

### SAJ-2 1/2 Unit (For Shaped Holes)

#### Assembly and Punch and Die Replacement

##### Lower Arm Assembly

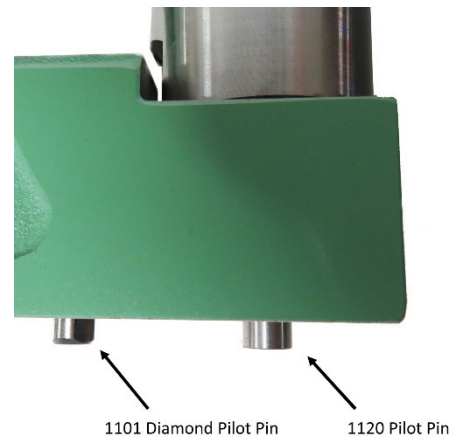
**Pilot Pin Removal:** To remove pilot pin and lock washer (P/N 1120), use a hex key wrench to unscrew the pilot pin. To remove pilot pin (P/N 1101), thread the ¼-20 x ½ set screw into the holder to back the pilot pin out of its hole.

**Pilot Pin Installation:** Use a hex key wrench to screw the pilot pin and lock washer (P/N 1120) into the lower of the holder up into the die adapter or pedestal die.

Ensure the pilot pin is perpendicular to the bottom surface of the holder.

Use a brass or aluminum hammer to install the pilot pin assembly (P/N 1101) into the hole on the lower arm of the holder behind the die. Ensure the pilot pin is perpendicular to the bottom and extends 3/32" from the 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.



**Pedestal Die Removal:** To remove the shaped pedestal die (P/N 2326), first loosen the guide retainer (P/N 1018) on the upper arm of the unit to allow the guide to lift up. Use a hex key wrench to loosen and remove the 1120 pilot pin and lock washer from the lower arm of the unit and lift the pedestal die up and out of the unit.

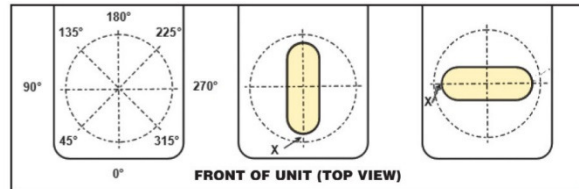
**Pedestal Die Installation:** First, to install the key (P/N 1019) in the back of the die seat on the lower arm, back out the 10-32 x 3/16 set screw (P/N 91310) located on the side of the lower arm. Then insert the key, with the flats on the key perpendicular with the flat on the lower arm, into the 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, assemble the shaped pedestal die (P/N 2326) making sure to align the shape in the die in the intended orientation. Then insert the

pilot pin and lock washer (P/N 1120) up through the lower arm of the holder and screw into the bottom of the pedestal die. Ensure the pilot pin is perpendicular to the bottom surface of the lower arm.

## Upper Arm Assembly

**Punch, Guide and Spring Assembly:** 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 0.125" and no more than 0.150"; finally retighten the set screw.

Next, check punch and die alignment. Externally lubricate punch body (P/N 2416) with a thin even coat of lubricant (e.g. P/N 8007 Molykote® type G-N metal assembly paste). Insert punch (threads facing up) into the bottom (the end away from the snap ring) of the guide (P/N 2435) being sure the pin on the side of the punch engages the keyway in the internal bore of the guide.



Loosely thread the punch screw (P/N 2485) only a few threads, by hand, into the punch. Now using the punch screw as a handle, drop this punch and guide assembly through the guide bore of the holder, gradually lowering the punch into the die making sure the punch shape will fit in the die by orienting it in the same intended orientation as the die. Visually look to see that the die clearance is even all the way around. If the die clearance is uneven, contact UniPunch.

Pull this assembly back out once die clearance is visually verified and remove the punch screw.

Stack the set of 10 disc style stripping springs (P/N 2440-10) with the disc spring curvature opposing each other as shown in the picture on the right. Place the stack of springs into the spring guard (P/N 2442). Insert the punch driver (P/N 2484) down through the center of the springs. Insert this assembly into the

**2440-10  
STRIPPING  
SPRING  
SET OF 10  
STACK AS  
SHOWN**



top of the guide. Insert the punch screw thru the punch driver and by hand engage a few threads into the punch. Put the punch and guide assembly into a soft jaw vice and tighten the vice just enough to prevent the guide from spinning while you tighten the screw. Use a hex key wrench to tighten the punch screw.

**Important:** tighten the punch screw until the punch driver is tight

against the punch so that during punching operation the punch driver is what engages the punch and not the threads of the screw. When properly assembled the disc springs will not spin and there is no loose play that would allow the punch to move up and down or spin in the guide.

Assemble the conical lifter spring (P/N 2470) onto the guide body, putting the narrow end of the spring on first. Lubricate the guide bore of the holder with a thin even coat of lubricant (*e.g.* P/N 8007 Molykote® type G-N metal assembly paste).

Insert guide assembly into holder. 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 91330) to secure the guide retainer under the lifter spring. For additional feed clearance, assemble the guide retainer with the small diameter down.