

Operating Instructions

15000 - Leaf Spring Pin & Bushing Service Kit

NOTE: SPRING PIN SPLIT ADAPTERS USED FOR DEMONSTRATION PURPOSES ONLY AND ARE ORDERED AS INDIVIDUAL KITS

- ✓ **Safety & Warning**
- ✓ **Remove Spring Eye Pin and Bushing**
- ✓ **Install Spring Eye Pin and Bushing**
- ✓ **Remove Chassis Pin and Bushing**
- ✓ **Install Chassis Pin and Bushing**



TIGER TOOL
International Incorporated

Product Support:
1-800-661-4661

Call 1-800-661-4661 for technical questions or replacement parts

**READ ALL INSTRUCTIONS BEFORE OPERATING THE LEAF SPRING
PIN AND BUSHING REMOVER / INSTALLER # 15000**

This manual is required for safety instructions, assembly, operating instructions and parts list. We suggest that you store this manual in a safe place for future reference. Retain your invoice with this manual. Write the invoice number on the inside cover for quick reference in respect to service and warranty enquires.

Safety Warning & Cautions

1. KEEP WORK AREA CLEAN. Cluttered areas invite injuries.
2. ALWAYS SET PARKING BRAKE AND BLOCK TIRES when using the Leaf Spring Pin and Bushing Remover / Installer #15000.
3. USE EYE PROTECTION. Always wear approved impact safety glasses or goggles when working with this tool.
4. 10,000 psi MAXIMUM LIMIT. Do not operate the hydraulic cylinder beyond the rated capacity.
5. STAY ALERT. Watch what you are doing. Use common sense! Do not operate this tool if you are unsure of its application and use.
6. USE IDENTICAL REPLACEMENT PARTS AND ACCESSORIES. All replacement parts and accessories are available from *Tiger Tool International Incorporated*.
7. KEEP HYDRAULIC COUPLER PROTECTED WHEN NOT IN USE. Dust caps should be used on couplers when not in use to avoid contaminants from entering the hydraulic cylinder and power source. This practice will help to extend the life of your tool and ensure proper and consistent operation.
8. NEVER STAND INLINE WITH THE PULLBAR WHEN APPLYING PRESSURE TO THE HYDRAULIC CYLINDER. It is poor shop practice to place your body or any portion of it in a position which is likely to be struck when using any tool that exerts a force. Failure of the tool or the component being forced may result in debris being projected with enough force to injure.

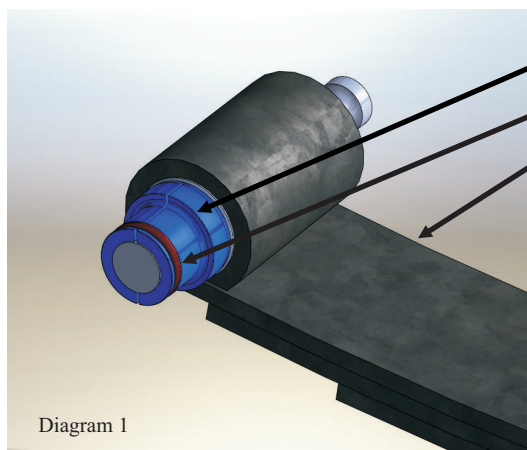
WARNING:

Before working on a vehicle, remember to set the parking brake and block the tires. Never attempt to repair the vehicle while the engine is running.

