

Tips for Getting the Most Out of Your Counting Scale

Using a counting scale for piece counting can give you accurate results in less time than counting by hand or other methods. However, there are a few common errors to avoid when using counting scales which can improve the speed and accuracy of your results.

For those who might not be as familiar with them, counting scales use an average piece weight (APW) to determine the number of parts on the scale. The operator takes a small sample of the items to be weighed and inputs the count into the scale. The scale then calculates the APW, so when an unknown quantity is placed on the scale, it determines exactly how many are there.

The benefits of a counting scale include:

- Speed
- Easy to use
- Short set up time
- More accurate results in less time than other methods

Counting scales are used across the industrial spectrum for:

- Receiving: Making sure you receive the number of parts you ordered
- Production packaging and shipping: Ensuring that only the correct number of parts – not too many or too few – go into your box. This can avoid customer complaints and/or costly product giveaway.
- Warehouse: Making inventory quick and easy, especially for smaller parts

They're also used for counting coins, paper, vials, tablets or anything with a low weight that is sold in high volumes. If you're not using counting scales and would like more information, [contact J.A. King to receive a quote.](#)

With over 75 years in the industrial measurement industry, J.A. King is very experienced with how to get the most out of your counting scale.

Human error

The most common source of error in piece counting is human error. The operator must remember to zero the scale between measurements and tare off any containers. The data about the sample needs to be accurate (i.e. there are definitely 10 pieces in the sample, not 9 or 11) and the count must be entered into the scale

correctly. You'd be surprised how many results are thrown out just because someone didn't count correctly!

Piece weight deviation

The bigger the weight variance from piece to piece, the bigger the inaccuracy in the count. This is the reason that you can't count a mixture of different parts. However, the reality is that piece weight variation does exist in most processes and your application needs to be able to cope.

First, make sure you are selecting the right number of parts to sample. The closer to the full amount being weighed, the better. However, you need to balance counting accuracy with the time it takes the operator to manually count the sample. The largest sample that can be easily and accurately counted by hand is ideal.

You also may need to take new samples more frequently than you think. Consider a new sample when counting products from different machines or different batches. And always take a new sample with each new SKU.

Finally, container weight deviation can also throw off your count: if you are working with small parts, the difference from one container to another can add up to five or even ten pieces. To reduce the risk, tare your container frequently.

Environmental factors

Counting scales are designed to be able to resolve between extremely small parts. This means not only are they extremely precise, but they're extremely sensitive to disturbances in their environment. Common environmental factors that can affect the count include:

- Drafts
- Changes in temperature
- Vibration
- Unstable power supply
- Electrostatic charging
- Not a level horizontal surface

Scale precision

As mentioned above, counting scales are extremely precise in order to differentiate between small, individual parts. Generally, however, to get this precision, there are

trade-offs in the scale's maximum capacity. So big scales can't weigh small parts accurately and small scales can't handle a total weight over their maximum capacity.

To solve this problem, consider using a small reference scale for weighing the sample, in order to get the best possible APW. Next, use a connected but remote base to weigh your full, unknown amount in order to get an accurate count of the heavier quantity.