

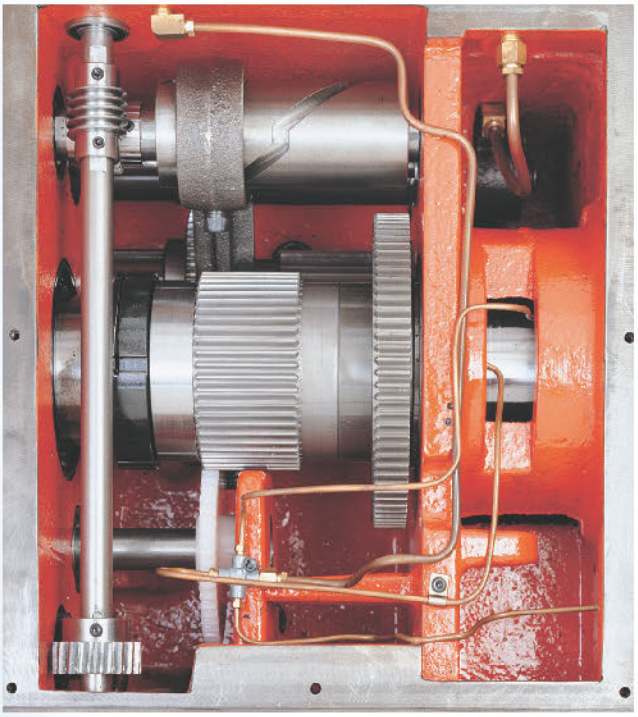
Ø75 mm Quill diameter for 18/21/25 Series
Ø80 mm Quill diameter for 30 Series

Heavy Duty Headstock

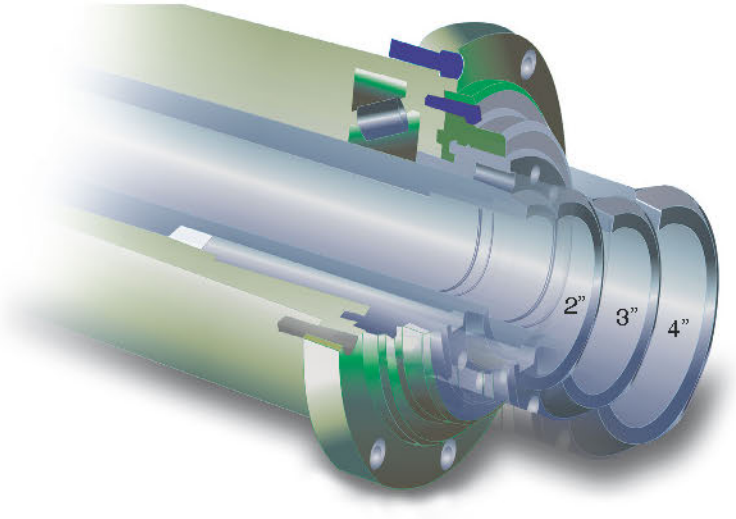
The Chrome-Molybdenum Alloy Steel gears are hardened and precision-ground for long life and low noise.

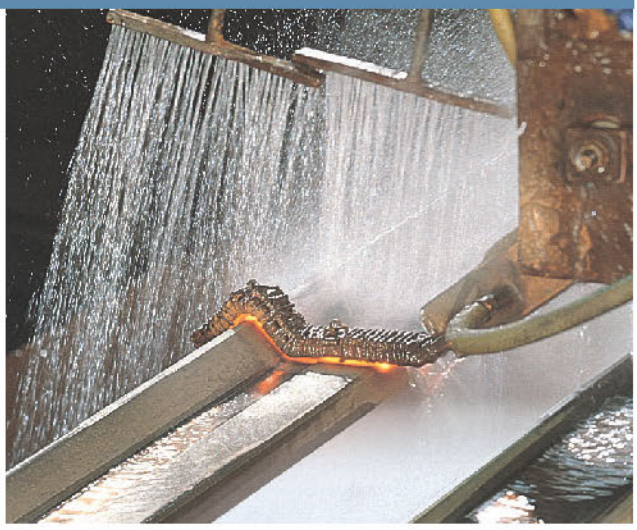
The gears are supported by high load capacity precision bearings allowing a greater transmission of torsional forces for heavier cutting capability.

