



for server computers and other vital
devices

Seismic Isolation Table Model TSD

To help ensure business continuity
when earthquakes strike

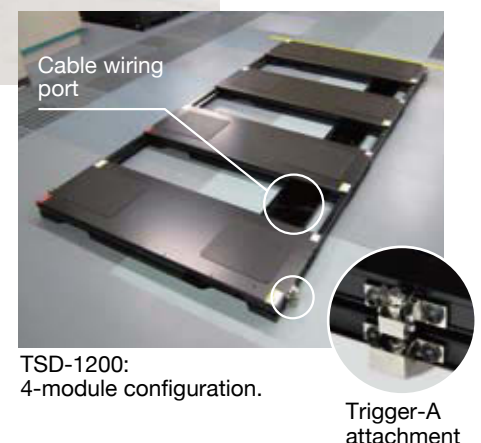


Seismic isolation tables for earthquake protection.

Easily installed, they are your first line of defense to ensure business continuity.

It is vital to take concrete step in business continuity, rather than shaping large-scale plans without implementing them. THK seismic isolation devices are deployed in a wide array of settings and situations to help protect vital devices.

To enable the rapid resumption of core operations in the aftermath of a destructive earthquake, a business must have measures in place to secure the necessary personnel, goods, financial resources, and information. In the quest for a comprehensive strategy, however, practical measures may be postponed or overlooked. The implementation of an effective practical measure—deploying easily installed Seismic Isolation Tables to protect vital assets—is your best option: the crucial first step toward ensuring overall business continuity.



Data center

Preserving vital data is the key to rapid recovery of business operations following an earthquake. You can protect your vital data from earthquakes by deploying Seismic Isolation Tables Model TSD in your data centers, in configurations sufficient to safeguard all data-storage devices.

Server computers

Seismic Isolation Tables Model TSD can be easily connected and configured to accommodate a single server computer or multiple servers, providing essential protection for vital data in the event of an earthquake.



TSD-1000:
5-module configuration.



TSD-1000:
3-module configuration.

Antiquities and artworks

The biggest threat to statuary and other artwork of historical value is the danger of toppling in an earthquake. The use of Seismic Isolation Tables Model TSD is a highly effective preventive measure.



TSD-1200
statue of the wooden god of a national
treasure (Ganjojin temple, Japan)



TSD-1000
"Warrior of Capestrano" Naples National
Archaeological Museum, Italy.

Optical devices and other precision instruments

If an optical device or precision instrument is damaged, considerable time can be lost waiting for repairs and resumption of service. Seismic Isolation Tables Model TSD are easily installed and offer highly effective earthquake protection, essential for ensuring business continuity.



TSD-450:
Microscope.



