

One off Production

One off production is the manufacturing system that produces a single product.

One off productions is costly for many reasons.

For example this one off clock and chair pictured below, have:

- *been specially made for a customer*
- *used a specialist craftsman who has added the fine detailing*
- *been made to measure to the customers' needs*
- *wood types and colours chosen specially*
- *been made using expensive materials*
- *taken a long time to manufacture*
- *have potentially created a lot of waste material*
- *used basic and often traditional and specialist tools*
- *been handmade with no automated manufacture*



Types of one off products:

- *a large structure or building*
- *an item made for a special order*
- *bespoke, one of a kind product e.g. jewellery*
- *only one unique item required e.g. space rocket*
- *handmade items*
- *a prototype*

Advantages	Disadvantages
<ul style="list-style-type: none"> ○ <i>High quality finish</i> ○ <i>New designs can be experimented with</i> ○ <i>One of a kind, no other product like it</i> ○ <i>Can be made to exact customer requirements</i> 	<ul style="list-style-type: none"> ○ <i>Slow manufacturing process</i> ○ <i>Expensive end price</i> ○ <i>Special materials often requiring special manufacturing techniques</i> ○ <i>Small specialist companies and skills</i>

Batch Production

Batch production is a manufacturing system that produces a specific or small amount of identical products.

Batch production is a manufacturing method that produces a set amount of products e.g. tens, hundred, etc

- *flexible machinery and labour that can easily be adapted to different products*
- *the time between the manufacture of batches is called down-time*
- *jigs and mould used to aid faster and accurate production of identical products*
- *jigs and CNC machining can be used for repeated tasks*
- *increase and decrease manufacture to suit demand*
- *batches can be repeated*
- *'limited edition' products*
- *batch production can be changed easily to reflect technological advances*

Types of batch made products:

- *Fashion items*
- *Small run furniture pieces*
- *Limited Edition sets*
- *Jewellery items*

A Jig is a guide used to accurately aid a repeated process.

Advantages	Disadvantages
<ul style="list-style-type: none"> ○ Batches can be repeated ○ Money saved by bulk-buying materials ○ Good finish quality due to the processes being repeated ○ Pre-made bought in parts reduce manufacturing time 	<ul style="list-style-type: none"> ○ Flexible and skilled workers required for different batches ○ Setting up of jigs is time consuming ○ Job planning and timing are essential ○ Costly manufacturing Down Time

Mass production

Mass production is a continuous high volume manufacturing system that produces a constant amount of identical products.

Mass production is based on the economic principal of fast automated constant production, using bulk bought cheaper materials resulting in more profit.

- production / assembly lines build each product step by step
- less human error due to automation
- fast production for high demand products
- relies on robots for Computer Aided Manufacture CAM and CNC
- constant manufacture 24/7
- bulk buy materials
- large factories
- standard and bought in materials used
- manufacturing in cheaper labour countries



Types of mass produced products:

- *Automotive and transportation*
- *Household products and containers*
- *Clothing and footwear*
- *Tools, office items, furniture*
- *Leisure equipment*

<i>Advantages</i>	<i>Disadvantages</i>
<ul style="list-style-type: none"> ○ <i>Fast manufacturing process</i> ○ <i>Money saved by bulk-buying materials</i> ○ <i>Skilled workforce not required</i> ○ <i>Cheaper production cost compared to batch and one-off production</i> 	<ul style="list-style-type: none"> ○ <i>Automated manufacture reduces workforce</i> ○ <i>Products cannot be changed easily</i> ○ <i>Expensive CAM setup</i> ○ <i>Costly storage of materials</i>