

Load cell installation

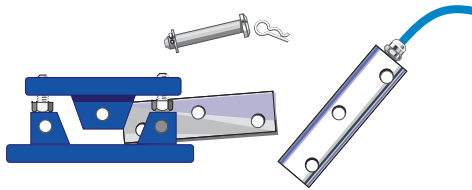


Installations should be planned by a qualified structural engineer.

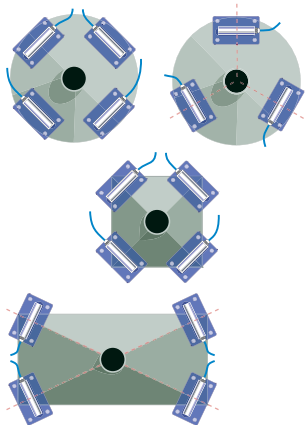
Each installation is unique. This document is a general guideline and should be used in conjunction with standards relevant to your application. Our application engineers will be pleased to advise you.

Dummy load cells

Remove live load cell elements prior to installation. Conduct all assembly, welding and initial leveling with the dummy load cells in the assembly



Load cell orientation



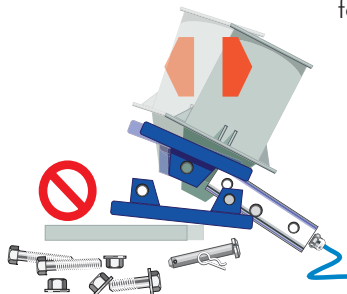
These load cell positions are recommended. Expansion and contraction of the vessel has minimal effect on the weighing system.

With existing plant, it is not always possible to achieve the ideal layout, but balance the forces equally over the load cells. Align the load cell axis with the Centre of Gravity.



Rigid framework.

Prevent lateral forces on the load cells; from lateral movement of the vessel, or deflection in the supporting framework

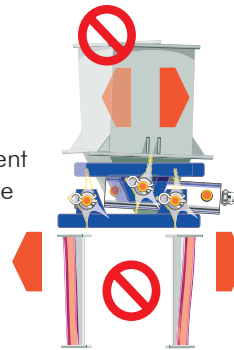


Check the load pins are secure, and the assemblies are bolted down before commissioning the weighing system.

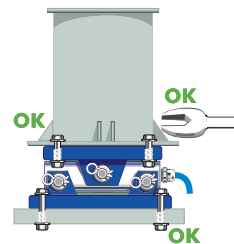
Proper drainage is necessary to avoid submersion. For steam cleaning, or direct wash down, a protective shroud must be fitted.

Shrouds must allow free movement of load cell assemblies and cables.

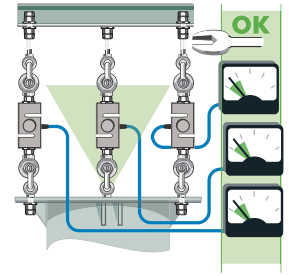
Protect gland entries with drip loops in the cable run.



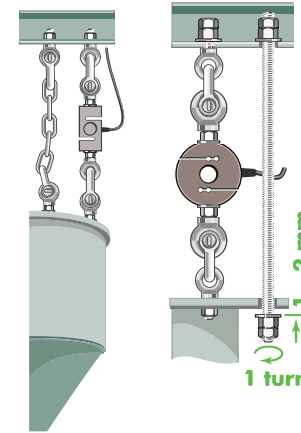
Take care to maintain a rigid supporting structure. Additional bracing may be required for safety and accuracy. Use flexible couplings to prevent lateral forces on the vessel.



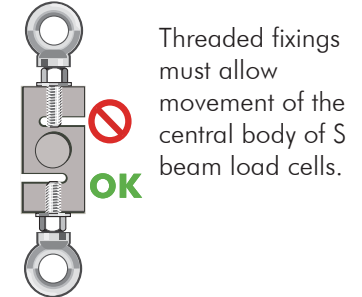
Mountings, and safety mechanisms, must allow calibration adjustment. Three cell systems may be self leveling. Four or more cells will require adjustment. See leveling guide.



Tension load cell systems



Tension load cell systems must be protected with adequate safety chains, or bolts. Allow 1 to 2mm clearance at the **designed full load** for the system.

