Innovative dual-purpose design integrates platform table for traditional vibration testing with a through-hole armature for modal studies

3.25 in (8.3 cm) diameter platform table supports payloads up to 10 lb (4.5 kg)

Through-hole armature with chuck and collet attachment provides simple set-up with modal stingers

Lightweight and portable - weighing just 35 lb (16 kg)

Trunnion base with EasyTurn™ handles provides flexibility and full rotation when positioning and aligning the shaker

1.0 in (25.4 mm) stroke and wide frequency range (to 6500 Hz) support broad range of applications

Forced air cooling sufficient to meet full shaker performance (110 lbf pk) specifications

DUAL-PURPOSE SHAKER

The Modal Shop's Dual-Purpose Shaker Model 2110E is a compact and powerful vibration shaker, providing up to 110 lbf pk sine force. A large armature (3.25 in / 8.3 cm diameter platform table supporting payloads up to 10 lb / 4.5 kg) makes the shaker ideal for traditional vibration control testing of components and subassemblies. The unit is also designed with a through-hole armature and includes a chuck and collet attachment, providing simple set-up with stingers for experimental modal analysis applications. When used in this configuration, 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 force measurement errors.

The shaker is supplied in a standard trunnion mounting base with EasyTurn™ handles, allowing operation through a large rotation for easy set-up. It also facilitates bolting the shaker in place either with or without vibration isolation mounts. Features include a rugged suspension system which minimizes test fixture requirements and related fixture guidance problems. Its 1 in (25.4 mm) stroke, wide frequency range (useable to 6500 Hz), and innovative dual-purpose platform table design support a broad range of applications. The shaker field supply is integrated into the 2050E09-FS power amplifier and includes a cooling interlock to protect the shaker.
**SPECIFICATIONS**

**Performance**
- Output Force, sine pk, forced air cooling: 110 lbf (489 N) [1]
- Output Force, random RMS, forced air cooling: 45 lbf (200 N) [1]
- Output Force, shock pk (50 ms): 110 lbf (489 N)
- Stroke Length, continuous pk-pk: 1.0 in (25.4 mm)
- Stroke Length, between stops: 1.03 in (26.2 mm)
- Frequency Range, nominal: DC – 6500 Hz [2]
- Fundamental Resonance: > 4000 Hz [2]
- Maximum Velocity: 70 in/s pk (1.8 m/s pk)
- Maximum Acceleration, bare table: 110 g pk
- Maximum Acceleration, 1 lb (0.45 kg) load: 55 g pk
- Maximum Acceleration, 5 lb (2.38 kg) load: 18 g pk
- Maximum Acceleration, resonance: 150 g pk
- Maximum Acceleration, peak shock: 200 g pk
- Maximum Payload, typical: 10 lb (4.5 kg)

**Physical**
- Platform Mounting Thread: 5x 10-32 [3][4]
- Armature Weight: 1 lb (0.45 kg)
- Suspension Stiffness: 90 lbf/in (15.8 N/mm)
- Rated Drive Current, forced air cooling: 22 A RMS
- Stray Magnetic Field, 1.5 in (33 mm) above table: < 20 Gauss
- Stray Magnetic Field, 1.0 in (25 mm) from body: < 25 Gauss
- Cooling Air: 100 cfm/15 in H₂O [1]
- Dimensions (H x W x D), nominal: 11.7 x 12.5 x 6.5 in (297 x 318 x 165 mm) [1]
- Weight, nominal: 56 lb (25 kg)
- Temperature Operating Range: 40 – 100 ºF (4 – 38 ºC), < 85% RH
- Field Power Supply: 15 V, 12 ADC, nominal [6]

**Supplied Accessories** [7]
- Trunnion base with EasyTurn™ handles
- Shaker cable 10 ft (3 m)
- 2000X03 Shaker Accessory Kit (includes case, modal stingers, chuck with collets, wrenches, spare fuse, & other accessories)

**Required Accessories**
- 2050E09-FS: Power Amplifier, 900 W, selectable voltage / current control / field power supply

**Suggested Accessories**
- 2050A: Lateral Excitation Stand
- 2000X01: Head Expander
- 2000X02: Base Isolation Mounts
- PCB 288D01: ICP® impedance head driving point sensor
- PCB 208: Series ICP® force sensors

---

[3] Includes 10-32 to chuck/collet adaptor for through-hole armature/stinger applications.
[4] Inserts also available with M5 threads.
[6] Power provided by the 2050E09-FS power amplifier.
[7] Always included if ordered as K2110E110 shaker system.