

ZDT-P Series

Pneumatic Air Spring Vibration Isolation Optical Table



PRODUCT FEATURES:

- Vibration isolation damping optical breadboard for surface resonance elimination
- High density honeycomb core structure breadboard
- Clean top with sealed cups
- Automatic self leveling
- Optional ordering for Castors

The ZDT-P type pneumatic isolators adopt ultra thin air springs with self developed compound rubber, integrated with porous quasi-laminar flow damping element with diffuser. The isolators provide excellent vibration isolation efficiency as well with high stable performance. The air spring isolators also feature auto leveling and inflating characteristics. The critical components of the pneumatic system are made by FESTO. The silent air compressor needs to be ordered separately.

APPLICATIONS:

- High precision optical microscopes, bio-medical applications
- Optical path testing and measurement
- Laser scanning and interferometers
- Spectrometers and high precision measuring
- Integrated electronics and other optical devices that require for high vibration isolation performance



TECHNICAL SPECIFICATIONS:

Inherent Frequency	1.0-2.0Hz, vertically; 1.0-2.0Hz, horizontally
Vibration Isolation Structure	Ultra thin air springs
Leveling Type	Automatic
Vibration Damping Type	Porous quasi-laminar flow damping element with diffuser
Total Table Height	800mm
Working Air Pressure	0.2-0.4MPa
Compressed Air Source	Silent compressor (noise level) <50dB
Vibration Isolating Efficiency	82~88%@5Hz, 86~95%@10Hz, vertically 78~86%@5Hz, 84~92%@10Hz, horizontally
Re-leveling Accuracy	±0.1mm
Table Top Flatness	so.1mm/m ²
Surfaced Roughness	≤1.6 μm, matt surface finish
Isolator Height Adjustment Range	±10mm

Model	Dimension(mm)	Inherent Frequency	Height(mm)	Load capacity (Kg)
ZDT-P09-06	900x600	Vertical:2.0Hz Horizontal:2.0Hz	800	<135
ZDT-P10-08	1000x800	Vertical:2.0Hz Horizontal:2.0Hz	800	<200
ZDT-P12-09	1200x900	Vertical:2.0Hz Horizontal:2.0Hz	800	<270
ZDT-P15-10	1500x1000	Vertical:2.0Hz Horizontal:2.0Hz	800	<375
ZDT-P18-10	1800x1000	Vertical:1.8Hz Horizontal:2.0Hz	800	<450
ZDT-P20-10	2000x1000	Vertical:1.8Hz Horizontal:1.8Hz	800	<500
ZDT-P12-12	1200x1200	Vertical:2.0Hz Horizontal:2.0Hz	800	<360
ZDT-P15-12	1500x1200	Vertical:2.0Hz Horizontal:2.0Hz	800	<450
ZDT-P18-12	1800x1200	Vertical:1.8Hz Horizontal:1.8Hz	800	<540
ZOT-P20-12	2000x1200	Vertical:1.8Hz Horizontal:1.8Hz	800	<600
ZDT-P24-12	2400x1200	Vertical:1.5Hz Horizontal:1.8Hz	800	<720
ZDT-P30-12	3000x1200	Vertical:1.5Hz Horizontal:1.8Hz	800	<900
ZDT-P35-12	3500x1200	Vertical:1.5Hz Horizontal:1.8Hz	800	<1050
ZDT-P40-12	4000x1200	Vertical:1.2Hz Horizontal:1.8Hz	800	<1200
ZDT-PS0-12	5000x1200	Vertical:1.2Hz Horizontal:1.5Hz	800	<1500
ZDT-P60-12	6000x1200	Vertical:1.2Hz Horizontal:1.5Hz	800	<2000

MOT-F Series

High Density Honeycomb Core Optical Breadboard

PRODUCT FEATURES:

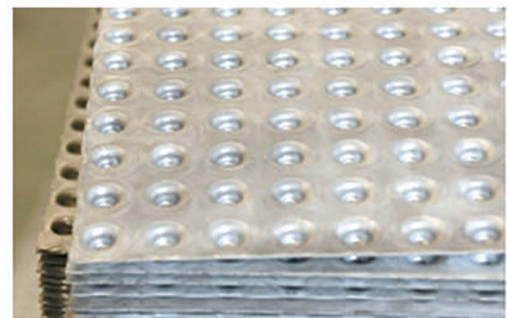
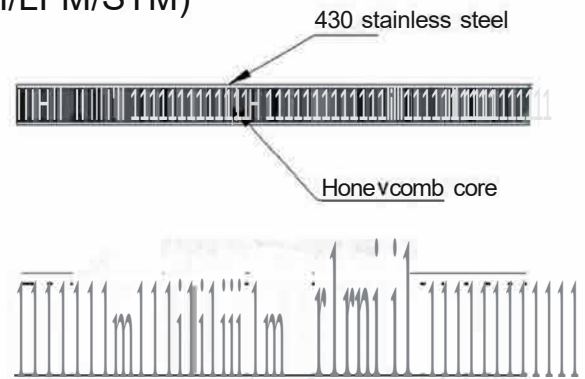
- Broad-band vibration damping top to eliminate surface synchronized vibrations
- Honeycomb core structure
- Clean top with sealed cups
- High density with lower self weight and high rigidity
- Long lasting service life without surface deflections due to residual stress
- Easy installation and simple to use without persistent maintenance



