

## CORBIN TECHNICAL BULLETIN

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### Care & Handling of Swage Dies

Bullet swage dies and punches are made of various special tool steels designed for specific purposes, and are very hard and tough. But they are also precision finished, honed and diamond lapped to exact tolerances, sometimes as close as plus or minus 50 millionths of an inch. They require proper handling, especially in shipping, to retain their finish, dimensions, and value.

#### **Shipping:**

NEVER toss loose dies and punches together in a bag for shipping! The different hardnesses of steel used for each kind of part will strike and rattle against the other parts during shipping, causing untold damages that can destroy the precision and even the usefulness of your tools.

ALWAYS wrap each punch and die separately with some kind of padding, such as a section of paper towel, a couple of layers of 1/8-inch or 3/32-inch standard expanded foam packing, even a crumpled newspaper wrapped snugly around each individual part and taped closed.

Dies and punches that were put into the mail with insufficient padding between them usually arrive in far worse condition than when you put them in the box. Boxes are thrown, dropped, kicked, piled under hundreds of pounds of other boxes, shaken and rattled all the way across country at times...and their contents might just as well have been put into a cement mixer for a few hours! The value of your die is primarily in the effort of a skilled diemaker in fitting and finishing the precision parts to fit as they should. Dinging them up with improper packaging and shipping is a sure way to ruin them.

#### **Storage:**

Dies should be protected with a good grade of rust-preventive oil if they are to be stored for more than a few days. In an atmosphere with wide temperature changes, high moisture, or salt air, they should be dipped or stored in a light oil even if it is just overnight. Be cautious of spray lubricants and anti-rust sprays: the rapid cooling effect of a spray stream can condense moisture on the metal, which when sealed in a bag will cause the same rusting that the spray was meant to stop! Light oils such as 3-in-1 oil, sewing machine oil, Corbin 5-Star ISO-15 gun oil, and similar gun oils can be used by dipping, swabbing, or light spray if air can circulate around the through the parts for a brief time before they are packed away. Storage in a jar of light oil is messy but usually quite safe. Anti-rust vapor inhibitor paper and other means can be used if the material is not in direct contact with the die.

Try to avoid storage in an unheated area that is subject to rapid temperature changes. If your loading room is not usually heated, and you warm it up quickly to do some work there, the moisture in the air may condense on the cold metal items and cause rusting. Rusted dies are ruined dies in most cases, because the diamond-lapped high precision fits are destroyed by the action of surface rust. Treat them like the precision tools they are, and they will last a lifetime.

#### **Cleaning:**

Dies can be cleaned with most organic solvents, such as kerosene, acetone, Stoddard's Solution, mineral oil, paint thinner, or just about any other non-corrosive oil and grease solvent. Wiping the bore of the die using a cotton swab dipped in a solvent or light oil and then wiping out the oil or solvent with a dry swab works well. Corbin Swage Lube or Corbin Jacket Drawing Lube can be used to prepare the die bore for swaging, by wiping the die surface with a swab containing one of these lubricants. Air-borne dust and road grit from driveways is the enemy of dies: the jackets and lead should be free of dust, which is highly abrasive. They can be washed by sloshing in solvent prior to use.

#### **Lubrication:**

Jackets and cores should be lubricated on the surfaces where they contact the die or punch, using Corbin Swage Lube. A light film is all that is required. Outsides of components can be lubricated simply by handling them while your fingertips are moistened with a little of the lubricant. Making or re-drawing bullet jackets requires using a swab to place lube inside the jacket or tubing. Merely wiping a little on the punch will not usually be enough, and you may have separated jacket ends, sticking jackets, and other issues if that is the extent of the lubrication applied. All stages where components are in contact with dies and punches normally requires proper lubrication with some specific exceptions to solve certain kinds of issues. These are spelled out in special instructions. Otherwise, use the right lube, applied in the right places, in sufficient quantity. Many problems are solved when the correct lube is applied.