



Industrial Scale Buying Guide

A complete guide to helping you choose the correct Industrial Scale



As with the specification of any weighing equipment, the first place to start is to determine the capacity / weighing range and the readability (how accurately you want to weigh) you require in your application.

Maximum Sample Weight

What is the maximum weight of the product do you wish to weigh?

An important consideration here is if you are using a tare vessel. The weight of this needs to be taken into consideration when determining the capacity of the scale.

For example:

If you are weighing out a 100kg of product and are using a vessel which weighs 50kg then the minimum capacity of the scale needs to be 300kg

If you are using equipment to load the scale the above guidance also applies.

If the product you are weighing is 180kg and you load it with a trolley (which rolls up onto the platform) weighing 30kg you will need a capacity of at least 300kg or risk damaging the scale.

When selecting a scale it is always better to specify a higher capacity. If you need to weigh to 150kg then selecting a scale with a capacity of 300kg would be a good idea as it gives flexibility should you requirements change in the future. Also if it can be avoided weighing regularly near the capacity of the scale is recommended since this is where you will put the scale most under stress.

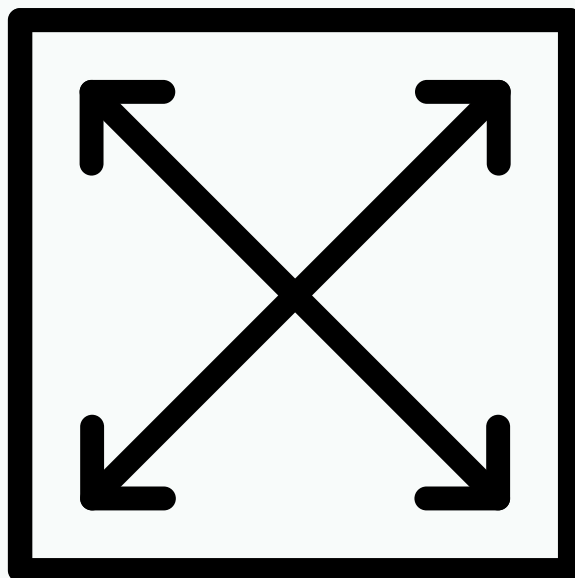


Platform Size

Wherever possible do not weigh product that overhangs the platform.

Select a scale where the dimensions are large enough to accommodate the product being weighed. Also take into consideration any equipment that may be used to roll onto the platform to load the product and ensure the scale is large enough to accommodate this.

Industrial scales can be quite large. Assess the area where it will be used to determine if there is enough room to accommodate the scale and manoeuvre the product around the scale. Also consider access when installing the scale – if the entry point into the intended area of use is small, can you fit the scale through it?





Platform Construction

Platforms can be constructed of stainless steel (AISI 304 / 316Ti), Mild steel, Painted steel or a combination of both. For example a stainless steel load plate and a painted steel frame (structure underneath the load plate).

The selection of the material is normally determined by how critical contamination is in your process as well as the cost, since stainless steel is a lot more expensive.

In some ranges there are options on the platform finish either smooth or treadplate.



Loading and Platform Design

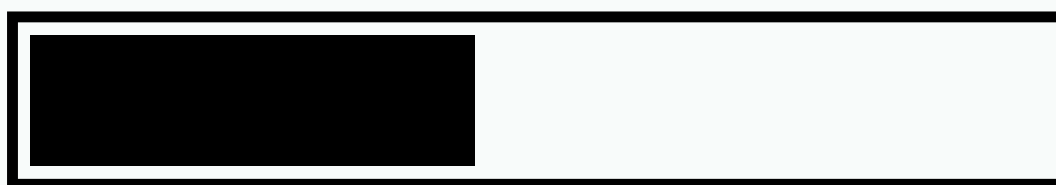
Consideration should be given to how the platform will be loaded as performing this by hand may not be possible or loading incorrectly may damage the scale.

For example damage can be caused to the platform if the operators attempt to roll / man handle the item to be weighed onto the platform- particularly if the item is heavy.

Scales do have overload protection, which works for products loaded from above into the centre of the platform.

Scales are significantly more vulnerable to damage from product being rolled on from the side or corners.

Loading...





Methods Available for Loading Scales

Pit Mounted:

On some ranges of industrial scales there is an option to pit mount the scale – recess the scale into the floor so the load plate is level with the floor.

While a convenient option it is becoming less popular since it is much harder to keep clean and is more difficult to service.

