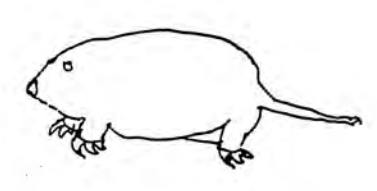


Some Principles of Soft Mold Patterning

adapted from Sewing Tiny Toys by Carolyn Vosburg Hall

1. The more you fill your mold, the rounder it will get.
 - If you stuff a pillowcase, it will no longer be as wide and flat, but it will be rounder and thicker.
2. The outline/circumference around a stuffed shape will remain the same as when it was flat.
 - The pattern pieces must have joining edges that match in length
3. The circumference of a round object is the diameter multiplied by π , 3.14.
 - Knowing the circumference will help you figure out the length of the pattern pieces you may sew onto it.
4. Many shapes can be reduced to combinations of basic geometric shapes: spheres, tubes, cones, and rectangles
 - Knowing this will help you analyze any 3D form

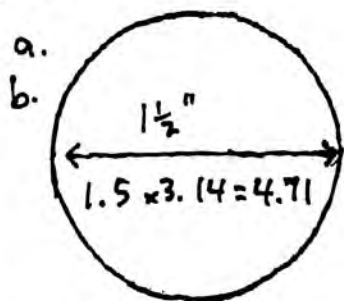


5. The materials used affect the design and construction of the mold.
 - Wrinkles are especially sensitive to the stretchiness of the fabric, so you may need to use darts.
6. If the math gets too complicated, use trial and error.
 - Some patterns will just be too difficult to come up with any other way. Pleasant surprises may also come from this method.

Soft Mold Patterning Cont.

7. Shapes that curve in more than one direction need more pattern.

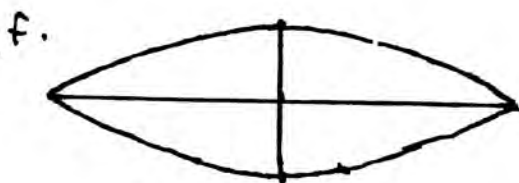
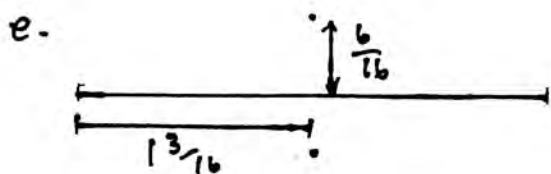
- A ball pattern consists of 6 or more elliptical pieces sewn together in order to avoid wrinkles from gathering the ends.



c. $\frac{4.71}{2} = 2.36 = 2 \frac{6}{16}$

d. $\frac{4.71}{6} = 0.79 = \frac{12}{16}$

- a. draw a circle using a compass
- b. multiply the diameter by pi, 3.14, to get the circumference
- c. draw a base line half the length of the circumference
- d. divide the circumference by the number of segments you want the ball to be
- e. in the center of the base line (c) measure up half the distance of "d". Measure down half the distance of "d". This is the width of the pattern piece.
- f. Use a compass to create an arc that intersects the two ends of the base line and one end of "e". Make the same arc below the base line. This gives you the shape of each segment.
- g. cut and sew into a ball. good job!



one segment

Making a Rubber Mold Within a Mother Mold

Ayumi Horie
July 2002

wear protective gear! coat/apron, goggles, rubber gloves, respirator w/ organic vapor cartridges

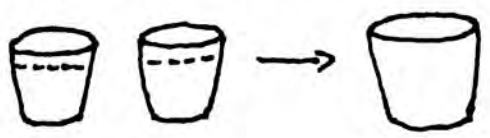
Resin is sensitive to moisture

- work in a dry, well ventilated environment
- your prototype should be leatherhard clay sealed with S31 release agent, or have a sealed surface already

Synair

1. spray your prototype with S31 in order to both provide a vapor barrier and to provide a release agent. Apply 2-3 coats, allowing coats to dry to a matte finish in between applications.

2. Using Synair TA 333^{durometer 35}, mix equal parts A + B by first measuring into cups of the same size and then transferring them to a larger cup. Only mix an amount that you can apply in 20 min. Scrape sides and bottom, being careful not to whip in air. Mix until it's a uniform color.

