

CHEVALIER®

FCL-18/21/25/26 SERIES

MULTI-FUNCTION CNC LATHE



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1

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.



FCL-1860

Note: Machine shown with optional accessories.

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 frequency drive or servo drive. Therefore, spindle speeds and feedrate are infinitely variable. Also, the spindle speeds will automatically adjust to varying diameters keeping 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-ups. 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).



INSPECTION

2



Laser Calibration

After assembly, the machine tolerances are measured and verified using state-of-the-art laser calibration equipment. This is done to ensure that the machine meets strict tolerance guidelines for accuracy and repeatability.



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 0.0003" (0.0075mm).

CONTROL FEATURES



FAGOR 8055TC-A Control

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

SIEMENS-810D Control

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



ANILAM 4200T Control

The Anilam 4200T control is everything you asked for, and more. Use it as DRO in manual mode.



FANUC 0iMate-t Control

3 MACHINE CONSTRUCTION

1 **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.



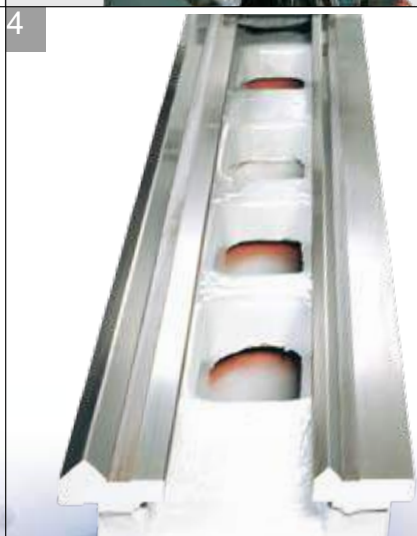
2 **High Accuracy Ballscrews**

- 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 using state-of-the-art laser calibration equipment.



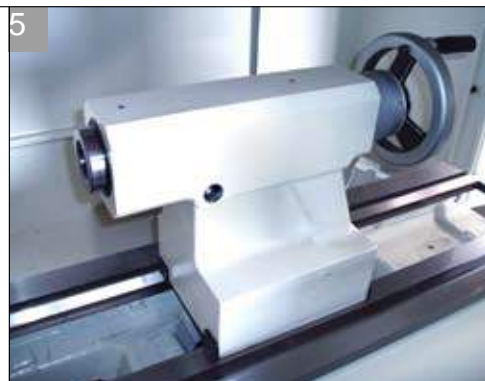
3 **Versatile Apron Controls**

- Specially designed handwheels with simultaneous movement of both X and Z axes and adjustable resolutions available. CNC BE shifted left or right hand side.



4 **Wear Resistant Ways**

- The machine ways, saddle and spindle bore are hardened and ground. The ways are also hand scraped and automatically lubed. Therefore, because of lower friction and reduced wear, high accuracy results can be obtained over an extended machine life, even under extreme operating conditions.



5 **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.

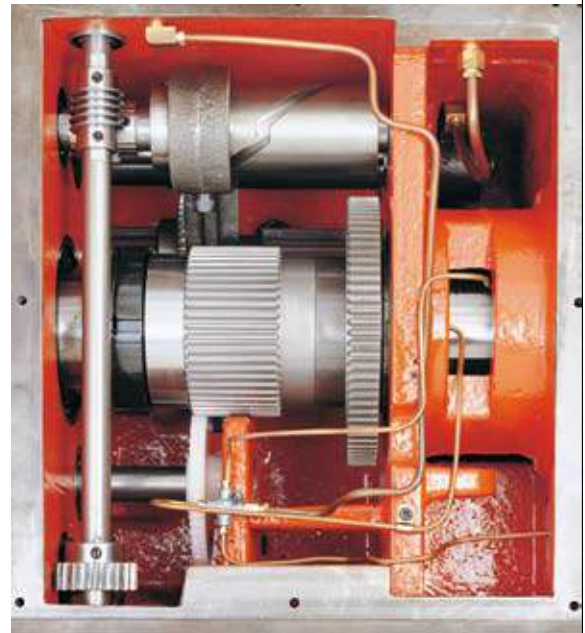
Ø75 mm Quill diameter for 18/21/25 series
Ø80 mm Quill diameter for 26 series



