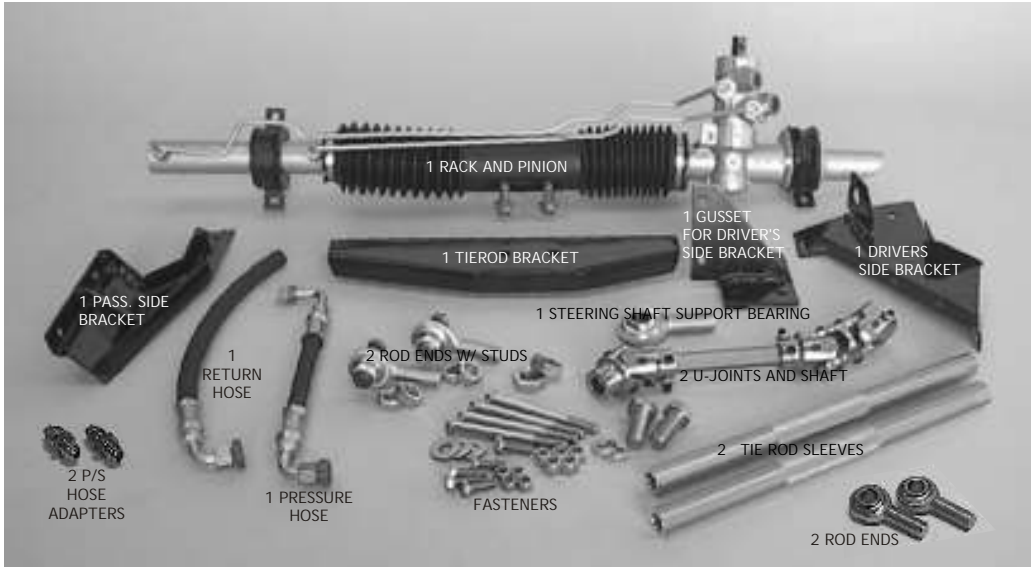


Steeroids™ INSTALLATION INSTRUCTIONS

1963-1982 Corvette - Power Kit



Verify Kit Contents:

- | | |
|---|--|
| 1 | RACK AND PINION |
| 2 | ROD ENDS W/ STUDS & COTTER PINS |
| 3 | ROD ENDS (INCL. SUPPORT BEARING) |
| 2 | TIE ROD SLEEVES |
| 2 | PUMP HOSES (1 PRESSURE, 1 RETURN) |
| 2 | P/S HOSE ADAPTERS |
| 2 | U-JOINTS AND SHAFT |
| 1 | DRIVER'S SIDE BRACKET |
| 1 | PASS. SIDE BRACKET |
| 1 | TIEROD BRACKET |
| 1 | GUSSET FOR DRIVER'S SIDE BRACKET |
| 2 | METRIC RACK BOLTS W/ WASHERS |
| 4 | 3/8- 24 x 4 GRADE 8 BOLTS |
| 5 | 3/8- 24 ELASTIC NUTS |
| 9 | 3/8 FLAT WASHERS |
| 1 | 3/8- 24 x 1 GRADE 8 BOLT |
| 6 | 5/16-24 x 1 GRADE 8 BOLTS |
| 6 | 5/16-24 ELASTIC NUT |
| 6 | 5/16 FLAT WASHERS |
| 2 | 5/8- 18 X 1.5 GRADE 8 BOLTS |
| 2 | 5/8- 18 RIGHT HAND JAM NUTS |
| 2 | 5/8 SPLIT WASHERS |
| 2 | EXTRA SET SCREWS IF NEEDED ON U-JOINTS FOR CLEARANCE |

BEFORE BEGINNING: Please note each steering rack is bench tested prior to shipping therefore some of the fluid from the test occasionally leaks out and may stain the box. This does not mean the rack has been damaged if fluid has leaked out. You may also find two small rubber o-rings attached to your rack with a twist tie, these are merely extras that are sometimes supplied with our steering racks. The power steering hose adapters supplied with your kit already have o-rings attached, so the extras can be discarded.

