TOYO AUTOMATION CO., LTD.

TAC Seismic Sensors

Detect Earthquake to save your Life & Facility

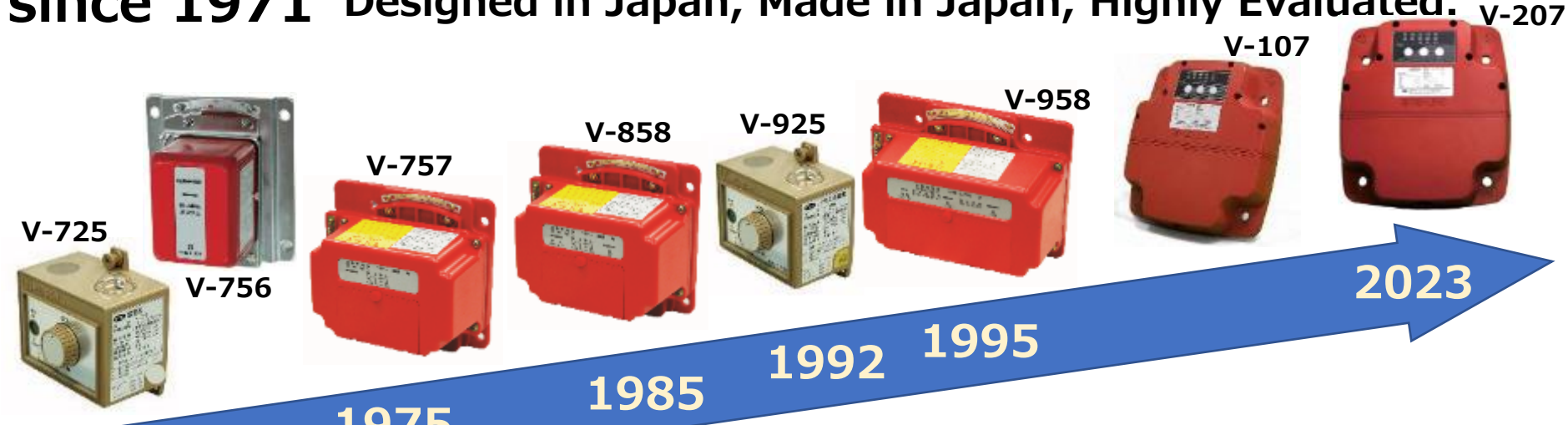
www.toyo-automation.com **Sep. 2025**

VIB-LINE

TOYO Automation Introduction

50 years of experience & Over 2 million units sold.
Engineering Excellence Built on Real-World Results.

since 1971 **Designed in Japan, Made in Japan, Highly Evaluated.**



Customers

OTIS

MITSUBISHI CHEMICAL GROUP

TKE

Schindler

HITACHI
Inspire the Next

MITSUBISHI CHEMICAL INFRATEC CO.,LTD.

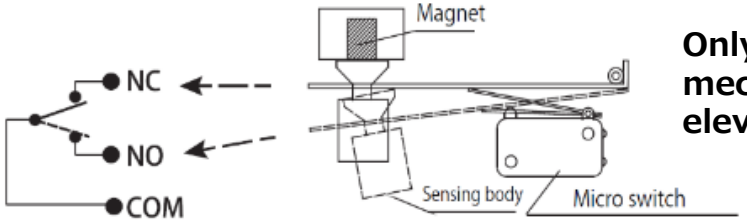
2 Million units +

What is a Seismic Sensor?

Detect Earthquake and switch out controls to your system

Mechanical Type

Traditional Way of durable Sensing.



Only TAC is providing mechanical sensors for elevators.

Keep Sensing function/result even at power outage.

Electrical Type

New Generation for Sophisticated Control

3D sensor device

Seismic Wave Determine Software

Control Signal

P-wave, s-wave and multi level sensing in one box

Seismic Sensor Application

Trusted Across Industrial and Infrastructure Projects.

