

USER GUIDE

Espresso 80
Hold-All collapsible mold

How to assemble, form, release and care for your SenseCraft Collapsible Mold System – Hold-All (80 mL espresso cup).

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

2 · Form the cup
Base and two arcs, built upside down.
Paper templates on pages 10–11.

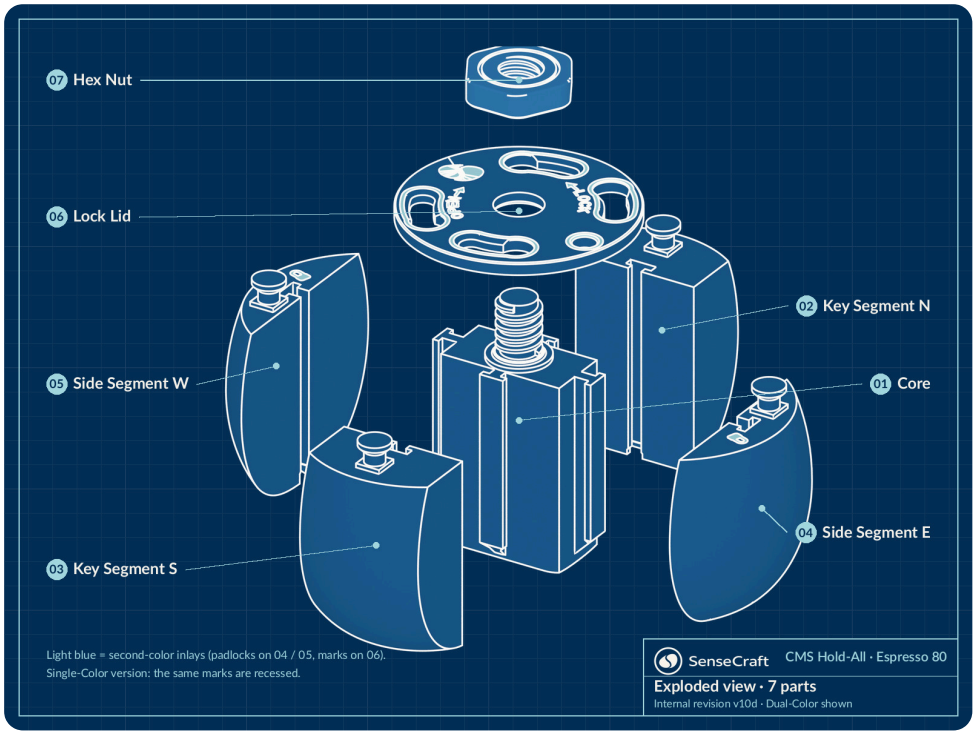
3 · Release and dry
Release order, joints, drying, fixes.

Version 1.5 · October 2026
Mold revision v10d · print on A4 or Letter at 100 %

SenseCraft

1 Before you start

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



The seven mold parts: 01 Core · 02/03 Key Segments N and S · 04/05 Side Segments E and W · 06 Lock Lid · 07 Hex Nut. The kit also works with the Inversion Stand from the Espresso 80 Tools page.

You will also need

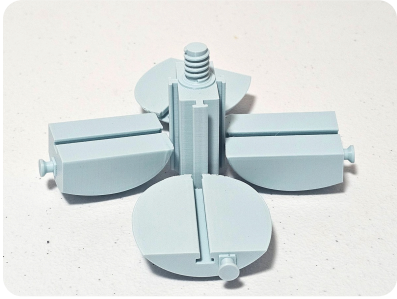
- ☐ Clay body you know (note its shrinkage)
- ☐ Rolling pin and two **5 mm** thickness guides
- ☐ The paper templates (pages 10–11), thin card or a plastic sleeve
- ☐ Craft knife, scoring tool, slip of the same clay, small brush
- ☐ Soft rib, sponge, a small tool that reaches inside the cup
- ☐ Two small boards (bats), a plastic sheet, a pencil
- ☐ The Inversion Stand (Espresso 80 Tools page)
- ☐ Optional: printed cutters for the three pieces and handle tools (experimental)

Important

- **Do not wrap one straight slab.** The bottom of this cup is strongly curved: a single slab folds and cracks there. Use the three pieces (page 4).
- **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.
- **Test with your own clay.** Timing and shrinkage depend on the clay body; make one trial cup before a series.
- Clean burrs, brim and support from the guides 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. If something sticks without clay, fix it before you add clay.



