

# Before you buy, know who is really behind your load monitoring products

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know the load series  
*whitepaper*

**Crosby**<sup>®</sup> |



**straightpoint**<sup>®</sup>

*know the load*

# Who's behind your load monitoring hardware?

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## Introduction

When using or buying load monitoring equipment do you ever consider the credibility of the manufacturer that produced it?

For being an essential element for enhancing safety and increasing assurances to asset protection, would you skip researching beyond the product's specification to find out more about the load cell manufacturer and their production practices?

When using something primarily to ensure a safe and successful lifting project, a lifting professional would do him and his team an essential service by making sure the load cells tick a number of requirement boxes before integrating them into the rigging setup.

There are also an encyclopedic amount of regulations and performances, from government and industry regulatory bodies (LEEA, LOLER, AWRP etc.) across the world, which are rightly there to uphold safety standards. Lifting professionals need to conform to these standards, the same goes to lifting equipment manufacturers so that they can guarantee against the risk of the type of failure that leads to catastrophic consequences. In fact, even with the industry being heavily regulated, not all meet these standards.

These tick boxes, when filled, would provide a weighty assurance for any future projects will entail in wholly successful outcomes.

What this document provides to you in this guide are:

- The kind of questions that should be asked of your load monitoring equipment supplier.
- The type of supply value chain Crosby SP does and does not use
- The level of accreditation our products meet
- The QA process we put out products through
- The sustainability of the company and our suppliers

**Crosby SP makes sure you know the load with confidence.**

# Who's behind your load monitoring hardware?

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## Vertically integrated

### In-house product development and manufacturing

A brand name on a product does not signify that it was actually developed and manufactured by the brand owner. In fact a great many items that are on offer, which required multi-stage and intricate manufacturing processing, are outsourced and supplied by outsourced companies. This is a disconnection between brand owner and the manufacturing base.

The advantages of a vertically integrated manufacturing business:

- Control over supply chain and quality of raw material source
- Internal engineering
- Product innovation and new product R&D
- In touch with industry trends
- Single source manufacturer
- Control of product scheduling and manufacturing process
- Typically has long industry legacy
- Responsibility of quality and safety products as a single owner
- Protected distribution network
- Fewest handoffs
- Most accountability

Having complete control of the supply chain manufacturing through vertically integrated practices is how SP can produce load cell products with the highest safety rating and quality assurance in our industry which ensures your safety and your equipment.

# Who's behind your load monitoring hardware?

## SP's vertical integrated supply chain

Vertically integrated product supply chain manufacturing provides complete control of the manufacturing process from raw material to finished goods. This control ensures product inspection throughout the manufacturing process affording a high level of quality and consistency across all product lines.

Remember, not all "branded" products are manufactured by the brand owner.

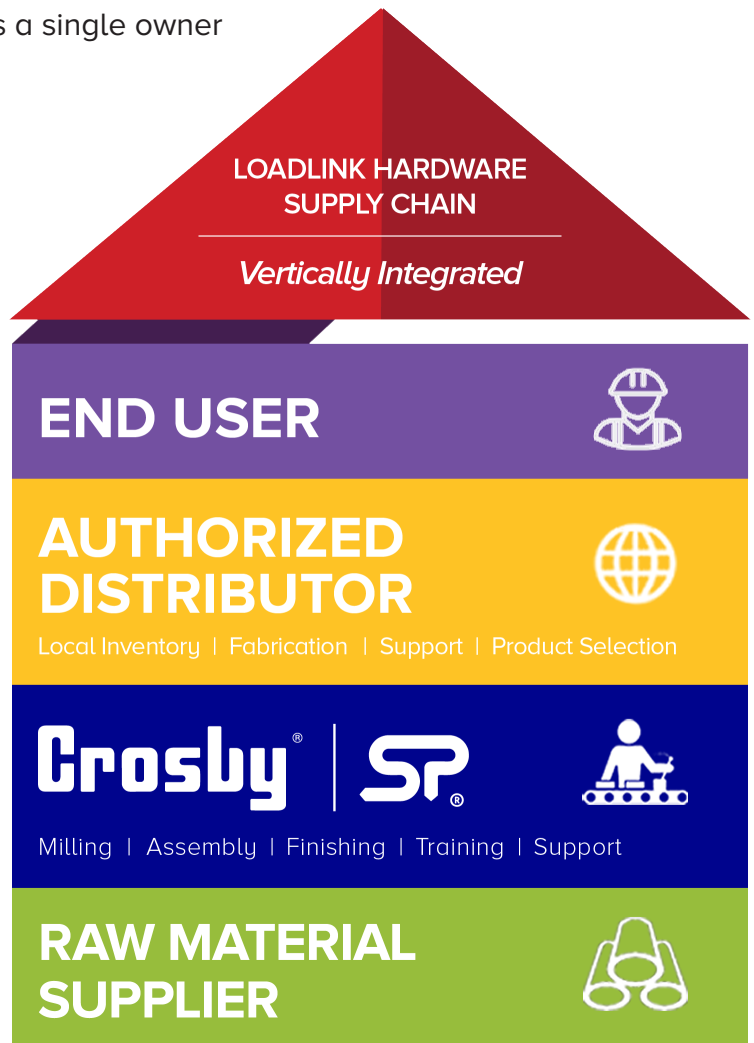
### Characteristics of a vertically integrated supply chain

