

INSTALLATION INSTRUCTIONS



ROCK ASSAULT™ HYDRO ASSIST RAM KIT

- 130250-1-KIT (1.5" X 6")
- 130251-1-KIT (2" X 6")
- 130266-1-KIT (2" X 8")
- 130056-1-KIT (1.5" X 6" ROCK ASSAULT)
- 130058-1-KIT (2" X 8" ROCK ASSAULT)
- 130058-1-KIT (2" X 6" ROCK ASSAULT)

KIT CONTENTS





RECOMMENDED TOOLS

Grinder

Welder

Jack

Jackstands

17mm, 18mm, 19mm Wrench

Large Crescent Wrench

7/8" and 15/16" Sockets

CAUTION

1. Read all instructions completely and carefully before you begin.
2. Check to make sure the kit is complete and that no parts are missing (refer to the Kit Contents List on the first page of these instructions). If anything is missing, please contact Trail-Gear at 559.252.4950.
3. Park vehicle on a clean, dry, flat, level surface and block the tires so the vehicle can not roll in either direction.

INSTALLATION INSTRUCTIONS



STEP 1 - INSTALLATION PREP

Before installing this steering ram kit, you will need to have your steering box tapped for #6 JIC fittings (included) or purchase a steering box that has already been tapped. This kit is designed for use on 1979-1985 Toyota 8" front solid axles with a high steer kit installed. For proper fit and strength, the tie rod should be 1.25" x .250" wall DOM tubing. These items are available from Trail-Gear, Inc.

STEP 1 - HOUSING MOUNT

Remove the paint around the top of the differential housing. Place the bracket on top of the housing and slide it toward the passenger side until it stops on the weld around the vent hole. Weld the housing mount to the top of the differential housing as shown.



STEP 2 - INSTALL THE RAM

Install the male and female rod ends and two jam nuts onto the ram. Center the steering wheel so that the front wheels are straight. Remove the red ram caps and pull out the ram from the housing three inches. It is important to have the wheels centered and the ram half way out when welding the mount on the tie rod. This ensures that the ram and steering are synchronized through their range of motion.



STEP 2 - CONTINUED

Bolt the steering ram onto the housing mount using the provided 5/8" bolt and sleeves. The ram hydraulic inlet and outlet should face toward the rear of the truck, parallel to the ground. Place the tie rod bracket onto the tie rod, remove the paint, and tack weld into position. Verify that the wheels are straight, the ram is out three inches, and that the 5/8" ram bolts are installed. Remove the tie rod and finish the welding bracket to the rod. Re-install the tie rod on the truck.



INSTALLATION INSTRUCTIONS



STEP 3 - RAM/UBOLT INTERFERENCE

A common problem with RAM assist steering is interference between the steering ram and the ubolt flip kit on the driver side of the truck. This is resolved by rotating the driver side end of the ram upward by twisting the tie rod. Start by cutting off excess threads exposed above the nut on the front ubolts. The taller the threaded section of these bolts are, the more likely they are to cause interference for the ram. Cutting off the unused threads helps reduce the problem. It is further necessary to prevent the tie rod from rotating as the ram cycles left and right. If the tie rod is allowed to freely rotate, damage to the ram, ram mount, and the ubolt flip kit are all likely. To prevent the tie rod from turning, each of the two tie rod ends are turned in the opposite direction (photo #2). Start by loosening the jam nuts on each end of the tie rod. Rotate the tie rod so that the ram mount is as it appears in photo #1, just above the flip kit ubolts. Now, while maintaining the tie rod position shown, turn one of the threaded rod ends as far forward as it will go and set the jam nut. Turn the other rod end the opposite way to the limit of its travel. Tighten the jam nut. Verify that the ram will not interfere with the ubolts or flip plate by turning the steering wheel all the way to the left. Also verify that the tie rod cannot rotate forward or back to the point that it could allow the ram end to hit the flip kit. Place a small weld on each tie rod end jam nut to prevent the nuts from coming loose.

