

# ***Operating Instructions*** **Wheel Stud & Brake Anchor Pin & Bushing Service Kit # 10603**

- ✓ **Safety & Warning**
- ✓ **Remove Wheel Studs**
- ✓ **Install Wheel Studs**
- ✓ **Remove Brake Anchor Pin & Bushings**
- ✓ **Install Brake Anchor Pin & Bushings**



***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 WHEEL STUD  
& BRAKE ANCHOR PIN & BUSHING SERVICE KIT # 10603**

*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 Wheel Stud & Brake Anchor Pin & Bushing Service Kit.
3. USE EYE PROTECTION. Always wear approved impact safety glasses or goggles when working with this tool.
4. 10,000 psi LIMIT. Do not operate the hydraulic pump beyond the rated capacity.
5. DO NOT OVER EXTEND THE HYDRAULIC RAM. Over extension of the ram may cause damage to the hydraulic cylinder or may cause bodily harm. Ram is marked with a stop line.
6. STAY ALERT. Watch what you are doing. Use common sense! Do not operate this tool if you are unsure of its application and use.
7. USE IDENTICAL REPLACEMENT PARTS AND ACCESSORIES. All replacement parts and accessories are available from *Tiger Tool International Incorporated*.
8. 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.

**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 Wheel Studs***

- Step 1: With the Hydraulic Cylinder mounted in the press frame, determine which adapter will be required and insert into the bore of the press frame. The large hub adapter (10 )1.6" ID will be used mainly on front hubs . The small hub adapter ( 9 ),1.3" ID, will be used mainly on drive hubs. Diagram 1 shows the correct setup using the large hub adapter. ***Caution: Failure to use the correct hub adapter will likely cause damage to the hub or press frame (13).***
- Step 2: Install Center Pin and Stud Pusher in the bore of the hydraulic cylinder.
- Step 3: Connect hydraulic fluid source to tool, 10,000 psi Maximum Pressure (not supplied). Available from Tiger Tool - P/N 70125.
- Step 4: Position the press frame, with the correct adapter installed, over the hub so that the hydraulic cylinder is facing towards the threaded portion of the wheel stud and is clear of any obstructions that could cause damage. Also align the hub adapter so that the flanged end of the stud is resting inside the adapter bore.
- Step 5: Hold tool in position firmly with both hands and apply pump pressure until the cylinder makes contact with the wheel stud. Continue to press out the stud until it becomes free from the hub. **DO NOT OVER EXTEND THE HYDRAULIC RAM.**
- Step 6: Release pressure from the pump and wait for cylinder to return back to its original position.
- Step 7: Remove tool from hub and slide the wheel stud out.