Heavy Duty Headstock

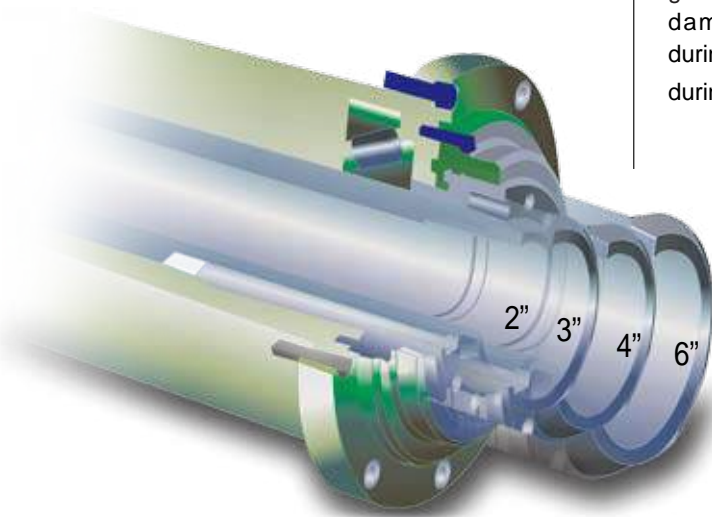
The Chrome-Molybdenum Alloy Steel gears are harden and precision-ground for long life and low noise. The gears are supported by high load capacity precision bearings allowing a greater transmission of torsional forces for heavier cutting capability. Patented cam driven auto. Gear shifting mechanism

Note: Brass tube is opt.



BIG SPINDLE BORE

High spindle speed 3100 rpm(18series)

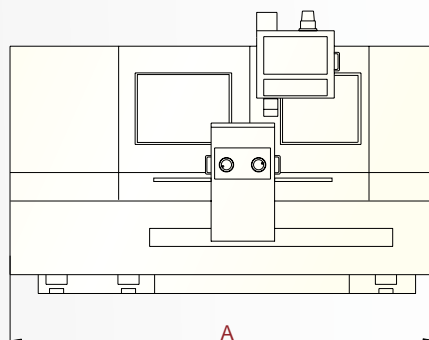
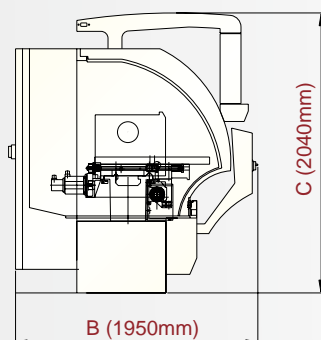


Hardened & Ground Guideways

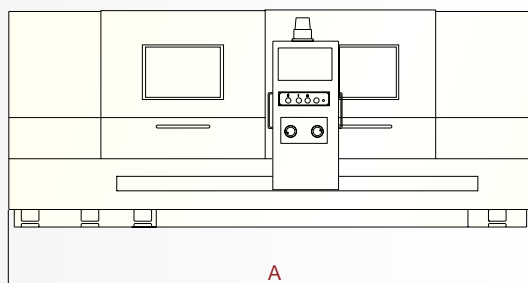
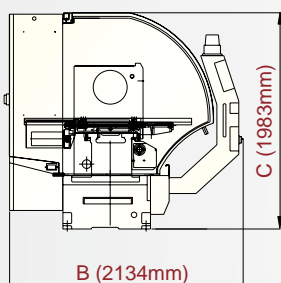
The machine bed is constructed with Meehanite castings which are heat treated and precision ground, provide excellent rigidity and superb dampening capability for high metal removal during rough turning and exceptional surface finish during fine turning.



