Model 853 Damper NVH System

Damper Vibration Analysis: structure-borne "chuckle, clatter, or rumble"

Purpose-engineered for structure-borne "chuckle" analysis	
Total Harmonic Distortion (THD):	<1% up to 200 Hz excitation frequency
Measurement bandwidth for vibration testing:	≤ 800 Hz
27 kN actuator:	20 kN at 3 m/s
18 kN actuator:	15 kN at 3 m/s
Noise Level (typical):	< 60 dBA without acoustic chamber < 42 dBA with acoustic chamber

be certain.

Model 853 Damper NVH System

The first-of-its-kind Model 853 Damper NVH System is purpose-engineered for analyzing a broad spectrum of damper noise and vibration phenomena, including elusive, structure-borne "chuckle" noises that can prove especially degrading to the ride comfort and quality of quieter electric and autonomous vehicles.

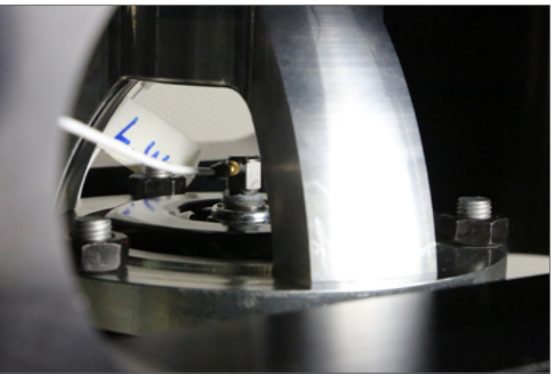
The innovative Model 853 draws from both MTS damper and elastomer testing technologies:

» High-bandwidth transducers perform damper NVH measurements with fidelity and accuracy up to 800 Hz.

» A high-stiffness load frame, along with larger diameter columns, a thicker crosshead, and robust base to avoid resonant modes that can corrupt measurements.

» Linear electromagnetic actuation provides the clean sinusoidal input and low total harmonic distortion (THD) required for effective chuckle testing.

The Model 853 employs full-featured MTS Damper software and is driven by a versatile FlexTest® controller capable of reproducing virtually any type of signal, making it suitable for basic damper characterization, and even elastomer testing.



High-bandwidth measurement transducer

Damper Acoustic Analysis: air-borne "swish" and "squeak"

Elastomeric components testing up to 400 Hz

Model 853 Damper NVH	Units	Model 853.18	Model 853.27
Dynamic Force	kN lbf	17.8 4,000	26.7 6000
Peak Velocity	m/sec in/sec	4 157	
Velocity at Peak Force	m/sec in/sec	2.5 98	
Stroke	mm in	200 8.7	
Frequency Response (real time close loop control)	Hz	100	
Measurement bandwidth for vibration testing (i.e. "chuckle", "clatter", "rumble")[1]	Hz	≤800	
Total Harmonic Distortion (THD)	–	< 1% up to 200 Hz command /response frequency	
Temperature Monitoring	Specimen Motor	Non-contacting IR Non-contacting IR	
Digital Encoder resolution	nm	10	
Noise Level – Typical	dbA	<60	
Noise Level, with integrated Acoustic Chamber - Typical	dBA	<42	
Load Cell	kN lbf	25 5600	
Waveforms Supported	Type Software	Sine, Triangle, Square, Frequency Sweep, Custom Profile 793 MPT, MTS Damper, RPC Connect	
Facility Requirements[2]	V A	240 (3-phase) 90	 125
Air Supply	PSI BAR CFM	100 7 35	
Testing with optional Elastomer package	Hz K* ° (Phase Accuracy)	400 5% 0.5	
Testing with optional sideload actuator	N lbf	1000 225	

Specifications subject to change

[1] *Measurement Bandwidth is typical for a passenger car sized damper or strut.*

[2] *MTS can supply transformers for voltages other than 240V 3-Phase.*