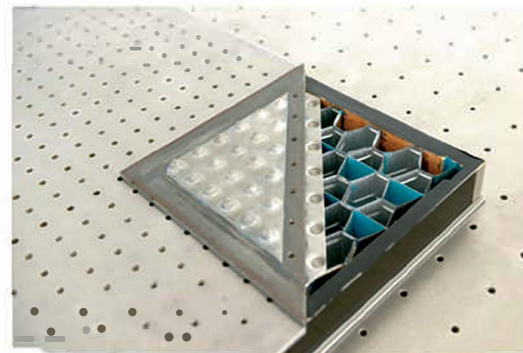
APPLICATIONS:

- Scanning tunneling microscopy (AFM/LFM/STM)
- Interferometry
- Electron microscopy

High density honeycomb core optical breadboard is widely applied in the scientific fields of optical experiments, medical researches, high precision devices manufacturing and testing as well as aviation labs etc. Its features of high rigidity and low self weight, providing a solid mounting platform for the experiments hence ensure the accuracy of the experiment applications. The breadboard is designed with a structure of top and bottom skins, honeycomb cores and sealed cups.

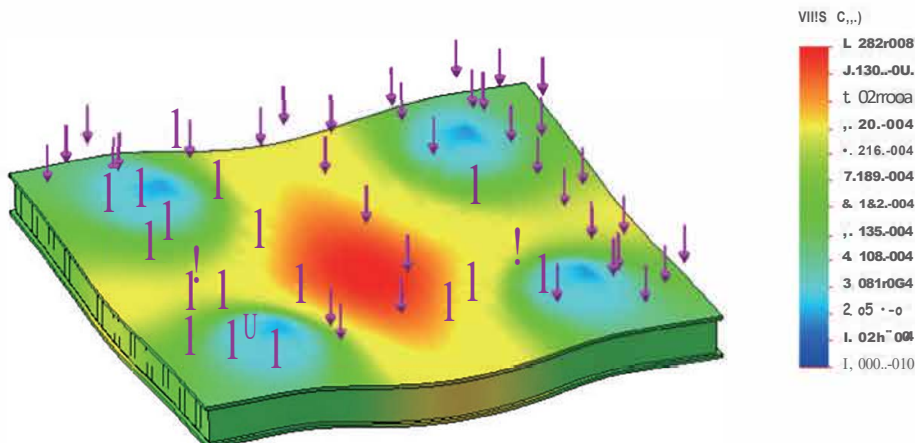


It is user friendly for the mounting of experiment devices. The top skin of the breadboard is made of highly conductive stainless steel(430), which prevents the breadboard from getting rusty. The sealed cups are made of stretching aluminum and they can effectively prevent the synchronized vibrations inside the breadboard, which may affect the accuracy of the experiments. Another advantage of the sealed cups is to prevent the dusts, liquids or other tiny accessories that may contaminate the breadboard dropping inside to the core of the breadboard. The overall honeycomb core design reduces the self weight of the breadboard while maximizes its rigidity.



RIGIDITY ANALYSIS:

With an MOT-F optical breadboard of dimension 600x600x50mm under the condition of 100kg load .



TECHNICAL SPECIFICATIONS:

Breadboard thickness	25mm, 50mm-300mm (e.g 50mm, 80mm, 100mm, 150mm ...)
Surface plate	430 stainless steel, thickness: 5mm
Single Honeycomb Dimension	Min: 6.25x10 ⁻⁴ m ² , Max: 1.25x10 ⁻³ m ²
Damping Type	Broad-band
Honeycomb Core Density	250kg/m ³
Mounting Holes Type	Metric M6 tapped @25mmx25mm grid, boarder edge: 37.5mm also customizable
Surface Flatness	5.01 mm/m ²
Surface Roughness	51.6µm, matt surface finish