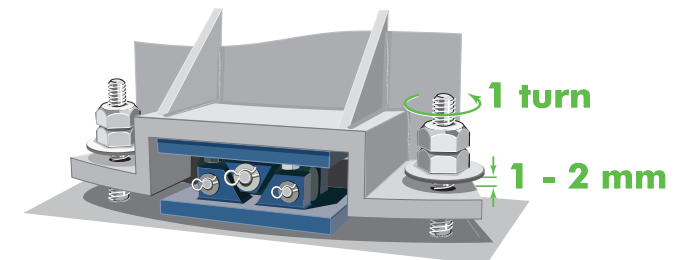


Threaded fixings must allow movement of the central body of S beam load cells.

Lift off protection

For installations subjected to wind loading, or seismic activity, lift-off protection must be fitted to the vessel. Lift off bolts must restrain the maximum upward forces.

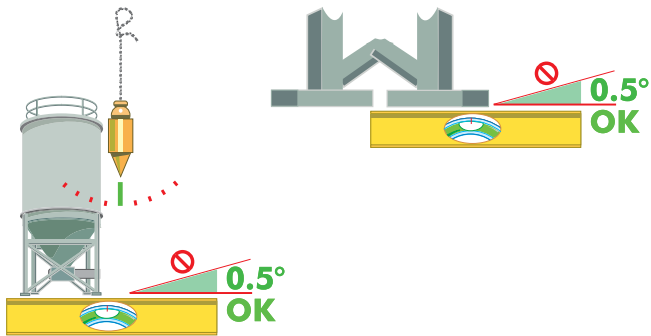
A clearance should be left to prevent the bolts from mechanically interfering with the vessel during normal use as this could cause weighing inaccuracies.



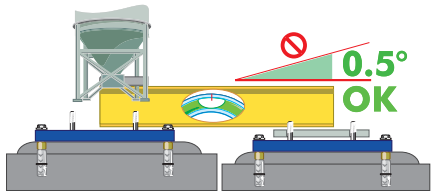
When the vessel is empty; wind the bolts down to touch the vessel skirt, then back 1 turn, and lock off.

Mounting

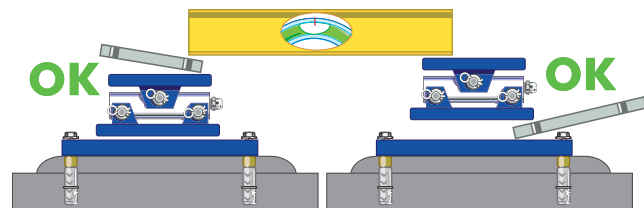
Check all the mounting surfaces carefully; vessel mountings, and ground spreader plates. Everything must be level within +/- 0.5°. The silo must be vertical.



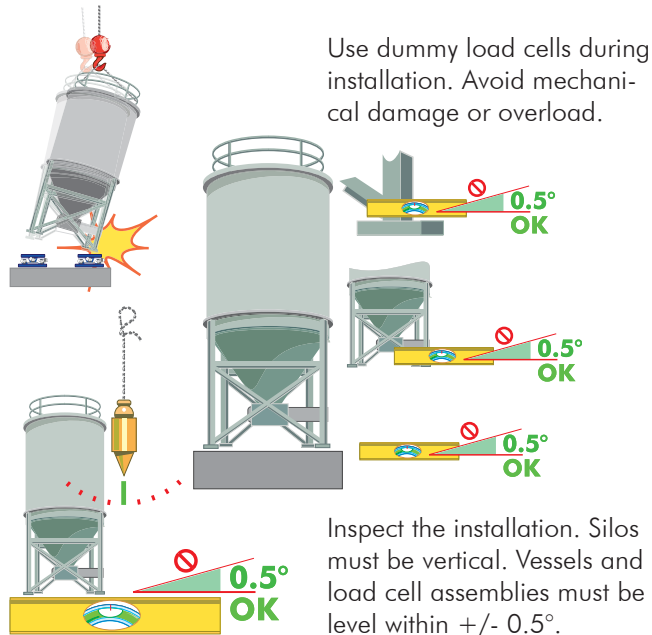
Fit spreader plates to support the load cell assembly. Level the concrete plinth with shim plates. Fill with grout if required.



