



HYT ENGINEERING COMPANY PVT. LTD.



YPL - 02

CNC PORTAL WHEEL LATHE

CNC Portal Wheel Lathe is extremely rigid, an automatic machine in portal construction with roll through movement of wheelsets. It is suitable for simultaneous or independent re-profiling, inside & outside facing of new or worn-out wheels when disassembled from railways vehicles. It is also capable of machining the brake discs.

Machine installed on a floor level with electrical, electronics, pneumatics and hydraulic equipment's installed overhead ensures very high reliability & minimum maintenance requirements. High degree of automation like automatic loading & unloading, automatic wheel profile & diameter measurement, suggestion of optimum depth of cut to restore profile, automatic machining process and easy to understand interactive HMI screens enables machine very easy to operate.

Rigid cross rail, Headstocks with wheelset drive at both ends

and dual tool carriages enables higher material removal rate and faster machining of wheelset. Dedicated control software with customised HMI Screens takes care of various safety measures for easy & safe operations as well as displays fault messages. Provision of remote maintenance support from HYT Headquarter is also available. Easy and quick access to parts requiring maintenance attention results in faster maintenance of machine.

This machine integrates both Industry 4.0 and Industry 5.0 features.



LEADING PARAMETER

TECHNICAL DATA OF MACHINE

○ Main Motor Capacity	:	2x55 kW
○ Cutting Speed while Profiling	:	25 to 80 m/min
○ Tool Post Feed for Wheel Profiling	:	0.1 to 4 mm/rev
○ Tool Post Rapid Speed for Both Axes	:	4500 mm/min
○ Max. Chip Cross Section while Profiling	:	32 - 50 mm ²
○ Cycle Time / Wheelset	:	8 - 12 mins
○ Supply Voltage	:	3Ph, 415V AC, 50 Hz**

** Special electrical supply can be considered, if required.

WHEELSET DATA FOR MACHINING

○ Track Gauge	:	As required	○ Min. Axle Length	:	1850 mm*
○ Max. Tread Diameter	:	1250 mm*	○ Max. Weight of Wheelset	:	50 kN
○ Min. Tread Diameter	:	750 mm*	○ Max. diameter for Brake Disc Machining	:	700 mm
○ Wheel Width	:	75 to 145 mm	○ Min. diameter for Brake Disc Machining	:	250 mm
○ Max. Axle Length	:	2750 mm*			

*Depends on Track Gauge

The parameters are for standard specification. However, suitable models for Locomotives, Metros, Trams and other Lightweight Vehicles are available.

ACCURACIES OF WHEELSET (WHEEL PROFILING)

○ Difference in diameter of Both Wheels	:	<0.15 mm
○ Accuracy of Wheel Profile when Compared with Standard Profile Gauge	:	<0.2 mm
○ Radial Runout of Wheel	:	<0.1 mm
○ Axial Runout of Wheel	:	<0.2 mm
○ Profile Surface Finish	:	<12.5 µm Ra

UNIQUE PROPOSITION

- Load Bearing Structure are made from high strength close-grained cast iron for stability and efficient vibration damping.
- System for measuring wheel profile and diameter to optimize cutting depth economically.
- Automatic loading, unloading and roll-in & roll-out arrangement to increase productivity.
- Rigid Portal Frame in slant construction.
- CNC Systems with Operator-friendly customised HMI Screens.
- Hardened and ground box guideways for Headstocks & Tool Carriages for maximum rigidity.
- Extremely rigid and durable spindle assemblies.
- 4 Jaw synchronised, powered chuck for heavy duty machining.
- Machine Enclosure for Operator Protection.
- Machine operation by single operator panel with good visibility of machining process.
- Camera and display system for enhanced visibility of measurement & machining process.
- Heavy duty chip conveyor & chip Shredder / crusher for effective evacuation of chips.

OTHER PRODUCTS

CNC Tandem Underfloor Wheel Lathe | CNC Underfloor (Pit) Wheel Lathe | CNC Surface (Above floor) Wheel Lathe
CNC Vertical Turning & Boring Machine | CNC Axle Journal Turning & Burnishing Lathe | CNC Axle Turning Lathe

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Solutions For Rolling Stock Production & Maintenance



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