Operating Instructions

Removing Spring Eye Pin and Bushing

- Step 1: Support the truck by the chassis in an approved method so that the front suspension is unloaded.
- Step 2: Support the Front axle assembly so that the shackles (side bars) can be removed from the trailing end of the spring eye and chassis bushings.
- Step 3: Remove the shackles from the trailing end of the front leaf springs on both sides of the vehicle. The vehicle can now be raised or the axle lowered to provide easy access to the Spring Eye Pin and Bushing.
Be aware of all other vehicle components that might be affected by this procedure such as brake lines and wiring. Ensure no damage is caused.
- Step 4: Place the Removal Split Adapters over the *inboard* end of the Pin Bushing Assembly. Large end of the split adapter against the spring bushing. Then slide the supplied o-ring into the groove to hold them in place. The Removal Split Adapters have a outside diameter slightly smaller than the bushing OD. The Installation Split Adapters have an OD larger than the bushing OD. Ensure you have the smaller Removal Split Adapters.
- Step 5: Slide the Retainer Sleeve over the Split Adapters. See Diagram 2



Removal Split Adapter
O-ring
Front Leaf Spring

Retaining Sleeve

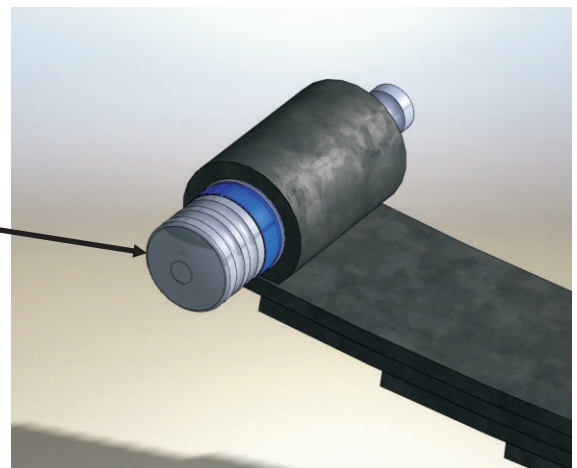


Diagram 2

NOTE:
OPTIONAL SPLIT ADAPTERS USED FOR DEMONSTRATION PURPOSES

Operating Instructions

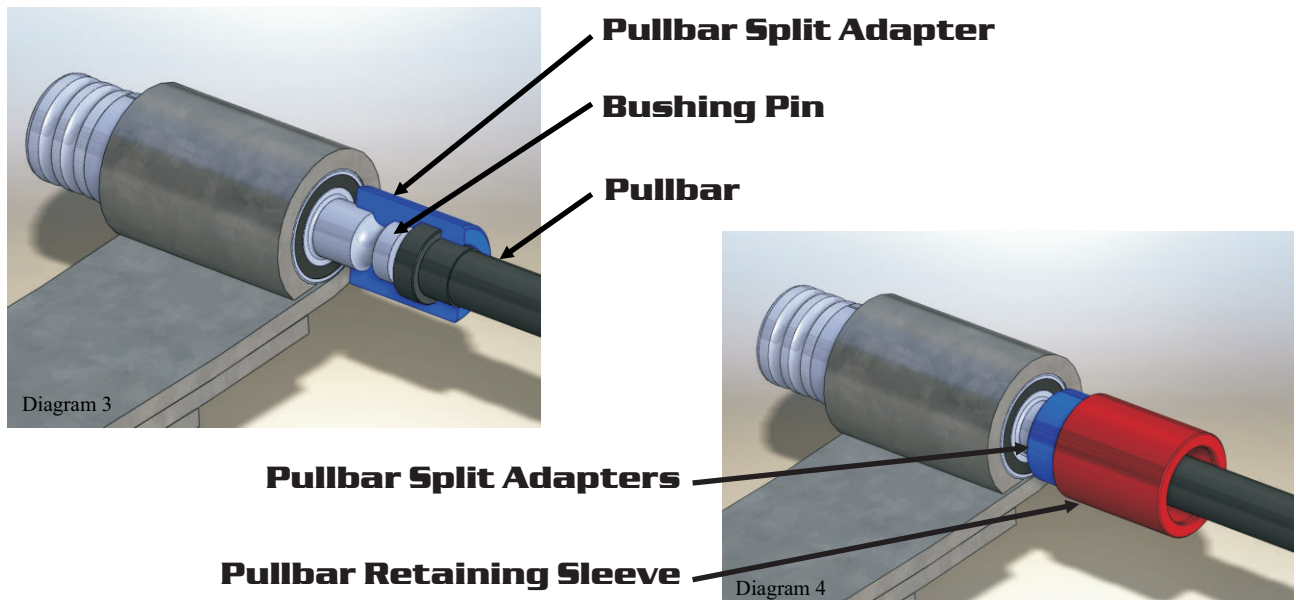
Removing Spring Eye Pin and Bushing

Step 6: Attach the Pull bar to the outboard end of the spring bushing. This is done with the Pullbar Split Adapters and Pullbar Retainer Sleeve.

