THE MODAL SHOP
AN AMPHENOL COMPANY

MODEL **2060E**

60 LBF MODAL SHAKER

- Through-hole armature with chuck and collet attachment provides simple set-up with modal stingers.
- Lightweight and portable – weighing just 37 lb (17 kg)
- Trunnion base provides flexibility and easy set-up when aligning the shaker and choosing best exciter location(s)
- 1.4" extended stroke for low frequency and broad frequency range supply adequate input energy for most modal applications
- Forced air cooling sufficient to meet full shaker performance (60 lbf/133N) specifications

MODAL TESTING

For many experimental modal test applications, an electrodynamic shaker system is best suited for creating an appropriate input forcing function. Distributing adequate input force energy across the test structure and obtaining accurate and reliable input force measurements is critical for successful modal and structural testing. This requires a shaker that is highly portable, rugged and easy to setup in order to position in the best exciter location while minimizing any unwanted interaction between the exciter and test structure.

The Modal Shop's Modal Shaker Model 2060E, a lightweight electrodynamic modal exciter, is capable of providing up to 60 lbf (267 N) of peak force excitation in a small footprint weighing just 37 pounds (17 kg). With an extended 1.4" (36 mm) stroke enhancing input levels at low frequencies and useful frequency range beyond 6 kHz, the 2060E is suitable for structural testing and experimental modal analysis applications, including single and multiple inputs (SIMO and MIMO) using random, burst random, sine dwell or chirp excitation signals.

The 2060E modal exciter is supplied in a trunnion base allowing full rotation for easy setup. The through-hole armature design with chuck and collet attachment is ideal for use with either traditional modal stinger rods or piano wire stingers. These stingers greatly simplify test setup with an easy connection to the force sensor and test structure, and help decouple cross-axis force inputs, minimizing input force measurement errors while using the modal shaker. For horizontal force inputs, the 2060E adapts directly to The Modal Shop's Lateral Excitation Shaker Stand Model 2050A.

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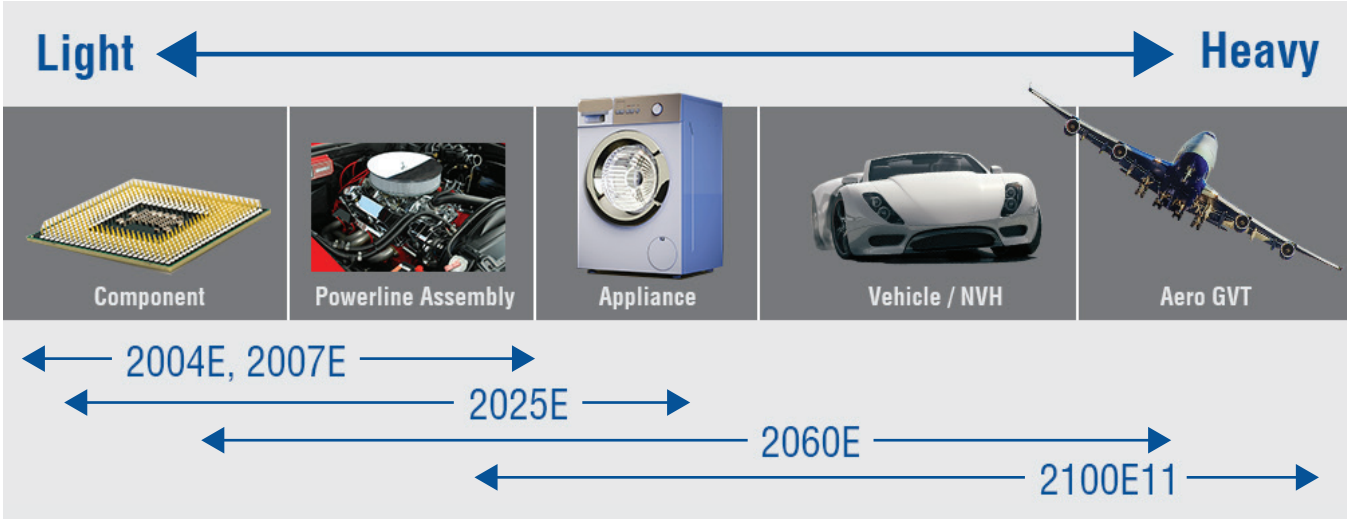

SPECIFICATIONS	
Performance	
Output Force, sine pk, ambient air cooling	30 lb (133 N)
Output Force, sine pk, forced air cooling	60 lb (267 N) [1]
Stroke Length, pk-pk	1.4 in (36 mm) [2]
Frequency Range, nominal	DC - 6000 Hz [3] [4]
First Resonance Frequency, nominal	> 4000 Hz [4]
Maximum Acceleration, bare table	100 g (1000 m/s²) pk
Maximum Velocity	120 ips (3 m/s) pk
Protection Features	Mechanical stops
	Over-current (in-line fuse)
Physical	
Maximum Current, ambient air cooling	9 A rms
Maximum Current, forced air cooling	18 A rms
DC Resistance, armature, nominal	1 Ω [5]
Armature Suspension System	8 pcs carbon fiber composite flexures
Effective Armature Mass	0.6 lb (0.272 kg)
Dimensions (H x W x D), nominal	10.8 x 12.6 x 6.5 in (273 x 319 x 165 mm) [6]
Weight, nominal	37 lb (17 kg)
Operating Range	40 – 100 ºF (4 – 38 ºC), < 85% RH

Supplied Accessories	
Trunnion base with EasyTurn™ handles	
Shaker cable 10 ft (3 m)	
Chuck with collets	
10-32 mounting adaptor	
Variety of rod and piano wire stinger kits (Models 2150G12, 2155G12 and K2160G)	
Suggested Accessories	
2100E23	SmartAmp™ Power Amplifier 400 W, 92% efficient, continuous gain adjustment
PCB 288D01	ICP® impedance head driving point sensor
PCB 208	PCB 208 series ICP® force sensors
2050A	Lateral Excitation Stand
2100E13	Modal Accessory Kit, for use with 2050A excitation stand

[1] Full force range requires optional forced air cooling with appropriate power amplifier
[2] Mechanical stops at 0.75" (19 mm)
[3] Frequency range based upon ISO 5344 recommended useful range of 1.5 times first resonance frequency
[4] Load dependent
[5] Room temperature, 68 °F (20 °C)
[6] Reference outline drawing for exact dimensions
Front left photo taken in cooperation with Belgian Defense

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