1 Stand the Core on the table. Slide the two Side Segments (E, W) down their rails, then the two Key Segments (N, S). Each segment slides on from above; do not force a segment that catches. Check for brim or support leftovers on the rails.



2 Fit the Lock Lid and turn it toward LOCK (counter-clockwise, seen from above). A padlock shows in the window when it is locked; the lid can sit in two positions, 180° apart, and either one works. **OPEN** is the opposite direction.



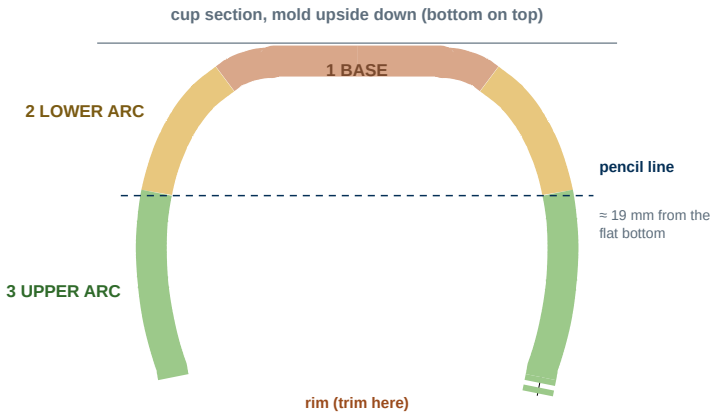
3 Thread the Hex Nut by hand, ring side up, until it is snug. Hand-tight is enough: do not use tools, and do not tighten until the plastic flexes.

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 in the Inversion Stand.
- [ ] You can release the whole mold in order (page 6) with the parts landing in a clear spot on the bench.

2 Cut the body in three pieces

The Espresso 80 has a strongly curved bottom. A straight slab wrapped around the mold would have to shrink its lower edge by about a third; the extra clay folds and cracks near the bottom. That is what happened in our first test cup. So the body is made of three flat pieces, each following one part of the curve.



The three pieces (wet sizes)

- **1 · Base**: disc, Ø 44 mm.
- **2 · Lower arc**: strongly curved, like a half-moon. Short edge (138 mm) → base; long edge (210 mm) → upper arc.
- **3 · Upper arc**: almost straight. Long edge (209 mm) → lower arc; short edge = rim, with 3 mm extra to trim.

Cutting sizes for a 5 mm wet slab on this mold, which was designed for 12 % shrinkage (reference). Do not add another shrinkage factor or scale them.

4 **Roll a 5 mm slab** on canvas between two 5 mm guides. Smooth both faces lightly with a soft rib, without thinning it further. Carry the slab on a board, never by its ends.

5 **Test the curve on a scrap.** Lay a scrap of the same slab over the most curved part of the mold. It must follow the curve **without cracking on the outside**. Too soft (it sags or stretches when you lift it): let it firm up a little, supported. **It cracks:** the slab is already too dry, and waiting will not help. Roll a new one.

6 **Cut the three pieces from the same slab** with the paper templates (pages 10–11), holding the blade upright. Keep the pieces you are not using covered. While the upper arc is still flat, soften its rim edge (the short edge) with a damp sponge. For your first cup use a smooth slab; if you texture later, texture **before** cutting, because texturing stretches the slab.

2 Build the cup upside down

This is what the Hold-All was designed for: the Lock Lid holds all four segments, so the mold stays together upside down while you build. Prepare one joint at a time, just before joining: lightly score both faces and brush on a thin layer of slip.



7 **Set the locked mold upside down in the Inversion Stand**, lid end down. First try a scrap of clay on the clean, dry mold. If it sticks, dust the mold with a trace of cornstarch, without making a cloud and keeping it off the clay edges you will join. Draw a light pencil line around the mold about 19 mm from its flat bottom: this is where the long edge of the lower arc will sit.