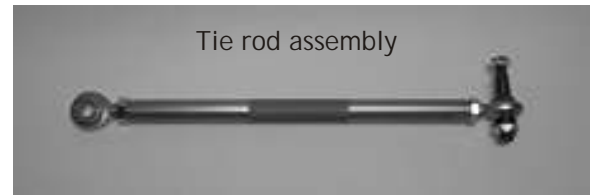
1. Begin by performing an inventory of all the components in the kit. Installing the Steeroids kit requires simple hand tools. A pickle fork will be useful when disassembling the old system.
2. Begin by supporting the car securely on jack stands. Never support the car using only a jack.
3. Removing the entire steering system as a unit is the most effective way. The outer tie rods require removal of a cotter pin and nut before separating from the steering knuckle using a pickle fork. Once both tie rods are separated from their respective steering knuckles, remove the two bolts attaching the steering column to the rag joint. Also, remove the two cross bolts that hold the rag joint to the steering column and the steering box. The steering box is attached with 3 bolts that extend through the frame from the driver's side wheel well. Remove two of the bolts. Leave the last bolt installed until you are ready to remove the entire system.
4. If you have tubular headers you will most likely need to remove the driver's side header to facilitate removal of the steering box. Unbolt the power assist cylinder and support bracket from the frame rail. Disconnect the power steering hoses from the pump.
5. Now remove the two bolts and nuts that attach the idler arm to the passenger side frame rail. The final bolt holding the steering box can be removed now, but **BE PREPARED TO SUPPORT THE STEERING BOX WHEN IT COMES LOOSE.** Lower the steering system out of the car. You might have to work the bolts and rag joint loose from the steering column.

ASSEMBLY AND INSTALLATION

6. Bolt the tie rod bracket to the rack and pinion unit using the supplied bolts (metric), flat washers and lock washers. Place the flat washers between the R & P unit and the bracket, which may compress the rubber boot-this is normal. Place the lock washers between the bolt head and the tie rod bracket. The bracket installs with outer holes toward the top of the steering rack and car. This bracket can be installed upside down, so be sure you have the correct orientation as shown in picture. Use a high-strength thread locker and torque to 60 ft/lbs.

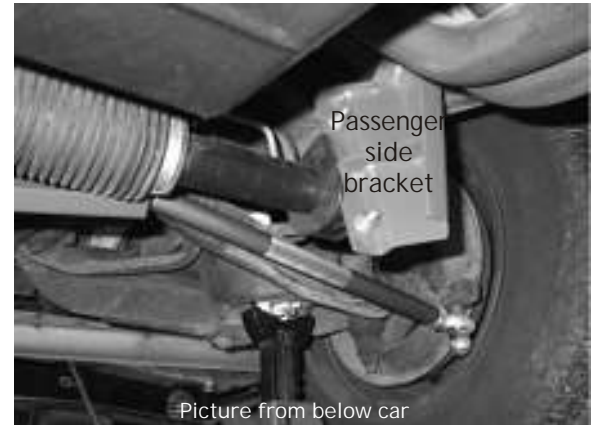


7. Thread each tie rod end with jam nut onto the tie rod sleeves an equal amount. On the other end of each sleeve, thread the remaining 5/8" rod ends with jam nuts. Attach them to the tie rod bracket using the 5/8-18 x 1.5 bolts and lock washers. Use a high strength thread locker and torque to 50 ft/lbs. If you experience clearance issues with the head of the 5/8 bolt, you can omit the lock washer but be sure to use high strength thread locker. To set an approximate alignment, measure the overall length of the old steering system. Measure from the center of each outer tie rod. Adjust the tie rods on the steering rack to match your measurement and tighten the jam nuts against the sleeves. When attaching the tie rod end to the spindle, torque the 15/16" nylock nut to 75 ft lbs. Using an adjustable wrench, turn the pinion until the rack is at its stop. Now count the turns as you proceed to the opposite stop. Divide the number you get by 2 and turn the pinion this amount. The steering rack is now centered.