- Controls the process from raw materials to finish good, ensuring a high level of quality and consistency due to multiple inspections
- Responsibility of quality and safety as a single owner
- Most direct line to the manufacturer
- Fewest handoffs
- Highest level of accountability

### Raw material supplying

While we're able to directly control the production and finishing of all our products first hand, we need to use outside suppliers for raw materials and basic smaller parts and elements.

When selecting a supplier of raw materials; our purchasing department not only has the task to find the best price and supply lead times, but it also has a list of essential stipulations the supplier is required to match.



# Who's behind your load monitoring hardware?

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## SP's vertical integrated supply chain

There are different stipulation lists depending on the type of raw material required. Here are a couple of those lists, as examples, for different material types:

### Metals:

All of our products are made using high grade metals, such as our loadlinks, for durability and strength. We don't rely on our supplier's word that they meet high standards, all our restocking orders come with an official 3.1 material certificate.

This is issued by an authority which is independent of manufacturing and is validated by the manufacturers authorised inspection representative.

It includes the following information:

- Mechanical properties
- Dimensions
- Weight
- Chemical composition
- Any impurities
- Where and who refined the metal
- Grain flow
- Ultimate strength
- Yield strength
- Elongation percentage

When all standard requirements are met an official suppliers stamp is added to the certificate as a guarantee that all the checks have been made.

All our metals conform to the EN 10204 – 3.1 or ISO474:1991 certification standard, which is there to indicate the results of a specific inspection by an authorised inspecting representative. The representative is authorised by the manufacturer but is independent from the manufacturing department.

# Who's behind your load monitoring hardware?

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## SP's vertical integrated supply chain

### PCB (Printed Circuit Board) Technology:

The circuit board technology used in our load cells and handhelds have been developed and designed by our engineers.