| Model | standard | optional (A2-11) | optional (A2-11) |
|---------------------------------|---------------|------------------|------------------|
| FCL-1840/1860/1880 | 2"(56mm) D1-6 | N/A | N/A |
| FCL-2540/2560/2580 | 3"(85mm) D1-8 | 4"(105mm) | 6"(153mm) |
| FCL-2660/2680/26120/26160/26200 | 3"(85mm) D1-8 | 4"(105mm) | 6"(153mm) |



| Model | A | B | C |
|--------------------|--------------|-------------|-------------|
| FCL-1840/1860/1880 | 106"(2700mm) | 77"(1950mm) | 80"(2040mm) |
| FCL-2140/2160/2180 | 126"(3200mm) | 77"(1950mm) | 80"(2040mm) |
| FCL-2540/2560/2580 | 146"(3700mm) | 77"(1950mm) | 80"(2040mm) |



| Model | A | B | C |
|-----------|--------------|-------------|-------------|
| FCL-2660 | 142"(3590mm) | 84"(2134mm) | 78"(1983mm) |
| FCL-2680 | 161"(4090mm) | 84"(2134mm) | 78"(1983mm) |
| FCL-26120 | 200"(5090mm) | 84"(2134mm) | 78"(1983mm) |
| FCL-26160 | 240"(6090mm) | 84"(2134mm) | 78"(1983mm) |
| FCL-26200 | 280"(7090mm) | 84"(2134mm) | 78"(1983mm) |

STANDARD ACCESSORIES

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. 4-station toolpost (25x25mm)
11. Tool box
12. Fully Enclosed Splash Guard (For machine with 2M. or smaller, between centers)



Steady rest

OPTIONAL ACCESSORIES

1. Follow rest
2. Quick change toolpost
3. H4 electric turret
20x20mm(18 Series)
25x25mm (21/25/25 Series)
4. 3-Jaw scroll chuck (manual)
5. 4-Jaw scroll chuck (manual)
6. V8 Hydraulic vertical turret
20x20mm(18 Series)
25x25mm (21/25/25 Series)
7. Hydraulic scroll chuck system
8. Face plate
9. Live center (MT6#)
10. SAUTER turret
(20x20mm18 Series)
(25x25mm 21/25/25 Series)
11. Chip conveyer
12. Hydraulic tailstock
13. SIEMENS 810D control



