



## CSW-1 Core Swage Die

Core Diameter \_\_\_\_\_

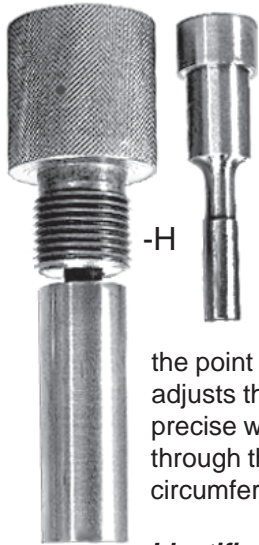
Wire Size \_\_\_\_\_

### Specifications:

- Caliber(s) \_\_\_\_\_
- Jacketed, wall \_\_\_\_\_
- Lead, max Bhn \_\_\_\_\_
- Other \_\_\_\_\_

### Type:

- R
- M
- S
- H



-H

**Purpose:** The core swage die prepares the lead core by expanding it to fit within a given jacket (diameter depends on the jacket wall thickness) or for smooth ogive lead bullets, to fit into the point forming die. The core swage adjusts the cut or cast lead core to precise weight by extruding (bleeding) lead through three tiny bleed holes around the die circumference (-S or -H) or through a punch (-R).

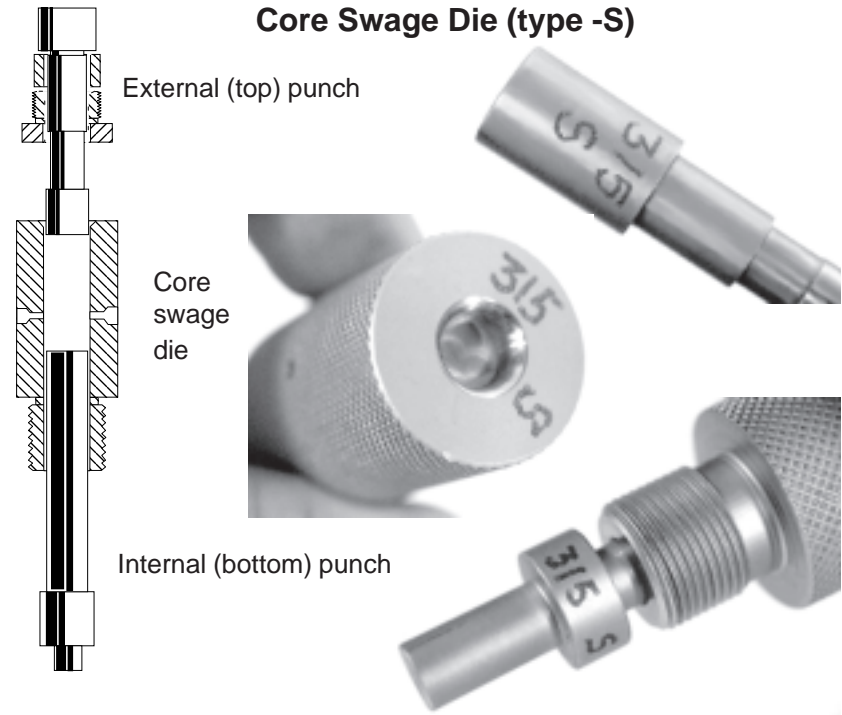


-S

**Identification:** The die and punches are marked "S". They are also marked with the diameter of the lead core produced. The cut wire or cast core must be smaller than the die bore. Never force a lead core into the die. The punches are snug fits to the die bore. The type -R die (reloading press) has a bleed hole through the external punch, rather than in the die. Type -S dies have 5/8-24 threads to fit the CSP-1 press ram. Type -H dies have 1-12 threads to fit the CSP-2 and HydroPress ram. External punches fit into the floating punch holder in Corbin presses. The type -R dies fit into the 7/8-14 head of reloading presses and the external punch fits the slotted press ram.

**Operation:** Install the die in the press (-S and -H dies fit the press ram). Install the external punch in the punch holder (or ram, for -R dies). Put a core into the die. (Cores should easily fit by hand entirely into the die). Raise the ram to the top of its stroke. The punch holder or -R die should be set high enough so the core does not touch the external punch. Adjust the punch holder (or -R die) downward to contact the core. Lower the ram, and carefully adjust the punch holder (or -R die) to leave exactly the desired weight in the core at the top of the stroke. Each stroke must remove a small amount of lead to avoid light cores. Hold the pressure for a second or two at the top of the stroke for more precise results. Cores should vary less than 1% of total weight.

## Core Swage Die (type -S)



**Avoiding die breakage:** Use only appropriate material. Pressure increases with the square of Brinnell hardness. Pure lead is Bhn 5. Most wheelweight lead alloys are Bhn 8-10. Linotype alloys are Bhn 20-22. Pure lead flows readily at room temperature with 20,000 psi of pressure. The -S dies normally handle about 50,000 psi before breakage occurs. The -H dies normally handle about 100,000 psi. Always use the softest lead that will do the job. Never exceed the maximum lead hardness for a given die. When in doubt, use pure lead only.

The stroke should be smooth, moderate speed. Never jerk or slam the handle up and down, because the shock of impact will increase the peak pressure and may crack the die. Use only clean lead, without silica or road dust, to avoid abrasion of the die. Use Corbin Swage Lube (a light film applied with fingertips when handling the cores is sufficient). Only one thing will break a die: excess pressure. The operator of the die controls how much force is applied. Regardless of the lead hardness, the only thing that breaks the die is applying more force, attempting to make the material extrude through the bleed holes, than the die can handle. If it takes more than gentle one hand force, stop and find out why. Adjust the die to use the end of the stroke to minimize the effort and provide a positive volume set point for consistent weight.