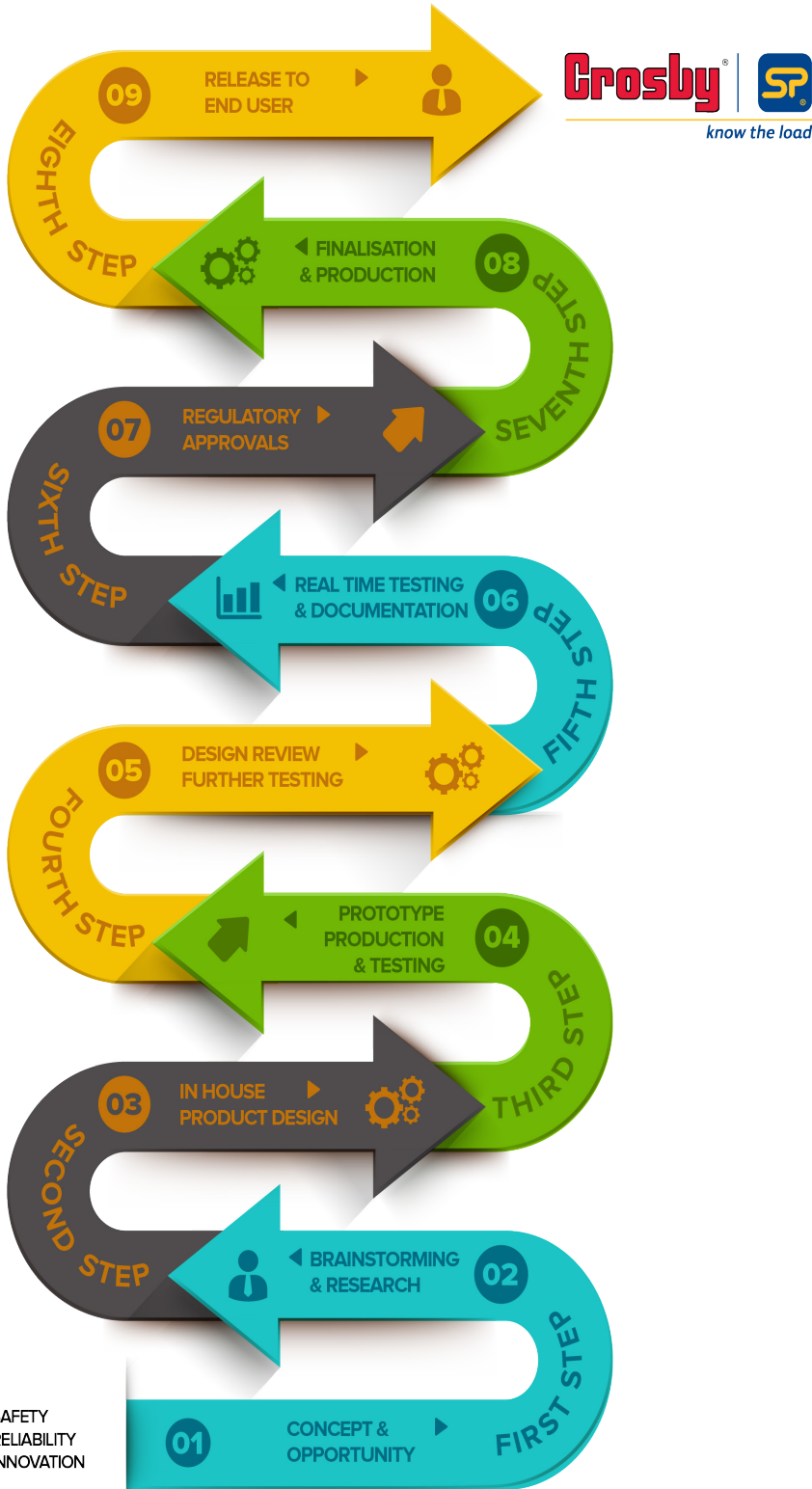
The PCB manufacturer has to meet our standards by:

- Following the latest in Quality Assurance standards (ISO9001 certification)
- Well established and with a fully developed quality management system
- Their electronics hold the IPC industry compliance for workmanship standards to claim high reliability products
- They are audited by an outside professional body for both management systems and on-site standards both under the following sub-categories:
  - Quality
  - Health and safety
  - Environmental responsibility
  - Corporate social responsibility



# Who's behind your load monitoring hardware?

## Assured product quality



### Development process

From concept to production SP controls each stage of the process.

Developing and manufacturing their load links to the highest of standards.

- SAFETY
- RELIABILITY
- INNOVATION

# Who's behind your load monitoring hardware?

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## Assured product quality

### Strain gauged – In house gauging

The most delicate and intricate part to the production process is installing the strain gauges. The strain gauge is what senses and measures the force being put on the load cell and then passes on the electrical signal to be converted into a visual force measurement by the output source (handheld or software) via an A&D converter.

We have a team of highly trained and experienced strain gauge technicians with a workshop, which is officially certificated by ATEX/IECEX to produce official ATEX Zones 0, 1, and 2 proofed products.

