

OPERATOR INSTRUCTIONS FOR MODEL WTSTL TENSION LINK LOAD CELL



Model WTSTL

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OPERATING INSTRUCTIONS

1.1 Introduction

This instruction manual refers to the Interface model WTSTL tension link telemetry options. Before installing or operating any Interface tension link, this and any reference documents should be read and understood.

In compliance with the Machinery Directive, Interface tension link load cells will be supplied with the following documents: Instruction Manual and Calibration Certificate.

1.2 Markings CE

Each tension link will be marked with an individual serial number, CE label and the SWL (safe working load) of the tension link.

1.3 Electromagnetic Compatibility (EMC)

The electromagnetic compatibility of the load cell device can only be assessed in conjunction with the entire installation, including its control systems. The machine builder who installs this partly completed machinery into a machine is responsible for compliance with the EMC directive.

1.4 Installation and Operation

To ensure safe and trouble-free installation of the tension link measuring device, the tension link must be properly transported and stored, professionally installed and placed in operation.

Unpacking

Before removing the tension link, inspect the packaging for signs of damage and immediately inform the supplier if any damage is found. Unpack the tension link carefully, taking special care with cables and be aware to the possibility of damaging low-range devices by mishandling. Ensure that calibration and instruction information is not inadvertently discarded.

Checks Prior to Installation

- Check that the tension link has been suitably selected for the environment it is being placed into. Any adverse temperature, corrosive or potentially explosive environments may affect the operational life and the safety of the product.
- If the tension link is fitted with a telemetry module, check that the 2 AAA batteries are correctly installed, that the two RED clips on the telemetry housing are closed and that the battery cover is secure. See Figure 1 for details.

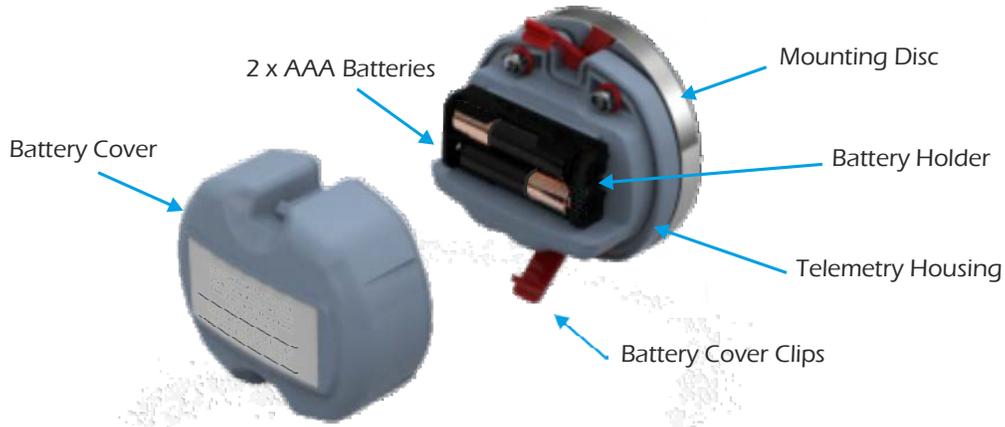


Figure 1

Installation

Tension link load cells are normally classified as portable devices, and so the correct installation is critical to ensuring product life cycle. To avoid damage or loss of accuracy during installation, the following points should be followed.

- The direction of the load applied to a link should be linear as shown in Figure 2.
- Ensure the tension link load cell does not experience torque or bending forces during operation.
- The tension link load cell should only be loaded in tension using the $\varnothing C$ holes as shown in Figure 2. See figure 3 for two common examples of installations.
- For optimal performance a tight tolerance with the $\varnothing C$ loading holes is recommended.
- If the tension link is fitted with a telemetry unit then ensure that a clear line-of-sight between the transmitter and receiver is maintained and that objects or structures are kept at least one meter away from antennae wherever possible. The installer should also first read the WTS Telemetry User Manual which can be found at the following web address: www.interfaceforce.com.

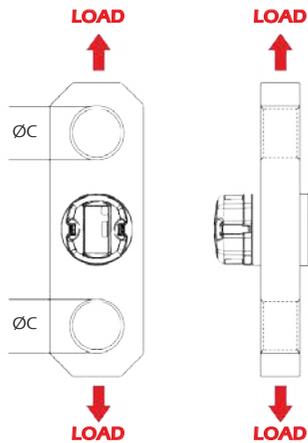


Figure 2

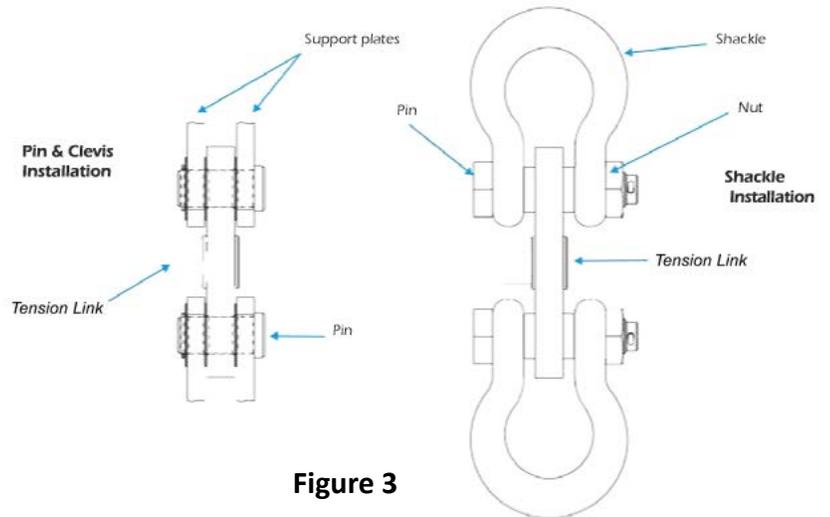


Figure 3

Electrical Checks

The correct connection of a tension link to an instrument is critical to achieving and maintaining the performance and reliability of the load cell.

