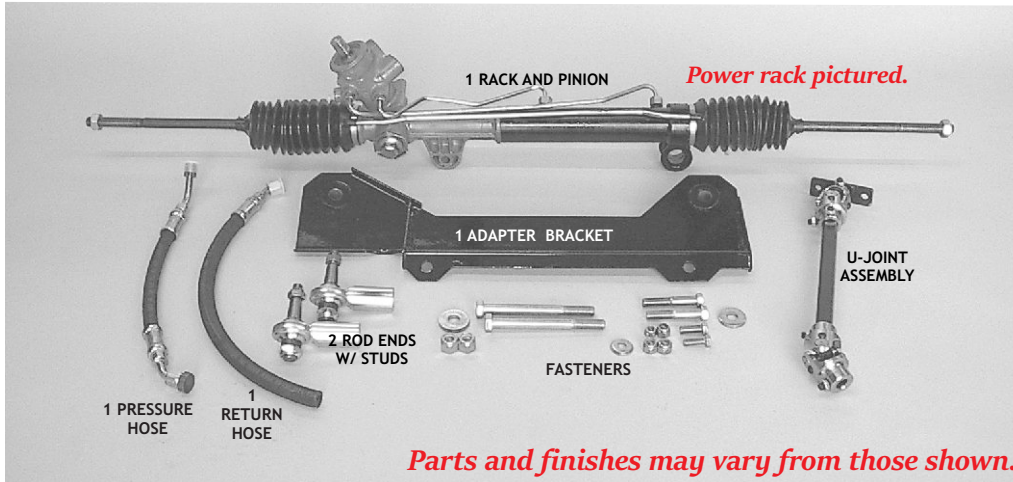


Steeroids™ Installation Instructions

Part Number(s): 83001, 83005

1967 - 1969 Camaro/Firebird, 1968 - 1974 Chevy II/Nova



Verify Kit Contents:

- 1 RACK AND PINION
- 2 ROD ENDS
- 1 U-JOINT ASSEMBLY
- 1 ADAPTER BRACKET
- 2 ½- 13 x 5 GRADE 8 BOLTS
- 2 ½- 13 ELASTIC NUTS
- 2 ½ WASHERS
- 2 7/16-14 x 2.5 GRADE 8 BOLTS
- 2 7/16-14 ELASTIC NUTS
- 2 7/16 WASHER
- 1 5/16-24 x 1 GRADE 8 BOLT
- 1 5/16-24 ELASTIC NUT
- 1 3/8-24 X 1 GRADE 8 BOLT
- 1 3/8-24 ELASTIC NUT
- 2 M14 X 1.5 JAM NUTS

Power Kit Only:

- 2 PUMP HOSES (1 PRESSURE, 1 RETURN)
- 1 POWER STEERING FILTER (NOT PICTURED)

PLEASE NOTE: These components are tested and engineered to meet loads equal to what the stock steering system is exposed to during normal operation. If you or the person or firm you hire to install your Steeroids rack and pinion kit believes it is necessary to “modify” any components to make them fit and / or adjust properly PLEASE note that this is extremely dangerous. We offer free technical phone support to assist with installation should you encounter a problem. Modifications may include cutting or welding support brackets, sawing or hammering on u-joints, or any revision, deletion or addition to the product as delivered, and should NEVER be required. Any such modifications void the manufacturer's warranty. Our knowledgeable staff will gladly assist you with any questions you may have during installation. In addition Class M Corporation, DBA SpeedDirect, is not responsible or liable for any damages or injury resulting from any modification to the components as delivered.

Instructions are updated often. The latest version is at www.speeddirect.com/index.aspx?nodeID=79

Before beginning: Please note each steering rack is bench tested prior to shipping; fluid from the test occasionally leaks out and may stain the box. This does not indicate damage.

If two small rubber o-rings are attached to the rack with a twist tie, these are extras that can be discarded. The power steering hose adapters or hose ends supplied with the kit should already have o-rings attached, so the extras can be discarded. Any bolts, metal plates and/or washers that are already threaded into the rack unit should be discarded and the included metric rack bolt kit should be used.

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BEFORE INSTALLATION

1. Perform an inventory of all the components in the kit. Installing the Steeroids kit requires simple hand tools, high strength thread locker and anti-seize compound. A pickle fork will be useful when disassembling the old system.
2. Support the car securely on jack stands. Never support the car using only a jack.
3. Remove the entire steering system as a unit. 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 steering box. The steering box is attached with three bolts that extend through the frame from the driver's side wheel well. Remove two of the bolts. Leave the last bolt installed until ready to remove the entire system.
4. Remove the two bolts and nuts that attach the idler arm to the passenger's 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. It may be necessary to work the bolts and rag joint loose from the steering column. If installed headers interfere with removing the steering box, loosen the bolts at the cylinder head flange. This will allow the headers to swing out of the way to remove the steering box, leaving the ability to re-tighten the bolts without having to replace the gasket.