Patented cam driven auto. gear shifting mechanism.



BIG SPINDLE BORE





Hardened & Ground Guideways

The machine bed is constructed with Meehanite castings. The machine guide ways are heat treated and precision ground, providing excellent rigidity and superb dampening capability for high metal removal during rough turning and exceptional surface finish during fine turning.

Unit : mm (")

Model	Standard	Optional (A2-11)
FCL-1840 / 1860	56mm (2.2") D1-6	N/A
FCL-2140 / 2160 / 2180 / 2540 / 2560 / 2580	85mm (3.3") D1-8	105mm (4.1")
FCL-3060 / 3080 / 30120	105mm (4.1")	N/A

BIG SPINDLE BORE

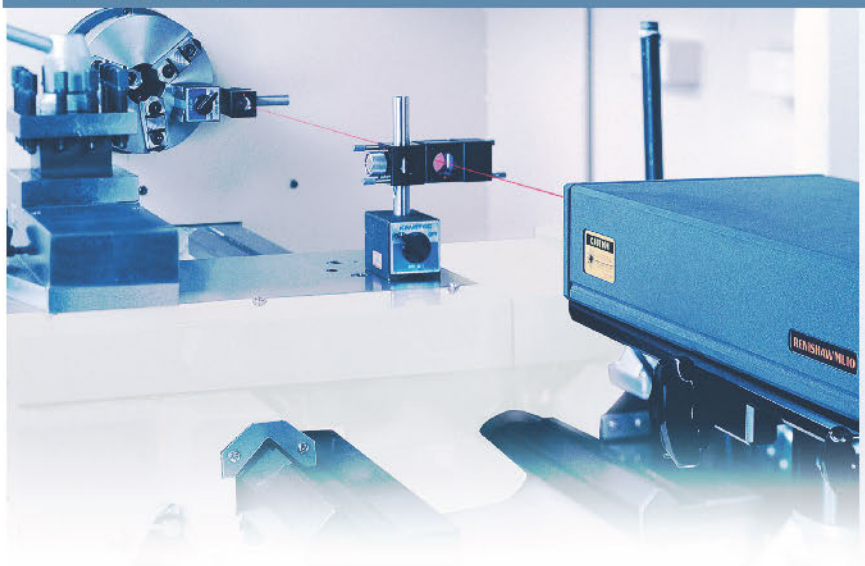
FAGOR 8055i Control

- Easy to modify already existing part-programs, possible to mix 8055i operations with routines defines in ISO language.
- Interactive graphic interface.
- 10.4" TFT color monitor.
- Profile editor.
- Integrated PLC.
- Graphic display.
- DNC software.
- Programmable spindle speed.
- Constant surface speed(css)function.
- Ethernet
- USB

