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WH Ford 2WD Steering System

#2013/2015 Date 02/15/04 rev. 1

Basic system notes:

This system works on 1966-1977 Broncos with manual steering to convert to power steering. This instruction manual is also based on converting a 66-75 Bronco with original manual steering. It will also work if the old stock power steering box is worn out. **DO NOT TRY TO PERFORM THIS JOB IN A HURRY!** Read the instruction manual completely before beginning so as to avoid any unforeseen problems as well as to gain a better understanding of what you will be doing. As with all custom work of this type you can expect some filing, grinding and fitting of parts as necessary to make a clean install for your particular Bronco. WH has been using this system for over 15 years and without exception when properly installed it works flawlessly.

- 1. The kit will not work with unlifted Broncos.**
- 2. You will not need or want to use a drop pitman arm with this system.**
- 3. A track bar drop bracket #1253 on the frame or a track bar riser bracket # on the front end will be necessary to maintain correct track bar and drag link angle. If these angles are not correct the Bronco will have sever bump steer and should not be driver until the problem is corrected.**

Instructions:

Disconnect the battery. Drain the cooling system. You may want to flush the system before you do this because after the kit is installed you will not have the radiator cock anymore (on stock radiators). There will be no clearance for it. Because of the popularity of this system WH radiators have the drain cock on the pass side. After you get the radiator drained, loosen the fan shroud, and then remove the radiator and the fan shroud.

The next step will be to remove the round snap-ring that is on the outside of the sliding steering joint (original manual steering). This connects the steering column shaft to the steering box. Then remove the drag link end from the pitman arm on the steering box. Remove the cotter pin and nut from the drag link. You can use a ball-joint splitting tool to take it apart. Now set the drag link assembly aside by wiring it up against the tie rod. If you have purchased the system with the new adjustable drag link you can completely remove the old drag link at this time. Next, remove the pitman arm from your old box (it normally takes a special puller to do this). Then remove the original steering box from the frame by removing the three 1/2" bolts that attach it to the frame.

The Steering Column:

Loosen the steering shaft clamp at the end of the steering column tube inside the engine compartment (66-75). Next pull the steering shaft up through the column tube to the area of the oil filter (this applies to 66-75 manual steering shafts only). Use a pair of vice grip pliers to hold the shaft on the inside of the Bronco below the steering wheel. This will position the shaft inside the engine compartment so you can work on it. With the joint removed from the bottom of the shaft you should see a pin going through the shaft and through a collar. Cut the shaft 1/2" or so above the collar. You can use a hack saw, die grinder etc. We will come back to the shaft later.

Steering box mounting:

Next clean the frame rail all the way around. This is done because the mounting plate goes on the outside of the frame, and is critical since there is very little clearance after the new steering box is installed. Bolt the mounting plate to the outside of the frame using the bottom two 1/2" bolts you took out previously. You may need to loosen the small nut on the bottom of the left lower radiator bracket enough to turn the bracket sideways. This is so you have room to insert the bottom bolt. It will also give you room to mark and drill the top steering box hole later. You may want to cut 1/2" off the threaded ends of the bolts, since they do not need to be that long and the installation will look much cleaner. Put the bolts through with the heads on the inside of the frame. Now weld on the inside of the frame where the steering box mounting bracket (#2143) with the two 7/16" holes in it connects the frame. Weld it the full length of the bracket. Next go to the outside of the frame weld on top of the mounting plate to the frame. The top 1/2" bolt hole is not used.

Now turn the input shaft of the box (small shaft) to the center of full lock left and right position. This is very important. Do not refer to the diagram it is only an example. Then put the box on the frame and attach the bottom box mounting bracket with the two 7/16" x 1 1/4" bolts supplied in the kit. Tighten down these bolts securely, but not excessively.

