

# **Advanced Shellplate Bearing Kit**

- For Dillon 650/750 Reloading Presses

Item No.: T1782

 $\checkmark$  Designed to be used on Dillon XL 650 and XL 750 presses.

- ✓ Should also work on SL 900 but has not been tested.
- ✓ This kit services 1 Press and up to 5 Shellplates.
- X Not for use on RL 550, BL 550, AT 500, RL 450 or RL 300 presses.

#### Included:

- 1 Needle Roller Thrust Bearing
- 6 Thrust Washers
- Loctite® 609 Retaining Compound (0.02 floz) + Application Needle
- Polyamide-imide Index Bearing + Reduced Force Spring
- Detailed Instructions

There are several shellplate bearing kits available that use an axial needle roller thrust bearing with two thrust washers. But they all miss one critical detail. The Thrust washers included in the kits are not fixed into position and so are able to rotate. When the thrust washers rotate along with the bearing, it defeats the whole advantage of using the bearing.

To function correctly, the thrust washers <u>must</u> be fixed to the Shellplate Bolt and to the top of the Shellplate. It is also not good to use just the bearing without thrust washers as the hardened needle rollers of the bearing will rapidly wear the Shellplate Bolt and Shellplate. The thrust washers are matched, in both material and hardness, to the needle rollers of the bearing ... thus preventing wear of the adjoining parts.

This kit includes six thrust washers ... one for the Shellplate Bolt and five more for Shellplates ... plus a tube of Loctite<sup>®</sup> 609 Retaining Compound to bond the thrust washers in position.

Note: Refer to the User Manual for your press to identify the Dillon part numbers referenced herein.

#### A) Preparing for Installation

- 1) Remove Ejector Wire (#13298).
- 2) Loosen the Brass Tip Set Screw (#13923) on the press Mainshaft (#13485) and then remove the Shellplate Bolt (#13418) and Shellplate.
- 3) Put a piece of masking tape or painters' tape over the Shellplate Bolt hole to prevent losing the Index Ball (#13997) or Index Ball Spring (#13891) down the Mainshaft. Then remove the Index Ball and Index Ball Spring.
- 4) Clean the bottom of the Shellplate Bolt head where it contacts the Shellplate and inspect the surface to make sure it is smooth and free of any burrs or other imperfections. Polish if needed.

TIP: To speed up the polishing, you can put it in a drill or drill press at low speed and use fine sandpaper (600 grit or finer) glued to a popsicle stick to remove the rough burrs on the bearing surface.

5) **Pay special attention to the bottom of the Shellplate**. Gently run the tip of a Q-tip along the edges of the detent holes to check for burrs. If you see any fibers pulled off or feel any burrs or sharp edges with your fingertip, you need to remove them as it can permanently damage the new Polyamide-imide Index Ball. Take a small piece of fine sandpaper (320 grit or finer), place it over the detent hole and press down with a finger in a twisting motion to remove the burrs. Check again with the Q-tip, repeat as needed. It should be very minor as Dillon does a great job on their machining. <u>You must do this to each of your Shellplates</u>.



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#### B) Installing Thrust Washer on Shellplate Bolt

- 1) Degrease the bottom surface of the Shellplate Bolt head with alcohol or mineral spirits. At this time, you should also degrease the surface of a Thrust Washer. Let both parts dry thoroughly.
- Place the Shellplate Bolt head down on a stable flat level surface. Apply about 4 drops of Loctite<sup>®</sup> 609 Retaining Compound, evenly spaced, to the surface of the Shellplate Bolt head that was polished in Step A4.
- 3) Slide a Thrust Washer onto the Shellplate Bolt until it is in full contact with the bolt head.
- 4) Rotate the Thrust Washer one full turn to evenly distribute the Loctite<sup>®</sup>. NOTE: <u>Immediately</u> clean off any excess Loctite using a cotton swab.
- 5) Leave the Shellplate Bolt head down on a stable flat level surface and weigh down the thrust washer with a 1/2" drive x 5/8" socket as shown in the photo at right. This will ensure that the Thrust Washer is level and in uniform contact with the Shellplate Bolt while the Loctite<sup>®</sup> cures.

TIP: If you don't have a 1/2" drive socket set, you can use a Shellplate. But first apply a light coating of gun oil to the top and center hole of the Shellplate. This will ensure that any excess Loctite<sup>®</sup> will not bond the Shellplate to the Shellplate Bolt.

6) Let the Loctite<sup>®</sup> cure for at least several hours before moving. Curing overnight is recommended.

### NOTE: Complete this assembly before proceeding to the next steps.

### C) Installing Thrust Washer on a Shellplate

- 1) Use alcohol or mineral spirits to degrease the top Shellplate surface where the Thrust Washer will contact it. At this time, you should also degrease the surface of one Thrust Washer. Let both parts dry thoroughly.
- 2) Apply 3 or 4 small drops of Loctite<sup>®</sup> 609 Retaining Compound, evenly spaced, to the top of the Shellplate in the area surrounding the hole for the Shellplate Bolt where the Thrust Washer will make contact.
- 3) Place a Thrust Washer on top of the Shellplate so that it is centered up on the hole for the Shellplate Bolt.