### Quality Checks

Prototype testing includes physical checking and functionality testing.

Physical test includes:

- Dimension checking
- Enclosure fitment,
- PCB board component damage if any.
- Component soldering issues if any etc.

Functionality Test includes:

- Board functionality by creating test cases based on actual requirement
- Firmware debugging
- Accuracy & Linearity testing
- Current consumption
- Thermal Testing (Temperature (High & Low) testing)
- Open field range testing for wireless products
- EMC Testing (From external Agency)
- LVD testing (From external Agency)

Product Tests:

- IP Test (In-house)
- Drop Test ( In-house)
- Fatigue Tested
- Pressure testing for subsea use



# Who's behind your load monitoring hardware?

## Assured product quality

### Calibrated & Proof Tested

Straightpoint products are inclusive of a Calibration and Proof Test certificate.

Calibration and repair at their UK facility is equipped with a range of load cell calibration test rigs (with closed-loop, servo-controlled testing ability) up to 350te / 770,000lbs.

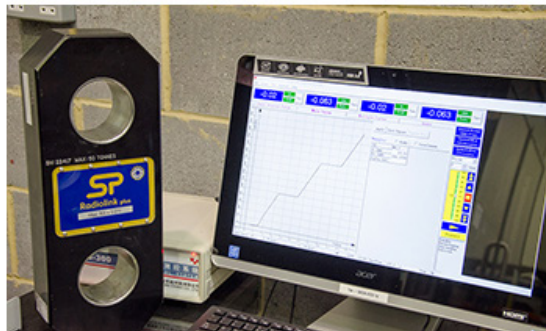
Careful investment and installation of new load cell test machines enables Straightpoint and their partners to offer a world class re-calibration and repair service.

In order to maintain the accuracy and function of your lifting load/force measurement products, be it either SP branded or otherwise, scheduled calibration and maintenance needs to be carried out as a recommended element to owning this type of equipment to ensure continued safety and accuracy when lifting.

It is important load systems used to measure and monitor forces across industry are optimised for peak accuracy, providing predictable output to recognised standards.

Machines installed at the Straightpoint facility are UKAS ISO 17025 / NIST traceable rigs, Class 0.5 standard and certified by the National Physical Laboratory in London.

Straightpoint and our partners offer world class after sales, care and calibration and is committed to a FAST turn round, endeavoring to calibrate, certify and despatch equipment to any international location worldwide.



# Who's behind your load monitoring hardware?

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## Questions to ask before you buy

Before you order from your load cell and rigging provider, it is important to make a thorough investigation into the load monitoring equipment they are offering. To do this you need to be armed with the type of questions that will allow you to ascertain whether or not the load cell kit they provide will help optimise safety and reduce risk during the lift. This is absolutely essential in order to achieve a successful lift where the highest levels of health and safety standards for the personnel working around the lift are adhered to, so that they are not at risk of injury or even death.

### Questions to ask yourself

#### Which brands do I know? Which brands do I trust?

Having knowledge of several load cell manufacturer brands will allow you to make a more well-rounded and confident decision. You can make comparisons on what they can offer and whether you have trust in them through outside recommendations and successful case studies.

#### What have I already got (Do I know how to use it)?

Does my existing equipment have a valid in date calibration certificate?

It is useful to know what rigging gear you have in stock. Whether you already have load monitoring kit and whether you have the correct or compatible rigging kit that can be used to achieve a safe lift. If anything is missing or incompatible you can find out from SP what you specifically need to make it all work successfully. You may find that there are gaps in your knowledge on how to use the load monitoring setup competently and need further training.

#### What did I use last time and what was my experience with it?

Think back to the last lifting project you worked on, you could have had some issues with the equipment through some inadequacies or that you could not monitor the load thoroughly enough to ensure all the risks were lowered the most that they could be.

#### How much does it cost?

One of the main factors that can sway your decision, but should not be the most important. You cannot put a price on keeping colleagues safe. The cost of replacing asset write offs would pale into insignificance in comparison to any loss of life that unfortunately occurs from a lifting disaster.