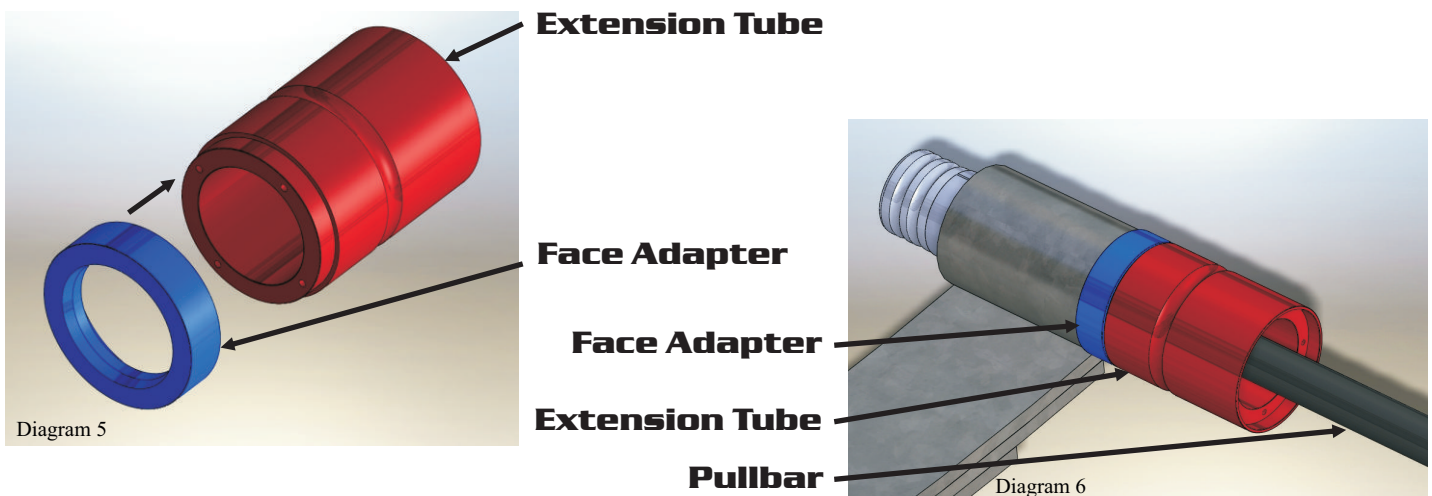
Diagram 3 shows how the Pullbar Split Adapter, Pullbar, and Bushing Pin connect together.

Place both halves of the Pullbar split adapter over the Bushing Pin and the head of the Pullbar. Now slide the Pullbar Retaining Sleeve down the Pullbar and over the Split Adapters.

Diagram 4 shows the Pullbar Retaining Sleeve being installed. Be sure the Pullbar Retaining Sleeve fully covers the Pullbar Split Adapters.