SIEMENS 828D Control

- 10.4" TFT screen.
- 2 axis AC servo motors.
- "ShopTurn" software

INSPECTION



Laser Calibration

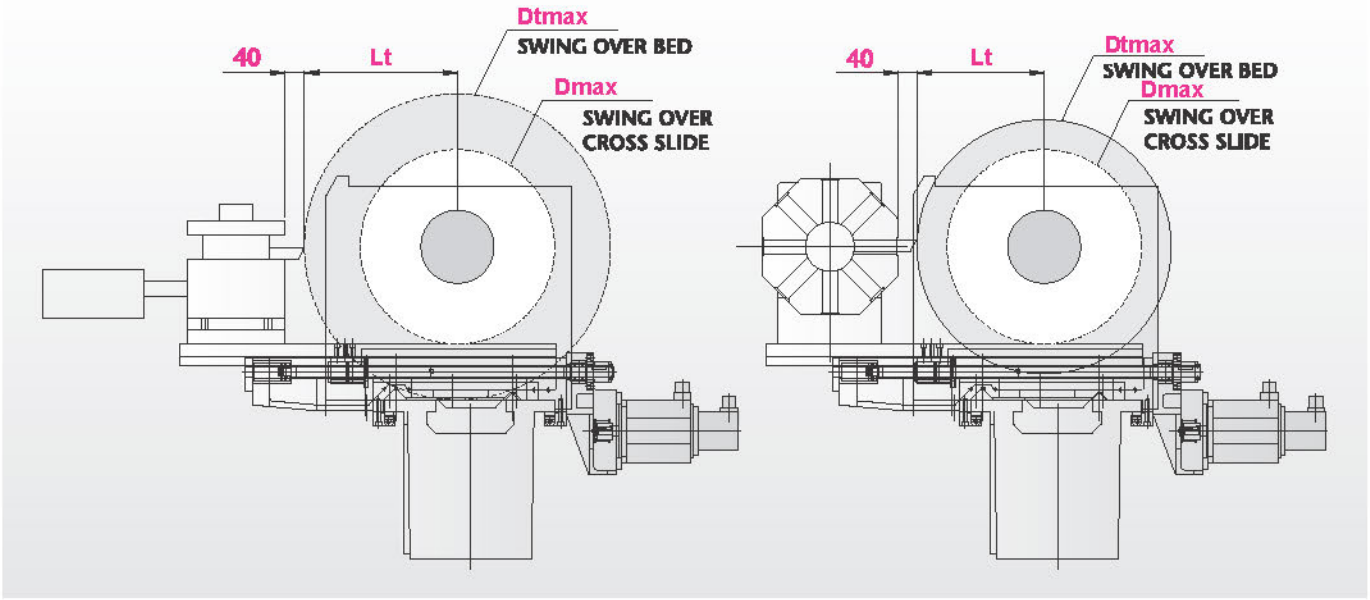
After assembly, the machine tolerances are measured and verified by state-of-the-art laser calibration equipment.

Spindle Nose Runout

Place a test indicator stylus on the external surface of the spindle nose at a right angle then rotate the spindle through 360 degrees.

The indicator variation will be under 0.0075mm (0.0003").

MAX. TURNING DIAMETER



FOUR WAY TOOL POST

Model	Dmax	Dtmax	Lt
FCL-1840 / 1860	230mm (9.1")	460mm (18.1")	230mm (9.1")
FCL-2140 / 2160 / 2180	310mm (12.2")	540mm (21.3")	270mm (10.6")
FCL-2540 / 2560 / 2580	400mm (15.7")	630mm (24.8")	315mm (12.4")
FCL-3060 / 3080 / 30120	500mm (19.7")	760mm (29.9")	380mm (14.9")

8 STATION TURRET

Model	Dmax	Dtmax	Lt
FCL-1840 / 1860	230mm (9.1")	460mm (18.1")	230mm (9.1")
FCL-2140 / 2160 / 2180	310mm (12.2")	522mm (20.6")	261mm (10.3")
FCL-2540 / 2560 / 2580	400mm (15.7")	522mm (20.6")	261mm (10.3")
FCL-3060 / 3080 / 30120	500mm (19.7")	730mm (28.7")	365mm (14.3")

Standard Accessory

1. Steady rest
2. Manual tailstock
3. Automatic Lubrication system
4. Worklight
5. Coolant system
6. Safety door with reinforce glasses
7. Sleeve (MT#5/MT#6)
8. Centers MT#5
9. X,Z axis electric handwheel
10. Manual 4-station toolpost (25x25mm)
11. Tool box
12. Fully Enclosed Splash Guard (For machine with 2M. or smaller, between centers)

Steady rest

Optional Accessory

1. Follow rest
2. Quick change toolpost
3. H4 electric turret
   20x20mm(18 Series)
   25x25mm (21/25 Series)
   32x32mm (30 Series)
4. 3-Jaw scroll chuck (manual)
5. 4-Jaw scroll chuck (manual)
6. V8 Hydraulic vertical turret
   20x20mm(18 Series)
   25x25mm (21/25/30 Series)
7. Hydraulic scroll chuck system
8. Face plate
9. Live center (MT6#)
10. SAUTER turret
    20x20mm(18 Series)
    25x25mm (21/25/30 Series)
11. Chip conveyer
12. Hydraulic tailstock

