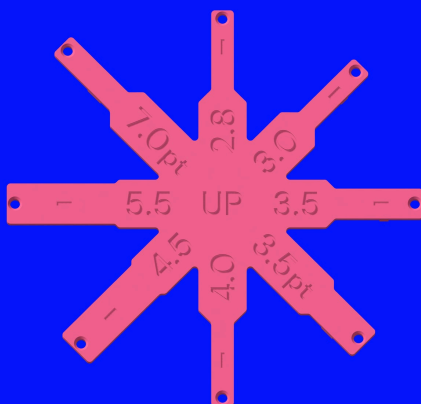




FREE PRINT GUIDE



FIVE HOLLOW PUNCHES, TWO SOLID PINS AND A STAR GUIDE THAT MARKS WHERE THE HOLE GOES.

Hole Punch Set

8 STL FILES

STAR MARKING GUIDE

MAKER LICENCE

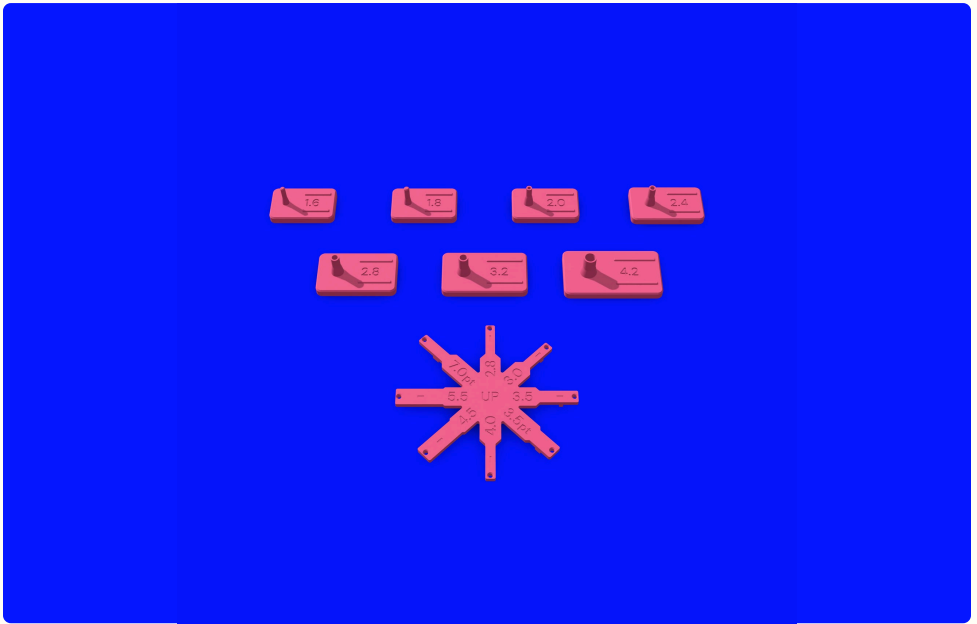
Print only what you need.

This free ZIP contains eight STL files, this Print Guide, README.txt and Licence.pdf. You need an FDM printer or print service, filament, clay, a flat tile and a fine needle for marking. Drill bits and jewellery hardware are supplied by you.

- 1.6 mm Pin – Small Earrings: hole-punch-1p6mm-small-earring-button.stl
- 1.8 mm Pin – Small Jump-Ring Earrings: hole-punch-1p8mm-small-jump-ring-earring.stl
- 2.0 mm Punch – Standard Jump-Ring Earrings And Small Charms: hole-punch-2p0mm-standard-earring.stl
- 2.4 mm Punch – Statement Earrings And Thicker Dangles: hole-punch-2p4mm-statement-earring.stl
- 2.8 mm Punch – Charms: hole-punch-2p8mm-charm-pendant.stl
- 3.2 mm Punch – Pendants: hole-punch-3p2mm-pendant-charm.stl
- 4.2 mm Punch – Keyrings And Heavy Hardware: hole-punch-4p2mm-keyring.stl
- Separate hole-position marking guide: hole-position-marking-guide.stl

Five tools are hollow punches: 2.0, 2.4, 2.8, 3.2 and 4.2 mm. The 1.6 mm and 1.8 mm tools are solid pins, which push clay aside instead of cutting a plug. The star guide marks where the hole goes; lift it off before you punch or drill.

Handles down, tips up.