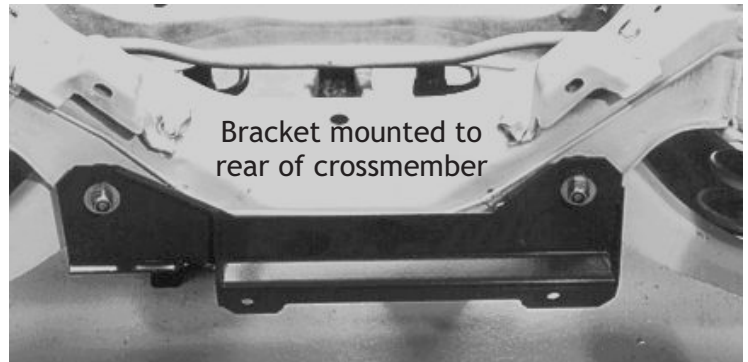
Tech Tip: For Power Steering kits, it may be easier to attach the power steering hoses onto the rack before installing the rack.

ASSEMBLY AND INSTALLATION


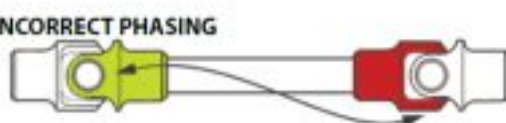
We recommend using red high strength thread lock on all threaded applications except for power steering hose fittings and tie rod sleeves. Be SURE to trial fit first, and read the instructions through before going crazy with the thread lock!

5. Thread each tie rod onto the steering rack an equal amount. 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 this measurement and tighten the jam nuts against the rod ends. Using an adjustable wrench, turn the pinion until the rack is at its stop. Then count the turns proceeding to the opposite stop. Divide the number of turns by 2 and turn the pinion this amount. The steering rack is now centered.

6. The adapter bracket attaches to the frame at the aft, lower a-arm mount. The existing bolts must be removed. Installing the new bolts while the old bolts are still half way in will help keep the bushing aligned with the hole. Install the first bolt with a washer, through the bracket, then approximately one inch into the bushing. Push the bracket until it contacts the frame and install the second bolt. Completely install both bolts and nuts. Torque to 80 ft/lbs. NOTE: If the bolts are installed with the ends pointing towards the back of the car, it will be easier to remove the bracket if needed. This can increase the difficulty of the initial installation but will be worth the time invested. Be sure to use a washer on the bracket side of the bolts.



7. Install the u-joint assembly on the steering rack. See diagram below on u-joint orientation. Use a high strength thread locker on the setscrews. For steel u-joints: apply anti-seize to the splines of the u-joint and the intermediate shaft.

CORRECT PHASING	U-Joint Orientation
	<p>When two u-joints are used on a shaft, the forks of the yokes closest to each other should be in line, or "in phase." Premature wear or binding can result if the u-joints are not phased properly. Sometimes if the u-joints are at a severe angle, even if they are phased correctly, a hard spot in the steering may occur for no apparent reason. If this happens, index the u-joints two or three splines in one direction. The hard spot should disappear or be minimized.</p>
INCORRECT PHASING 	

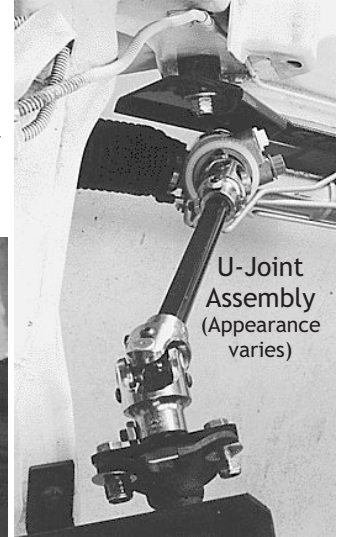
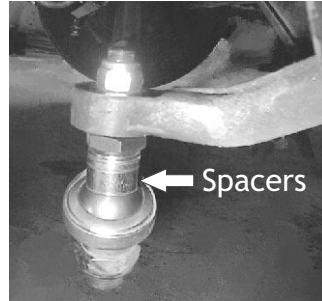


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7 (cont). Install the rack and pinion on the bracket using the supplied bolts, washers, and nuts. Torque to 59 ft/lbs. Proceed to attach the outer tie rod ends to the steering arms (spindles). Before torquing, read the following details. NOTE: the flange below the taper may not seat against the steering arm - this is not a problem. If the 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 increase the steering radius. To properly adjust the outer tie rods, use the included bump steer spacers. Start with half above and half below the tie rod end bearing. As needed, move the spacers above or below the bearing so that the entire length of the tie rod matches the angle of the lower control arm with the vehicle on the ground and the suspension settled. The tie rod sleeve should be as close to parallel with the lower control arm pivot points as possible - not necessarily parallel with the ground.

