Recording acceleration in 3 directions

Ultra-compact data recorder that can record vibration,shock, temperature and humidity

GRAVITY
SHOCK RECORDER

Shinyei Testing Machinery Co.,LTD

Challenges of logistics

GRAVITY SHOCK RECORDER

•Challenges at logistics site:

•Such as damage to the product due to a fall during the movement of cargo

•Load falling due to vibration during transportation,splitting off of load parts, etc..

•Condensation and other caused by sharp fluctuations in temperature and humidity

Firstly, in order to improve the quality of the logistics necessary to know the environment.

Gravity Shock Recorder G-MEN

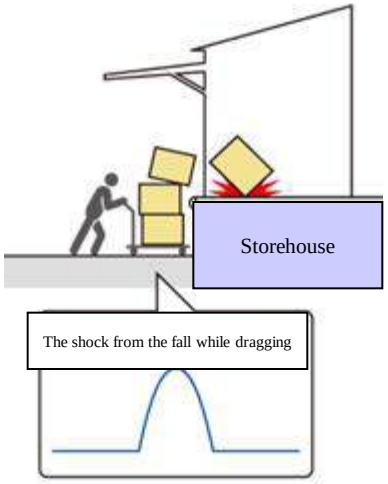
3-axis acceleration sensor, with temperature and humidity sensor built-in

Ultra-compact data recorder

Writing the vibration and shock

GRAVITY SHOCK RECORDER

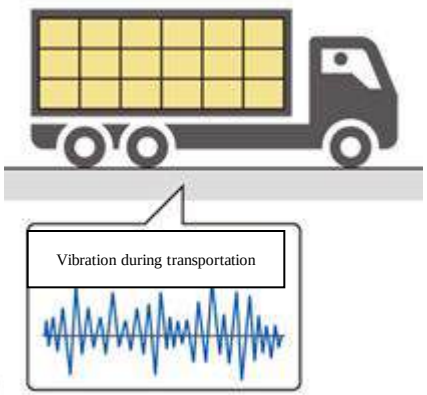
Characteristics of models



Measuring the shock during the fall

Model : DR100

Maximum acceleration of 100G
Temperature and humidity transmitter
※ Measurement up to 50 days
※ At the time of 10 ms sampling



Measuring the vibration during transportation

Model : DR20

Maximum acceleration of 20G
Temperature and humidity transmitter
※ Measurement up to 50 days
※ At the time of 10 ms sampling

G-MEN

Shinyei Testing Machinery Co.,LTD

Ultra-compact data recorder

Writing the vibration and shock

①Measurement condition setting

USB cable

③Transmission of recorded data to PC

②Data recording in accordance with the measurement conditions

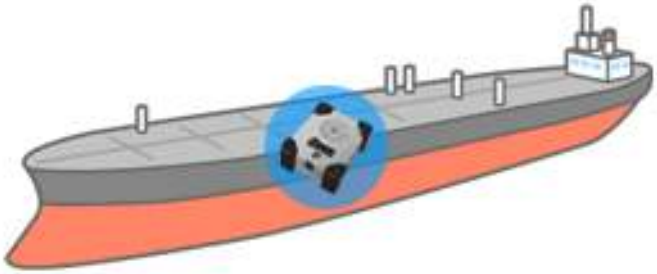
④ Displaying recorded data by special software

Flow of data measurement

① Measurement condition setting → ② Data measurement → ③ Data transmission → ④ Data check

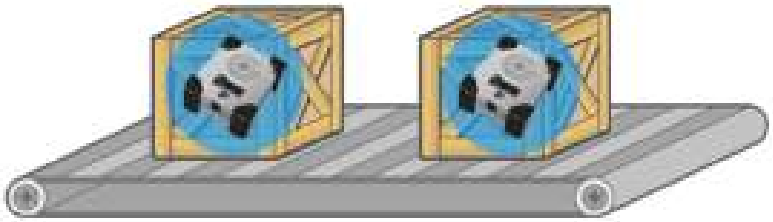
Measurement Case-studies

GRAVITY SHOCK RECORDER



Recording of ship vibrations

Measuring of ,depending on the wave ,back and forth, left and right, up and down motions of the ship traveling on the sea surface, by 3 directional acceleration data written by G-MEN



Recording of conveyor line vibrations

The recorder being attached to such objects as straight parts, curve parts,joint and branching parts of the belt conveyor measures the vibration generated in those parts.
Moreover, it also records the inclination angle of the inclined transporting unit.

