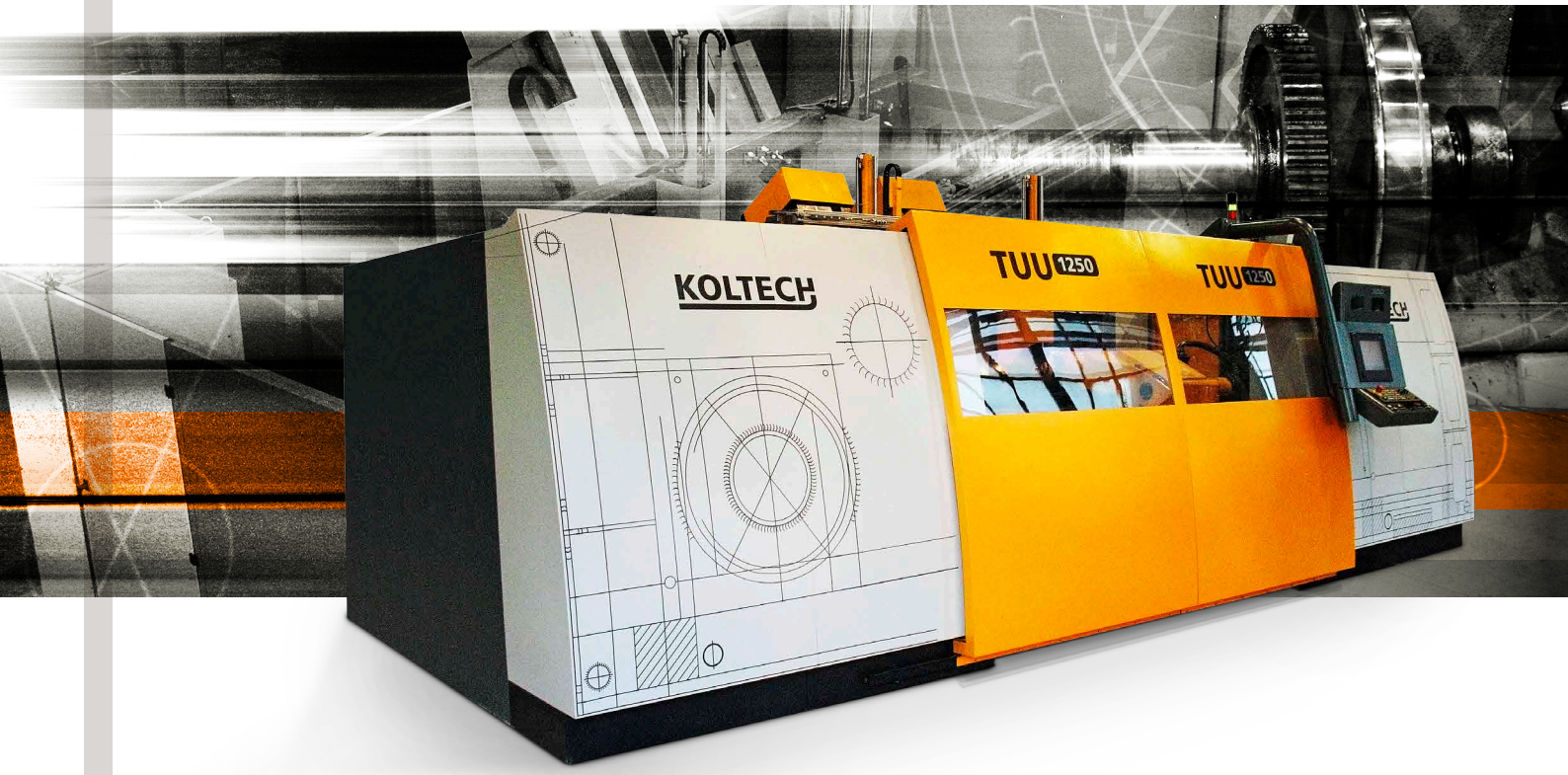
Product line of

Above Floor Wheel Lathe

TUU 1250



easy to learn,
easy to use,
easy to maintain…

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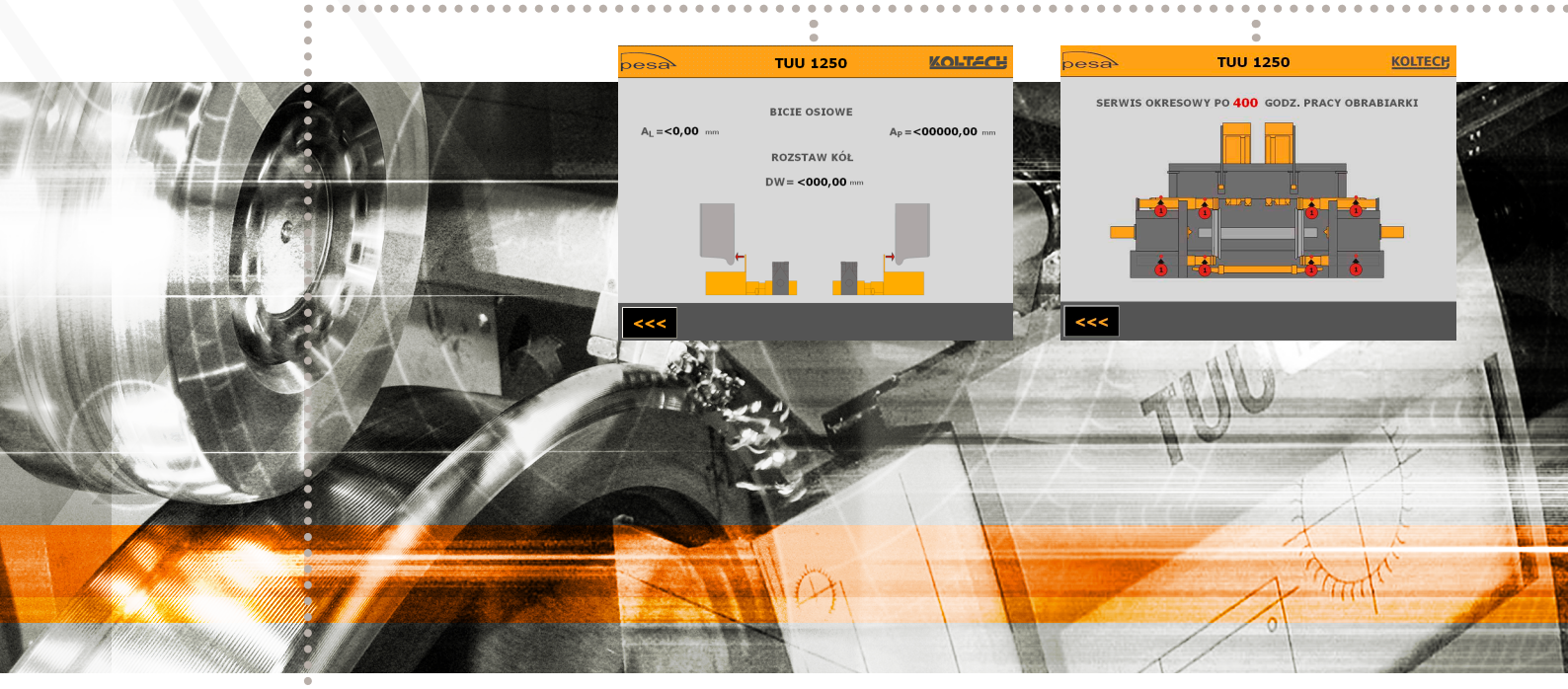
Application

The wheel lathe type **TUU1250** is designed for turning the new and used wheel profiles of wheelsets separated from the rail vehicle. By means of **TUU1250** lathe the following jobs can be performed:

- Reconditioning of wheel profile of used wheelsets,
- Turning of wheel profile of new wheelsets,
- Exposing of the ring, securing the wheelset wheel tyre,
- Facing of inner and outer faces of wheel tyres,
- Facing of active surface of axle mounted pr wheel mounted brake discs with the use of optional equipment.

The wheelset during the machining is positioned in centres and the torque, needed for cutting is transmitted frictionally onto the rollers driven by the hydraulic motors. Each wheel is driven by three rollers pressed against the wheel tread on the circumference of the wheel. To obtain a proper torque needed for machining the rollers are pressed against the tread by the hydraulic cylinders. Each driving roller together with the hydraulic motor is mounted on separate lever, pressed by the hydraulic cylinder by means of a spring, compensating the sudden changes of wheel shape.



