Injection Molding Machine Hour Rate

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

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Work out what one billable hour of every injection press costs before labour, and see which presses are quoted below cost and how many hours each quoted rate needs.

For: Estimators, plant controllers, molding managers and owners of custom and captive injection molding shops who set or review press rates.

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Quick start

1. On Setup, type your currency and your all-in electricity price per kWh.
2. On Presses, give each press a row: its annual fixed costs, the hours a year you bill on it, its average power while molding and the machine rate you quote.
3. Fix anything the Check column names.
4. Open the Dashboard: each press's machine hour rate against its quoted rate, the annual over or under recovery and the presses quoted below cost.

What is in the workbook

Start Here	Read this first: what the workbook does and how to use it.
Setup	Plant name, currency and the electricity price every press's energy cost uses.
Presses	One row per press: annual fixed costs, billable hours and power in; machine hour rate and recovery against your quoted rate out.
Dashboard	Each press's machine hour rate against the rate it is quoted at, the annual over or under recovery, and the fleet.
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
Annual fixed cost	Depreciation + finance and interest + floor space + maintenance + insurance and other.	currency/yr
Fixed cost per hour	Annual fixed cost / billable hours.	currency/h
Energy cost per hour	Average power while molding (kW) x electricity price (Setup).	currency/h
Machine hour rate	Fixed cost per hour + energy cost per hour.	currency/h

Quantity	How it is calculated	Units
Quote margin	Quoted machine rate - machine hour rate.	currency/h
Annual recovery	Quote margin x billable hours: over (+) or under (-) recovery, an estimate.	currency/yr
Break-even hours	Annual fixed cost / (quoted machine rate - energy cost per hour); blank when the quote does not cover the energy.	h/yr
Rate status	On target when the quoted rate covers the machine hour rate; Near target within 5% below it; Below target otherwise.	-
Fleet machine hour rate	(Sum of annual fixed costs + sum of kW x billable hours x price) / sum of billable hours.	currency/h
Net and gross under-recovery	Sum of every press's annual recovery; under-recovery = minus the sum of the negative ones.	currency/yr
Energy share of press cost	Energy cost of all presses / their total cost (fixed + energy).	%

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 Larkspur 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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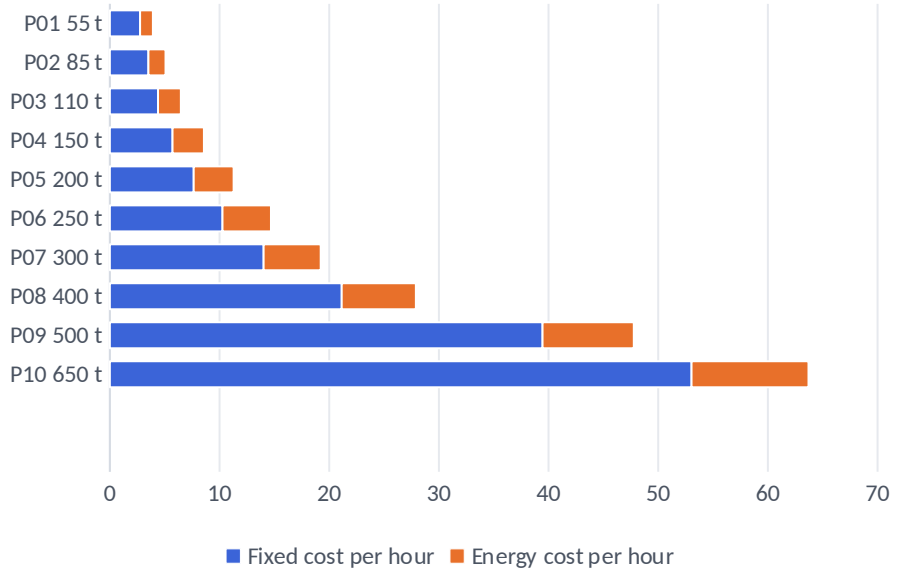
Each press's machine hour rate against the rate it is quoted at, the annual over or under recovery, and the fleet.

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Larkspur Plastics (example): 10 presses, 46,200 billable press hours a year, electricity 0.130 USD/kWh. Energy is 25% of press cost.

FLEET MACHINE HOUR RATE (USD/H)	NET RECOVERY PER YEAR (USD, EST.)	UNDER-RECOVERY PER YEAR (USD, EST.)	PRESSES QUOTED BELOW COST
15.32	**15,838**	**33,960**	**2**
Weighted by billable hours	All presses, quoted rate - cost	Presses quoted below their cost	Rate status Below target

Machine hour rate by press: fixed and energy cost



Annual over (+) or under (-) recovery by press

