FSS Dies (Fast Stamping System)

Kevin Potter designed this first-of-its-kind tool in 2015 with the goal to bridge the gap between an inexpensive pancake die and a $2000 tool-steel die set, commonly used in industrial die striking. This new method, invented by Kevin, allows us to produce a die set for under $100, making it affordable to artists who need more production capacity than what a pancake die affords them. The FSS (Fast Stamping System) helps speed up small-scale production of metal blanks, as well as accommodates a wider range of metal gauges than pancake dies -- and there's no tab to remove! And, as a bonus, it's able to be re-sharpened, if/when needed! The FSS (Fast Stamping System) is a precision tool, and must be treated as such, or you may damage it. Please read the instructions fully before use.

Copper Blanks cut with the FSS (Fast Stamping System)

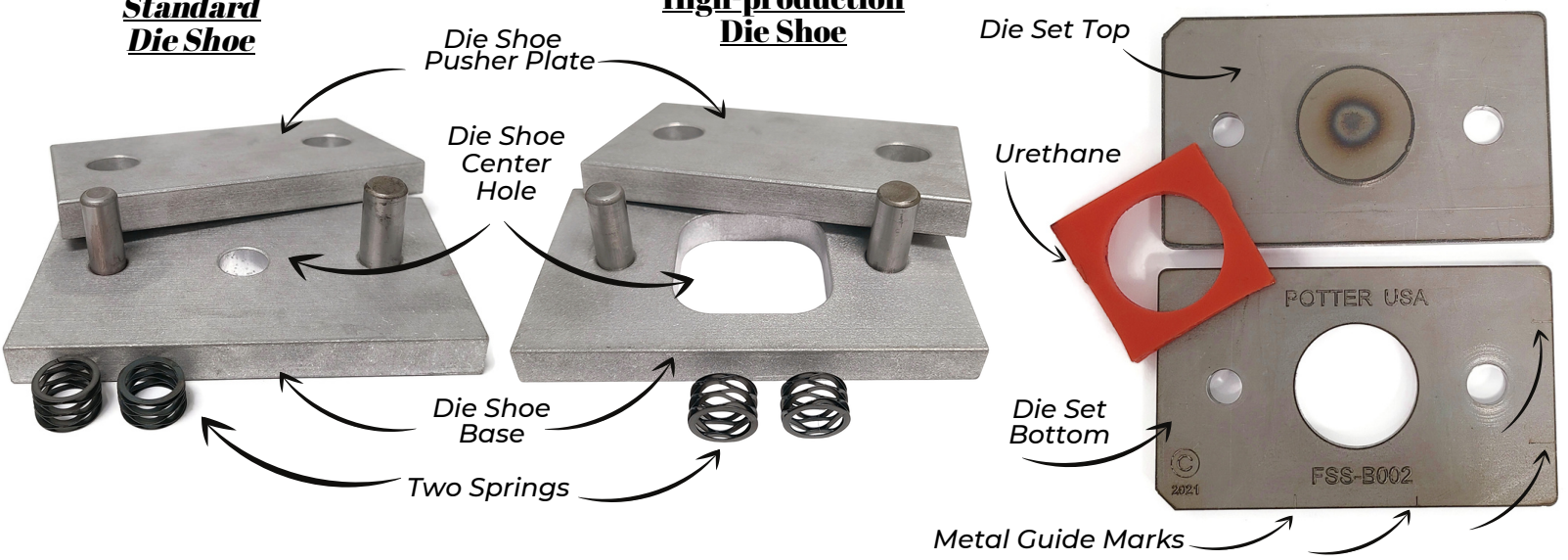
FSS Parts (Die Shoe and Die Sets Sold Separately)

- Die Shoe
- 2 versions: Standard or High-production
  - **Base** with two sizes of pins to maintain correct indexing and assembly and center hole to assist with metal alignment and for removing cut blanks.
  - **Aluminum Pusher Plate** with two oversized holes
  - **Two springs** to place between the top and bottom of the Die Sets
- Die Set
  - **Die Top**, with precision-welded cutter
  - **Die Bottom**, with precision-registered center hole and metal guide marks on bottom- and right-side edges to assist in lining up metal in the die
- **Urethane:** Specific to each die set; not interchangeable with other designs. Color may vary. The components of each Die set are not interchangeable with other die sets, but all can be used with a single, standard Die Shoe.