- Tension link cabling must be kept away from high power cables and equipment, high output RF equipment and inductive loads and generators.

Tension link Output

When setting up your tension link the following points should be acknowledged:

- The zero load output given on the calibration certificate is the output of the tension link when no load is applied. This includes the removal of the load caused by any lifting accessories.
- The load on an installed tension link will comprise of the weight of your assembly (including sheaves, blocks, shackles, ropes, hooks etc.) and the active load (load lifted). Therefore, the output with no active load will be greater than the zero output indicated on the calibration certificate.

Checks After Installation

- With the tension link installed, check to make sure that the displayed output is not negative, as this may indicate either a fault or a compressive force is being applied to the tension link. See Figure 2 on previous page.
- When applying load to the tension link, the output should increase in the positive direction. Use the calibration certificate for reference as to the output observed at certain loads.

1.5 Calibration

All Interface tension link load cells are calibrated in traceable test machines to best simulate normal loading conditions.

Our goal is to match the loading conditions that would be experienced in service but it is not possible to totally simulate the on-site structure for every tension link manufactured. It is for this reason that for optimum system accuracy, a calibration in the final assembly is recommended. On-site calibration should be performed with the instrument that is being used with this tension link load cell.

1.6 Warnings / Hazards

Tension links are highly stressed devices and commonly have safety factors between three and five times the rated capacity under static conditions. Fatigue applications and environmental factors can contribute to reducing this margin. The user should determine media effects on the exposed tension link materials. Where a corrosive environment is present, tension links can often be manufactured from corrosion resistant materials or, alternatively, isolation barriers can be employed between the corrosive environment and the tension link.

The following points should be followed to avoid potentially hazardous situations:

- Do not weld near to installed tension links, as leakage currents may destroy the tension link's electric circuits.
- Tension links are sealed units which must not be dismantled. Damaged tension links should be returned to Interface for repair and re-calibration.
- The accuracy of the system is dependent upon correct installation of the tension link.
- Tension link load cells must not be subjected to shock loads, such as using a hammer to force an assembly together (fitting clevis pins into the mounting holes).
- The tension link load cell should never be placed in a potential explosive environment unless the product is suitably certified (ATEX or IECEx).

1.7 Inspection and Repair

Repair

Interface recommends that all prepared and service of tension link load cells be performed by Interface.

Inspection

All Interface tension link load cells should be subject to periodic inspection, which should include, but is not exclusive to the following checks:

- Completion of the safety checks after installation.
- Check output at zero load (shift in zero offset). Verify against calibration certificate.
- Inspect to see if the tension link has been damaged/worn or chemically attacked (from a corrosive environment or lubricants etc.).
- After any serious operating incident, repeat the first three checks above.
- For tension links fitted with a telemetry module, check that the batteries are correctly installed. The battery holder shows pictorially the correct orientation.
- For tension links fitted with a telemetry module, check for any signs of water ingress to the battery compartment and for any battery corrosion.
- In the unlikely event of this device failing, fit new batteries (if applicable) and re-test. Only when this has been done should you report the fault. When reporting the fault, give a full description of the problem and the type of application the device is being used for.

- For tension links fitted with a telemetry module, check for any signs of water ingress to the battery compartment and for any battery corrosion.
- In the unlikely event of this device failing, fit new batteries (if applicable) and re-test. Only when this has been done should you report the fault. When reporting the fault, give a full description of the problem and the type of application the device is being used for.

Load measuring links are designed for many diverse lifting and weighing applications.

Telemetry

The WTS product range uses high performance two-way radio communication. Each tension link fitted with the telemetry module requires either a WTS handheld device, a digital/analogue interface, or a base station and PC to communicate with. See the WTS User Manual for further details on the WTS range of products:

<http://www.interfaceforce.com>

**IF IN DOUBT ABOUT ANY ASPECT OF THE SELECTION,
INSTALLATION OR USE OF A TENSION LINK,
CONTACT INTERFACE FOR ADVICE BEFORE INSTALLING**

WARRANTY

WARRANTY

All tension link load cell products from Interface Force Inc., ('Interface') are warranted against defective material and workmanship for a period of (1) one year from the date of purchase.

If the 'Interface' product you purchase appears to have a defect in material or workmanship or fails during normal use within the period, please contact your Distributor, who will assist you in resolving the problem. If it is necessary to return the product to 'Interface' please include a note stating name, company, address, phone number and a detailed description of the problem. Also, please indicate if it is a warranty repair. The sender is responsible for shipping charges, freight insurance and proper packaging to prevent breakage in transit.

'Interface' warranty does not apply to defects resulting from action of the buyer such as mishandling, improper interfacing, operation outside of design limits, improper repair or unauthorized modification.

No other warranties are expressed or implied. 'Interface' specifically disclaims any implied warranties of merchantability or fitness for a specific purpose. The remedies outlined above are the buyer's only remedies. 'Interface' will not be liable for direct, indirect, special, incidental or consequential damages whether based on the contract, tort or other legal theory.

Any corrective maintenance required after the warranty period should be performed by 'Interface' approved personnel only.