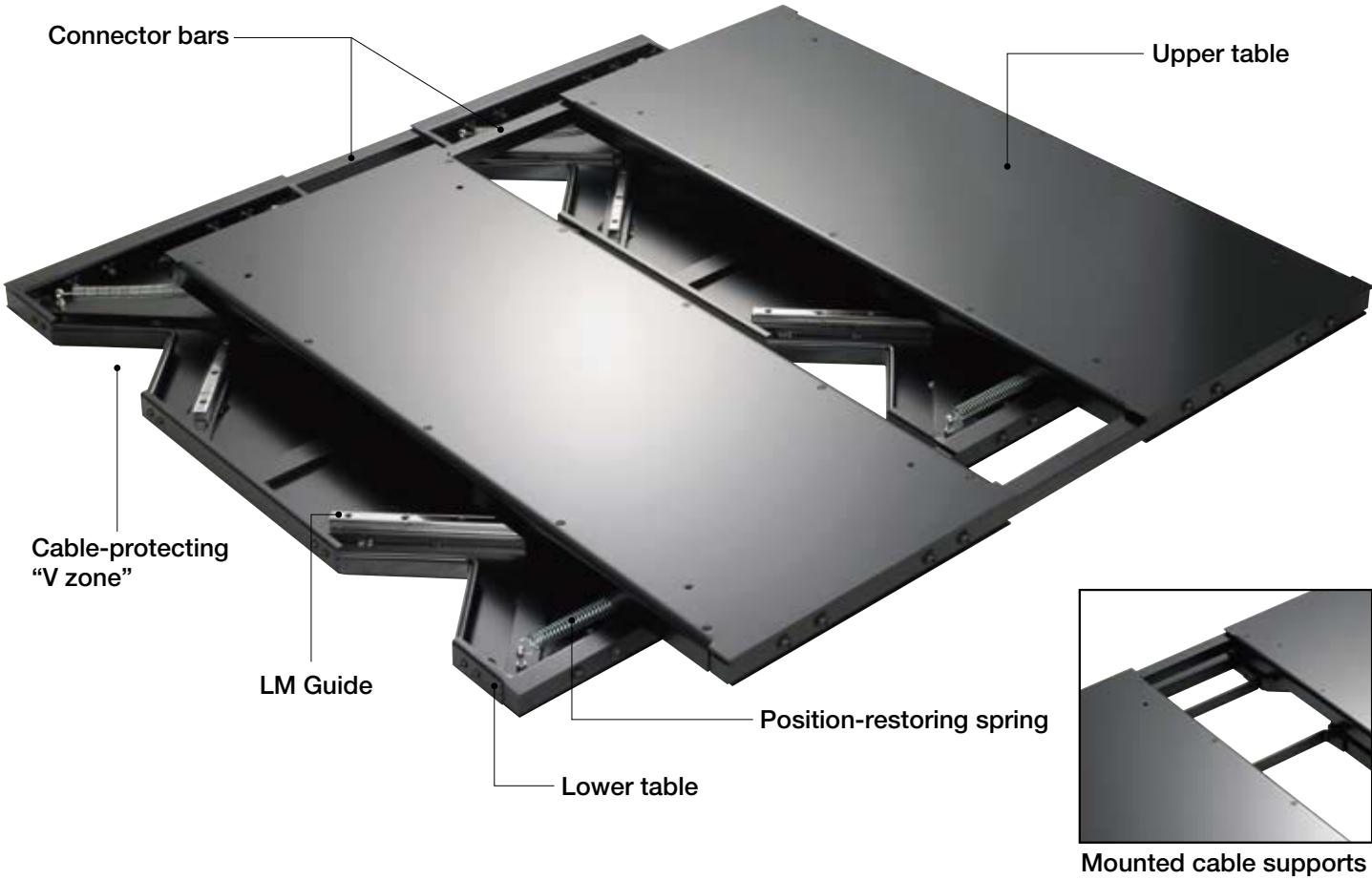
TSD-1000:
4-module configuration.



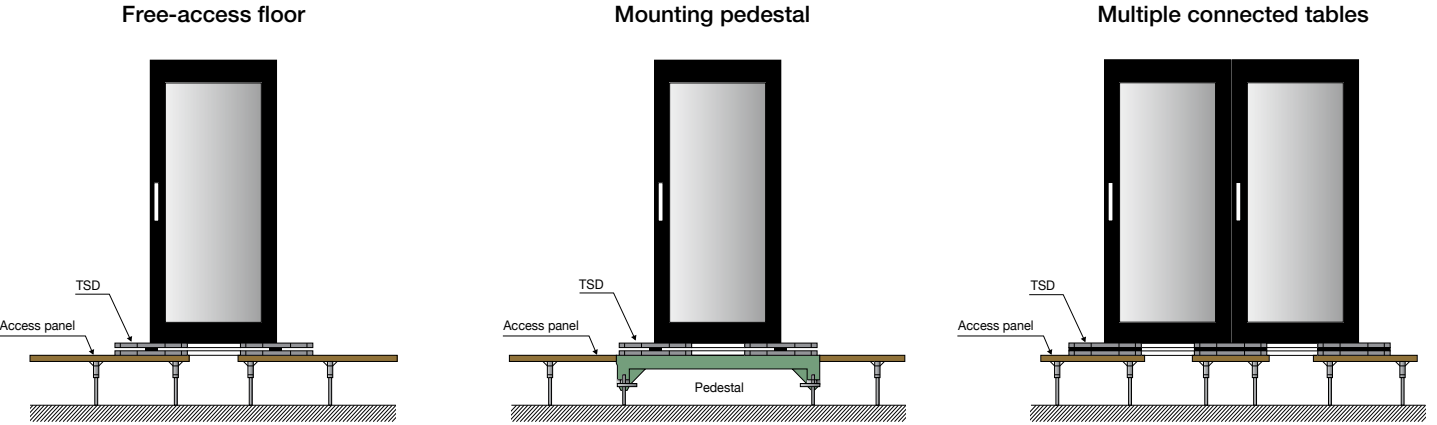
TSD-1000:

Seismic Isolation Table Model TSD: Technical data

Structure



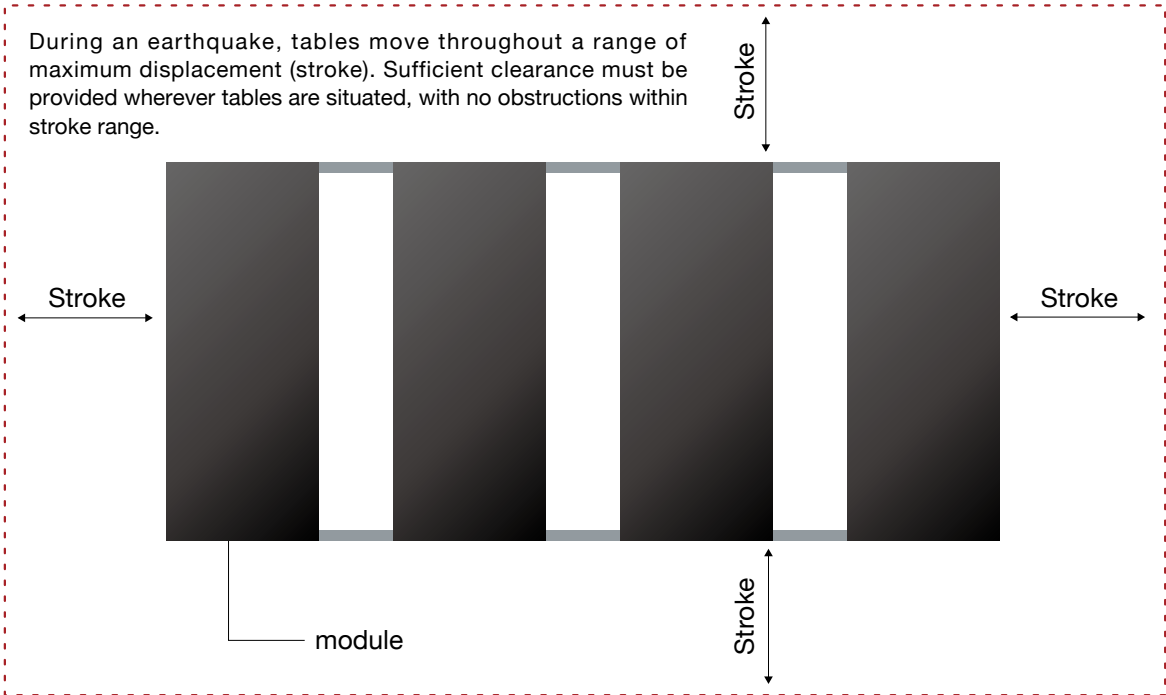
Sample configurations



The Model TSD is easy to set up—simply place it on the floor. No special construction is required. Tables are easily connected and almost any configuration can be expanded to handle a larger load.

