



# MARSDEN

Reducing Production Waste with a Counting Scale

A Marsden Weighing Group White Paper

[www.marsden-weighing.co.uk](http://www.marsden-weighing.co.uk)

## In this white paper:

- Why does waste need to be reduced
- How lean production can reduce waste?
- Where can weighing save waste?
- What are the benefits of semi-automated counting?
- How can calibration eliminate risk?

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With over 288 million tonnes of solid production waste generated by companies in the UK<sup>1</sup> – action needs to be taken to reduce production waste.

The pressure is on companies to reduce waste in light of rising disposal costs, regulatory pressure and changing consumer preferences.

Lean production can ensure waste is minimised whilst also contributing to improved quality, more punctual deliveries and reduced stock inventories.

But can you make your production processes leaner – and how can counting scales, and weighing scales, help? This white paper explains.

### Tackling waste through lean production

A business' competitiveness is defined by its revenues and costs. Subsequently, if an organisation is manufacturing hundreds of parts, the cost of production will have greater bearing on the firm's position in the marketplace<sup>2</sup>.

It means that keeping excess production cost to a minimum is vital, but this can be easier said than done - as sometimes waste in production is hard to spot.

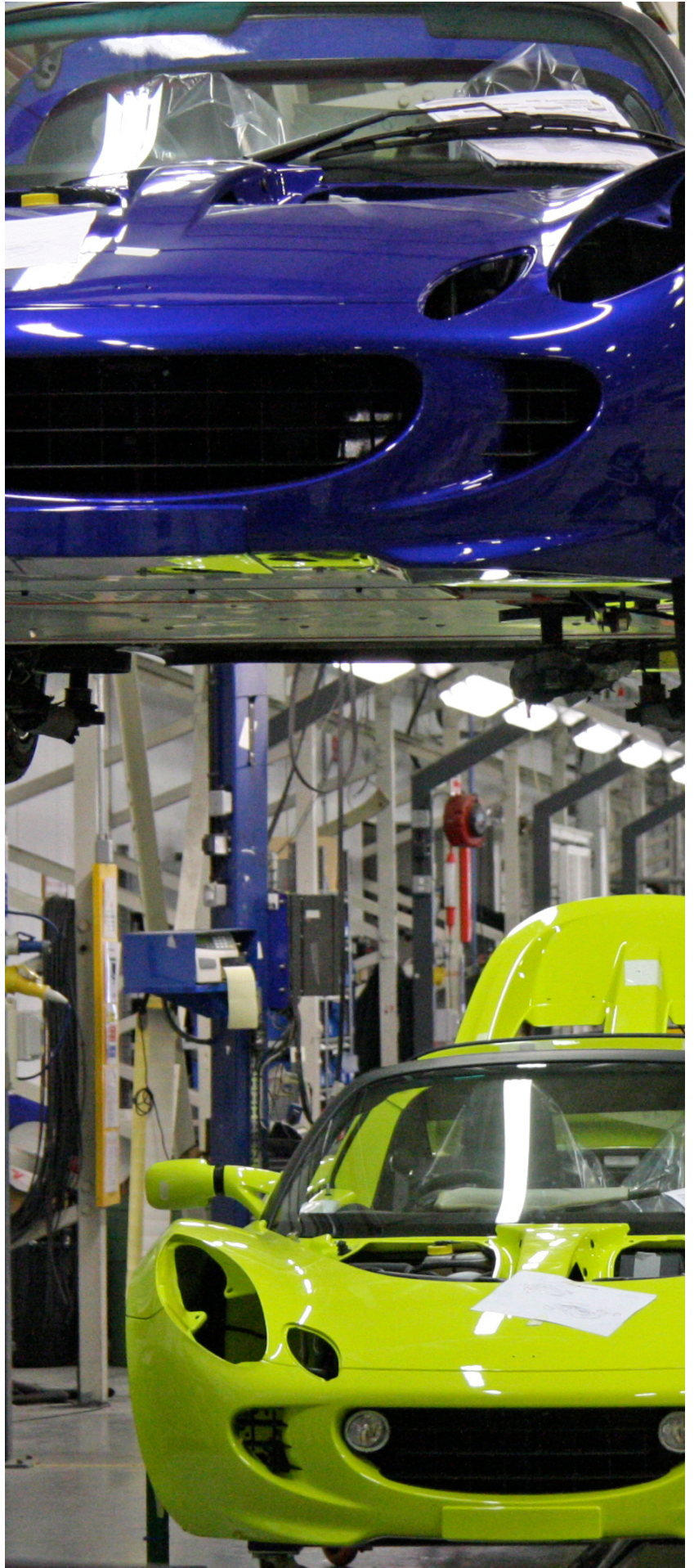
In some organisations it can be difficult to determine between what is waste and what is not<sup>3</sup>. Some processes may seem wasteful – but can provide real value elsewhere in the organisation, or prevent other forms of waste appearing later. Conversely, other activities may seem useful, but actually do not really add value.

