TCE 200 / TCE 250
SUPER HEAVY CENTRE LATHES

BASIC PARAMETERS

4-guideway bed	
Max. torque on spindle	180,000 Nm
Max. weight of workpiece between centre	80 tonnes
Turning length	4,000 to 25,000 mm

In their basic version the **TCE** series **(TCE 200 / TCE 250)** super heavy centre lathes – thanks to the innovative mechanical solutions and the advanced control systems – are the multi-purpose lathes that guarantee productive rough and finish machining.

PURPOSE

The TCE series lathes are designed for workpiece machining in the range of turning in accordance with their specifications, especially for machining of large-size shafts. When delivered with special equipment they can operate as the horizontal machining centres with turning, drilling and milling capabilities. They can be equipped with an automatic turret, tool attachments, 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

- Machine tool construction based on a rigid bed with hardened guideways
- 4-guideway bed, headstock body made from high-grade cast iron of enhanced mechanical properties
- Carriage travels along two guideways that guarantee precise guidance and a third support guideway
- Bed and carriage guideways hardened to 45 HRC and ground.
- A wide variety of optional equipment that expands the machine tool capabilities
- Slidable operator cabin with the control panel

STANDARD EXECUTION

- Swing over bed Ø 2,000 mm (TCE 200)
- Turning length 4,000 to 25,000 mm, every 1,000 mm
- 4-jaw chuck Ø 1,700 mm
- Carriage rested on two flat guideways and one support guideway
- Power of main drive motor of 150 kW (continuous operation)
- Range of continuously variable spindle rotation rates 0.5 to 160 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 bed, automatic clamping against bed
- 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

- Swing over bed Ø 2,500 mm (TCE 250)
- 4-jaw chuck Ø 2,000 mm
- 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 4-position turret with live tools, controlled C axis powered by main drive motor
- Automatic 4-position turret with live tools, controlled Y axis and controlled C axis powered by main 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
- 56-HRC hardened steel and ground guideways

ADDITIONAL EQUIPMENT

- Roller steady rest Ø 250 to 650 mm / 15 tonnes
- Roller steady rest Ø 600 to 1,000 mm / 25 tonnes
- Open-type roller steady rest Ø 1,000 to 1,350 mm / 40 tonnes (TCE 200)
- Open -type roller steady rest Ø 1,000 to 1,800 mm / 40 tonnes (TCE 250)
- Hydrostatic steady rest Ø 600 to 1,000 mm / 50 tonnes
- 5.5 kW grinding attachment for 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
- 10-kW grinding attachment for automatic 4-position turret with Y axis and C axis powered by main drive motor
- Boring clamping ring Ø 200 mm

BASIC TECHNICAL SPECIFICATIONS

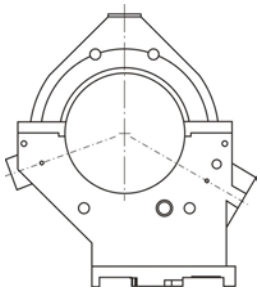
TECHNICAL SPECIFICATIONS (TCE SERIES)			
Model		**TCE 200**	**TCE 250 ***
Machine tool code			
Swing over bed	Ø mm	2,000	2,500
Swing over carriage	Ø mm	1,700	2,000
Distance between centres (every 1,000 mm)	mm	4,000 to 25,000 *	
Max. weight of workpiece clamped in: • chuck • centres • centres + 1 steady rest • centres + 2 steady rest	 kg kg kg kg	 12,000 80,000 90,000 100,000	
Headstock			
Range of continuously variable rotation rates	rpm	0.5 to 160	
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	660 + 450	
Rapid travel in X axis	mm/min	2000	
Rapid travel in Z axis	mm/min	4000	
Z-axis travel drive	type	Rack-and-pinion, backlash-free	
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	2,500	2,900*
Weight (for 3,000 mm of turning length)	kg	70,000	75,000
Increase in weight for 1,000 mm of turning length	kg	3,500	
*optional execution			

STEADY RESTS

ROLLER STEADY RESTS

Ø 250 to 650 mm / 15 tonnes

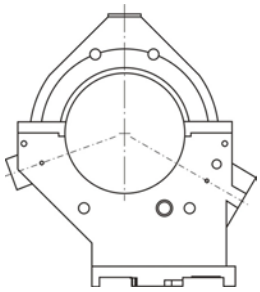
- Installed on the bed
- Fixing to the bed: Manual
- Setting of quills: Manual



ROLLER STEADY REST

Ø 600 to 1,000 mm / 25 tonnes

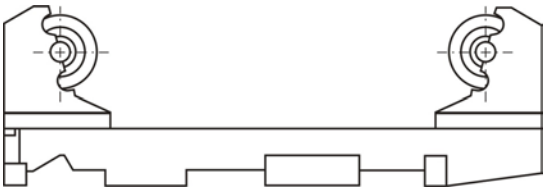
- Installed on the bed
- Fixing to the bed: Manual
- Setting of quills: Manual



OPEN-TYPE ROLLER STEADY REST

Ø 1,000 to 1,350 mm / 40 tonnes (TCE 200)

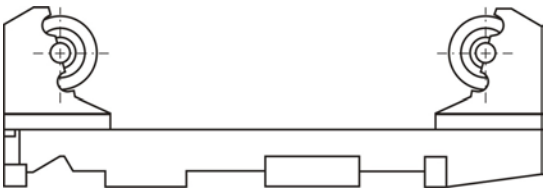
- Installed on the bed
- Fixing to the bed: Manual
- Setting of quills: Manual



OPEN-TYPE ROLLER STEADY REST

Ø 1,000 to 1,800 mm / 40 tonnes (TCE 250)

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



HYDROSTATIC STEADY REST

Ø 600 to 1,000 mm / 50 tonnes

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