

Handi-Clamp

LoboCNC

VIEW IN BROWSER

updated 5. 11. 2023 | published 5. 11. 2023

Summary

One-handed operation - squeeze to close and it stays closed. Press the release lever to open.

Hobby & Makers > Tools

This is a 3D printable version of the Irwin Handi-Clamp. Squeeze the handles to close it on your workpiece and the self-locking lever mechanism keeps it closed. Just press on the lever to release. Great for clamping jobs needing light pressure and one-handed operation. Opens 0 - 39mm (0 - 1.5 in).

Everything presses or snaps together without glue or fasteners. If you want the clamp to automatically spring open, you will need one small rubber band, like the kind that comes on green onions.

Printing
You want to print this as rigid as possible. I used PLA with 5 perimeter lines and 30% infill. CF filled PLA would be even better. I used 0.2mm layer thickness.

The bar and lever sides of the clamp do need some supports in specific areas, as indicated last photo. I recommend manually painting on supports as indicated rather than turning on automatic supports everywhere.

Assembly
The leaf spring has some built-in mouse-ear brims that need to be broken away first. Then insert the short leg of the spring into the slot in the lever-side handle. It should press into place.

Then, slide the lever over the curved bar on the bar-side of the handle and place the two handle pieces together. The D-shaped pin should be a press fit into place but you may need to tap it into place lightly with a small hammer. (If your pin happens to be a little loose, you might try reprinting it scaled up by 0.5% or so.)

To make it spring open automatically, you'll need to loop a thin rubber band through the eyelet in the bar-side of the handle and then hook the other end over the little nub on the other side as shown in the fifth photo.

Operation
Squeezing the clamp closed will cause the lever to slide along the curved bar and it self-locks into place when you stop squeezing. Pressing on the end of the lever will cause it to unlock. Note that the little leaf spring may not contact the end of the lever once the clamp is locked. The spring's job is to initially apply a light pressure to the lever to get it to start locking on the bar. When you stop squeezing the clamp, it will flex back and the spring will no longer touch the lever, but the self-locking will still stay engaged.

And here 3Dprintsmith has posted a video of his build of the clamp.

Model files



handclamp-barside.stl



handclamp-leverside.stl



handclamp-lever.stl



handclamp-spring.stl



handclamp-pin.stl



handclamp-pad.stl

License

This work is licensed under a
Creative Commons (4.0 International License)

Attribution-ShareAlike

✖ | Sharing without ATTRIBUTION
✔ | Remix Culture allowed
✔ | Commercial Use
✔ | Free Cultural Works
✔ | Meets Open Definition