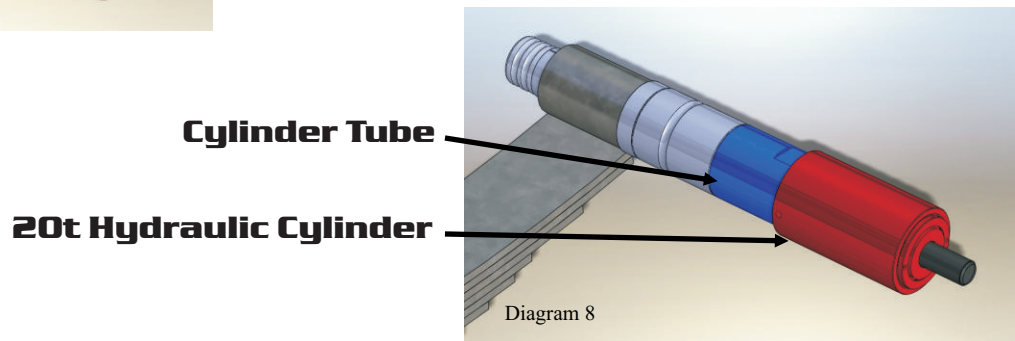
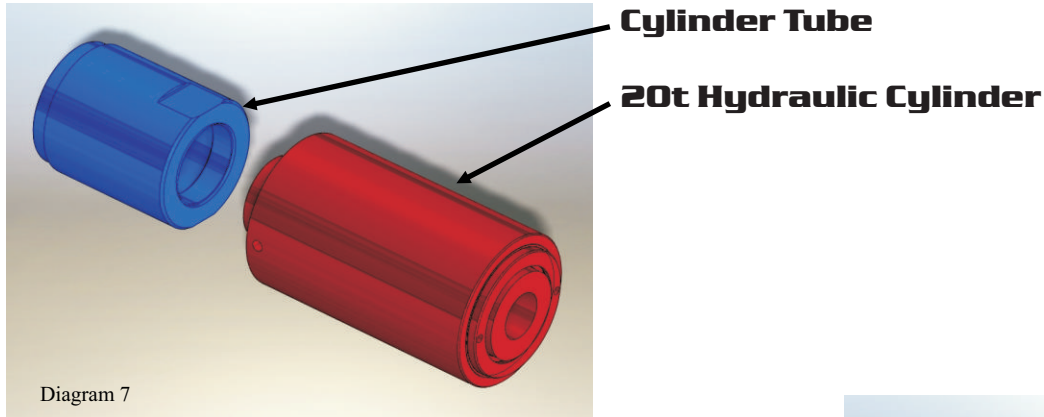
Step 7: Connect the Face Adapter and Extension Tube together and slide them over the Pullbar Retaining Sleeve As shown in Diagrams 5 and 6.



Operating Instructions

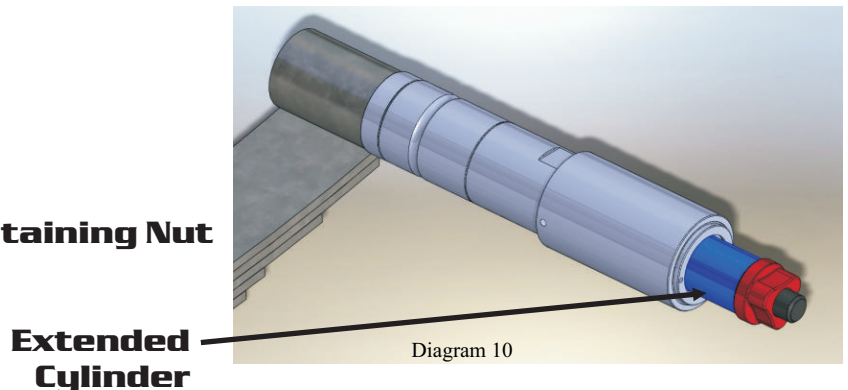
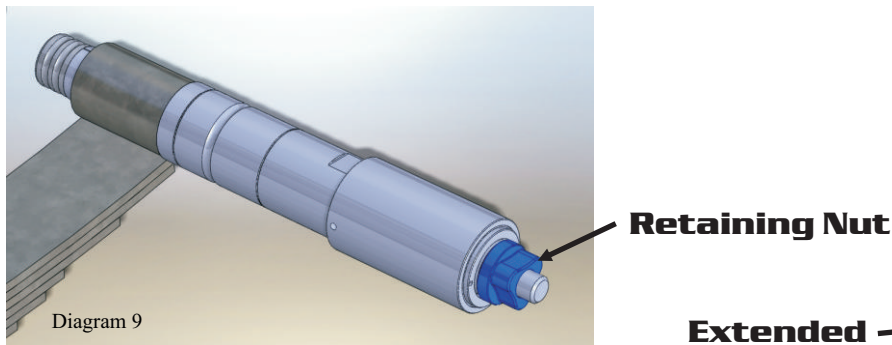
Removing Spring Eye Pin and Bushing

