

### SA-1 Unit (For Shaped Holes)

#### Assembly and Punch and Die Replacement

## Shaped Holder Assembly

#### Lower Arm Assembly

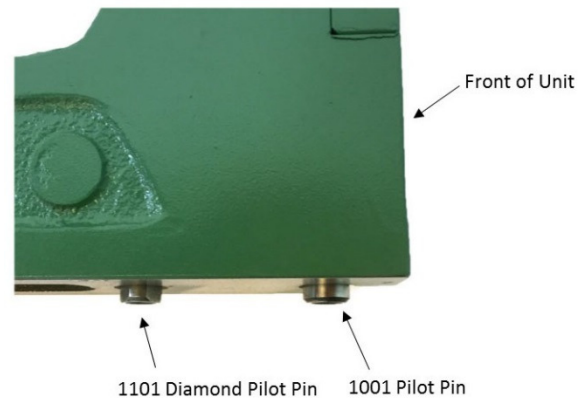
**Pilot Pin Removal:** To remove the pilot pin, thread the ¼-20 x ½ set screw into the holder to back the pilot pin out of its hole.

**Pilot Pin Installation:** Use a brass or aluminum hammer to install the pilot pin assembly (P/N 1001) into the hole on the bottom of the holder under the die. Ensure the pilot pin is perpendicular to the bottom and extends 3/32" from bottom surface. Thread the 1/4-20 x 1/2 set screw (P/N 91332, supplied with pilot pin), until it touches the bottom of the hole, being careful not to push the pilot pin back out.

Using the same process as above, install the diamond pilot pin (P/N 1101) into the second hole.

**Die Removal:** To remove the die, first use a hex key wrench to loosen the guide retainer (P/N 1018) in the upper arm and lift the guide to allow clearance for die removal. Then loosen the die set screw on the front corner of the holder and, if necessary, push the die up out of the holder from the slug chute. A bent metal rod or tool might be required.

**Die Installation:** First, to install dowel pin (P/N 1088-3) in the back of the die seat, back out the 10-32 x 3/16 set screw (P/N 91310) located on the side of the bottom arm. Then insert the dowel pin through the clearance hole at the front of the unit and into the hole in the back of the die seat being sure it extends into the die seat at least 0.050" and no more than 0.075"; finally retighten the set screw. Then,



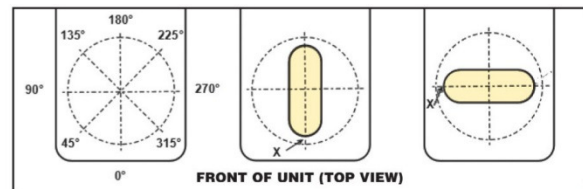
being sure the die seat is free of debris, insert the shaped die (P/N 2125) with the cutting edge on the top, making sure to align the shape in the die in the intended orientation. Align the keyway in the die with the dowel pin and insert the die into the die seat, being sure the die is fully seated at the bottom of the die seat. Tighten the die set screw at the front corner of the unit (P/N 91310 10-32 x 3/16) to secure the die in place.



## Upper Arm Assembly

**Guide Installation:** First install the  $\frac{1}{4}$  x 1 dowel pin (P/N 1088-3). Start by backing out the 10-32 x 3/16 set screw (P/N 91310) located on the side of the upper arm. Then insert the dowel pin through the clearance hole at the front of the upper arm and into the hole in the back of the guide bore being sure it extends into the guide bore at least 0.100" and no more than 0.125"; finally retighten the set screw. Apply a thin coat of lubricant (e.g. P/N 8007 Molykote® type G-N metal assembly paste) to the outside of the shaped guide body (P/N 2035). Put the lifter spring (P/N 2070) on to the guide with the narrow end of the spring against the collar and insert the assembly into the guide bore while being sure to align the external key slot on the shaped guide with the dowel pin in the guide bore of the unit. While pushing down on the guide, align the flat on the guide retainer (P/N 1018) with the flat on the guide. Insert the guide retainer in the guide retainer bore in the upper arm with the small diameter up and use the button head screw (P/N 91130) to secure the guide retainer under the lifter spring. (For additional feed clearance, assemble the guide retainer with the small diameter down.)

**Punch Installation:** First be sure the punch and head assembly (P/N 2016) will fit in the die by orienting it in the same intended orientation as the die and dropping it through the guide (without the stripping spring) and into the die. Visually look to see that the die clearance is even all the way around. If the die clearance is uneven, contact UniPunch.



Extract the punch and apply a thin coat of lubricant (e.g. P/N 8007 Molykote® type G-N metal assembly paste) to the punch body. Put the punch and head assembly through a stripping spring (P/N 2045) and into the guide. According to the orientation, push the retainer pin (P/N 2180) through the hole that is parallel to the flat on the punch until it clips on to the guide collar.