Rollers:

In some applications sets of rollers can be integrated so the product can be rolled across the weighing pan.

Lifting / Moveable Platforms:

If cleaning and minimising the potential for contamination is a priority ranges are available where a platform can be moved on wheels or lifted to a vertical position to facilitate cleaning under the scale.

U Shaped / Pallet:

Weighing pallets using a pallet truck is difficult on a traditional platform design since you cannot get the pallet truck under the scale.

U shaped platforms allow you to position the pallet truck in such a way that the pallet can be lowered onto the weighing bars.

Pallet Truck With Built in Scale:

Pallet Truck Scales are a convenient way of having mobile weighing equipment. A Pallet Truck Scale is a pump truck with an integrated high capacity weighing scale. Which allows you to lift and move a pallet and weigh it in one process.



Methods Available for Loading Scales

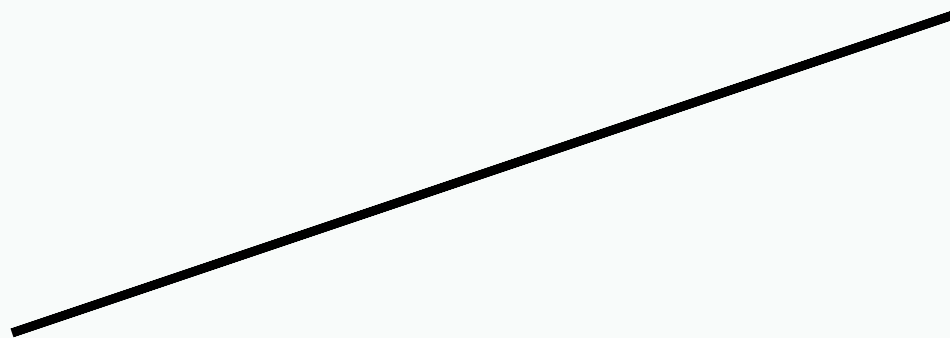
Ramps:

Ramps can be specified in a range of materials and sizes to roll the product up onto the platform.

You can have a single ramp to roll on then roll back off the same way, or two ramps (drive through) to roll on one side and roll off another.

If the height of the ramp is a consideration then flat bed scales are available which have a low profile so reducing the height and length of the ramp required.

When considering ramps as an option ensure you have the space available to accommodate the ramps and ensure the scale has enough capacity to weight the sample and accommodate the weight of the lifting / moving equipment.





Mounting the indicator

Higher capacity industrial scales tend to have the indicator separated from the platform. Consideration should be then given as to where you would like to mount the indicator:

Free standing on a bench for example

Wall Mounted

Floor mounted on a column

We recommend using an inline connector between the indicator and platform so that the platform can be disconnected without moving the indicator should it need to be cleaned.



Washdown

If you need to washdown the scale using water the scale needs to be protected against water ingress.

The level of protection is determined by its IP rating.

IP65:

Dust-tight – No ingress of dust

Low pressure water projected by a nozzle (6.3 mm) against scale from any direction shall have no harmful effects

IP67:

Dust-tight – No ingress of dust

Ingress of water in harmful quantity shall not be possible when the scale is immersed in water under defined conditions of pressure and time (up to 1 m of submersion)

IP68:

Dust-tight – No ingress of dust

The equipment is suitable for continuous immersion in water under conditions which shall be specified by the manufacturer.

IP69K:

Dust-tight – No ingress of dust

Protected against close-range high pressure, high temperature spray downs.



CE Verified / Legal For Trade Weighing Applications

Some weighing applications in the UK are regulated by the Non-Automatic Weighing Instruments (NAWI) directive, for example selling by weight.

To comply with this directive weighing equipment needs to be CE verified (not to be confused with CE marked for electrical safety).