8 **Base.** Center the disc on the flat bottom of the mold. Seat it from the center outward with your palm, in small moves. The edge eases down to follow the curve: follow it, do not stretch it.

9 **Lower arc.** Bring its short edge to the edge of the base, wrap it around and join the two ends **end to end** (a butt joint): no bevel and no overlap. These pieces have no seam allowance, so a bevel or overlap makes the ring about 5 mm too short and forces you to stretch it. Check that the long edge sits on the pencil line. Seat it with broad, light contact: pressing hard slides the arc toward the base and thickens its upper edge. Blend the joint with the base from the outside without thinning the wall.

10 **Upper arc.** Its long edge meets the long edge of the lower arc. Line them up with no step, spread the small difference (about 1 mm) along the joint, and butt-join the two ends, about a quarter turn away from the lower seam. 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 the edge: check that you used the right piece, that the arc sits on its line, and that the clay is still flexible. Fix the cause; do not flatten the fold.
- **an arc only closes when you stretch it**: check for a bevel or overlap at the ends, a slab that is not 5 mm, texture added after cutting, or an arc fitted with its edges swapped.
- the clay slumps or a joint opens while upside down: let the pieces firm up a little, supported, and try again.

3 Release in order

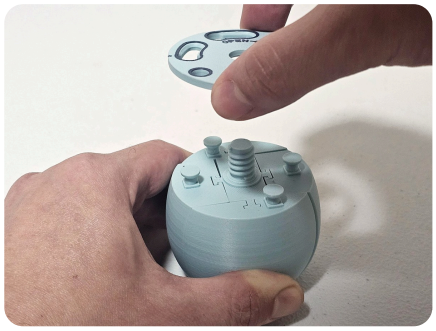
With a board ready, lift the mold by its base and support the clay with broad contact. Bring the board gently against the clay base, hold board and mold together and turn them close to the bench, so the cup stands on its base. Never hold the clay rim. Then take the mold out one part at a time, in this order, keeping the cup on its board.



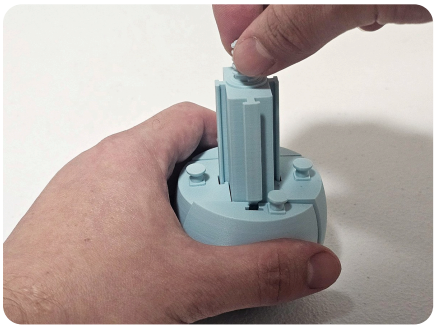
11 Unscrew and lift off the Hex Nut.



12 Turn the lid toward **OPEN** (clockwise).



13 Lift off the Lock Lid.



14 Pull the Core straight up and out.



15 Move the two small Key Segments into the space left by the core, then lift them out.



16 Move each Side Segment inward and lift it out through the rim.

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 cup, find what is blocking, and free that first. If the clay has already shrunk tight around the mold, see “When to release” on the next page.

3 Release window, finishing and drying

When to release

Release when all three are true: **the cup 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. Waiting longer makes release harder, not easier. There is no fixed time: it depends on your clay and your room, so note the time of your first cup. Keep loose plastic over the work while you wait.

Finish the joints inside

Supporting the outside with one hand, work the two vertical seams and the two joints around the cup from the inside with a small rounded tool. A very thin coil helps only where the joint already meets well; blend it into both sides. A thick coil over a gap does not fix the joint, and smoothing only the outside is not enough.