It may be necessary to come back and adjust this once installation is complete, especially if no engine is installed. Torque nylock or castle nut (whichever supplied) to 35 ft/lbs. [If castle nuts are supplied: Continue to tighten the nut to align castellation with the cotter pin hole. Install cotter pin.]



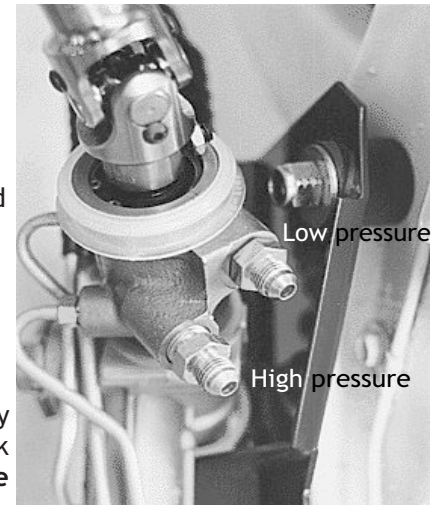
When attaching the tie rod end to the spindle, torque the 15/16" nylock nut to 50 ft/lbs. Note: the flange above the taper may not seat against the spindle - this is not a problem.

8. Bolt the other end of the u-joint assembly to the steering column (see picture on right). Turn the column/steering wheel to align the holes. The steering wheel will most likely need to be recentered. Recenter the steering wheel by removing it from the column, centering and reinstalling.

9. The steering shaft should be able to be turned by hand (with the wheels off the ground). If there is binding in the u-joint assembly, the steering column should be moved towards the rear of the car. Adjust the column by loosening the nuts under the dash and pulling it back. It may also be necessary to move the end of the column toward the engine to eliminate binding.

Note: For manual kits, skip to step 12

NOTE: If using the existing power steering pump, drain all remaining fluid and thoroughly clean the pump to remove all dirt and debris from the reservoir. Even the smallest dirt speck can plug a rack valve and cause it to stop working. **Failure to clean the system will void the manufacturer warranty.**



10. Attach the power steering hoses. The large hose fitting on the rack is the pressure side (see picture at right). This connects to the threaded fitting on your pump. Tighten to 21 ft/lbs. The return side 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.** Install the supplied in-line filter on the return hose. Cut the hose in a location that allows for the filter to fit but still have enough hose to connect to the pump. **Failure to install the filter will void the warranty.**

Power steering fluid recommendations: Run standard GM Power Steering Fluid. For those who prefer synthetic fluids you may switch to Royal Purple Synthetic after 1000 miles, but it is not required.

11. Bleed the system by turning the wheels all the way to the left. Add fluid to the "cold" mark on the dipstick. Turn the wheel back and forth three or four times. Start the car and allow it to idle. Fill to the "cold" mark as needed. (A) Turn the wheels side to side until there are no more bubbles. Check the fluid level frequently while proceeding. Allow the engine to run for a few minutes. Add fluid as needed. Replace cap and shut off engine. If the fluid level rises after the engine is shut off, there is still air in the system. Repeat step (A) until all air is out of the system. "Flushing" the system is not necessary, you are only bleeding it of air.



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12. Re-check every bolt and nut to be sure all are tight. Briefly test-drive the car at low speed. Check every bolt for tightness again. **For power steering kits only:** If the engine is at operating temperature, check the power steering fluid level. Fill fluid to the “hot” mark as needed.

13. The final step is to have the front end aligned **to the specs below** and re-check all bolts for tightness after the first 100 miles. Ignoring these recommendations and aligning to factory specs will make the car handle very poorly. **This is VERY important.**

Alignment Settings: 67-69 Camaro/69-74 Nova			
	Camber	Caster	Toe
Street	0 to -0.25 degree negative	2.5 to 5 degree positive	0 to 1/8" toe in (0 to 0.28 degrees total)
Track	-0.5 to -2 degree negative	2.5 to 5 degree positive	0 to 1/16" toe out (0 to 0.14 degrees total out)

CAUTION: The steering ratio of this kit is significantly faster than the stock steering. Exercise caution when first driving with the new system. The vehicle will respond quicker and turn more from the same amount of steering input. This might take some time to get used to.

STEERIODS FIVE YEAR WARRANTY TERMS

Our warranty can be found at www.speeddirect.com/fiveyearwarranty. It is your responsibility to understand what Class M Corporation DBA: SpeedDirect is warranting on the components you have purchased. Be advised that our warranties change from time to time and it is our exclusive right to change the terms of the warranty at any time and for any reason.

STEERIODS REPLACEMENT POLICY

Labor charges and/or damage incurred in installation, repair or replacement as well as incidental and consequential damages connected therewith are excluded and will not be paid by seller. Any and all costs for inspection, removal or replacement of the kit or its constituent parts or assemblies under the warranty are the responsibility of the original purchaser.

