

IMPACT INDICATORS



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

ShockWatch Labels, Clips, and Tubes: Available in a range of sensitivities, these single-use devices incorporate a red indicator that clearly shows when mishandling has occurred.

ShockWatch MAG 2000 and MAG 2000 Impact Date/Timer: These devices monitor the handling of fragile goods and freight containers weighing more than 100 lbs. They provide visible evidence of any impact, along with its angle.

ShockWatch DropSpot™: This device provides a high level of sensitivity and clearly indicates mishandling, even from a distance.



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 or storage
- Protects fragile, sensitive, or calibrated goods in transit
- Provides indisputable evidence of mishandling
- Acts as a 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 supply chain, from production to transportation and storage
- 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” to indicate 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 includes optional bracket mounting)
- Ability to reset and reuse MAG 2000
- Resettable digital clock for display of date and time of impact (MAG 2000 Impact Date/Timer)

■ The ShockWatch Program

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

Implementation of this damage prevention program provides 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.

Clips



Designed to mount directly onto a product, the clips are compact and economical.

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, the tube can be incorporated directly into product's design.

DropSpot



Available in three sensitivities, this single-use device can be armed in the field and individually tracked.

MAG 2000



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

MAG 2000 Impact Date/Timer



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

Selection Guide

ShockWatch Label Selection Guide

Product Color Key: **L-30** **L-35** **L-47** **L-55** **L-65**

Shipment Size Weight lbs.	0-1 CU. FT.	1-5 CU. FT.	6-15 CU. FT.	15-50 CU. FT.	50+ CU. FT.
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
251-1,000	RED	RED	PURPLE	YELLOW	YELLOW
1,000+	—	PURPLE	YELLOW	YELLOW	YELLOW

Cubic feet = height x width x depth

Drop Height at Which to Expect Label Activation

COLOR PART #	YELLOW L-65	PURPLE L-55	RED L-47	ORANGE L-35	GREEN L-30
< 100 LBS.	—	12-18" (0.30-0.48m)	12-24" (0.30-0.61m)	24-36" (0.61-0.91m)	36"-OVER (0.61-0.91m)
> 100 LBS.	6-12" (0.15-0.30m)	8-16" (0.20-0.41m)	12-18" (0.30-0.48m)	—	—

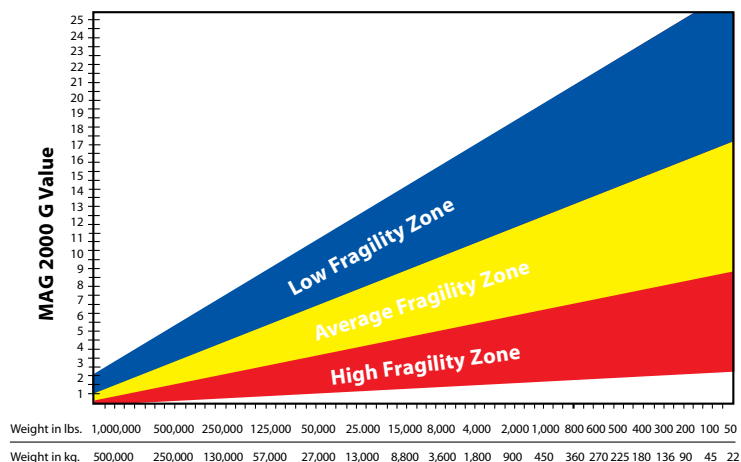
NOTE: Packaging and construction may affect the correlation between drop height and ShockWatch activation. This table is intended as an approximate guide only. Minimal testing is suggested.

DropSpot Selection Guide

Product Color Key: **C10** **A7** **C7**

Shipment Size Weight lbs.	6-15 CU. FT.	15-50 CU. FT.	50-99 CU. FT.	100-249 CU. FT.	250-499 CU. FT.	500+ CU. FT.
0-10	—	—	—	—	LIGHT BLUE	LIGHT BLUE
11-25	—	—	—	—	LIGHT BLUE	DARK BLUE
26-50	—	—	—	LIGHT BLUE	LIGHT BLUE	DARK BLUE
51-100	—	—	—	LIGHT BLUE	DARK BLUE	DARK BLUE
101-250	—	—	LIGHT BLUE	LIGHT BLUE	DARK BLUE	DARK BLUE
251-999	—	LIGHT BLUE	LIGHT BLUE	DARK BLUE	DARK BLUE	SILVER
1,000-1,999	LIGHT BLUE	LIGHT BLUE	LIGHT BLUE	DARK BLUE	DARK BLUE	SILVER
2,000-4,999	LIGHT BLUE	LIGHT BLUE	DARK BLUE	DARK BLUE	SILVER	SILVER
5,000-9,999	LIGHT BLUE	DARK BLUE	DARK BLUE	DARK BLUE	SILVER	SILVER
10,000+	DARK BLUE	DARK BLUE	DARK BLUE	SILVER	SILVER	—

