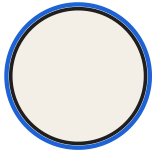


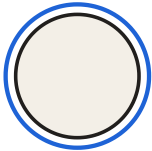
Clearance & Fit — the cheat sheet

All numbers are the gap PER SIDE, in mm. PLA on a well-calibrated printer.

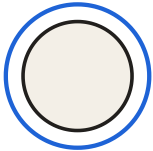
THE FIT LADDER



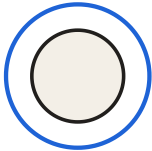
PRESS FIT
0.05–0.15
Glue joints · dowels · dovetails · magnet pockets



SNUG FIT
0.15–0.25
Sliding lids · drawers · battery doors



FREE FIT
0.25–0.40
Hinges · fidget spinners · print-in-place



LOOSE FIT
0.40–0.60
Printed threads · screw-on lids

FIT	CLEARANCE	FEELS LIKE	USE IT FOR
PRESS FIT	0.05–0.15	Firm push, holds by friction	Glue joints · dowels · dovetails · magnet pockets
SNUG FIT	0.15–0.25	Slides with light resistance	Sliding lids · drawers · battery doors
FREE FIT	0.25–0.40	Moves freely, no felt play	Hinges · fidget spinners · print-in-place
LOOSE FIT	0.40–0.60	Obvious play, never jams	Printed threads · screw-on lids

Nozzle rule (0.4 mm nozzle): ½ nozzle = snug slide (0.2) · 1 nozzle = loose (0.4)

HOLES PRINT SMALL

hole Ø = pin Ø + 2 × clearance + 0.2 mm (FDM undersizing)

CALIBRATE YOUR PRINTER (15 MIN)

Print a coin: Ø10 pin + holes Ø10.2 / 10.4 / 10.6 / 10.8 / 11.0.
Where press, snug, free and loose land = your personal ladder.
Re-test after nozzle or filament changes.

ADJUSTMENTS

- ABS/ASA: +0.1 on every rung (shrinkage)
- PETG: +0.05 (oozes fatter)
- TPU: press fits may go 0.05 tighter (squish)
- Seam on a mating face: budget +0.05–0.1 or move the seam
- Chamfer bottom edges 0.3–0.5 mm (elephant foot)
- Chamfer entry edges 0.5 mm — parts self-align