Stamping Press Tonnage

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

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Work out the cutting force and tonnage every blanking and piercing die needs, and check it against the press it runs on.

For: Tool and die engineers, stamping process engineers, press shop supervisors and estimators quoting stamped parts.

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Quick start

1. On Setup, type your plant and near-capacity threshold, your materials with their shear strength, and your presses with their available capacity.
2. On Dies, give each blanking or piercing die a row: material, simultaneous cutting perimeter, thickness, reserve and press.
3. Fix anything the Check column names.
4. Open the Dashboard: required force against capacity for every die, and the dies over their press.

What is in the workbook

Start Here	Read this first: what the workbook does and how to use it.
Setup	Plant, the near-capacity threshold, the materials with their shear strength, and the presses with their available capacity.
Dies	One row per blanking or piercing die: material, cutting perimeter, thickness, reserve and press in; force, tonnage and capacity used out.
Dashboard	The cutting force every die needs against the capacity of the press it runs on.
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
Cutting force	Cutting perimeter (mm) x thickness (mm) x shear strength (MPa) / 1,000.	kN
Required force	Cutting force x (1 + reserve).	kN
US tons and metric tonnes	Required force (N) / 8,896.443; required force (N) / 9,806.65.	ton, t
Capacity used and headroom	Required force / available capacity; available capacity - required force.	%, kN

Quantity	How it is calculated	Units
Status	Over capacity above 100%; Near capacity from the threshold on Setup; Under capacity below it.	-
Longest cut at once	Available capacity x 1,000 / ((1 + reserve) x thickness x shear strength).	mm

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 Rotherby Pressings, 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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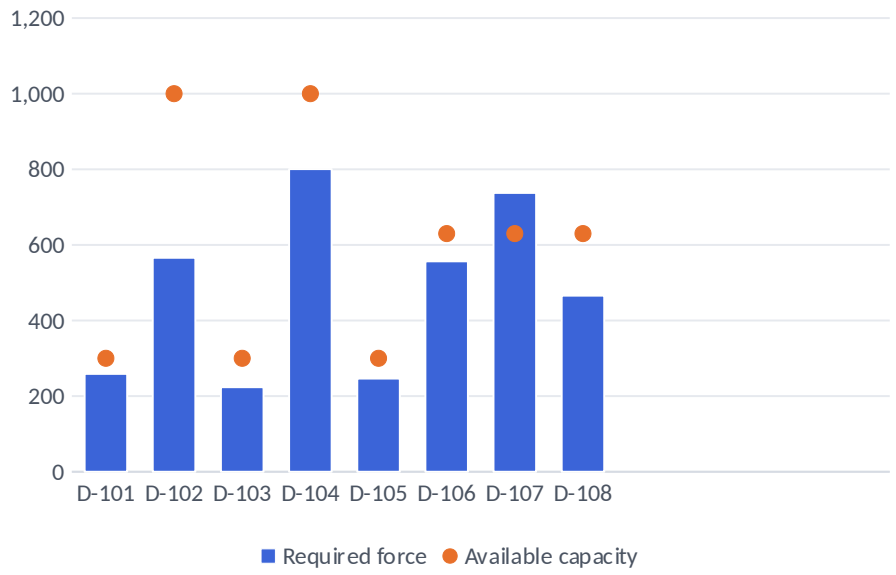
The cutting force every die needs against the capacity of the press it runs on.

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Rotherby Pressings (example): 8 dies on 3 presses. Near capacity from 85%.

DIES	DIES OVER CAPACITY	HIGHEST CAPACITY USED	LARGEST TONNAGE
8	**1**	**117.1%**	**90.0**
Rows with a required force	Required force above the press	Required / available force	US tons, with reserve

Required force against press capacity (kN)



Press capacity used