H4 Electric turret

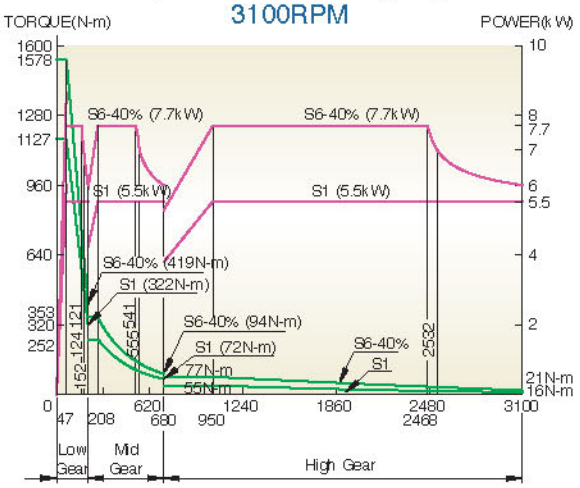
V8 Vertical turret

SPINDLE MOTOR OUTPUT

FAGOR CONTROL FCL-18/21/25/30 SERIES CNC LATHE POWER TORQUE CHART

For FCL-18

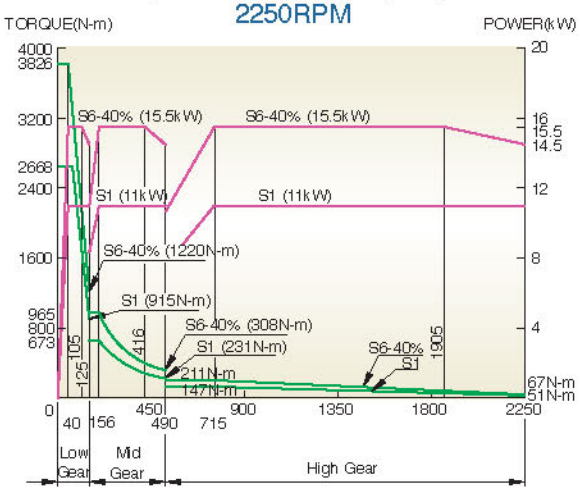
FAGOR
Spindle Bore Ø56mm(2.2")
3100RPM



Spindle speed (rpm)

For FCL-21/25/30

FAGOR
Spindle Bore Ø85mm(3.3")
2250RPM

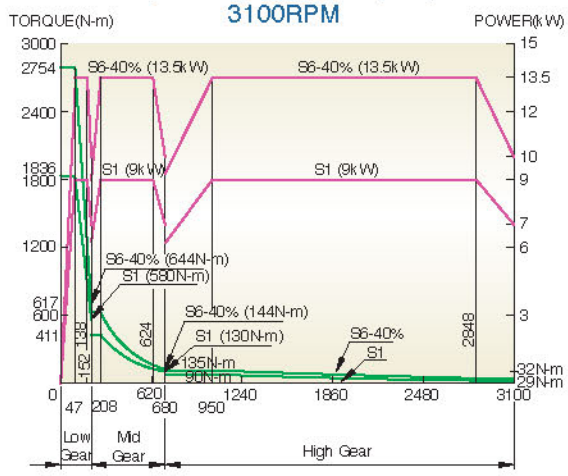


Spindle speed (rpm)

SIEMENS CONTROL FCL-18/21/25 SERIES CNC LATHE POWER TORQUE CHART

For FCL-18

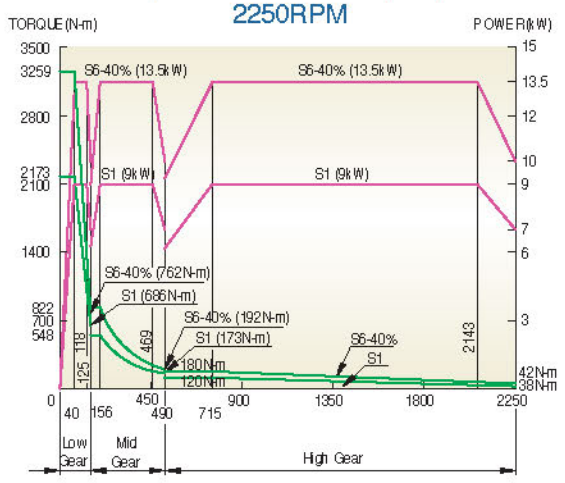
SIEMENS
Spindle Bore Ø56mm(2.2")
3100RPM



