

28433 HWY 65 NE  
ISANTI, MN 55040  
763-444-5880  
800-828-2212  
[www.autocityclassic.com](http://www.autocityclassic.com)



## INSTALLATION INSTRUCTIONS

## 1955-1957 CHEVY RACK AND PINION INSTALL

### **IMPORTANT NOTICE – READ ALL INSTRUCTIONS PRIOR TO STARTING THE RACK AND PINION INSTALL**

**Before getting started...this install should only be attempted by a qualified installer with extensive knowledge of power steering systems!**

It is very important to take note that this power steering conversion can work on a 3-on-the-tree. But be prepared that you may need to make some additional modifications to the firewall and column to complete the install.

Even though this is a direct bolt-in kit, there are some modifications you will need to make if you are using your stock steering column. Be prepared to modify and cut the stock column shaft to an appropriate length to install with your new Rack and Pinion.

Take note that when installing the crossmember you will almost certainly need to use the supplied shims to get the crossmember to fit snugly between the frame rails.

One of the issues that you can come across that can throw a wrench in your install is the oil pan and headers clearance.

#### **Headers:**

- If you use full length headers you will need to be sure to use headers designed to work with rack and pinion.
- This kit will work with rear dump exhaust headers and NOT center dump (ram style) exhaust headers.

#### **Oil Pans:**

- Small block oil pans should work ok.
- LS car pans generally work with the exception of the Corvette.
- LS truck pans will not work
- GM Muscle Car pans generally work.

One last clearance issue that can arise is different motor mounts and how they are installed. Be sure to mock everything up and make the necessary modifications to make them fit if you have an issue.

**If you plan to paint or modify any of the parts in this kit you must first test fit everything to ensure proper fit. The kit cannot be returned for credit once any part is painted, modified or fluid run through.**

## THE KIT INCLUDES



- A. 1) CROSSMEMBER
- B. 1) RACK AND PINION RACK (1988 Chevy Celebrity)
- C. 2) OUTER TIE ROD ENDS
- D. 2) TIE ROD ADJUSTER SLEEVES AND 4) CLAMPS
- E. 2) STEERING ARMS
- F. 3) DRIVER SIDE CROSSMEMBER ADJUSTING SHIMS
- G. 3) PASSENGER SIDE CROSSMEMBER ADJUSTING SHIMS
- H. 4) 7/16-14x2 BOLTS, 4) WASHERS, 4) LOCK WASHERS AND 4) NUTS
- I. 5) 3/8-16X4 1/4 BOLTS, 5) WASHERS, 5) LOCK WASHERS AND NUTS
- J. 2) BOLTS WASHERS AND NUTS

### OPTIONAL ITEMS INCLUDED IN THE KIT (if purchased)

- K. 1) INTERMEDIATE SHAFT (With 3/4 Round X 17MM U-Joint)
- L. 1) 3/4 ROUND X 3/4 ROUND U-JOINT (For OE Column setup)
- M. 1) BRASS BUSHING
- 1) POWER STEERING PUMP
- 2) HOSES (1 High Pressure & 1 Low Pressure)
- 1) SET UP OF PUMP BRACKETS
- 1) "STACK-ON" PULLEY FOR CRANKSHAFT

(no additional hardware is included)

## VEHICLE PREP AND DISASSEMBLY

It is a tight fit in the front of your engine compartment, so it is highly advisable that you remove the fan and shroud and radiator before starting to give yourself a little working room.

### Steps 1 & 2 are if you are using your original column

1. Cut the steering shaft right at the manual steering box and remove the box
2. Unbolt your steering column and remove it completely.
  - You will need to shorten the steering shaft coming out of the bottom of your OE column to the length needed to meet up to the rack using the appropriate U-Joints to complete your install.

### Steps 3 & 4 are if you are using most aftermarket columns

3. Unbolt your steering wheel and disassemble your column to pull it out of the car.
4. Remove the manual steering box with the steering shaft.
  - Most aftermarket steering columns have a 1" DD shaft coming out of the bottom of the column. You will need to use the appropriate U-Joints and DD shaft cut to the proper length to complete your install.