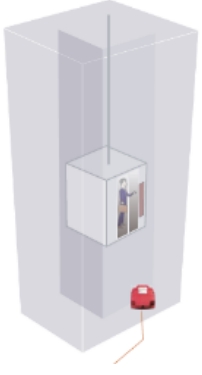
Detecting Earthquake

Seismic Sensor

VIB-LINE

VIBCON

Elevator
(Stop at nearest floor)



LPG Facility
(Close gas valve)

Office, Building
(Alarm for evacuation)

Water Tanks
(Keep water)

Precision Factory
(Switch off machine)

Boiler
(Switch off)

Lineup（VIB-LINE & VIBCON）

A variety of products to meet your needs

※1 Certified by Tokyo Fire Department
※2 Certified by LP Gass Association

Elevator / Plant / Water tank	Boiler	Gas equipment
 V-756	 V-725	 V-925

Elevator			Elevator(Electric)
 V-757	 V-858	 V-958	 V-107

World wide sales （VIB-LINE & VIBCON）

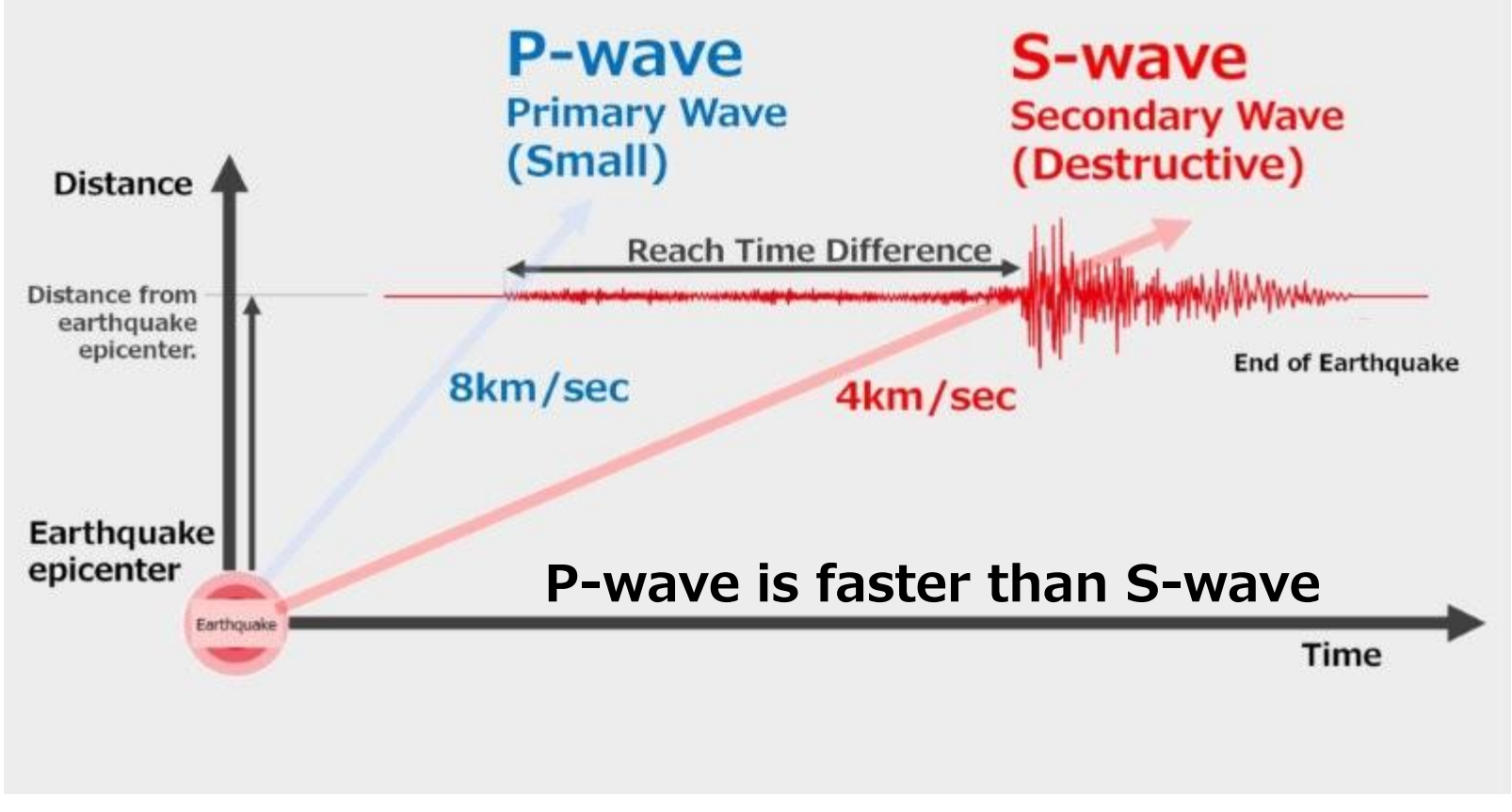
Trusted across earthquake zones around the world.
Directly and through our customers to the world.