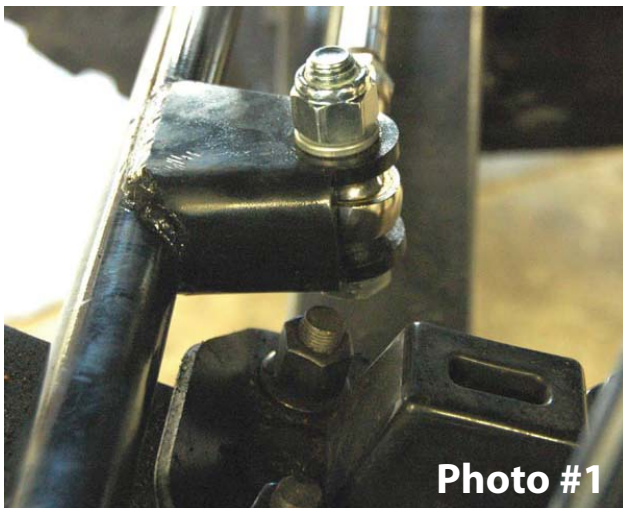


Photo #1

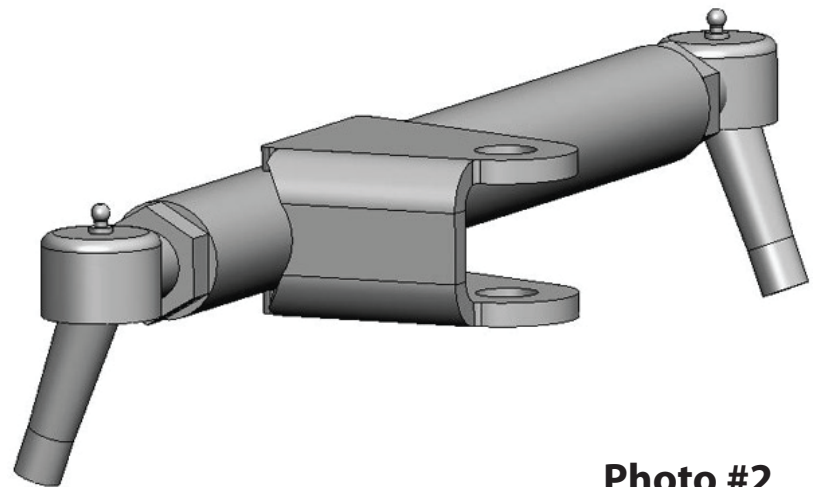


Photo #2

STEP 4 - ROUTE HOSES

Each hose has one end with a 90 degree fitting and the other end is straight. Remove the red safety caps from the ram. Take the end of each hose that has the 90 degree fitting and connect them to the ram. Route the hoses behind the driver side motor mount and up to the steering box. Use the photo below for fitting locations on the ram and steering box. Use the two loose 90 degree fittings (included) to connect the ram to the box. Tighten the hose connections. Check that the ram bolts, rod ends, and jam nuts are tight. Verify all the steering parts have been reinstalled correctly and cotter pins have been properly installed.



INSTALLATION INSTRUCTIONS



STEP 5 - FLUID & TESTING

Drain the old fluid from the steering fluid reservoir and lines. Connect the factory lines to and from the steering box and reservoir. Fill the reservoir with high temp synthetic steering fluid. Using a floor jack, lift the front of the truck off the ground. With the engine off, turn the steering wheel from lock to lock 20 times. Check and fill the steering fluid reservoir as needed. Use only high temp synthetic steering fluid. Start the truck and allow to idle. Turn the steering wheel another 20 times from lock to lock while keeping an eye on the fluid reservoir. Top off as necessary but do not overfill. If the ram hoses are connected backwards, the steering box and ram will fight each other and you will not be able to control the position of the wheels. If you feel major binding in the steering, check to see that the hoses are connected correctly. Lower the vehicle to the ground. Check and maintain the fluid level as needed. We recommend flushing and replacing the steering fluid once each year. If you are combining this ram kit with a high volume/pressure pump, a fluid cooler should be installed in the low pressure return line that goes between the steering box and the reservoir. This kit will work properly with the stock Toyota pump and reservoir. Due to the limited volume of the stock pump, the steering response time will be a little slower than stock. This kit works and drives well in both low and high speed driving applications. All products sold by Trail-Gear, Inc. are sold for off road/racing use only. Any other use or application is the responsibility of the purchaser and/or user.