TZL 420
CNC FLOOR-TYPE CENTRE LATHE

BASIC PARAMETERS

4-guideways bed	
Max. torque on spindle	180,000 Nm
Max. weight carried between centres	80 tonnes
Turning length	5,000 mm, 12,000 mm, 19,000 mm, 26,000 mm

In its basic version the **TZL 420** horizontal centre lathe – thanks to the innovative mechanical solutions and advanced control systems – is a multi-purpose lathe that guarantees productive rough and finish machining.

PURPOSE

The TZL 420 CNC lathe is designed for workpiece machining in the range of turning in accordance with the machine tool specifications, especially machining of large-size shafts and large-diameter workpieces. When delivered with special equipment it can operate as horizontal machining centre with turning, drilling and milling capabilities. It can be equipped with an automatic tool head, tool and workpiece measuring systems, controlled C axis, workpiece steady rests.

CONTROL SYSTEM

The application of the state-of-the-art CNC system allows for automatic, precise and productive workpiece machining according to a program.

MAIN FEATURES

- Max. turning diameter Ø 4,200 mm
- 4-guideway bed, headstock body made from high-grade cast iron of enhanced mechanical properties
- Carriage and tailstock bed guideways hardened to 45 HRC and ground, additional carriage guideway hardened to 60 HRC
- Cross-slide guideways carburized and hardened to 60 HRC and ground
- Headstock and tailstock on separate plates
- A wide variety of optional equipment that expands the machine tool capabilities
- Slidable operator cabin with a control panel

STANDARD EXECUTION

- Max. turning diameter Ø 4,200 mm
- Turning length 5,000 mm, 12,000 mm, 19,000 m, 26,000 m
- 4-jaw chuck Ø 2,000 mm
- Double lamellar cross-slide rested on 4 guideways
- Telescopic covers for carriage guideways on bed and cross-slide
- Power of main drive motor 150 kW (continuous operation)
- Range of continuously variable spindle rotation rates 0.3 to 100 rpm
- Power supply 3 × 400 V / 50 Hz
- SIEMENS SINUMERIK 840 D sl CNC system
- Backlash-free rack-and-pinion transmission for Z-axis travel
- Ball screw and nut transmission for X-axis travel
- Automatic change of range of headstock rotation rates
- Central lubrication system controlled by CNC
- Chip conveyor
- 1.0-Bar tool cooling system
- Tailstock with quill Ø 450 mm with spindle, clamping force indicator, workpiece extension compensation, with automatic quill stroke, travel along plates, automatic clamping against plates
- Operator cabin
- Control panel
- Dead centre - 2 pcs
- Adjusting wedges for leveling and foundation bolts
- CE mark
- Operations and maintenance manuals
- CNC operation and programming documentation

OPTIONAL EXECUTION

- Additional carriage
- SIEMENS SINUMERIK 840 D sl Operate CNC system with basic turning functions and power of main drive motor of 200 kW (continuous operation)
  - Shop Turn – basic turning functions
  - PCU 50.3
  - Language options
  - Real-time simulations
  - 3D simulations
- FANUC 0i-TD Manual Guide CNC system with basic turning functions and power of main drive motor of 150 kW (continuous operation)
- Spindle positioning (C axis) realised by additional gearbox
- Headstock with two ranges of rotation rates 0.3 to 42 rpm
- Automatic turret with live tools, controlled C axis powered by main drive motor
- 20-kW milling head and C axis powered by main drive motor
- 10-kW milling head for automatic 4-position turret and C axis powered by main drive motor
- Linear measuring scales for X and Z axis
- Tool measuring system
- Workpiece measuring system
- Air conditioning for electrical cabinet and control panel
- Oil heating in hydraulic pack to maintain oil temperature >10ºC

ADDITIONAL EQUIPMENT

- C-type steady rest Ø 150 to 700 mm / 7 tonnes
- C-type steady rest Ø 400 to 800 mm / 7 tonnes
- C-type steady rest Ø 700 to 1,000 mm / 7 tonnes
- Steady rest Ø 250 to 650 mm / 15 tonnes
- Steady rest Ø 600 to 1,000 mm / 25 tonnes
- Hydrostatic steady rest Ø 600 to 1,000 mm / 50 tonnes
- Automatic 4-position turret
- 10-kW grinding attachment for automatic 4-position turret
- 20-kW milling head and C axis powered by main drive motor