Step 8: Thread the Cylinder Tube onto the Hydraulic Cylinder. Slide the Hydraulic Cylinder/Cylinder Tube Assembly over the Pullbar, Cylinder Tube first. See Diagrams 7 and 8.



Step 9: Thread on the Retaining nut and tighten by hand until tight. This will hold everything in place. The 20t Hydraulic Cylinder will provide the power required to remove the Pin Bushing. Do final check to ensure all the parts are still in place, the face adapter should be flush against the spring face or the bushing housing. See Diagram 9.

Step 10: Apply Hydraulic Pressure - the Bushing is pulled partially from the spring eye or bushing housing. See Diagram 10.

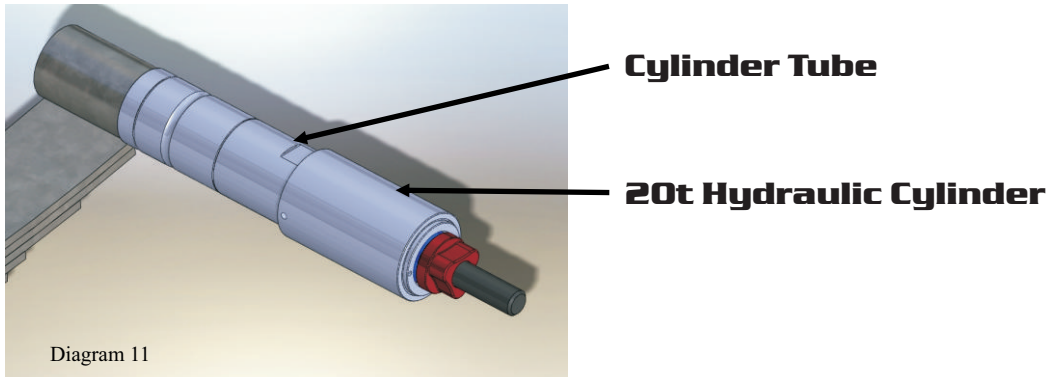


Operating Instructions

Removing Spring Eye Pin and Bushing

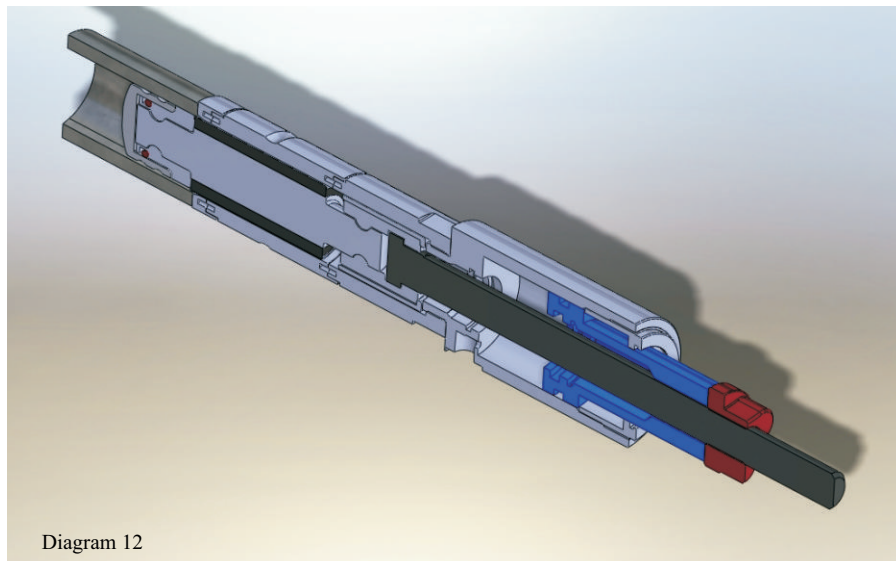
Step 11: Remove Hydraulic Pressure allowing the Hydraulic Cylinder to retract.