Standard Die Shoe

High-production Die Shoe

Die Set (many designs available, work with all die shoes)



FSS Specifications and Recommendations

- The FSS (Fast Stamping System) MUST be used with a hydraulic press. It cannot be used with a hammer.
- Standard Die Shoe: More durable and will last longer than the High-production Die Shoe. Recommended gauges are from 28-gauge to 14-gauge, full-hard, non-ferrous metal. Beta testing showed gauges as thin as 30-gauge and as thick as 10 gauge can also be used, but may decrease the lifetime of the tool.
- High-Production Die Shoe: The High-production base features a large well in the base to allow for cut blanks to fall out of the bottom of the assembly. It is more delicate than the Standard Die Shoe base and is more prone to damage when over-pressed. Max gauge for use with the High-production Die Shoe that we recommend is 16 gauge.
- Metal Types: ONLY for use with non-ferrous metal (gold, silver, copper, aluminum, etc.) DO NOT try and cut any steel alloy or plated materials unless you are certain it is not steel, or you WILL destroy the die set.
- Metal Temper: Works with full-hard and annealed metal. Results will be better with full-hard metal, and blank will have less of a burr.
- Be sure to cut the entire shape. Cutting half or other partial shapes can result in the Die Set becoming misaligned and damaged.
- Engraved Text on the Top and Bottom of the Die Set should always be facing UP
- DO NOT FORCE any part of the assembly or cutting process. If something feels like it's stuck, lightly tap it with your fingers, a light mallet, your workbench, or any other tool on hand.
- DO NOT MIX DIE SETS, even if you purchase two of the same shape and item number. Each Die Set Top and Bottom is a factory-matched pair. Mixing Die Sets will result in you destroying the tool.

General Hydraulic Press Safety: DOs and DO NOTs

DO ...

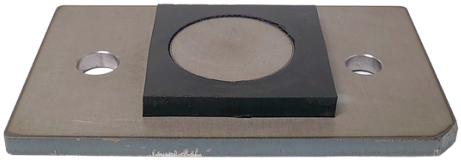
- keep your work area clean.
- keep children away from the press.
- keep fingers away from moving parts.
- tie back long hair.
- ALWAYS bolt the press to a sturdy work surface.
- wear ANSI-approved impact safety eye and face protection when using the press.
- only use replacement parts from Potter USA.
- ALWAYS center your work on the lower platen.
- ALWAYS use spacers to avoid overextending the ram.
- lower the ram completely at the end of the day to prevent dust and debris from sticking to the ram, which will cause wear on the seals.

DO NOT ...

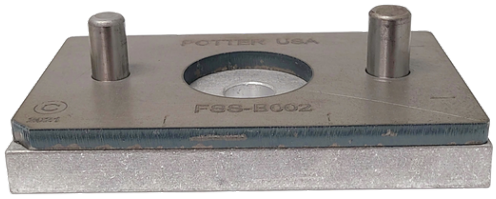
- assemble or operate the press when you're tired or under the influence of alcohol or drugs.
- wear loose clothing or jewelry.
- operate the press beyond its rated capacity.
- place cast iron, springs, fragile or brittle objects, or any item that could disengage from the press.
- put heat-treated tool-steel dies or bench blocks in the press unless you know they have been properly heat tempered. They can shatter like glass.
- use the press for hot forging.

FSS Assembly and Use

1. Place the urethane included with the Die Set onto the welded cutter on the Die Top. Make sure it does not cover the holes for the pins. You will not need to remove the urethane after setup.



