

Bearing Removal and Installation Tool

This kit is intended for removing and installing the needle bearing 11-483002-000 mounted on the cross brace. The kit makes changing this bearing in these close quarters, much easier than other methods used. Refer to *Figure 1*.

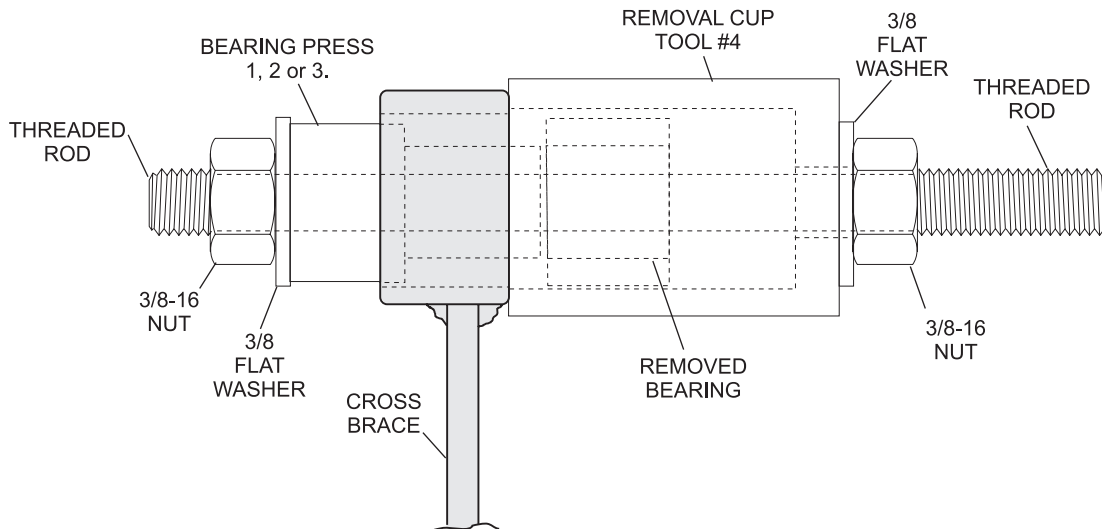


Figure 1

Packaging

12-700135-000

1	12-700140-000	Threaded Rod (5-1/2" x 3/8")
2	11-125104-001	Nut (3/8-16)
2	11-191014-001	Flat Washers (3/8)
1	12-700136-000	Bearing Installer and Remover Tool #1
1	12-700137-000	Bearing Remover Tool #2
1	12-700139-000	Broken Bearing Remover Tool #3
1	12-700138-000	Removal Cup Tool #4
1	12-700141-000	Spacer Tool #5
1	12-900107-000	Bearing Removal Instructions

Tools Required

- (2) 9/16" Ratchet Wrenches or Combination Wrenches
- Rags
- Pliers
- Hammer
- Vise Grips
- Optional: Cable Removal Tool 12-860673-000

Installation

i *NOTE: Bearing Presses - Identification number 1, 2, 3, 4 or 5 is engraved on each of the Bearing Removal Presses. Refer to Figure 2.*

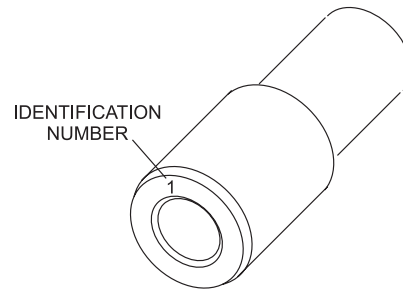


Figure 2

Bearing Press #1 - Used to press out bearings that still have the needle bearings in them.

Bearing Press #2 - Used to remove bearings where the needle bearings have fallen out of the bearing race.

Bearing Press #3 - Used if the Race of the bearing is broken.

Removal Tool #4 - Used with any combination 1, 2 or 3 presses above to remove or install a bearing.

Spacer #5 - Used if additional length is needed to remove or install bearing. Used in combination with tools 1, 2, and 3.

1. Cycle the Pinsetter to 90 degrees detecting standing pins, allow the scissors to close and shut off power to the Pinsetter.



WARNING! Shut off power to the Pinsetter by turning off the circuit breaker and disconnecting the power cord to the Pinsetter electrical box.