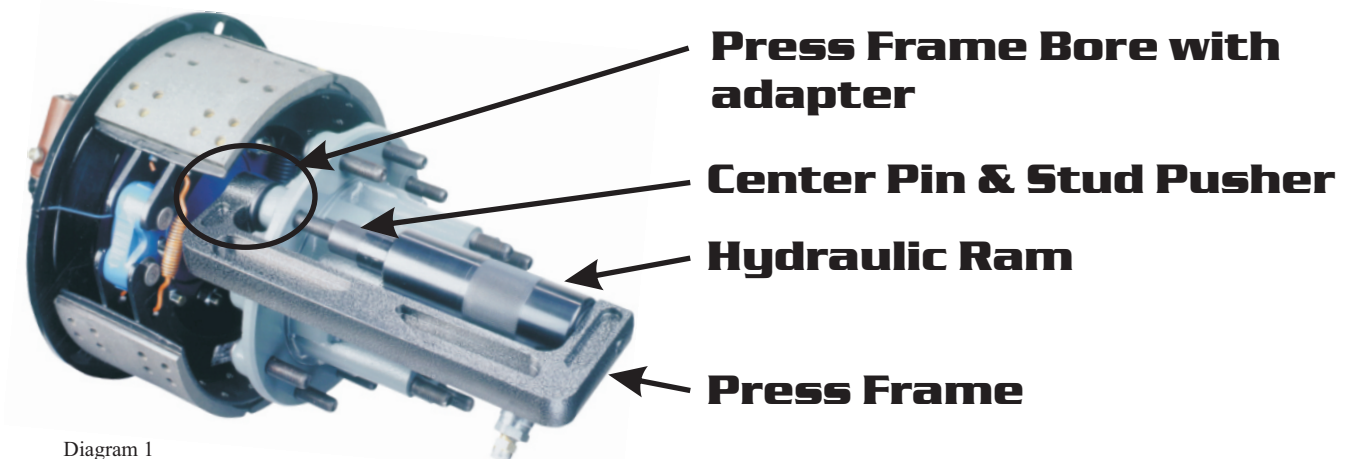


Diagram 1

# Operating Instructions

## ***Installing Wheel Studs***

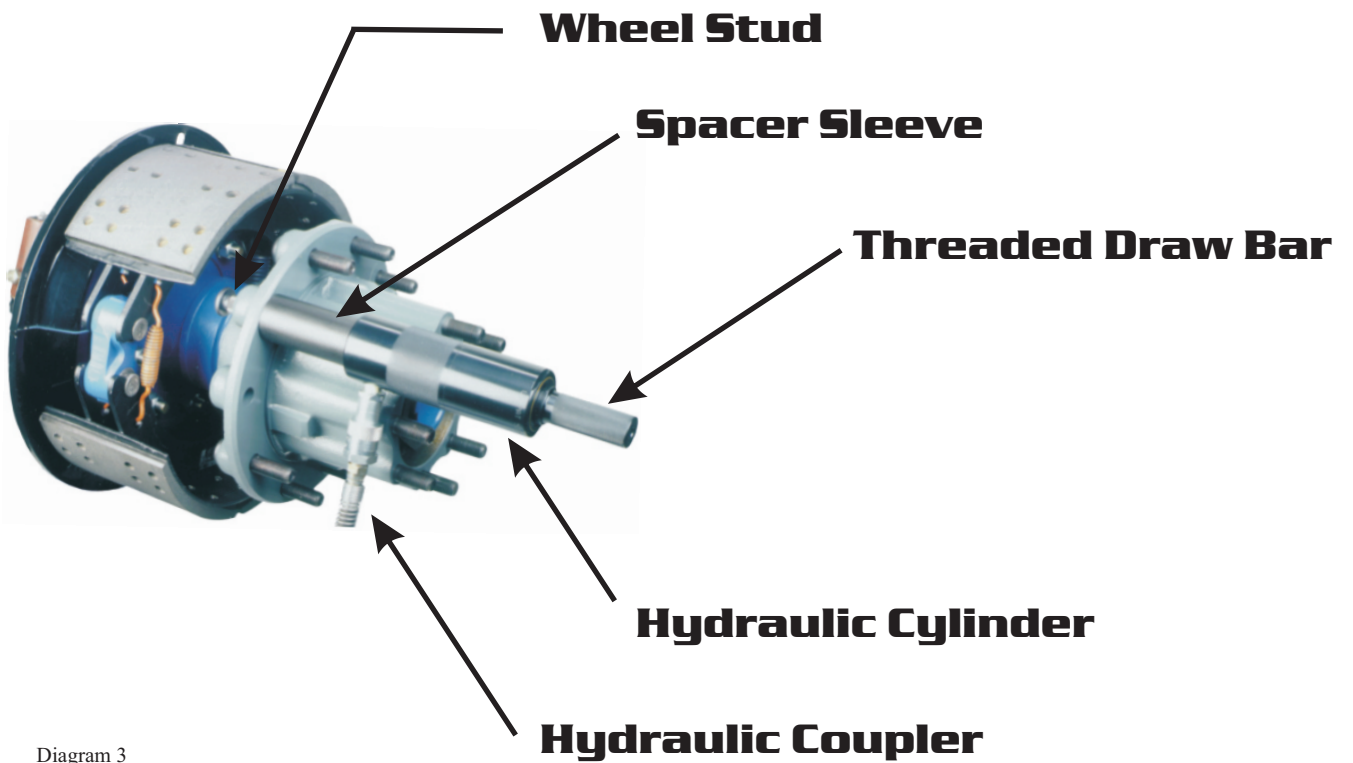
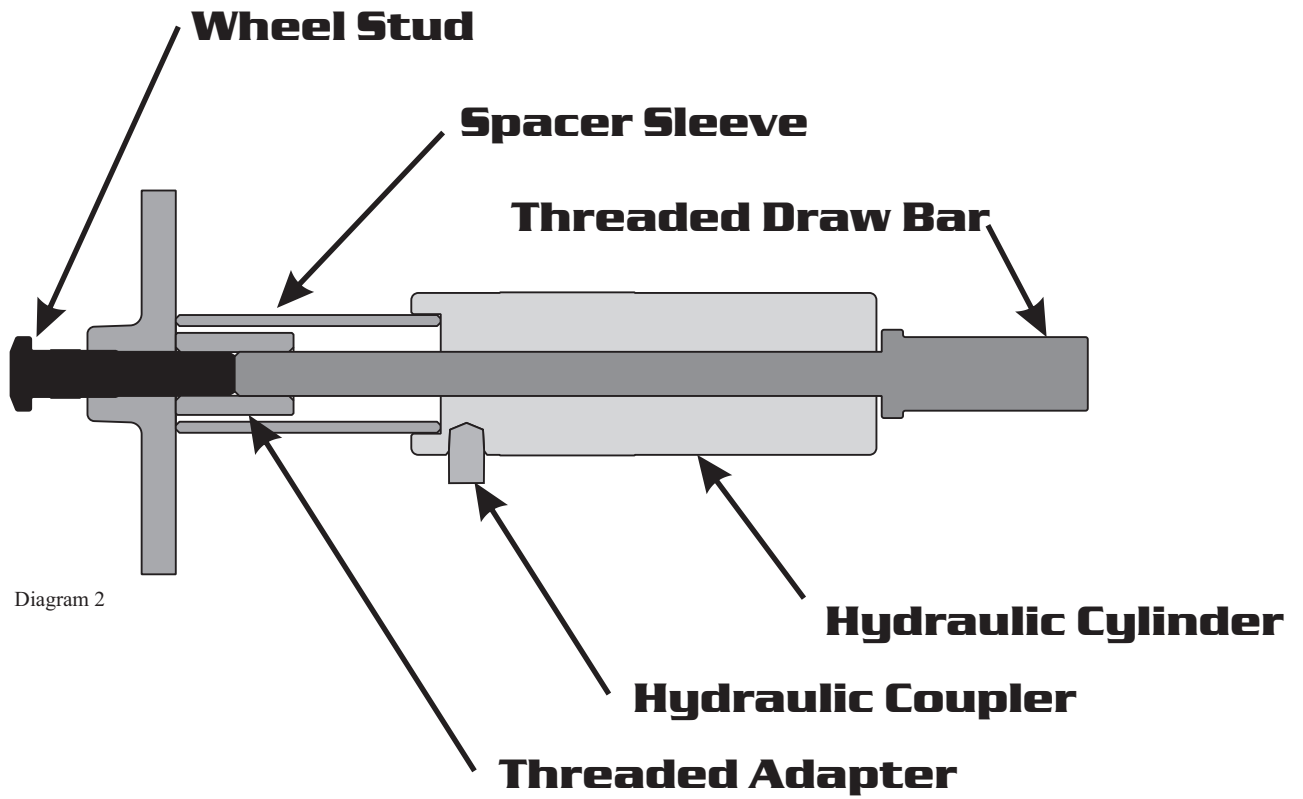
- Step 1: Remove the hydraulic cylinder from the press frame by sliding the cylinder off the frame.
- Step 2: Insert Threaded Draw Bar (14) through the hydraulic cylinder so that the handle is opposite the hydraulic coupler. See Diagrams 2 and 3 for reference.
- Step 3: Choose the correct threaded adapter for the stud installer according to the thread size of the new stud that is to be installed.
- Step 4: Thread chosen adapter tightly to the threaded draw bar until it is fully secured.
- Step 5: Slide wheel stud through hub in the correct orientation.
- Step 6: Insert the spacer sleeve into the recessed pocket of the hydraulic cylinder. Slide the spacer sleeve/cylinder/draw bar assembly over the wheel stud and turn the handle of the draw bar to thread the adapter onto the wheel stud. It is important to get as much thread engagement as possible. See diagrams 2 and 3 for reference.