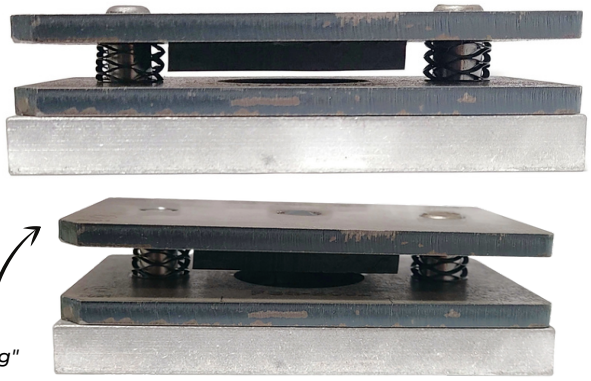
2. Place the Die Bottom onto the Die Shoe Base. The text should face up and the notched corner of the Die Bottom should be to the lower left side of the setup. **Make sure the Die Bottom is flush with the Die Shoe Base.**



3 Place one spring on each of the pegs. The springs MUST be placed between the top and bottom parts of each Die Set. Placing them in the wrong location will result in you damaging the tool.

4. Place the Die Top urethane/cutter-side down on top of the Die Bottom. Align the notched corner of the Die Top with the notched corner of the Die Bottom. The pins are two different sizes to aid in alignment.

IMPORTANT: Slide the Die Top and Bottom parts onto the Die Shoe Base Pins without angling them. If you find the Die Top or Bottom gets stuck on the pegs, **STOP!** This is called "racking," and it means the Die Top or Bottom is out of alignment. Luckily, this is easy to fix: Use your fingers or a rawhide/plastic mallet to **GENTLY** tap the higher side of the Die. You **DO NOT** want to hit it hard, as doing so will damage the Die Set. You can also gently tap the high side on your workbench, if needed.

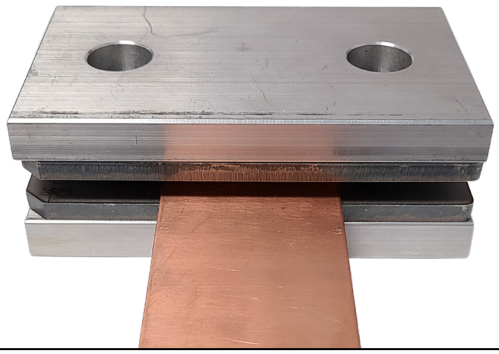


Example of "racking"

5. Place the Die Shoe Pusher Plate on top of the Die Set. Be sure the register the Pusher on the pegs. The holes in the Pusher are loose by design but can become misaligned if care is not taken. Before placing the assembly in the press. MAKE SURE EVERYTHING IS LEVEL AND THERE ARE NO GAPS BETWEEN THE PLATES.

6. Insert your metal texture-side down into the die. Use the hole in the center of the Die Shoe Base to align your metal in the die. The Metal Guide Marks on the Die Bottom indicate the location of the shape at the center of the die and can be used to place your metal correctly into the die. Make sure the Die Top is seated flush on your metal to prevent racking.

NOTE: Rock the Die Top back and forth a little to make separating the parts easier.



7. Center! Center! Center! Center the assembly on the lower platen of your 20-ton hydraulic press. Be sure it's centered front to back as well as side to side.

8. Raise the lower platen and press until you hear a "POP." This will be *much* quieter than the "pop" when using pancake dies.

IMPORTANT NOTE: You DO NOT need the full 20-tons! The pressure required to cut a blank will vary by design, metal type, gauge, and metal temper. You should NOT see any urethane squish out of the sides of the die. If you don't hear anything, stop and check rather than continue to press. The Die Set may be damaged if over-pressed. Err on the side of caution until you become familiar with the tool.

9. Release the pressure and advance your metal in the die. Press again to cut additional metal blanks.

NOTE: If using the Standard Die Shoe base, open the Die Set as needed to remove blanks (after every third cut, approx.). Be sure to realign all of the components evenly, making sure there are no gaps between the parts. If using the High-production Die Shoe base, the cut blanks will collect below the base; remove blanks as needed.