2. Remove the upper and lower scissor cables from the pulleys on the deck assembly. Position the cables between the scissor and moving deck pulleys. To remove the cables, we suggest using the Cable Removal Tool 12-860673-000. Refer to *Figure 3* and *Figure 4*.

CABLE REMOVAL
TOOL 12-860673-000

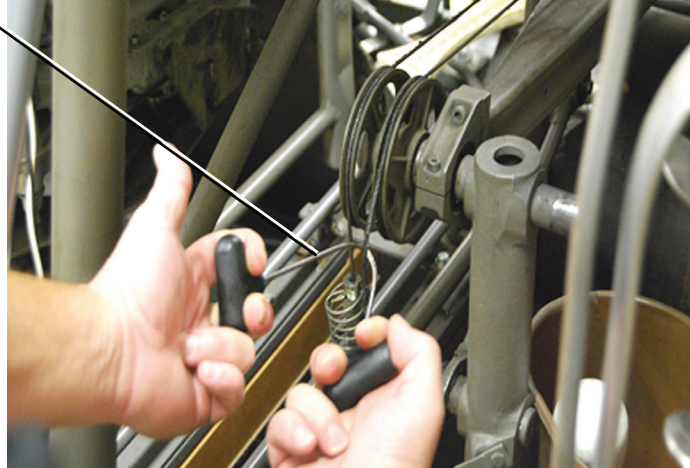


Figure 3

CABLE REMOVAL
TOOL 12-860673-000

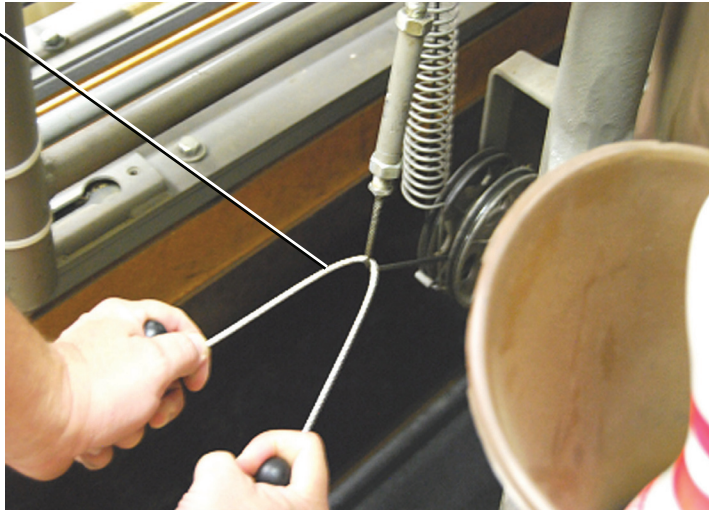


Figure 4

3. With the scissor cables resting between the upper and lower moving deck and scissor cable pulleys, apply power back to the Pinsetter.



WARNING! When turning on power to the pinsetter verify there are no persons or equipment in the operational area of the pinsetter.

4. Cycle the Pinsetter to 270 degrees setting new pins and shut off power to the Pinsetter



WARNING! Shut off power to the Pinsetter by turning off the circuit breaker and disconnecting the power cord to the Pinsetter electrical box.

5. Using the Cable removal tool, remove the upper moving deck cable from the upper pulley of the deck post. Allow the cable to rest to the left of the deck in the gutter. Refer to *Figure 5*.



Figure 5

6. With the moving deck and scissor cable loose, remove “X” washers and “X” washer pins from the upper control pulleys, and remove the upper deck cable from the upper control pulley. Refer to *Figure 6*.

