Injection Molding Cycle Time

How-to guide: what the workbook does, how to use it and what every number means. mfgcalcs.com

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Build every mould's cycle from its phase times, check it against the cycle you quoted, and see the parts per hour, the press cost per part and where screw recovery sets the cycle.

For: Moulding process engineers, production and plant managers, and estimators checking moulds against their quoted cycles.

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Quick start

1. On Setup, type your plant, currency and near band, and list your presses with their hourly rate.
2. On Moulds, give each mould a row: press, cavities, fill, pack and hold, cooling timer, screw recovery, open-eject-close and the quoted cycle.
3. Fix anything the Check column names.
4. Open the Dashboard: each cycle by phase, cycle against quote, and the moulds the screw holds up.

What is in the workbook

Start Here	Read this first: what the workbook does and how to use it.
Setup	Plant, currency, the near band, and the presses with their hourly rate.
Moulds	One row per mould: phase times, cavities and quoted cycle in; cycle, parts per hour, headroom and cost per part out.
Dashboard	Every mould's cycle by phase against the cycle it was quoted at, and the moulds the screw holds up.
Method	How every number is calculated, with assumptions, limits and sources.
Verify	Self-check: the workbook's formulas recomputed on fixed inputs against an independent reference.

What each number means

Quantity	How it is calculated	Units
Cooling phase	The longer of cooling timer and screw recovery.	s
Cycle	Fill + pack and hold + cooling phase + open, eject, close.	s
Shots and parts per hour	3,600 / cycle; x cavities.	per hour
Headroom	Quoted cycle - cycle.	s
Recovery wait	Screw recovery - cooling timer, if positive.	s
Cooling in cycle	Pack and hold + cooling phase.	s

Quantity	How it is calculated	Units
Press cost per part	Press rate x cycle / 3,600 / cavities; the same at the quoted cycle.	currency
Status	On target at or under the quoted cycle; Near target up to the near band over it; Above target beyond.	-

Assumptions, limitations, sources and the self-check (the Verify sheet, which recomputes the workbook's formulas on fixed test inputs) are in the workbook. The last page shows the Dashboard with the example data for Calloway Plastics, a fictional business.

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Engineering estimates for planning and improvement work. Verify the results against your own process, data and standards before you rely on them.

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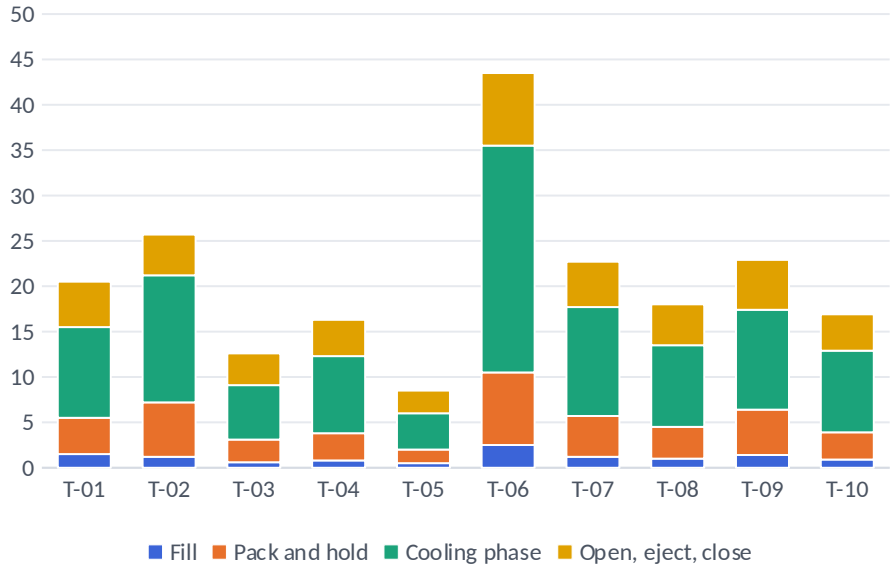
Every mould's cycle by phase against the cycle it was quoted at, and the moulds the screw holds up.

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Calloway Plastics (example): 10 moulds on 3 press sizes. Times in seconds, amounts in USD.

MOULDS	SLOWER THAN QUOTED	SCREW RECOVERY SETS THE CYCLE	WORST HEADROOM (S)
10	**3**	**2**	**-2.3**
Rows on Moulds	Near or above target	Recovery longer than cooling	Quoted - actual cycle

Cycle by phase (s)



Cycle against quoted cycle (s)

