

# MARSDEN

Better quality control with a counting scale

A Marsden Weighing Group White Paper



Human error is often the root cause of any problem. No doubt you'll have heard it cited as the cause of delayed trains, a mis-diagnosed patient or even aviation disasters. You may've used the term before in your business when an order is mis-sent or missing items.

Mistakes within your business in overfilling, underfilling or general wastage can cost thousands - not to mention your reputation.

How do we avoid human error? How does a business like yours get a better handle on quality control, without huge expense or a massive disruption to workflow?

### **The importance of counting scales**

When you are counting hundreds, or even thousands, of parts every day, absolute accuracy is a must - but it's here where human error can really cause a costly mistake.

Using a counting scale to count multiple items instantly removes the need for them to be checked and counted by hand.

This ensures accuracy and quality. Plus, a counting scale, when used for assembly areas, packaging or shipping departments - or even for stock-takes - will actually speed up processes, because it will count multiple identical items in a second.



## How does a counting scale work?

A counting scale eliminates the need for multiple, identical parts to be counted out and checked by hand. By determining a set weight per unit, a counting scale will work out the total weight for a batch of items, the individual weight of each item - and from that, instantly provide you with a count of the items you've placed on the scale.

Some counting scales allow you to preset the weights of different individual items, speeding up counting processes even further, as you don't need to determine unit weight by using a sample before you start counting.

With minimal training, your workforce can be using a counting scale in no time - and you can speed up processes and improve quality control in one go!

## Choosing the right counting scale

Which counting scale you choose will depend on the kind of parts you need to count, and why you need to count them.

Counting scales are generally available in different capacities. You will also find different counting scales have different internal resolutions.

**Capacity:** What is the largest batch of identical items you're likely to count in one go? Make sure the capacity at least as high as the maximum weight a batch of items are likely to be. If you're unsure, go for something like 30kg - this is Marsden's most popular counting scale capacity, and suits most applications. Choosing a counting scale with overload protection will ensure the scale isn't damaged if you go over the capacity.

**Internal resolution:** This is how small a difference the scale can detect between part weights. Remember that it's the weight of an item that the scale uses to count the total number of items. If, for example, your counting scale's internal resolution is 1/1,000,000, it can detect the differences between items to a millionth of its total capacity. The higher the internal resolution, the more you can rely on the scale to count small parts accurately!

It's important that you consider the above when purchasing a counting scale. Additionally, you need to think about usability, because how easy the scale is for staff to use can make all the difference.



## Consider the following when purchasing a counting scale:

- Does it include a hi/lo alarm with traffic light system to make getting the right quantity quicker and clearer to the user?
- Are the functions easy to use and access via the keypad (or touch screen)?
- How many features can be automated? For example, if you need a specific count per batch?

### What can affect counting accuracy?

- Minute differences between unit weights
- The accuracy of the counting scales
- The environment (For example, wind and dust)

## What if part sizes are slightly different?

Depending on what the product is, you may sometimes find that the weight of each part is very slightly different. For example, if you are counting plastic pipe components, even though all the parts look identical some may have very small amounts of flash.

This flash adds to the weight of the item, making it not identical in weight to other parts.

If you are inputting the weight of each item by weighing a sample batch, the counting scale will work out the piece weight as an average. For example:

**10** items placed on the scale

Total weight of the ten items: **500g**

Counting scale calculates individual weight as **50g**

However, if three of the items have flash, and are therefore slightly heavier, the results may look like this:

**10** items placed on the scale

Total weight of the ten items: **510g**

Counting scale calculates individual weight as **51g**

It may be that the standard piece weight is actually 50g. This is where two things come in to play: Sample size and internal resolution.



The larger the sample you initially put on the scale, the easier it for the scale to work out the weight of each item, and therefore the more accurately it will count.

The greater the internal resolution, the more accurately the scale can detect differences in weight between items. So, if you know the items you are counting are going to be the exact weight, high internal resolution is better. High internal resolution will also allow you to count smaller items.

With an example like the above, where there are slight differences in piece weight, a slightly less accurate scale is better, as it will not notice the extra weight the flash is adding to some of the plastic pipe components.