Though our customer

HITACHI Inspire the Next
MITSUBISHI ELECTRIC Changes for the Better
Schindler
azbil
TOSHIBA
FUJITEC
OTIS
etc.

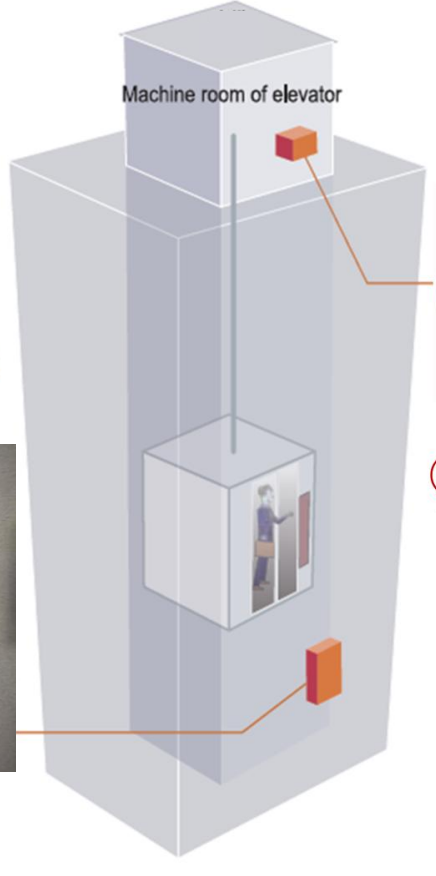
Earthquake propagation

Early detection of P and S waves with VIB-LINE helps save lives and systems



Installation of Seisimic Sensor

P-waves are measured on the ground.
S-waves are measured at the top.



Elevator
Machine Room

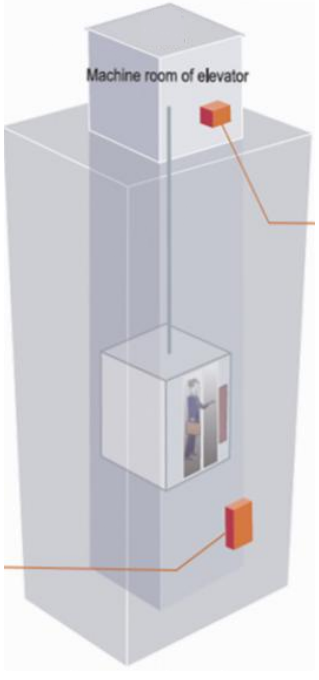
② S-wave Detection

① P-wave Detection

Ground Level

Earthquake control operation for Elevator

Sensing P-waves for evacuation.
Sensing S-waves reduces damage to elevator.



Earthquake

↓

Detected P-wave

※1 Prevent entrapment

↓

Stop nearest Floor and the Open Door for evacuation

↓

Detected S-wave

Shaking is mild → **Return operation**

↓ Shaking is big

Suspend the operation

※2 Ensuring safety

Earthquake control operation for Equipment

Prevention of secondary damage like a fire.

Earthquake

↓

Detected S-wave

↓

Automatically stop the equipment

Gass

Boiler

Plant

Earthquake control operation for Machine

Reduce equipment damage and speed up recovery.

Earthquake

↓

Detected P-wave

↓

Temporarily stop equipment

※1 Protect expensive equipment and parts

↓

Detected S-wave

NO → Return operation

↓ YES

Suspend Production

※2 Protect equipment Evacuate safely

Earthquake control operation for others

Be used in a wide range of applications.

Earthquake

↓

Detected S-wave

↓

Alarm / Announcement

Evacuate safety

Shat off valves for water tank

Keep water after disaster

Water tank

Emergency shut-off System

January 1995, The Great Hanshin-Awaji Earthquake occurred.

The water tanks and water supply pipes are damaged,
Water spill out from the water tank.

Damaged tanks

Damaged pipes

Emergency shut-off System

After Earthquake,
The first thing people needed was ‘ water. '
Need at least 3 liters of water per day

Drinking water, food.
The shortage is serious.

Exhibited by: Asahi Shimbun (1955.1.19)

Lifeline “Water”.
The shortage is serious.

