

Sheet Metal Part Cost Estimator

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

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Sheet Metal Part Cost Estimator

Estimate a sheet metal part from its flat blank: parts per sheet, material, laser time, bends, hardware and finishing, priced for five quantities.

For: Estimators, sales engineers and owners of sheet metal and fabrication shops, and buyers checking a fabricated-part quote.

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Quick start

1. On Setup, type your company name, currency, costing defaults, machine rates and sheet material prices.
2. On Estimate, choose the material and thickness, enter the flat-blank and sheet sizes, part spacing and edge margin.
3. Enter the cut length, pierces and cutting speed, then the bends and secondary operations, hardware and outside finishing.
4. Type five quantities and read whole sheets to buy, cost per part, unit price and margin for each.
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, machine rates and sheet material prices.
Estimate	The part, nest, laser time, forming and secondary operations, hardware, finishing and five quantities.
Dashboard	Unit price, cost and margin at the quantity you pick, the nest, and where the cost of a sheet metal part 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
Parts per sheet	Usable = sheet - 2 x edge margin; along each side INT((usable + spacing) / (blank + spacing)); as drawn and rotated 90 degrees; the larger count.	parts
Sheet yield	Parts per sheet x blank length x width / sheet length x width.	%

Quantity	How it is calculated	Units
Sheet mass and cost	Length x width x thickness (mm ³ x 0.001 or in ³ x 16.387064 = cm ³) x density / 1000; x price per kg (a price per lb / 0.45359237).	kg, currency
Cutting time	Cut length / speed + pierces x seconds per pierce / 60 + sheet load and unload / parts per sheet.	min/part
Operation cycle	(Count per part x seconds per count + handling) / 60; run cost = cycle / 60 x rate; setup cost = setup hours x rate.	min, currency
Parts and sheets	Parts to start = CEILING(quantity / first-pass yield); sheets = CEILING(parts to start / parts per sheet).	parts, sheets
Cost lines	Material = sheets x sheet cost x (1 + markup) / quantity. Cutting, forming and hardware x parts to start / quantity. Setup / quantity.	currency/part
Outside finishing	Per process the larger of lot charge and price x quantity, summed, / quantity, x (1 + markup).	currency/part
Overhead	(Cutting + forming + setup per part) x overhead %.	currency/part
Unit price	CEILING(total cost / (1 - target margin), price step). Margin achieved = (price - cost) / price.	currency/part
Machine hours	Setup hours (cutting included) + parts to start x machine minutes per part / 60.	h

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 Ironbridge Fabrication, 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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Unit price, cost and margin at the quantity you pick, the nest, and where the cost of a sheet metal part goes.

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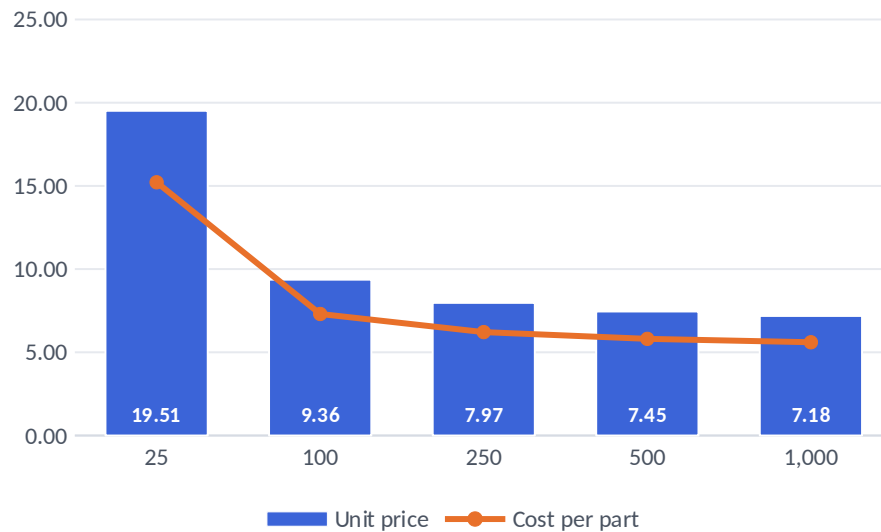
Quantity shown

250

Showing 250 parts of LE-BRK-0217, 2.0 mm Cold-rolled steel. Pick another quantity in the yellow cell.

UNIT PRICE (USD/PART)	COST PER PART (USD)	MARGIN ACHIEVED	PARTS PER SHEET
7.97	6.21	22.1%	42
Rounded up to your price step	All lines, before margin	Target 22.0%	Sheet yield 78.0%, 7 sheets
		On target	

Unit price and cost by quantity



Where the cost per part goes

