



HYT ENGINEERING COMPANY PVT. LTD.



## YUL - 12T

### CNC TANDEM UNDERFLOOR WHEEL LATHE

CNC Tandem Underfloor Wheel Lathe is a combination of two CNC Underfloor wheel lathes for simultaneous re-profiling of new or worn-out two-wheel sets of one bogie of railway vehicles in situ. It is also capable of machining brake discs assembled on wheel sets of rolling stock. One of the machines in Tandem configuration is fixed and other machine can be moving or fixed.

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.

Automatic synchronised lifting of each wheel set by 4 drive rollers to ensure correct alignment of wheel set with respect to machine centre line. Roller in individual follow up mode after

application of jacks and hold down claws to the axle / bearing boxes. This ensures continuous drive roller contact to wheel set during machining operations.

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	:	4 motors of 15 KW capacity each
○ Cutting Speed while Profiling	:	20 to 120 m/min (Optional 20-300 m/min)
○ Tool Post Feed for Wheel Profiling	:	0.1 to 2.5 mm/rev
○ Tool Post Rapid Speed for Both Axes	:	3000 mm/min
○ Max. Chip Cross Section while Profiling	:	10 mm <sup>2</sup>
○ Supply Voltage	:	415V AC, 50 Hz**

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

### WHEEL SET DATA FOR MACHINING

○ Track Gauge	:	As Required
○ Max. Tread Diameter	:	1500 mm*
○ Min. Tread Diameter	:	540 mm*
○ Wheel Width	:	75 to 155 mm
○ Max. Axle Load	:	300/400 kN

\*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 WHEEL SET (Wheel Profiling)

○ Difference in Dia. of Both Wheels	:	<0.10 mm
○ Difference in Dia. of 4 wheels in one bogie	:	<0.3 mm
○ Accuracy of Wheel Profile when Compared with Standard Gauge	:	<0.2 mm
○ Radial Run Out of Wheel	:	<0.1 mm
○ Axial Run Out of Wheel	:	<0.15 mm
○ Profile Surface Finish	:	<12.5 µm Ra

## UNIQUE PROPOSITION

- Re-Profiling time reduced to 50%
- One of the machine is fixed and other other machine is movable to take care of varying wheel base of bogie.
- CNC System of both the machine in communication with each other.
- Data Exchange between two machine for enhance accuracies.
- Load-bearing structures 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.
- Individual Jack and hold-down device for securing axle/bearing boxes.
- Hardened and ground box guideways for Tool Carriages for maximum rigidity.
- Quick change tool for wheel profiling and disc brake machining.
- Machine Enclosure for Operator Protection.
- Heavy duty chip conveyor & chip Shredder / crusher for effective evacuation of chips.
- Shunter interlocking provision with machine controls.
- Remote office as an optional accessory.

## OTHER PRODUCTS

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

## HYT ENGINEERING COMPANY PVT. LTD.

Economical Rolling Stock Maintenance



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