Step 12: Tighten the Retaining Nut by hand until tight to take up the slack. Check to ensure all parts are still in place. See Diagram 11.



Step 13: Apply Hydraulic Pressure, the Hydraulic Cylinder extends and the Bushing is pulled fully from the spring eye or bushing housing. If the Bushing is not fully removed from the Spring Eye or Housing repeat steps 12 through 14.

Diagram 12 shows a cross section of the Bushing fully removed from the Spring Eye.



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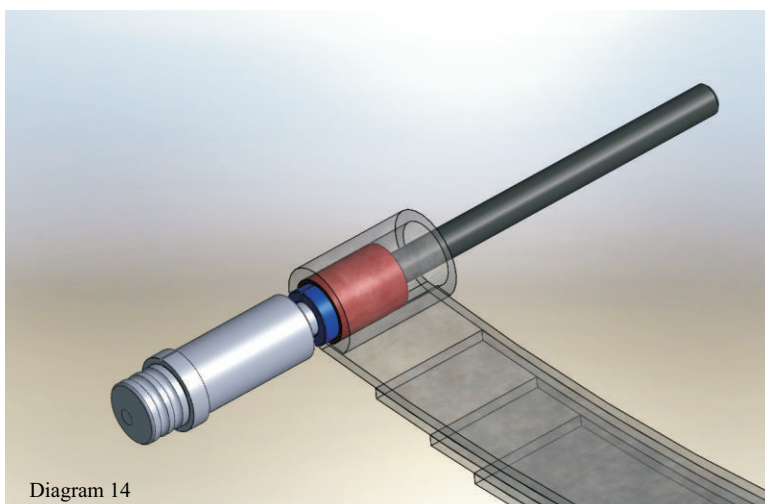
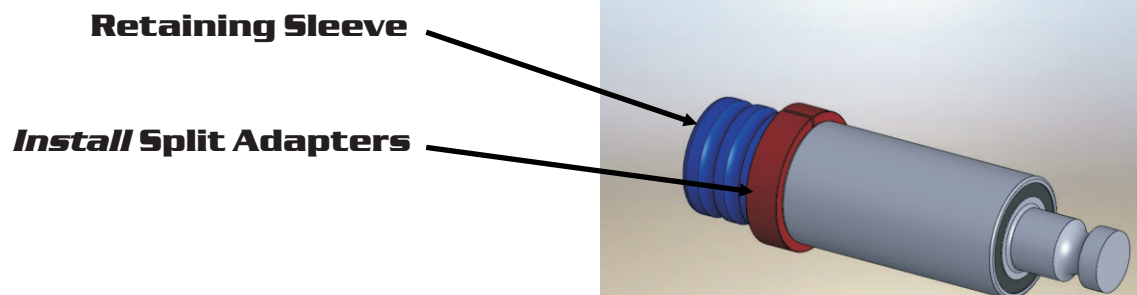
Installing Spring Eye Pin and Bushing

NOTE: OPTIONAL SPLIT ADAPTERS USED FOR DEMONSTRATION PURPOSES

It is recommended that after removing a Bushing/Pin assembly you immediately install the new Bushing/Pin assembly. The instructions given here follow that methodology.

Note that this tool pulls the Bushing/Pin assembly into the Spring Eye from the inboard side of the Spring.