CABLE AND
PULLEY

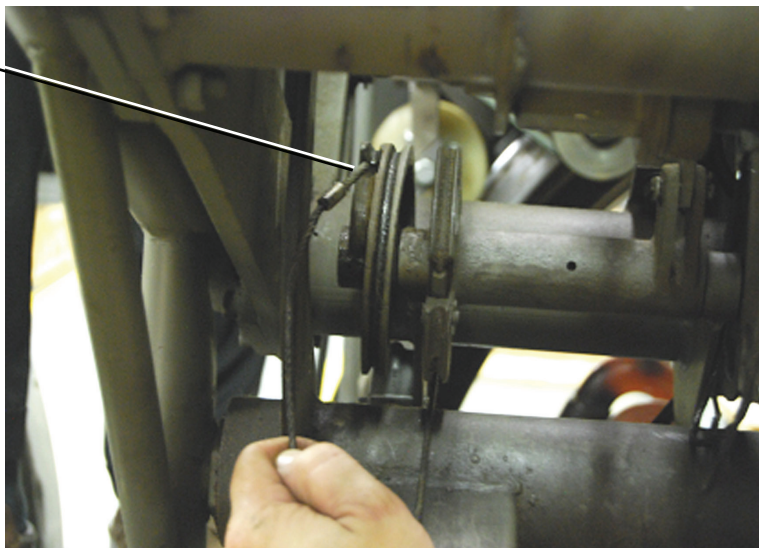


Figure 6

5. Remove the upper scissor cable from the upper control pulley and remove the deck jam control cable from the upper right pulley. Refer to *Figure 7* and *Figure 8*.

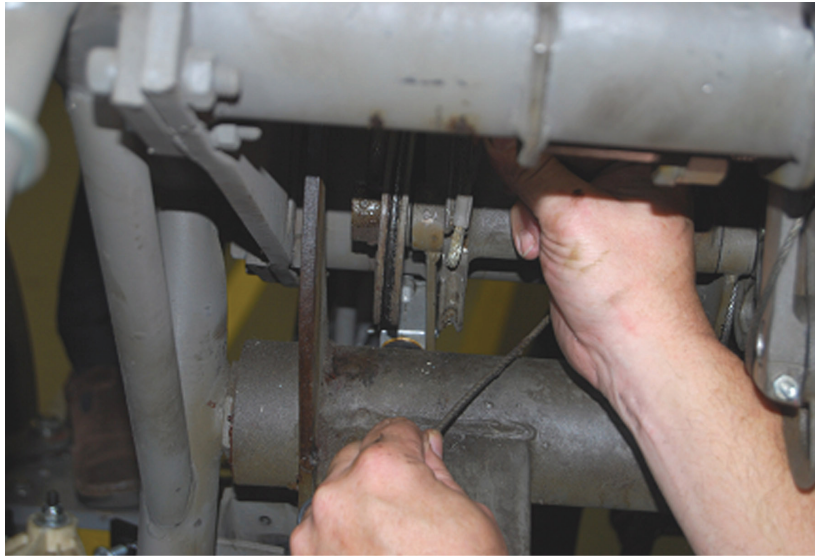


Figure 7

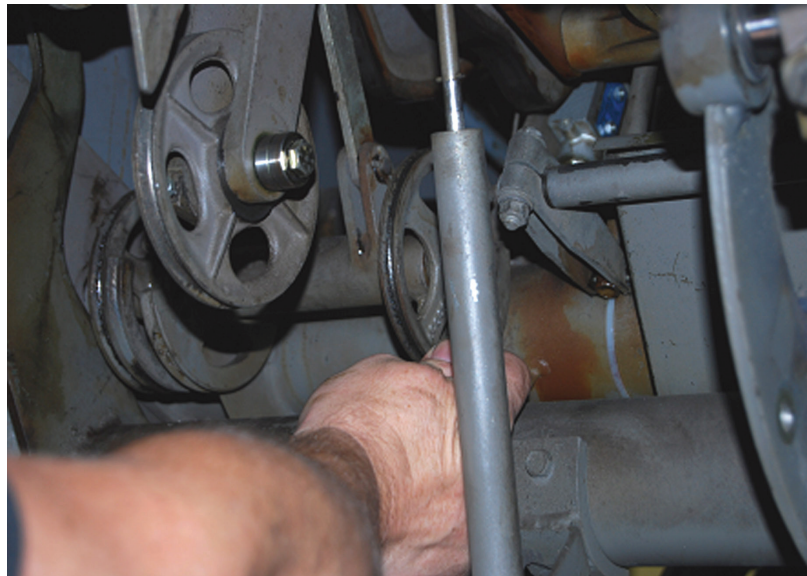


Figure 8

6. Remove the “X” washer and “X” washer pin that connects the scissor link to the upper scissor control pulley. Refer to *Figures 9 and 10*.

