



Finned Shotgun Slug Swage Kit

The finned hollow cavity shotgun slug is formed in three steps, using a CSW-1-H core swage, CS-1-H core seater, and PF-1-H point form die. An ejector frame is used, with special ejecting external punch and punch holder, to free the finned slug from the final punch. The usual FPH-1-H floating punch holder is NOT used in the final operation of forming the point. It can be used in the first two steps.

The 12-gauge set is designed to make slugs from 1.125 to 1.375 ounces. Heavier slugs are not recommended. Never attempt to make a slug lighter than 1.125 ounces as it will cause the destruction of the dies and punches. If a die or punch is damaged, all of the parts associated with the die must be returned for hand fitting. Modifications to the slug design will require return of the entire set along with the ejectors and accessories.

STEP 1. Make pure lead (Bhn 5 hardness) cores. For 12-gauge, these would be approximately .70-inch diameter by .50-inch long. Use clean lead: reclaimed lead may contain grit and alloys that will destroy the punches and dies. Cores can be cast 3 at a time in a Corbin CM-3 Core Mould, available for 10, 12, and 20 gauge as well as other sizes. The cores must weigh approximately 1.25 to 1.375 ounces for 12-gauge, and .75 to .875 ounces for 20-gauge. Lighter weights will destroy the punches.

STEP 2. Swage the lead cores. In a 12-gauge, this will require approximately 1,500 psi on the Hydro-Press gauge. In 20-gauge, the pressure should be about 1,200 psi. Use



the lightest pressure that will form the shape completely. The lead cores must be lubricated lightly. Too much lube will prevent cores from forming fully, and too little will increase pressure and extrude excess lead. A bleed-off of 5-10 grains is correct. Attempting to bleed off too much lead can break the die from excess pressure. The correctly formed slug will have a deep cavity on one end and a conical shape on the other.



STEP 3. Change to the CORE SEAT DIE (CS-1-H) and punch, and form the fins on the conical end of the slug. This uses approximately the same gauge pressure as the first step. The external (top) punch aligns itself in the cavity of the slug. Raise the ram slightly, so the preformed core can

be inserted easily into the cavity of the slotted punch. Do not press the slug into the die under power without first starting in this way or the slotted punch may be broken.

Lubricate the slug, and put it into the die

with the conical end down. The internal punch is equipped with an ejector rod to push the slug clear of the fins on the down stroke. Raise the press ram and hold the pressure on the slug for two seconds by keeping the UP button depressed. Lower the ram slightly and then raise it again to swage a second time. This uses lower pressure than trying to form completely in one pass. Lower the ram to eject the slug.

If the slug sticks in the punch, place a small piece of lead wire in the cavity of the slug to increase the volume of lead. Raise the ram so that you can see the ejector punch, which passes through the fin punch. Make sure this ejector punch is pulled down, out of the lead (raise the ram enough so you can use a wood, brass, or plastic stick to push this punch down if it is stuck in the up position). The end of the ejection punch should be clear of the rectangular knock-out bar, which passes through the slot in the press ram. Never attempt to melt a stuck slug out of the punch, as this ruins the temper of the tool steel punch.

Lubricate the lead slug at each step with Corbin Swage Lube. To make the lubricant thinner, you can dilute the swage lube with castor oil, and simply dip the end of the slug (with the fins) into it. The fins should be sharp and completely formed with points at the base. If they are not, check for excess lube build-up, or particles of lead in the bottom of

the punch slots. Do NOT try to increase the pressure and form the slug in one pass: it will not form reliably and may break the die. Swaging the slug twice at lower pressure without ejecting between passes does a much better job.



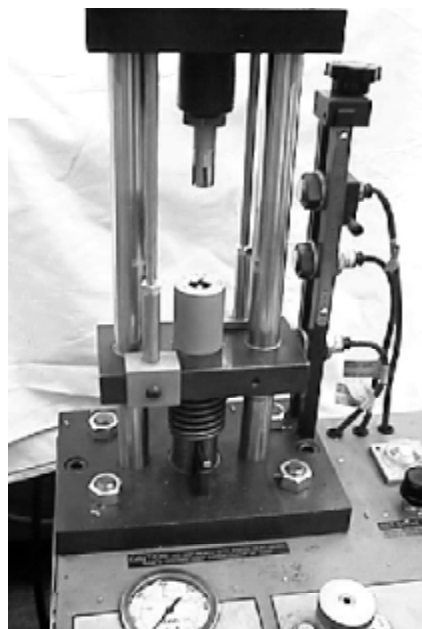
STEP 4. Finish the slug in the point forming die. The external punch has an ejector and fits into a special punch holder so that the ejector punch projects from the top. An optional ejection frame fits on the press.

Do not tighten the screws at first: instead, slide the two 5/16-inch threaded rods down through the two bronze bushings in the top of the press, with the longer threaded ends up. Place a 5/16-18 nut on the lower ends of each rod, and screw the rods into the L-brackets. Snug up the nuts against the top of the L-brackets. Now the cap screws holding the L-brackets can be tightened. The two rods should have a knock-out plate mounted to their top. This plate has an adjusting screw in the center of it.



With the ram down to the position where the slug would be ejected out of the point forming die, adjust the center

bolt in the knock-out plate so that it contacts the ejection punch head, in the special punch holder. The spring loaded knock-out plate will help prevent damage to the die if the assembly is misadjusted, or if the bottom position sensor on the press is not set correctly. The ejector frame must be set up correctly to avoid damage.



Alternatively, the ejector punch can be tapped with a plastic mallet to eject the slug. The ejection is in two stages: first the slug is automatically ejected from the die, and usually sticks in the slots of the external punch. Then, the ejector punch that projects out the top of the punch holder is used to eject the slug from the punch itself.

Place the slug into the slotted punch by hand, then raise the press ram. Never place the slug into the point form die. The fins must align with the slots. A pressure of 500 psi is sufficient to form the cavity into a round shape. If the a slug is used lighter than the minimum specified weight, the punch and possibly the die will be destroyed. The slotted external punch is provided with a combination stop collar and lock nut. This holds the punch in the punch holder, as well as preventing the punch from being driven too far into the die.



Lower the ram. The finished slug will usually stay in the top punch. The ejection frame will contact the ejection punch and push the slug out. Catch it as it falls. To be safe, use a small box or scoop instead of your hands. This way, if the ram should accidentally be reversed your hands are not in the way of the moving die.