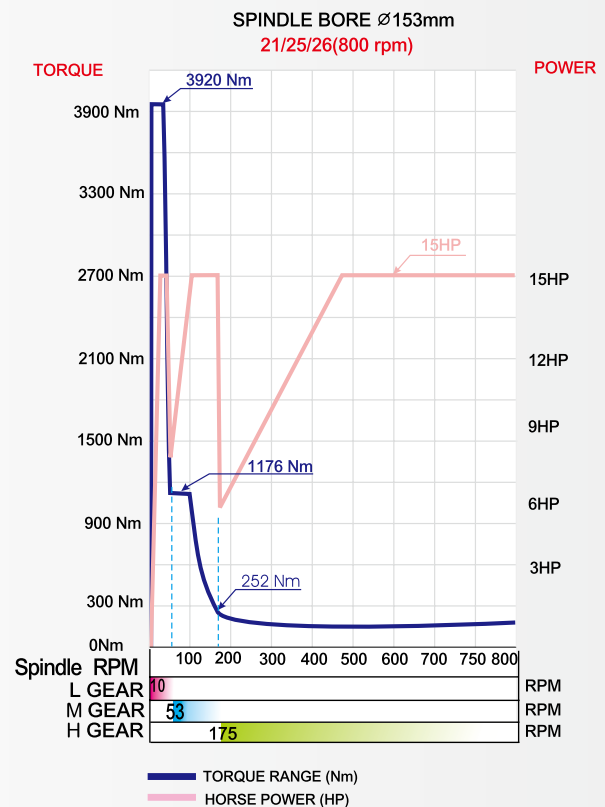
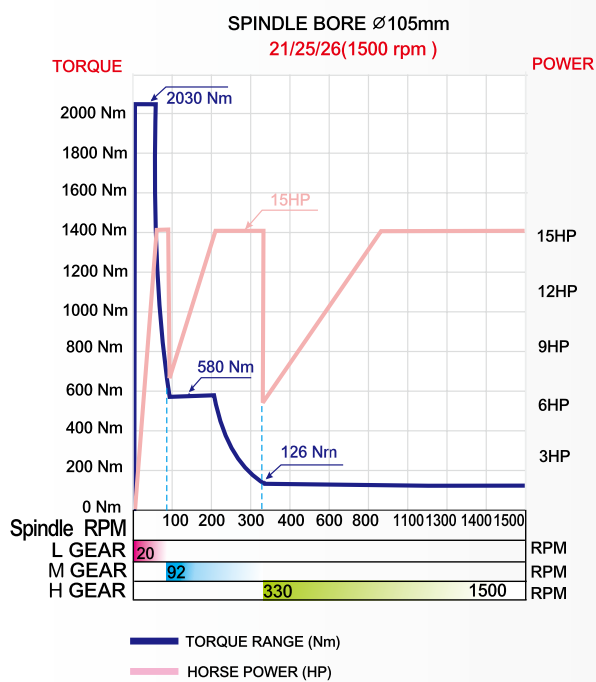