Rim and handle

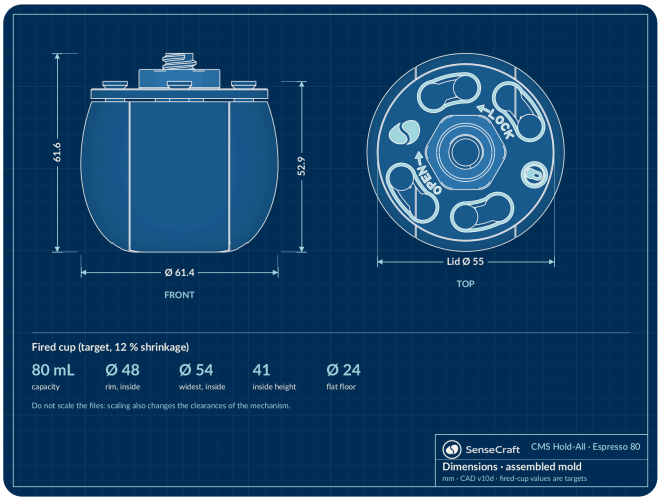
Mark a level rim 53.5 mm above the board the cup stands on and trim the extra clay above the line; compress the edge. Attach the handle when cup and handle are at a similar state: score and slip both contact areas and support the inside at the joint. Do not lift the cup by a fresh handle. The Espresso 80 handle tools (experimental) are designed for this cup.

Drying

- Keep the cup on its board, away from drafts, under a loose plastic tent that does not touch it. Open the tent gradually as the cup firms up.
- Rims and handles dry first. Protect them a little more than the body; the bottom must not stay wet while the rim is already hard.
- Turn the cup onto its rim only if the rim is flat and firm enough to carry the cup without marks, so the base dries too; otherwise keep it upright. Do not rest it on the handle.

Size

The mold is shaped for the Espresso 80 cup with **12 % total shrinkage** as a reference: about **80 mL**, rim Ø 48 mm (inside) after firing. If your clay shrinks more or less, the fired size changes with it; the templates stay the same.



Mold dimensions (CAD v10d) and fired-cup targets.

Troubleshooting

What you see	Likely causes	What to try next time
Folds or cracks near the bottom	One straight slab wrapped around the mold; lower arc off its line; clay too dry to bend	Use the three pieces (page 4); seat the arc on the pencil line; if a scrap cracks on the curve, roll a new slab.
An arc only closes when stretched	Ends bevelled or overlapped; slab not 5 mm; texture added after cutting; edges swapped	Butt joint; 5 mm guides; texture before cutting; short edge of the lower arc goes to the base.
Arc slid down, thick at the top	Pressed too hard while seating	Mark the line; seat with the palm, broad and light, no squeezing.
Clay sticks to the mold	Clay too wet; untested aid; surface marks from printing	Let the pieces firm up a little; dust lightly with cornstarch; smooth rough spots on the forming surface.
Hard to release, cup grips the mold	Waited too long; clay dried fast on the outside	Release earlier (page 7); keep loose plastic over the work while waiting.
A joint opens while soft	Not scored; too much slip; pieces at different dryness	Open the area, work in clay and compress, or remake the piece. Cut all pieces from one slab.
A joint opens when dry	Joint not closed inside, or uneven drying	Slip will not fix it. Finish every joint from the inside on the next cup.
S-shaped crack in the base	Rim dried before the bottom; uneven thickness	Dry more covered and turn the cup earlier; check thickness.
Segment catches during assembly	Brim or support left on the rails; elephant foot; 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 windows and the nut thread.
- Never put the mold, the nut or any plastic part in the kiln.
- Store it away from heat: PLA softens in a hot car or near a heater.

Printing reminders

- Use the included profiles (Single-Color or Dual-Color). Print in the orientation of the files.
- Remove all brim and support before the first assembly.
- If parts feel tight, check first-layer squish and elephant foot. Do not scale the files.

Quick card

Cut out and keep it next to your bench.

Form

1. Core → Side Segments E, W → Key Segments N, S
2. Lid toward LOCK · padlock in the window · Hex Nut, ring up, hand-tight
3. 5 mm slab · test a scrap on the curve
4. Cut base, lower arc, upper arc from the same slab
5. Mold upside down in the stand · pencil line 19 mm from the bottom
6. Base → lower arc → upper arc · score + slip · ends butt-joined

Release

7. Flip onto a board
8. Nut off · lid toward OPEN · lid off
9. Core straight up
10. Key Segments in, then out · Side Segments in, then out
11. Finish all four joints from inside · trim the rim
12. Dry slowly under a loose tent, then fire