### Steps 5 & 6 are for FRONT MOTOR MOUNT ONLY (skip these steps if you have a side motor mount)

5. Support or lift the engine slightly.
6. Remove the original front motor mount to make room for the front lower pump mount bracket.
  - If you are not installing new motor mounts, be sure to save the motor mount bushings to be reused when you install the front power steering pump mount.
7. Remove all your original steering components: pump, tie rods, center-link, pitman arm.

## INSTALLING THE POWER STEERING PUMP

(STEPS 8-12 ARE FOR SIDE MOUNT STEERING PUMP BRACKETS, SKIP TO STEPS 13-16 IF YOU HAVE THE FRONT MOUNT STEERING PUMP BRACKETS)

Small blocks come with all the bolt holes for the power steering pump brackets pre-drilled.

### Small Block Side Mount Pump Bracket Install (steps 8-12)

8. Locate the 3 holes marked with circles in this picture that will be used to bolt your power steering pump brackets to the block.



9. Ensure your lower bracket is assembled as pictured here to install properly on the block.



10. Bolt the lower bracket into place on the block into the lower 2 holes identified in the picture on the previous page.

- You may choose to only install the bolts hand tight until you finish the install with the pump.



11. Install the upper adjusting bracket into the lower water pump bolt hole as shown in the picture on the previous page.

- Be sure to use the short 1" spacer between the bracket and the water pump as show in this picture.
- You may choose to only install the bolt hand tight until you finish the install with the pump.



12. Bolt the new power steering pump to the brackets using the bolt holes in the pump identified in this picture.

- If you did not tighten the bolts on the brackets do so now.



### Small Block Front Mount Pump Bracket Install (steps 13-16)

You should already have your motor supported and the original front motor mount removed from the car.

Locate the 3 holes marked with circles in this picture that will be used to bolt your power steering pump brackets to the block.



13. Bolt the lower bracket into place on the block into the lower 2 holes identified in the pictured on the previous page.

- You will want to tighten these bolts prior to the next step.



14. Reinstall the motor mount bushings and hardware and allow the engine to rest again on the new mount.

15. Install the upper adjusting bracket into the lower water pump bolt hole as shown in this picture.

- Notice the bend in the bracket going backward toward the block so the bracket can go to the back of the pump when installed.
- You may choose to only install the bolt hand tight until you finish the install with the pump.



16. Bolt the new power steering pump to the brackets using the bolt holes identified in the pictures below.

- Take note that the lower bracket bolts to the front and back of the pump and the adjuster bracket bolts to the back.
- If you did not tighten the bolts on the brackets do so now.



### **Resume instructions for both style of brackets (Side Mount and Front Mount)**

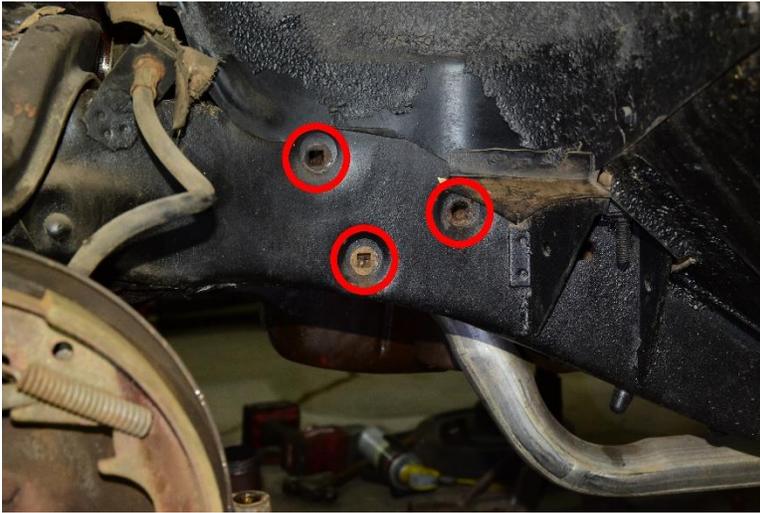
17. Install both the high-pressure and low-pressure hoses.

18. Install the stack-on crank pulley.

19. Purchase and install the appropriate belt (V-Belt 3/8" wide x 38 3/4 long **for small block**)

20. Adjust the pump as needed to get the necessary tension on the belt.

## CROSSMEMBER AND RACK INSTALL



This picture shows the driver side frame rail. These 3 holes, identified with RED circles, are the original manual steering box bolt holes. These 3 holes are the holes you will use to bolt the driver side of the new rack and pinion crossmember to the frame.