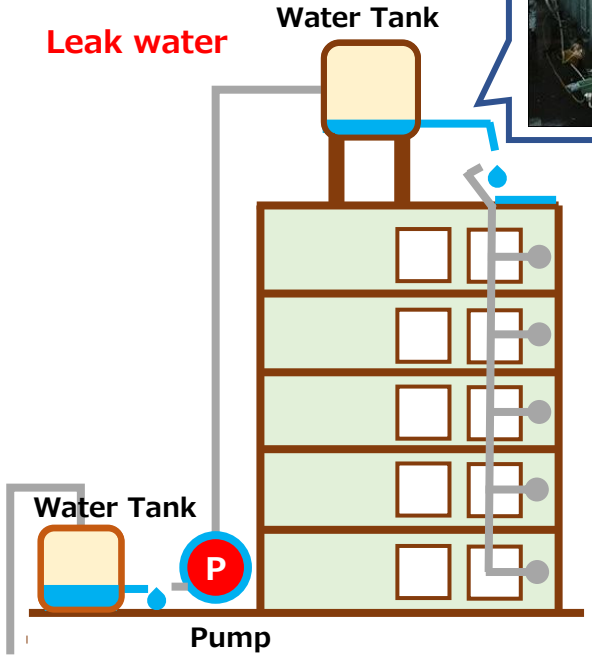
Exhibited by: Yomiuri Shimbun (1955.1.21)

Emergency shut-off System

Emergency shut-off valve to keep the life water in the tank

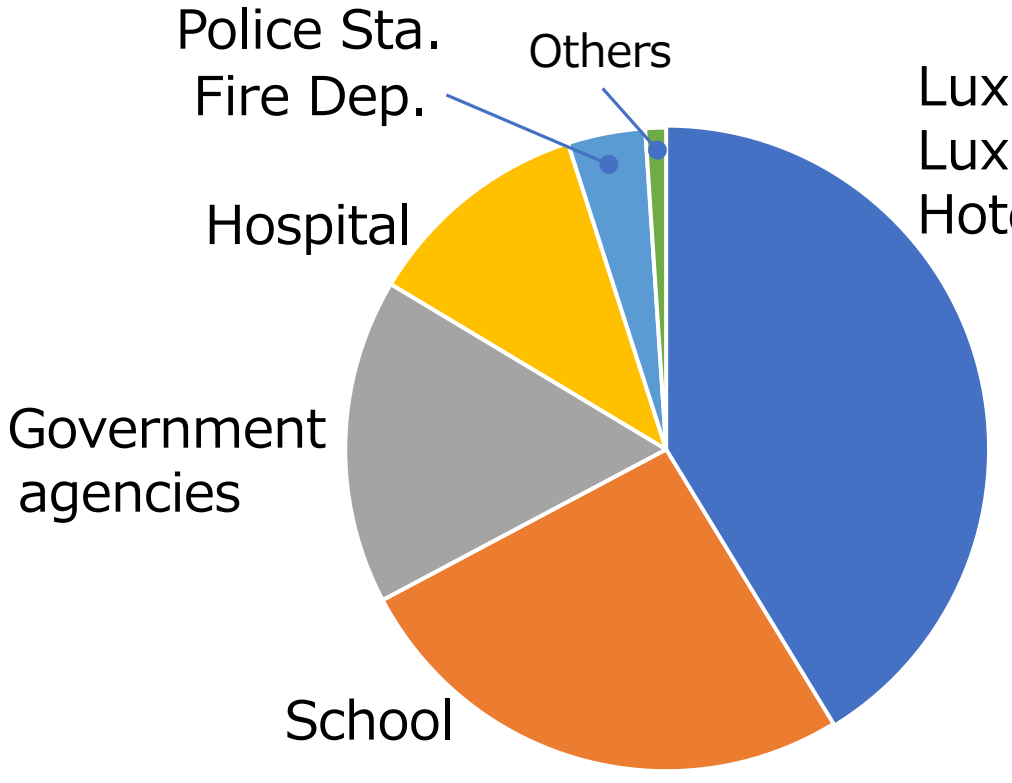
With shutoff valve

Without shutoff valve



Emergency shut-off System

Installed in the following locations.

