

SHOCK ACCELEROMETER CALIBRATION

PneuShock™



The PneuShock™ Model 9525C provides shock inputs for accurate and consistent sensitivity calibrations at high acceleration levels. Shocks are created at accelerations from 20g to 10,000g using a pneumatically operated projectile to strike an anvil and excite the sensor. By controlling both the level and the duration of the air pressure applied, the user gains greater control and consistency of the impacts. The system can be used manually in stand-alone mode or fully computer-controlled.

PneuShock works by pneumatically forcing a projectile to impact an anvil to which the sensor under test and the back-to-back reference accelerometer are mounted. Pressure is regulated either manually via a precision pressure regulator or optionally via an electrically controlled regulator that allows remote control of the pressure.

When the impact occurs, the anvil lifts off a rubber mount, flies a short distance, and is captured by a cushioned fixture. Desired accelerations and pulse durations are produced using combinations of five anvils with different padding material, one optional supplemental mass, and continuously adjustable pressure settings. PneuShock's electronics are rack mountable and vibration isolated from the shock exciter. Also, the PneuShock poppet is shock isolated from the structure of the exciter to prevent false triggering by the poppet action during low level accelerations.

BENEFITS:

- Easy amplitude linearity calibration of shock and crash sensors from 20 g to 10,000 g
- Controlled and consistent impacts using state-of-the-art pneumatically actuated exciter
- Easy refinement of impulse shape and frequency content using a wide variety of impact anvils
- Superior impact control through drive pressure and duration control
- Precise adjustment of impact through use of digital pressure gauge



MODEL 9525C PneuShock™

PneuShock provides verification and linearity check from 20g to 10,000g allowing accurate calibration of shock accelerometers at amplitude levels used in actual testing.

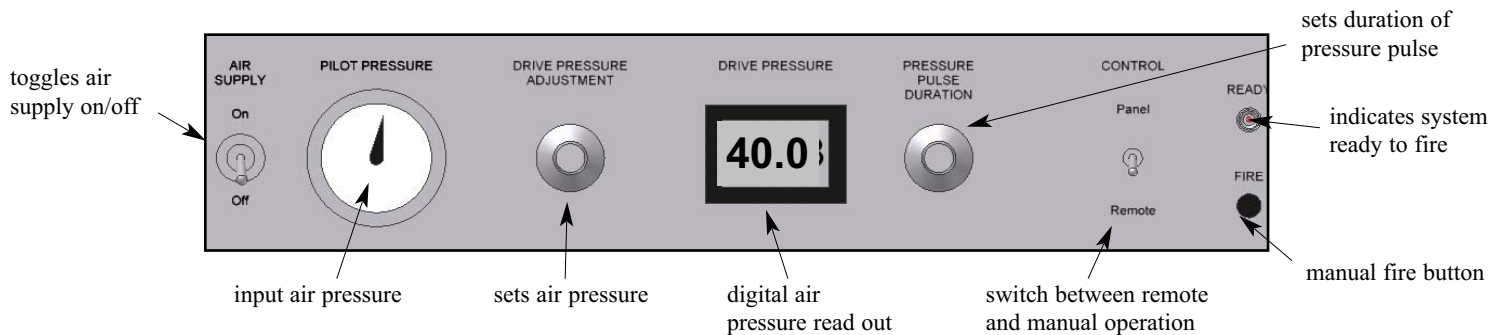
Acceleration Range	20g - 10,000g [196 - 98,000 m/s ²]
Sensor Mounting	1/4-28 UNF Thread Size
Air Supply Pressure	90 - 150 psi [6.2 - 10.3 bar]
Air Supply Quality Class	4 (ISO 8573.1 Compressed Air Standard)
Air Filter Requirements	
Dirt (Particle Size)	15 micron
Water Pressure Dewpoint (100 psi gauge)	37 °F [3 °C] (128 ppm vol.)
Oil (including vapor)	5 mg/m ³

Achieve

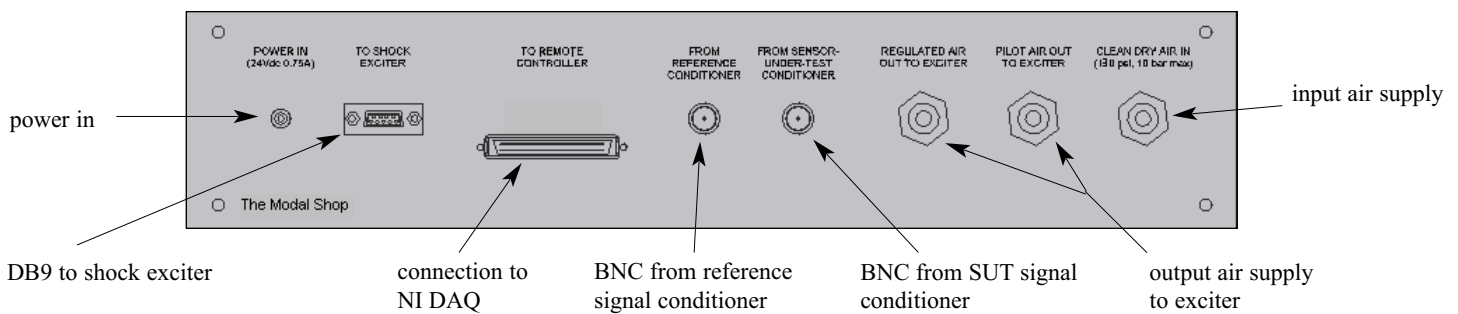
Using these settings

Shock Level (g)	Pulse Duration	Anvil Material	Padding	Drive Pressure (psi)	Hex Mass Y/N
20	1.3-1.5	Steel	1/4" rubber	10.3~11.3	Y
50	1.3-1.5	Steel	1/4" rubber	10.4~11.9	Y
100	1.3-1.5	Steel	1/4" rubber	10.9~13.2	Y
500	1.3-1.5	Steel	1/4" rubber	11.7~15.2	N
1000	1.3-1.5	Aluminum	1/8" rubber	11.6~13.7	N
5000	1.3-1.5	Aluminum	Lexan + 1/8" felt	13.5~14.0	N
10000	1.3-1.5	Aluminum	Lexan + 1/8" felt	16.3~18.7	N

Front Panel of PneuShock Electronic Control Box



Back Panel of PneuShock Electronic Control Box



Shock Calibration is also available as an option (9155C-525) to The Modal Shop's Model 9155C Accelerometer Calibration Workstation.

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