

USER GUIDE

Orb Mug
Hold-All collapsible mold

How to assemble, form, release and care for your SenseCraft Collapsible Mold System – Hold-All, in three sizes: S, M and L.

1 · Before you start
Parts, tools and a dry run.

2 · Form the mug
Base and two rings, built upside down.
Paper templates on pages 10–12.

3 · Release and dry
Release order, joints, drying, fixes.

Version 1.0 · October 2026 · Mold revision R02
Print on A4 or Letter at 100 %. Images marked “Illustrative render” are renders of the CAD.

SenseCraft

1 Before you start

The Hold-All is a forming support: you build the mug on it from flat clay pieces with the mold upside down, then take the mold apart through the rim. It never goes in the kiln.

The mold parts (each size)

01 Core · 02 four Key Segments (narrow) · 03 four Side Segments (wide) · 04 Lock Lid · 05 Hex Nut. The Inversion Stand is not in this kit: it will come in the separate experimental Tools profile. Until then, rest the lid on something stable that clears the nut, such as a wide mug or a roll of tape.

You will also need

- A clay body you know (note its shrinkage)
- Rolling pin and two 6 mm thickness guides
- The paper templates for your size (pages 10–12), thin card or plastic sleeves
- Craft knife, scoring tool, slip of the same clay, small brush
- Soft rib, sponge, a small tool that reaches inside the mug
- Two small boards (bats), a plastic sheet, a pencil, a ruler



S, M and L. ILLUSTRATIVE RENDER

Important

- **Do not wrap one straight slab.** The Orb is curved above and below its widest point; a single slab folds and cracks. Use the base and the two rings.
- **Never fire the mold.** It is PLA. Keep it away from heat sources and hot cars.
- **Do not scale the files.** Scaling changes the clearances of the mechanism too.
- **Make a trial mug first.** Timing and shrinkage depend on your clay.
- Clean brim and elephant foot from the rails before the first assembly.

1 Assemble and lock

Do this first with no clay, and once more as a full dry run: assemble, then release in order (page 6). If something sticks without clay, fix it before you add clay.



1 Segments. Stand the Core on the table. Lower the eight segments onto it from above, one at a time, each along its own rail. Do not force a segment that catches: look for brim or elephant foot on the rail.



2 Lock. Put the Lock Lid on top with the arrow at **OPEN** and turn it to **LOCK** (about 24° on the S, 28° on the M, 30° on the L). It should turn without force. **Locked = the padlock on the Core shows through the round window of the lid.** No padlock in the window = not locked.



3 Nut. Screw the Hex Nut on by hand until it is snug. Do not use tools and do not over-tighten.

ILLUSTRATIVE RENDERS

Dry run checklist

- ☐ Every segment slides on and off without force.
- ☐ The parting lines meet with no step you can feel with a fingertip.
- ☐ The padlock shows in the window when locked.
- ☐ The locked mold sits steady upside down, resting only on its lid (on a wide mug or a roll of tape that clears the nut).
- ☐ You can release the whole mold in order (page 6) through a ring the size of the mug's mouth.

2 Cut the body in three pieces

The Orb is widest a little below the middle: the wall leans out below that line and leans in above it. A straight slab cannot follow both, so the body is made of a flat base and two rings, each cut as two half-arcs.

Size	1 · Base	2 · Lower arc (half)	3 · Upper arc (half)	Pencil line
S	Ø 55.1 mm	cut 2 · short edge 85 mm → base · long edge 120 mm	cut 2 · long edge 120 mm · rim edge 90 mm (+3 mm to trim)	≈ 22 mm
M	Ø 66.9 mm	cut 2 · short edge 104 mm → base · long edge 147 mm	cut 2 · long edge 147 mm · rim edge 111 mm (+3 mm to trim)	≈ 29 mm
L	Ø 77.9 mm	cut 2 · short edge 121 mm → base · long edge 172 mm	cut 2 · long edge 172 mm · rim edge 130 mm (+3 mm to trim)	≈ 35 mm

Wet sizes for a 6 mm slab; they already follow the mold. Do not enlarge them. Pencil line = distance from the flat bottom of the mold to the widest point.

