

UDA 125 N

ROLL-IN ROLL-OUT / RADIAL OR AXIAL CLAMPING



BASIC SPECIFICATIONS

Range of wheel tread diameters (axial/radial wheelset clamping):	770 to 1,200 mm / 600 to 1,250 mm
Maximum weight of wheelset:	4,500 kg
Available multi track gauge version	

PURPOSE

The UDA 125 N Portal Wheel Lathe is a CNC double-saddle special-purpose lathe designed for reprofiling of wheels used in rail vehicles. The machine tool ensures productive machining of solid (monoblock) wheels and wheels with tyres of both used and new wheelsets.

The machine tool is provided with either axial or radial wheelset clamping system. The wheelsets can be equipped with outboard axle boxes, gears installed between the wheels, or brake discs.

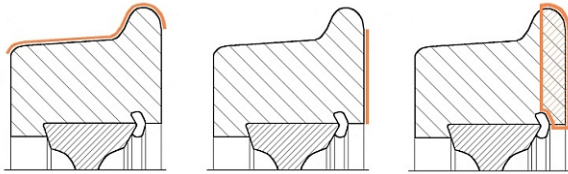
The wheelset is rolled onto the built-in wheelset elevator along rails and automatically centred and clamped between the centres and the driving dogs installed on spindle face plates.

The machine tool main structure is made in the form of a portal enabling wheelsets unloading to its rear side in roll-through flow. It is also possible to unload the wheelsets to the machine front side.

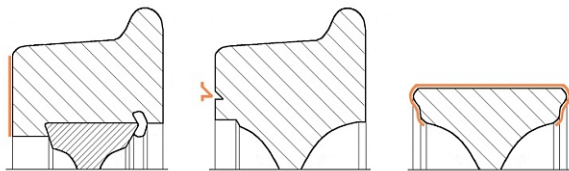
The main drive is powered by two AC motors of continuously variable rotation rates and digitally controlled in master / slave system.

The UDA 125 N Portal Wheel Lathe is capable of performing the following operations:-

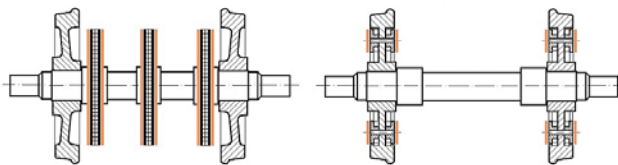
- Turning of wheel profile according to technological program.
- Wheel rim inner facing.
- Turning of tyre in order to remove retaining ring.



- Wheel rim outer facing (available for radial clamping system only).
- Turning of limit machining groove (available for radial clamping system only).
- Turning of wheel centre (available for radial clamping system only).



- Axle-mounted brake disc facing.
- Wheel-mounted brake disc facing (available for radial clamping system only).



MAIN FEATURES

- The machine main structure made as a single-piece extremely rigid, heavily ribbed box-type high-grade iron casting in the form of portal guaranteeing the best dumping of vibrations produced during cutting process and excellent chip evacuation.
- Main drive powered by two AC motors of continuously variable rotation rates and digitally controlled in master / slave system.
- Automatic and reliable profile wear measurement using touch-type measuring heads (laser measurement optional).
- Productive machining of narrowed (economical) wheel profiles.
- Operation in roll-through or roll-in roll-out system.
- Versatile equipment and wide programming capabilities facilitate easy machining of unusual wheel profiles.
- Available multi track gauge version.

STANDARD EXECUTION

- Portal, two headstocks with spindles and face plates each with 60 / 90 deg. centre and three radial / axial driving dogs.
- Saddles and compound cutter for wheel profile machining with cassettes and cutting plates.
- Touch-type wheel wear measuring heads.
- Wheelset elevator and centring device.
- Two (2) AC motors of continuously variable rotation rates with digital controllers for main drive.
- Four (4) AC motors of continuously variable rotation rates with digital controllers for feed drives.
- Latest SIEMENS SINUMERIK 840D sl computer numerical control system with PLC.
- Control panel.
- Fault diagnostics with text messages in user's language and Help function.
- Program for machining of one type of basic or economical wheel profile.
- Profile gauge and master gauge for one type of basic wheel profile.
- HMI screen pages – operator guidance during machining process.
- Electrical equipment and control cabinet.
- Hydraulic power system.
- Lubrication system.
- Chip covers, chip chute and chip conveyor.
- Safety guards with sliding front doors.
- Lighting of working zone.
- Spanners for machine tool operation and installation.
- Equipment for setting and fixing the machine tool on foundation.
- Calibration wheelset for machine tool measuring system.
- Operation and Maintenance Manuals.
- Stack light and buzzer indicating machine tool working condition.
- CE mark and EC declaration of conformity.

ADDITIONAL EQUIPMENT

- Special centres.
- Device holding outboard axle boxes.
- Device and cutters for wheel rim outer facing.
- Device and cutters for axle-mounted and wheel-mounted brake disc facing.
- Device for wheel centre machining.
- Touch screen for main control panel.
- Additional programs for machining of basic and economical profiles.
- Wheelset database.
- Laser measuring heads for scanning of wheel profile.
- Equipment for tool retraction in case of power failure.
- Equipment for monitoring of profile cutters wear condition.
- Equipment for calibration of cutting tools.
- Mechanical chip crusher and chip bin.
- Dust and fume extraction system.
- CCTV system for monitoring of machining process.
- Wheelset turn table.
- Other upon request.


TECHNICAL SPECIFICATIONS

MODEL		UDA 125 N	
Wheelset geometry			
Track gauge ⁽¹⁾		To be agreed upon	
Wheelset clamping system ⁽²⁾		Radial	Axial
Max. wheel tread diameter before machining	mm	1,250	1,200
Min. wheel tread diameter after machining	mm	660	770
Max. width of wheel rim	mm	145	
Min. / max length of wheelset axle ^{(3), (4)}	mm	1,645 / 2,370	
Max. weight of wheelset	× 10 kN	4.5	
Machine tool parameters			
Max. chip cross-section ⁽⁵⁾	mm ²	2 × 12	
Max. feed rate	mm/rev.	4,000	
Max. rate of continuously variable rotation of main drive:-			
Profile machining	rpm	45	
Brake disc facing	rpm	70	
Power of main drive motors (S1)	kW	2 × 40	
Total power installed (standard execution)	kW	140	
Machine tool overall dimensions and weight			
Machine tool overall dimensions:-			
Length ⁽³⁾	mm	8,400	
Width ⁽³⁾	mm	3,825	
Height	mm	2,840	
Workshop floor surface demand	mm	15,500 × 6,500	
Machine tool weight ⁽³⁾	× 10 kN	36	
Machining accuracies			
Difference in diameters between two wheels of the same wheelset	mm	≤0.15	
Radial run-out of wheel tread	mm	≤0.10	
Axial run-out of wheel inner faces	mm	≤0.10	
Accuracy of profile machining	mm	≤0.15	
Roughness of wheel profile surface after machining, Ra	µm	5 to 20	
Roughness of brake disc surface after machining, Ra	µm	2.5 to 3.2	
<small>(1) Multi track gauge version available. (2) To be selected by Purchaser. (3) For track gauge of 1,435 mm and standard execution. (4) Other length of wheelset axles to be agreed upon. (5) Wheel material: steel of hardness ≤270 HB and tensile strength Rm ≤950 N/mm².</small>			

Some of the above data can be altered to meet the customer requirements.

Above data are subject to change due to product development, without prior notice.