To find out more and determine if your application needs to comply visit [NAWI](#)





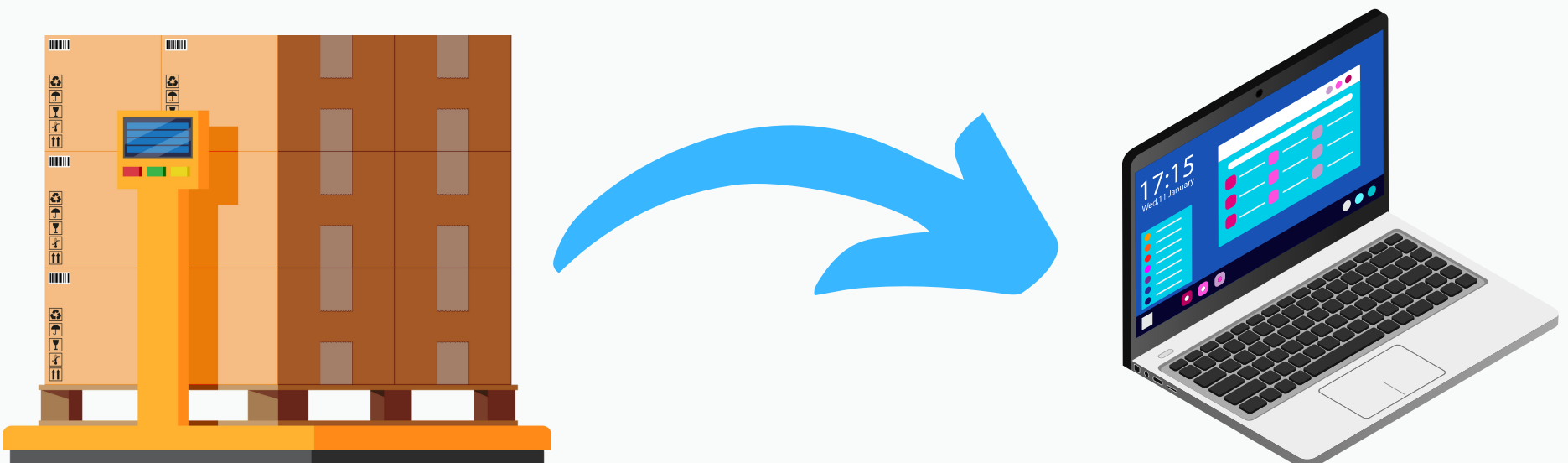
External Communication to Third Party Device e.g. Printer or Computer

Factors to consider:

Is specific type of interface required to connect to a third party device eg RS232, RS485

Is connection to a printer required. If so does it need to output in a particular format eg date and time

Is connection to a PC or another type of third party equipment required





Features

Industrial scales will either be supplied with an indicator integrated into the body of the scale or the indicator and platform will be separated.

For scales where the indicator and the platform are separated it is often possible to buy different levels of indicator based upon functionality. Some of the most common features are:

IP Codes:

You can assign codes (such as product name, batch number, etc.) for identification of measured values on printouts.

Counting:

With the Counting application, you can determine the number of parts which each have approximately equal weight.

Date & Time:

Transmits date and time to printer or computer if connected.

GMP / GLP Compliant Print Outputs:

When this function, the printout is supplemented with a GMP header and a GMP footer.

Product Data Memory:

The product data memory stores initialization data and user data (product and tare values).

Examples include saving Average Piece Weight in a counting application, value of tare vessels.



Applications

Averaging (Dynamic Weighing):

Calculate averages from several weighing operations. It is used when either the object to be weighed or the environment during weighing are unstable.

Numeric Input of Tare weight:

The usual process would be to load the tare vessel to the platform without product. Tare the scale. Remove and load with product. With the numeric input of the tare this process is simplified as the weight of the tare vessel can be inputted via the keyboard or bar code scanner.

Checkweighing:

Check whether the sample on the weighing pan matches a target value or lies within a given tolerance range. Checkweighing also makes it easy to fill sample materials to a specified target weight.

Totalizing:

Adding up weight values and calculating values. The weight values of all individual components as well as the total weight results are recorded and can be logged.

Net Total Formulation:

You can weigh in different components up to a defined total. Each component is saved in the net-total memory.

Percent Weighing:

Obtain weight readouts in percent, which are in proportion to an initial reference weight.



Hazard Area Protection

Like any piece of electrical equipment industrial scales have the capability to generate sparks during normal operation. If the scales are to be used in an environment where this could be a potential source of ignition they must be hazard area protected.

Scales are available with different levels of protection eg zone 1, zone 2, zone 21, zone 22. European Instruments cannot advise you on what zone you require, this is something that must be determined by the customer.

The customer will receive a quote / literature stating the level of protection which they must then check this meets with their requirements.

Factors for consideration would be the location of the power supply, which can be located either in the safe or hazard area depending on the version purchased.

Also the connection of third party equipment, for example printers or computers. It is not possible to directly this equipment to the scale (even if located in the safe area) without putting in the required protection.

