ShockWatch® Impact Indicator Clip for Detecting Impacts Directly to Products

ShockWatch impact indicator clips are tamperproof, mechanically-activated devices that turn bright red to indicate mishandling. These indicators can be mounted directly to products to understand the conditions experienced by the product even when it is outside protective packaging.

A single-use indicator, over 7 million ShockWatch devices are used around the world each year. As part of a company’s standard operating procedures, ShockWatch Clips are used to alert the recipient to inspect the product if mishandling has occurred.

A low-cost, highly accurate solution to identify and correct gaps in the supply chain

ShockWatch® impact indicator clips reduce mishandling-related costs by indicating when fragile products have been exposed to a potentially damaging impact during manufacturing, transit and storage.

Ideal Applications

- Automotive components
- Electronics
- Commercial appliances
- Semiconductor wafers and components
- Computer hard drives
- Lab equipment
- Glass products

Features

- Tamper-proof design prevents concealment of activation without obvious evidence of interference
- Compliance and field tested for use in multiple manufacturing, shipping and storage environments
- Highly visible “red alert” to indicate mishandling
- Easy-to-use adhesive backing requires no tools or assembly
- Custom sensitivities and device types are available with minimum quantities
- Available in a wide range of sensitivities

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ShockWatch Clips are **Specifically Designed** to Help Manufacturers:

**Lower production line yield losses by identifying and correcting process gaps**
Line yield losses may result from physical damage of wafers, components, manufacturing electronics and equipment components due to mishandling during the manufacturing and internal handling process. ShockWatch products have been used for 35 years to detect mishandling, excessive vibration, or other process irregularities that can contribute to costly defects or equipment downtime. By adding the ShockWatch Clip impact indicators to their products, customers have proven their ability to reduce the time and resources required for in-process inspection and metrology.

**Test the robustness of packaging in real-world applications**
Drop-testing is typical when designing impact-tolerant product packaging, replicating product abuse and for accelerated life cycle testing, but in a controlled environment, the object does not always execute its natural dynamics during impact. ShockWatch clip impact indicators mounted to products allow for standardized test protocols to be developed that replicate the abuse a product will experience in the field. With 360 degrees of impact sensitivity and multiple sensitivity levels available, customers can replicate the real-world testing required for “free drops” because the product can move naturally during impact.

**Determine the damage boundaries of products**
ShockWatch provides the ability to determine damage tolerance aspects and quickly and cost-effectively set inspection procedures without the need for excessive testing. The first question to answer is whether you have a damage boundary specification for your product. If you have this information, simply select a ShockWatch Clip sensitivity that matches that specification. If a specification is not available and you need support in selecting the best sensitivity for your application, please contact a local ShockWatch representative. You will need to be prepared to have a general knowledge of your product including its sensitivity (rugged, average, or fragile), volume and weight. If you are looking for a solution for monitoring impact, temperature, tilt or vibration, additional devices are available from ShockWatch to meet your requirements.

**Reduce warranty abuse**
Warranty service abuse costs businesses billions of dollars that could be significantly reduced with appropriate vigilance and controls. Warranty abuse impacts business through lost revenues and increased costs undermining the integrity of both individual businesses and entire industries. These consequences, along with other risks, will continue to threaten a company’s operations and financial results unless threats are recognized and appropriate actions are taken to prevent continued fraud and abuse. Embedding or mounting shock detectors directly to electronics or other sensitive products may allow you to prevent customer repairs that are claimed under warranty. In the end, this low cost impact sensor can have a positive effect on your bottom line.