Mark through the top steering box hole for the new hole, then remove the steering box and drill a hole completely through the inside frame. You will have noticed that the new steering box is on a slight angle, so this hole will have to be drilled through to the outside of the frame on the same angle. This is done in order to make the bolt line up with the threads on the top hole in the steering box when inserting the 7/16" bolt from the outside of the frame. Replace the steering box using the 7/16" x 4" bolt from the kit and put this bolt in the top hole. Tighten this bolt and the other two lower bolts down very snug and evenly. (Approximately 70 ft. lbs.) Take the radiator and remove the drain cock, and replace it with the pipe plug provided in the kit. Do not put the radiator in permanently as the steering pump has to be put on yet and further work has to be done at the u-joint yoke. The radiator and shroud should be the last thing to go in permanently. The pitman arm from the original box will now be put on the new steering box. Make sure the new box is still in the center of the full lock left and right position. The arm will point not quite straight back when on. Tighten the arm very securely.

Back to the steering column:

Put the new U-joint yoke on the splined input shaft of the new steering box. Line up the bolt with the place on the input shaft grooved for the placement of the bolt, then snug down the bolt. Lower the steering shaft into the other end of the U-joint yoke. If they do not line up, you may have to remove the triangle shaped piece at the firewall and slot the piece about 1/2" longer in each of the three holes. The way to slot them would be straight up as the piece was previously in the vehicle. It does not matter if you are little to far, as you may have to elongate them a little bit more later on. Make the slots only about 1/2" in width. **Please note if you have a body lift it is best to use a WH custom lower steering shaft.** Now bolt the triangle piece back on the Bronco, leaving the bolts loose. Insert the shaft into the yoke completely so that the shaft is even with the bottom of the hole in the yoke. Now go inside the Bronco and measure the distance from the backside of the steering wheel flange to the turn signal switch housing that it goes up against. Pull the steering shaft, (with the wheel still on it) out of the yoke through the steering tube through the inside of the vehicle. Cut the measured amount off of the end of the shaft inside the engine compartment. Replace the shaft into the yoke making certain the steering shaft is down near the bottom of the hole in the yoke. The steering wheel and hub should also be in the proper original position for the directional signals to work. Slide the steering shaft clamp on the steering shaft back up and tighten it up as before.

Shaft to yoke connection:

Have a keyway milled into the steering shaft that fits the yoke. Grind a recess into the shaft for the set screw. Reassemble and use locktite on the set screw. Doing the job this way will allow you to adjust the shaft and take it apart if necessary. The alternative way to attach the shaft to the yoke is to weld them together. Be careful if you weld not to burn out the rubber seals on the u-joint. You will want to weld a small amount and let cool and so on. When the shaft to yoke connection is finished you can tighten up the triangle piece on the firewall and then the circle clamp that holds the tube in place. Make sure the shaft and yoke are not touching the inner fender, brake lines or anything in the engine compartment.

The Drag Link : (if you are using original drag link)

You will find that the drag link is now too long. Make sure the steering box is centered in its travel from right to left. Set the drag link ball joint end next to the steering arm. Measure from the center line of the ball joint taper shaft to the center line of the pitman arm hole. The amount you have is how much needs to be cut out of the drag link . Use the same method to pop the other end of the drag link assembly loose as before. Take this to the vise and cut out the amount you measured. Grind one end to a chisel shape. Insert the two pieces in their respective holes on the pitman arm and tie rod. Clamp them together in a piece of angle iron to keep them straight, tack weld, and then remove from the vehicle to a place where you can weld securely. Make sure to keep the two ball joint tapers pointed in the right direction as they were before. The piece of pipe included in the kit needs to be split lengthwise with two cuts then put over the center of the weld on the rod. Cut it with a hacksaw, die grinder etc. Grind the weld on the drag link down flush with the outside diameter, then clamp the pipe on and weld the gap in on both sides of the pipe. **DO NOT WELD AROUND THE ENDS!!!** Allow it to slow cool by itself. Then connect it back up to the tie rod and steering arm. Make sure you tighten the ball joint nuts very tight—approximately 70 ft. Lbs. And install the cotter pins.