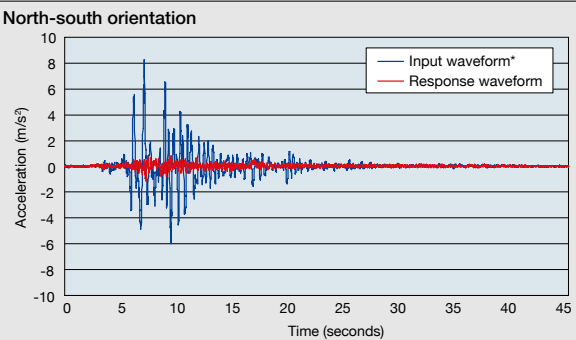
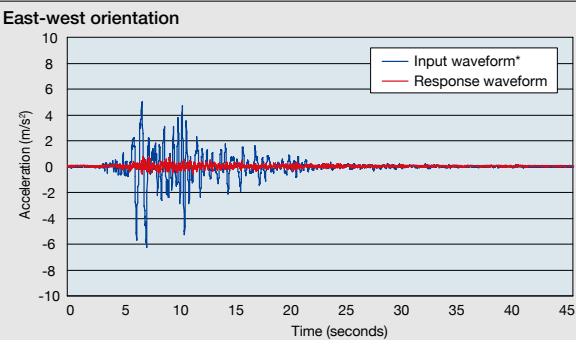


Required clearance

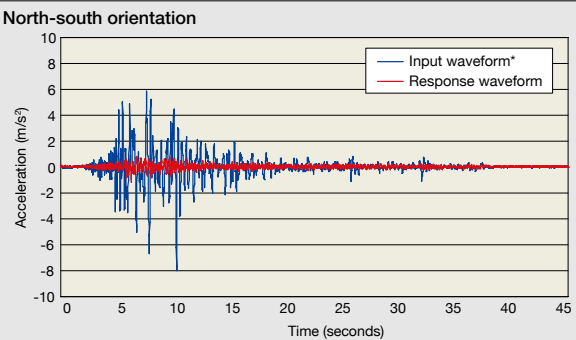
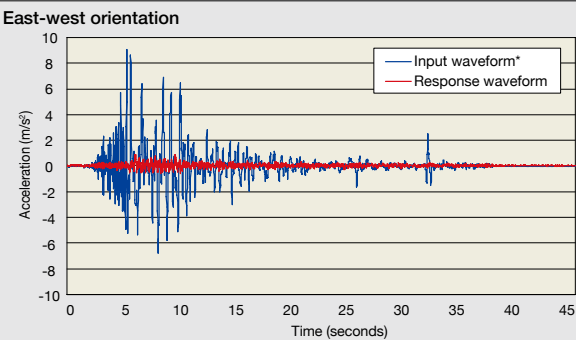


Vibration tests

Southern Hyogo Prefecture Earthquake (monitored at Kobe Marine Observatory), 800kg load



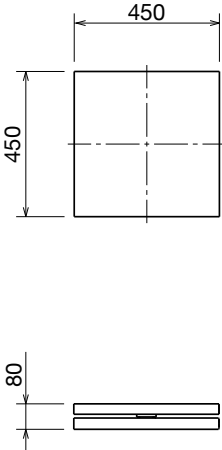
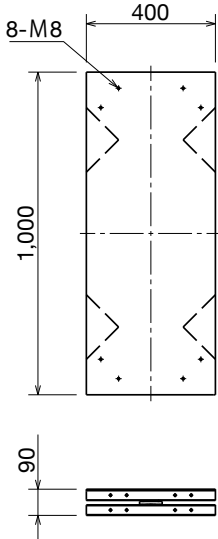
Niigata Prefecture Chuetsu Earthquake (monitored at Ojiya), 800kg load



*Input waveform: Acceleration rate for top surface of shaking table.
Response waveform: Response acceleration rate for top surface of TSD.

Seismic Isolation Table Model TSD: Technical data

Dimensions and specifications

	Basic type	
Model	TSD-450	TSD-400
Dimensions	 <p>450 (W) × 450 (D) × 80 (H)</p>	 <p>400 (W) × 1,000 (D) × 90 (H)</p>
Seismic isolation effect	Acceleration of 0.2G or less in response to input acceleration	
Maximum displacement	±200mm on x - y axis	
Load	30kg - 100kg	50kg - 150kg
Orientation	Horizo	
Table weight	20kg	45kg

*For loads exceeding 800kg, please consult THK.

