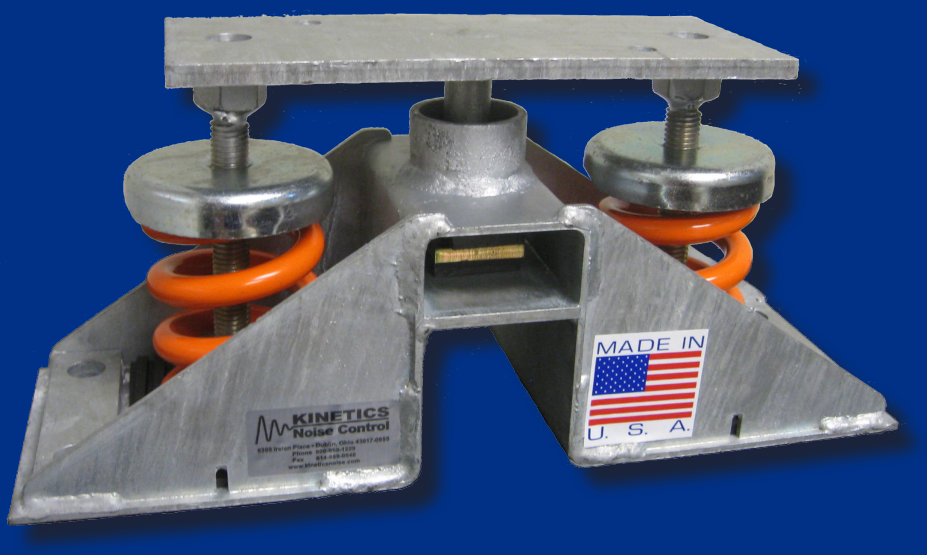
KINETICS Noise Control®



TITAN

Patent No.: 9,316,279

Modular Seismic and Wind Restraint Vibration Isolator

- Features Kinetics unique Heavy Duty Centralized Snubber Element for increased restraint capacities and reduced time in the field installing and adjusting isolators
- Engineered to meet the latest building codes

Description

KINETICS TITAN Modular Seismic and Wind Restraint Vibration Isolator is comprised of two interfacing but independent elements; two or more high deflection, free-standing, housed, large diameter, laterally stable steel springs, and a seismically rated housing. The steel springs are replaceable without having to lift or otherwise remove the supported equipment. The seismically rated housing is available in three (3) housing sizes engineered to resist nominal restraint forces of 0.5G, 1.0G, and 2.0G based on the max load capacity of the isolator model.

KINETICS unique heavy duty centralized snubber element allows 1/4-inch (6 mm) motion in any direction from the neutral position. The elastomeric snubber element is replaceable in the field after a seismic event without lifting the unit off the isolator.

Save time adjusting the TITAN leveling bolts in the field with up to 270 degrees of arc swing on two (2) spring models and 200 degrees of arc swing on four (4) spring models.

The TITAN isolator/restraint is recommended for equipment mounted on a structural frame or concrete inertia base where the top plate of the isolator can be fully utilized.

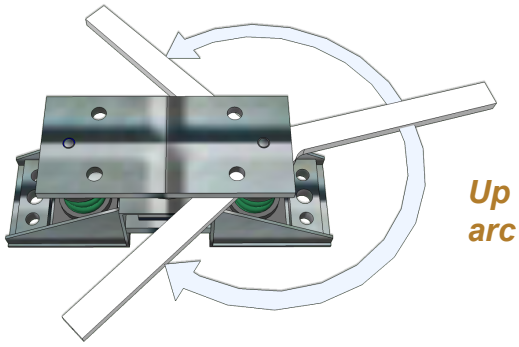
The modular design of the TITAN allows it to handle loads up to 23,200 lbs. and provide up to 4-inches of deflection. As with any seismic restraint or vibration isolation device, direct mounting to light pieces of equipment may not be possible without an intermediate frame.

Product Features

KINETICS TITAN isolator was designed with the contractor mind. Save time during field installation and after seismic events with these exclusive TITAN features.

