

## 1. List of tools:

1. Safety glasses
2. Hammer
3. Brass or aluminum punch
4. channel locks
5. Block of wood or plastic
6. grease gun
7. razor knife
8. 6" long, 2" diameter or 1 1/2" diameter pipe
9. screw driver
10. seal driver
11. mini sledge hammer
12. hydraulic jack
13. jack stands

## 2. List of supplies:

1. rags or paper towels
2. emery cloth
3. lacquer thinner

### **Commercial Model with a non easy-lube spindle**

**Universal Kit Installation** (Use for Universal Kit Installation) The Universal Kit will eliminate the need to measure your spindle. Air-Tight's Universal Kit comes with (3) different inner dimension size shims. One or none of the shims may be used in putting on the stainless steel bushing.

**Note:** The universal kit for the 5 lug/ 3500lb has 3 shims. The universal kit for the 6 lug/ 5200 and the 8 lug 7000lb has 1 shim.

#### **One of (2) things will happen:**

1. Air-Tight's stainless steel bushing will fit your spindle snug, without the use of a shim.
2. One of the (3) shims will fit your spindle snug so Air-Tight's stainless steel bushing can bond directly on top of the shim.

#### **Follow these steps below for putting on the bushing:**

1. If there is a stainless steel sleeve on your axle, you must remove it. Removal can be accomplished by carefully splitting the bushing in half, using a hammer and a thin tip screwdriver. Exception: If your axle is made by U.F.P. (Unique Functional Products) the bushing does not have to be removed due to their bushing is sealed to the spindle. If you are not sure which axle manufacturer you have, go to our web site, which lists over 70 trailer manufacturers and the axles they use or match it up to the spindle in the pictures on the [Illustrated Universal Bushing Assembly Sheet](#)
2. If the spindle is a drilled spindle, draw a straight line through the grease hole to the back of the spindle with a permanent marker. This will mark the location of the grease hole. Match one of the shims to your spindle. The shim that fits the closest is the shim you will bond to the spindle.  
Note: If Air-Tight's stainless steel bushing fits on the spindle the closest, the shims are not needed.
3. Clean any corrosion on the axle with emery cloth and wipe clean with a degreaser. Clean the inner dimensions of the shim with a degreaser.
4. Shake up the bonding agent by removing the cap, cut the tip with a razor knife and screw the cap back on. Squeeze the container a few times back and forth. This will mix the bonding agent so that it is thick and consistent and easy to apply. Put the bonding agent 360° (degrees) on the axle where the shim will go and 360° (degrees) on the inner dimensions of the shim.
5. Put the shim on the spindle. Even if the shim goes on by hand, use an old inner bearing and a short pipe or punch and tap on the bearing until the bearing bottoms out. Remove the bearing. This will form the shim to the contour of the spindle and put the shim back against the shoulder. The shim will block the grease hole on the spindle. Use an awl or a nail to pierce through the shim where you marked the hole, leaving the grease hole open.
6. Bond Air-Tight's stainless steel bushing on the top of the shim the same way you put on the shim. If you had to press on the bushing with an old bearing, when the bearing bottoms out, remove the bearing and use a brass or aluminum punch to place the bushing in against the shoulder. Tap on the taper of the bushing on both sides until the bushing is against the shoulder. If there is no shoulder, tap the bushing about 1/8 of an inch in from the inner bearing. Air-Tight's stainless steel bushing should always be about 1/16 to 1/8 of an inch back from the inner bearing when placed properly.
7. Be sure to remove any debris in the grease hole. Removal of the debris can be done by greasing the zerk fitting and letting the grease clean out the hole.
8. When the bushings are assembled, discard the remaining shims and continue with the main directions.

**Disclaimer: The Universal Kit fits most axle manufacturer sizes. If your axle size is not covered by the Universal Kit, revert to part 1. ( Determining the Correct Kit ). Contact Air-Tight to exchange the bushing for your particular size.**

#### 4. Disassemble wheel:

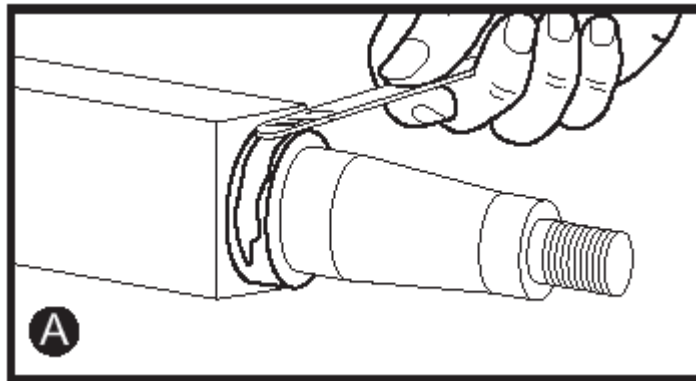
1. Jack up trailer and remove wheel
2. Pull hub off axle

#### 5. Cleaning the axle:

1. Clean the axle and the inner dimensions of the bushing with a degreaser.
2. Be sure to use a degreaser that is approved for cleaning metal in your area. Today we will be using Lacquer Thinner.
3. Whichever degreasers you use, make sure it cleans the metal thoroughly of all grease.
4. Sand down the surface with emery cloth until the surface is clean of most surface corrosion.
5. Clean again with a degreaser. Make sure the surface is grease free. There is no such thing as being too clean!