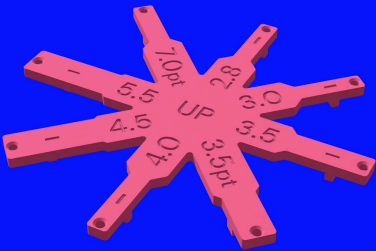


The seven punches and pins, tips up as they print, and the star guide numbered side up. Print the flat handles on the bed.

Start with PLA, a 0.4 mm nozzle, 0.12 mm layers, four walls and 25 percent infill. Use your calibrated filament profile, supports off and a brim where needed. Print the star guide with its numbered face on the bed and its lips pointing up; no supports are needed.

Inspect the sliced narrow walls and open bores before printing. A 0.2 mm nozzle can resolve smaller details, but it does not change the wall thickness in the STL. Check the printed rim, bore and size label before using a tool, and clear the guide's marking holes with a needle.

One guide, eight tongues.



The star guide, numbered side up. Each tongue has a lip underneath and a marking hole near its end.

Each number is the distance in millimetres from that tongue's lip to its marking hole. It is a position, not a hole size. Tongues marked "pt" have a V-shaped lip that centres itself on a point; the others have a straight lip with a small centre tick. Hold the guide with UP and the numbers facing you, so the lips hang underneath.

Which tongue to use

KIT	SIZE	TONGUE	SEAT THE LIP ON
Pixel Eye, layered	52, 56 mm	4.0	Lash dip
Pixel Eye, layered	60, 62 mm	4.5	Lash dip
Pixel Eye, relief	60, 62 mm	3.0	Lash dip

One guide, eight tongues.

Which tongue to use

KIT	SIZE	TONGUE	SEAT THE LIP ON
Pixel Lips, layered	44 mm	2.8	Cupid's-bow dip
Pixel Lips, layered	48 mm	3.0	Cupid's-bow dip
Pixel Lips, layered	56, 62 mm	3.5	Cupid's-bow dip
Pixel Flame, layered	32, 36, 40 mm	4.5	Top pixel
Pixel Flame, relief	36, 40 mm	4.5	Top pixel
Pixel Flame, layered or relief	48 mm	5.5	Top pixel
Faceted Gem, layered	30, 34 mm	4.5	Flat top edge
Faceted Gem, layered	38, 42 mm	5.5	Flat top edge
Go-Go, clean cutters	16, 18, 20 mm disc	3.0	Each end
Go-Go, clean cutters	18, 20, 22, 24, 26 mm hex	3.5pt	Each point
Go-Go, clean cutters	28, 32, 36, 40 mm triangle	7.0pt	Top point

One guide, eight tongues.

Which tongue to use

KIT	SIZE	TONGUE	SEAT THE LIP ON
Blue Spotted Cat, drops	40 mm	4.5	Head edge between ears
Blue Spotted Cat, relief	56 mm	3.5	Head edge between ears
Blue Spotted Cat, relief	60 mm	4.0	Head edge between ears
Blue Spotted Cat, relief	64, 68 mm	4.5	Head edge between ears
Boston Terrier, drops	40 mm	4.0	Ear dip; ruler preferred
Pixel Mushroom, layered	32 mm	4.0	Flat cap top
Pixel Mushroom, layered	36, 40 mm	4.5	Flat cap top
Pixel Mushroom, layered	48 mm	5.5	Flat cap top

For your own shapes, use the tongue whose number matches your hole-centre distance and a reference that fits its lip: a flat or gently curved top, a notch or dip, or a point that matches a V lip. A dip needs at least 0.2 mm space on each side of the lip: 3.4 mm across, or 4.4 mm for the wider lip on the 3.5 tongue. The tongue must rest flat and its lip must catch the edge. For any other position, measure with a ruler and make a shallow needle dot.

Follow the hole method for your piece.

The station table sets a position only. Use your kit guide for the finished hole size, marking stage and hardware. Some pieces use cutter marks, a ruler, a screw eye or a glued finding instead of this guide.

Kit-specific methods

PIECE	MARKING AND HOLE METHOD
Cat drops	Mark before the spots go on; drill 2 mm after baking.
Boston drops	Mark after the muzzle, before the eyes. A ruler is preferred: the raised muzzle leaves little lip engagement. Drill 2 mm.
Mushroom 36 to 48 mm	Rest flat on the 0.3 mm top spot with the lip catching the cap edge, or use a ruler. Drill after baking.
Flame relief 36 to 48 mm	Mark the 4 mm slab; drill after baking. Do not raw-punch the relief. Relief 32 mm uses a bail.
Cherry 36, 44, 52 mm	Use the top-circle centring method in the kit; drill 2 mm after baking. No star station is specified.
Fortune Cookie	Use its screw-eye method; the baked fallback needs a 0.7 mm pilot bit. Wall-strip holes are 2.3 mm.