Standard accessories



①Instruction manual ②Rubber mats ③Marking tape ④Wire (sleeves included)
 ⑤Hex. bolts, washers ⑥Cable supports (set screws included) ⑦Hex. wrenches
 Note: TSD-450 comes with accessories 1 and 3 only. TSD-400 comes with accessories 1 though 5 only.
 Consult the manual for instructions on using accessories.

Optional accessories

Trigger for TSD (stadby lock mechanism)



Trigger-A



Trigger-B

Trigger-A, Trigger-B

Both types unlock in response to seismic motion. Either type can be attached to a table already in place (excluding the TSD-450).

- Trigger-A is designed for repeated use; at least two must be attached. Trigger-A is relocked manually after the table has completed its motion.
- Trigger-B, made of plastic, is designed for one-time use only. At least four must be attached, all of which must be replaced with new locks after the table has completed its motion.

Note: The optimal number of locks is determined by the weight of the load—please consult THK for further details.

THK offers four types of Seismic Isolation Tables Model TSD for a variety of applications. Additional modules can be added to the TSD-1000 and TSD-1200 for expanded coverage, and the pitch between modules can be adjusted as needed.



Connecting type	
TSD-1000	TSD-1200
1,000 (W) × 1,000 (D) × 90 (H)	1,200 (W) × 1,190 (D) × 90 (H)
of 0.8G (for TSD-450, input acceleration of 0.5G)	
(for TSD-450, ±150mm)	
300kg - 1,200kg*	
ntal	
90kg	110kg

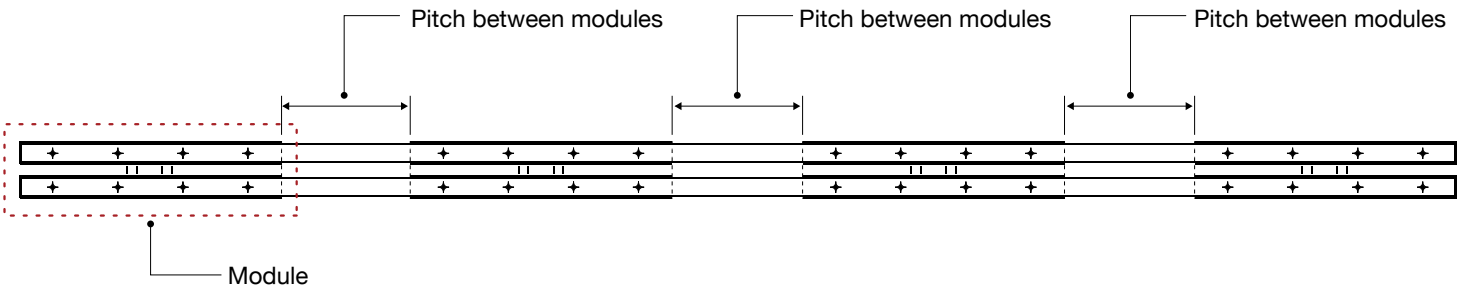
Connecting modules: TSD-1000 and TSD-1200

With TSD-1000 and TSD 1200, more modules can be added to accommodate larger loads. The pitch between modules can be adjusted in 50mm increments within a range of 200 to 400mm. Consult THK for details on configurations for dimensions other than those shown above.

Model Number Coding:

TSD-1000-M4

Model numberNumber of modules
(if 2, this suffix is omitted)



THK Seismic Isolation Table Model TSD

Safety precautions

Use of Seismic Isolation Tables

- Please read the instruction manual carefully before using the Seismic Isolation Table.
- Do not dismantle or attempt to modify the Seismic Isolation Table. Any such action could cause the table to malfunction.
- Seismic Isolation Tables are designed for indoor use only.

