

Weighbridge Maintenance:

Ongoing weighbridge maintenance is often overlooked to the detriment of expected load cell operating life. When electronic weighbridges were first introduced, one of the primary selling points was the greatly reduced servicing requirements. Unfortunately, many weighbridge owners took this to mean the new load cell based weighbridges do not need regular servicing at all.

True, all the mechanical components of a lever system based weighbridge were totally eliminated, but even though the load cells are deemed to be electronic, basic mechanical principles still apply. The load cell is really a mechanical component containing encapsulated electronics to generate small electrical signals that are converted to weight readings by the digital weight indicator.

Many weighbridge load cells are based on the rocker pin design and fitted with hardened steel cups at each end with just enough internal clearance to allow the loadcell to freely rock back and forth to a maximum of approximately 5 degrees. This rocking clearance is necessary for two reasons:

- to cope with the expansion and contraction of the weighbridge deck caused by temperature changes
- to cope with the inherent forces generated by trucks braking and accelerating when entering and leaving the weighbridge

Excessive Weighbridge Movement Damages Load Cells:

The degree of load cell tilt must be strictly controlled as the load cells can suffer physical deformation if allowed to tilt at higher than expected angles. The load cell tilt is regulated by the total weighbridge movement, which is only limited by adjustable physical stops that are usually mounted at each end of the weighbridge. Excessive tilt can cause the load cell cups to cut into the load cell pendles and cause extensive damage that usually requires the replacement of the load cell(s).

These weighbridge end stops need regular adjustment due to seasonal temperature changes and possible damage caused by excessive truck braking. If these end stops are not adjusted correctly, the usual result is a dramatic shortening of load cell life expectancy.



Excessive Weighbridge Movement Can Damage Weighbridge Foundations:

As well as causing load cell damage, excessive weighbridge movements if left unchecked, can even cause extensive damage to the weighbridge's foundations, as in the image below where the end wall of an inground weighbridge required replacing.



Weighbridges Require Regular Maintenance:

The hardened steel cups and the load cell pendles need to be inspected regularly for damage caused by excessive end movement and excessively overloaded vehicles. The entry of dust and dirt into the cups can form a grinding paste when mixed with the grease and has the potential to quickly render both the cups and load cell in-operatable in a matter of months.

On most weighbridges, basic maintenance procedures should only take 2-3 hours to complete which can ensure a longer operational life of the weighbridge is achieved.





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Weighbridge Speed Humps Minimise Potential Damage:

To help minimise potential damage to weighbridge load cells caused by excessive truck braking, it is advisable to fit speed humps immediately before the weighbridge entry to lower truck speeds. Excessive truck braking is the primary cause of excessive weighbridge end movements. A weighbridge with correctly adjusted ends stops will weigh more accurately and cost far less in repairs than a weighbridge that has been neglected.



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