**Note:** *In some applications, the stud may not protrude sufficiently through the hub to allow the threaded adapter to install more than a few threads on the stud. To avoid possible damage of the threaded portion of the adapter, the stud should be drawn through the hub with the “Stud Installer” only to a point where the adapter can be threaded onto the stud further. This may have to be done in one or two small steps. Upon ensuring full engagement of the stud with the adapter, the technician can now complete the installation of the stud. Failure to follow this process may result in damage to the threaded adaptor which may not be covered by warranty.*

- Step 7: Apply hydraulic pressure to the cylinder to pull the stud into place. Watch carefully and do not over extend the hydraulic cylinder. The hydraulic cylinder rod is marked with a “Stop Line”. ***Do not extend the cylinder beyond the stop line shown on the cylinder rod.***

***IMPORTANT: The stud is fully installed only when the flange of the stud is entirely seated against the backside of the hub.***

- Step 8: Remove the “Stud Installer” by simply releasing the hydraulic pressure source and unthreading the adapter from the installed stud.
- Step 9: Repeat this process as needed for the remaining studs.



# Operating Instructions

## ***Brake Anchor Pin & Bushing Removal***

- Step 1: Remove all brake shoes, lock ring retainers and springs from the brake anchor pins and spider.
- Step 2: With the hydraulic cylinder installed in the press frame, remove the stud pusher (2) from the end of the hydraulic cylinder.

**Note:** *Ensure that the center pin remains in the bore of the cylinder.*

- Step 3: Install the anchor pin & bushing adapter (11) over the center pin located in the hydraulic cylinder.

**Note:** *To remove the brake anchor pin, the short stepped end of the anchor pin & bushing adapter must be facing the hydraulic cylinder. To remove the anchor pin bushing the long stepped end of the anchor pin & bushing adapter is facing the hydraulic cylinder.*

- Step 4: With the hydraulic cylinder still secured to the press frame (13) and with the anchor pin & bushing adapter (11) installed, position the frame over the brake spider, see Diagram 4. Apply hydraulic pressure to the cylinder until the anchor pin & bushing adapter makes contact with the anchor pin or bushing. Continue to apply hydraulic pressure until the anchor pin or bushing has been completely removed. **Caution: Always check the alignment of the tooling and components when applying hydraulic pressure.**

- Step 5: Release pressure from the pump and wait for the cylinder to return back to its original position.

- Step 6: To remove the anchor pin bushing, Install the anchor pin & bushing adapter as per Step 3 and repeat steps 4 and 5.



Diagram 4

# **Operating Instructions**

## ***Brake Anchor Pin & Bushing Installation***

Step 1: With the hydraulic cylinder installed in the press frame, remove the stud pusher (2) from the end of the hydraulic cylinder.

**Note:** *Ensure that the center pin remains in the bore of the cylinder.*

Step 2: Install the anchor pin & bushing adapter (11) over the center pin located in the hydraulic cylinder.

**Note:** *To install the brake anchor pin bushing, the long stepped end of the anchor pin & bushing adapter must be facing the hydraulic cylinder.*

Step 3: Clean the dirt and rust from the bore of the spider where the new bushing is to be installed. Firmly insert the new bushing into the spider housing bore by hand.

Step 4: With the hydraulic cylinder still secured to the press frame (13) and with the anchor pin & bushing adapter (11) installed, position the frame over the brake spider, see Diagram 5. Apply hydraulic pressure to the cylinder until the shoulder of the anchor pin & bushing adapter makes contact with the anchor pin bushing. Ensure that the bushing and tool are aligned as straight as possible. Continue to apply hydraulic pressure until the anchor pin bushing has been installed to its proper location. **Caution: Always check the alignment of the tooling and components when applying hydraulic pressure.**

Step 5: Release pressure from the pump and wait for the cylinder to return back to its original position.



Diagram 5

**TIGER TOOL**  
*International Incorporated*

**Product Support:**  
**1-800-661-4661**

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

# Operating Instructions

## *Installation of Bushing*

# Kit # 10603 Components

## *Wheel Stud & Brake Anchor Pin and Bushing Service Kit*



- 1) Convenient Carrying Case
- 2) Center Pin & Stud Pusher
- 3) Spacer Sleeve Adapter
- 4) 3/4" R.H. Threaded Adapter
- 5) 3/4" L.H. Threaded Adapter
- 6) 1 1/8" R.H. Threaded Adapter
- 7) 1 1/8" L.H. Threaded Adapter

- 8) 22mm R.H. Threaded Adapter
- 9) Small Hub Adapter
- 10) Large Hub Adapter
- 11) Anchor Pin & Bushing Adapter
- 12) 10 Ton Hydraulic Cylinder
- 13) Rigid A.D.I. Press Frame
- 14) Threaded Draw Bar