



## Why some S-type external punches use a captive retainer bushing ...

Swage dies have **two punches**, one **INTERNAL** and one **EXTERNAL**. The “die” is the cylinder with threads on one end, into which the punches fit.

The **INTERNAL punch** fits inside the press ram. It is sometimes called the “bottom” punch. It rides up and down inside the die and rests on a step inside the ram to position it for swaging. On the down stroke, it is stopped by the “stop pin” while the ram and die goes down, pushing swaged components out of the die. This is the “ejection” function of the internal punch.



The **EXTERNAL punch** is held by a threaded retainer bushing or “hex nut” that screws into the bottom of a 7/8-14 threaded body which screws into the 7/8-14 top plate of the press.



This unit is called the “**Floating Punch Holder**” (FPH-1-S). It allows the punch to move slightly from side to side so it can align with the die bore. This is the “floating” function, which occurs only if the hex nut is finger tight. (No wrench required!)

The punch holder is screwed up and down to adjust how far the external punch goes into the die mouth at the top of the stroke. This controls the weight, seating pressure, amount of tip closure, and other adjustable parameters depending on which die is being used. All operations of swaging take place at the TOP of the ram stroke.

The CSP-1 press comes with a FPH-1-S floating punch holder, which includes a **retainer bushing** or “hex nut”. The retainer bushing fits over the end of any -S type external punch that is .375 caliber or smaller. But it cannot fit over a punch larger than 0.375 inches.

Punch Head



**For calibers larger than .375 inches**, the external punch is constructed with a **captive retainer bushing**. The punch is built with a separate “head” that is secured permanently with a cap screw and a thread locking agent. The retainer bushing is put on the punch shank, and the punch head is secured snugly in place. Now the hex bushing cannot “fall off”. The punch head is NOT intended to be easily removable, and there is no reason to remove it. The bushing should remain captive.



**Punches of .375 caliber and smaller** could not have a captive hex bushing. There would be nothing larger than the center hole of the retainer bushing to keep the bushing from falling off. And there is no reason one would ever be required, since all external punches of .375 and smaller simply use the retainer bushing that comes with the FPH-1-S floating punch holder, which in turn comes with the CSP-1 press.

**Note:** Bullet makers sometime purchase additional retainer bushings in case of loss and additional floating punch holders so they can set the lock ring to retain a favorite setting for weight or bullet style. (Or, one can drop a part into the die, raise the ram to the top, and then bring the punch holder down until the external punch touches the part firmly enough so the punch holder can’t be turned further by hand. This is a quick way to make the same setting as a prior operation.)