**When product reliability truly matters**
When a highly reliable system is required, impact detection is a key component to assuring the stability of your system. Our quality standards are among the highest in the industry, which enables ShockWatch products to be used by many of the world’s largest companies.
Impact Indicator Clip

**ShockWatch Clips Come in Different Sizes and Sensitivities Tied to User-Specified Thresholds**

There are five different types of ShockWatch clips available:

<table>
<thead>
<tr>
<th>Clip Type</th>
<th>Description</th>
<th>Sensitivities available</th>
<th>Design/Usage</th>
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</thead>
<tbody>
<tr>
<td>ShockWatch Clip</td>
<td>Affixed to product itself, designed to provide a visible alert if mishandling has occurred</td>
<td>Nearly 360 degrees of detection, multiple sensitivities from 10 to 100G</td>
<td>May be embedded or attached to exterior of products and used to assure product packaging is providing protection during shipment.</td>
</tr>
<tr>
<td>ShockWatch Mini-Clip</td>
<td>Using the same technology as the Clip, the Mini-Clip offers a reduced footprint designed to fit smaller products.</td>
<td>Nearly 360 degrees of detection, multiple sensitivities from 10 to 100G</td>
<td>May be embedded or attached to exterior of smaller products, like mobile communications equipment, handheld electronics or munitions.</td>
</tr>
<tr>
<td>ShockWatch Double-Ended Clip</td>
<td>Using the same technology as the Clip, and complete 360 degrees of detection, the Double-Ended Clip is designed for highly-sensitive products</td>
<td>Full 360 degrees of detection, multiple sensitivities from 10 to 100G</td>
<td>May be embedded or attached to exterior of products, like networking equipment, stationary medical equipment or electronics.</td>
</tr>
<tr>
<td>ShockWatch Double Mini-Clip</td>
<td>Designed with minimum footprint for use on smaller products, the Mini-Clip Double uses the same technology as the Double-Ended Clip</td>
<td>Full 360 degrees of detection, multiple sensitivities from 10 to 100G</td>
<td>May be embedded or attached to exterior of smaller products, like mobile communications equipment, handheld electronics, calibrated mechanical tools, or munitions.</td>
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<tr>
<td>ShockWatch Multi-G Clip</td>
<td>An impact diagnostic tool for packaging engineers, distribution analysts, product designers, and manufacturing engineers. The device incorporates three sensitivity levels into a single unit to indicate a low, medium and high impact.</td>
<td>Single device with 25G, 50G, and 75G at 50 msec durations. Double clip technology provides full 360 degrees of detection for all three sensitivities</td>
<td>Used to determine the package sensitivity during drop testing</td>
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Most ShockWatch Clips are designed to protect products up to 500 cubic feet in volume and weighing up to 10,000 pounds. Other indicators and recorders are available from ShockWatch for additional sensitivities and monitoring requirements. For help in determining the correct device or sensitivity for your needs, please contact a ShockWatch representative at info@shockwatch.com.
A scalable portfolio of solutions for packages and containers

![Diagram of ShockWatch products]

Partner with the Experts

ShockWatch is a global leader in the innovation and optimization of logistics and cold chain risk mitigation through environmental event detection. In addition to providing leading-edge solutions, ShockWatch consultants are subject matter experts that excel in partnership. They are available to support training and execution of your risk reduction program:

- Ensure proper implementation and effective long-term usage of ShockWatch systems
- Optimize your hardware investment for healthy ROI
- Maximize understanding of conditions that affect products during transit and in operation
- Enhance your existing logistics, loss management and quality programs with a variety of tools. These may include companion labels, alert stickers, caution tape, supporting documentation and ongoing support

Contact your representative for more details on how to build a program around your monitoring needs.

About ShockWatch

As the global leader in the innovation and optimization of logistics and cold chain risk management systems, ShockWatch provides solutions that currently enable over 3000 customers and some 200 partners in 62 countries to detect mishandling that causes product damage and spoilage during transport and storage. The robust ShockWatch product portfolio includes impact, tilt, temperature, vibration, and humidity detection systems and is widely used in the energy, transportation, aerospace, defense, food, pharmaceutical, medical device, and manufacturing sectors.

Founded in 1976 and based in Dallas, Texas, ShockWatch is a subsidiary of MRI, Inc., which is also the parent of DPC and DataSpan. MRI’s international client base includes two-thirds of the Fortune 100 and more than half of the Fortune 1000 companies.

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