Quality guarantee check record of transported products

Monitoring the quality of transportation by recording the temperature changes,inclinations,shock and vibrations,by packing the recorder inside the transported product supplied with the special attention seal showing under what temperature it should be transported, and what vibration and shock can be applied.

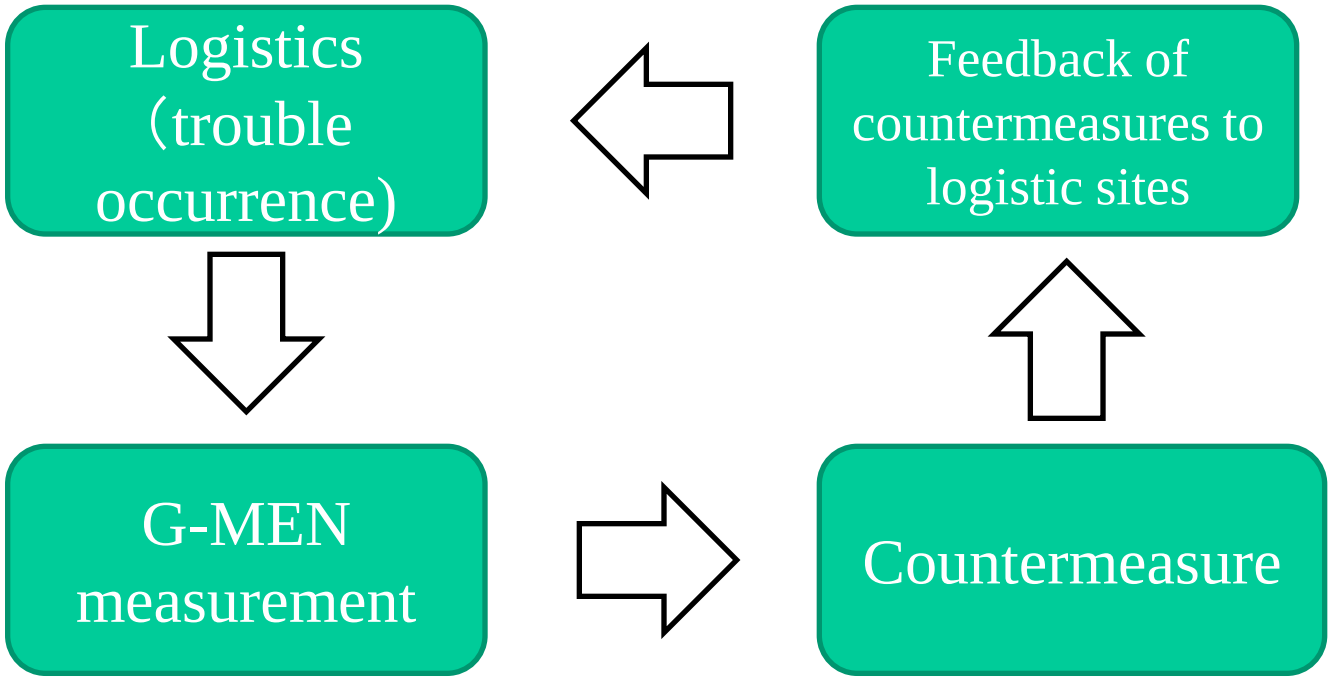
Transportation safety record of containers

We are analyzing the conditions of transportation routes by measuring over long periods of time the vibration and temperature of the interior of the container by mounting the body of recorder to a dedicated waterproof and dustproof case for measuring the condition of transportation of the containers.