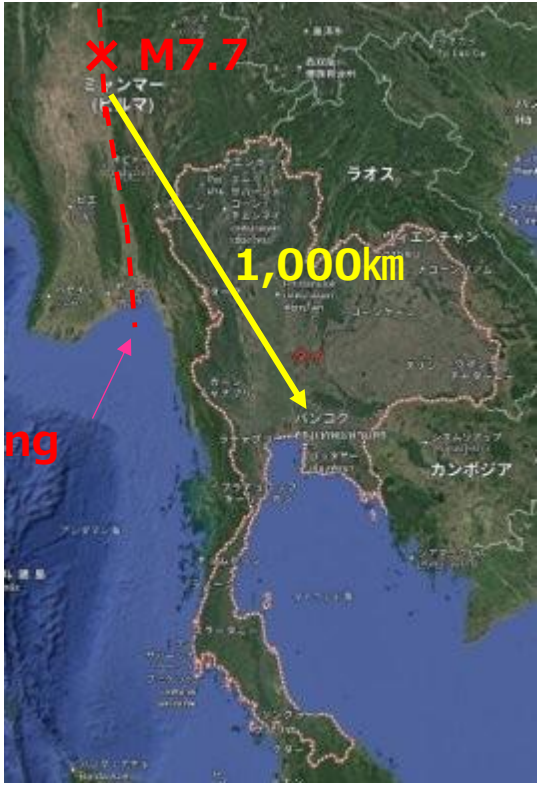


Reliable stop with multiple sensing

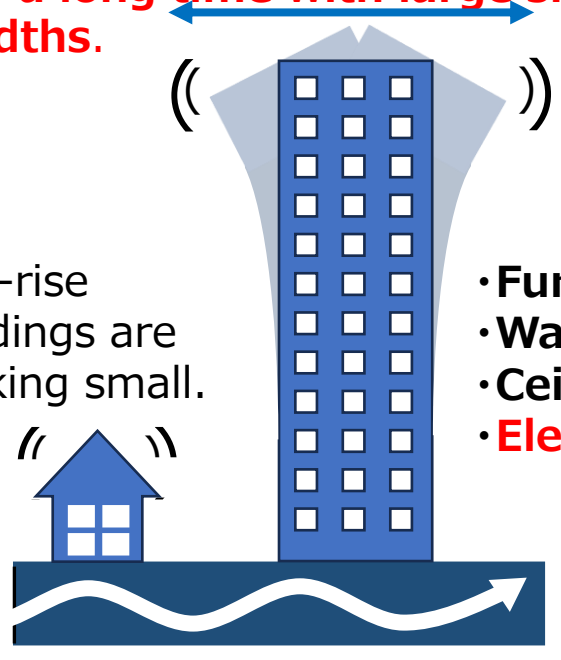
Preventing unnecessary equipment stop due to vibrations other than earthquakes

Long-period earthquake

Place far from the epicenter, High-rise buildings sway for a long time with large shaking widths.



High-rise buildings sway
for a long time with large shaking widths.



Low-rise buildings are shaking small.

- **Furniture falls**
- **Wall materials peeling**
- **Ceiling collapse**
- **Elevator stop**

Long-period earthquakes

Preparation for long-period earthquakes

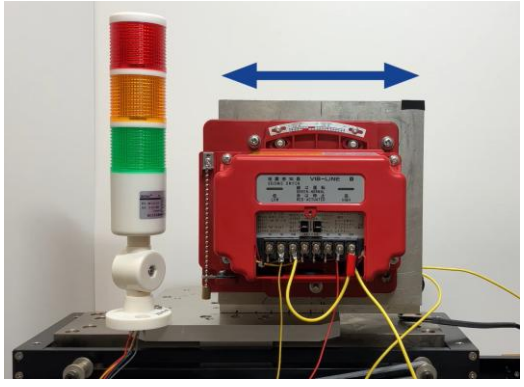
Buildings over 60m are considered to be prepared for long-period earthquakes in Japan

Table. 1 Japan Elevator Association Guidelines

Building Hight	Height of the top of the hoist way	Height of the hoist way	Detector application
～60m	–	–	–
60～120m	Less than half the building height	～30m	–
	More than half the building height	30m～	**Long vibration detector,** or **S-wave seismic detector (extra low)**
120m～	～60m	–	–
	60m～	～60m	–
		60m～	**Long vibration detector**

Exhibited by: Japan Elevator Association

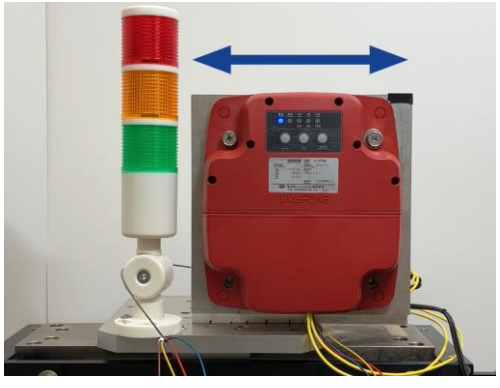
How the earthquake detector operates



V-858 S-wave test

V-207 P-wave test

V-858 on site check



V-207 S-wave test

Thank you