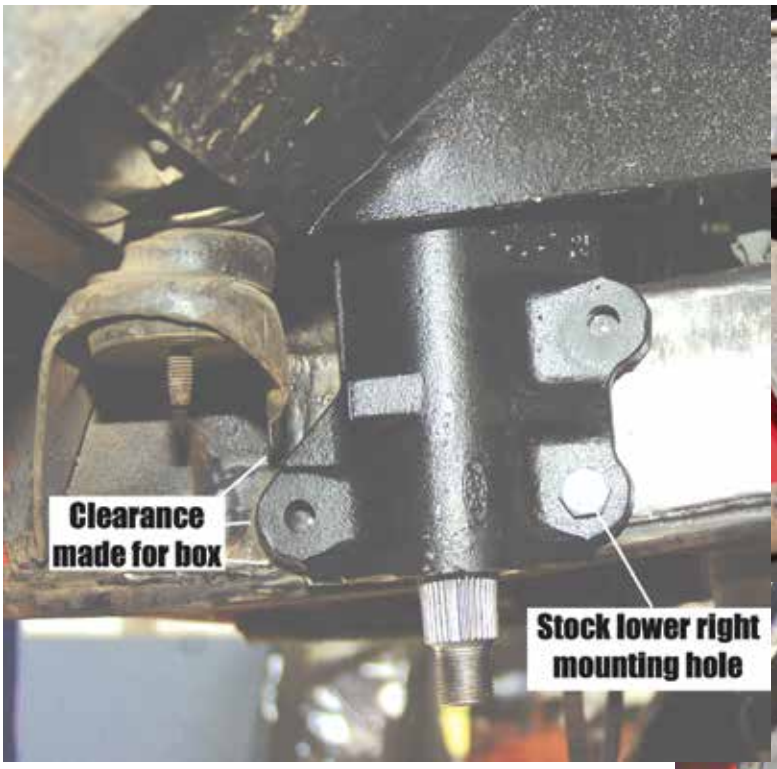
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Rock Box Extreme Duty Steering

#2004 Date 4/19/05 rev. 0

Mounting the box to the frame:
It is easiest to remove the radiator and steering pump so that you will have easy access to the frame from the top and side. Looking at the frame from the drivers side use the lower right original mounting hole for positioning the box. The body mount bracket will need to be modified. It can be modified using a grinder or cutting torch. You will need to cut off about 1 1/2-2" from the bracket as shown to make clearance for the box. Once you have the box in place as shown you can center punch the two remaining mounting holes and then drill through the frame with 1/2" drill bit. These two holes will be right next to the other two stock holes. Use a round file to clean up the holes once you have them drilled. On the back side of the frame the upper hole will be right next to the cross member you may need to grind in this area to get a spot for the nut to sit flat.







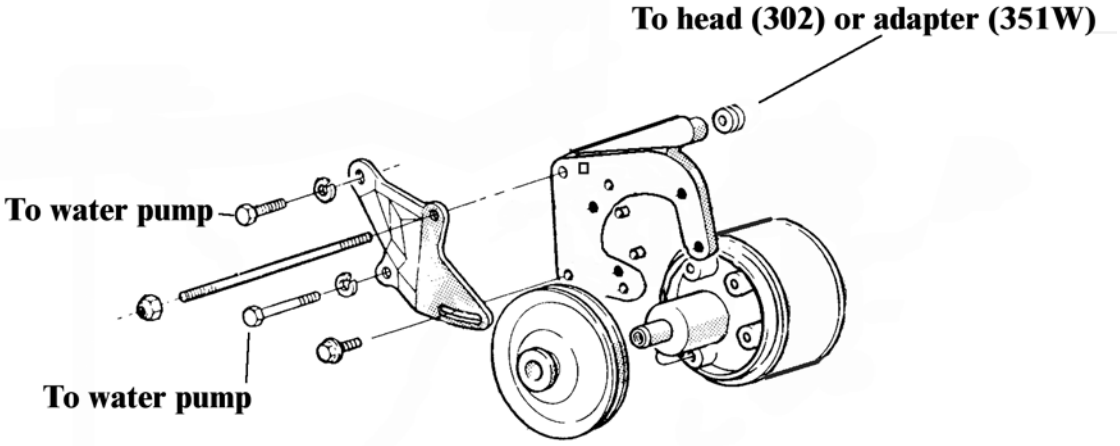
With the box bolted in this location you will see that the pitman arm is in the same position as if it was stock. Also notice clearance between the draglink and tie rod. This is necessary for suspension travel without interference.

