LAHTI PRECISION

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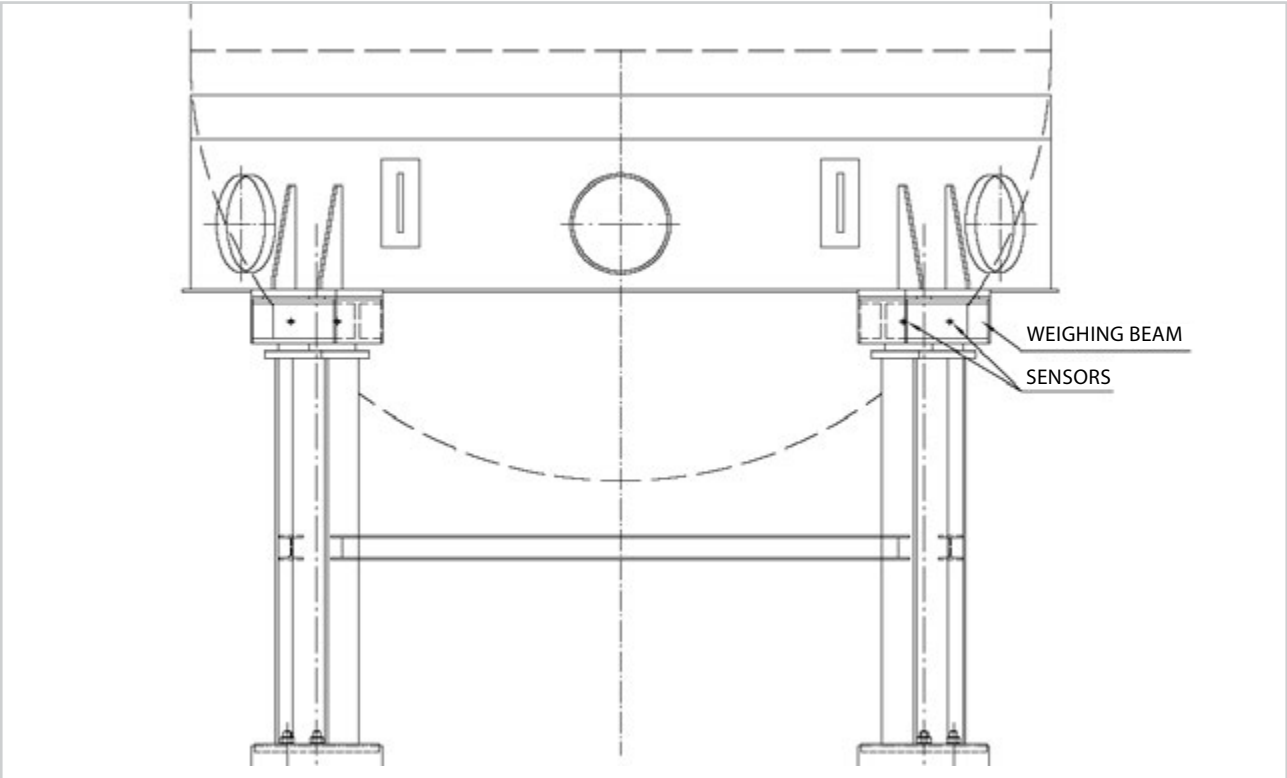
Button Weighing

Typical applications:

- Silos and containers
- Batching in pulpers
- Boilers
- Reactors
- Train monitoring systems

Button weighing is based on a cylindrical sensor, which is mounted in a hole drilled into the support structure with a special tool. A strain gauge sensor measures the deformation of the hole caused by the load.

With the button sensor mounted into the support structure, e.g. the silo weight can be measured without redesigning the existing structures. The measuring accuracy is sufficient in normal process weighing and monitoring.



Picture 1. Weighing beams mounted under the boiler.

The button weighing system is best suited to heavy weighing applications, where the foundations rest on steel beams. Hundreds of button weighing systems have been succesfully delivered in Finland and also exported worldwide.

The button sensors are connected in parallel and the measurement signal is transferred to a weighing transmitter, and then as an analog signal to further processing.

The beams can be either vertical or horizontal. The load to be measured has no actual maximum limit, and in new objects the measurement range can be calculated in advance. The price of the sensors is the same regardless of the size of the object to be measured. Thus, the bigger the object, the better is the price of the system.

In silos and containers with mixers and discharge equipment, large circular motions are emerged. Also big temperature changes cause strong and fast deformations, which have to be eliminated in the measurements. For these special cases, a beam has been designed (picture 1), where two button sensors are mounted at 45° angle. In this case, double share force technique is applied to efficiently eliminate tensions in the beam, which are caused by other factors than changes in mass.

Thanks to the small size of the sensor as well as Lahti Precision's wide expertise in weighing, special measurements can be carried out with the button sensor, and also monitoring e.g. train location at the factory areas.

Mounting of a button sensor system is fast and easy. However, to secure reliable operation, we recommend hat you use our trained and experienced engineers to mount the systems.