

# UNIPUNCH

HOLES IN PARTS. **FAST.**

UniPunch Products, Inc.  
715/263-3900 | Fax 715/263-3897  
311 5<sup>th</sup> Street NW | Clear Lake, WI 54005  
[www.unipunch.com](http://www.unipunch.com)

## AJ-2 1/2 Unit (For Round Holes)

### Assembly and Punch and Die Replacement

#### Lower Arm Assembly

**Pilot Pin Removal:** To remove the pilot pin, use a hex key wrench to unscrew the pilot pin.

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

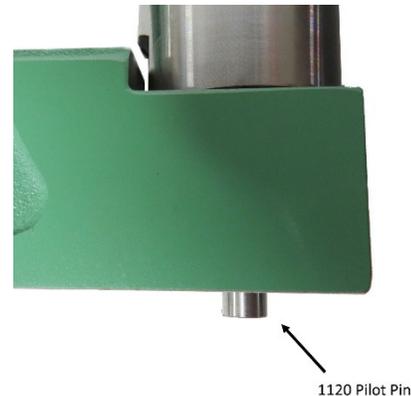
**Pedestal Die Removal:** To remove the pedestal die (P/N 2321), use a hex key wrench to loosen and remove the 1120 pilot pin and lock washer. Then loosen the guide retainer (P/N 1018) on the upper arm and lift the guide up enough for the pedestal die to clear and be removed.

**Pedestal Die Installation:** First make sure the bottom die seat and the die are free of debris. Insert the pedestal die (P/N 2321) into the die bore on the lower arm of the unit. 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 check punch and die alignment. Externally lubricate punch body (P/N 2411) 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) and 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. 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 leaving the punch in the guide.



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)

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



down through the center of the springs. Insert this assembly into the top of the guide. Insert the punch screw thru the punch driver and by hand engage a few threads into the punch. To prevent the punch from spinning while tightening the screw, make sure to align the hole on the side of the punch with the key slot on the guide, and insert a drift pin or similar tool through the key slot of the guide and into the



hole in 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.)

## To Convert a Round Unit to a Shaped Unit

Purchase a shaped hole conversion kit (P/N 7125) and the appropriate shaped punch and die.