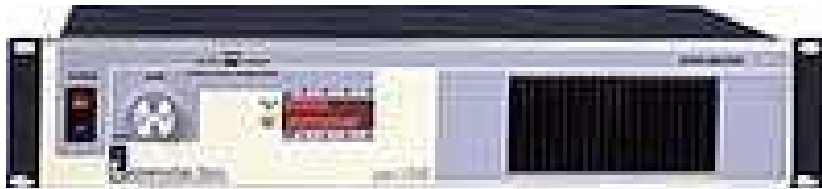


LW163.138-40 Modal Test System

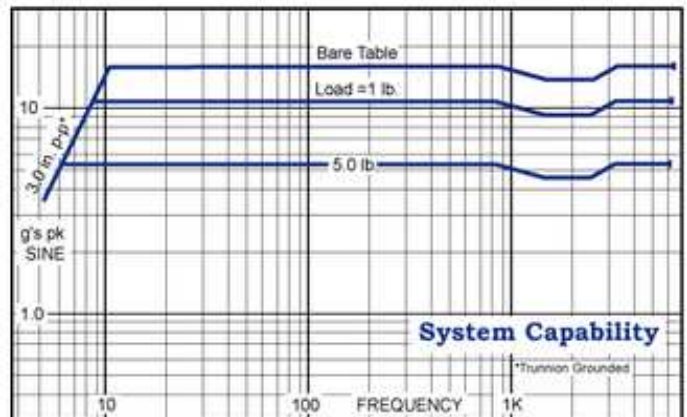


The LW163.138-40 system utilizes the Labworks MT-163 3"p-p thruster and pa-138 linear power amplifier to form our most popular permanent magnet field modal test system. The thruster's 3.0 inch stroke capability and low suspension spring rate makes this system ideal for most modal test applications. The thrusters armature features a through hole, and a single collett stinger attachment to accommodate both tension wire and stinger modal testing. The PA-138 amplifier is direct coupled to the shaker to give the maximum performance at both low and high frequencies and can be easily switched from voltage source mode to current source mode for force input testing applications. The standard voltage-proportional-to-current amplifier signal output facilitates servoed test operation. Dual bar graphs display the system operating levels and internal and external interlocks help protect the system from accidental abuse.

General Specifications

Sine force	40 lbs force pk 35 lbs force pk (1.5K-2.5KHz)
Blocked Armature Sine Force	40 lbs force pk
Random force	15 lbf rms random
Shock force	50 lbf pk shock
Frequency Range:	DC to 6500 Hz
Maximum Acceleration:	16 g pk, bare table 11 g pk, 1 lb. load 5.3 g pk, 5 lb. load
Maximum Displacement:	3.0 inch pk-pk
Cooling:	2-Speed Fan
Amplifier:	<30 lbf: natural convection
Shaker:	>30 lbf: cooling vacuum
Power Requirements:	1,000 VA @ 100*, 110*, 200, 220, or 240V, single phase 50/60 Hz

*special service req'd



System Components*

- MT-163 Modal Thruster
- PA-138 Linear Power Amplifier
- MS-129-163 Modal Stinger Kit
- Interconnect Cables and Hoses

System Options*

- VL-144/VL-145 Vibration Controller
- SC-121 Sine Servo Controller
- SG-135 Manual Sine Controller
- Amplifier Rack Mount Brackets
- Rack Cabinet
- Accelerometer Package
- SI-163 Base Isolation Mounts
- CB-152-163 Cooling Vacuum (>30 lbf)



MT-163 Modal Thruster

- 60 pounds pk sine force
- 3.0 inch stroke
- Armature Collett sizes:
1/32", 1/16", 5/32", 1/14"
- 1/4" Through-Hole
- Low stray magnetic field
- Frequency range² DC-6,500 Hz.
- Trunnion mounting base
- Stinger Kit



General Specifications

Performance

Sine force	
Natural cooling	30 lbf pk
With blower	60 lbf pk
Max displacement	3.0 in
Max velocity	120 ips pk
Acceleration	
Bare table	24 g pk
1 lb load	17 g pk
5 lb load	8 g pk
Max acceleration	
Resonat	200 g pk
Frequency range ²	DC-6500 Hz
Fundamental resonance ²	4000-5000 Hz
Stray magnetic field	
Measured 1.5" above collet	<8 gauss
Measured 1.0" from body	<20 gauss
Cooling	100 CFM/15 in H2O

