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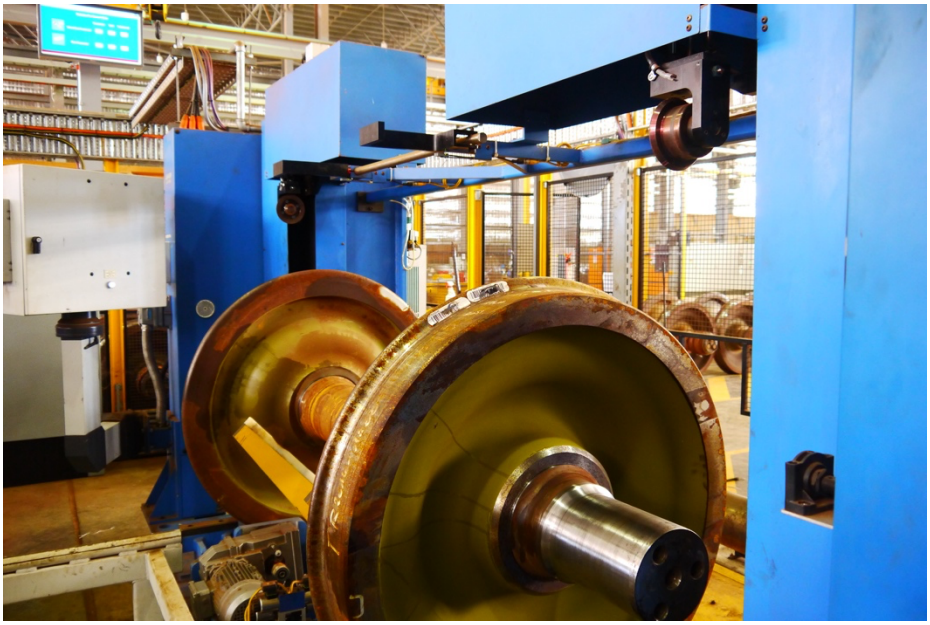
Simmons WSM-420 Wheel Set Measurement System Data Sheet



The **Simmons WSM-420 Wheel Set Measurement System** is a metrology machine that automatically inspects used railroad wheel sets to determine if the wheel set must be demounted, or if it can be reprofiled and returned to service. The machine measures wheel diameter and width, flange thickness and height, wheel rim thickness, deviation of measured wheel profile from standard profile, wheel back-to-back, depth of flat spots on wheel tread, and depth of grooved wheel tread. The WSM-420 calculates the amount of material that must be removed to restore the wheel profiles to the nominal profile, and determines if the wheel rim will be thick enough to return the wheel set to service after reprofiling.

Wheel sets are delivered to the WSM-420 via shop rails and once captured, the measuring arms are automatically positioned against each wheel tread. The wheel set is rotated while the wheel profiles are measured. The measurement results for both wheels will be displayed on local HMI and saved to the database. The control system determines if there is sufficient material remaining on the tread for further machining.

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www.nsh-usa.com
+1 (518) 462-5431

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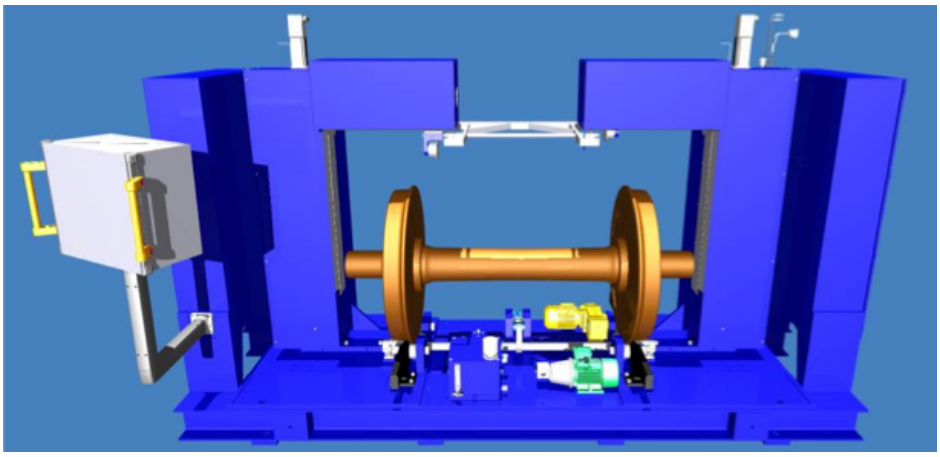

Machine Dimensions		
Length	165.8 in.	4210 mm
Width (With Panel)	90.3 in.	2292 mm
Height	96.2 in.	2443 mm
Weight	10000 lbs.	4536 kg

Measurement Accuracy*		
Wheel Diameter	+/- 0.020 in.	+/- 0.5 mm
Flange Thickness	+/- 0.020 in.	+/- 0.5 mm
Flange Height	+/- 0.020 in.	+/- 0.5 mm
Rim Thickness	+/- 0.020 in.	+/- 0.5 mm
Wheel Back-To-Back	+/- 0.020 in.	+/- 0.5 mm
Depth of Flat Spots	+/- 0.020 in.	+/- 0.5 mm
Wheel Profile Deviation	+/- 0.020 in.	+/- 0.5 mm
Wheel Width	+/- 0.020 in.	+/- 0.5 mm

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

Utility Requirements		
Electrical Power	22 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

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