Tie rod assembly

8. The driver's side adapter bracket attaches to the frame at the same location as the steering box. You can use the bolts supplied (be sure to place a washer under the head of the bolt, as well as under the nut) or the existing steering box bolts. The factory original bolts will be a bit longer than needed but they won't interfere with the operation on the system. Use a lock washer under standard nuts or use the nylon insert lock nuts. When using the original bolts, check to be certain that there are enough exposed threads to properly tighten the nut without it bottoming on the bolt. Add a flat washer if needed.



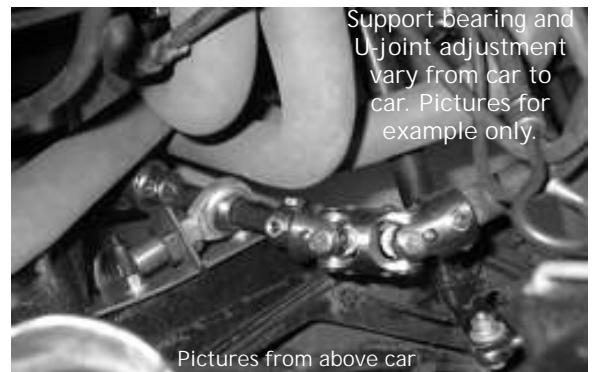
Passenger side bracket

Picture from below car

9. The gusset installs using the mount for the power assist cylinder. Two 5/16-24 x 1 bolts are used for the brackets. Place flat washer under nut, torque all fasteners to approximately 10 ft/lbs.

10. The passenger side bracket attaches in the same manner as the idler arm. Place flat washers under bolt head AND under nut. Torque to 35 ft/lbs.

11. Install the intermediate shaft on the steering rack. The double universal joint attaches to the steering column. Position the u-joint on the splines so that the setscrew will sit on the flat, machined surface. Use a high strength thread locker on the setscrews. The support bearing is installed on the bracket with two jam nuts.

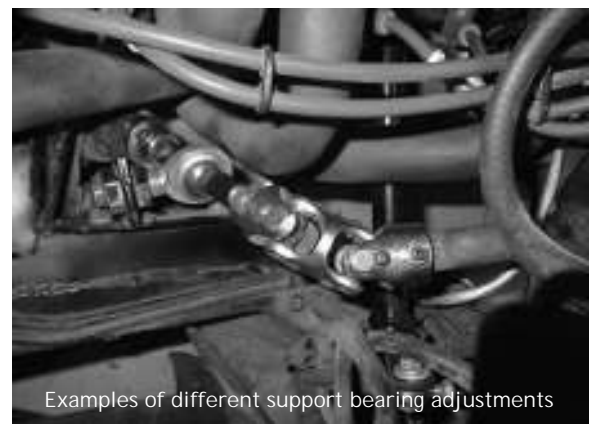


Support bearing and U-joint adjustment vary from car to car. Pictures for example only.

Pictures from above car

12. During installation it may be easiest to allow the shaft to float between the upper and lower u-joints. Don't tighten any setscrews until both u-joints are installed on the shaft and the rack and pinion unit is in place. Be sure that the setscrew holes are aligned with the holes on the shaft before tightening them. Two additional shorter set screws have been supplied in the bag of other hardware in the event of any clearance issues when the u-joints rotate.

13. Now install the rack and pinion on the brackets using the supplied bolts, washers and nuts. Torque to 30 ft-lbs. Attach the tie rod ends to the steering knuckles and torque to 30 ft-lbs. Continue to tighten the nut to align castellation with the cotter pin hole. Install cotter pin. NOTE: If your car has two holes in the steering arm install the tie rod end in the hole closest to the front of the car. Using the hole towards the rear will reduce the steering radius.