Physical

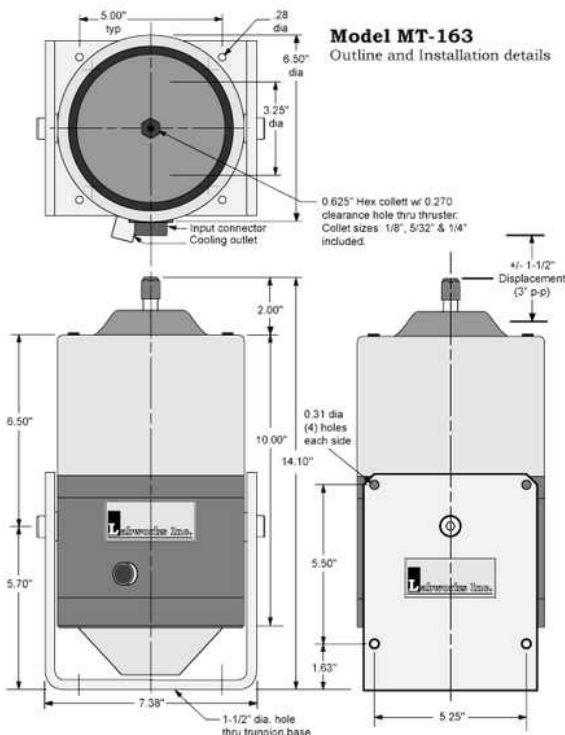
Armature weight		2.5 lb
Suspension stiffness	3.3 lb/in	
Rated armature current, Arms		
Natural cooling: -1, -2	15 A, 9 A	
With blower: -1, -2	30 A, 18 A	
Dimensions	14.1"H x 7.5"W x 6.5"D	
Shaker weight	54 lbs	

¹Please see systems ratings for additional specifications.

²Load dependent.

Model MT-163

Outline and Installation details



The MT-163 Modal Thruster's compact size and extra long stroke armature make it well suited for all types of modal testing. The MT-163 Thruster has a compression collet stinger attachment and features a central through-hole suitable for modal stinger and pre-tensioned wire testing applications. The MT-163 trunnion base facilitates bolting the shaker in place for rigid applications or the use of adjustable mounting feet. Four mounting holes located on each side of the universal trunnion base provide a convenient method for hanging the thruster for suspended applications and a large hole through the base bottom allows long stinger rods and wires to pass completely through the thruster and trunnion base in virtually any thruster angle position.

Reliability is assured through the use of the unique, dual linear ball bearing armature suspension design. This design provides for very low axial stiffness while retaining very high lateral stiffness. Cushioned rolling components insure against unwanted harmonics and distortion. The Thrusters low force recentering spring helps to keep the armature centered for low compliance test setups. When combined with the correct Labworks linear power amplifier, the resulting system is unmatched for reliability, performance and cost.

PA-138 Linear Power Amplifier

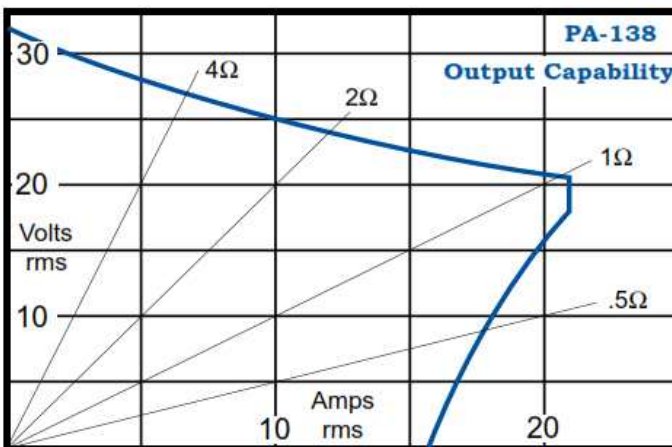


- Output: 25V, 500 VA
- Direct coupled linear output
- Output voltage and current meters
- Voltage and current source modes
- Small size, high power



The Labworks PA-138 Linear Power Amplifier is a high quality, air-cooled, direct-coupled audio amplifier primarily intended for use with small vibration systems. Although this amplifier has been designed to directly drive low impedance loads, it can be used in any application requiring continuous duty, high quality, audio power.

PA-138 Amplifiers feature protection from both over current and over temperature insuring long term reliability. The amplifier has full interlock capabilities as well as peak voltage and RMS current bar graphs to monitor output.



General Specifications*

Output voltage	25 V rms
Output current	20 A rms
Max. cont. dissipation	450 W
Frequency response	
Voltage source: DC to 10 KHz	-0.6 dB
Current source: DC to 2 KHz	-2 dB @ 4Ω
Max. voltage gain	30 dB
Cooling	2-speed fan, automatic
Input impedance	10 kΩ
Meters	
Volts, pk	19 segment ± 5 %
Amps, rms	19 segment ± 5 %
Interlock circuit	
External, user	F.O. switch or TTL
Input power	1000 VA max
Voltage	100, 120, 220, 240 V, 1∅
Frequency	48 to 62 Hz
Dimensions	3.5" H x 19" W x 13" D
Weight	24 lbs

*Specifications subject to change. Call factory for latest specifications.

Amplifier Options

- Rack panel cabinet
- BNC signal cables