“X” WASHER

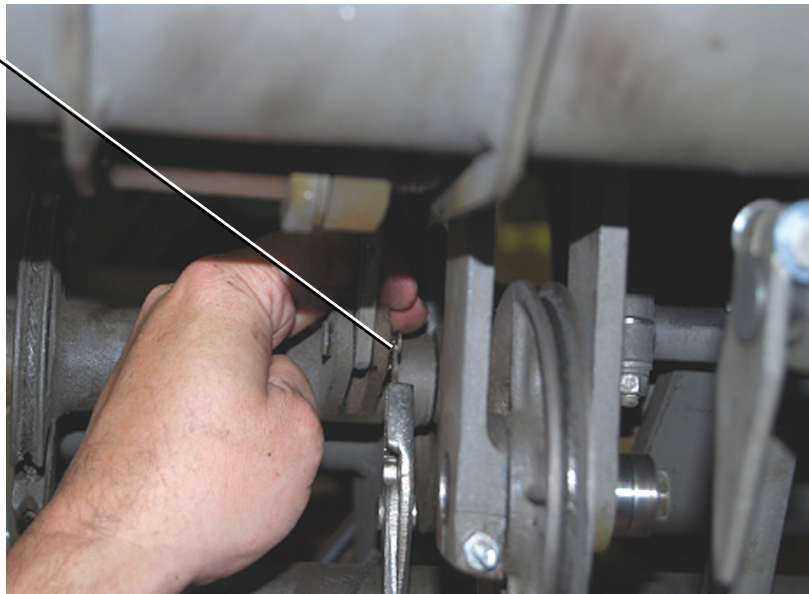


Figure 9

“X” WASHER
PIN

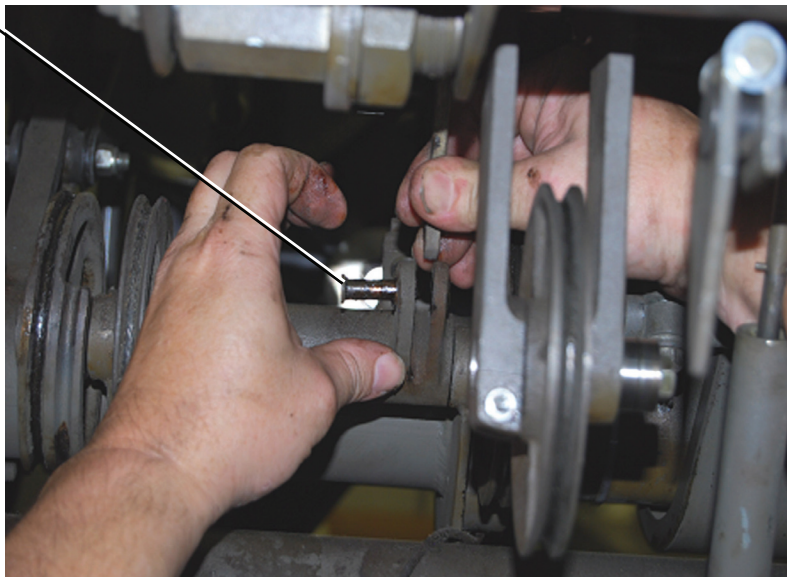


Figure 10

7. With all 3 cables and the upper scissor link removed from the upper pulleys, loosen the 3/32" Allen set screw in the upper moving deck control pulley and remove the pulley from the shaft. After the pulley is removed, remove the square key from the shaft. Refer to *Figures 11, 12 and 13*.

