FG-142 *Force Generator*

**GENERAL DESCRIPTION**

The FG-142 generator’s compact size and lightweight construction make it equally well suited for modal as well as general vibration testing on larger and more compliant test articles. The generator has a single .141 inch diameter mounting hole and a rugged internal suspension system which eliminates test fixture requirements for most testing applications. The FG-142 can be operated in any position and is therefore easily positioned for modal applications above 20 Hz.

Reliability is assured through the use of the latest composite materials in the unique, integral, armature coil design. The generator’s closed armature design eliminates alignment and lateral motion problems. When combined with a Labworks linear power amplifier, the system is unmatched for reliability, performance, and cost.

- 4 POUNDS PK SINE FORCE
- 0.33 lb. DYNAMIC WEIGHT
- SINGLE .141 in. MOUNTING HOLE
- 2.0 in. DIAMETER
- 20 - 3000 Hz.
**STANDARD FEATURES**

- AIR COOLED
- PERMANENT MAGNET DESIGN
- ANY POSITION MOUNTING

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**FG-142 SPECIFICATIONS**

### PERFORMANCE

**Sine force**
- Natural cooling: 2 lbf pk
- Forced air cooling: 4 lbf pk

**Random force**
- Natural cooling: 1.4 lbf rms
- Forced air cooling: 2.8 lbf rms

**Shock force**
- 4.5 lbf pk, 20 msec

**Low frequency force**
- $0.12 f^2 (0.35-d)$
  
  \[ f = \text{freq. Hz, } d = \text{disp. in. pk-pk} \]

**Max displacement**
- 0.35 in

**Maximum velocity**
- 20 ips pk

**Acceleration, non-resonant**
- Bare table: 6.0 g pk
- 1 lb load: 1.5 g pk
- 5 lb load: 0.38 g pk

**Maximum acceleration**
- Resonant sine: 100 g pk
- Peak shock: 13.5 g pk

### PHYSICAL

**Dynamic weight**
- 0.33 lb

**Total weight**
- 0.56 lb

**Rated armature current**
- Natural cooling: 1.1 A rms
- Forced air cooling: 2.2 A rms

**Frequency range**
- 20 - 3000 Hz

**Reaction mass resonance**
- 10 Hz

**Structural resonance**
- 3500 - 4500 Hz

**Stray magnetic field**
- Measured @ 1.0” distance: <10 gauss

**Cooling (>1.0 lb force)**
- 3.5 CFM/5 psi

**Dimensions**
- 2.0” dia x 1.5” long

**Attachment hole**
- 0.141” dia x 1.5” long

### OPTIONS

Cooling package: Required for operation above 2.0 lbf. Regulator, •Iter, 10 ft. hose, etc. Requires 80 - 125 psi inlet air pressure @ 3.5 CFM dry air.

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1. Please see systems ratings for additional specifications.
2. Load dependent.

Specifications subject to change. Consult factory for latest specifications.

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![Diagram](image-url)