Leveling Bolt Access Reduces Field Installation Time

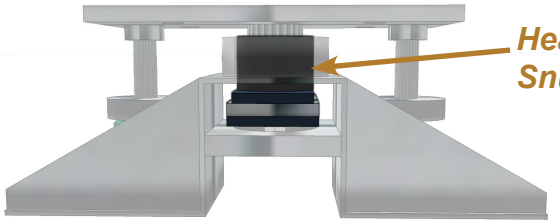
A full 270 degrees of arc swing on two (2) spring models reduce field installation time and adjustment of leveling bolts for the TITAN Isolator. Four (4) spring models provide 200 degrees of arc swing.



Up to 270 degrees of arc swing

Heavy Duty Centralized Snubber Element with a 2 and 4 Coil Arrangement

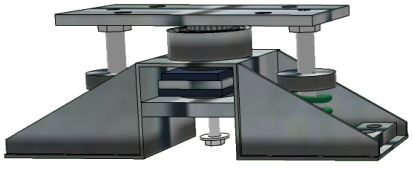
A single snubber element allows the TITAN housing to take all of the restraint load at one single point while limiting contact stress to 1000 PSI. This allows for an increase in restraint ratings and also greater ease of installation and adjustment. The single snubber element can be combined with a 2 or 4 coil arrangement for up to 23,200 lbs.



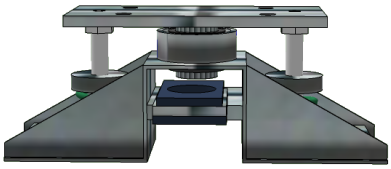
Heavy Duty Centralized Snubber Element

Replace Seismic Subbing Element while the Isolator Remains Under Load

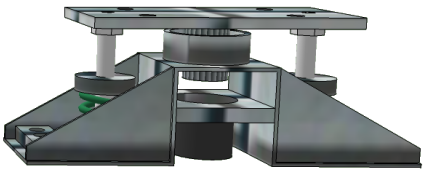
By design, KINETICS TITAN Isolator's single neoprene element might incur damage absorbing the shock of a seismic event. Unlike most seismic isolators, the TITAN's neoprene element is quick and painless to replace. In fact, the design of the TITAN Isolator allows for the replacement of a damaged neoprene element while the isolator(s) remains under load. This allows the replacement of the neoprene element to be completed without removing the equipment that is being isolated.



1. **Unscrew and remove the Vertical Restraint Bolt**



2. **Slide the Vertical Restraint Component out of the Housing**



3. **The Horizontal Restraint Element will Drop out of the Housing**

4. **Replace the Neoprene Elements and Reassemble in Reverse Order**

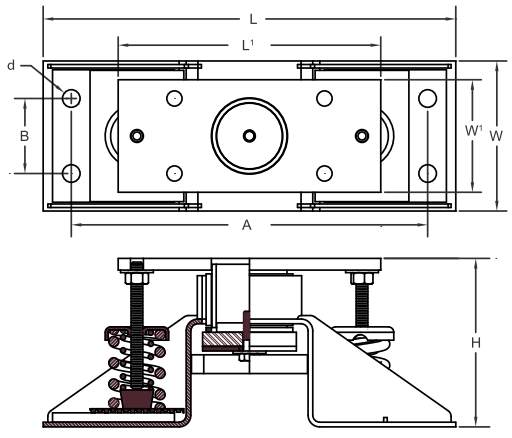
Dimensions and Capacities

KINETICS TITAN housings engineered restraint capacities:

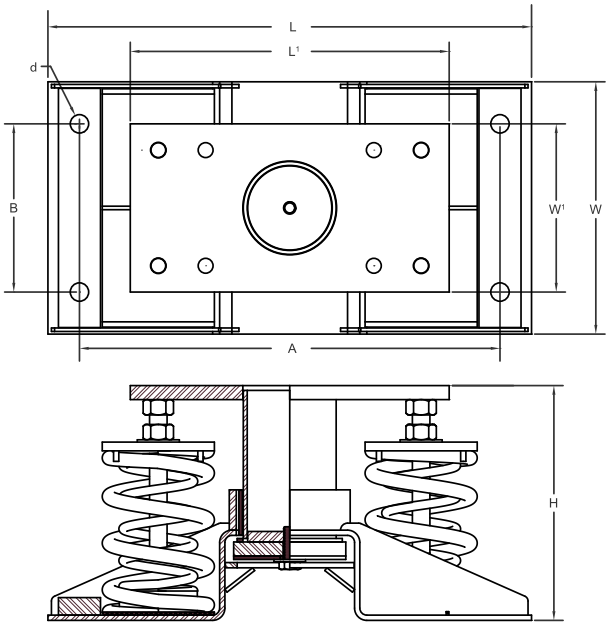
- TITAN (A) 0.5G
- TITAN (B) 1.0G
- TITAN (C) 2.0G