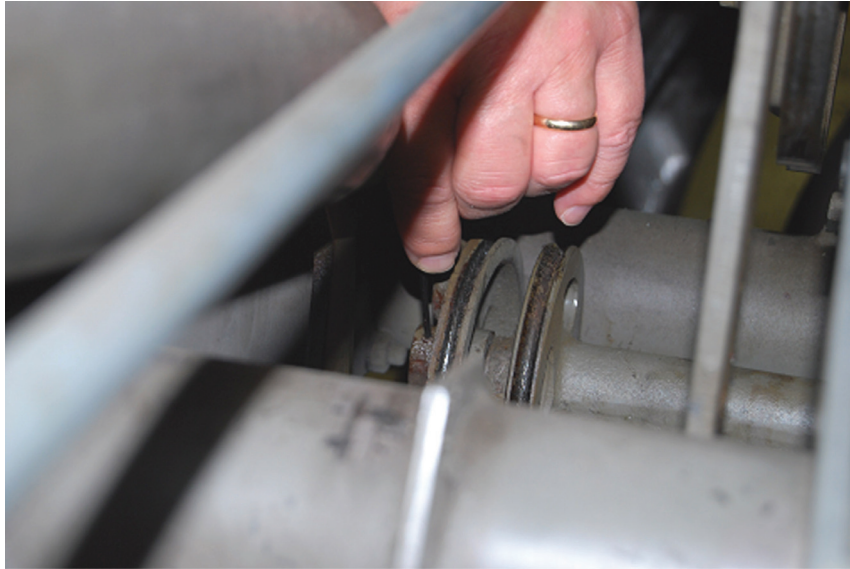
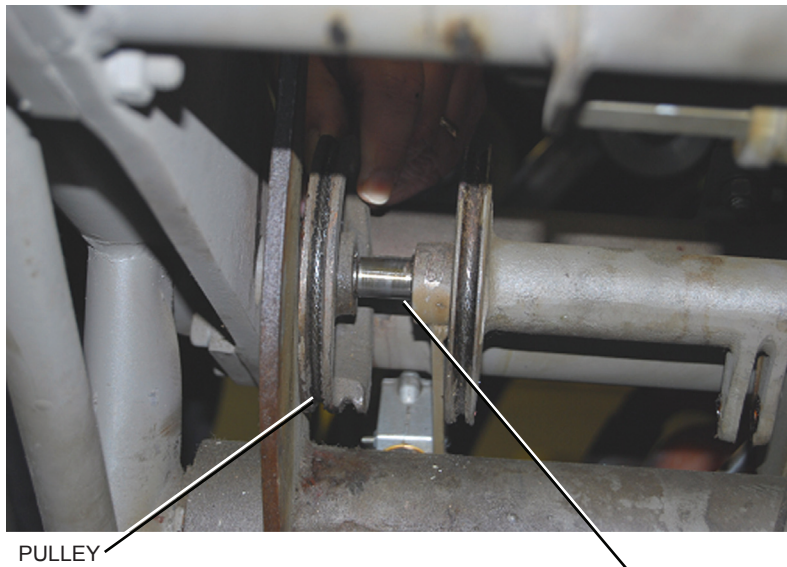


