

Outfitter Design LLC Hummer H3 Steering Rack Reinforcement Kit Installation Instructions

This kit is to be installed by a professional. Be sure to read and understand all steps before starting installation. This kit is for off-road use only.

STEP 1:

Place vehicle in park and chock the rear wheels to prevent the vehicle from rolling. Using floor jack lift the front of the vehicle up until the front tires are just high enough to be off the ground and properly support the vehicles frame on jack stands. **REMEMBER A HYDRAULIC JACK IS FOR LIFTING NOT SUPPORTING the vehicle.**

STEP 2:

Remove both front Skid Plates to attain access to Steering Rack

STEP 3:

Remove outer tie rods from wheel knuckles

STEP 4:

Remove steering column U-Joint from the steering rack. There is a splined shaft protruding from the top of the steering rack that the U-joint fits over. Be sure to mark the position of the U-joint in relation to the shaft. Failure to reinstall the column in the same position will result in your steering wheel not lining up with your direction of travel and may require a trip to the dealer to have a traction control sensor reset in the steering column. Remove clamp bolt pictured in Figure 1 and slide the U-joint up and away from the steering rack.



Figure 1: Steering Column Clamp Bolt

STEP 5:

Remove Power Steering Lines from Steering Rack. Remove the retaining bolt pictured in Figure 2 and pull both lines from the steering rack. Both lines are attached to the Aluminum Plate and

will pull out as one unit. Have an oil pan under the Rack for this step.



Figure 2: Power Steering Line Assembly

STEP 6:

Remove the bracket holding the Passenger Side of the Steering Rack. This Bracket is held to the frame with two bolts.

STEP 7:

Remove the two bolts from the driver side of the Rack shown in Figure 3.



Figure 3: Two Bolts secure Driver's Side of Steering Rack to Frame

STEP 8:

Remove Steering Rack from Vehicle. Inspect frame where passenger side clamp will be installed. If the frame has been damaged, straighten it so the new Aluminum bracket sits flush with no gaps.

STEP 9:

Once the Steering Rack is removed, take note of the position of the metal plate attached to the bushing. You will need to install the Outfitter Design Bushings the same way. Press out old rubber bushings from Driver's Side of the Rack. Also discard the Rubber Piece from the Passenger Side Mount of Rack.

STEP 10:

Press in the new Outfitter Design Bushings. Each bushing is made up of three pieces. There are two Delrin® pieces and one steel sleeve. One Delrin® piece has a small flange, and the other has a large flange. Do not mix these up. Follow the following process to press in your new bushings and see figure 4.

- Using a small rubber mallet, gently tap the **small flanged** Delrin® piece into the rack with the flange on the **frame side**.
- Gently tap the steel sleeve into the bushing so the steel flange will make contact with the frame.
- Gently tap the **large flanged** Delrin® piece in from the **non-frame** side.

Note: When tapping the bushing components in to the steering rack, be sure to tap them in **straight**. If you drive them in crooked, you will ruin them.

STEP 11:

Slide the steering rack back up into the vehicle. Place the Aluminum Passenger Side Brace on the rack **WITH** the new bolts and washers inserted into the holes. Use the included Red thread locker on all bolts. If you do not have the bolts inserted into the Brace before you slide it up into place, you will not be able to fit the bolts into the brace. See Figure 5 and 6 for the correct position of the Brace.



Figure 5: Steering rack with Aluminum Brace in correct position. In both right and left hand versions the straight side of clamp is facing the outside of the vehicle with the “L” facing the inside to clear the power steering line



Figure 6: Aluminum Bracket installed between the front differential and frame

STEP 12:

Insert factory driver side bolts and washers as they were installed from the factory. Use the included Red threadlocker on all bolts. Hand tighten all steering rack bolts. Then torque the driver side bolts to 96 ft lb. Torque the passenger side bolt to make sure the gap at the bottom of the bracket is the same as the gap at the top (this gap should be just UNDER 1/16” when installed correctly).

****Over torqueing these bolts will move rack out of alignment and cause excessive wear on rack and difficulty steering. Clamp halves should not touch!!****

STEP 13:

Reinstall the power steering lines.

STEP 14:

Reinstall the steering column in the same position it was before the uninstall.

STEP 15:

Reinstall the tie rod ends into the knuckles.

STEP 16:

Bleed power steering according to GM specifications or you will have issues steering.

STEP 17:

Take your H3 to get an alignment.

*Note that the steering wheel may be off position. This is due to the steering rack being installed in the proper position on the frame vs. the faulty rubber bushings that existed the last time the vehicle had an alignment.

This completes the installation. Make sure to re torque all hardware after 150 miles, then 500 miles and at every oil change.