

Process Families

Mechanical Engineering

Five ways to make a shape, what each is good at and what it costs you.

Tooling cost decides more than machine cost does.

Family	Best for	Watch out for
Casting	Complex shapes, volume	Porosity, draft, shrinkage
Forming	High volume sheet and bar	Springback, tooling cost
Machining	Tight tolerance, any batch	Everything cut off is waste
Joining	One part out of many	Distortion and inspection
Additive	One-offs, internal shapes	Anisotropy, surface finish

Below a few hundred parts, machining usually beats any process that needs a tool made first.