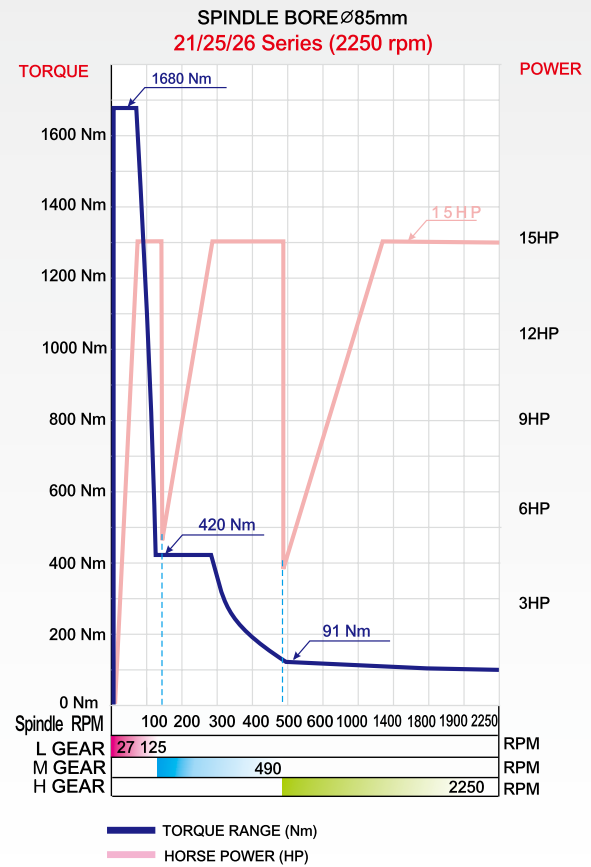
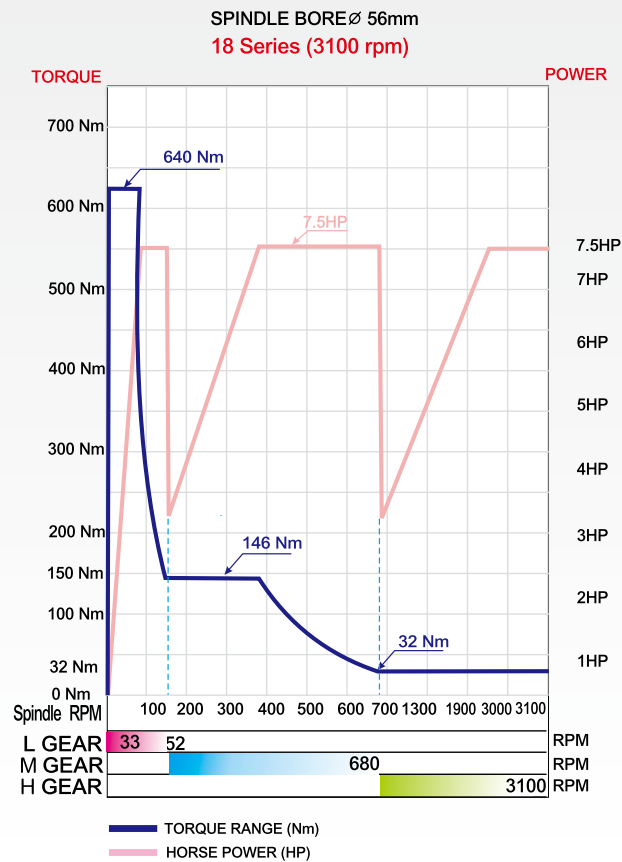
V8 Vertical turret



