

Casting Cost Estimator

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

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Casting Cost Estimator

Estimate a casting's cost from poured metal, melt loss, energy, cores, moulding and finishing, and price five order quantities.

For: Foundry estimators, sales engineers and managers, and buyers checking a casting quote.

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Quick start

1. On Setup, type your company name, currency, costing defaults, energy price, alloy data and work-centre rates.
2. On Casting Estimate, choose the alloy, enter the casting weight and casting yield, the castings per mould and the cores.
3. List the process steps with minutes per mould or per casting, and enter the pattern cost and expected castings.
4. Type five order quantities and read cost, price per casting, margin and liquid metal to melt.
5. On the Dashboard, pick a quantity to see the tiles, the two charts and where the cost goes.

What is in the workbook

Start Here	Read this first: what the workbook does and how to use it.
Setup	Your company, currency, costing defaults, alloy data and work-centre rates.
Casting Estimate	The casting, metal and yield, cores, process steps, pattern, and cost and price for five order quantities.
Dashboard	Price, cost and margin per casting at the order quantity you pick, and where the cost of a casting goes.
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
Poured weight and returns	Casting kg (lb x 0.45359237) / casting yield; returns = poured - casting.	kg
Cost of liquid metal	Charge price per kg (per lb / 0.45359237) / (1 - melt loss) + melting kWh per kg x electricity price.	currency/kg
Metal cost per casting poured	Poured kg x liquid metal cost - returns kg x charge price x return credit.	currency

Quantity	How it is calculated	Units
Cores	Cores per casting x cost per core.	currency
Process steps	Minutes per casting = minutes / castings per mould for steps timed per mould. Run cost = minutes / 60 x rate; setup cost = setup hours x rate.	min, currency
Pattern per casting	(Purchase + engineering - residual value) x share charged / expected accepted castings.	currency
Castings to pour	CEILING(order quantity / first-pass yield).	castings
Cost lines	Metal, cores and processing x castings to pour / quantity; setup / quantity; pattern per casting; overhead = (processing + setup) x overhead %.	currency/casting
Price per casting	CEILING(total cost / (1 - target margin), price step). Margin achieved = (price - cost) / price.	currency/casting
Metal to melt	Castings to pour x poured kg / (1 - melt loss).	kg

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 Blackwood Foundry, 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.

Casting Cost Estimator

Price, cost and margin per casting at the order quantity you pick, and where the cost of a casting goes.

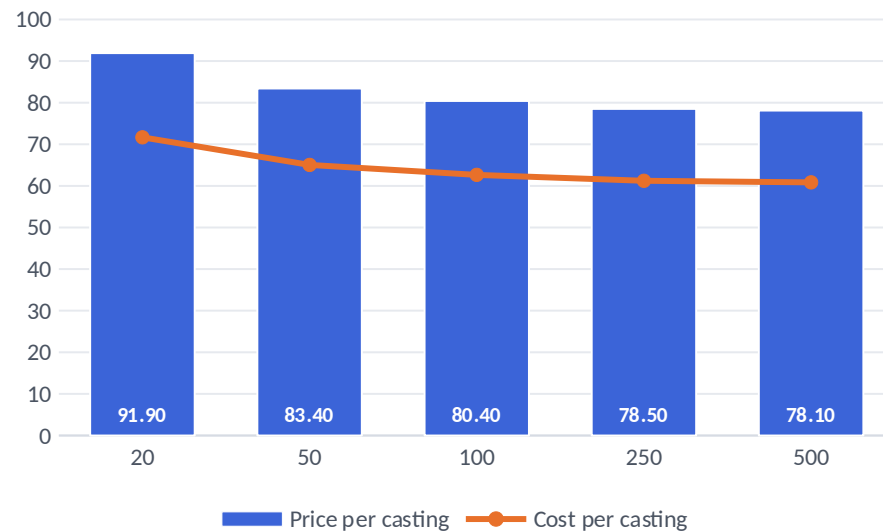
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Order quantity shown 100

Showing 100 castings of HDS-GH-310 in Ductile iron, 18.5 kg each. Pick another quantity in the yellow cell.

PRICE PER CASTING (USD)	COST PER CASTING (USD)	MARGIN ACHIEVED	POURED WEIGHT PER CASTING (KG)
80.40	62.65	22.1%	29.8
That is 4.35 USD per kg of casting	All lines, before margin	Target 22.0%	Casting yield 62%, 3,326 kg to melt
		On target	

Price and cost per casting by quantity



Where the cost per casting goes