4 **Roll a 6 mm slab** on canvas between two 6 mm guides. Smooth both faces lightly with a soft rib without thinning it. Carry it on a board.

5 **Test the curve on a scrap.** Lay a scrap over the widest part of the mold. It must follow the curve without cracking on the outside. Too soft (it sags): let it firm up a little, supported. It cracks: the slab is already too dry; roll a new one.

6 **Cut the five pieces from the same slab** with the paper templates for your size: one base, two lower half-arcs, two upper half-arcs. Hold the blade upright. Keep the pieces you are not using covered. Soften the rim edge of the upper half-arcs with a damp sponge while they are flat.

Starting templates

The templates are drawn from the Orb profile with the same method as our Belly and Espresso 80 guides. They have not yet been tried in clay on the Orb Hold-All: treat your first mug as a trial and note what you change.

2 Build the mug upside down

The Lock Lid holds all eight segments, so the mold stays together upside down while you build. Prepare one joint at a time, just before joining: score both faces lightly and brush on a thin layer of slip.

7 **Set the locked mold upside down**, lid end down, on a wide mug or a roll of tape that clears the nut. Dust it lightly with cornstarch. Draw a light pencil line around the mold at its widest point (S ≈ 22 mm, M ≈ 29 mm, L ≈ 35 mm from the flat bottom): the long edges of the lower ring sit on this line.

8 **Base.** Center the disc on the flat bottom of the mold and seat it from the center outward with your palm. Its edge eases down over the rounded corner: follow it, do not stretch it.

9 **Lower ring.** Bring the short edge of a lower half-arc to the edge of the base and wrap it; add the second half-arc and join the ends end to end (butt joints): no bevel and no overlap. Check that the long edge sits on the pencil line. Seat with broad, light contact; blend the joint with the base from the outside without thinning the wall.

10 **Upper ring.** Its long edge meets the long edge of the lower ring. Line them up with no step and butt-join the ends, with these seams about a quarter turn from the lower seams. Leave the 3 mm of extra clay at the rim for now. Do not push clay into the gaps between segments.

Stop if...

- a fold appears that would only go away by squeezing: check the piece, the pencil line and that the clay is still flexible;
- a ring only closes when you stretch it: check for bevelled or overlapped ends, a slab that is not 6 mm, or texture added after cutting;
- the clay slumps or a joint opens while upside down: let the pieces firm up a little, supported.

3 Release in order

Flip mold and mug together onto a board so the mug stands on its base. Take the mold out one part at a time, in this order. Keep the mug on its board the whole time.



11 Unscrew and lift off the Hex Nut.



12 Turn the lid to OPEN and lift it off.



13 Pull the Core straight up and out.

14 **Key Segments, one at a time.** Slide each key toward the center **until it stops** (about 2 cm), and only then lift it out. Lifting a key early makes it hit the rim.

15 **Side Segments, one at a time.** Pull each one diagonally into the center and lift it out through the rim.

ILLUSTRATIVE RENDERS



The wide Side Segments come out last.

Stop if...

- the clay follows a part as it comes out, the rim bends, or you hear a crack;
- a part needs force or a lever. **Never lever against the clay rim.** Support the mug, find what is blocking and free that first.

3 Release window, finishing and drying

When to release

Release when all three are true: the mug **holds its own shape**, the mold **comes out without deforming it**, and the inside joints **can still be worked**. Do not wait too long: clay shrinks as it dries and the mold does not, so the wall gradually grips the mold. There is no fixed time; note the time of your first mug. Keep loose plastic over the work while you wait.

Finish the joints inside

Supporting the outside with one hand, work the four vertical seams and the two joints around the mug from the inside with a small rounded tool. A very thin coil helps only where the joint already meets well.