Particular examples

Example 1	Identifying problematic transportation routes with the help of G-MEN
Improvement	Modification of cushioning material on these routes and a reduction in the number of complaints
User	Communication equipment manufacturer
Example 2	Found that strong vibration that occurs during transport in trucks is the cause of parts splitting off.
Improvement	Solving problem by changing the route of transportation
User	Auto parts maker
Example 3	Using the G-MEN to ensure the safe transport of expensive equipment
Improvement	Provision of data to the client increases the client's confidence in the carriage
User	Auto parts maker

Summary


Logistics
（trouble
occurrence)
Feedback of
countermeasures to
logistic sites
G-MEN
measurement
Countermeasure

Supplemental material

Ultra-compact data recorder

Writing the vibration and shock

GRAVITY SHOCK RECORDER

Spec of recorder body

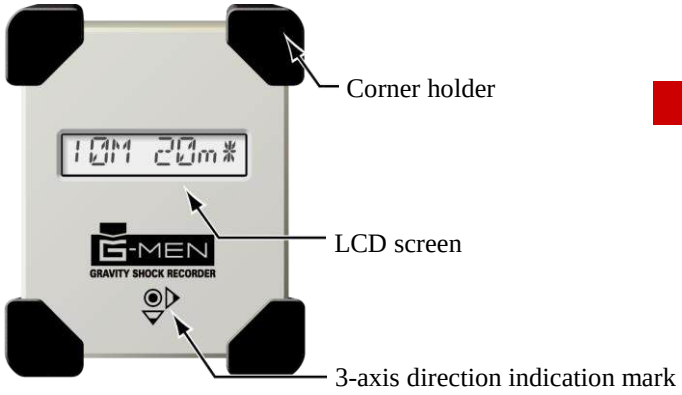
Model	G-MEN DR01	G-MEN DR20	G-MEN DR100
Measurement item	Direct 3-axis acceleration peak value + temperature and humidity		
Acceleration sensor	Static acceleration 1G/2G	Static acceleration 10G/20G	Dynamic acceleration 100G
Sampling period	Selection from 1・2・5・10・20msec		
Measurement resolution	0.01G/0.02G	0.1G /0.2G	1G
Accuracy	±10%	±10%	±10%
Temperature range	0～50℃(±1.25℃)		
Humidity range	30～90%(±3%)		
Measurement interval	Selection from 1・5・10・15・20・30 sec・1・2・3・4・5・10・15・20・30 min		
Action display	Liquid crystal display		
Recording capacity	65,500 data		
Record keeping	EEPROM		
Communication format	USB(mini B)		
Continuous measurement time	Approx50 days(in 10msec sampling period. Varies depending on setting conditions		
Power supply	2 AA alkaline batteries		
External dimensions	75.5(H)×60.5(W)×33(D)mm		
Weight	135g(including batteries)		
Accessories	USB cable,2 AA alkaline batteries,1 attention seal,1 complect of fixing metal fittings,special software (CD-ROM)		

