# Load cell levelling

APPLIED WEIGHING

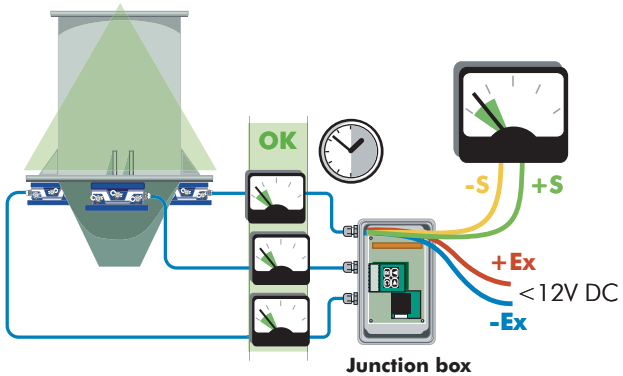
**Installations should be planned by a qualified structural engineer.**

Each installation is unique, and this document is a general guideline. It should be used in conjunction with standards relevant to the application. Should you require advice on your weighing application, our application engineers will be pleased to advise you on the best solution.

**Levelling is essential for accuracy and safety. The objective is to distribute the weight equally over the load cells.**

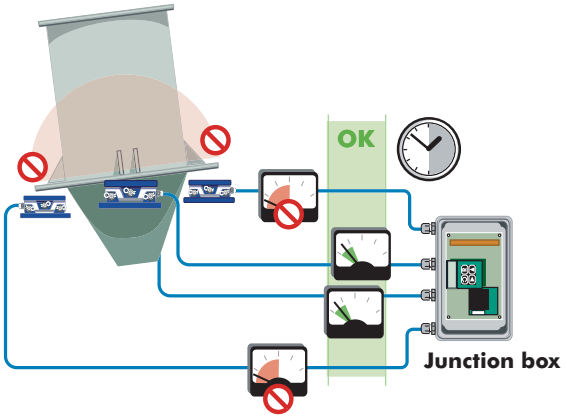
Ideally the millivolt output from each load cell will be within 20% of each other, and the signal should be stable. Carry out basic wiring and mechanical safety checks before fitting load cells and applying power.

After the Silo has been installed, and whilst it is still empty; measure and record the millivolt output across the green and yellow wires on each load cell.

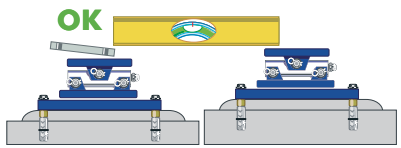



Three load cell installations tend to be self levelling. This makes it easier to balance the signals, within a 20% band. But where you require greater loads, and mechanical stability, more load cells may be fitted.

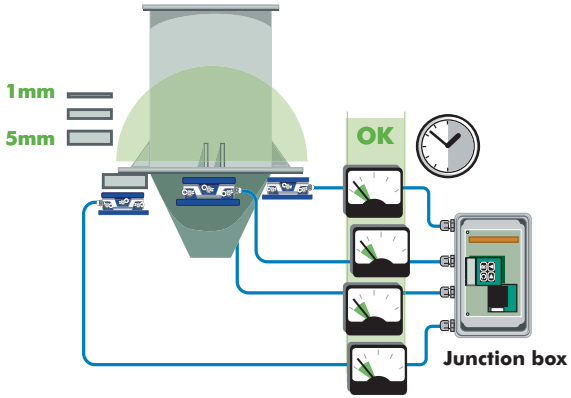
On installations with 4 or more load cells; it is likely 2 opposing load cells may be giving out lower readings.




If the load cell outputs differ by more than 20%, shim plates should be fitted to level the system. Shim plates should be positioned between the top plate of the load cell assembly and the foot of the vessel.

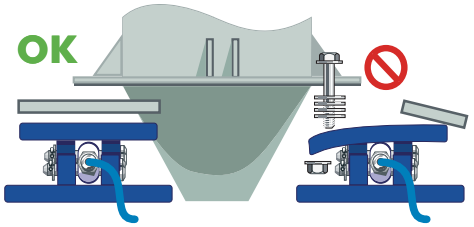



Shim the load cell with the lowest output. Shimming will then force more weight to be applied to its opposing load cell.

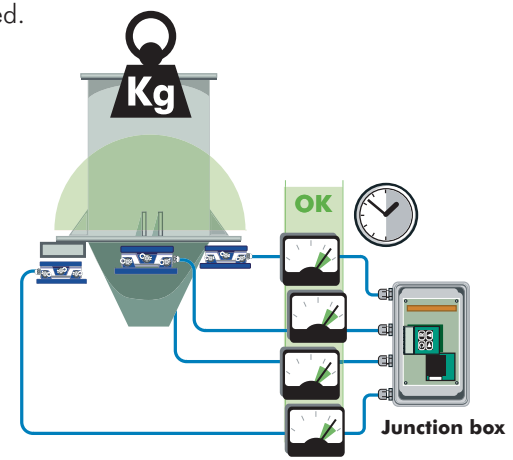



Shim plates can range from 1mm to 5mm thickness. 1mm should be used for fine shimming. Take care where shims are positioned. Shims must cover the full area of the load cell plate, evenly distributing the force.

Avoid point loading. Small patches of shim, or spacing washers, may twist the load cell; causing inaccuracies, and possibly damage the assembly.




Apply a known load. Again measure the output from each load cell. Ensure that each output is still within 20%. Inspect the installation and add further fine shims as required.




When the system is correctly shimmed, the millivolts output from each load cell will be within 20% of each other, and the signal should be stable.

After shimming, carry out a final inspection. Check all bolts are tightened, check wiring, and refit all junction box covers. Ensure the installation is fit for use.

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