

Bending beam load cells

Principle

Bending as a measuring principle offers excellent linearity. Bending beams high strain levels at relatively low forces with greater deflection compared to other measuring principles. This in turn means that although the cell is subjected to greater static overload, mechanical stops are more feasible. The dynamic overload capabilities are excellent because of the typical high deflection.

Bending beams are used in platform scales, weighing small hoppers, belt weighers and weigh feeders and other high precision applications.

Bending beam load cells are commonly used in capacities from around 5kg to 1,000kg.

F60X bending beam load cell

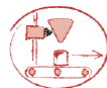
The most common type available is the all stainless steel F60X which is sealed to a very high integrity (IP 68). This makes them extremely suitable for wash-down situations such as food processing plants.



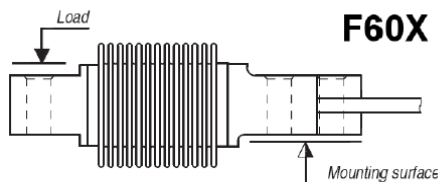
Platform scales



Silo / Hopper weighing



Filling / sorting machines



Load introduction

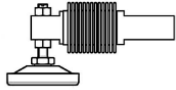
Loads should be introduced as closely as possible in the direction of measurement. Torsion moments, offcentre loads and transverse or lateral forces cause measurement errors and are liable to damage the load cell. These adverse influences must be avoided, e.g. by using stay rods or guide rolls. These elements must not absorb any load or force components in the direction of measurement (force shunt resulting in measurement errors).

The following must be considered with attention:

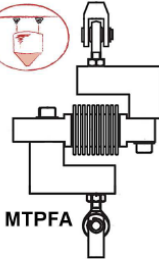


- The load cell and especially the thin-walled bellows must be handled with care.
- Do not overload the load cell, not even for a short time. When handling and mounting load cells with small rated capacities, you will reach permissible limit values quickly.
- The load cell seating must be horizontal, flat over the whole surface and, like the load cell base, absolutely clean.
- Never load in a direction opposite to the load direction specified (see data sheet).
- Load cells are to be clamped in tightly at the mounting bores, like a cantilever beam. Refer to the data sheet for the recommended tightening torques.

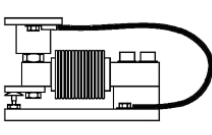
Bienfait offers different load-introduction components suiting various mounting situations in order to minimize the adverse effects due to load introduction or environmental factors.



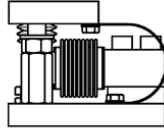
LFC



MTPFA



RUBBERKIT



STABIFLEX

LFC, LFD : Swivel foot designed for platform scales Manufacturing

MTPFA : Roll and ball joint tension mounting kit. Designed for suspended hoppers weighing and mechanical weighbridge modernization.

RUBBERKIT : Compression mounting kit including elastomer for misalignment compensation and vibration or shock absorption. Designed for small tanks or hoppers weighing with agitator.

STABIFLEX : Compression mounting kit including built-in side stoppers, lift-off prevention and high precision ball and cup de-coupling. Designed for tanks or hoppers weighing.

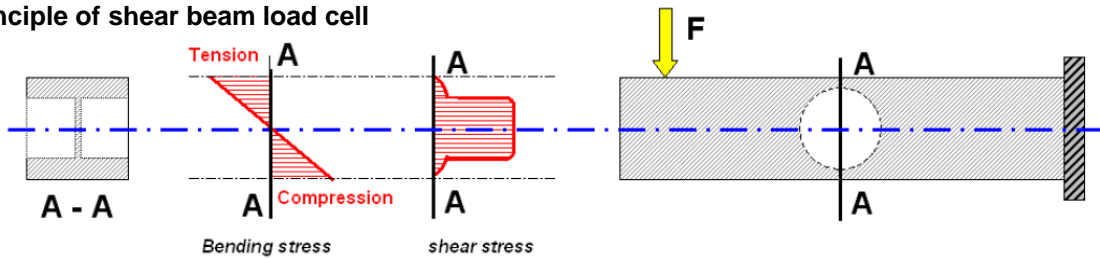
Shear beam load cells

Principle

Shear beam load cells are especially suited for all types of medium and high capacity weighing applications. This load cell is bolted to a fixed structure at one end and force is applied through a single point at the other end, causing the beam to bend and placing the strain gauge area under shear.

Shear as a measuring principle offers a good resistance against side loads and small sensitivity to the variation of loading position.

Principle of shear beam load cell



Along the beam centre line, the shear stress is independent of the point of load application

They are most commonly used in conjunction with special swivel feet and mounted in the corners of large platform scales. They are also used for vessel weighing.

In comparison with bending beam load cells, they offer:

- Better independence with respect to the point of load application.
- Better resistance to side forces.
- Better overload capability.

Although mechanical stops are more difficult to adjust because of limited deflexion at full scale.

Shear beam load cells are commonly used in capacities from around 300kg to 5,000kg.

SK30X shear beam load cell

SCAIME offers the all stainless steel SK30X which is sealed to a very high integrity (IP 68). This makes them extremely suitable for wash-down situations and sanitary environments such as dairies and food processing plants.



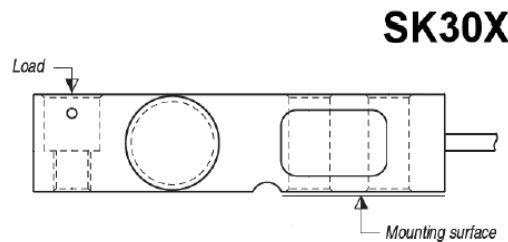
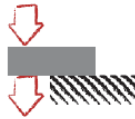
Platform scales



Silo / Hopper weighing



Onboard weighing



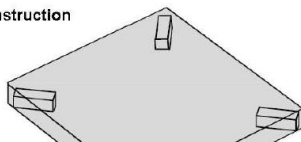
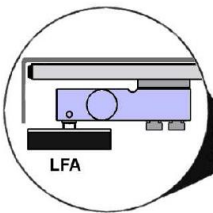
Load introduction

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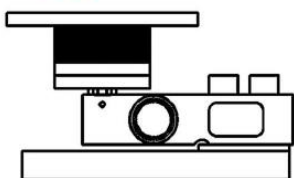


Industrial scale construction

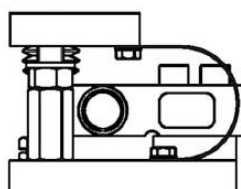


LFA, LFD : Swivel foot designed for platform scales manufacturing

ISOFLEX : Compression mounting kit including elastomer for misalignment compensation and vibration or shock absorption. Designed for tanks or hoppers weighing with agitator.



ISOFLEX



STABIFLEX

STABIFLEX : Compression mounting kit including built-in side stoppers, liftoff prevention and high precision ball and cup de-coupling. Designed for tanks or hoppers weighing.

WEGEN



KRACHT



KOPPEL



VERPLAATSING



KALIBRATIE EN MOMENT CONTROLE



MOTORTEST



DATA AQUISITIE REKSTROKEN



TELEMETRIE