G-MEN

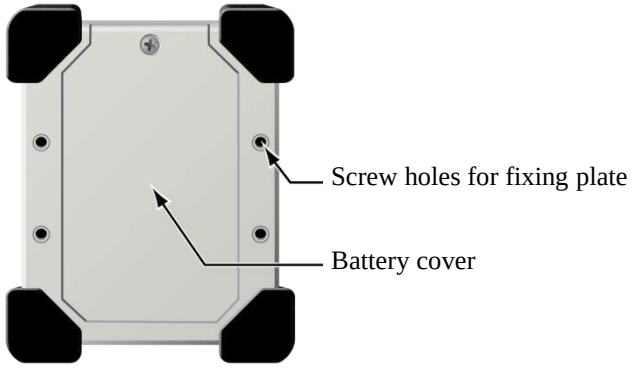
Product outline Description of parts

GRAVITY SHOCK RECORDER

Surface

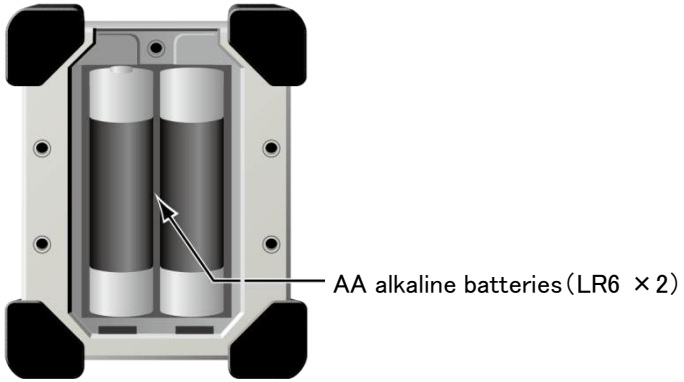


Back



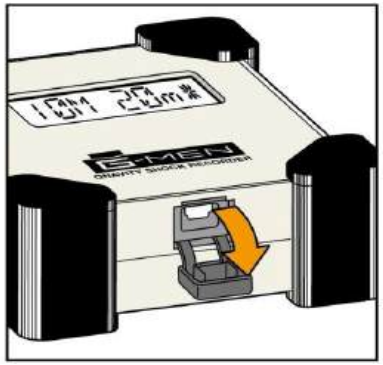
Bottom

Battery case



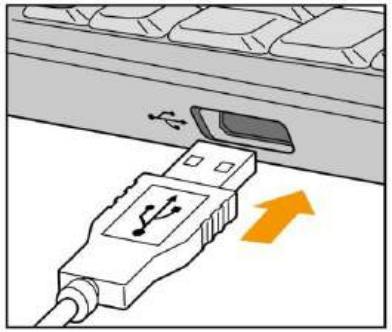
Product outline *Connection to PC*

GRAVITY SHOCK RECORDER



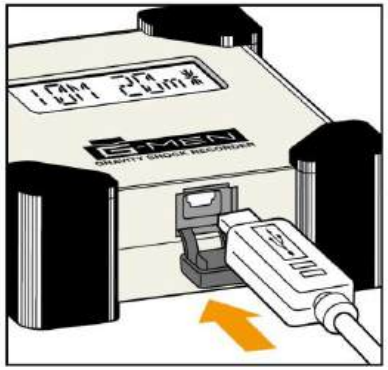
1 **Open the connector cap**

Open the connector cap of USB terminal (MiniB) body



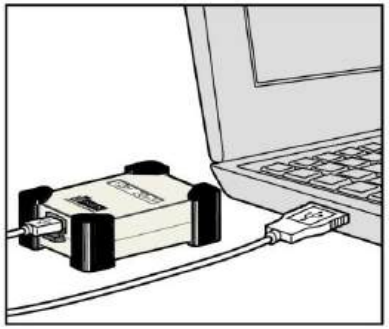
3 **PC connection**

Insert the USB TYPE- A side of the accessory USB cable into the USB connector on the PC



2 **USB cable connection**

Insert the USB terminal (MiniB) side of the accessory USB cable to the connector

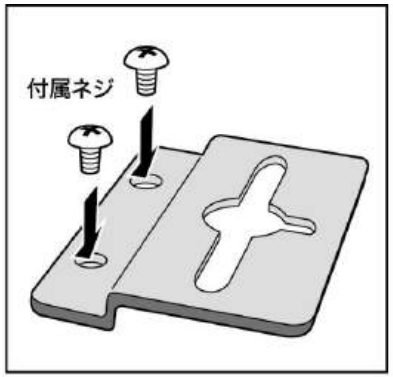


4 **Communication with PC**

Software of G- MEN will communicate with the installed PC.