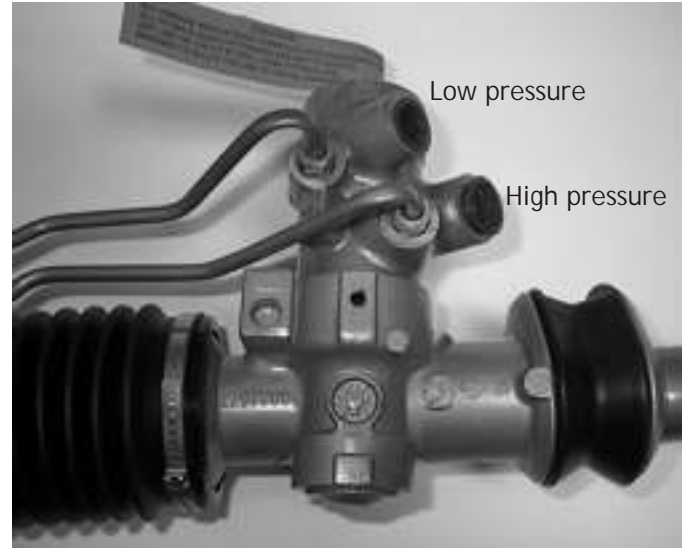
Examples of different support bearing adjustments

14. Adjust the support bearing to minimize binding of the u-joints during rotation. There should not be any binding. The steering shaft should be able to be turned by hand (with the wheels off the ground). If the bearing cannot be adjusted to completely remove any binding then the steering column should be moved towards the rear of the car. Adjust the column by loosening the nuts under the dash and at the firewall, and pulling the entire unit back. The most common binding is found when the double u-joint starts to form an "S" shape. This is caused by misalignment of the intermediate shaft and steering column. If sliding the steering column all the way back does not remove the binding, you can also slide the end of the steering column toward the engine. This normally relieves any remaining binding.

15. You will most likely have to re-center the steering wheel by removing it from the column, centering and reinstalling. This may change the turn signal canceling feature. There are two ways to correct this. Either modify the plastic canceling cam or change the phasing of the u-joint. The plastic cam and head can be cut off the stem and glued into the correct orientation. Moving the u-joint on the steering column splines will require grinding or drilling an indentation for the setscrew.

16. Check for any interference between the u-joints and the frame, particularly near the engine mount. Be sure the setscrews clear when the u-joint rotates. A variety of set screw lengths have been included, however be sure when the set screws are fully tightened down, they still have enough protruding to get full thread bite on the jamb nut.

17. Next, attach the power steering hoses. The large hose (the lower outboard) fitting on the rack is the high pressure side. This connects to the threaded fitting on your pump. The high pressure hose has fittings on both ends. Tighten to 21 ft-lbs. The return side (upper, inboard fitting) is torqued to 13 ft-lbs. It is very important to connect these hoses to their proper locations. Reversing the hoses will destroy seals and cause the rack to operate inconsistently and uncontrollably.



18. Bleed the air out of the system by turning the wheels all the way to the left. Add fluid to the "cold" mark on the dipstick. Start the car and allow it to idle. Fill to the "cold" mark as needed. Now turn the wheels side to side but not to the stops. Check the fluid level frequently while proceeding. Allow the engine to run for a few minutes before shutting off. Add fluid as needed. "Flushing" the system is not necessary, you are only bleeding it of air.

19. Now re-check every bolt and nut to be sure all are tight. Test-drive the car at low speed for a brief period. Check every bolt for tightness again. If the engine is at operating temperature, check the power steering fluid level. Fill to the "hot" mark as needed.

20. The final step is to have the front end aligned and re-check all bolts for tightness after the first 100 miles.



WARNING: FAILURE TO ADJUST THE UPPER U-JOINT SO THAT THERE IS NO BINDING WILL RESULT IN PREMATURE WEAR AND FAILURE! IF YOU FEEL ANY BINDING IN THE STEERING WHEEL, ADJUSTMENT IS STILL REQUIRED AS DETAILED IN STEP 14.

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