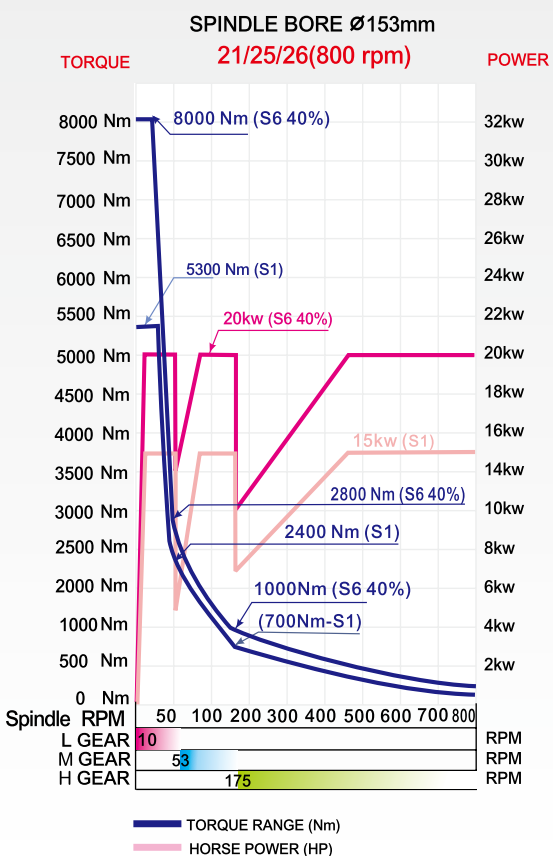
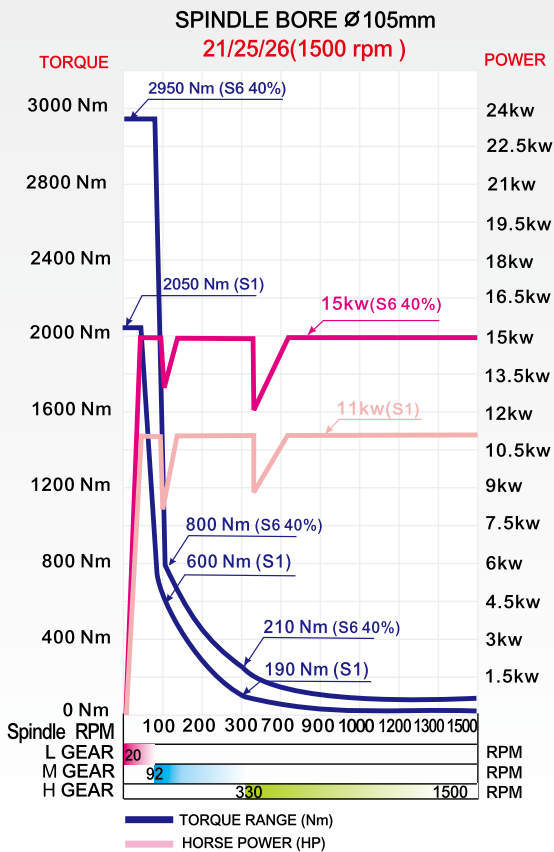
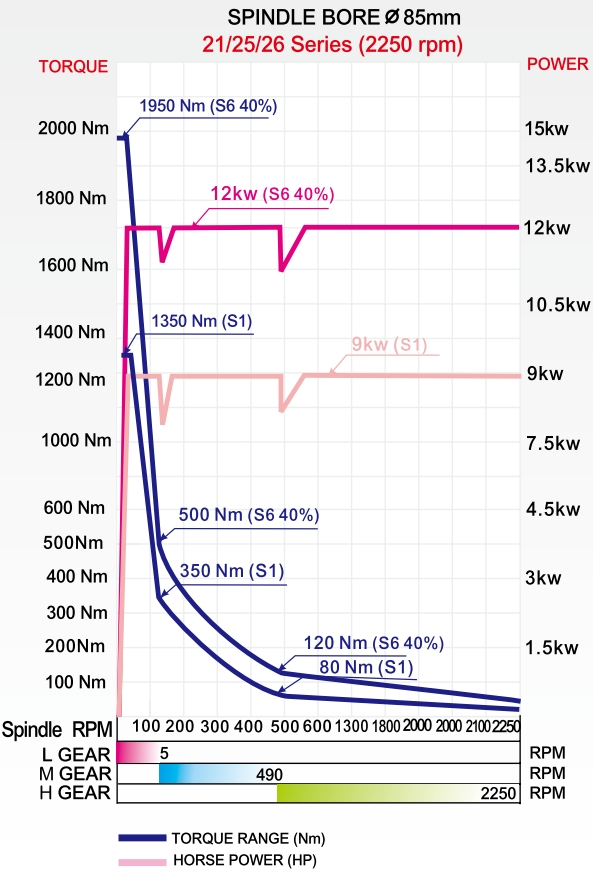
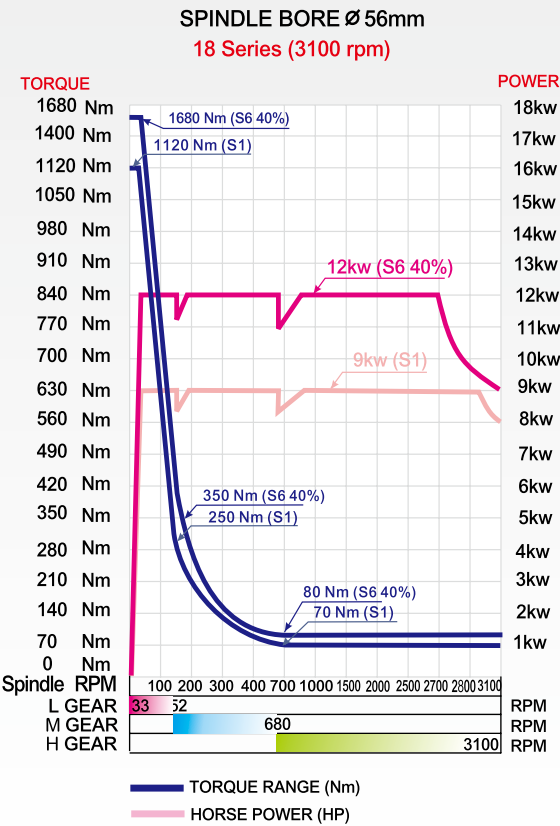
H4 Electric turret