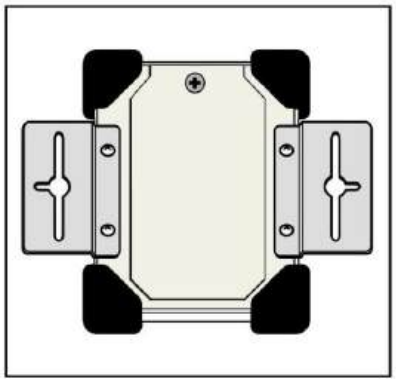
Product outline Body attachment method

GRAVITY SHOCK RECORDER



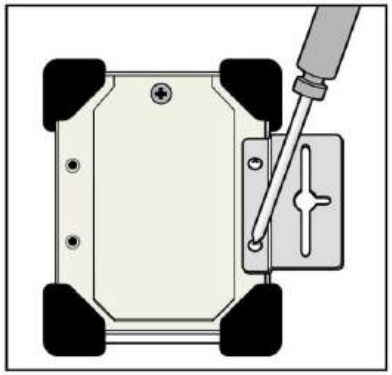
1 **Mounting direction**

Attach the body mounting fixed plate in this direction.



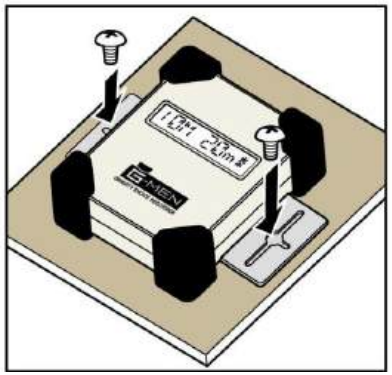
3 **Mounting on both sides**

Fasten attached body mounting fixed plate with screws on both sides.



2 **Mounting direction**

Fasten the attached body mounting fixing plate with screws.