## Who's behind your load monitoring hardware?

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### Questions to ask before you buy

#### Do I like the people who work there and/or are they easy to deal with?

Competent and warm customer service and after sales care can remove the stresses of purchasing process and it helps you to feel more confident in repeating orders.

#### Do I need it quickly – if so, can they do it?

Dependant on the time constraints and schedules of your lifting project it will be an imperative to know when you need your load monitoring equipment and if the supplier can match it with ease. SP are able to have fast lead times because of a full complement of stock and well established courier links.

### Questions to ask the load cell supplier

#### Are your raw metal materials fully certificated to the standards of your relevant trading block and contains the QA report?

A load cell needs to be made out of a highly durable and strong type of metal (Alloy steel, or more preferably; aluminium), so that it can withstand multiple loading through general usage. To prove that it is up to the Quality Assurance standards it should come with certification saying it has met the standards set by your local trading block. Buying raw materials without this certification would mean a loss of confidence in the integrity of the product and trust that will do its job while being used. It may contain imperfections/faults that will lessen the load handling capability.

#### How do you proof test your products?

The claims by the manufacturer on the product's capabilities need to be backed up with thorough proof testing of the ultimate working limit, IP environmental protection rating, wireless signal distance, etc.

#### Are your products calibrated and come with an official manufacturers certificate?

Proof that the load cell you are buying has been officially calibrated by a test machine with an in-date accuracy confirmation by professional 3rd party company is an essential inclusion. If the supplier cannot provide you with an accompanying certificate of calibration to say that it is calibrated, then you should not proceed with the purchase. It is also recommended that load cells are calibrated either once a year or when 110% of its working load limit has been exceeded during the lift (the extra stress on the load cell may degrade its accuracy).

#### Do I need to return the product for recalibration to your production house or to somewhere closer to my location?

This depends on whether there is an approved calibration centre by the manufacturer, never take a load cell to non-approved one as there will be no accountability.

# Who's behind your load monitoring hardware?

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## Questions to ask before you buy

### What certifications do you provide with your products?

You should only consider ordering the loadcell products if they come with official safety and/or assurance certifications, e.g. ATEX/IECEX certification approval for use in environments with high levels of volatile gases present.

### I have specific project I need loadcells for and need something bespoke: Can I expect a certain level of support to help implement the loadcells?

Once the deal is done and finished you have all the usual customer/consumer protections for issues to do with product or provided services. When you have bought something more technical does the load cell supplier provide you with technical service support during its lifetime? The minimal amount of post-purchase support to expect would be a repair service if it is still within the warranty. Exceeding that, further support can be issued with product familiarisation and advice on how to correctly integrate the loadcells within a project.

### What is the loadcell's safety factor?

When a load amount exceeds your predictions and is over the Working Load Limit of the loadcell, the lift will be classed as overloaded. It is essential that all loadcells are listed with a safety factor, if it doesn't have one, do not even consider purchasing the load cell in the first instance.

### What is the most extreme environment a loadcell can withstand? What level of environmental protection does it have?

The product's IP rating and operating temperature is an important factor to consider for the sake of the product's lifetime longevity and reliability. Water and/or dust ingress finding its way into the interior of the product can damage the sensitive circuitry over time as well as freezing or extreme heat conditions. It is important to know the level of protection and operating temperatures it has to enable use in situations you require it for. For general outdoor use in a variety of outdoor conditions SP recommend using no less than IP67/NEMA6 rating with operating temperatures of -10 to +50 °C / 14 to 122°F to suit most environments.

