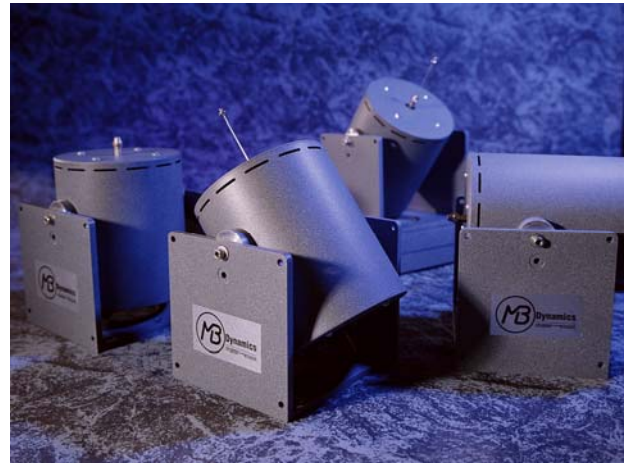




## **MODAL 50A** *Excitation Made Easy!*

### **THE EXCITER - #1 SELLING WORLDWIDE**

"The MODAL 50A along with MB's MODAL APPLICATIONS EXPERTISE have revolutionized modal testing!" This Exciter was designed by a team of world-respected modal testers, including University of Cincinnati professors, to eliminate problems encountered when using traditional shakers for modal tests. The MODAL 50A slashes setup time to a minimum! Conveniences in fixturing and setup like the clearance hole through the armature and shaker and a collet chuck for gripping a threadless stinger make easy the attachment of the MODAL 50A to a test structure. 50 pounds dynamic force from an Exciter weighing little more than 50 lbs makes it portable and easy to setup by one person.



### **THE COMPANY - UNIQUELY QUALIFIED**

MB's three principals (SDRC alumni) have over seven decades of combined experience performing extensive dynamic testing - both in the USA and Europe. These experienced test veterans have solved real-world test challenges, and have helped hundreds of new and experienced modal testers alike properly apply the right excitation source to achieve good modal data faster! Choosing an MB Modal Exciter gains you access to applications experience unsurpassed in the marketplace today ... whether you need custom-tailored testing solutions ... on-site consulting ... seminars on theory, applications, excitation ... practical hints for acquiring valid modal data ... you'll get it with MB Modal Exciters.

### **APPLICATIONS EXPERTS - BEHIND EVERY EXCITER**

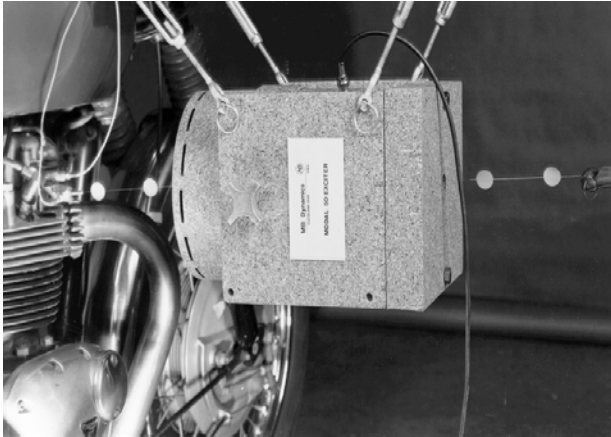


The MODAL 50A (and multiples thereof) is ideal for exciting structures smaller than say, a full-size automobile. Total vehicle modal tests on anything larger (truck, jet, even a space shuttle) requires multiple MODAL 50A's or the MODAL 250A.

Modal testing of structures needs an Exciter that is highly portable and easy to setup and operate. The lightweight, compact MODAL 50A was designed with these needs in mind. A center bore extending through the armature, housing, trunnion base, and inertial masses allows a stinger to be easily positioned along its axis. It may then be placed as close to the test article as desired and the chuck tightened down to grip the stinger firmly. The stinger need not be cut off, thus retaining flexibility for future use in different orientations and applications.

The ideal stinger would be infinitely stiff in the axial direction and have no bending stiffness. Since this is not possible, it can be approached with a pre-loaded thin wire. Replacing the 1/8" stinger with piano wire is easy by simply changing one of the collets provided in the Accessory Kit. Once installed, the wire can be pre-loaded using bungy cord and a small block pulley. An oscillatory force of 50 pounds keeps the tension in the stinger while delivering peak dynamic force. This virtually eliminates measurement errors due to bending moments and side loads that can result when using compression loading of traditional stingers.

## EASY TO FIXTURE & SETUP -- *SLASHES SETUP TIME*



- Clearance hole through armature and shaker allows unlimited positioning along the axis of the stinger
- Collet chuck with clearance hole through armature and shaker provides easy attachment of "one size fits all" stinger
- 'Piano wire' minimizes cross-axis measurement errors; allows large static force to be applied without derating 50 lb dynamic force
- Quick disconnect turnbuckles for adjustable suspension and easy, 6 dof positioning
- Lightweight shaker, easy-mount inertial masses/accessories allows one-man setup and portability to remote locations
- Trunnion base with two hand-knobs and three screw feet allow adjustment to virtually any excitation angle
- Quick connect/disconnect of additional mass supplies large inertial restraint for low frequency tests

## UNIVERSAL -- *NO NEED FOR 2 LBS FORCE OR 6" STROKE SHAKERS*

- 1" stroke - sufficient for flexible structures and low frequency "suspended shaker" tests
- 50 pounds dynamic force - enough for large test articles such as mid- to full-size automobile
- Lightweight armature (<0.4 lb) enables testing small items
- Broad usable frequency range (1-4000 Hz) handles almost every modal survey
- Ideal for multi-shaker random, single-point random, multi-point sine dwell, and even burst random

## ACCURATE -- *FEWER MEASUREMENT ERRORS DUE TO FIXTURING*

- The 'current mode' of MB's SS250VCF amplifier virtually eliminates mass loading of very small test items
- Lightweight armature minimizes mass loading - dramatically reduces force drop-off at resonances of the test specimen
- Low armature axial suspension stiffness (<15 lbs/in) assures shaker dynamics are decoupled from the test specimen's
- Ultra thin stinger decouples force inputs in all directions except the driven axis - avoids "cross axis" error in force measurement
- Applies/Maintains pre-loaded tension to the stinger, eliminating buckling problems - *results in superior forcing function!*

## ACCESSORY KIT

Includes chucks, turnbuckles, nuts, bolts, bolt-on masses, wrenches for bolt-on masses, stingers, user's manual, and extra storage for your stingers and load cells

## SPECIFICATIONS

STROKE	1" peak-peak (continuous duty) 1.1" between stops
FORCE OUTPUT	Convection Cooling: Shop Air by User: Portable Cooling:
	25 pounds (peak) 50 pounds (peak) 50 pounds (peak) - optional
STINGER ATTACHMENTS	Chuck and assortment of collets handles wire sizes from .020" to .125"
SHAKER ATTACHMENTS (for mounting)	Floor: adjustable trunnion base & screw feet. Suspended: multiple turnbuckles
TEST SPECIMEN STATIC PRE-LOAD	Capable of tensioning stinger in excess of 50 pounds
WEIGHT	Shaker with trunnion base: 55 pounds
BOUNCE MODE OF 'LARGE INERTIAL CONFIGURATION' ON ARMATURE SUSPENSION	Approx. 1 Hz
DIMENSIONS	11 ½" H (to top of collet chuck with feet retracted) 7 ½" x 9 ¼" footprint
DRIVE CABLE LENGTH	30' standard (100' cable available as option)

*Specifications subject to change without notice 0297*