FCL-18/21/25/26SERIES CNC LATHE POWER TORQUE CHART FAGOR, ANILAM CONTROL

6 SPINDLE MOTOR OUTPUT



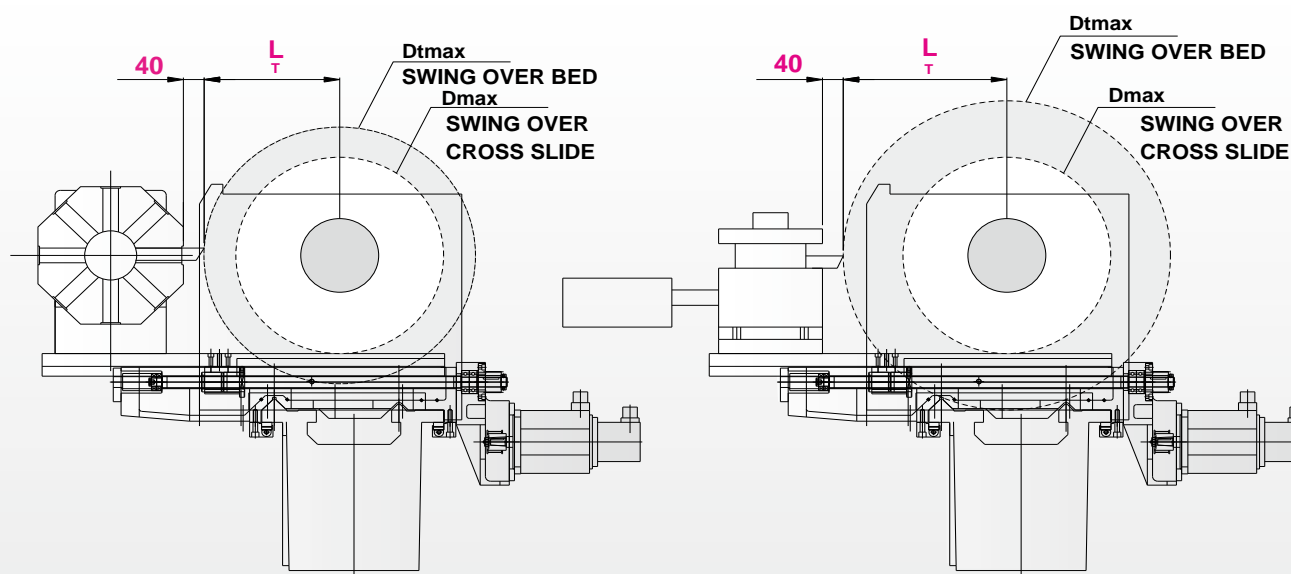
FCL-18/21/25/26SERIES CNC
LATHE POWER TORQUE CHART
SIEMENS CONTROL



