



CONTAINER WEIGHING OPTIONS COMPARED

Find the best solution for your business



Location	Container Weighing Solution	Pros	Cons
Container Pack Point	Weighbridge	<ul style="list-style-type: none"> • 2 minutes to weigh container • High weighing accuracy • Can be certified legal-for-trade • Weighing can be in-line with haulage operation 	<ul style="list-style-type: none"> • Expensive to install • Occupies large area • Difficult to relocate • Does not confirm container load distribution • Needs truck & trailer combination to weigh • Separates weighing from packing operation • Cannot weigh 2 x 20' containers on trailer • Same vehicle must weigh in / out for high accuracy
	Axle Weigh Pads	<ul style="list-style-type: none"> • Economic • Portable • 2 minutes to weigh container (if WIM system) 	<ul style="list-style-type: none"> • Needs large flat surface • 15 minutes to weigh container (for static weighing) • Does not confirm container load distribution • Cannot weigh 2 x 20' containers • Pads must be recessed for high accuracy • Same vehicle must weigh in / out for high accuracy • Many systems not certifiable as legal-for-trade
	Scales on Container Handling Equipment	<ul style="list-style-type: none"> • Economic (if container handler available) • 1 minute to weigh container • High weighing accuracy possible • Some systems can be certified legal-for-trade • Weighs in-line with container handling operations • Enables weighing in any location on a single site 	<ul style="list-style-type: none"> • Requires expensive container handler on site • Diverts container handler from other operations • Weighing restricted to one site • Container handling can impact scale calibration
	Portable Container Scales	<ul style="list-style-type: none"> • Economic • Can weigh in any location and on multiple sites • Enables load optimization during packing • Confirms container load distribution • High weighing accuracy • Can be certified legal-for-trade • Weigh all container sizes • No container handling or haulage equipment required • Weighs container on ground or trailer 	<ul style="list-style-type: none"> • 5 minutes to weigh grounded container • 10 minutes to weigh container on trailer • Manual operation
	Fixed Container Scales	<ul style="list-style-type: none"> • High weighing accuracy • Can be certified legal-for-trade • Can confirm container load distribution 	<ul style="list-style-type: none"> • Expensive to install • Occupies fixed space on site • Usually limited to 20' containers • Requires expensive container handler on site • Weighing restricted to one site • Shock loading can affect calibration • 5 minutes to weigh container
	On-Demand Weighing Services	<ul style="list-style-type: none"> • No need to buy or maintain scales • Economic for operators handling low container volumes • Flexibility as to weighing location • Outsources weighing task to third party 	<ul style="list-style-type: none"> • Not available in all locations • Must wait for service provider to visit site • High cost per weigh • Typically only weigh grounded containers
En-route to Port	Weighbridge	<ul style="list-style-type: none"> • Low-to-medium cost per weigh • Outsources weighing task to third parties 	<ul style="list-style-type: none"> • Not compliant with CTU Code (i.e. transporting container without a verified weight) • Doesn't allow for load optimization during packing • Does not confirm container load distribution • Cannot weigh 2 x 20' containers • Diversion and queues can delay delivery to port • May incur extra charges from transporter and forwarder • Truck tare weight must be obtained for high accuracy
Terminal	Refer to PEMA Information Paper, <i>Weighing Containers in Ports and Terminals</i> , 2013.		

Weighbridge



A weighbridge is a large platform scale, typically mounted onto a concrete foundation. It is large enough to weigh an entire road vehicle and its contents. Weight readings are transmitted to an indicator on a display near the weighbridge, or housed inside a nearby office or control room. The weighbridge may be connected to a terminal and software that prints weight dockets and provides reporting features.

For weighing containers at the pack point, a weighbridge is fast, taking around 2 minutes to weigh the container. A weighbridge has a high weighing accuracy, and can be certified legal-for-trade. The weighing task can be done by the haulier as he exits the site, in-line with the haulage operation.

However, a weighbridge is expensive to install. It tends to occupy a large area and is difficult to relocate. Limitations also include that a weighbridge needs both a truck and trailer to weigh a container, it cannot weigh 2x20' container on a trailer, and it does not confirm the container load distribution. The same vehicle must weigh in and out for high accuracy.

An alternative to installing your own weighbridge, is to have the container run over a public weighbridge en-route to the terminal. This option avoids the capital expense of buying new weighing equipment and leads to a low to medium cost per weigh.

Disadvantages of using on off-site weighbridge include non-compliance with the international CTU Code, as you are transporting a container without a verified weight. Weighing a container on a weighbridge does not allow for load optimisation and confirmation of the load distribution during packing. It is also often necessary to haul the container extra distances to and from the weighbridge. This, together with queues at the weigh station, may lead to extra charges from your haulier or forwarder and delay delivery of the container ahead of the terminal cut off time.