In standard execution the machine is equipped with two saddles provided with vertical slides for turning the wheel profile. Optionally the saddles can be equipped with additional slides for turning of brake discs, axle-mounted or wheel-mounted.

At the machine front the operator's panel is located, enabling the complete monitoring of the machining process. Both loading and unloading of the wheelsets from the machine is carried out from the floor level at the operator's side. The machine can operate in "roll-in, roll-out" or "roll through" system.

Modern technical solutions

In the machine, some modern technical solutions are applied, worked out during years of practice in the machine tool designing, among which the following is worth of mentioning:

- Application of **SIEMENS CNC SINUMERIK 840 D SL** and operator's touch panel
- Application AC main drive motors. Each roller is provided with own electrical motor with a planetary gear.
- Use of digital drive units of saddle motors, integrated with the **CNC** system
- Application of **SIEMENS SERVO AC** brushless motors in the drive units of machine saddle travels
- Input-Output system **(PLC)** uses **PROFIBUS** solution
- Possibility of connecting the machine to the external computer network and getting the external access to the data base installed on the machine
- Realisation of dialogue with the operator, complying to the requirements of **HMI** philosophy (Human Machine – Interface)
- Application of frictionless linear guideways for slide travels, especially for solutions, featured by heavy loads
- Application of roller drive by means of hydraulic motors, featured by simple design of mechanisms, allowing for differing the speeds of particular driving rollers at simultaneous preservation of equal distribution of torque
- Application of contact measuring heads which perform all measurements necessary for achievement of perfect machining results
- Installation of data base with the possibility of export of data to files eg. xls.

Technical specification » TUU 1250

» Geometry of wheelsets:	
Track gauge – standard	**1435 mm**
Wheel tread diameter: min-max	**600-1250 mm**
– Including maximum tread diameter in roll through system	**1050 mm**
Width of wheel tyre	**90-150 mm**
Brake disc diameter	**300-700 mm***
Brake disc width	**30-150 mm***
» Technical parameters of machine:	
Infinitely variable cutting speed	**0-180 m/min**
Way of drive transmitting	**friction drive by rollers**
Way of centring the wheelset	**in centers**
Main drive motor power	**6 x 13,5 kW**
Total installed power	**120 kW**
Rapid travel speed of saddles	**1-4500 mm/min**
Range of working feeds	**0,1-2,5 mm/rev**
Max. cross-section of cutting layer	**10 mm²**
» Achieved machining accuracy:	
Radial run out	**≤ 0,10 mm**
Axle run out	**≤ 0,30 mm**
Accuracy of profile representation	**≤ 0,20 mm**
Difference of wheel diameters of single axle	**≤ 0,10 mm**
Roughness of surface Ra	**≤ 12 µm**
» Overall dimensions and weight:	
Height	**3900 mm**
Width	**3500 mm**
Length	**6700 mm**
Aprox. occupied area for the machine	**4500 x 11000mm**
Total weight	**ca 30 000 kG**

*Data for optional equipment

Standard Equipment

- Foundation bolts
- Feed drive motors together with feed units of **SIEMENS** make
- AC main drive motors of **SIEMENS** make with planetary gears for the driving rollers
- **CNC** system **SIEMENS SINUMERIK 840D SL** with touch panel
- Swarf protecting guards
- Cutting tools for final acceptance
- Profile machining program
- Centres 90°
- Wheelset lifting jack
- Electrical cabinet with apparatus
- Hydraulic power pack with hydraulic apparatus
- Measuring heads
- Operation & Maintenance Manual
- Lightning
- Diagnostics of disturbances in machine work
- Warning
- Data base on machine
- System of cameras for monitoring of cutting zone
- Calibration wheelset
- Software for remote service of the machine
- Printer for printing of measured results
- Two tailstocks with centring device

Optional equipment:

- Slide for facing of brake discs, axle mounted or wheel mounted
- Additional profile machining programs
- Dust and fume exhaust device with pipes and nozzles
- Centers 60° or special centres e.g. elongated
- Swarf disposal system (mechanical swarf conveyor, swarf crusher, two swarf bins)
- Turn-table for wheelsets

- ISO 9001: 2015
- ISO 14001: 2015
- ISO 45001: 2018

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