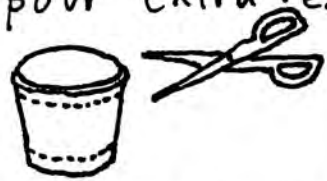


3. Using a disposable bristle brush, paint on 1st coat thinly, trying to break any air bubbles on the surface of the prototype. Using an air compressor at 5 psi to blow the resin into the grooves may also help record fine details.

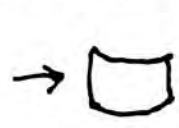
4. Build up layer to an 1/8" using a putty knife



5. pour extra resin into empty pill containers to make key system.



cut the lip + feet off paper dixie cups, then cut into 2-4 pieces

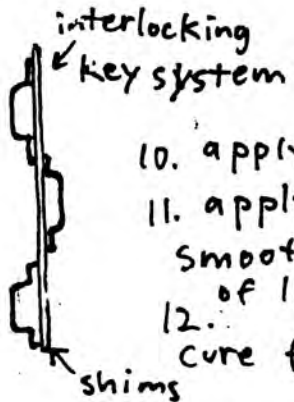
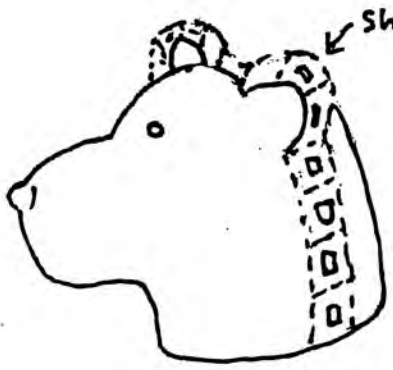


these will be your shims

6. allow 2nd batch of resin to set for 3 min before applying.

7. put in shims, connect them with scotch tape.

8. cut windows into the shims and insert keys, including plastic, alternate direction of keys



10. apply one more thick coat
11. apply oil-based smool in order to smooth out undercut. apply with 15-20 min of last coat
12. cure for 24 hours at 70°F

Rubber Mold - Mother Mold cont.

Mothermold PAK TA durometer 75

1. apply 531 to cured rubber mold, 2-3 coats
2. mix mothermold resin
1:1 volume
3. paint on and reinforce with strips of burlap or fiberglass mesh
4. apply 2-3 coats, and reinforce with steel tubes if necessary
5. let set 24 hours 70°F
6. clean tools with rubbing alcohol

Synair

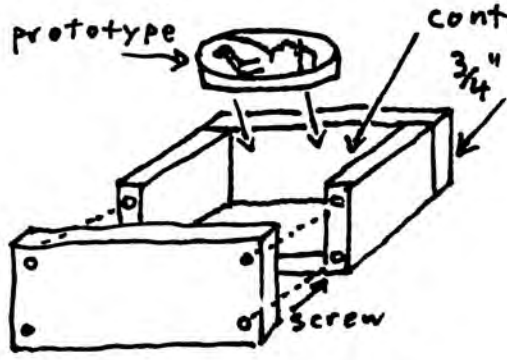
www.synair.com

1-423-697-0400

clean with rubbing alcohol
if possible, mix until combined
moulage at Johnson Atelier

Making a Simple Rubber Box Mold

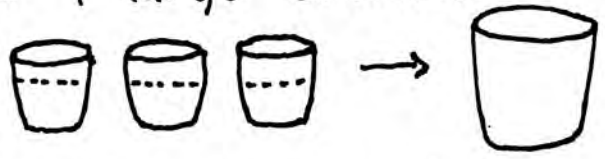
- Wear protective gear! coat/apron, goggles, rubber gloves, respirator with organic vapor cartridges



2. construct a plywood box that's lined with contact paper, painted, or otherwise sealed. the rubber will stick to anything porous

- 3. Seal cracks with clay or caulking
- 4. in a well ventilated area, seal the box with Synair 531 release agent
- 5. secure the prototype to the bottom and spray again, allowing 2-3 times coats to dry in between

mix prepolymer Ultra 2 part prepolymer: 1 part curative
use 3 containers of the same size to measure, then transfer to 1 large container



- only mix an amount you can apply in 20 min
- scrape sides and bottom, being careful not to whip in air
- pour in a thin stream so that air bubbles break and pour into highest point in the mold, allowing it to find its own level. do not move cup back and forth to make ribbons!
- tap to dislodge air bubbles
- let cure at 70° for 24 hours
- clean tools with rubbing alcohol