Waters (2010)<sup>3</sup> identified seven type of waste in manufacturing:

1. Over-production
2. Unnecessary transport
3. Inventory
4. Motion
5. Defects
6. Over-processing
7. Waiting

With weighing, common root causes of waste can be eliminated.

# What is lean production?



Lean manufacturing is defined as<sup>4</sup> 'the never ending effort to eliminate or reduce waste in design, manufacturing, distribution and customer services.'

The architect of lean production is Toyota executive Taiichi Ohno. Though the story of lean production begins with Henry Ford - the first to integrate an entire production process.

Ford's assembly line sequence reduced the time that it took to build an automobile significantly - as parts were passed down a line in a sensible production order. However Ford's vision became unstuck as it was unable to create a variety of products, and revenue was lost to firms more capable of meeting individual demands of customers.

Toyota's system took the good of the Ford system and improved upon the bad. Toyota concluded that using a right size of machine for the volume required, self-monitoring to ensure quality, pioneering quick set ups, and using machinery in a process sequence would be the best way to achieve the aims of low cost, high variety, high quality, rapid throughput times and an ability to meet changing customer desires.

Counting scales and weighing scales not only fulfil weighing tasks as part of the process, but can go further to promote improvement throughout. This is because production inconsistencies can be identified and waste - and therefore costs - can be reduced.

## Takeaways

- 288 million tonnes of industry weight in the UK alone per year.
- Pressure to reduce waste due to rising disposal costs, regulation and changing consumer habits.
- 7 different types of waste occur in manufacturing.
- Lean production is the effort to reduce waste throughout business processes.

Where can  
weighing  
save waste?



## Removing unnecessary inventory

Weighing data can tell you the date, time, quality and quantity of goods which enter your premises. By counting stock items through the process, from entering the warehouse through production, you have a clear idea of inventory levels. Using counting scales you can ensure the smallest quantities of goods are recorded accurately.

## Checking for defects

To avoid costly recalls of your products it is worth using your counting scale to a preset weight or count target. This preset target can be entered into many Marsden scales. By doing this you can quickly identify products which are out-of-spec.

## Keeping overproduction to a minimum

Weighing production output at the end of the production line will help you find the right time to stop producing. Using the scale's hi/lo alarm can also assist. This allows the user to set prescribed ranges, and if the weight is great or less than what has been identified in setup, the user will be notified by alarm.

Not only can doing this save money, but allows you to verify stock quantity.

## Make product improvements

Using accurate weighing and counting equipment means that quality can improve and defects are minimised – on the flip side using the wrong equipment can result in monetary loss.

## Takeaways

Weighing parts as part of the weighing process can save on waste by:

- Reducing inventory waste
- Reducing defects
- Reducing the risk of overproduction
- Improving products

# Semi-automated processes





By using counting scales through your processes, quality can improve and costs can be saved. Here's why.

### Reduced operator involvement

By using a counting scale, manpower can be saved – allowing costs to be reduced or migrating your workforce to tasks elsewhere in your business. The hi/lo alarm will sound when a prescribed range is exceeded, therefore the operator can be situated away from the scale, completing other tasks, until the alarm rings.

### Improved control

Scales can be incorporated into production lines. A flow of materials can be sent to a scale at the end of the line, or to a manned scale part-way along the line. Use a scale that features a hi/lo alarm, or a scale suitable for automatic filling processes and save time and reduce human input ensure quality level is consistent. Semi automated processes like this help reduce costs.

### Streamlined packing

At the end of the process shipping boxes can be positioned on a platform scale – the scale can then be set up so that the operator is notified when each box is full, i.e. it reaches a maximum predefined weight limit.

### Takeaways

Improve processes via semi-automated counting by:

- Reducing operator involvement
- Taking more control
- Streamlining the packing process

# Eliminating counting risk



A scale's accuracy can vary over time – so it is important to receive a calibration service annually to ensure that the accuracy of the scale does not diminish.

A scale may lose its accuracy because of over-use or external factors like mis-use, exceeding the scale's capacity or if the scale is dropped or suffers an impact.

Calibration ensures quality consistency. Whether you check bulk goods or small quantities, a calibration service is crucial in order to keep scales performing to their best.

### Calibration in the automotive industry

Compared to other industries, the automotive industry has more stringent regulation on calibration. ISO16949 demands measuring equipment should be calibrated at specific intervals in time.

### Calibration in other industries

How critical weighing is in your overall production process will influence how regularly the scale will need to be calibrated.

Many manufacturers will conclude that money loss or reputational damage can be caused if piece counts are inaccurate. At Marsden we recommend an annual calibration.

Marsden provide service contracts to the medical, veterinary and industrial sectors. Find out more by emailing [service@marsdengroup.co.uk](mailto:service@marsdengroup.co.uk).

