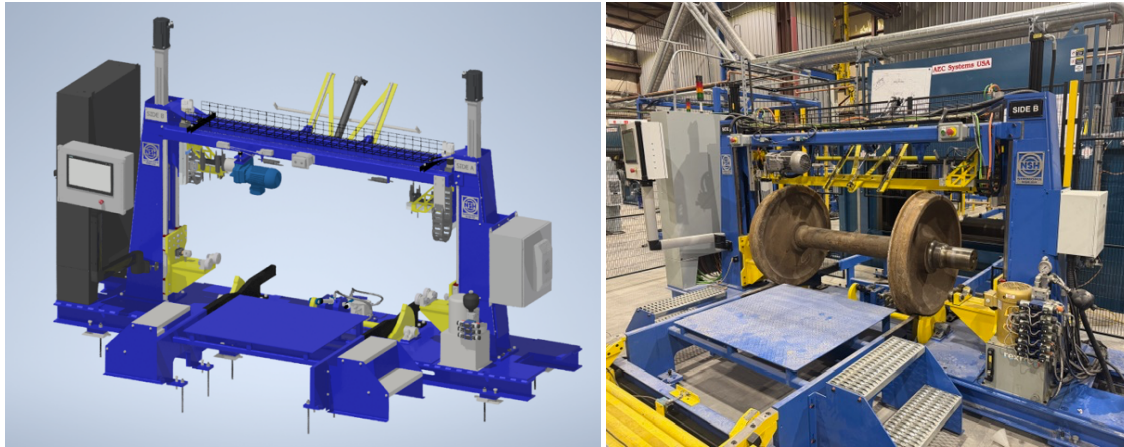


SIMMONS WSM-450 Outboard Bearing Journal and Back-to-Back Measurement System Data Sheet



The **SIMMONS WSM-450 Outboard Bearing Journal and Back-to-Back Measurement System** automatically inspects the outboard bearing journals of used railway wheel sets to determine if they are reusable, if the axle should be scrapped, or if axle repair is possible.

The WSM-450 can interface with factory automation systems to automatically route the wheel set to a demount press or wheel lathe (based on the measurements performed). The machine can also function as a standalone machine, and the measurement results can be stored locally on the machine or shared with data collection systems on the customer's server.

The WSM-450 measures the following characteristics of a rail vehicle wheel set:

- Back-to-Back
- Bearing Journal Length (W dimension)
- U Dimension (Bearing Journal Fillet to Bearing Journal Fillet)
- Bent Axle Measurement
- Dust Guard to Bearing Journal Relative Runout



Machine Dimensions (Standard Track Gauge)

Length	175.4 in.	4454 mm
Width (w/ panels and inspection station)	93.8 in.	2383 mm
Height	106.4 in.	2701 mm
Weight	6200 lbs.	2812 kg

Measurement Accuracy*

Wheel Back-To-Back	+/- 0.002 in.	+/- 0.05 mm
Dust Guard to Bearing Journal	+/- 0.002 in.	+/- 0.05 mm
Bent Axle Detection	+/- 0.002 in.	+/- 0.05 mm
U-Dimension (Bearing Journal Fillet to Bearing Journal Fillet)	+/- 0.012 mm	+/- 0.3 mm
W-Dimension (Bearing Journal Length)	+/- 0.012 mm	+/- 0.3 mm

*Applicable up to maximum ambient temperature change of +/-10°C (+/-18°F)

Measurement Repeatability

Wheel Back-To-Back	+/- 0.002 in.	+/- 0.05 mm
Dust Guard to Bearing Journal	+/- 0.002 in.	+/- 0.05 mm
Bent Axle Detection	+/- 0.002 in.	+/- 0.05 mm
U-Dimension (Bearing Journal Fillet to Bearing Journal Fillet)	+/- 0.012 mm	+/- 0.3 mm
W-Dimension (Bearing Journal Length)	+/- 0.012 mm	+/- 0.3 mm

Utility Requirements

Max Power Requirement	14 kW	
Compressed Air	10 scfm @ 100 psi	425 slpm @ 5.5 bar

Wheel Set Dimensions

Maximum Wheel Diameter	42 in.	1067 mm
Minimum Wheel Diameter	28 in.	711 mm
Maximum Axle Length	90 in.	2286 mm
Minimum Axle Length	85 in.	2159 mm
Maximum Weight	4000 lbs.	1820 kg
Maximum Bearing Journal Diameter	7.086 in.	180 mm
Minimum Bearing Journal Diameter	5.118 in.	130 mm
Maximum "U" Dimension	70 in.	1778 mm

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