

Casting Processes

Mechanical Engineering

Five casting routes ranked by tolerance, volume and tooling cost.

Tolerances are typical, and shrink with part size and care.

Process	Typical tolerance	Volume
Sand casting	± 1 to 2 mm	One to thousands
Investment casting	± 0.1 to 0.5 mm	Tens to thousands
High pressure die	± 0.05 to 0.3 mm	Thousands upward
Permanent mould	± 0.3 mm	Hundreds upward
Continuous casting	Stock shapes only	Very high

Every casting needs draft, walls of even thickness and a feeding path.
Educational reference.