

 **Earthquake Protection**

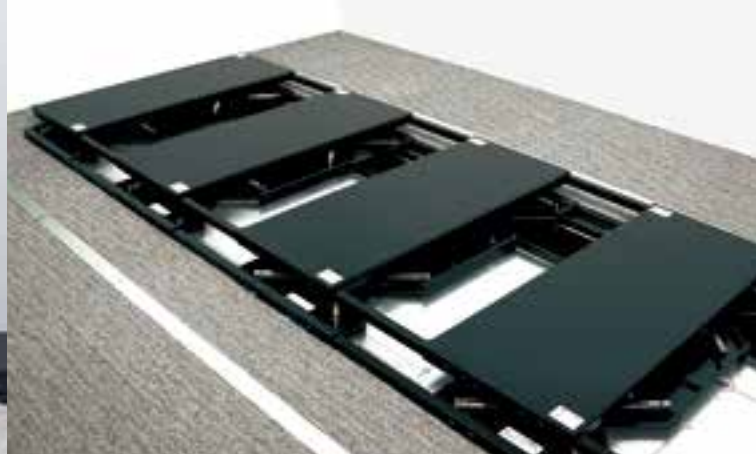
Seismic Isolator for Racks

Responsive to
an earthquake of
seismic intensity of
7 class



Highly evaluated on numerous tests and earthquake disasters
High-performance and compact seismic isolator for racks

SD-5 type II



Seismic Isolator for Racks

SD-5 type II

Standard type with the ball retainer type seismic isolating structure responsive to an earthquake of seismic intensity of 7 class

A seismic isolator which adopts the constant standby method without the starting mechanism and immediately responds to seismic motion in the horizontal direction. In particular, it exerts great effects against short-period seismic motion including epicentral seismic motion. Since installation is simple, seismic isolation measures can be taken easily and there is no need of reset after an earthquake. It is a standard type seismic isolator with a large number of installation records and excellent cost performance.

Easy installation! Connection and extension are available!

The constant standby method allows the device to respond to shakes instantly.

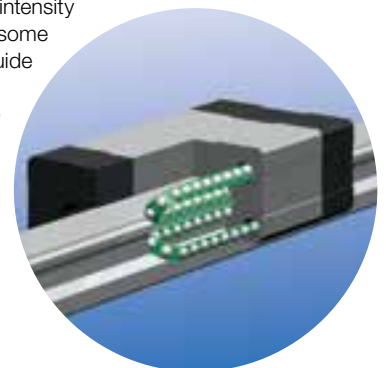
Maintenance-free! No need of reset after an earthquake!

The applicable load is 300 to 1,200 kg (2 units).

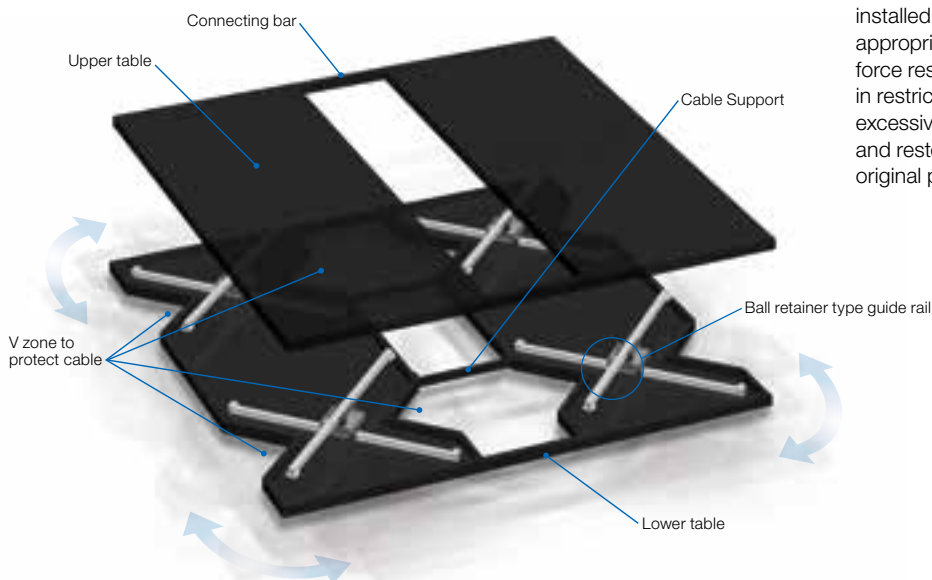
The thickness is only 85mm.