Rim and handle

Trim the 3 mm of extra clay to a level rim and compress the edge. Attach the handle when mug and handle are at a similar state: score and slip both contact areas and support the inside at the joint.

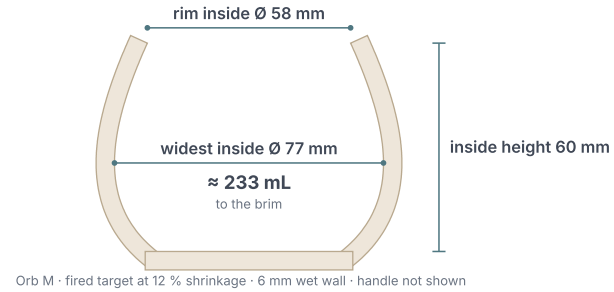
Drying

Keep the mug on its board, away from drafts, under a loose plastic tent. Rims and handles dry first: protect them a little more. Turn the mug onto its rim when it can carry its own weight, so the base dries too.

Size: a target, not a guarantee

Size	Brim capacity	Rim inside	Widest inside	Inside height
S	≈ 115 mL	Ø 47 mm	Ø 62 mm	46 mm
M	≈ 233 mL	Ø 58 mm	Ø 77 mm	60 mm
L	≈ 400 mL	Ø 69 mm	Ø 91 mm	74 mm

Fired targets at 12 % total shrinkage (reference), from the CAD of the mold. Capacity is to the brim; a comfortable fill is less. If your clay shrinks more or less, the fired size changes with it; the templates stay the same.



Orb M, fired target (section). DIAGRAM FROM THE CAD

Troubleshooting

What you see	Likely causes	What to try next time
Folds or cracks around the belly	One straight slab; ring off its line; clay too dry to bend	Use the base and two rings; seat the lower ring on the pencil line; roll a new slab if a scrap cracks.
A ring only closes when stretched	Ends bevelled or overlapped; slab not 6 mm; texture after cutting; half-arcs swapped	Butt joints; 6 mm guides; texture before cutting; short edge of the lower half-arc goes to the base.
Clay sticks to the mold	Clay too wet; no release dust	Let the pieces firm up; dust lightly with cornstarch.
Hard to release, mug grips the mold	Waited too long; outside dried fast	Release earlier; keep loose plastic over the work.
A key hits the rim	Lifted before it reached the center	Slide each key in until it stops, then lift.
A joint opens when dry	The defect was already there	Finish every joint from the inside on the next mug.
Segment catches during assembly	Brim or elephant foot on the rails; clay in a gap	Clean the rails; check first-layer squish; keep clay out of the parting lines.

Caring for the mold

- Take it apart and clean it with a damp sponge after each session; dry it before storing.
- Keep clay out of the rails, the lid window and the nut thread.
- Never put the mold, the nut or any plastic part in the kiln. PLA softens in a hot car or near a heater.

Printing reminders

- Use the included profiles (Single-Color or Dual-Color) for your size.
- Print in the orientation of the files. No supports. 8 mm brim on the Core and segments.
- Remove all brim before the first assembly. If parts feel tight, check first-layer squish and elephant foot.
- Do not scale the files. Other printers: see the PDF “Printing on other printers”.

Quick card

Cut out and keep it next to your bench.

Form

- Core on the table · eight segments down their rails
- Lid from OPEN to LOCK · padlock in the window · nut hand-tight
- 6 mm slab · test a scrap on the belly
- Cut base + 2 lower + 2 upper half-arcs from one slab
- Mold upside down on its lid · pencil line at the widest point
- Base → lower ring → upper ring · score + slip · butt joints