Spindle speed (rpm)

For FCL-21/25

SIEMENS
Spindle Bore Ø85mm(3.3")
2250RPM

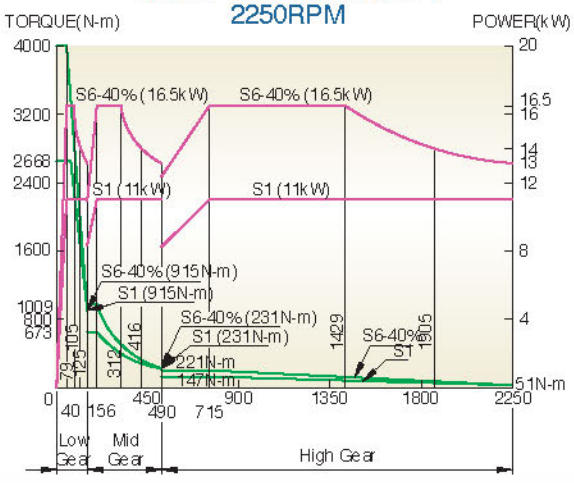


Spindle speed (rpm)

SIEMENS CONTROL FCL-30 SERIES CNC LATHE POWER TORQUE CHART

For FCL-30

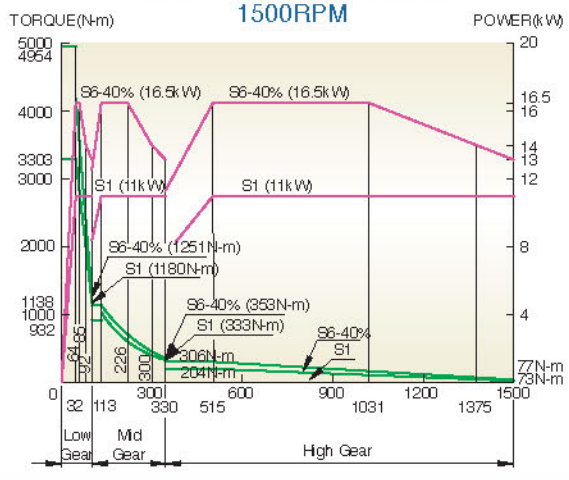
SIEMENS
Spindle Bore Ø85mm(3.3")
2250RPM



Spindle speed (rpm)

For FCL-30

SIEMENS
Spindle Bore Ø105mm(4.1")
1500RPM



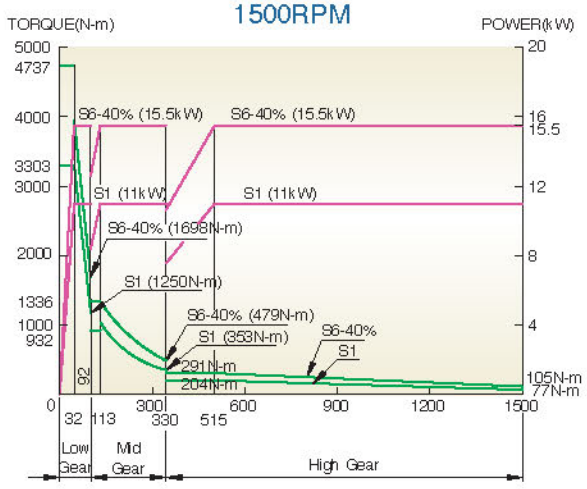
Spindle speed (rpm)

For FCL-21/25/30

FAGOR

Spindle Bore Ø105mm(4.1")

1500RPM



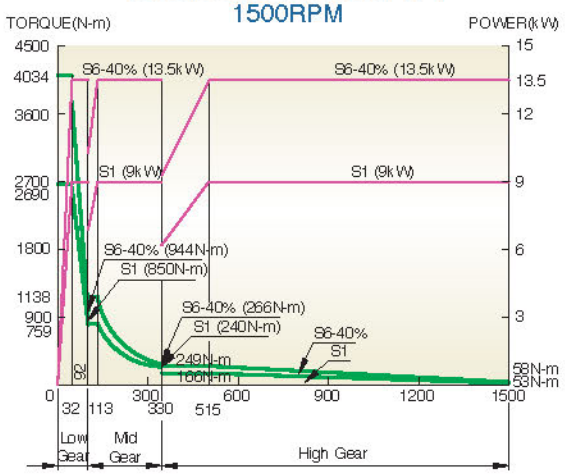
SPINDLE SPEED (rpm)

