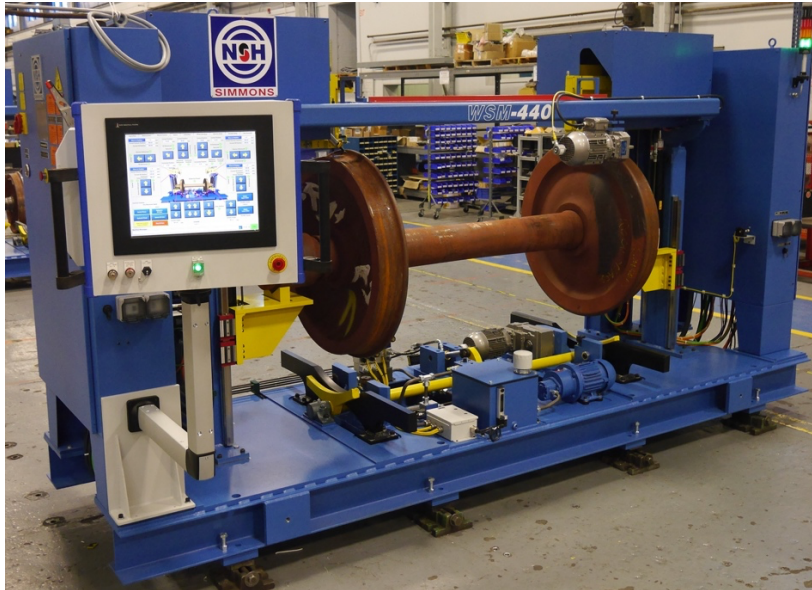


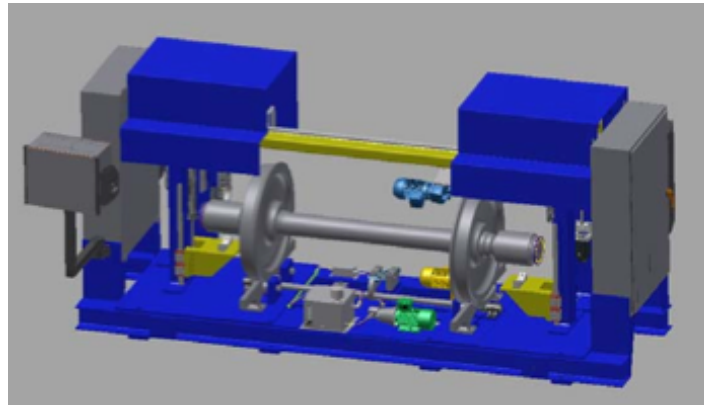
Simmons WSM-440 Wheel Set Measurement System Data Sheet



The **Simmons WSM-440 Wheel Set Measurement System** is a metrology machine that automatically inspects new or reconditioned railroad wheel sets. The WSM-440 measures wheel diameter and width, flange thickness and height, wheel rim thickness, profile deviation, back-to-back, and radial and axial wheel tread runout. Measurements are stored in a local database at the machine or can be networked to transfer the data to a remote server. If interfaced with a facility supervision system, those measurements can be used to automatically route the wheel set for maintenance.

Wheel sets are delivered to the WSM-440 via shop rails and once captured, the measuring heads are automatically positioned against each wheel tread. The wheel set is rotated while the wheel profiles are measured. The contact probes are fitted with linear gauges in the measuring arms. The measurement results for both wheels will be displayed on local HMI and saved to the database. The control system determines if the wheel set conforms to the predefined geometry for that particular wheel set type.





Machine Dimensions

Length	164.2 in.	4171.9 mm
Width (With Panel)	87.7 in.	2227.6 mm
Height	88 in.	2235.1 mm
Weight	11500 lbs.	5216 kg

Measurement Accuracy*

Wheel Diameter	+/- 0.005 in.	+/- 0.13 mm
Flange Thickness	+/- 0.012 in.	+/- 0.3 mm
Flange Height	+/- 0.012 in.	+/- 0.3 mm
Rim Thickness	+/- 0.020 in.	+/- 0.5 mm
Wheel Back-To-Back	+/- 0.010 in.	+/- 0.25 mm
Wheel Profile Deviation	+/- 0.008 in.	+/- 0.2 mm
Wheel Width	+/- 0.020 in.	+/- 0.5 mm
Radial Runout at Tapeline on Centers	+/- 0.002 in.	+/- 0.05 mm
Plane Runout	+/- 0.012 in.	+/- 0.3 mm

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

Utility Requirements

Electrical Power	20 kW	
Compressed Air	15 scfm @ 80 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
Maximum Weight	4000 lbs.	1820 kg

Updated November 17, 2021