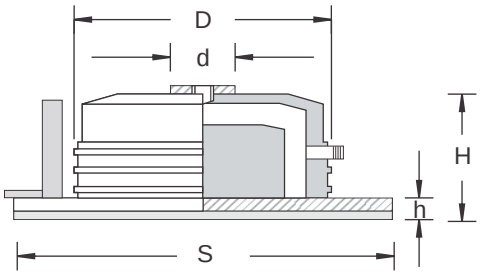
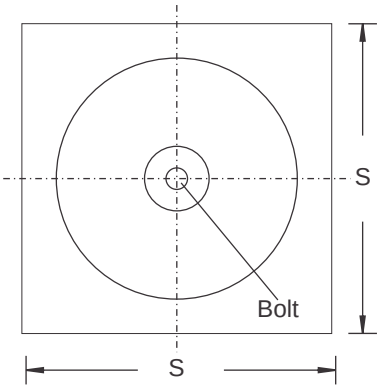
VIBRATION DAMPING SOLUTIONS

Dynemech VIBRATION TECHNOLOGY

Auto-Levelling Pneumatic Mounts
Series DLPM





Model	Lifting capacity (Kg/pc)	Max. Pressure Bar	S mm	D mm	H App. mm	d mm	h mm
DLPM1	25 - 60	3	145	84	64	41	6
DLPM2	80 - 300	5	180	120	70	80	6
DLPM3	270 - 800	6	240	174	88	100	6
DLPM4	650 - 1500	6	310	250	108	127	8
DLPM5	1200 - 3400	6	425	360	111	200	8
DLPM6	3000 - 6500	6	555	480	114	315	8

Leveling accuracies of +/- 0.15 mm or +/-0.025 mm are available.
The standard Dynemech DLPM isolators have a natural frequency as low as 1.7 Hz.

A complete Dynemech DLPM system consists of three isolators for 3-point determinate leveling. Each isolator incorporates a leveling valve which is the load sensing and height controlling element.

Placement of Dynemech's DLPM Mounts Before a pneumatic isolation system is selected by analysis or test, the payload and its support base should also be evaluated dynamically for proper implementation. Poor structural stiffness can compromise the isolation efficiency of a system. To ensure that an isolator will perform as intended, it is good design practice to have the support structure dynamic stiffness at least 10 - 20 times higher than the isolator,depending on the application.
If the center of gravity is too high above the isolator's elastic plane, instability can occur.Pneumatic isolator locations must satisfy the requirements for a stable system. This requirement is met by positioning the isolators within the limits of design guidelines for a stable system.

An industry standard is to consider a line connecting the center line of the isolators. Using this line as a base, construct a triangle whose vertical height is 1/3 the lenght of the base. Id the projection of the center of mass onto this plane lies with in the triangle, the system will likely be stable and exhibit optimum isolation and damping characteristics.

If the center of gravity is outside the triangle, the system is likely to have stability problems. It is possible to overcome this instability by addition damping. This will slightly increase the stiffness of the system and hence the vertical natural frequency of each isolator.

Isolation Characteristics/Specifications

Natural Frequency	(-6)	(-12)
Vertical	2.5 - 2.7 Hz	1.5 - 1.7 Hz
Horizontal	2.0 - 4.5 Hz	2.0 - 4.5 Hz
Damping		
Vertical (Adjestable)	6% - 20%	6% - 20%
Horizontal	5% - 6%	5% - 6%

Systems are supplied with automatic height control valves, tubing and all other pneumatic accessoriesn ecessary for complete system installation.

Setting time can be defined as the time it takes for an isolation system's motion to return to a predete mined reference with respect to a defined in put disturbance. The disturbance can be an environmental in put or machine induced, such as a arm or job movement. Dynemech DLPM Mounts have minimal setting time. Long setting time using pneumatic isolators is not acceptable because precision measuring and positioning machines can suffer repeatability errors and through put losses.