### What percentage of your production is done in house and much is made and supplier from an outside organisation?

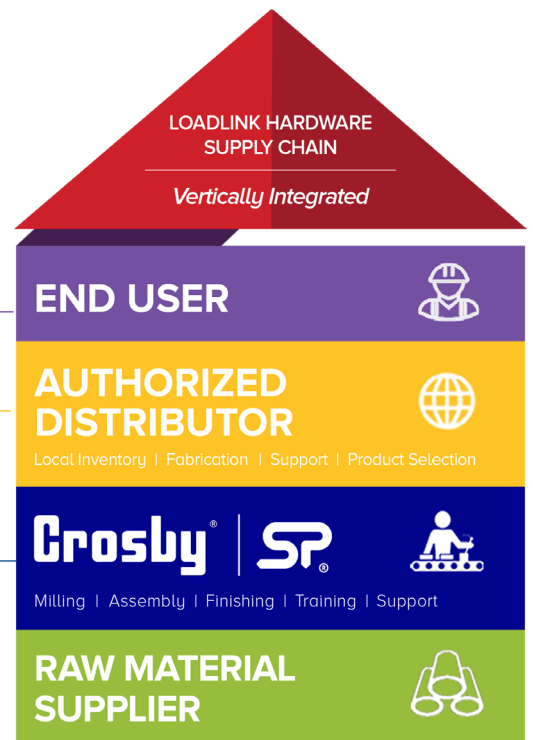
Not something that gets thought about much when researching for loadcell suppliers but as the document has explained in the previous sections it goes to show that buying from a manufacturer with the most vertically integrated manufacturing process can provide the most assurances in product safety, quality and reliability.

### How much can your products be safely overloaded?

Despite being designed with a 500% safety factor SP load cells and rigging should never be overloaded.

# Who's behind your load monitoring hardware?

## What you get when you buy SP



### Customer service

- Full-time, knowledgeable business development representatives
- Well-trained, inside sales and customer service departments
- Engineered products group for all special product needs (design, manufacturing, and applications)
- Technical support team to help with products and services
- Management team dedicated to core customer service values

### Research and development

- Development of manufacturing processes for improved product performance
- Enhanced material toughness and properties through raw material selection and proper metallurgical processing
- More efficient product designs, utilising less raw material and common design

### Complete product line

- Loadlinks for every application
- Custom designed products

### Engineering

- Properly selected materials
- Superior strength, impact toughness and fatigue performance
- Extensive expertise in CAD, finite element analysis, non-destructive testing and failure analysis of products
- Active participants in industry standards development professional committees
- Design validated by F.E.A.
- ISO 9001 Certified

### Manufacturing

- 95% of product lines are vertically integrated
- Modern facilities and state-of-the-art processes
- Extensive and unique capabilities allow us to provide the quality and type of fitting our customers require

### Risk management

- Comprehensive product literature
- Formal product instruction and warning program
- Individually bagged and tagged products with application information
- Training videos
- Product training seminars

### SP's value-added services beyond the sale

#### World-class training

- On-site training clinics
- Unrivalled partner support
- Worldwide classroom seminars

#### Digital footprint marketing

- Social media and newsletter updates
- Comprehensive website
- Electronic catalogue
- Access to CAD online

#### Industry Accreditations & Memberships

- American Wire Rope Association
- Specialized Carriers and Rigging Association
- American Society of Mechanical Engineers
- National Association of Tower Erectors
- Lifting Equipment Engineers Association
- DNV-GL Type Approval
- ATEX & IECEx - Zones 0, 1, and 2 (CSA Group)
- Federal Communications Commission
- Japanese Radio Conformity

### SP has your back

- Largest and most capable distribution partners
- 100+ authorized distributors worldwide
- Broadest and deepest inventory
- Design and fabrication of customer lifting solutions
- Extensive testing capabilities
- Engineering support
- Local inventory and support

#### Product certification

- Calibration and Proof test certificate free with every product
- Straightpoint certificate of authenticity



## the Crosby group®

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The Crosby Group is a global leader in the innovation, manufacturing and distribution of products and services used to make lifting and load securement safer and more efficient, with premier brands such as Crosby, Gunnebo Industries, Straightpoint, Acco, McKissick, Trawlex, Lebus and CrosbyIP.

With global engineering, manufacturing, distribution and operations, the company provides a broad range of products and solutions for the most demanding applications with uncompromising quality that exceed industry standards.

The Crosby Group, with its team members around the world, provides an unparalleled training program supported by industry experience dating back hundreds of years, creating safer work environments for people everywhere.

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