Silhouette Die Instructions

Tools & Materials

- Steel silhouette die
- Non-ferrous metal sheet: 20 or 18 gauge
- Urethane puck: 95 durometer
- Hydraulic press (20-ton) with spacers
- Contained urethane system (optional)

How to Use Silhouette Dies

1. Use shears, a pancake die, or a jeweler's saw to cut a piece of metal slightly larger than the opening in the silhouette die. When pressed, the metal gets pulled down into the die, so it needs to be larger than the opening—this flange also gives the urethane something to press against to clamp the metal in place as it's pressed down into the die.
2. Anneal the metal before pressing and a few times during the process. This helps achieve the best puffing of your shape and helps avoid tearing. If you texture your metal, anneal it again before forming it.
3. Stack the items (or insert them into a contained urethane vessel) in this order, from bottom to top: Silhouette die, Metal, Urethane, Pusher (if using container).
4. Center the stack or container in the press, checking from all sides to make sure it's centered. Use spacers as needed to avoid overextending the ram of the jack.
5. Begin pumping the jack until you just begin to feel resistance. Apply enough pressure to dome the metal, but not enough that the metal splits. If you apply too much pressure, the die can cut part of the shape instead of puff it up. It's better to stop and anneal the metal than to have the metal split or bottom out in the die.
6. Release the pressure, and check your metal. Anneal and repeat if necessary.

Tips for Preventing Splits

- Soften the edge of one side of the silhouette die by carefully filing the inner edge to smooth it out. This will allow the metal to be more easily drawn into the die. When you use the edge that has been filed, it will leave a softer edge. If you want a crisp edge, flip the die over and use the hard edge.
- Go slowly, and check/anneal your metal often. Most splitting occurs when you think "I'll just try pressing a little bit more..."
- Use thicker metal. Thinner metal can be used, but is more likely to tear.

FAQs

How much pressure do I need to use?
There's no single answer to this question. Every metal type, gauge of metal, and die combination will require a different amount of pressure, so take notes and make sample pieces. If your jack has a pressure gauge, keep an eye on the gauge and write down what psi works for each metal/gauge/die. If your jack doesn't have a gauge, count the number of pumps needed for each combination—you don't have to take complete strokes once you feel resistance.

How do I center my metal? Use a ruler and a marker or scribe to draw reference marks on the die to make it easier to center your design on the die. Each die will be different.

Why should I use spacers? Spacers are used to take up space in the press so that you do not overextend the jack, which can make it leak and then cause problems. Do not use wood or acrylic as spacers, only steel or aluminum.

Do I have to use urethane?
Nope! Other materials to try include leather, cardboard, aluminum foil, and stacked paper.

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