Wall displays and display cards have their own cutter marks or printed holes. The 1.2, 2.2, 2.3 and 2.6 mm holes used by some of those pieces need the specified drill bits, which are not in this set. Glued posts, magnets, brooch backs and bails do not need a hanging hole.

Seat, mark, lift.

01 Mark at the stage your kit names

Keep the raw piece on its tile. Some kits are marked before raised details go on: Cat drops before the spots, Boston drops before the eyes. Follow that sequence. Chilled clay holds its shape better.

02 Seat and centre the lip

Rest the tongue flat and slide its lip against the named edge, dip or point. Centre it left to right as your kit shows; a straight lip can slide sideways. If a raised layer rocks the tongue or the lip cannot catch the edge, use a ruler and needle instead.

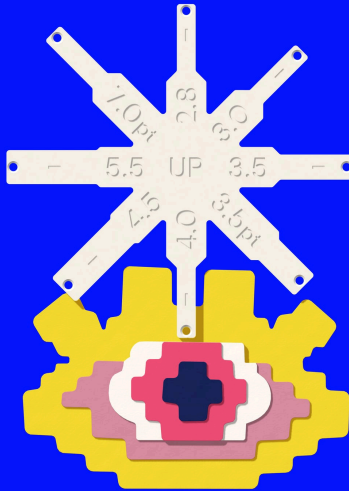
03 Make a shallow centre mark

Lower a fine needle, about 1 mm across, upright through the guide's marking hole until it makes a shallow dot in the clay. The sloping entry around the hole leads the needle point into it. Lift the needle out; the dot marks the centre for the punch or drill bit.

04 Lift the guide off

Lift the guide straight up before making the full hole. Mark both pieces of a pair the same way before punching either.

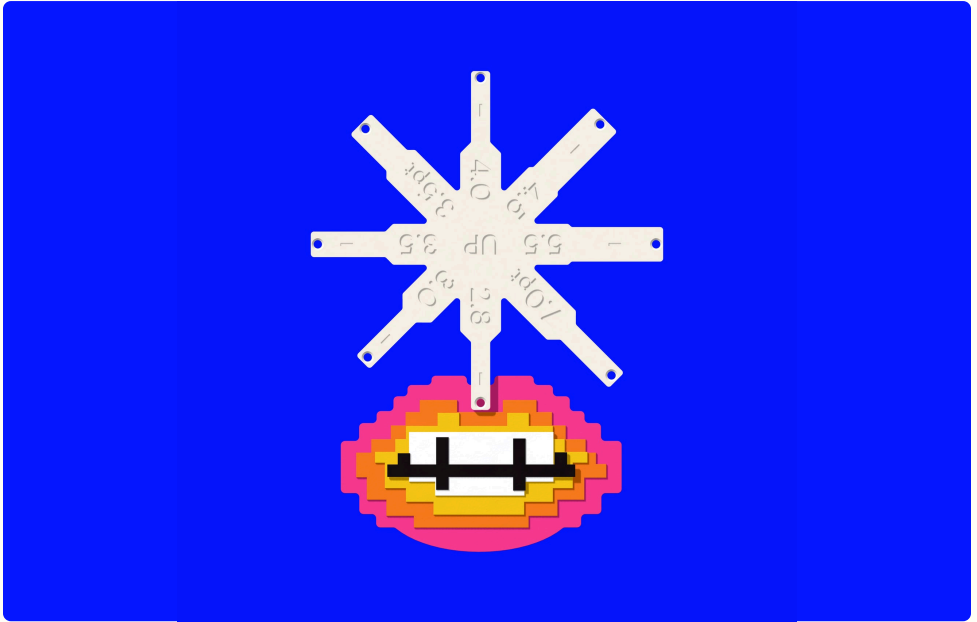
Seat a narrow lip in a notch.



The 4.0 tongue seated in the lash dip of a 52 mm Pixel Eye.

On a Pixel Eye the narrow lip drops into the dip between the two middle lashes. Keep the hole the same distance from the far-left and far-right edges of the eye.

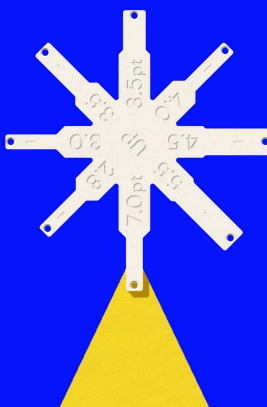
Drop the lip into a dip.