Steering shaft: The box is 3/4"-36 at the input shaft connection. Use appropriate method to connect to your existing steering shaft. WH lower custom shafts are recommended.

Hose routing:
This can be a challenge because of the tight quarters of the inner fender, frame, and steering pump. There are 4 ports on the Rock box 2 for the ram 1 pressure and 1 return. If you are not going to use the ram simply tighten the port caps down on the ram ports. You can add the ram at any time in the future. The ram port on the box closest to the fire wall goes to the driver side port on the ram. The ram port closest to the radiator on the box will go to the pass side port on the ram. Now for the hoses to the pump. The smallest port is the pressure and the larger one is for the return line.



Pump mounting:
Now we will focus on the steering pump. It is easiest to remove the radiator when installing the steering pump and brackets (you will have a lot more room to work). **NOTE: WH brackets are specifically designed for use with stock 289 and 302 Bronco water pumps.** Remember if you have a 351W you will need our #8048 adapter bracket to keep all the brackets lined up properly. The stock Bronco water pump will have the water inlet on the passenger side of the motor. Start by bolting the pump to the pump bracket. 4 bolts and two spacers are used on the pump. These are metric and should be used. The two shorted bolts are used without the spacers and the longer ones are used with the spacers. Because the pulley is installed on the pump it will take some finesse to start the bolts but we assure you it will work and can be done. Bolt the pump adjusting bracket to the water pump. Determine which end of the double threaded rod fits your head 3/8 or 7/16". Use the rod to bolt the assembled pump and bracket to the pump adjusting bracket and head. Use an appropriate amount of washers for spacing of the pump bracket away from the head. This is to line up the pulleys and belt. We do not include a belt in the kit because of all the different size crank and water pump pulleys. Obtain the correct size v-belt from your local parts store.



Reservoir mounting:
The remote reservoir can be mounted as far away from the pump as the hose will allow. The hose can be cut if less is needed. It is not recommended to use a longer hose than the one provided because of increased possibility of cavitation and by doing so you will decrease the ability of the pump to pull the high volume of fluid needed for it to work at its optimum capacity. You may need to fab some additional bracket for mounting the reservoir. We have used angle iron off of the firewall or core support as shown. Hose clamps are not necessary but can be used as a percussion.





Ram mounting:
You have to choose how and where to mount the ram. We have seen many different ways to do this. We prefer to mount the ram up high and run from the frame to the draglink. Many people mount them off the differential cover and to the tie rod. It is up to you. Center the tires so that they are straight ahead then center the steering box with the draglink disconnected by moving it lock to lock, counting the turns and turning it to the center position. If the draglink will not reinstall at this position adjust it if you have an adjustable draglink. If you don't have an adjustable draglink you could remove the pitman arm and file the keyways out so that you can then mount it on in a new position. WH has fully indexed (no keyways) dropped pitman arms which make this easy if you don't want to file them out. Once you have everything in the centered position you are ready to access where to mount the ram. Install the rod ends on the ram and put the ram in the center of its travel. We put the cylinder on the pass side and the shaft on the driver side. You can mount the shaft side close to the pitman arm on the draglink. Fabricate brackets if necessary. Once you have the drive side located it's just a matter of holding the ram up to the frame and figuring out a bracket system to tie it into the frame. 4 mounting tabs are provided as a start but additional material may be necessary. Make sure you can run through the travel of the ram without any binding of the tie rod, draglink etc. It is best to run the ram as straight as possible. Undue stress placed upon the ram shaft can cause it to bend. You should be able to take the ram off at any point in the travel without feeling bind on it.





Here are a couple of shots of the ram install on the Nightmare. You may wonder why we just don't provide completed mounting brackets. The reason is by the time you go for a kit like this or just a ram for that matter you will most likely have many other custom modifications which would alter any bracket we could conceive as a one size fits all. Tie rod over, tie rod under, rod end steering etc. As much as we would like to offer such a thing we have found this to be a one at a time process and best left to the installer to determine what will work for them.

Ram hose kit:
The ram hose kit comes with 4 reusable fitting and hose which you will cut to length. Install the end on the hose, it will thread on counter clockwise. Now thread the fitting into the end you placed on the hose (clockwise). Tighten it all the way down until it bottoms out. Run, route and cut hose as required for your application.