

# Work Holding, Clamps, and Jigs

## Work holding

In general, **no hard metal hold downs** are safe for the CNC, like screws or metal clamps, because of the risk of ejecting shrapnel out into the shop.

## Strategies

**Brass screws and composite nails** may be used, and are available in the shop. Be sure to remove them after use!

- Brass screws are good for attaching from the top (easier) or bottom (if the top surface must be preserved) and provide the best overall strength and reliability.
- Composite nails are quick to attach into waste material from above.

**Cam and wedge clamps** work well and can be easily customized for stock that has square edges. Several are available near the machine.

- Great for work without waste material, engraving, and repeat setups.
- It's better to make a block that fits just right rather than use too many pieces in one direction, or the assembly may buckle outward.
- Avoid too much upward pressure by using a down-cut endmill or making shallow passes with standard up-cut endmills and engraving tools.

**Wooden peg based "7"-shaped hold fasts and clamps** may be used on the grid of holes in the spoilboard, but still take care to avoid when programming.

- Great for holding fragile work, pieces that cannot easily be held from the sides or below, and for projects which need to resist more upward forces.
- Steel holdfasts may not be used.

## Files

We can always cut more clamps and jigs! If you make something for the CNC, consider sharing models or drawings here.

Corner jigs and clamps: [CNC Workholding Clamps + Jigs.f3d](#)

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