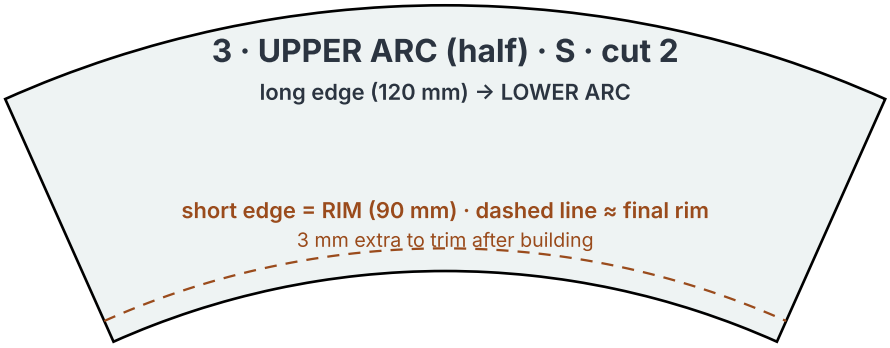
Release

- Flip onto a board
- Nut off · lid to OPEN · lid off
- Core straight up
- Each key: in until it stops, then up
- Each side: diagonally in, then up
- Finish all joints from inside · trim the rim
- Dry slowly under a loose tent

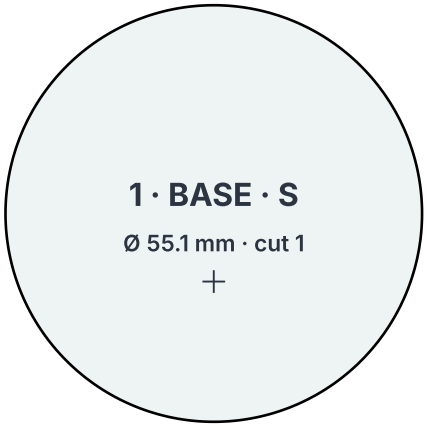
About this guide

The clay steps are a practical summary of general handbuilding practice from SenseCraft's book *Handbuilding Ceramics* (2026) and follow the method of our Espresso 80 Hold-All guide. The templates are drawn from the Orb profile for a 6 mm wet slab and have not yet been tried in clay on the Orb Hold-All. The assembly and release sequence is the one of the Belly Hold-All (same mechanism, printed and assembled); the Orb molds themselves have not been printed yet. Clay bodies differ: treat the numbers as starting points and make a trial mug first.

Images marked “Illustrative render” are renders of the CAD; they are not photos of a printed mold or a finished piece. Designed by SenseCraft with the assistance of AI tools.