The Drag Link : #2195

Make sure the steering box is centered in its travel from right to left. Simply adjust the new drag link until it fits into the hole on the tie rod and the hole in the pitman arm. Make sure you tighten the ball joint nuts very tight—approximately 45 ft. Lbs. and install the cotter pins. Now tighten the adjusting sleeve bolts.

Steering Pump Assembly:

Now in order for the pump pulley to match up properly, you should have a double crank pulley and double water pump pulley. Bolt the flat bracket to the water pump, and then install the pump by screwing the long bolt into the cylinder head. The pump pulley should line up with the outside crank and water pump pulleys. Install pressure and return hose. Fill system with power steering fluid. Test and check for any interference or binding of any components.

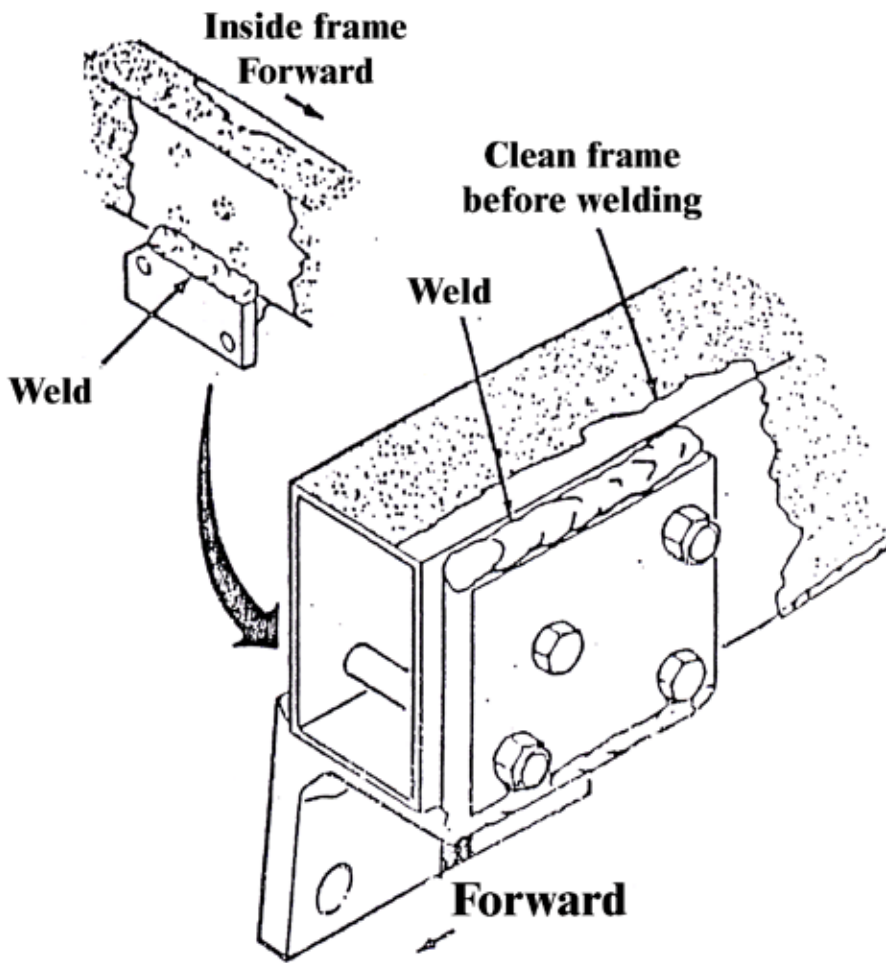
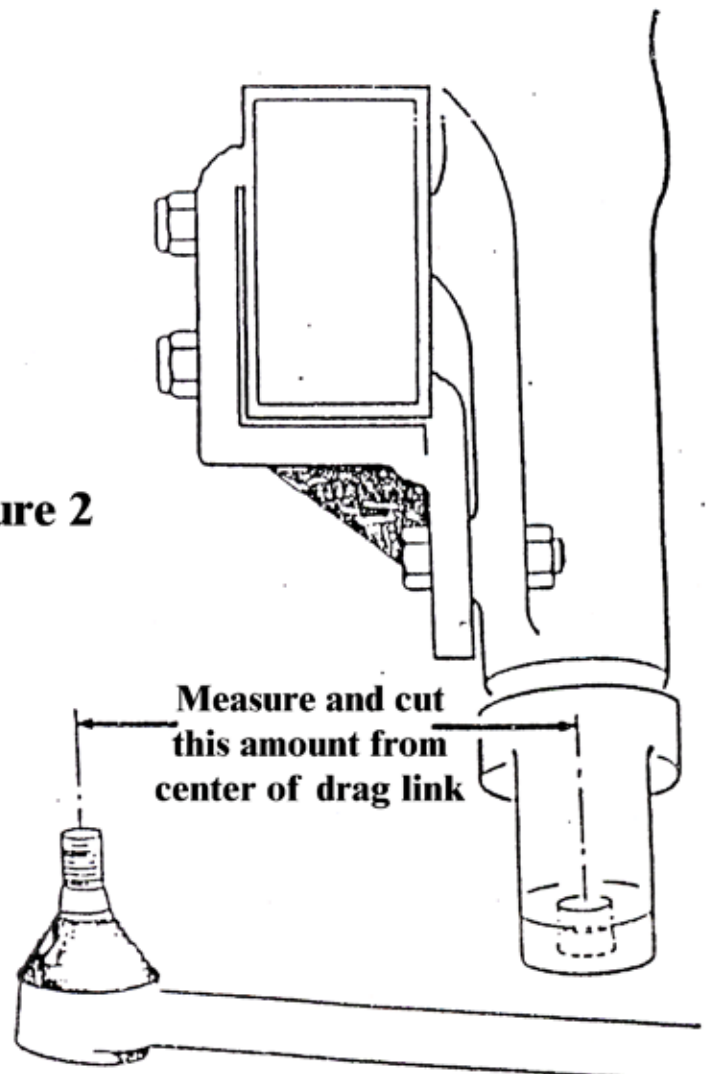


