



SHAPE-PAD

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[VIEW IN BROWSER](#)

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Summary

Macro-pad of shortcuts for Onshape CAD software!

[Gadgets](#) > [Computers](#)

Tags: [keyboard](#) [mechanicalkeyboard](#) [onshape](#)

This is a macro designed for the **Onshape CAD software**! It only works for computer. (Not on the mobile apps)

Tap once to select the tool on the left. Double-tap to select the tool on the right. Press the "Swap" key once to switch to the second layer. It will stay on the second layer until you press it again, or if you used the "Confirm" tool.

Also see my **ARITH-PAD** for an upgraded num-pad.

READ THESE NOTES:

Everything prints without supports! It is possible the files will import into the slicing software with a tiny scale. If so, make the scale 1000%.

If you look closely at the code, many of these shortcuts are not real keyboard shortcuts, and were created by looking up the tool using the search function (ALT+C), typing on the keyboard, or moving and clicking the mouse in a certain way to emulate a human doing it at lightning

speed. Therefore, SHAPE-PAD may not work 100% of the time as expected. For best results, press all the way down on a key and release, wait for an action to fully complete before trying to attempt another shortcut.

The “Combinable” version has an extra port with 5 pins. Sometime later, I will post an adapter that can combine multiple of my keyboard designs if you want to use them at the same time on a phone for some reason?

List of Tools (from upper left to lower right):

Layer 0

1. Boolean (double-tap for Split)
2. Linear Pattern (double-tap for Circular Pattern)
3. Mirror Part (double-tap for Mirror Feature)
4. Hide Item (double-tap for Show Item)
5. Extrude
6. Revolve
7. Sweep
8. Loft
9. Fillet (double-tap for Chamfer)
10. Plane Line Angle (double-tap for Plane Midplane)
11. Move the Rollback Bar up one item (have the cursor hovering over the rollback bar first)
12. Swap to Layer 1
13. Transform Translate XYZ (double-tap for Transform Scale)
14. Plane Offset (double-tap for Plane Plane Point)
15. New Sketch (automatically switches to Layer 1)

Layer 1

1. Coincident (double-tap for Midpoint)
2. Linear Pattern (double-tap for Circular Pattern)
3. Mirror (double-tap for Offset)
4. Dimension
5. Horizontal (double-tap for Vertical)
6. Parallel (double-tap for Perpendicular)
7. Equal (double-tap for Symmetric)
8. Concentric (double-tap for Tangent)
9. Sketch Fillet (double-tap for Trim)
10. Line (double-tap for Spline)
11. Circle (double-tap for Ellipse)
12. Swap to Layer 0
13. Transform
14. Corner Rectangle (double-tap for Center Point Rectangle)
15. Confirm (cancels/confirms any sketch or feature)

All the parts needed were ordered on Amazon. See below.

Parts List:

- Print x1 "Upper"
- Print x1 "Lower" (choose either combinable or not)
- Print x18 "Keycap" (different colors are nice!)
- Print x1 "Large Keycap"
- x1 [Arduino Pro Micro](#) (I just get a cheap off-brand, they work fine)
- x19 [Cherry MX Keyswitches](#) (cheaper if you buy more at a time)
- x19 [220Ω Resistors](#)
- x1 Micro USB cable (for flashing, make sure it can do data transfer and isn't just a power cable! I wasted a couple hours with this stupid mistake)
- x1 [2u Costar Style stabilizer](#) (this is a multi-pack that also includes a longer one for space-bar which you don't need for this project)

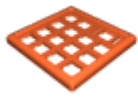
Additional parts for Combinable:

- x5 [Male-to-Female Dupont wires](#) (will be cut in half and using the female side)

Instructions for Assembly:

1. Use the Arduino IDE to upload the code to the Arduino Micro.
2. Pop in the keyswitches. Make sure they are in the right orientation!
3. Follow the wiring diagram (at the end of the photo gallery) to solder the resistors and wires across the keyswitches.
4. Solder the wires to the Arduino Micro.
5. If doing the "Combinable" version, cut up cables and solder any extra connections needed. (it looks like an absolute mess inside lol)
6. TEST IT OUT BEFORE SEALING (VERY IMPORTANT)
7. Glue the Upper and Lower together! (May require some force to push down)
8. I made the key labels by inkjet printing on clear vinyl sticker and cutting them out (as best as I can) with scissors. They are double-layered to prevent rubbing off.
9. Now you can simply plug in the USB into your computer and it will work! If any "Keyboard Assistant" window pops up, you can simply close it since there's actually no setup required.

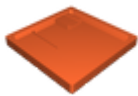
Model files



upper.stl



lower.stl



lower-combinable.stl

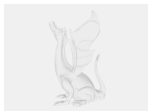


keycap.stl



large-keycap.stl

Other files



shape-pad.ino

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