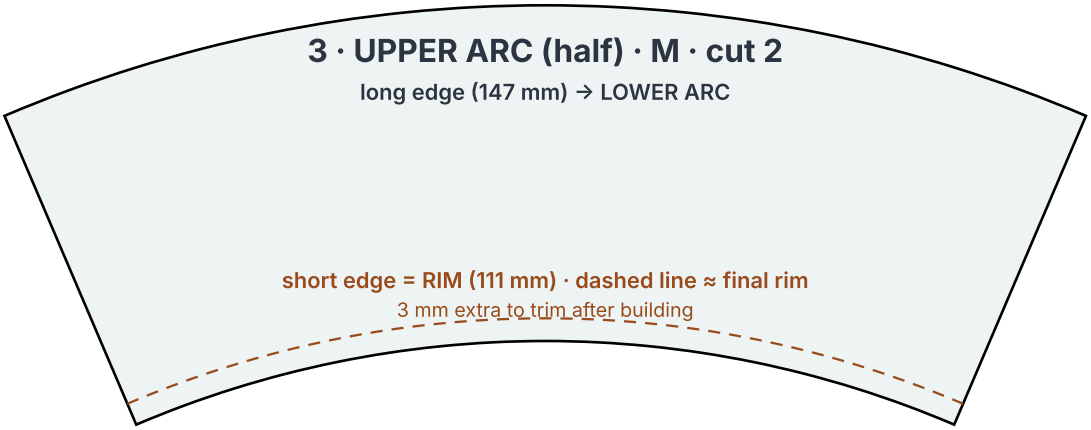


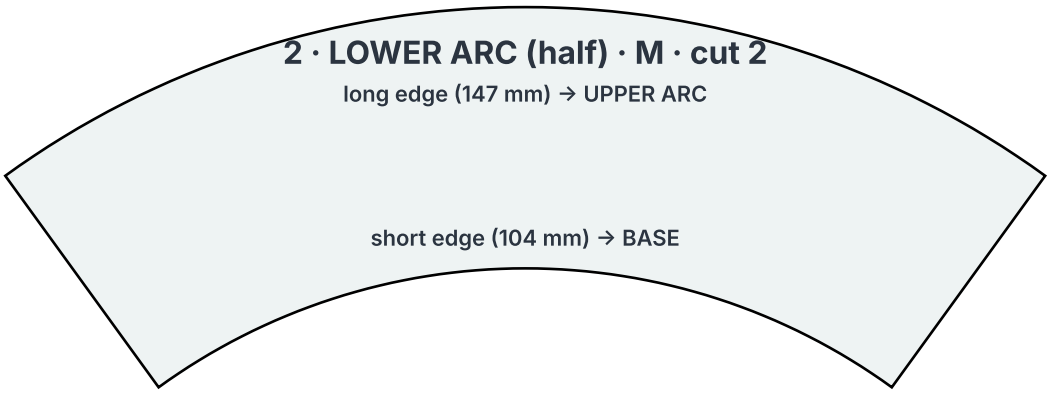


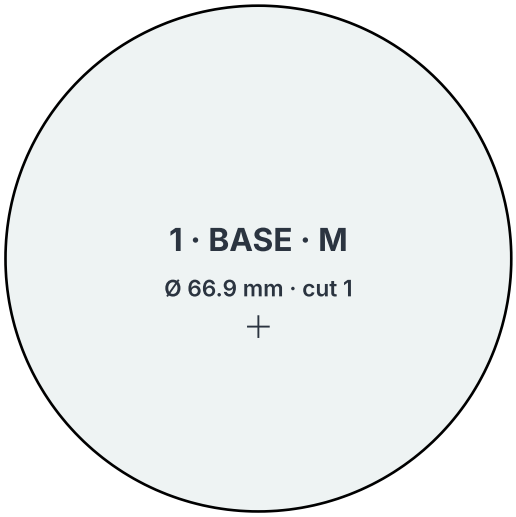


CHECK: this bar must measure 50 mm

Butt the ends: no bevel, no overlap.
Offset the seams of the two rings by 90°.



