



# Tire Uniformity Test System

TMSI's Tire Uniformity Test System (HSU-500) provides the highest quality measurements available in tire uniformity testing for speeds up to 250km/h. The HSU-500 utilizes TMSI's patented ***Dynamic Force Measurement System (US Patent No. 6,606,569 and International Patent No. WO02/04906)*** to assure a flat measurement band width (with zero phase lag) from 0 to 500 Hz. This is equivalent to standard test machine technology with a full machine resonant frequency of **5,000 Hz**.

The system also provides **Rolling Resistance** tire measurement capability. The system is guaranteed to exceed the repeatability requirements of a **reference system** as defined in ISO 28580; and it includes automated test setups for the rolling resistance measurement standards *ISO 18164, ISO 28580, SAE J1269 and SAE J2452*.



## High Quality Tire Measurements

- ◇ Force and Moment Variations (1st to 64th Harmonic Measurements)
- ◇ Dynamic and Static Unbalance
- ◇ Radial and Lateral Runout
- ◇ Harmonic Magnitudes and Phase Angles
- ◇ Average Values of Force and Moments, (including Ply-Steer and Conicity)
- ◇ Rolling Resistance (Force Method)
- ◇ RPK Testing
- ◇ Loaded and Rolling Radius

### Options:

- ◇ Rolling Resistance (Torque Method)
- ◇ Rolling Resistance (Coast-Down Method)
- ◇ 2nd Station for HSU/RR Measurements (PCR or TBR)

## Technical Specification

<b>Roadwheel Drum</b>		<b>Force and Moment Measurement</b>	
Diameter, mm	1700 or 2000	Radial Force Variation, N	4000
Width, mm	508	Lateral Force Variation, N	4000
Surface Coating	80-grit Safety Walk	Tractive Force Variation, N	4000
Max. Rotating Speed, km/h	250	Conicity and Ply-Steer, N	±2000
<b>Tire Sizes</b>		Self-Aligning Torque Variation, Nm	100
Min/Max. O.D, mm	430/1000	Overturning Moment Variation, Nm	100
Max. Tread Width, mm	450	<b>Load Cell Measurement Accuracy</b>	
Max. Tire Weight (with Wheel), kg	250	Radial Force, N	±0.5
Max. Tire Load, N	20,000	Lateral Force, N	±0.5
<b>Tire Pressure</b>		Tractive Force, N	±0.75
Range, kPa	689	<b>Note:</b> Above specifications can be customized per customer request. Call our machine specialists for more information.	
Control Accuracy, kPa	±1.4		
Measurement Accuracy, kPa	±0.7		

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