For FCL-21/25

SIEMENS

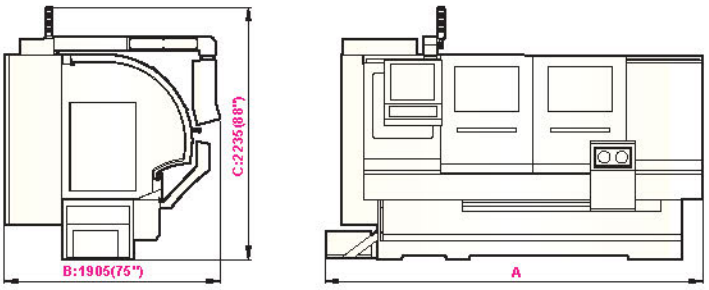
Spindle Bore Ø105mm(4.1")

1500RPM



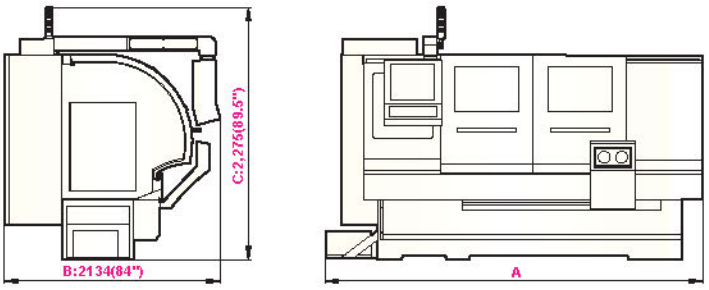
Spindle speed (rpm)

GENERAL SPECIFICATIONS



Unit : mm (")

Model	A	B	C
FCL-1840 / 2140 / 2540	2,840mm (111.8")	1,905mm (75")	2,235mm (88")
FCL-1860 / 2160 / 2560	3,340mm (131.5")	1,905mm (75")	2,235mm (88")
FCL-2180 / 2580	3,840mm (151.2")	1,905mm (75")	2,235mm (88")



Unit : mm (")

Model	A	B	C
FCL-3060	3,815mm (150.2")	2,134mm (84")	2,275mm (89.5")
FCL-3080	4,300mm (169.3")	2,134mm (84")	2,275mm (89.5")
FCL-30120	5,300mm (208.6")	2,134mm (84")	2,275mm (89.5")

