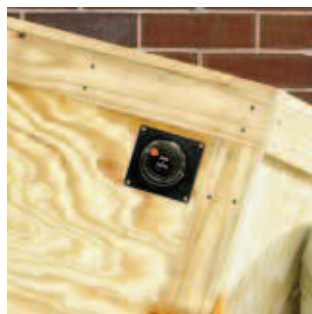


# IMPACT INDICATORS

ShockWatch Impact Indicators detect and record impact and mishandling of fragile, sensitive, or calibrated products during transportation.

**ShockWatch Labels, Clips, and Tubes:** ShockWatch labels and clips are devices containing a tube with red liquid held in suspension. When the device is subjected to an impact exceeding a specified G-level, the shock releases the highly visible red liquid into the tube. These products can be used to prevent damage on virtually any goods requiring care during shipping and handling.

**ShockWatch MAG 2000 & MAG 2000 Impact Date/Timer:** The MAG 2000 and MAG 2000 Impact Date/Timer products monitor the handling of fragile goods and freight containers over 100 lbs. When an impact occurs, the device provides visible evidence of the event and angle of impact.



Use Impact Indicators on:  
Automotive components  
Commercial appliances  
Semiconductor devices  
Computer hard drives  
Lab equipment  
Storage media  
Glass products  
Electronics  
Furniture  
And much more

## ■ Benefits

- Reduces product damage and loss incurred during transportation
- Protects fragile, sensitive, or calibrated goods in transit
- Provides indisputable evidence of mishandling
- Acts as visual deterrent to improper handling
- Alerts recipient to inspect contents before acceptance
- Ensures chain of accountability for all product handling
- Protects against/reduces warranty claims
- Confirms effectiveness of packaging
- Identifies trouble spots in production process and transportation
- Lowers production yield losses
- Ensures quality of product from dock to dock
- Increases customer satisfaction and provides a visible marketing edge

## ■ Features

- Impact detection for a wide array of product types and sizes
- User-specified detection threshold
- Highly visible “red alert” indicates mishandling
- Tamper-proof design prevents concealment of activation without obvious evidence of interference
- Easy-to-use adhesive backing requires no tools or assembly to install (MAG 2000 products include optional bracket mounting)
- MAG 2000 products are resettable and re-usable
- MAG 2000 Impact Date/Timer features a resettable digital clock for display of date and time of impact

## ■ The ShockWatch Program

A key element in the success of ShockWatch products is the companion tools. Used in conjunction with companion labels, alert stickers, caution tape, posters, supporting documentation, and ongoing technical support, these tools constitute a highly effective damage reduction and prevention program.

Implementation of this damage prevention program provides psychological reinforcement of proper handling procedures and changes the behavior of material handlers. It provides a highly visible deterrent to mishandling throughout the supply chain.

This program is most successful with collaboration from the carriers and the shipping, warehousing, and packaging departments.



## ■ Available Products

### Labels



Available in five sensitivities, as indicated by the five different colors. Activation indicates an impact beyond a predetermined level.

### Clip



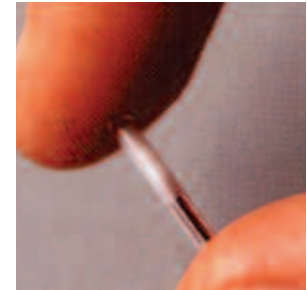
Designed to mount directly onto a product, the clip is compact and economical. It can be customized to fit your specifications.

### Multi-G



A version of the clip product, the Multi-G houses three tube sensitivities in a single unit. It is designed for determining package sensitivity during drop testing.

### Tube



Designed to be used where space is limited. It can be incorporated directly into a product's design.

### MAG 2000



Economical, resettable, and tamper-proof, this impact detection device can be used for large crates and shipments over 100 lbs.

### MAG 2000 Impact Date/Timer



Economical, resettable, and tamper-proof, this impact detection device can be used for large crates and shipments over 100 lbs., and also records the date and time of an impact.