Figure 11



PULLEY

Figure 12

SHAFT

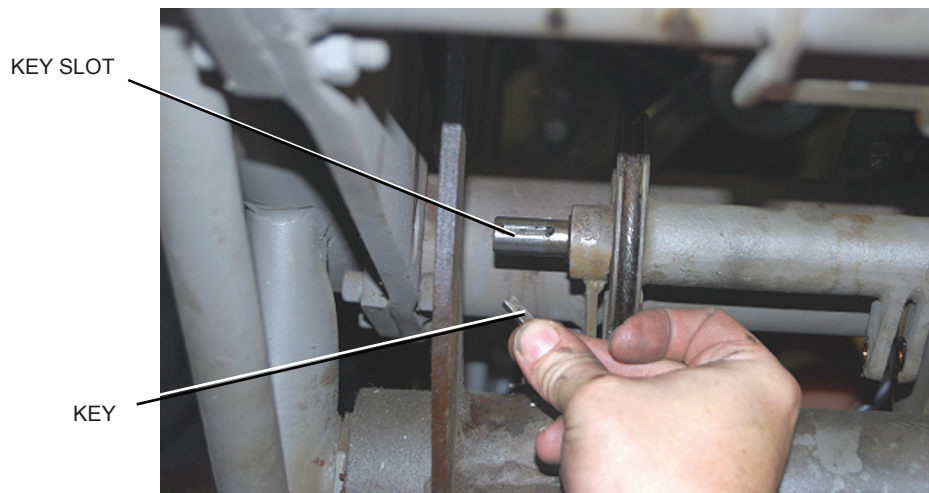


Figure 13

8. Repeat the procedure in Step 6 to remove the upper deck jam control pulley on the right side. Refer to *Figure 14*.

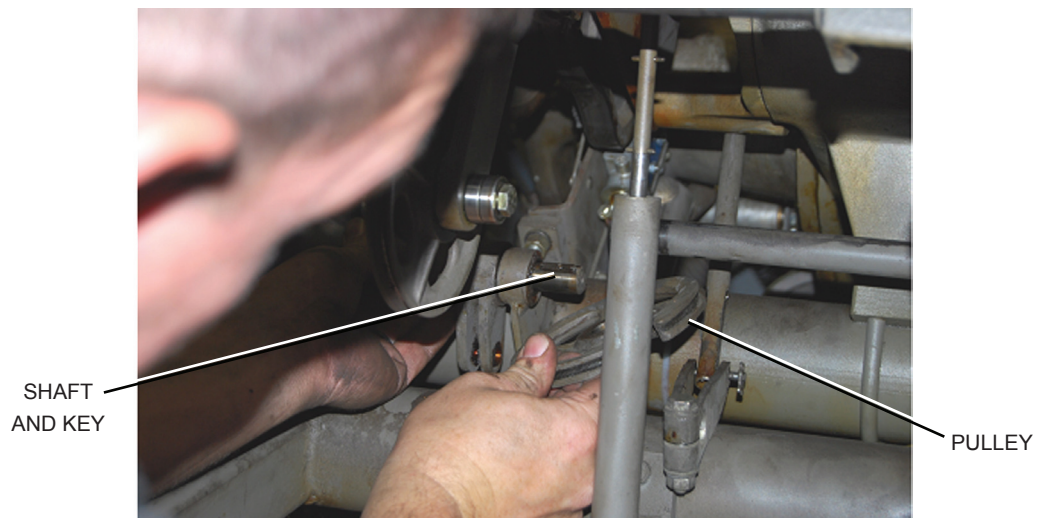


Figure 14

9. With the upper moving deck jam control pulleys and keys removed from the shaft, the shaft can now be removed. Hold the upper scissor control pulley in place and remove the shaft. The upper scissor control pulley can now be removed. Refer to *Figure 15*.



Figure 15

10. With the shaft and all the upper control pulleys removed, the needle bearings can now be accessed for removal and replacement.

i **NOTE:** Refer to page 1 of instructions for to determine which insert to use based on your situation.

11. Using the Bearing Removal Tool and two 9/16" combination or ratchet wrenches, the left hand needle bearing can now be removed (the bearing will be pressed into tool #4). Refer to *Figures 16 and 17*

i **NOTE:** Repeat this procedure to remove the right hand needle bearing.