Model	Isolator			Top Plate		Mounting Holes			Number of Springs
	H	L	W	L¹	W¹	A	B	d	
TITAN (A) 1-70/1600	5.12	12.50	4.00	8.25	4.00	10.50	2.00	Ø0.56	2
TITAN (A) 1-100/7000	8.98	18.00	6.00	11.38	6.00	15.75	3.50	Ø0.81	2
TITAN (A) 1-7600/14000	9.03	21.50	10.00	14.00	10.00	18.25	6.00	Ø0.94	4
TITAN (A) 2-4000/8995	10.89	22.00	8.00	13.50	6.00	19.50	5.00	Ø0.81	2
TITAN (A) 2-8000/18000	10.88	29.50	18.00	17.75	12.00	26.50	12.00	Ø1.31	4
TITAN (A) 4-12000/23200	16.73	29.50	18.00	19.75	12.00	26.50	12.00	Ø1.31	4
TITAN (B) 1-70/1600	5.13	13.25	4.00	9.00	4.00	11.25	2.00	Ø0.56	2
TITAN (B) 1-100/7000	8.98	22.00	8.00	14.00	6.00	19.00	4.00	Ø0.94	2
TITAN (B) 1-7600/14000	9.00	26.50	12.00	16.75	12.00	22.00	7.00	Ø1.31	4
TITAN (B) 2-50/833	6.92	15.25	5.00	9.75	4.00	13.25	3.00	Ø0.69	2
TITAN (B) 2-200/3950	8.98	18.00	6.00	11.38	6.00	15.75	3.50	Ø0.81	2
TITAN (B) 2-4000/8995	10.87	25.50	8.00	14.75	6.00	22.50	4.00	Ø1.06	2
TITAN (B) 2-8000/18000	10.88	34.50	18.00	22.75	12.00	30.00	12.00	Ø1.31	4
TITAN (B) 4-200/3450*	14.25	22.00	8.00	14.00	6.00	19.50	5.00	Ø0.81	2
TITAN (B) 4-4500/11600	16.73	29.50	10.00	19.75	8.00	26.50	5.00	Ø1.06	2
TITAN (B) 4-12000/23200	16.75	34.50	18.00	22.75	12.00	22.75	12.00	Ø1.31	4
TITAN (C) 1-100/4400	8.98	22.00	8.00	14.00	6.00	19.00	4.00	Ø0.94	2
TITAN (C) 1-4930/7000	10.88	28.75	12.00	17.75	12.00	24.25	7.00	Ø1.31	2
TITAN (C) 1-7600/14000	10.88	36.75	18.00	25.00	14.00	32.25	13.00	Ø1.31	2
TITAN (C) 2-200/3950	8.98	22.00	8.00	14.00	6.00	14.00	4.00	Ø0.94	2
TITAN (C) 2-4000/8995	10.88	28.75	12.00	17.75	12.00	17.75	7.00	Ø1.31	2
TITAN (C) 2-8000/18000	10.88	36.75	18.00	25.00	14.00	25.00	13.00	Ø1.31	4
TITAN (C) 4-4500/11600	16.75	34.50	12.00	22.75	8.00	22.75	7.00	Ø1.31	2
TITAN (C) 4-12000/23200	16.75	36.75	18.00	25.00	14.00	32.25	13.00	Ø1.31	4

*TITAN (B) 4-200/3450 is available with extended height (16.73 inches).



