

# Single Minute Exchange of Die (SMED)

***”We want to reduce batch sizes, if only we were able to reduce our setup time”***

Reducing batch sizes usually entails a higher frequency of setups. Reducing the setup time (including cleaning) is an important precondition for increasing the flexibility and the capacity of a production line.

## From hours to minutes

SMED (Single Minute Exchange of Die) is a method used to analyse and reduce setup times. The inventor of the SMED method is the Japanese engineer Shigeo Shingo. He showed that setups that took hours could be reduced to minutes.

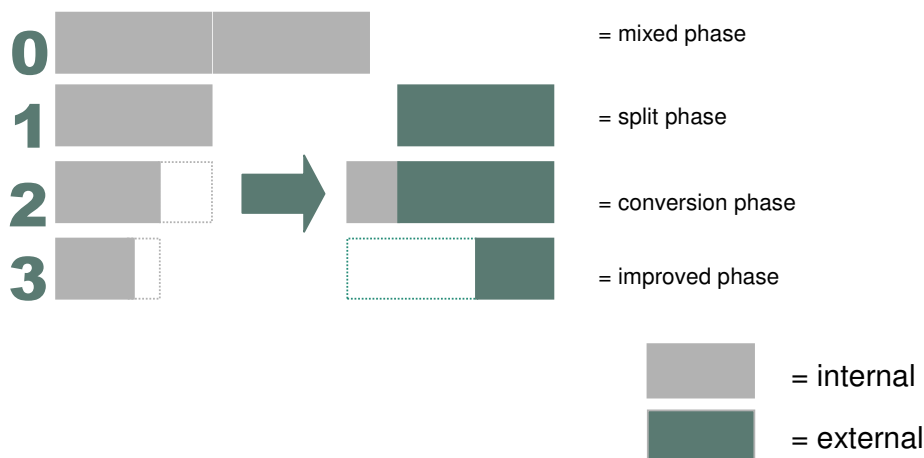
## Team-based improvement

The power of the method lies in its simplicity, the team-based approach and the focus on the details. The best results will be achieved when the operators themselves analyse the setup on their machine using the SMED method.

The SMED method consists of 3 steps:

1. Separate internal and external activities (internal: activities while machine is stopped, external: activities while machine is running)
2. Convert internal activities into external activities
3. Eliminate and/or reduce all activities (Internal and external)

Schematically:



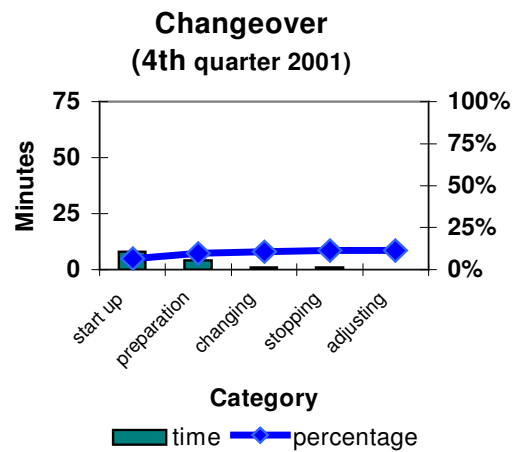
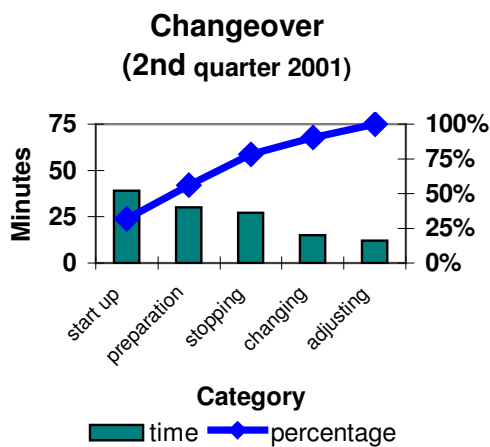
## Results with SMED

Applying the SMED method leads to the following results:

- Reduction of setup time from hours to minutes is possible
- Stronger teams
- Greater involvement
- Focus on the machine/line
- Structural analysis and solving of problems
- Fewer machine failures and mistakes

The SMED method can also be used to reduce cleaning time.

Example of a situation for a packing machine before and after using SMED:



## More information?

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