About this guide

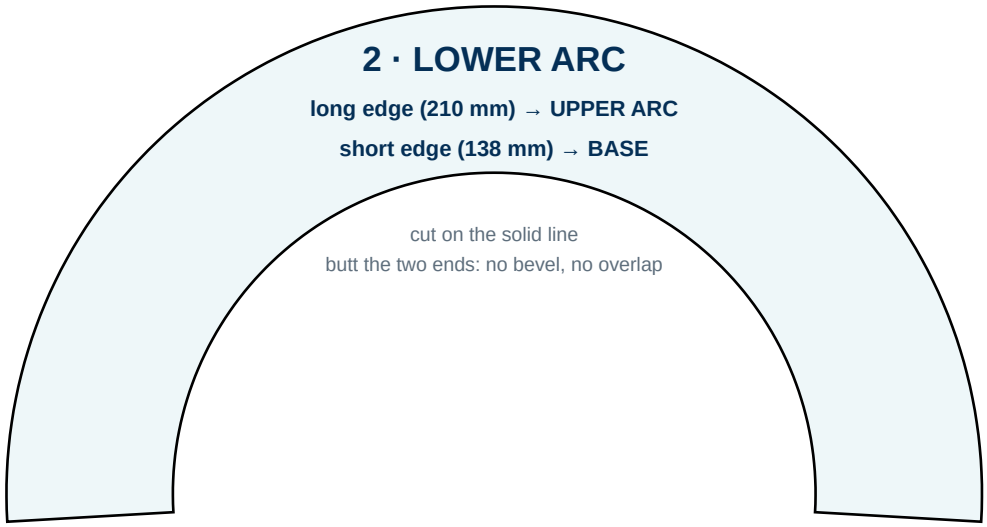
The clay steps are a practical summary of general handbuilding practice from SenseCraft's book Handbuilding Ceramics: foundations, techniques and process decisions (2026), mainly the chapters on joining (C05), slab construction (C09), bottoms (C11), handles (C13), collapsible molds (C19), drying (C24) and defects (C26). Building a bellied cup from a base and shaped slab pieces is common practice among potters; the templates are drawn from the Espresso 80 profile for a 5 mm wet slab. The assembly and release sequence was checked on printed Hold-All molds, dry (without clay). Clay bodies differ: treat the numbers as starting points and make a trial cup first.

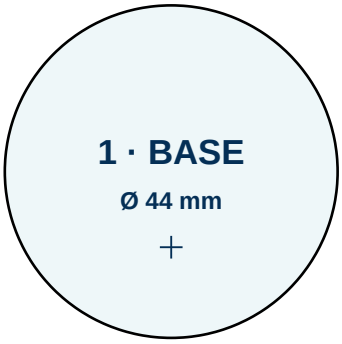
Photos show the printed mold. Images marked “Illustrative render” show the sequence and are not to scale. Designed by SenseCraft with the assistance of AI tools.

The Inversion Stand, printed cutters and rigid templates for the three body pieces, and the handle tools for the Espresso 80 are on the separate Espresso 80 Tools page, released as experimental.

Templates · Base and lower arc

Print at 100 % (“Actual size”), not “Fit to page”. Check the 50 mm bar before cutting. Cut out on the solid line, glue onto thin card or slip into a plastic sleeve, lay on the slab and cut around with the blade upright. Wet sizes for a 5 mm slab.







CHECK: this bar must measure exactly 50 mm





CHECK: this bar must measure exactly 50 mm

Templates · Upper arc

Print at 100 % ("Actual size"). Check the 50 mm bar.

The upper arc is almost straight. Its **long edge** (the outer curve, on the left) joins the lower arc. Its **short edge** is the rim of the cup.

The dashed line shows the approximate final rim. Cut on the solid line: the 3 mm between the two lines are trimmed after the cup is built, to give a level rim.

Both arcs close end to end around the mold. Do not bevel or overlap the ends, and do not trim the templates to make them "fit": they are drawn to close on the mold with a 5 mm slab. Ease them into place; do not stretch them.

Same template, any clay. Your clay's shrinkage changes the size of the fired cup, not the templates.