Figure 1

Figure 2



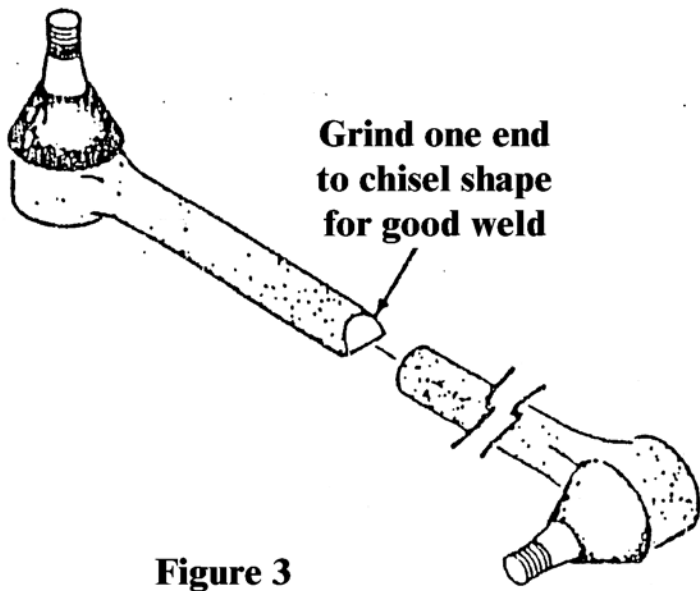


Figure 3

Clamp drag link securely to angle iron

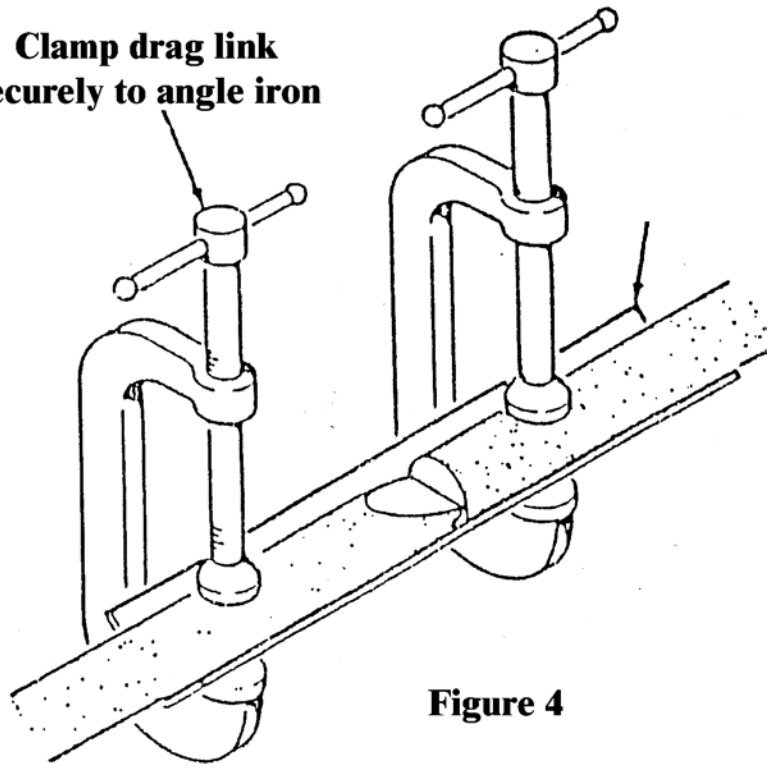


Figure 4

Weld sides only, do not weld ends

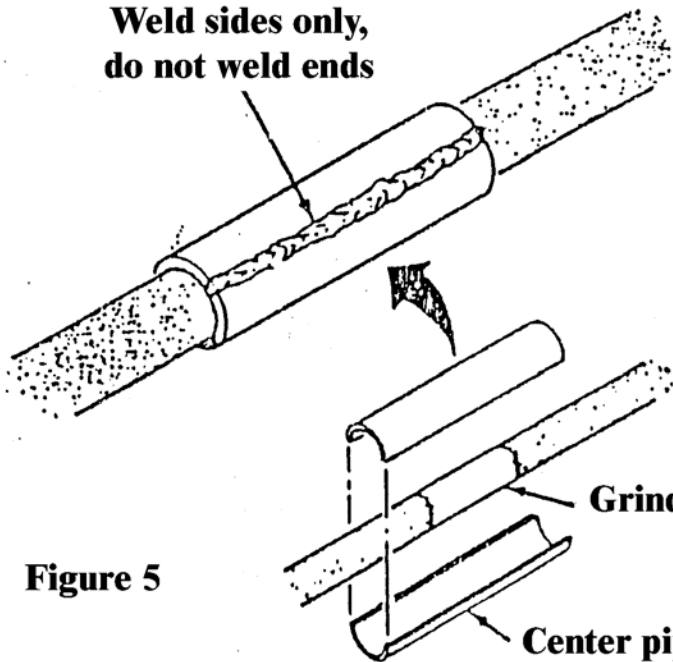


Figure 5

Slot three mounting holes as shown

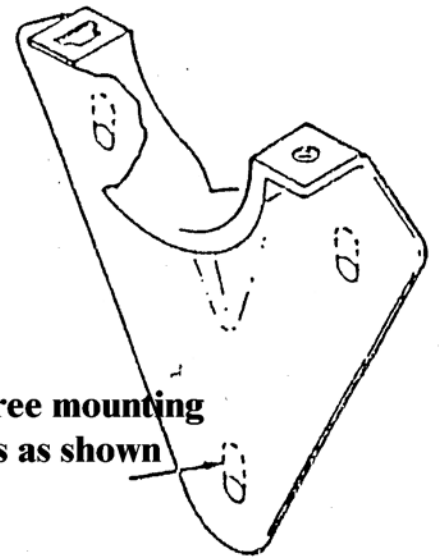


Figure 6