

# What is a Load Pin?

Load pins are load cells used in overhead weighing applications.

A load pin is a type of load cell that can be used as direct replacements for clevis, sheave, pivot, normal shaft or equalizer pins. Load pins are reliable, easy-to-install overhead weighing solutions, many of which have capacities over 500,000 pounds.

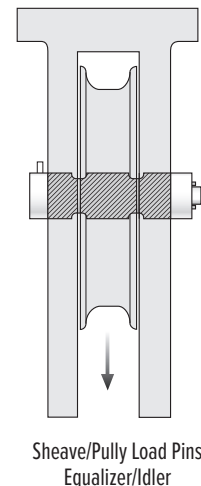
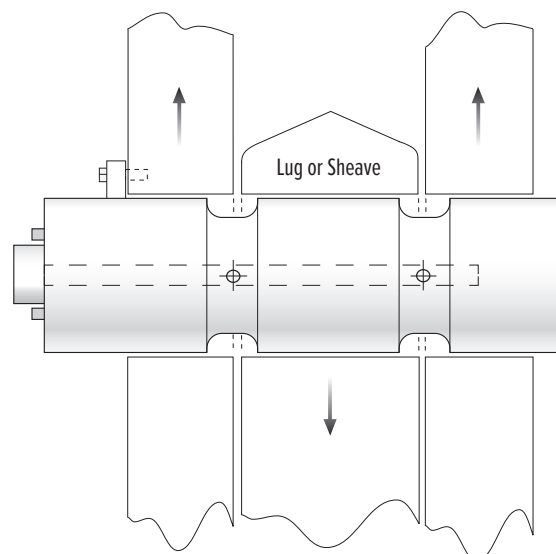
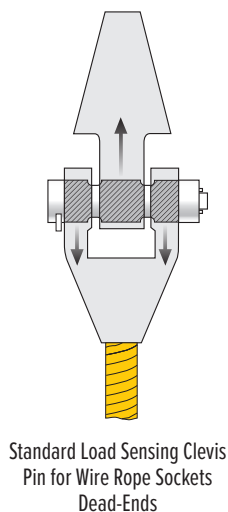
Made from stainless steel, load pins are strong and corrosion-resistant. Because the strain gauges are completely internal, load pins can successfully be used in a variety of applications, including marine operations.

## How do load pins work?

Load pins have a bored center, which contains internal, force measuring strain gauges. Like other load sensors, these strain gauges measure the change in the electrical signal caused by force being applied in a specific direction. This change in electrical signal is then converted to a weight measurement. Load pins are designed to be permanently installed in a sheave, pulley or crane system, meaning they can be used to consistently monitor vertical or horizontal tension.

The exterior circumference of a load pin has two grooves to define the area of the pin between the measured forces. The lug or sheave applies force in one direction on the middle section of the pin, while the fixed support applies pressure in the opposite direction. This is the force, or tension being measured by the load pin strain gauges.

Integrated overhead weighing solutions like load pins provide overload protection without impacting the headroom of an application. Load monitoring with an integrated load pin also helps promote safety and prevent costly overload damage to overhead equipment.



# Why choose an MSI load pin?

Rice Lake Weighing Systems offers custom-designed and manufactured MSI load pin sensors that are strictly industrial grade with a 5:1 ultimate safety factor. Each MSI load pin is precision machined from 17-4 stainless steel, ensuring safety, strength and corrosion resistance in every application.

Using Finite Element Analysis (FEA) and other tools, Rice Lake engineers precisely calculate and correctly place strain gauges in concentrated stress areas specific to your application. This applied engineering process ensures you receive the most efficient and accurate performance from your MSI load pin. MSI load pin sensors utilize internally mounted strain gauges for complete protection from outside elements.

Rice Lake MSI load pin sensors have many different cable connection options available. To meet individual installation requirements, cable exits can be oriented differently to support connectivity while providing recessed protection for the cable. There are integral cables and a wide variety of standard, industrial and marine connectors available to meet your overhead weighing needs.

Because Rice Lake's MSI load pins are custom-designed for individual applications, MSI overhead weighing specialists are available at 800-874-4320 to help with questions and consultations. When paired with a remote indicator or controller, Rice Lake can provide a personalized load pin solution with competitive lead times.



# Where are load pins used?

Integrated load pins can be used with almost any application with a repeatable load path including:

- Cranes (mobile, bridge, jib, gantry and straddle)
- Winches
- Elevators
- Hoisting gear
- Sheaves
- Shackles
- Bearing blocks
- Pivots

A wide range of industries benefit from integrated overhead weighing solutions, including agriculture, chemical processing, energy production, marine cargo and port shipping operations.



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