Atlas Rail

Manufacturers of custom built machinery for the railway industry

Single and Tandem Underfloor Wheel Lathes

The Atlas Rail Underfloor Wheel Lathes (UFWL) are designed to re-profile wheel sets both on and off the train for a wide range of rolling stock. It is a proven design of heavy construction designed for many years of use, and is in service with many rail operators around the world.

The UFWL can be installed as a single unit or in a tandem configuration whereby two single machines are installed and operated back to back. This is particularly effective in operations involving large fleets of rolling stock and where high throughput is required. The UFWL is designed as a heavy duty machine allowing the operator to initiate heavier cuts, effectively further enhancing the throughput rate.

Single configuration

The UFWL is capable of performing the following machining operations on wheel sets with inboard and outboard axle supports:

- Re-profiling of single wheelsets in a bogie
- Re-profiling both wheelsets in a bogie simultaneously (Tandem configuration)
- Turning of single wheelsets between centres
- Machining vehicles with coupled wheelsets

The UFWL in its standard configuration can accommodate different types of rolling stock by examining the loaded wheelset and applying any one of a number of pre-configured profiles. The basic machine is capable of measuring:

- Profile measurement
- Wheel Diameter
- Total Radial Run-out
- Flange Height
- Flange Thickness
- Flange Angle (qR dimension)
- Wheelset back-to-back dimension
- Wheel wobble

The lathe can also be configured to accommodate Brake disc machining.

Tandem configuration

For more information regarding these units and other railway workshop equipment, please contact Atlas Rail

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A Division of Marand Precision Engineering

Specifications

General Parameters

Length (base machine)	4800mm
Width (base machine)	1800mm
Height (to hold downs)	3000mm
Weight	35,000kg
Machine noise level (max)	75dBa
Power usage (Max cut)	215 Amps

Machine Speeds

Drive rollers	Max 120 RPM
Feed rate	0-3mm/rev
Tool post rapid traverse	4.1m/min

Machining Parameters

Track gauge	1067mm - 1676mm
Range of wheel diameters	550 to 1400
Range of profile widths	80 mm to 145 mm
Wheel gauge	To suit track gauge
Max axle load	40T
Maximum Metal Removal Rate	7x10-4m3/min. (1400 ØWheel)
Maximum Depth of Cut	10mm
Minimum Depth of Cut	0.2mm

Accuracy

Difference of diameters same axle	≤0.1mm
Difference between diameters of the wheels of given bogie	0.3mm
Rotational accuracy (Total Indicated Run-out, Radial)	0.15mm
Profile deviation (from nominal)	< 0.2mm
Surface finish (dependent on feed rate)	Ra 8 – 25

Cycle Times – Single Cut

Lift and weigh wheelset	4 mins
Wheel measurement	4.5 min
Wheel cutting	10.5 min
Check wheel measurement	1.5 min
Lowering and Progressing wheelset	4 min
Total time (Single cut operation)	**24.5 min**

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