

# COMPETITION 4x4 – [www.comp4x4.com](http://www.comp4x4.com)

## 1000 lb. and 1750 lb. Single Shear Tire Carrier Hinge Kit Installation Instructions

**\*\*Read instructions in full before attempting installation\*\***

### FREQUENTLY ASKED QUESTIONS:

#### **1. My slip fit sleeve feels a little loose on the spindle, why?**

Your spindle will be machined approximately five thousandths down to provide a easy flow through the slip fit sleeve. We don't however make it a tight fit for this main reason – heat expansion and contraction from welding. When you weld the slip fit sleeve into your bumper and let it cool, the ID (Internal Diameter) of the sleeve will shrink.

The installation instruction below will provide the correct process to install the sleeve to avoid the problem of a shrinking ID causing your spindle to not fit.

#### **2. How durable is my kit?**

The carrier bearing housing and slip fit sleeve are machined in house from extremely durable d.o.m. tubing. The carrier bearing housing is machined on our CNC lathe with precise tolerances. The DIY0001 spindle has a 1000 pound rating on the spindle and the DIY0002 has a 1750 pound rating on the spindle. The kits are rated for off-road use only as they are sold as a fabricator part. Because fabricator parts are welded onto, and used in a variety of applications with different materials etc. we cannot provide an exact rating for the kit as a whole. Use the items at your own risk.

#### **3. Will the roll pin alone hold the vertical load of the carrier?**

The purpose of the roll pin is to provide an automatic height for an easier installation. We have found however that when the spindle is installed in the correct method (heat shrunk in by the sleeve) and used with the roll pin, it can handle the vertical load.

However, we recommend tack welding the bottom of the spindle to the inside of the sleeve. Do not fully weld it in if you would like to remove it at a later date. There is very little down pressure on the spindle once fully installed.

#### **4. What size bumper is this kit made for and can I use it for other sizes?**

A. The kit is designed for a 4" tall bumper at a minimum width of 2" if you are using the sleeve. However, this kit may be used for all style bumpers and applications. You may order custom

length sleeves with your order. Contact us if you need a different size sleeve than we have available on the website and we can make one for you.

### **5. Is this spindle kit air tight, or is it going to rust?**

A. Between the dust cap, oil seal, and the amount of grease you have, the carrier bearing housing should be pretty well protected from the elements. Because the spindle is installed as a heat shrunk press fit, it should be air tight allowing no elements to enter in between the spindle and sleeve.

### **INSPECT YOUR KIT**

Your DIY0001 and/or DIY0002 (1000 pound and 1750 pound rated) kits should contain the following:

- 1 Spindle
- 1 Flat washer for spindle
- 1 Castle nut for spindle
- 1 Cotter pin for spindle
- 1 Carrier-bearing-housing – should include a grease able zerk fitting already installed.
- 2 Bearing races – already installed (pressed) in the carrier bearing housing.
- 2 Bearings
- 1 Oil seal
- 1 Dust cap
- 1 Roll pins – You only need one, you may have received an extra
- 1 Slip fit sleeve - slides over the spindle body - this is an option and in optional lengths.

The sleeve and the spindle should have a hole drilled in the side of them where the roll pin goes. 5/32 size drill.

### **ASSEMBLY OF THE KIT**

**\*Please note in the final assembly of your kit that you should first pack the bearings with grease before assembling them into the carrier bearing housing. This will ensure longevity of the bearings. Make sure you use the zerk fittings and grease them often. Final assembly of the kit including installing the grease seal should only be done after everything is fully installed.**

1. Notice the carrier bearing housing has a deeper end on one side. (Diy00002 has a thinner wall on this end). Put one of the bearings into that side with the flat side facing toward the bottom of the housing and the beveled side facing towards the center of the housing (DIY0002 will use the larger bearing for this end). Now press fit the oil seal into the housing on this same

end. Be careful not to cockeye the press fit as the oil seal is a thin wall and can be bent. We recommend using a plastic hammer and lightly tapping it in (it may be a tight fit).

2. Now put the carrier bearing housing onto the spindle with the installed bearing side facing towards the bottom of the spindle. Be careful not to damage the oil seal.

3. Slide the other bearing over the spindle with the bevel side pointing down into the bearing housing center and the flat side toward the top of the spindle. Slide it down until it seats against the race.

4. Put on the flat washer.

5. Screw on the castle nut. Tighten it snug, but not too tight. If you put it on too tight it the bearing housing will be difficult to rotate and freely spin. If you put it on too loose it will allow play within the assembly. Line up the cotter pin hole and press it through and bend it shut.

6. Install the Dust Cap. This is also a press fit and may be a tight fit. Be careful not to bend this as it is a thin wall. Tap lightly around the edges of the dust cap using a plastic hammer and a punch or driving tool. Be careful to make sure the item installs symmetrically and doesn't cockeye. If you have a dust cap driver, use that tool. You can also find some tubing that fits around the dust cap to press fit it.

#### **GENERAL INSTALATION TIPS**

We recommend recessing the spindle assembly into the bumper; however, you may also use an external style as well.

For a recessed style, we recommend the following:

1. Locate where on your bumper you would like the spindle installed. Drill all the way through your bumper (vertically) to the O.D. (Outside Diameter) of the sleeve you will be using. TIP – a hole saw works well to drill this hole location.

1000 lb. kits use a 1-5/8" outside diameter sleeve. 1750 lb. kits use a 2-1/8" outside diameter sleeve.

2. You will then press the sleeve into the hole in your bumper you just drilled. If you are using a 4" tall bumper, the sleeve should sit flush on the bottom of the bumper and stick out 1/2" above the top of the bumper. Regardless of the height of your bumper, it needs to stick out 1/2" above the top of the bumper so you can press the roll pin in later.

3. Position the roll pin hole to your desired position. We recommend positioning it to the outside (away) from the vehicle or in any other easily accessible position that you can later install your roll pin from.

4. Put the spindle kit into the sleeve and determine the correct height you need the spindle to be. If you are using the roll pin as a standard height, pin it now.

Once the correct height of the spindle is determined, mark its location and disassemble the kit. Replace the spindle only back into the sleeve and set it to the marked height. Align the sleeve and spindle in place.

Tack weld the sleeve in place and re-check to make sure everything is aligned and the spindle is at the correct height. You can now fully weld in the sleeve to the bumper on the top and bottom with the spindle inside of it.

**Once the sleeve is fully welded, the heat will shrink the internal diameter of the spindle and press fit itself on to it.**

We then recommend putting two light tack welds on the bottom of the spindle to the inside of the sleeve. This will allow you to easily grind them off and remove the spindle at a later date if needed.

**\* NOTE: DON'T weld the spindle completely to the sleeve. This creates two problems.**

**ONE - it weakens the spindle at the points of welding and creates break points where your spindle WILL later fail.**

**TWO– When your spindle does break down the road, it is going to be a mess trying to remove it. There is no easy extraction method to replace the spindle now that it has been welded to the sleeve and the sleeve to the bumper.**

5. Let the entire area cool slowly. You can cover the area with leather to insulate it and provide an even cool down.

6. You can now install the bearing housing and mark where you would like your tire carrier main arm to connect to the bearing housing.

\*Those using the 1750 lb. kit shouldn't weld onto the bottom ½" of the bearing housing as the wall thickness is thinner there. Weld the tire carrier main arm on the top and sides only. After paint and final installation, silicone the bottom of the carrier main arm to the bearing housing. This doesn't compromise strength.