### Takeaways

- Accuracy can be improved through a calibration service
- Ensures consistency when weighing
- Inaccurate weighing can result in lost earnings or a damaged reputation
- Recommended annual service – time varies depending on industry

## Recommended Counting Scales

C-100



Capacity: 30kg  
Graduation: 1g

MSS-JIK (with data transfer capabilities)



Capacity: 3kg to 60kg  
Graduation: 0.1g to 10g

JCO



Capacity: 6kg to 30kg  
Graduation: 0.5g to 2g

MSS-JWI



Capacity: 3kg to 60kg  
Graduation: 0.2g to 20g

JCE (with data transfer capabilities)



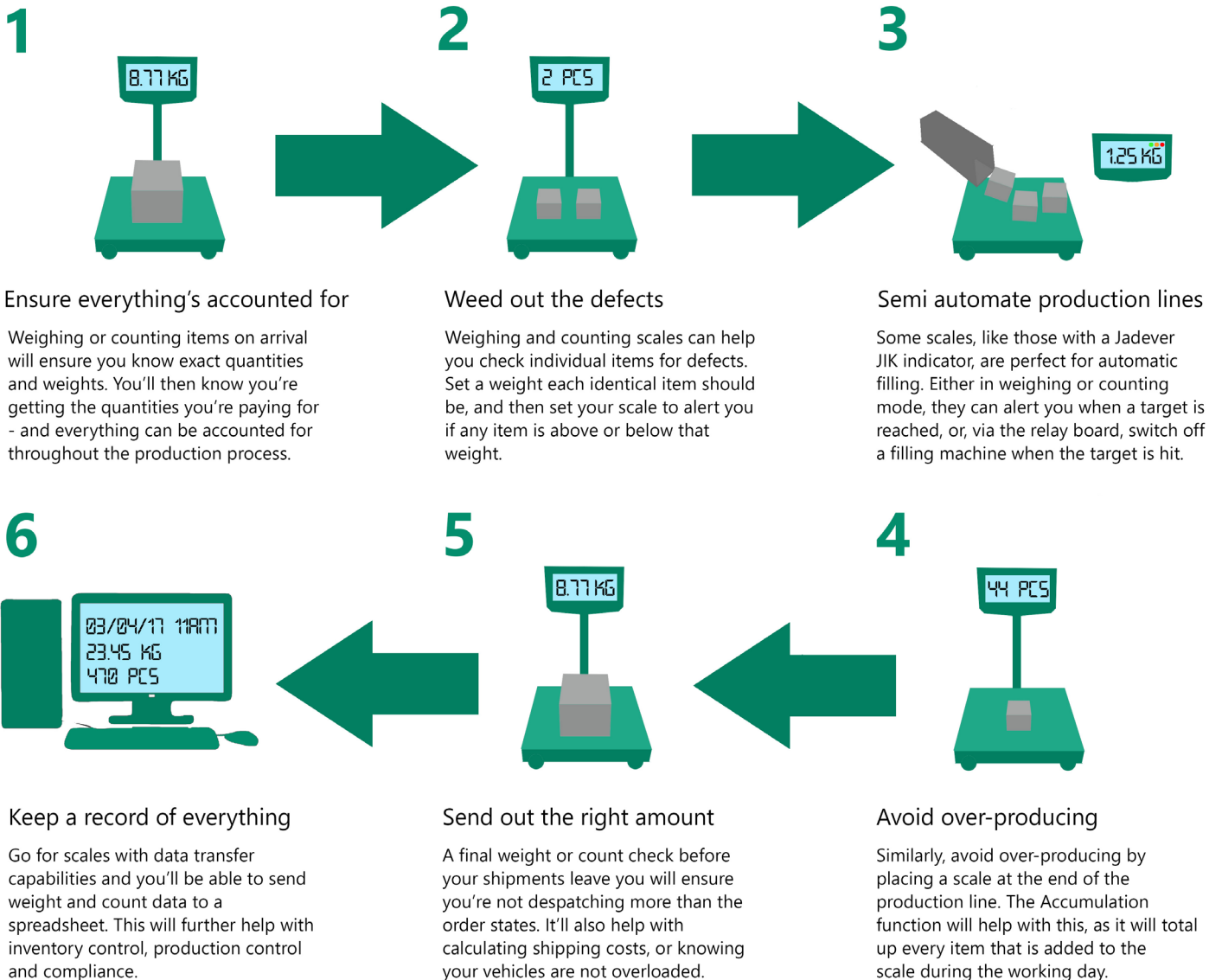
Capacity: 3kg to 30kg  
Graduation: 0.1g to 1g

JWL



Capacity: 3kg to 30kg  
Graduation: 0.1g to 1g

# Cut wasted time and money in six steps



## Links

- 1 <http://webarchive.nationalarchives.gov.uk/20130123162956/http://www.defra.gov.uk/statistics/files/20110617-waste-data-overview.pdf>
- 2 <https://hbr.org/1988/09/measure-costs-right-make-the-right-decisions>
- 3 <http://www.allaboutagile.com/lean-principles-1-eliminate-waste/>
- 4 <http://www.businessdictionary.com/definition/lean-manufacturing.html>



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