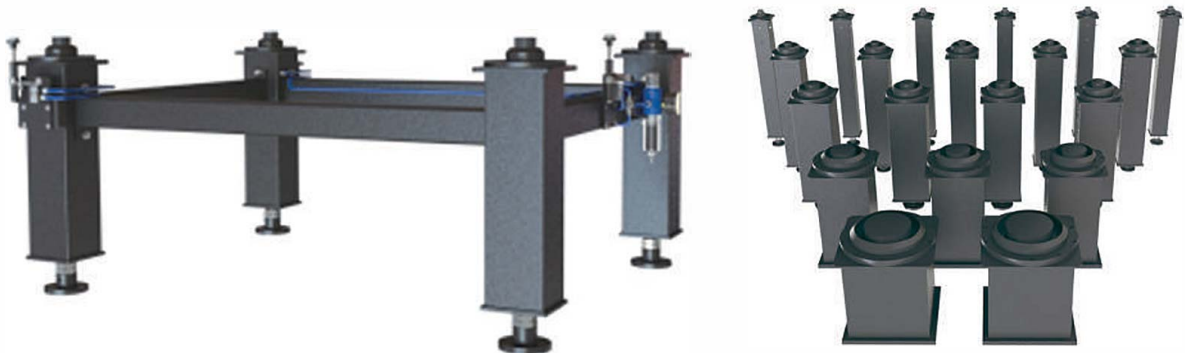
Model	Dimension(mm)	Thickness	Hole Grid	Hole Type	Board to Edge
MOT-F06-045	600x450	50	25x25	M6	37.5x37.5
MOT-F06-06	600x600	50	25x25	M6	37.5x37.5
MOT-F09-06	900x600	80	25x25	M6	37.5x37.5
MOT-F075-075	750x750	80	25x25	M6	37.5x37.5
MOT-F10-08	1000x800	100	25x25	M6	37.5x37.5
MOT-F09-09	900x900	80	25x25	M6	37.5x37.5
MOT-F12-09	1200x900	100	25x25	M6	37.5x37.5
MOT-F15-10	1500x1000	150	25x25	M6	37.5x37.5
MOT-F18-10	1800x1000	150	25x25	M6	37.5x37.5
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MOT-F12-12	1200x1200	100	25x25	M6	37.5x37.5
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MOT-F18-12	1800x1200	200	25x25	M6	37.5x37.5
MOT-F20-12	2000x1200	200	25x25	M6	37.5x37.5
MOT-F24-12	2400x1200	200	25x25	M6	37.5x37.5
MOT-F30-12	3000x1200	250	25x25	M6	37.5x37.5
MOT-F35-12	3500x1200	250	25x25	M6	37.5x37.5

Customized dimensions are available upon request.

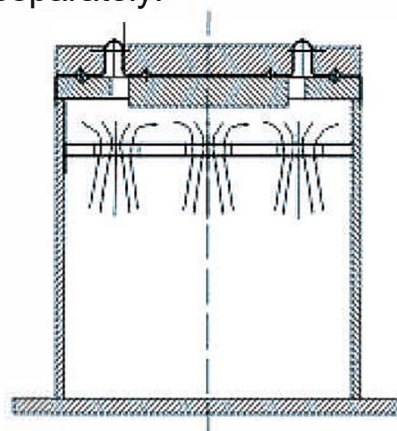
ZDT-P Series

Pneumatic Auto-balancing & Self-Centering Isolator

- Ultra-thin air spring structure to eliminate the impact on the system inherent frequency
- High precision pneumatic control system with features of high sensitivity, high speed and stability
- Self leveling and balancing
- Optional choice of castors

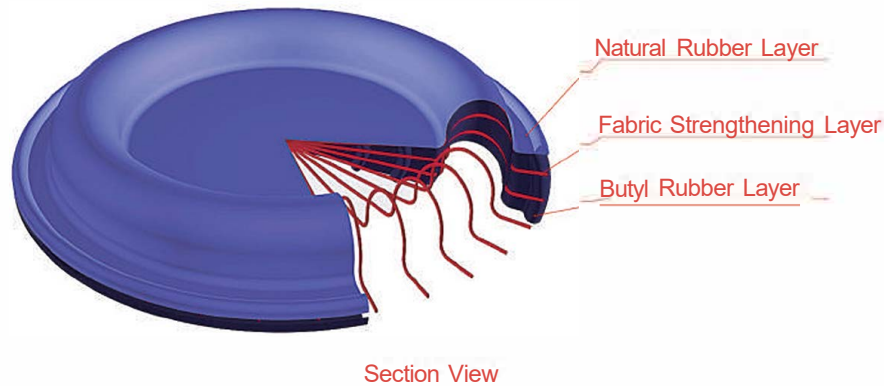


The ZDT-P type pneumatic isolators adopt ultra thin compound material air springs with porous quasi-laminar flow damping element with diffuser. The isolators provide excellent vibration isolation efficiency with highly stable performance. The air spring isolators also feature auto leveling and inflating characteristics. The critical components of the pneumatic system are made by FESTO. The silent air compressor needs to be ordered separately.



Schematic drawing

With the structure of dual air chambers, under the perturbation of the environment vibration, the air system will have low-frequency alternating deformation which enables the air flow to change its flowing direction thus forms an isolation damping force during each forced cycles.



The thickness of the air spring is only 0.5% to its effective diameter, which is almost half of the conventional air springs. It is softer and more sensitive.

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Inherent Frequency	1.0-2.0Hz, vertically; 1.5-2.0Hz, horizontally
Vibration Isolating Efficiency	82---88%@5Hz, 86~95%@1 0Hz, vertically 78~86%@5Hz, 84~92%@10Hz, horizontally
Vibration Isolation Structure	Ultra thin air springs
Leveling Type	Automatic
Vibration Damping Type	Porous quasi-laminar flow damping element with diffuser
Working Air Pressure: 0.2-0.4MPa	Re-leveling Accuracy: ± 0.1 mm
Isolator Height Adjustment Range: ± 10 mm	Resetting time: <5s
Optional installation of castors	