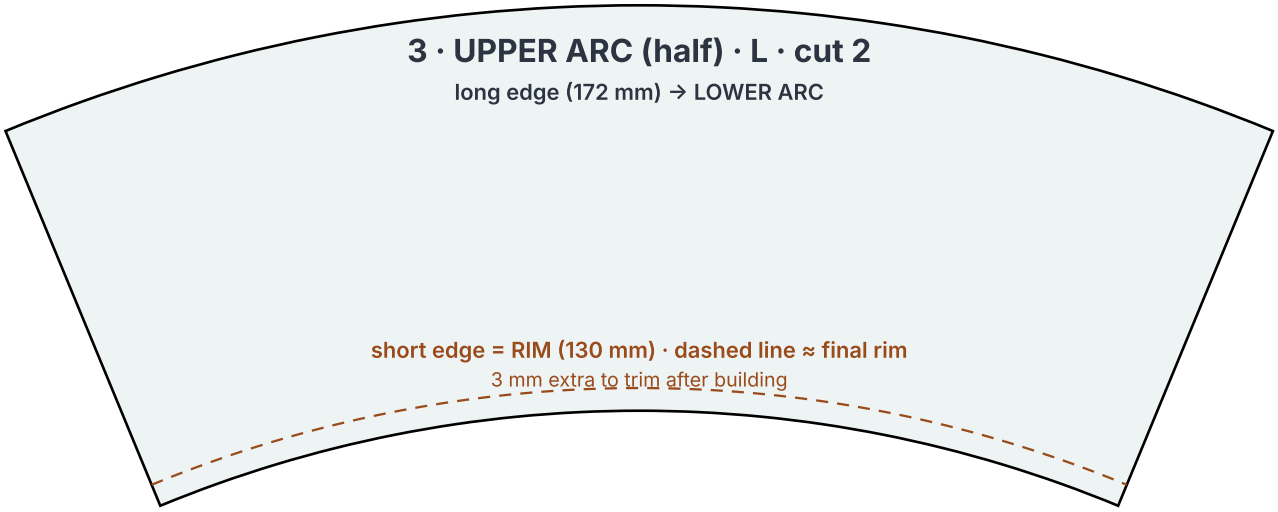


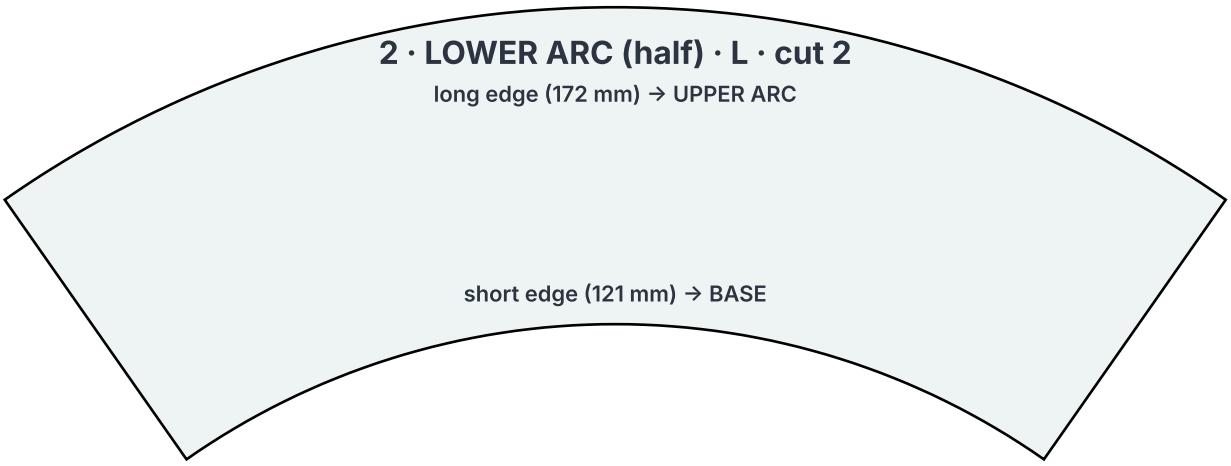


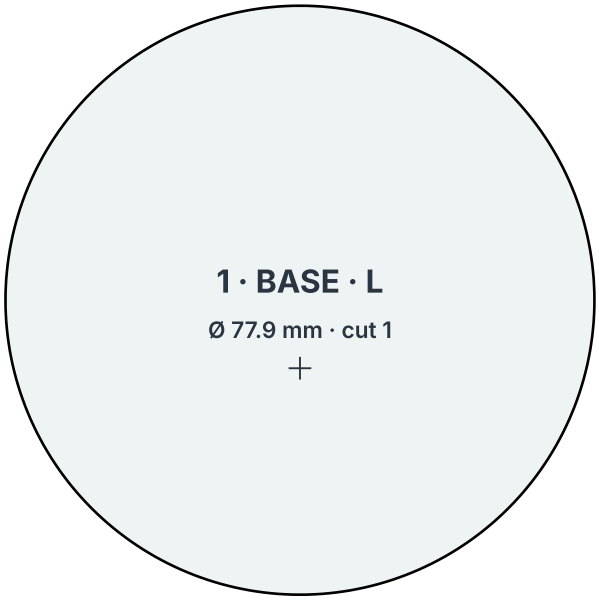


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