Ball retainer type seismic isolating structure

SD-5 type II consists of the lower table installed on the floor and the upper table on which the equipment is mounted. For the inner structure, the low friction ball retainer type guide rail is used to avoid respective rotations in X and Y direction and to reduce acceleration by means of generating slippage. The integrated structure of block and guide rail prevents the bearing from jumping out even in case of occurrence of an earthquake of seismic intensity of 7 class. In addition, some tilt is provided to the guide rail and the springs installed in parallel give appropriate recovering force resulting in restriction of excessive deformation and restoration to the original position.



Conceptual drawing of the structure of ball retainer type guide rail

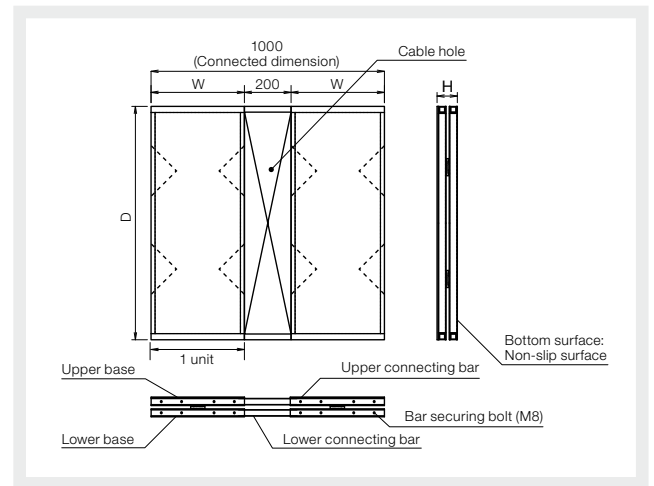


Features of seismic isolating mechanism

- With low friction resistance, smooth attenuation is achieved.
- Uplift of the main unit is prevented.
- Distortion of the main unit is prevented.



Appearance diagram



Specifications

Dimension and Weight*	400mm(W) × 1000mm(D) × 85mm(H) • 43kg/unit 400mm(W) × 1100mm(D) × 85mm(H) • 45kg/unit 400mm(W) × 1190mm(D) × 85mm(H) • 47kg/unit • When two units are connected : 800 - 1200mm • If the dimension of two connected units is 1,000mm or less, the central cable hole cannot be used. • The connection is extended by 50mm
Seismic isolation performance	The response acceleration against 800 gal of input acceleration is 200 gal or less. (In our internal test, the response acceleration is 150 gal or less.)
Maximum displacement	+200mm to -200mm
Applicable load	300kg to 1200kg If the load exceeds 800 kg with casters and leveler support, reinforcement may be required. Contact us separately.
Direction of seismic isolation	Horizontal direction (X direction / Y direction)

* The above dimension and weight are the dimension and weight of a single unit.

Option

Trigger piece / Trigger block

Exerts the effects when lightweight equipment is loaded.

When the loaded equipment is lightweight and the seismic isolator moves at the time of operation, attachment of the following options allows increase of the initial resistance value to such an extent that seismic isolation performance is not affected.



Trigger piece

A simplified model to be replaced after each motion.

When the horizontal force exceeds a certain level, the trigger piece breaks to activate the seismic isolator.