## ■ Selection Guide

### ShockWatch Label Selection Guide

Weight lbs.	Shipment Size				
	0-1 CUBIC FEET	1-5 CUBIC FEET	6-15 CUBIC FEET	16-50 CUBIC FEET	50+ CUBIC FEET
0-10	GREEN	GREEN	ORANGE	ORANGE	RED
11-25	GREEN	ORANGE	ORANGE	RED	RED
26-50	ORANGE	ORANGE	RED	RED	PURPLE
51-100	ORANGE	RED	RED	PURPLE	PURPLE
101-250	RED	RED	PURPLE	PURPLE	YELLOW
251-1000	RED	RED	PURPLE	YELLOW	YELLOW
1000+	—	PURPLE	YELLOW	YELLOW	YELLOW

Cubic feet = height x width x depth

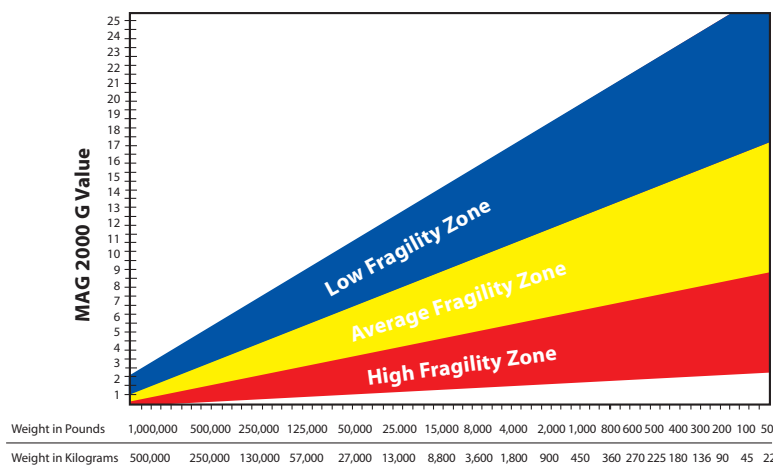
### Clip, Tube Only & Multi-G Selection Guide

All product is rated at 50 milliseconds

Product Name	Sensitivity	Activation Height
CX85 and CXX85 Clip & Tube Only	10G	Activates at 2" to 4" drops on hard surfaces
CX75 and CXX75 Clip & Tube Only	15G	Activates at 3" to 6" drops on hard surfaces
CX65 and CXX65 Clip & Tube Only	25G	Activates at 4" to 8" drops on hard surfaces. Most commonly used clip.
CX55 and CXX55 Clip & Tube Only	37.5G	Activates at 6" to 14" drops on hard surfaces
CX47 and CXX47 Clip & Tube Only	50G	Activates at 8" to 18" drops on hard surfaces
CX35 and CXX35 Clip & Tube Only	75G	Activation trends at 19" to 24"
CX30 and CXX30 Clip & Tube Only	100G	Activation trends at 24" to 10"
CX25 and CXX25 Clip & Tube Only	150G	Activation trends at 30" to 48"
Multi-G Clip	25G, 50G, 75G (standard)	Activates at three different levels

CX = clip with one window CXX = clip with two windows

### MAG 2000 Selection Guide



**Low Fragility Zone**— Applicable in situations where both visible and hidden damage is possible, and a single extreme impact will cause damage to product. Pertains to products transported via a variety of modes.

**Average Fragility Zone**— Applicable in situations where there is a moderate degree of stability and survivability built into the product, and where a standard mode of transportation is used.

**High Fragility Zone**— Applicable in situations where hidden damage is the key concern. Typically, these products will be constructed of low tolerance components such as data storage drives, optical lenses, or any other products that require precise alignment. Pertains to most products that require specialized modes of transportation, such as air-ride vans or extended travel in hydro-cushion railcars.

# IMPACT INDICATORS

## ■ ShockWatch Label, Clip, and Tube Specifications

### Operating Temperature

-13°F/-25°C to +176°F/+80°C

### Size

3.8" x 3.8" (Label)

1.1" x 1.6" x 0.1" approx. (Clip)

### Sensitivity

Available from 10 to 150G and sensitive to impacts on 360° axis

### Guaranteed Activation

+/-15% of nominal value

### Responsiveness

Responds to single impact

### Duration

Ranges 1 to 50 ms

### Adhesive

Acrylic

### Shelf Life

2 years from date of sale

## ■ MAG 2000 and MAG 2000 Impact Date/Timer Specifications

### Operating Temperature

-13°F/-25°C to +140°F/+60°C

### Temperature Durability Range

-40°F/-40°C to +151°F/+60°C

### Size

2.5" x 2.4"

2.8" x 3.0" with mounting bracket

### Thickness

0.9" (MAG 2000)

1.2" (MAG 2000 Impact Date/Timer)

### Humidity

0 to 99% non-condensing

### Case Material

High-impact ABS & acrylic

### Shock Resistance

200G @ 11 ms

### Shock Range

1/2 to 25G in 1/2G increments

### Frequency

0 to 20 Hz flat

### Security

Tamper-resistant, resettable utilizing key

### Chemical Resistance

Neoprene O-ring seal is weatherproof and chemically resistant to solvents, acids, and petrochemicals

# SHOCKWATCH®

DAMAGE PREVENTION. WE'RE ON IT.

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