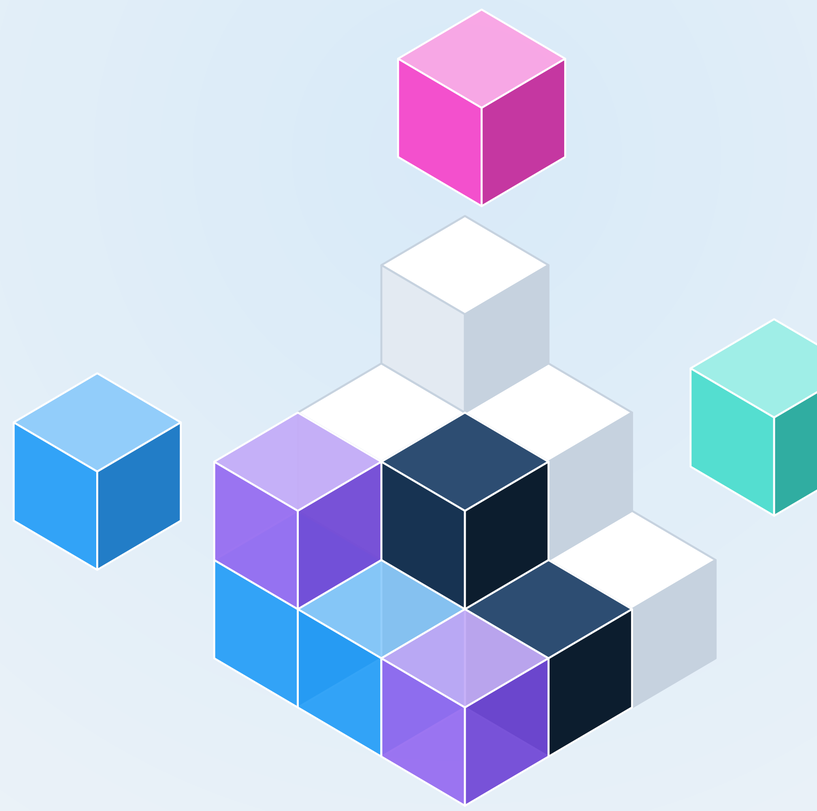
PRODUCTION & MANUFACTURING

SMED: Reduce Changeover Time

SMED (single-minute exchange of die) cuts changeover time by moving setup work outside machine downtime and simplifying what must still be done while the machine stands.



01 THE CORE MODEL

CHANGEOVER TIMELINE · BEFORE AND AFTER

Before
Everything done while stopped

Search tools | Remove die | Fetch new die | Mount and align | Trial and adjust

100 min
machine stopped

After
Prep done while running

Prepare (running) | Swap | Set | OK

20 min
machine stopped

Internal setup
Work that can only be done while the machine is stopped.

External setup
Work done while the machine is still running the previous job.

Changeover time
From the last good part of one job to the first good part of the next.

02 WHY IT MATTERS

Short changeovers make small batches and leveled production affordable.

LONG SETUPS — QUICK SETUPS

LONG CHANGEOVERS

- − Large batches to spread setup cost
- − High inventory and long lead times
- − Little flexibility for urgent orders

QUICK CHANGEOVERS

- + Smaller batches, more frequent runs
- + Lower inventory, shorter lead time
- + More capacity on bottleneck machines

03 WORKED EXAMPLE

PRESS LINE · ILLUSTRATIVE FIGURES

BEFORE
100 min
all work internal

→

SEPARATE
Prep moved outside
tools and die staged early

→

CONVERT
Quick clamps
no bolts to turn

→

AFTER
20 min
internal time only

04 MANAGEMENT TAKEAWAYS

01
Film the changeover
Video makes every step visible and easy to classify as internal or external.

02
Move work outside first
Separating external tasks often brings a large early gain at little cost.

03
Standardize the new method
Checklists and setup carts keep the gain across shifts.

05 COMMON MISTAKE

LIMITATION
Buying hardware first
Quick-change tooling before separating internal and external work automates waste. Organize first, invest second.