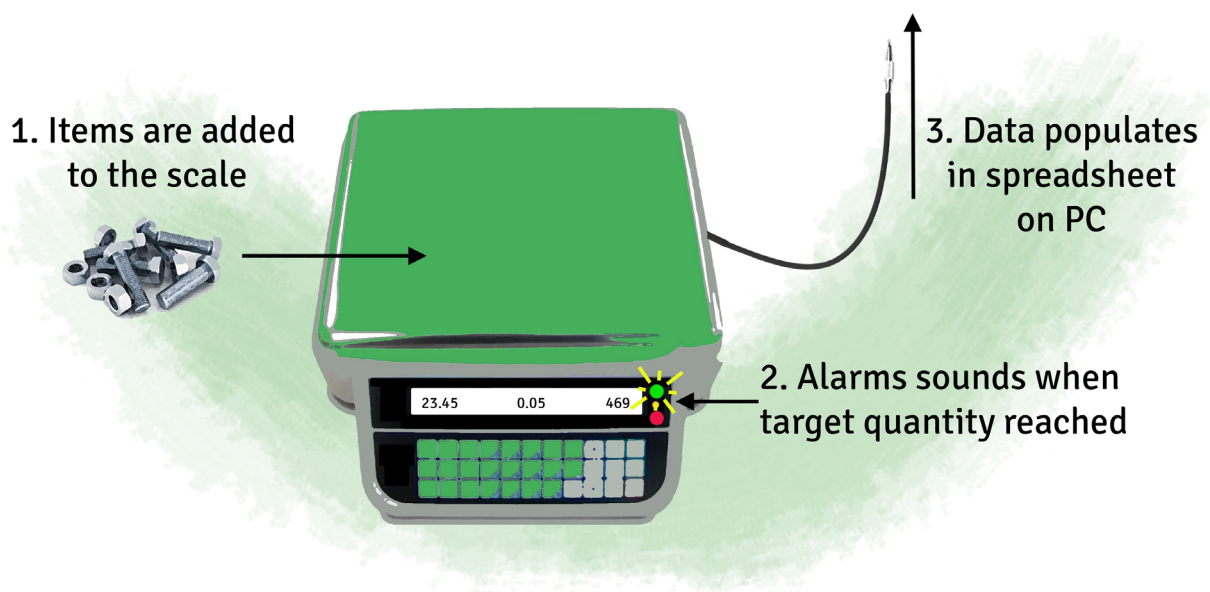
### What will you do with the data?

Will you be simply counting out items to gain a quantity required? Or will the data need to be recorded in some way?

Some counting scales will have the ability to transfer the count data to a PC, automatically populating a spreadsheet each time a batch is added to the scale. This is an essential function that'll allow you to do periodic inspections, allowing you to check the counting history of the scale and that part of your manufacturing, packing or despatching process. It also provides you with a permanent record of what exactly has passed through this part of the production or despatch process.

Once the data has been transferred to a spreadsheet, you can print reports, receipts or save the data to a central database.

### A typical counting scale set-up



## Summary

Using a counting scale to control quality and avoid costly errors is easy. It's a simple process to implement, and will speed up processes within your business.

Plus, counting scales are relatively inexpensive - compare the cost of a counting scale to the value of your business' reputation, or how much human error could cost you.

To find out more about how counting scales can improve quality control, speak to the Marsden team today.

## Recommended Marsden Counting Scales

### C-100

- Highly accurate and easy to use
- Highly responsive
- Internal resolution 1/1,000,000
- Total weight
- Individual parts weight and parts count
- 99 PLUs
- Alarm
- Rechargeable battery



### JCE

- High accuracy, 1/30,000
- Weighing and counting
- Internal resolution 1/600,000
- Durable and water resistant keypad
- Rechargeable battery
- Bright LCD display with back light
- Optional RS232 for data transfer



### DC-300

- Built in thermal printer
- High accuracy with 1/1,000,000 internal counting resolution
- 3 scale connection
- 5,000 item memory
- RS232 printer, scanner & balance connection







Accuracy Assured

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