Setup

- To prevent the possibility of injury during an earthquake, make sure there are no objects within the table's range of motion (the maximum displacement stated in the catalog) and that all personnel stay clear as well.
- To ensure proper performance, make sure the table load is within the weight range stated in the catalog. Do not load the table with any object that has a high center of gravity or that would topple if pushed.
- For proper seismic isolation, the table must be placed on a level, even surface; placement on a slanted or uneven surface could cause misalignment, undue strain or irregular movement. When dealing with slanted or uneven surfaces, please obtain professional assistance or consult your local distributor.
- Position the load so that its center of gravity is situated over the center of the table. Improper positioning of a load or loading of objects that are outside the stated weight range could result in an unstable load and adversely affect the table or its load.
- Make sure the table is locked in place with the anchoring hardware before loading any object onto it. Make sure the table is locked before operating any device loaded onto the table.

During an earthquake

- If a seismic tremor occurs, move away from the seismic isolation table immediately to prevent any possibility of injury through accidental contact with the moving table.
- If an earthquake of intensity-level 6 or greater (on the Japanese scale) occurs, review the post-setup checklist in the instruction manual following the earthquake and follow the directions provided.

Warranty

- (1) This product is designed to attenuate horizontal seismic motion; it is not intended to be effective against vertical seismic motion. This table will reduce the effect of tremors on an object loaded onto it, but there is no guarantee that the object will not move or topple.
- (2) In the event of seismic motion stronger than this product is designed to absorb, the table can be expected to strike the stopper, exerting an impact on any object atop the table.

Warranty period

The warranty period is one year from the date of delivery.

Scope of warranty

This warranty covers repairs to or replacement of a Seismic Isolation Table. It does not cover accidental damage, loss of business profits, interruption of business activities, loss or alteration of data, or the like, arising from the use of this product or due to the product being out of service.

Disclaimer

THK is not liable for any Seismic Isolation Table malfunction arising from any of the following:

- Tsunami, lightning, flooding, fire, or another such accident or disaster.
- Damage to or collapse of a building due to an earthquake.
- Damage caused by the actions of a third party, intentional or unintentional misuse of the product by the customer, or use of the product under abnormal conditions.
- Loading of an object that is not within the table-load weight range stated in the product specifications.
- Seismic input exceeding the product capacity stated in the specifications or input exceeding the maximum displacement stated in the specifications.
- Damage to an object located within range of the table's maximum displacement or caused by the presence of an object that obstructs the table's movement.
- Loading of an object that does not conform to the stated restrictions concerning table loads.
- Placement or setup of a Seismic Isolation Table other than in conformity with the instructions for correct placement and setup set forth in the instruction manual.

● LM Guide, Ball Retainer, and are registered trademarks of THK CO., LTD.

- Discrepancies may exist between photographic representations of products and the products themselves.
- Modifications may be made, without prior notice, to a product's appearance and specifications; please consult THK before using the product.
- Great care has been taken in the preparation of this brochure. Nevertheless, THK is not liable for damages arising from typographical errors or omissions.
- THK observes a policy of full compliance with the Foreign Exchange and Foreign Trade Act and other relevant laws and regulations in relation to the export of THK products and technology and to export-related sales activities. Please consult THK in advance concerning the export of individual products.

All rights reserved.

THK CO., LTD.

HEAD OFFICE 3-11-6, NISHI-GOTANDA, SHINAGAWA-KU, TOKYO 141-8503 JAPAN
INTERNATIONAL SALES DEPARTMENT PHONE:+81-3-5434-0351 FAX:+81-3-5434-0353