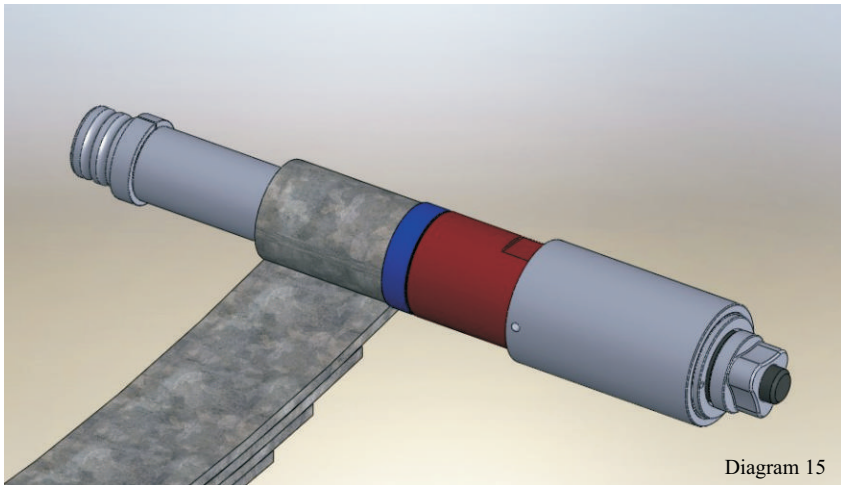
- Step 1: Disassemble the previous puller assembly leaving the Cylinder Tube attached to the Hydraulic Cylinder.
- Step 2: On the bench attach the ***Install*** Split Adapters, O-Ring, and Retaining Sleeve to one end of the Bushing/Pin Assembly in the same method as Step 5 and 6 Removal. See Diagram 13. Notice the Install Split Adapters have a larger OD than the Removal Split Adapters.
- Step 3: Slide the Pullbar through the spring eye from the outboard side of the spring. Attach the new Bushing/Pin Assembly with the Pullbar Split Adapters and the Pullbar Retaining Sleeve in the same method as Removal Step 7. See Diagram 14.



Operating Instructions

Installing Spring Eye Pin and Bushing

- Step 4: Slide the Face adapter over the Cylinder Tube end and Slide the Cylinder, Cylinder Tube, and Face Adapter over the Pullbar.
- Step 5: Spin on the Retaining Nut and tighten by hand to take up the slack. See Diagram 15. Double check that the Bushing/Pin assembly is in alignment with the bore of the Spring Eye.
- Step 6: Apply hydraulic pressure to the cylinder and the Bushing/Pin Assembly is pulled Partially into the Spring Eye. Release pressure allowing the Cylinder to Retract. Tighten the Retaining Nut and apply hydraulic pressure once again to pull the Bushing /Pin Assembly farther into the Spring Eye. The Install Split Adapters are larger than the OD of the Bushing and will stop the Bushing/Pin Assembly at the correct installation distance.
- Step 7: Disassemble the tool from the Bushing/Pin assembly.
- Step 8: Replace remaining Bushing/Pin assemblies as required.



15000 Kit Breakdown



| Item | Part | Description |
|------|----------|--------------------------------|
| 1 | 17200 | 20 TON HYDRAULIC CYLINDER |
| 2 | 15001- 8 | EXTENSION TUBE |
| 3 | 15001- 6 | CYLINDER TUBE |
| 4 | 15001-18 | SMALL PULLBAR RETAINING SLEEVE |
| 5 | 15001- 5 | LARGE PULLBAR RETAINING SLEEVE |
| 6 | 15001-11 | LARGE FACE ADAPTOR |
| 7 | 15001-23 | SMALL FACE ADAPTER |
| 8 | 15001-17 | SMALL PULLBAR SPLIT ADAPTOR |
| 9 | 15001- 4 | LARGE PULLBAR SPLIT ADAPTOR |
| 10 | 15001-10 | O-RINGS |
| 11 | 70250- 2 | MALE HYDRAULIC COUPLER |
| 12 | 15001- 7 | RETAINING NUT |
| 13 | 15001-16 | SMALL RETAINING SLEEVE |
| 14 | 15001- 2 | LARGE RETAINING SLEEVE |
| 15 | 15001- 3 | PULLBAR |