Trigger block

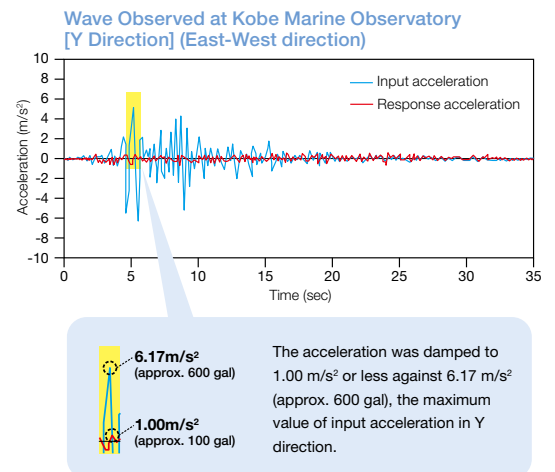
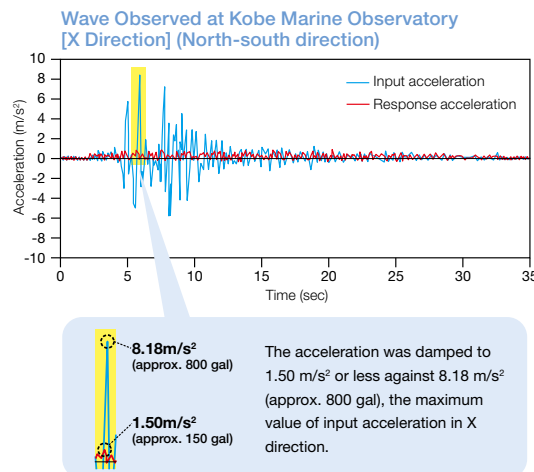
Usable repeatedly after a motion.

When the horizontal force exceeds a certain level, the lock is released to activate the seismic isolator.

Seismic isolation effects

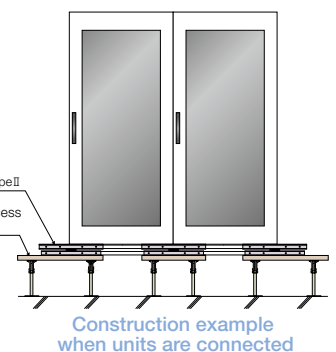
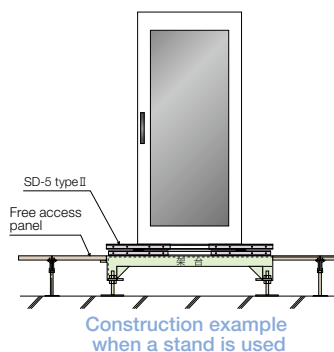
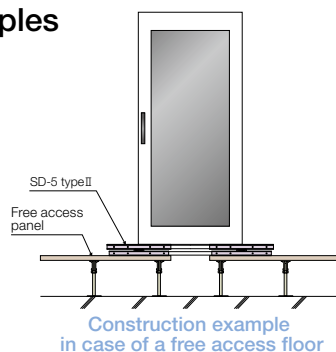
Test condition : Load weight of 800kg (Rack Dimension W:650mm D:1100mm H:2080mm)

* According to the test value on our vibrator base.



Installation examples

In case of a free access floor, the difference in level can be reduced by providing a stand and sinking the seismic isolator for racks below the floor. In addition, connection is available.



Seismic Isolator for Racks Responsive to Short-period / Long-period Seismic Motion

SD-6

The latest seismic isolator responsive to both short-period (epicentral type) and long-period seismic motion

The needs of measures for not only big lateral and short-period seismic motion but also big, slow and long-period seismic motion are growing. SD-6 is a newly developed seismic isolator equipped with a special damper responsive to both short-period and long-period seismic motions. It exerts the effects against seismic motion of which period characteristics vary greatly such as fault epicentral seismic motion and long-period seismic motion.



* This device is developed jointly by Saitama University and Shoden Corporation.

For outdoor cubicles

For outdoor cubicles Seismic isolator for shelters and cubicles

Production of customized seismic isolators tailored to customer's specifications

Upon request, we can produce seismic isolators tailored to the customer's specifications. They can be used for shelters which house various equipment and facility or outdoor cubicles. Hearing the conditions about the equipment to be loaded, installation / maintenance space, operation environment, we will offer a product with the optimum specifications. Upon request, we will offer a product responsive to short-period / long-period seismic motions.



Seismic isolator for shelters



Seismic isolator for cubicles



One of the foremost three-dimensional earthquake vibration generators in Japan

The three-dimensional earthquake vibration generator at Narita Plant, Shoden Corporation is one of the foremost three-dimensional earthquake vibration generators in Japan. It can be used for the test of seismic vibration in the Hyogo-ken Nanbu Earthquake (Great Hanshin-Awaji Earthquake) and the standing wave test.

Product Name	Three-dimensional earthquake vibration generator
Dimension of the vibrating table	3m×3m
Maximum applicable load	10ton
Vibration direction	Simultaneous vibration in the longitudinal (X), transverse (Y) and vertical (Z) directions is available.