GENERAL SPECIFICATIONS

MODEL		FCL-1840 / 60	FCL-2140 / 60 / 80	
Swing				
Swing Over Bed		460mm (18.1")	540mm (21.3")	
Maximum Machining Diameter		460mm (18.1")	540mm (21.3")	
Swing Over Cross-Slide		230mm (9.1")	310mm (12.2")	
Center Height		230mm (9.1")	270mm (10.6")	
Distance Between Centers		1,000 / 1,500 / 2,000mm (39.4" / 59.1" / 78.7")		
Headstock				
Spindle Speeds		33-3,100rpm (D1-6)	27~2,250rpm (D1-8), Opt. 80~1,500rpm	
Spindle Nose		D1-6	D1-8, Opt. A2-11	
Spindle Bore		Ø56mm (2.2") (D1-6)	Ø85mm (3.3") (D1-8), Opt. Ø105mm (4.1") (A2-11)	
Taper In Spindle		1/20	1/16, Opt. 1/20	
Saddle				
Longitudinal Travel(Z Axis)		900 / 1,400 / 1,900mm (35.4" / 55.1" / 74.8")	850 / 1,350 / 1,850mm (33.5" / 53.1" / 73")	
Cross-Slide Travel(X Axis)		280mm (11")	350mm (13.8")	
Size Of Tool Post Shank		25mm (1")		
Quill				
Diameter		75mm (3")		
Travel		190mm (7.5")		
Taper		MT#5		
Motor				
Spindle Motor		FAGOR: 5.5kW / 7.7kW (S1 / S6-40%)	FAGOR: 11kW / 15.5kW (S1 / S6-40%)	
		SIEMENS: 9kW / 13.5kW (S1 / S6-40%)	SIEMENS: 9kW / 13.5kW (S1 / S6-40%)	
Axis X/Z		X: 1kW , Z: 1.5kW		
Coolant Pump Motor		1/10 kW		
Axis Feedrate				
Feedrates X/Z		5,000mm/min (196.9")		
Rapid Traverse X/Z		5,000 / 8,000mm/min (196.9"/315")		
Accuracy (VDI3441)				
Positioning Accuracy		X: 0.02mm , Z: 0.02mm	X: 0.02mm , Z: 0.02mm (FCL-2140/60) X: 0.02mm , Z: 0.04mm (FCL-2180)	
Repeatability		X: 0.01mm , Z: 0.016mm	X: 0.01mm , Z: 0.016mm (FCL-2140/60) X: 0.01mm , Z: 0.035mm (FCL-2180)	
General				
Rated Power, Approx		16 KVA	20 KVA	
Width of Bed		350mm (13.8")		
Approx. Machine Weight		2,900 / 3,400 kgs (6,380 / 7,480 lbs)	3,200 / 3,700 / 4,200 kgs (7,040 / 8,140 / 9,240 lbs)	
	L	2,840 / 3,340 / 3,840mm (111.8" / 131.5" / 151.2")		
Floor Space	W	1,905mm (75")		
	H	2,235mm (88")		

※ Note: The manufacturer reserves the right to modify the design, specifications,mechanisms...etc. of the machine without prior notice. All the specifications shown above are just for reference.

	FCL-2540 / 60 / 80	FCL-3060 / 80 / 120
	630mm (24.8")	760mm (29.9")
	630mm (24.8")	760mm (29.9")
	400mm (15.7")	500mm (19.7")
	315mm (12.4")	380mm (14.9")
	1,000 / 1,500 / 2,000mm (39.4" / 59.1" / 78.7")	1,500 / 2,000 / 3,000mm (59.1" / 78.7" / 118.1")
	27~2,250rpm (D1-8), Opt. 80~1,500rpm (A2-11)/10~800 rpm (A2-11)	80~1,500rpm (A2-11)
	D1-8, Opt. A2-11	A2-11
	Ø85 (3.3")mm (D1-8), Opt. Ø105 (4.1")mm (A2-11)	Ø105 (4.1")mm (A2-11)
	1/16, Opt. 1/20	1/20
	850 / 1,350 / 1,850mm (33.5" / 53.1" / 73")	1,480 / 1,980 / 2,980mm (58.3" / 78" / 117.3")
	350mm (13.8")	450mm (17.7")
	25mm (1")	
	75mm (3")	80mm(3.2"), Opt.105mm (4.1")
	190mm (7.5")	220mm (8.7")
	MT#5	
	FAGOR: 11kW / 15.5kW (S1/S6-40%)	
	SIEMENS: 9kW / 13.5kW (S1 / S6-40%)	SIEMENS: 11kW / 16.5kW (S1 / S60-40%)
	X: 1kW , Z: 1.5kW	
	1/10 kW	
	5,000mm/min (196.9")	
	5,000 / 8,000mm/min (196.9"/315")	
	X: 0.02mm , Z: 0.02mm (FCL-2540/60 • FCL-3060) X: 0.02mm , Z: 0.04mm (FCL-2580 • FCL-3080/120)	
	X: 0.01mm , Z: 0.016mm (FCL-2540/60 • FCL-3060) X: 0.01mm , Z: 0.035mm (FCL-2580 • FCL-3080/120)	
	20 KVA	
	350mm (13.8")	450mm (17.7")
	3,350 / 3,850 / 4,350 kgs (7,370 / 8,470 / 9,570 lbs)	4,400 / 5,100 / 5,600 kgs (9,680 / 11,220 / 12,320 lbs)
	2,840 / 3,340 / 3,840mm (111.8" / 131.5" / 151.2")	3,815 / 4,300 / 5,300mm (150.2" / 169.3" / 208.6")
	1,905mm (75")	2,134mm (84")
	2,235mm (88")	2,275mm (89.5")