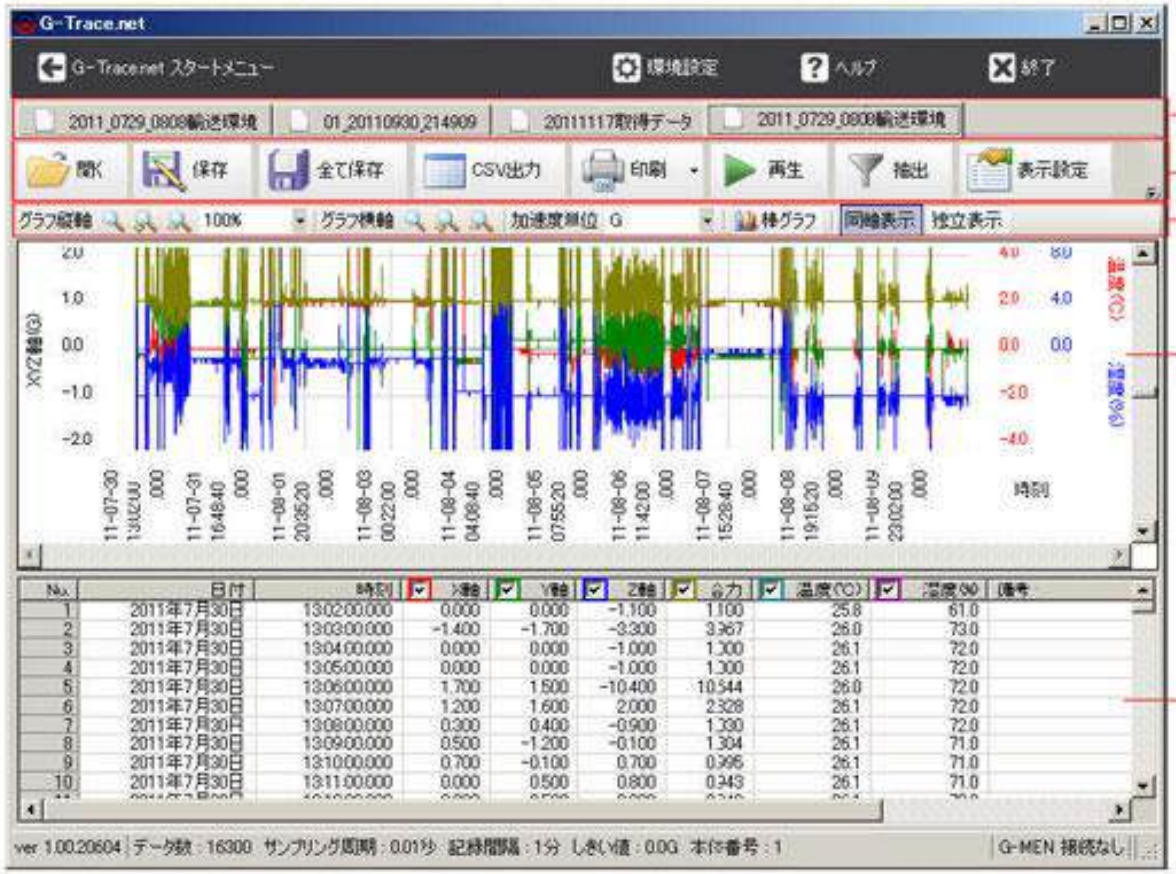


4 **Fixed on object which is to be measures**

Fix the fixing plate on both sides with screws to fit the object to be measured.

Specific software Basic screen

G-Trace.net



Tab bar

Menu button

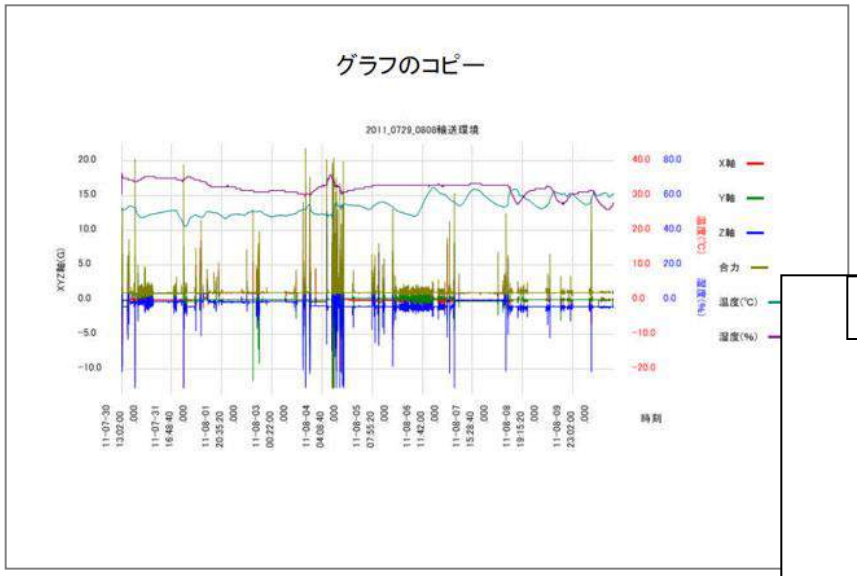
Graph button

Graph display screen

List display screen

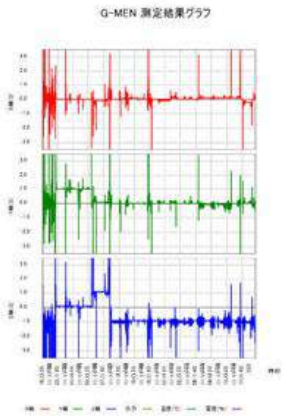
Special Software output

G-Trace.net

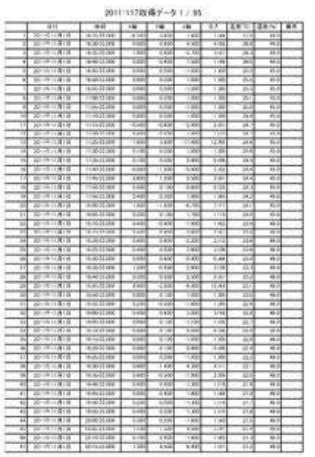


Graph display

Graph print out



List print out



CSV format