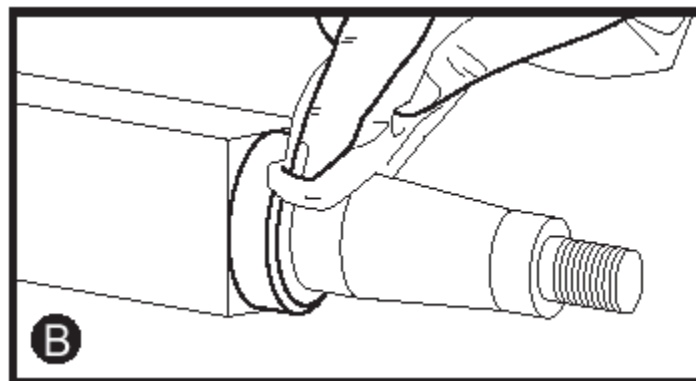
#### 6. Applying the bonding agent:

1. Shake up the bonding agent by removing the cap, cut the tip with a razor knife and screw the cap back on. Squeeze the container a few times back and forth. This will mix the bonding agent so that it is thick and consistent and easy to apply.
2. Put the bonding agent 360 degrees on the axle where the bushing goes and 360 degrees on the inner dimensions of the bushing.



#### 7. Putting on the bushing:

1. Put the bushing on the axle with the taper towards the outside. Bushings may go on by hand or you may have to tap the bushing on with an old inner bearing and a short pipe.
2. Tap the bushing on the axle against the shoulder. If there is no shoulder, tap the bushing on where the seal will ride 100% on the surface.
3. Indicating where the old seal was riding is the best way of placing the bushing. The rule of thumb is about 1/8 of an inch in from the inner bearing. That will leave open the grease hole if the axle is a drilled spindle.
4. If the bushing has to be driven on with an old bearing, then once the bearing bottoms out on the spindle, remove the bearing and use a brass or aluminum punch to place the bushing in that 1/8 of an inch. You want to tap on the taper part of the bushing.



## 9. Prepare the hub:

1. Remove the old seal and check the bearings and races.
2. Replace bearings and races if there is any damage.
3. Clean out the old grease from the hub.
4. If the spindle is not drilled, put the inner bearing into the hub packed with grease. Wipe out any grease that is on the inner dimensions of the hub where the seal is pressed in. Clean the surface with a degreaser until it is completely clean of all grease. Next, apply bonding agent to the hub I.D. and the seal O.D. Press in the seal until the seal is flush. Make sure to press in the seal evenly.  
Wipe off excess bonding agent, and pack the cavity between the seal and the inner bearing with grease. Make sure the cavity is full. Next, pack grease into the middle of the hub, between the two races.

## 10. Assemble the hub:

1. Put on the hub. If the axle is not drilled, then put the outer bearing in packed with grease.
2. Put on the washer and nut. Tighten the nut to seat the bearings. Put the retainer on the nut.
3. If you are putting a hub on with a cotter pin in the axle, you must bend the cotter pin tight against the axle for clearance on the Air-Tight cap.

## 11. Put on Adaptor Ring:

1. Clean the surface where the adaptor ring is pressed in. This can be done by wiping the excess grease off while turning the hub 360 degrees around.
2. Next, use the degreaser to wipe the hub off where the adaptor ring will be pressed in. Make sure all the grease is cleaned off.
3. Then place bonding agent 360 degrees around the edge of the hub and the outer face of the hub. This can be done by turning the hub around while applying bonding agent.
4. Place the bonding agent on the adaptor ring, 360 degrees around.
5. With a soft-faced tool, or block of wood, drive the adaptor ring into the hub.
6. Wipe off excess bonding agent.

## 12. Install Air-Tight Cap:

1. Put grease on the "O" ring and the threads on the cap.
2. Screw the cap in the adapter ring by hand, compressing the "O" ring. Hand tightening is sufficient.
3. Release any air pressure through the valve stem that may have been created by screwing in the cap.

## 12. Allow the Bonding Agent to Fully Cure and air up the Hub:

1. Let the entire assembly cure for 24 hours before submerging it in water, in order to allow for proper setup of the bonding agent.
2. On the Commercial Model, when the bonding agent is cured, use a manual air pump such as a bicycle pump and put in 15 pounds. Remove the pump and bleed the valve stem until the gauge reads 10 p.s.i.
3. After the initial trip you may have to pump the hub back up to 10 p.s.i. due to the air pockets in the grease equalizing to the 10 p.s.i. Put grease on the valve stem and replace the valve stem cap. Replace the valve stem cap.
4. **DO NOT OVER PRESSURIZE THE DIAPHRAGM!!**

## 13. Ready to go!:

1. Your Air-Tight Bearing Protector will protect the grease and let the grease do its job. And I think you will agree, it's not only easy to install, it's simply the best bearing protection of its kind available.
2. Air-Tight protects hubs from contaminants as well as the water.
3. It quickly indicates a bearing problem or seal failure.
4. And it's an environmentally friendly, clean system; the grease stays in, keeping trailers, brakes and the waterways clean.
5. That's why Air-Tight Bearing Protectors are considered "Environmentally Friendly" and the "Best Bearing Protectors" you can buy.
6. Congratulations, you are now good to go!