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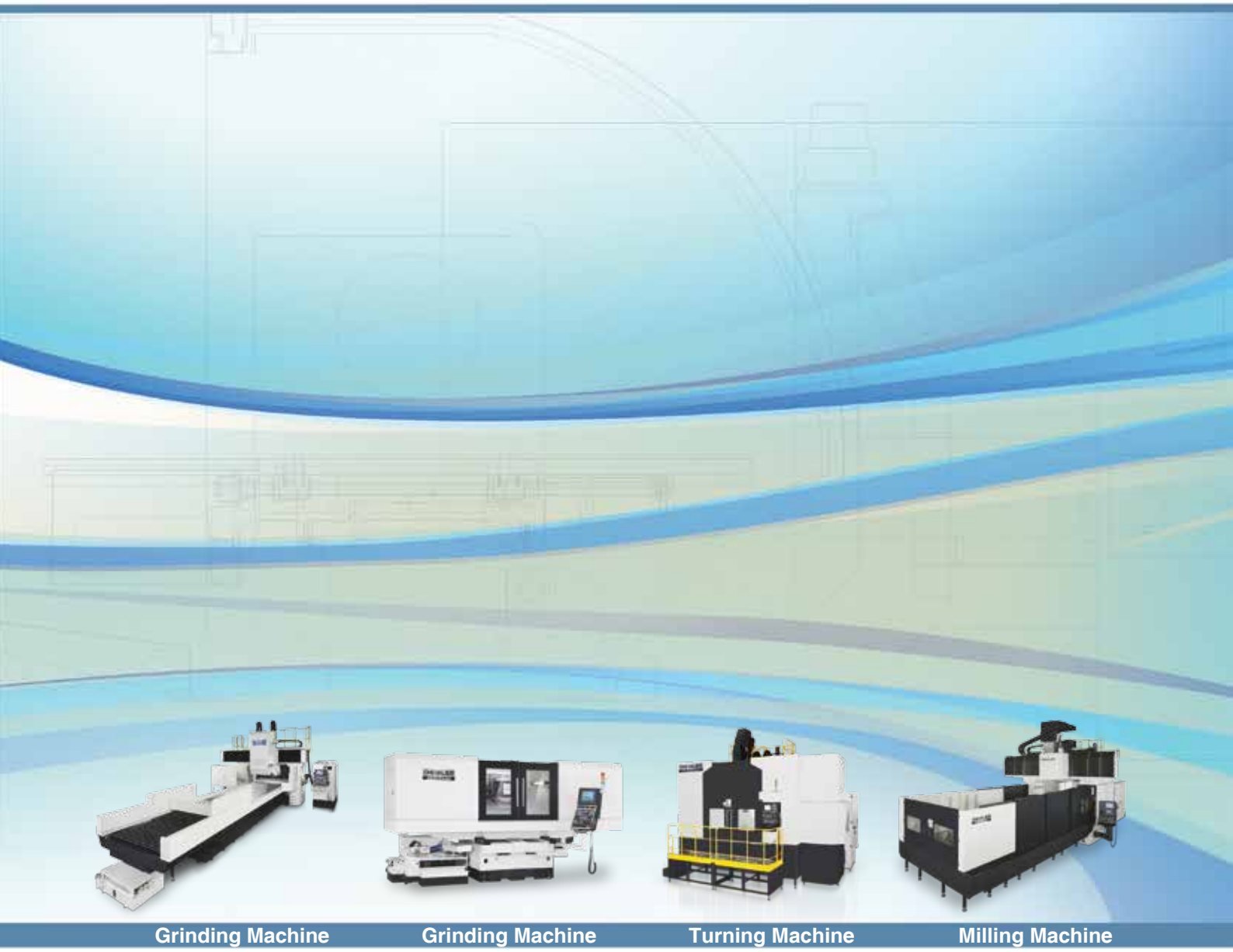

Grinding Machine | Grinding Machine | Turning Machine | Milling Machine

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FCL-18.21.25.30 series_201702 / 1000P2