Use shim plates to make fine level adjustments. Shims must fully cover the load cell assembly plate. Avoid point loading. Shim plates may be fitted either above or below the loading assembly. *For ease of maintenance fit shims only to one side of the assembly.*



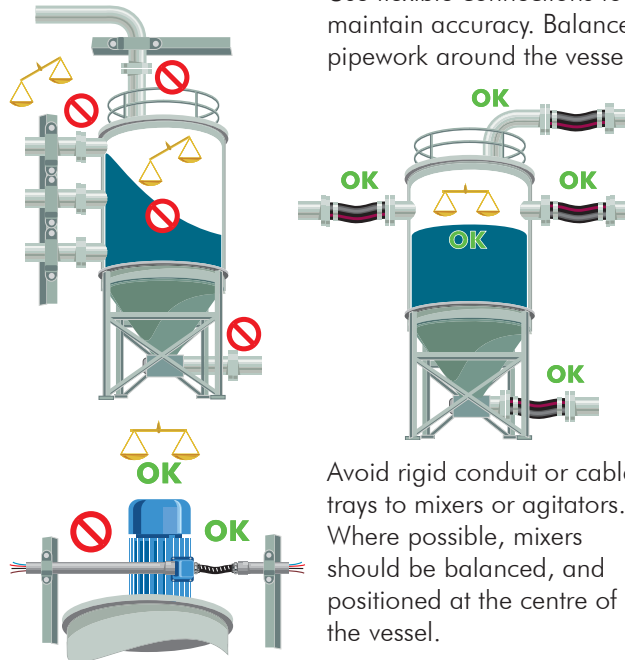
Installation of the vessel or silo



Use dummy load cells during installation. Avoid mechanical damage or overload.

Inspect the installation. Silos must be vertical. Vessels and load cell assemblies must be level within +/- 0.5°.

Connections to the vessel

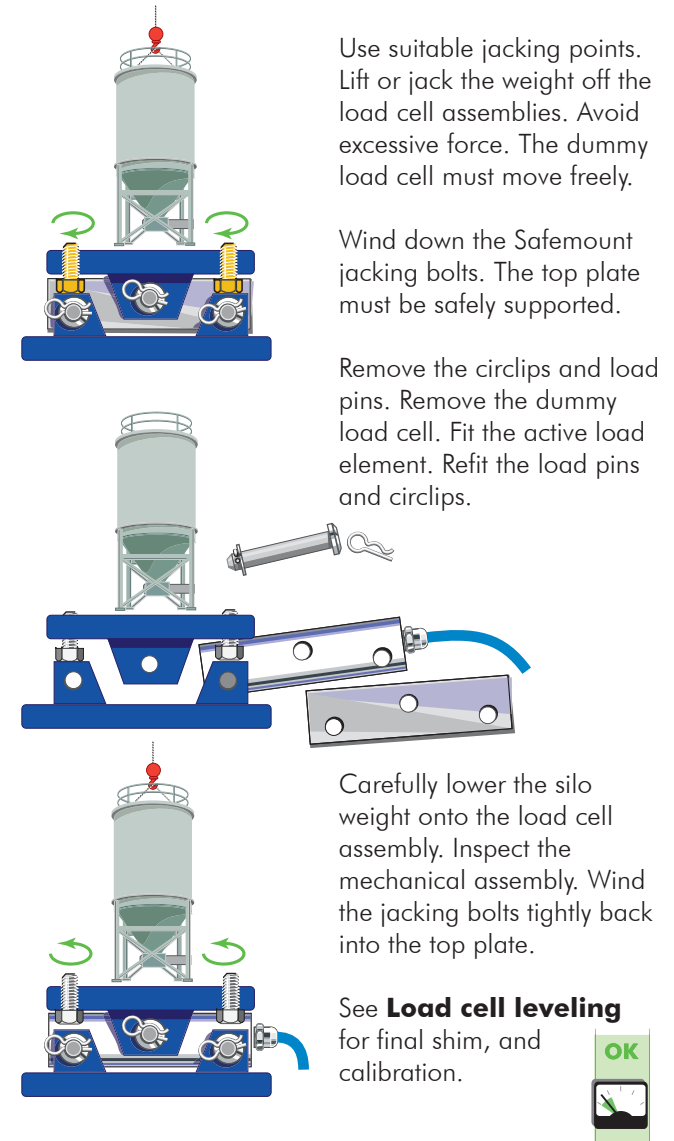


Use flexible connections to maintain accuracy. Balance pipework around the vessel.

Avoid rigid conduit or cable trays to mixers or agitators. Where possible, mixers should be balanced, and positioned at the centre of the vessel.

To remove dummy load cells

Complete all welding work, and initial leveling work.



Use suitable jacking points. Lift or jack the weight off the load cell assemblies. Avoid excessive force. The dummy load cell must move freely.

Wind down the Safemount jacking bolts. The top plate must be safely supported.

Remove the circlips and load pins. Remove the dummy load cell. Fit the active load element. Refit the load pins and circlips.

Carefully lower the silo weight onto the load cell assembly. Inspect the mechanical assembly. Wind the jacking bolts tightly back into the top plate.

See **Load cell leveling** for final shim, and calibration.

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