

Features:

- Recommended in GMW14011 Subsystem & Component Squeak & Rattle (S&R) test specification; further supports GM7293TP, BMW PR311-2 or PSA “Specification bruit parasites”, as well as several Hyundai Engineering Standards
- Quiet package: no exciter noise, optimized design for S&R testing; no masking of S&R noise sources caused by exciter
- S&R background noise: running typical S&R random vibration profile of 0.36 g RMS, 8 to 100 Hz, microphone positioned 10” (250 mm) above mounting table; Sound Pressure Level <28 dB(A) N18 time varying loudness: <0.2 sone
- Stiff load support with patented stiff, quiet flexures resist overturning moments due to offset or “high CG” payloads; horizontal CG offset ≤150 mm; safely supports non-centered unbalanced payloads
- 2000 N (450 lbs.) pk sine force with cooling
- Maximum vertical payload of 90 kg (200 lbs.)
- Maximum uncooled acceleration with 30 kg payload: 2.5 g's pk (1.5 g's RMS)
- 50 mm pk-pk stroke
- Weight armature plus mounting table: 9.2 kg (20 lbs.)
- Large (250 mm) diameter integral payload mounting tables
- Thermal shutdown protection, to prevent vibration exciter overheating
- Virtually no maintenance
- CE marked

Options:

- Air spring load support/re-centering for heavy payloads (see Energizer **BLACK** Specification Table, back page)
- 2:1 lever-arm integrated on trunnion base and floor plate, increasing exciter force output by 2X
- Other ratio lever-arms with base & base mass + air casters, for force multiplication & mobility
- Universal Test Fixture Kit (UTF) for testing cockpits, IPs, seats, door modules, sunroofs, etc.
- Quiet cooling package (<60 dBA) for durability and S&R aging tests
- Instrumentation cabinet for mounting amplifier, controller, instrumentation, etc.
- Horizontal Moving Table (HMT) for horizontal vibration testing of heavy test items
- Chamber Readiness Kit, for using Energizer **BLACK** in thermal chambers from -40°C to +60°C, including humidity

Applications:

- Quiet operation for S&R evaluations and other external/ambient noise sensitive testing
- Robust construction for durability and NVH testing
- Sensor manufacturing quality assurance testing
- In-laboratory R&D instrumentation verifications
- Recommended pairing with MB Dynamics P-Series Power Amplifiers



Vibration Exciter System
MB Energizer BLACK

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MB-ENRGZRBLK-1018

Parameter	
Maximum excitation force	Requires cooling, uncooled operation up to 50% of max. excitation force
Sine	2000 N pk
Random	1200 N RMS
Peak force (instantaneous)	4000 N pk
Max. payload, excitation (both vertical and horizontal)	25 kg (55 bs.) vertical; 12 kg (25 lbs.) horizontal
Max. payload with air spring, vertical	90 kg (200 lbs.)
Weight-Armature plus mounting table	9.2 kg (20 lbs.)
Acceleration, 5 kg payload, uncooled	7.2 g's pk (4.3 g's RMS)
Acceleration, 15 kg payload, uncooled	4.0 g's pk (2.4 g's RMS)
Acceleration, 30 kg payload, uncooled	2.5 g's pk (1.5 g's RMS)
Accelerations with forced air cooling	2X uncooled
Mounting table diameter (standard)	250 mm (10")
Surface mounting pattern	50 mm x 50 mm (M6)
Inserts and bolt-hole pattern	M6 (1/4"-28), 50 mm x 50 mm
Frequency range (less with air spring)	DC to 2500 Hz
Operating background noise	Using a typical S&R test profile
Noise rating curve (NR)	NR18
Sound Pressure Level [dB(A)]*	<28 dB(A)
N10 Time Varying Loudness**	<0.2 sone
Stroke pk-pk	50 mm
Suspension driven-axis stiffness	33 kN/m (190 lb/in)
Suspension transverse-axis stiffness	1700 kN/m (9500 lb/in)
Max. displacement at test item, pk-pk	50 mm (2")
Max. velocity, pk	1.5 m/s (60 in/sec)
Weight including trunnion and HMT mounting base	668 kg (1474 lbs.)
Energizer mounting base footprint	609 mm x 483 mm (24" x 19")
Height to top of mounting table	812 mm (32")
CE mark	Yes
Power requirements	6000 watts, max.
Recommended amplifier	P Series Power Amplifiers
Amplifier input power	208, 220, 240 VAC, 50-60 Hz, single phase
Amplifier dimensions, 19" rack; taller cabinets available for PC & instruments	800 mm x 760 mm (31.5" D x 30" H)
Weight of power amplifier	136 kg (300 lbs.)
Temperature and overtravel control	Included

* A-weighted, FAST (125 ms) Sound Pressure level over the complete AUDIO frequency range from 20 Hz to 20 kHz

** N10 Time Varying Loudness in accordance with DIN45631/A1, measured in accordance with GMW14011

NOTE: Specs for Energizers with various ratio lever arms available upon request.

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