NOTE: Immediately clean off any excess Loctite<sup>®</sup> using a cotton swab.

4) Insert the Shellplate Bolt through the Thrust Washer and Shellplate to ensure the Thrust Washer is perfectly centered.

NOTE: First apply a light coating of gun oil to the shaft of the Shellplate Bolt and to the surface of the Thrust Washer that is affixed to it. This will ensure that any excess Loctite<sup>®</sup> will not bond the Shellplate Bolt to the Shellplate.

- 5) Place the Shellplate Bolt head down on a stable, flat, level, surface with the Shellplate still in place as shown in the photo at right. The weight of the Shellplate will ensure that the Thrust Washer is in uniform contact with the Shellplate while the Loctite<sup>®</sup> cures.
- 6) Let the Loctite<sup>®</sup> cure for at least several hours. Curing overnight is recommended TIP: Alternatively, if you reinstall this assembly onto the press and tighten the Shellplate Bolt fingertip snug, it will ensure that the Thrust Washer is in solid contact with the Shellplate while the Loctite cures.

#### Repeat this procedure for each Shellplate.

#### Notes on Loctite<sup>®</sup> 609 Retaining Compound

Loctite<sup>®</sup> 609 Retaining Compound should be applied at normal room temperatures (68-72 °F / 20-22°C). At colder temperatures, the initial set and full cure times can become excessively long. At higher temperatures initial set times can become impractically short.

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The twist off cap can be flipped around and used to reseal the Loctite<sup>®</sup> capsule when done. The application needle can be blown out and likewise saved for future use.

## D) Installing Needle Roller Bearing

- 1) Clean the top of the Platform (#16658 for XL 650 / #75103 for XL 750)
- 2) Install the low force Index Ball Spring and Polyamide-imide Index Ball included in the kit.
- 3) Inspect the Shellplate Bolt and Shellplate and remove any excess Loctite<sup>®</sup>.
- Place the Shellplate on the Press Platform.
  NOTE: Don't forget to remove the masking tape covering the hole for the Shellplate Bolt.
- Apply a light oil to the Needle Roller Bearing. A fully synthetic oil is recommended. NOTE: Do NOT use grease or heavy weight oils. As this bearing operates under a very light load, a thick grease would impede movement of the needle rollers.
- 6) Install the Needle Roller Bearing onto the Shellplate Bolt.
- 7) Insert the Shellplate Bolt into the press Mainshaft and screw in until it contacts the Shellplate.
- 8) Adjust the tightness of the Shellplate Bolt and then tighten the Brass Tip Set Screw. NOTE: The Shellplate Bolt should be just barely fingertip snug. If it is too tight, the Index Ball will not be able to accurately index the Shellplate. Test it by indexing by hand through at least one full rotation, allowing it to stop at each station. The Shellplate should rotate easily but not be able to wobble.
- 9) Reinstall the Ejector Wire.

NOTE: As the diameter of the bearing is slightly larger than the head of the Shellplate Bolt, you must open up the loop of the Ejector Wire. It needs to fit loosely around the Needle Roller Bearing. The Ejector Wire <u>must</u> be positioned down against the top of the Shellplate for proper ejection of cartridges. If this is not done, cartridges will jam and not be ejected. If you have an aftermarket ejector, make sure it is designed to be used with a bearing or ejection jams will occur.

#### Maintenance

As the Needle Roller Bearing is not sealed, periodic cleaning and relubrication is required. A good rule of thumb is to inspect it each time you change calibers, and clean and relubricate if needed. If you have a press dedicated to a single caliber, you will need to determine a cleaning schedule. If you feel rough indexing or hear crunching during indexing, it is usually an indication that cleaning and relubrication is needed.

Because the Shellplate is now being held closer to the platform, you must also keep the platform clean. If any powder is spilled, it should be cleaned up immediately.

#### Q&A

- Q: Can a Shellplate that has a thrust washer attached be used on a press that doesn't have a needle roller bearing or Shellplate Bolt with a thrust washer attached?
- A: Yes, but why would you want to? But, if you do, you should clean the bottom of the Shellplate Bolt (See Section A4) to ensure that there are no burrs that might scratch the Thrust Washer. And be sure to keep a film of lubricant on the Thrust Washer to prevent rusting.
- Q: Is it possible to remove thrust washers from the Shellplate and Shellplate Bolt?
- A: Yes. But you will need to use a heat gun to melt the Loctite<sup>®</sup> 609. A hair dryer cannot get hot enough.

Disclaimer: UniqueTek, Inc. is not liable for damages or personal injury that may be incurred as a result of using this product in an improper way or in a reloading press that has been improperly maintained or operated. It is your responsibility to ensure that your reloading equipment is properly assembled, is maintained in proper working condition, and is used according to the manufacturer's instructions and safe reloading practices.

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