MAG 2000 Selection Guide



Clip & Tube Only and Multi-G Selection Guide

All product is rated at 50 milliseconds.

Product Name	Sensitivity	Activation Height (on hard surfaces)
CX85 and CXX85 Clip & Tube Only	10G	Activates at 2"/50.8mm to 4"/101.6mm
CX75 and CXX75 Clip & Tube Only	15G	Activates at 3"/76.2mm to 6"/152.4mm
65MC, CX65 and 65MCD, CXX65 Clip & Tube Only	25G	Activates at 4"/101.6mm to 8"/203.2mm (most commonly used clip)
55MC, CX55 and 55MCD, CXX55 Clip & Tube Only	37.5G	Activates at 6"/152.4mm to 14"/355.6mm
47MC, CX47 and 47MCD, CXX47 Clip & Tube Only	50G	Activates at 8"/203.2mm to 18"/457.2mm
35MC, CX35 and 35MCD, CXX35 Clip & Tube Only	75G	Activation trends at 19"/482.6mm to 24"/609.6mm
30MC, CX30 and 30MCD, CXX30 Clip & Tube Only	100G	Activation trends at 24"/609.6mm to 30"/762mm
Multi-G Clip	25G, 50G, 75G (standard)	Activates at three different levels

MC, CX = clip with one window MCD, CXX = clip with two windows

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.

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ShockWatch Label, Clip, and Tube Specifications

Operating Temperature

-13°F/-25°C to 176°F/80°C

Size

Label

3.8"/96.52mm x 3.8"/96.52mm

Single Clip

1.8"/46.73mm x 1.1"/28.95mm
x 0.2"/4.16mm (25–37.5G)

1.8"/46.73mm x 1.1"/28.95mm
x 0.1"/3.15mm (50–100G)

Double Clip

1.9"/49.52mm x 1.1"/28mm x
0.2"/4.31mm (25–37.5G)

1.6"/42.69mm x 1.1"/27.95mm
x 0.1"/3.31mm (50–100G)

Mini Clip and Mini Clip Double

1.4"/35.72mm x 0.5"/12.85mm
x 0.2"/4.19mm (25–37.5G)

1.4"/35.72mm x 0.5"/12.85mm
x 0.1"/2.97mm (50–100G)

Sensitivity

Available from 10 to 100G and
sensitive to impacts on 360° axis

Responsiveness

Responds to single impact

Duration

Ranges 1 to 50ms

Adhesive

Acrylic

Shelf Life

2 years from date of sale

DropSpot Specifications

Operating Temperature

-13°F/-25°C to 176°F/80°C

Size

3.5"/88.9mm x 3.5"/88.9mm
x 0.2"/5.1mm

Sensitivity

10 to 25G (at 50 m/sec)

Responsiveness

Bidirectional

Duration

Ranges 1 to 50ms

Adhesive

5 mil high tack acrylic

Shelf Life

2 years from date of sale
when stored at standard
temperature and pressure
(20°C, 1 atm)

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/66°C

Size

2.5"/63.5mm x 2.4"/60.96mm

2.8"/71.12mm x 3.0"/76.2mm

(with mounting bracket)

Thickness

0.9"/22.86mm (MAG 2000)

1.2"/30.48mm (MAG 2000
Impact Date/Timer)

Humidity

0 to 99% non-condensing

Case Material

High-impact ABS & acrylic

Shock Resistance

200G @ 11ms

Shock Range

2G to 20G

Frequency

0 to 20Hz flat

Security

Tamper-resistant, resettable
utilizing key

Chemical Resistance

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

For more information on ShockWatch's position on RoHS, EU Directive 2002/95/EC, Amendment Commission Decision 2005/618/EC, and our certificates of compliance, please visit www.shockwatch.com

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SHOCKWATCH®

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