This picture shows the passenger side frame rail. These 2 holes, identified with RED circles, are the idler arm bolt holes. These 2 holes are the holes you will use to bolt the passenger side of the new rack and pinion crossmember to the frame.

21. Measure the width of the supplied Rack and Pinion Crossmember.
22. Measure the distance between the driver side and passenger side frame rails.

You most likely will not have the exact measurement so use the appropriate shims to make up the difference as needed.



23. Install the 3 supplied bolts, nuts, and washers to secure the driver side of the crossmember.

- As stated above be sure to use the appropriate shim(s), if necessary, as shown in the picture below identified with the Yellow Arrow.



24. Install the 2 supplied bolts, nuts, and washers to secure the passenger side of the crossmember.

- Again, as stated before, be sure to use the appropriate shim(s), if necessary, as shown in this picture identified with the Yellow Arrow.



This picture shows the crossmember properly installed and ready to receive the new rack.



25. Install the rack to the crossmember using the supplied hardware.

- The rack is bolted on to the front of the crossmember and of course with the steering shaft on the driver side. As shown in this picture.



25. Install the new steering arms on your spindles.

- These arms are attached to the spindle facing the rear of the car.

26. Install the new tie rod ends and adjusting sleeves on your new rack and attach to the spindles.

- Note that the steering arms still face the rear of the car and the tie rod ball-joints come in from the bottom of the steering arm as shown in this picture of the driver side spindle.

The final steps of connecting the steering shaft to the new Rack and Pinion will need to be determined by you taking into consideration the column you are using and what parts you have available. Auto City Classic does have a wide range of rag joints, u-joints, and DD bars available as well as aftermarket columns and column tubes/jackets.

Below are a couple common installs to help guide you.

Installing an OE column or most aftermarket columns are very similar with the exception that you WILL need to cut the shaft coming out of the end of the OE column while most aftermarket columns are already short enough to install. Be prepared to shorten the supplied intermediate shaft to get everything installed to your liking as well.

When you are reinstalling your OE column back into the car with your Rack and Pinion setup you will need to use an abundance of common sense and caution. You WILL need to cut your original steering shaft coming out of the end of your column. The length will be somewhat preference for you. Most installs will end up being about 1 ½" length on the shaft coming out of the column.

The Rack and Pinion kit can come with an intermediate shaft (if ordered) made for an OE column. The intermediate shaft for the OE column is supplied with a ¾" Round U-Joint on the column end whereas the aftermarket column intermediate shaft would need a larger 1" DD U-Joint on the end to attach to the column. This can be swapped out if you let Auto City Classic know that you are using an aftermarket column with a DD steering shaft when you ordered your Rack and Pinion/Intermediate Shaft.



Prior to installing the OE column and intermediate shaft you will need to install the supplied brass bushing over the steering shaft into the column as shown in this picture. Because the steering shaft/wheel is spring loaded you will need to push the wheel into the column a bit so that the wheel and column collar are aligned properly and then tighten the set screw on the brass bushing to hold everything in place. This will keep the steering shaft on the OE column tight and not flop around after your install.

*Note: If the 17mm U-Joint on the intermediate shaft does not slide over the splines on the rack and pinion you may need to lightly deburr the splines using emery cloth.*



Once you are satisfied with the length/cut of the steering shaft and have installed the brass bushing in the end of the OE column (just a reminder these are not steps you need to take with most aftermarket columns) you can install the column inside the car. Hook it up to the intermediate shaft and hook up the intermediate shaft to the rack as shown in this picture.

When you have test fitted everything and are COMPLETELY satisfied with your cuts and fitment you will need to either weld the U-Joints to the steering shaft coming out of the original column and the intermediate shaft OR drill a hole through the steering column shaft and intermediate shaft and install a screw so that the U-Joints are held tight with each end of the shaft.

## FINAL STEPS

After everything has been installed and properly tightened finish the install by aligning the front end and filling the power steering pump with fluid.

**It is EXTREMELY important that the steering system be tested and that YOU confirm it is performing well before ever attempting to drive your vehicle after your rack and pinion has been installed!!!**

