

GUIDE TO BUYING & INSTALLING A TRUCK SCALE

Purchasing the equipment: Cost is always important, but if this is the only concern in buying a truck scale, it will surely be a decision that is regretted at some point. Purchase the truck scale that *is needed*, not necessarily the one that is wanted. With electronic truck scales there are many designs and configurations, which exist for one type of application or another. With mechanical or electro-mechanical truck scales, the designs are limited and the choices fewer. But, they have been around for almost 100 years and are still manufactured and sold today because they have been proven to have less lightening damage, reduced down time, and lower repair costs.

Electronic Truck Scales

PROS - Electronic truck scales are lower in height, have lower initial construction costs, and can be manufactured to more lengths and widths for a lower cost than mechanical types. They are the dominant offering in the truck scale market today.

CONS - Electronic truck scales are susceptible to lightning damage. A “total hit” can cost the owner from \$895 to \$1600 per load cell (multiply that by 6 to 12 depending on how many load cells the scale has), plus labor and travel. This assumes that the local scale company has that many load cells in stock at any given time. If not, factor in airfreight charges and 24 to 48 hours of down time.

CAUTION - Beware of manufacturers that may offer some type of lightning warranty or “insurance” plan. Most simply increase the cost of the replacement load cells or mark-up the price of the scale itself.

CAUTION - Almost anyone with a fabrication shop can make a truck scale, and some offerings in the market are not much more than that. Many times an electronic truck scale “marries” the owner to the manufacturer. If the load cells are unique or proprietary in design, only those particular load cells can be used throughout the life of the scale. What looks like a good deal, may be the most expensive deal over a 10-20 year period.

Electro-mechanical Truck Scales

PROS - Electro-mechanical truck scales provide all the benefits of modern electronic indicators, printers, and PC based information systems. Yet, they are much more immune to lightning damage and much less expensive to repair should they take a hit. The one load cell in an electro-mechanical truck scale usually costs 1/3 or less than a single load cell in an electronic scale that may have 6 to 12 load cells in it.

Although there are fewer manufacturers to choose from, these units are usually available from only those with experience. When considering a particular manufacturer, it says a lot about how much real experience and capability they have if they offer both electro-mechanical and mechanical designs.

CONS - Electro-mechanical truck scales may carry slightly higher construction costs depending on design.

Mechanical Scales

PROS - Mechanical scales have been around for almost 100 years. A good one will last 20 years or more in most applications. There are some out there that are over 50 years old and still going. These scale can be configured to provide the weight information electronically, mechanically, or both. If configured for both electronic and mechanical indication, the owner should never experience any down time. Simply put, they work and they last.

CONS - They have higher initial construction costs and costs of cleaning the pit. The cleaning of the pit is only a problem if it is allowed to build up. If the owner institutes a regular pit-cleaning program from the beginning, it requires no more than washing off a sidewalk with a garden hose.

All Truck Scales are made of fabricated steel and some sort of weighing sensors. The quickest way to find out which one is the best value is to divide the *shipping* weight into the purchase price to determine the best price per pound. The heavier the scale, the more steel in its construction; thus, a better scale and longer lifespan.

Construction of the pit: This phase is critical and depends ultimately on the skill of the contractor. For pit construction, it is highly recommended that an experienced, competent contractor be used; one with verifiable experience in building truck scales. The quality of the work will pay for itself throughout the life of the scale. While such a contractor may cost a little more, the end result will prove invaluable. The pit must be built correctly to avoid countless problems for the owner and the scale company. The expertise of the contractor in this area is of the utmost importance and cannot be stressed enough. Further, by having only one contractor responsible for both the pit construction and the installation of the scale will ensure accountability for any problems that may occur.

A pit type scale will typically cost more, but requires less ground for the approaches since the top is level with the surface. However, depending on your terrain, the money saved with an above ground slab may be consumed with the extended approach costs. Most scale companies will quote the legally required 10 feet straight and level approach required by law that is adjacent to the scale. The local Weights and Measures Department has requirements for the slope rate of the remaining approach. An above ground scale may require 30 to 60 feet of approach on either end. While the initial slab cost looks less on the quote, the final cost may be the same or even more than a pit. This must be taken into account.

Construction of the slab:

Most fully electronic scales only require a slab that can be built by most contractors. Thus a more competitive cost can be obtained.

Installation of the scale: To reiterate, it is preferable that the same contractor is used to build the pit or slab and to install the scale for these reasons. If the pit or slab is not right, the scale company cannot get the scale installed correctly. And if the contractor that built the pit or slab is not experienced, he assumes too many things will be taken care of by the scale company. In the end, the owner must deal with and pay for this confusion. Quite often, the cost of a crane for unloading and installing the scale is not taken into account. This is a very important detail that should not be forgotten.

Commissioning and calibration of the scale: If the construction of the pit or slab has been done correctly, the scale company can proceed without delay. The scale company will perform the same tests done by the government inspector with the Department of Weight and Measures. Many times the inspector cannot be there initially. This is why scale companies are licensed by the Weights and Measures Departments. They are granted permission to calibrate and place the scale in service for the owner. It is the scale company's duty to keep a scale out of service if it fails to pass. For this reason, payment cannot be withheld for the scale, the construction, or for the installation, pending approval by the inspector. Instead, the owner should witness the test performed by the scale company to avoid any reservations about making full payment prior to the government inspection. If the scale passes the test performed by the scale company, it will pass the inspector's test with minor exceptions for tweaking.

Opinion:

The following is the recommendation of a scale man with 20+ years experience, from one of the worst lightening areas in America:

One should purchase an all steel, mechanical pit type truck scale with a concrete deck and a single load cell with isolators on it. Have the 5' deep pit built by an experienced truck scale contractor. Have the scale company plumb a minimum 2" water line directly into the pit, install a trash pump in the sump hole, and install a weigh beam as a back up to power failure or electronic equipment failure. Here is why:

1. Use all steel instead of cast iron levers because steel levers won't break as cast iron ones can. Rust won't be a problem if the pit is maintained properly (See #3 & #4). The concrete deck eliminates rusting problems on the deck if the scale company knows the scale design is proper for a concrete deck. (Not all designs are proper.)
2. The single load cell reduces repair costs drastically in lightening prone areas.
3. The pit at 5' allows enough room for proper maintenance, for cleaning by the owner and for the scale company to make adjustments or repairs if needed. If there is too little vertical space, neither job will be done properly.
4. If two large hoses are installed in the pit, wash out on a weekly basis is simple and takes about 30 minutes. This eliminates 99% of the maintenance problems known for a pit scale and can triple the lifespan of it.
5. The trash pump is recommended instead of a less expensive sump pump so all dirt and debris will be ground up and go out the drain when washing the pit down.
6. Because a truck scale is more important to business than a cash register, a weigh beam would be put on it to enable the owner to keep selling or buying product even if the electricity goes out.

This will not be the least expensive truck scale, but will save money over the years. When an owner is ready to sell the business, or pass it on, this type of truck scale is a real asset.

This guide is not inclusive of all matters one must address when purchasing a truck scale, but it will provide a basis for the owner to work from. We at Alabama Scale & Instrument, Inc. strive to be honest, do good work and expect prompt payment in return. We are an independent scale distributor. We can sell so many brands we cannot list them all. **But**, there is a reason why we only sell a few and not always the same one. Give us the opportunity to explain.