Load Cell Mounting Hardware Safety Guidelines

Install only load cell mounting hardware and assemblies that have been specifically designed for use in tank, hopper or hanging scale applications. Often, the use of an inferior-grade product results in component failure which risks equipment damage and personal injury. These simple suggestions are provided to help minimize your exposure to vessel scale installation hazards.

1. Estimating Gross Load

To select the correct load cell or load cell hardware for a given application, it is necessary to know the total weight on the scale—including net weight of product, tare weight of the vessel and weight of the platform, tank or hopper, as appropriate.

2. Safe Load

Do not exceed safe load figures listed in Rice Lake Weighing Systems' catalog for any load cell hardware. Where shock loads are present, it may be necessary to derate these safe load figures depending on severity of the shock load.

3. Load Distribution

In multiple-load-cell applications, weight must be evenly distributed between all cells.

4. Threaded Connections

Check that all threaded connections are engaged. For example, an eye bolt screwed into an s-type load cell should protrude slightly on the opposite side.

5. Jam Nuts

All threaded connections must be locked with jam nuts to prevent inadvertent disassembly. If a load is suspended from a single load cell, it is critical that the load cannot rotate as this may loosen the jam nut.

6. Wire Rope Assemblies

With wire rope assemblies, do not twist the rope during assembly or disassembly. For example, do not remove a frozen nut from one end of a rope assembly by holding the opposite end.

7. Attachment Points of a Load Cell

The attachment points of a load cell hardware assembly must be aligned properly and the assembly should be essentially vertical.

8. Swaying in a Suspended Vessel Scale

If there is excessive swaying in a suspended vessel scale, apply horizontal checking to reduce amplitude.

9. Safety Backup

If failure of one or more load cell hardware assemblies could cause injury or damage, a safety backup (safety chains, safety rods, etc.) must be used. The assemblies should be inspected routinely for damage, excessive wear or corrosion and replaced if necessary.

10. Hopper Scales: Guarding Against Contamination

With hopper scales, guard against contamination of the product being weighed in case of failure of the load cell or hardware assembly. For example, do not locate a wire rope assembly over a hopper scale where broken strands of wire could fall into the weighing vessel, contaminating the product being weighed.

11. Selecting Steel Rod or Any Other Weight-bearing Components

Select steel rod or any other weight-bearing components so the minimum tensile strength is at least four times the total weight carried by that component. Note that threaded rod is generally made from a low tensile-strength mild steel which should be checked for tensile strength before use in any suspended vessel scale.