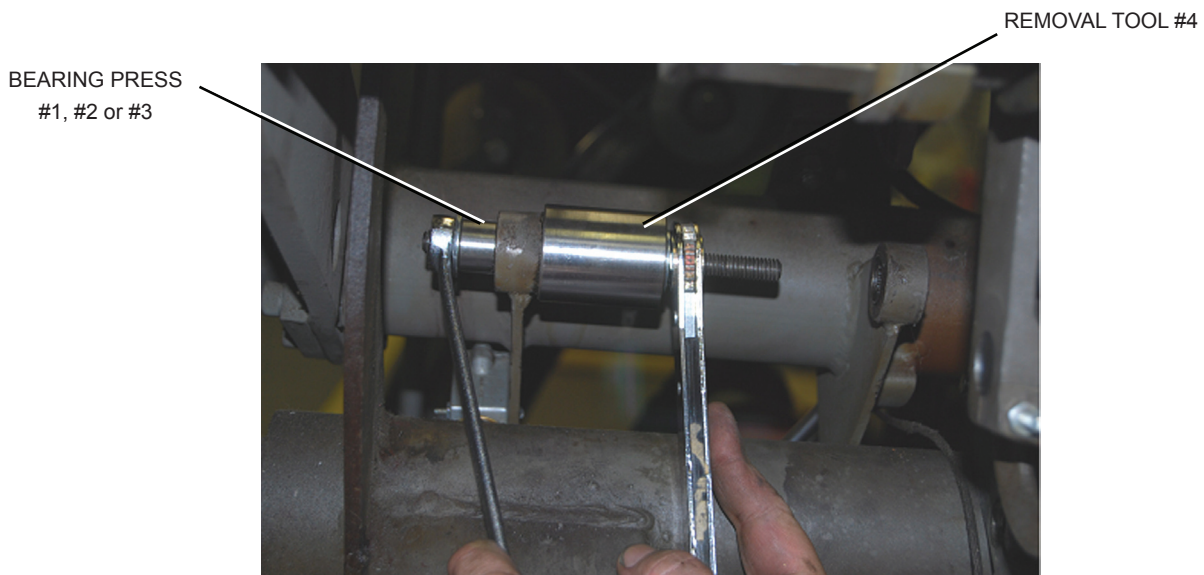


Figure 16

BEARING

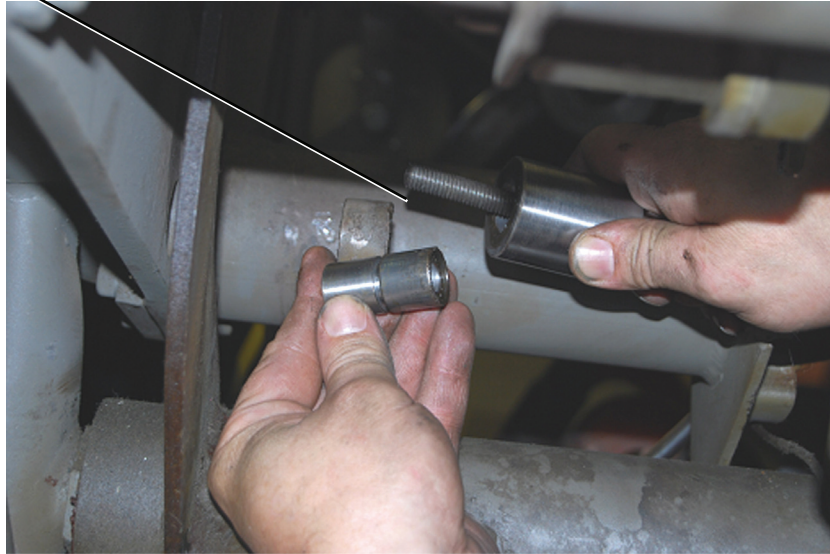


Figure 18

11. To reinstall the bearings use the bearing removal and installation tool. **Do not insert the bearing too far.** Refer to *Figure 19*.

BEARING

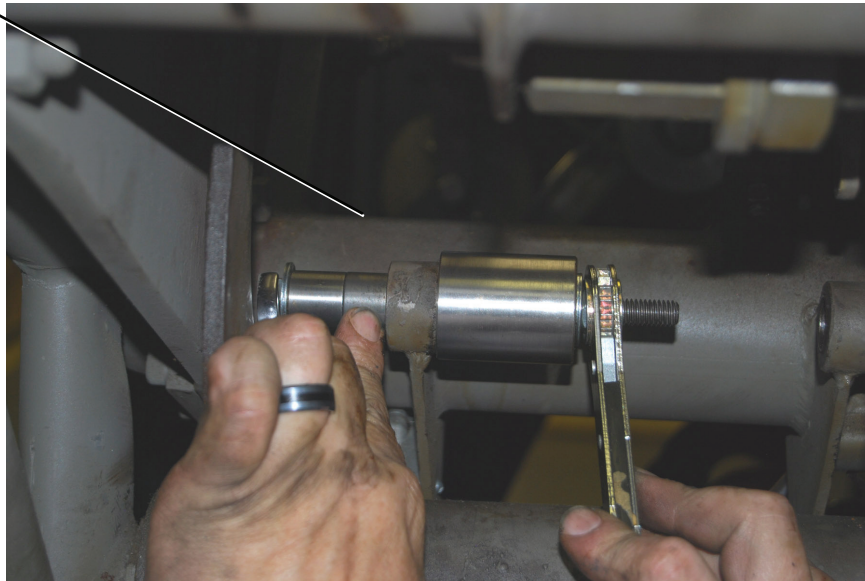


Figure 19

12. Repeat procedure to reinstall the right hand bearing. **Do Not insert the bearing too far.**
13. With the bearings replaced, lubricate the shaft with oil and reinstall the shaft, keys pulleys and cables.
14. Turn on power.



WARNING! When turning on power to the pinsetter verify there are no persons or equipment in the operational area of the pinsetter.