The 2.8 tongue dropped into the cupid's-bow dip of 44 mm Pixel Lips.

The narrow lip drops into the cupid's-bow dip, but the dip leaves sideways play. Centre the tick halfway between the far-left and far-right edges. At 44 mm, the spare margin allows only about 0.25 mm sideways error and the tongue sits very close to colour layer B. If it touches B, use a ruler. Keep the full 1.8 mm hole clear of B; do not enlarge an off-centre hole.

Hook a V lip over a point.



The 7.0pt tongue on the point of a 32 mm Go-Go triangle. The V lip centres itself.

A V lip hooks over a point and centres itself. Point distances are measured from where the two sides would meet, so a slightly rounded tip still seats.

Punch on the mark.

Raw punching suits chilled, conditioned clay that holds its outline. Leave the piece on its tile.

Choose a tool for the clay thickness

TOOL DIAMETER	SUGGESTED SLAB	STRAIGHT CUTTING DEPTH
1.6 mm	2.5 mm	4.5 mm
1.8 mm	2.5 mm	4.5 mm
2.0 mm	3.0 mm	3.5 mm
2.4 mm	3.5 mm	4.0 mm
2.8 mm	3.5 mm	4.0 mm
3.2 mm	4.0 mm	4.5 mm
4.2 mm	4.0 mm	4.5 mm

Measure the full clay thickness at the hole, including colour layers. Stay within the suggested slab thickness so there is room before the tool widens. A 2 mm punch is not suitable for a 4 mm slab: its outside widens above 3.5 mm. Mark thick pieces and drill after baking with the specified bit.

01 Centre a hollow punch

Hold a needle upright in the shallow dot, thin enough to slide through the punch's bore (under 1 mm for the 2.0 mm punch). Thread the punch down over the needle so its tip sits on the mark, then pull the needle out.

Punch on the mark.

02 Press, twist, lift

Hold the punch upright, twist gently back and forth while pressing until the tip reaches the tile, then lift straight up.

03 Let the plug slide out

Each hollow punch keeps its cutting size for 3.5 to 4.5 mm up from the tip, then widens inside, so the plug slides up and out of the handle opening. If one sticks, push it through with fine wire from the handle side, fingers clear of the tip.

04 Solid 1.6 and 1.8 mm pins

Push the pin straight down through the mark to the tile and lift it straight up. A pin makes no plug; it pushes clay aside, which can raise the edge. Smooth any ridge before baking.

Check for a round opening without a stretched edge or separated layer. The tool sizes are nominal; print tolerance and clay movement affect the finished hole. Printed plastic tools stay out of the oven.

Or bake, then drill.

For thin, layered or narrow pieces, or wherever raw punching distorts the shape, keep the needle mark and drill after baking. Follow your kit guide where it names the route for a size.

01 Bake and cool

Bake by the clay package directions and let the piece cool fully on its tile.

02 Support the back

Lay the piece front up on a sacrificial backing. Turn a pin vise gently through the mark with the specified bit, lifting it to clear debris. Keep the bit upright and check the edge for chips or cracks.

03 Check the actual hardware

Fit the chosen ring through the clay and its finding. It should turn without bearing against the clay. Hole diameter, clay left beyond the hole, clay thickness, ring wire and ring size work together; do not enlarge a hole if that removes its remaining margin.

Each kit guide gives its hole position, size, method and hardware. A tongue is not needed for a cutter-marked hole or a glued finding. For the punch-or-drill comparison, visit claybake.com/blog/polymer-clay-jump-ring-holes-punch-or-drill.

Keep the small openings clear.

Remove clay from the tools after use, wipe with a damp cloth and dry. Keep the tips protected in storage and replace a cracked tool. Keep printed tools away from heat and food preparation.

If a bore is blocked or a rim is rough, check the sliced preview, flow and seam before reprinting. Do not force a blocked punch through clay.

The included maker licence allows finished clay pieces made with these tools to be sold. Do not redistribute the files or sell printed copies of the tools. A private print service may print for your own use. Read Licence.pdf for the full terms.

Want the next free tool? Sign up at claybake.com/tools/polymer-clay-hole-punch-set for one email when it is ready. Unsubscribe anytime.

Keep the set with your making tools.

Keep the print settings with your files for the next set.

Need a change or a new design?

If a different hole size, another guide station or a completely new tool or marking guide would help, message [ClayBakeStudioShop on Etsy](#). Tell us what you need and how you'll use it. Keep the discussion and any custom order on Etsy.

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