Axle Weigh Pads



Axle weigh pads are lightweight, portable scales designed for weighing static or in-motion (WIM) vehicles. The weight is transmitted by cable or wirelessly to a central indicator.

For container weighing, axle weigh pads are an economic option. They are quick to install and can be used at multiple sites.

If the vehicle is weighed in motion, the container weight verification process can take only 2 minutes, although WIM systems tend to be less accurate and may not be certifiable. For more accurate weight verification on certified equipment, the vehicle can be weighed while stationary, although this weighing process can take around 15 minutes.

Axle weigh pads need a large, flat surface. Other limitations of a weigh pad system include it does not confirm the load distribution, it cannot weigh 2x20' containers, and the process can delay haulage operations. In order to get high accuracy, the pads must be recessed, and the same vehicle must weigh in and out. Many axle weigh pad systems are not certifiable as legal-for-trade.

Scales on Container Handling Equipment



Weighing sensors can be integrated into the spreader or hydraulics of reach stackers, heavy forklifts, straddle carriers and other handling equipment. Weight readings are displayed in the container handler cabin and may be transmitted wirelessly to connected IT systems.

Fitting scales to container handling equipment is an economic option if a suitable container handler is available. Container handlers are otherwise an expensive machine to buy and maintain.

These systems offer high efficiency, with container weighing able to be performed in-line with existing container handling operations. Weighing accuracy varies with these systems and depends on the equipment and scale type. Some systems can be certified as legal-for-trade. The high impacts and shock loading involved in day-to-day container loading can have a negative impact on calibration and accuracy.

These scales are mobile, enabling containers to be weighed at multiple locations around a site. However the size of the container handler may mean that weighing is restricted to that site.

Fixed Container Scales



With fixed scales, the container can be placed with separate handling equipment on a heavy duty platform that is specifically designed to weigh the container. The weight is transmitted by cable to an indicator located near the platform.

Advantages of fixed container scales include their high weighing accuracy and that they may be certifiable as legal-for-trade. Fixed scales may also confirm the container load distribution.

These weighing systems occupy a fixed space, therefore they are restricted to one site. There must be a container handler available to place the containers onto the frame. Placement on the scale can lead to shock loading, which can affect calibration. Fixed container scales typically only weigh 20' containers. It takes approximately 5 minutes to weigh a container.

On Demand Weighing Service



The SOLAS VGM rules have led to the release of portable container scales that some companies are using to offer on-demand container weighing services to shippers. For shippers, these services offer an effective outsourcing solution and an economic option for those handling low container volumes. There is no need to buy or maintain your own scales and there is flexibility as to where and when containers are weighed.

On-demand services are not available in all locations and there can be delays between the time the container is packed and ready to dispatch and the time a service provider can visit to perform the weigh. Relative to other solutions, there is generally a high cost per container weighed. The service is limited to weighing grounded containers.

Portable Container Scales



Portable container scales attach to the four corners of a container, and use a hydraulic bottle jack to lift the container slightly off the ground or a chassis. The scales then transmit the weight and load distribution to a smartphone, which allows a detailed weight record and VGM certificate to be emailed or transmitted to designated IT systems.

Portable container scales are an economic option. They can weigh a container of any size, in any location, up to 35 tonne. Their portability means the scales can be used across multiple sites. The system can be deployed during and immediately after the packing operation, enabling load optimisation and checks on the container's load distribution. Portable container scales are independent of other equipment. No container handling or haulage equipment is required. They are highly accurate and as such can be certified legal-for-trade.

The entire weight verification process takes under 5 minutes for a grounded container and up to 10 minutes to weigh a container on a chassis.

BISON™ Container Scales

Fast, smart, portable and accurate, BISON Container Scales are robust industrial scales for weighing shipping containers in any location.

Capable of weighing all ISO container types, sizes and weights up to 35,000kg, with BISON Container Scales you can weigh containers simply and efficiently and communicate a reliable container weight at the earliest opportunity.

OIML certified and type approved in over 35 countries, BISON Container Scales are an ideal tool for transactional weighing and SOLAS VGM compliance.

For weighing grounded containers, use BISON C-Jacks. For weighing containers on chassis, choose BISON C-Legs. Both systems work the same way. Simply attach the scales to the container, jack the container just clear of the ground or chassis, then transmit the weight direct to the BISON App on your smart phone.

In addition to weighing the container, the BISON App also checks and records the container's load distribution, captures other useful shipment information and communicates weight records instantly.



SMART



FAST



ACCURATE



PORTABLE



COMPLIANT



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www.bison-jacks.com

To find out more about how your business can weigh shipping containers in any location, at any time, contact us.

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