Two (2) Spring Housing Example

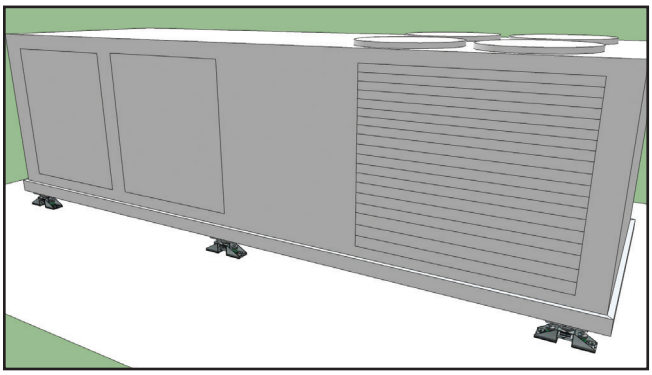


Four (4) Spring Housing Example

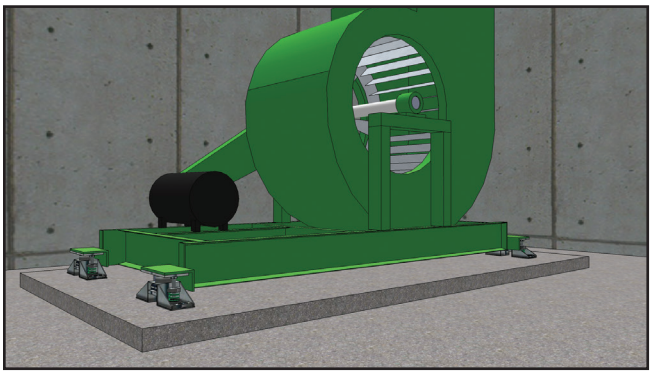
Installation Options

KINETICS TITAN Isolator is designed to be installed under a variety of systems and equipment within a facility. Its ease of installation and flexibility of attachment makes it the ideal choice when selecting a seismic/wind restraint isolator.

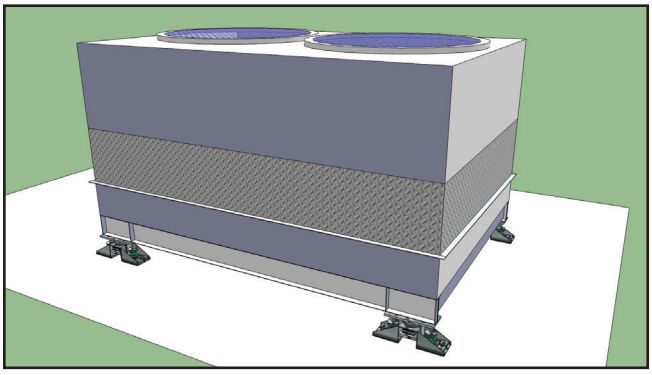
Typical AHU Installation



Typical Fan Installation



Typical Cooling Tower Installation



Specification

Spring isolators shall be comprised of two interfacing but independent elements; a coil spring element and a seismically rated housing. The spring coil element shall be comprised of two or more coil assemblies having all of the characteristics of freestanding coil spring isolators as specified in the vibration isolation portion of the specification.

The seismically rated housing shall be sized to meet or exceed the force requirements applicable to the project and have the capability of accepting coils of various sizes, capacities, and deflections as required to meet the desired isolation criteria. The housing shall be hot dipped galvanized for corrosion resistance.

All spring forces will be contained within the coil/housing assembly and under no seismic load condition shall the restraint anchoring hardware be exposed to spring - generated forces.

The single restraint element shall incorporate a steel housing with elastomeric elements at all dynamic contact points. The single restraint will allow 1/4 in. (6 mm) motion in any direction from the neutral position. All elastomeric elements shall be replaceable in the field after an event without lifting the unit.

To ensure the optimum anchorage capacity, the restraint will have an overturning factor (the ratio of the effective lateral snubber height to the short axis anchor spacing) of 0.33 or less.

The leveling nut or screw shall be accessible and allow up to 270 degrees of arc swing on two (2) spring models and 200 degrees of arc swing on four (4) spring models.

The spring element shall be replaceable without having to lift or otherwise remove the supported equipment.

The isolator/restraint shall be **KINETICS TITAN** as manufactured by Kinetics Noise Control.

KINETICS Noise Control®

kineticsnoise.com
sales@kineticsnoise.com
1-800-959-1229