| Description | FCL- 1840/1860/1880 | FCL- 2140/2160/2180 | FCL- 2540/2560/ 2580 | FCL- 2660/ 2680/26120/26160 |
|-----------------------------|------------------------------------------------------------|-------------------------------------------------|--------------------------------------------------------------------------|-------------------------------------------------------|
| Swing | | | | |
| Swing over bed | 18.1"(460mm) | 21.3"(540mm) | 24.8"(630mm) | 26"(660mm) |
| Max. machining diameter | 18.1"(460mm) | 21.3"(540mm) | 24.8"(630mm) | 26"(660mm) |
| Swing over cross slide | 9.1"(230mm) | 12.2"(310mm) | 15.7"(400mm) | 15.7"(400mm) |
| Center height | 9.1"(230mm) | 10.6"(270mm) | 12.4"(315mm) | 13"(330mm) |
| Distance Between center | 39.4"/59.1"/78.7" (1000/1500/ 2000mm) | | 59.1"/78.7"/118.1"/157.5" 1500/2000/3000/4000 mm | |
| Headstock | | | | |
| Spindle speeds | 33-3100rpm | 27~2250rpm, 80~1500rpm (opt.) /10~800rpm (opt.) | | |
| Spindle nose | D1-6 | D1-8, A2-11(opt.) / A2-11(opt.) | | |
| Spindle bore | 2.2"(56mm) | 3.3"(85mm), 4"(105mm)(opt.) | 3.3"(85mm), 4"(105mm)(opt.)/6"(153mm) (opt.) | |
| Taper in spindle | MT#6 | 1/16, 1/20(opt.) /1/20(opt.) | | |
| Saddle | | | | |
| Longitudinal travel(Z-axis) | 35.4"/55.1"/74.8" (900/ 1400/ 1900mm) | 33.5"/53.1"/73" (850/ 1350/ 1850mm) | 58.3"/78"/117.3"/156.7" (1480/1980/2980/3980mm) | |
| Cross-slide travel (X-axis) | 11"(280mm) | 13.8"(350mm) | 17.7"(450mm) | |
| Size of toolpost shank | 1"(25mm) | | | |
| Tailstock | | | | |
| Diameter | | 3"(75mm) | 3.2"(80mm)/opt. 4.1"(105mm) | |
| Travel | | 8.3"(210mm) | 8.7"(220mm) | |
| Taper | | MT#5 | | |
| Motor | | | | |
| Spindle motor | 7.5HP/10HP(Opt.) AC Servo(Opt.) | 15HP/20HP(Opt.) AC Servo(Opt.) | | |
| Drives(spindle) | AC & Inverter | | | |
| Drives(X,Z) | X=1.34HP, Z=2HP | | | |
| Coolant pump motor | 1/6Hp | | | |
| (X,Z) Drives | | | | |
| Feed rates (X,Z) | 196.9"(5000mm/min) | | | |
| Rapid traverse (X,Z) | 196.9"/315"(5000/8000mm/min) | | | |
| Accuracy | | | | |
| Positioning accuracy | JIS B6331/11.81" X +/-0.0002", Z +/-0.0004" | | | |
| Repeatability | Under± 0.0002"(±0.005mm) | | Under ±0.0003"(±0.007mm) | |
| Width of bed | 13.8"(350mm) | | 17.7"(450mm) | |
| Rated power, approx | 16KVA | 20KVA | | |
| Approx, machine weight | 6380/7480/8580lbs (2900/3400/3900kgs) | 7040/8140/9240lbs (3200/3700/4200kgs) | 7370/8470/9570lbs (3350/3850/4350kgs) | 9680/11220/12320/13420lbs (4400/5100/5600/6100kgs) |
| Floor space (L x W x H) | 106"/126"/146"x77"x80" (2700/3200/3700 x 1950 x 2040mm) | | 142"/161"/200"/240"x84" /96" (3590/4090/5090/6090 x 2431 x 1983mm) | |

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

MAX. TURNING DIAMETER



FOUR WAY TOOL POST

| Model | D max | D t max | L t |
|---------------------------------|---------------|---------------|---------------|
| FCL-1840/1860/1880 | 9.1" (230mm) | 18.1" (460mm) | 9.1" (230mm) |
| FCL-2140/2160/2180 | 12.2" (310mm) | 21.3" (540mm) | 10.6" (270mm) |
| FCL-2540/2560/2580 | 15.7" (400mm) | 24.8" (630mm) | 12.4" (315mm) |
| FCL-2660/2680/26120/26160/26200 | 15.7" (400mm) | 26" (660mm) | 13" (330mm) |

8 STATION TURRET

| Model | D max | D t max | L t |
|---------------------------------|---------------|---------------|---------------|
| FCL-1840/1860/1880 | 9.1" (230mm) | 18.1" (460mm) | 9.1" (230mm) |
| FCL-2140/2160/2180 | 12.2" (310mm) | 20.6" (522mm) | 10.3" (261mm) |
| FCL-2540/2560/2580 | 15.7" (400mm) | 20.6" (522mm) | 10.3" (261mm) |
| FCL-2660/2680/26120/26160/26200 | 15.7" (400mm) | 24.8" (630mm) | 13" (330mm) |

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Cat:2816-00020C00/20040924/1000 V1.5



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