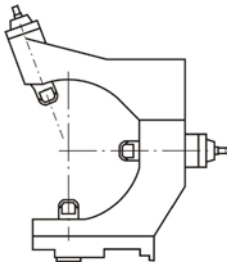
BASIC TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS TZL 420		
Model		**TZL 420**
Machine tool code		
Max. turning diameter	Ø mm	4,200
Min. turning diameter	Ø mm	700
Distance between centres	mm	5,000 / 12,000 * / 19,000 * / 26,000 *
Max. weight of workpiece clamped in:		
• chuck	kg	12,000
• centres	kg	80,000
• centres + 1 steady rest	kg	90,000
• centres + 2 steady rests	kg	100,000
Headstock		
Range of continuously variable rotation rates	rpm	0,3 to 100
Power of main drive motor	kW	150 / 200 *
Max. torque on spindle	Nm	180,000
Spindle nose	size	Taper 1:10
Carriage		
Longitudinal travel	mm	Turning length
Crosswise travel	mm	1,300 + 450
Rapid travel in X axis	mm/min	4,000
Rapid travel in Z axis	mm/min	4,000
Z-axis travel drive	type	Rack-and-pinion, backlash-free
Spindle – C axis*		
Range of continuously variable rotation rates	rpm	0.3 to 42
Positioning rotation rates	rpm	0.2 to 2
Max. torque on spindle	Nm	36,000
Positioning accuracy	deg	0.001
Tailstock		
Quill diameter	Ø mm	450
Quill stroke	mm	200
Rapid travel of quill	mm/min	300
Working travel of quill	mm/min	4
Machine tool overall dimensions and weight, approx.		
Length	mm	7,000 + turning length
Width	mm	4,350
Height	mm	3,500
Weight:		
• for 3,000 mm turning	kg	100,000
• for 5,000 mm turning	kg	138,500
• for 19,000 mm turning	kg	177,000
• for 26,000 mm turning	kg	215,500
* optional execution		© RAFAMET S.A. – All Rights Reserved

STEADY RESTS

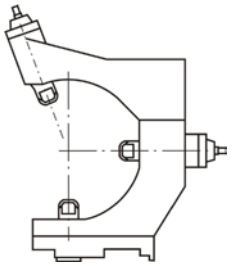
C-TYPE ROLLER STEADY REST
Ø 150 to 700 mm / 7 tonnes

- Installed on the bed
- Fixing to the bed: Manual
- Setting of quills: Manual



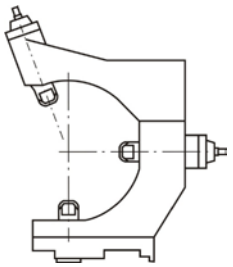
C-TYPE ROLLER STEADY REST
Ø 400 to 800 mm / 7 tonnes

- Installed on the bed
- Fixing to the bed: Manual
- Setting of quills: Manual



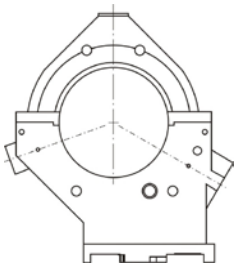
C-TYPE ROLLER STEADY REST
Ø 700 to 1,000 mm / 7 tonnes

- Installed on the bed
- Fixing to the bed: Manual
- Setting of quills: Manual



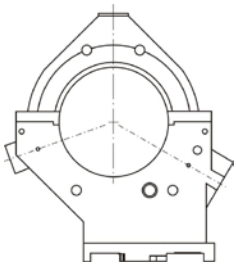
ROLLER STEADY REST:
Ø 250 to 650 mm / 15 tonnes

- Installed on the bed
- Fixing to the bed: Manual
- Setting of quills: Manual



ROLLER STEADY REST:
Ø 600 to 1,000 mm / 25 tonnes

- Installed on the bed
- Fixing to the bed: Manual
- Setting of quills: Manual



HYDROSTATIC REST:
Ø 600 to 1,000 mm / 50 tonnes

- Installed on the bed
- Fixing to the bed: Manual
- Setting of quills: Manual