

# THE 8 WASTES



## OVER-PRODUCTION

Over-production or over-purchasing is the most serious waste. Creating more parts than necessary creates **excess inventory**, creates more parts to fix if there is a **defect**, creates long lead times (**waiting**), ties up machinery and frustrates people with **unstable flow**.



## TRANSPORTATION

**Transportation eats time for breakfast and money for lunch.** Avoid using vendors that are geographically far away. If needed, batch orders to reduce transportation costs.



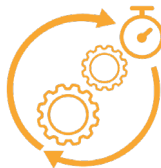
## EXCESS INVENTORY

Excess inventory is a result of over-production or over-purchasing. Making or buying more parts than necessary creates a need for more storage space, needs packaging and ties up valuable cash in product waiting to be sold.



## DEFECTS

Every defective item requires rework or replacement, wastes resources and materials, disrupts flow and can lead to lost customers. **Defects are the easiest wastes to avoid.**



## OVER-PROCESSING

Over-processing is simply adding more time to a part or process, i.e. polishing a part no one sees, deburring a part that should have been chamfered in the machine, cleaning parts that get cleaned in a later step.



## WASTED MOTION

Wasted motion happens when things are too far apart. No one should struggle at work. Create **U-shaped cells** and **bring your work and tools close at waist level**.



## WAITING

Waiting disrupts flow and is the **second most serious waste**. Waiting means the process is broken. Fill time between machine cycles or assembly with inspection and improvements.



## MISUSED BRAINPOWER

**You are a process engineer!** Don't rely on others to see waste or to create improvements. **Create flow!** Don't use brainpower for mindless tasks that could easily be automated or put into a repeatable process. Misused brainpower is the waste in which all other wastes come from.