Global site : <http://www.thk.com/>

EUROPE

THK GmbH

●EUROPEAN HEADQUARTERS

Phone:+49-2102-7425-555 Fax:+49-2102-7425-556

●DÜSSELDORF OFFICE

Phone:+49-2102-7425-0 Fax:+49-2102-7425-299

●STUTTGART OFFICE

Phone:+49-7141-4988-500 Fax:+49-7141-4988-888

●U.K. OFFICE

Phone:+44-1384-47-1550 Fax:+44-1384-47-1551

●ITALY OFFICE

Phone:+39-02-9901-1801 Fax:+39-02-9901-1881

●SWEDEN OFFICE

Phone:+46-8-445-7630 Fax:+46-8-445-7639

●AUSTRIA OFFICE

Phone:+43-7229-51400 Fax:+43-7229-51400-79

●SPAIN OFFICE

Phone:+34-93-652-5740 Fax:+34-93-652-5746

●TURKEY OFFICE

Phone:+90-216-362-4050 Fax:+90-216-569-7150

●PRAGUE OFFICE

Phone:+420-2-41025-100 Fax:+420-2-41025-199

●MOSCOW OFFICE

Phone:+7-495-649-80-47 Fax:+7-495-649-80-44

THK Europe B.V.

●EINDHOVEN OFFICE

Phone:+31-040-290-9500 Fax:+31-040-290-9599

THK France S.A.S.

Phone:+33-4-3749-1400 Fax:+33-4-3749-1401

NORTH AMERICA

THK America, Inc.

●HEADQUARTERS

Phone:+1-847-310-1111 Fax:+1-847-310-1271

●CHICAGO OFFICE

Phone:+1-847-310-1111 Fax:+1-847-310-1182

●NORTH EAST OFFICE

Phone:+1-631-244-1565 Fax:+1-631-244-1565

●ATLANTA OFFICE

Phone:+1-770-840-7990 Fax:+1-770-840-7897

●LOS ANGELES OFFICE

Phone:+1-949-955-3145 Fax:+1-949-955-3149

●SAN FRANCISCO OFFICE

Phone:+1-925-455-8948 Fax:+1-925-455-8965

●DETROIT OFFICE

Phone:+1-248-858-9330 Fax:+1-248-858-9455

●TORONTO OFFICE

Phone:+1-905-820-7800 Fax:+1-905-820-7811

SOUTH AMERICA

THK BRAZIL INDUSTRIA E COMERCIO LTDA.

Phone:+55-11-3767-0100 Fax:+55-11-3767-0101

CHINA

THK (CHINA) CO., LTD.

●HEADQUARTERS

Phone:+86-411-8733-7111 Fax:+86-411-8733-7000

●SHANGHAI OFFICE

Phone:+86-21-6219-3000 Fax:+86-21-6219-9890

●BEIJING OFFICE

Phone:+86-10-8441-7277 Fax:+86-10-6590-3557

●CHENGDU OFFICE

Phone:+86-28-8526-8025 Fax:+86-28-8525-6357

●GUANGZHOU OFFICE

Phone:+86-20-8523-8418 Fax:+86-20-3801-0456

●SHENZHEN OFFICE

Phone:+86-755-2642-9587 Fax:+86-755-2642-9604

●XIAN OFFICE

Phone:+86-29-8834-1712 Fax:+86-29-8834-1710

THK (SHANGHAI) CO., LTD.

Phone:+86-21-6275-5280 Fax:+86-21-6219-9890

TAIWAN

THK TAIWAN CO., LTD.

●TAIPEI HEAD OFFICE

Phone:+886-2-2888-3818 Fax:+886-2-2888-3819

●TAICHUNG OFFICE

Phone:+886-4-2359-1505 Fax:+886-4-2359-1506

●TAINAN OFFICE

Phone:+886-6-289-7668 Fax:+886-6-289-7669

KOREA

SEOUL REPRESENTATIVE OFFICE

Phone:+82-2-3468-4351 Fax:+82-2-3468-4353

SINGAPORE

THK LM SYSTEM Pte. Ltd.

Phone:+65-6884-5500 Fax:+65-6884-5550

THAILAND

THK LM System Pte. Ltd. Representative Office in Thailand

Phone:+660-2751-3001 Fax:+660-2751-3003

INDIA

THK India Pvt. Ltd.

Phone:+91-80-2340-9934 Fax:+91-80-2340-9937