



*64-67 Chevelle
Power Rack & Pinion
Cradle Kit*

64-67 Chevelle

Note: For safety disconnect battery cables and ensure that the vehicle is properly supported by jack stands.

Before painting or powder coating of the cradle, we recommend that you pre-fit the entire system to ensure proper fitment for your application.

Note: Before installation make sure the rack is centered by turning the input shaft to the right until it stops. Next turn the input shaft back the left counting the number of revolutions until you reach the stop. Then go back half the number of revolutions. the Rack should now be centered in its travel.

Inventory	pg 2
Electrical System Verification	pg 4
Removal of Factory Steering	pg 5-6
Installation of:	
Rack and Cradle	pg 7-8
Flaming River Tilt Column	pg 9-10
Electrical System Notes	pg 11
Universal Joint and Steering	pg 12
Shaft Installation	
Power Steering Pump Installation	pg 13
Power Steering Bleeding Procedure	pg 14

WARRANTY DISCLAIMER: Flaming River's® Limited Warranty

Flaming River® warrants its products to be free from defects in material and workmanship for a period of one (1) year after the date of purchase, except that: All steering columns are warranted for a period of three (3) years from the date of purchase. The Big Switch (part number FR1005) is warranted for a period of three (3) years from the date of purchase, provided that it is not mounted with a steel bracket and provided further that it is adequately protected from environmental conditions. All electrical products other than the Big Switch are warranted for a period of ninety (90) days from the date of purchase. Flaming River's® warranty liability is limited to the replacement of defective products. Flaming River® is not liable for any labor costs associated with any warranty claim, or for any incidental or consequential damages. Improper installation, abuse, racing, and/or modification of the products voids this warranty. No warranty of merchantability or fitness for a particular purpose is made by Flaming River® with respect to any of its products. Warnings and Recommendations It is the customer's responsibility to determine the suitability of a given Flaming River® product for the customer's uses. Likewise, it is the customer's responsibility to install a Flaming River® product. Contact the vehicle manufacturer whenever installing a switch to confirm the appropriateness of using such a switch and the recommended placement of the switch on the vehicle. Use qualified chassis specialists for the installation of all steering related components. Be aware that the installation of certain Flaming River® products may adversely impact a manufacturer's warranty with respect to certain vehicles and other manufactured goods. Flaming River will repair or replace any product found to be defective in material or workmanship. Improper installation, abuse, racing and/or modification VOID WARRANTY. Flaming River® is not responsible for any labor costs associated with any warranty.

<i>Part Number</i>	<i>Description</i>	<i>Qty</i>
100435	Bracket, Support Bearing	1
100638	Sway Bar	1
100639	Power Rack and Cradle Assembly	1
BOLT-3/8-16X1.25	Screw, 3/8-16 x 1.25 Hex HD	2
BOLT-7/16-14X4.5	7/16-14 Grade 8 Bolt 4.5" Long	3
FR1612	Power Steering Pump Bracket, SB	1
FR1614	Remote Reservoir, Power Steering	1
FR1789P	FR Power x 3/4" DD U-Joint	1
FR1810-2	3/4" ID Support Bearing	1
FR1850	18" 3/4" DD Shaft	1
FR1920	3/4" DD x 3/4" DD Chrome Moly U-Joint	1
FR1934	1" DD x 3/4" DD Chrome Moly U-Joint	1
FR20005-28	28" Paintable Floor Shift Tilt Column (Paintable Column Kit)	1
FR20005-28SS	28" Polished Floor Shift Tilt Column (Polished Column Kit)	1
FR20101CH	GM A-Body Floor Mount	1
FR20118	Female Wiring Adapter	1
FRPMPSB-V	Power Steering Pump with V-Belt Pulley	1
NUT-3/8-16	Nylock Lock Nut 3/8"-16	2
NUT-7/16-14	Nylock Lock Nut 7/16"-14	3
WASH-3/8"	3/8" Flat Washer	4
WASH-7/16"	7/16" Flat Washer	6

**1964-1967 Chevelle
Cradle and Shaft Assembly**



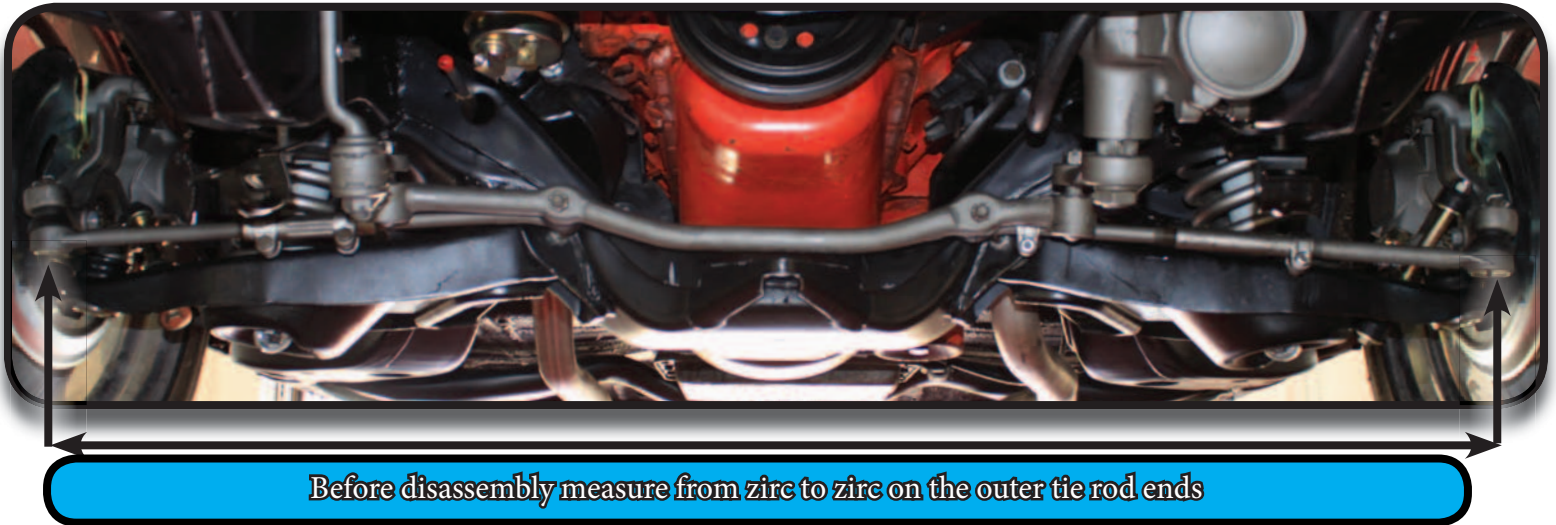
Color Verification To Be Completed Before Disassembly

Before disconnecting the turn signal connector, verify the factory wiring colors and turn signal operation. The use of a wiring diagram is recommended. This will be used when connecting the new Flaming River Steering Column.

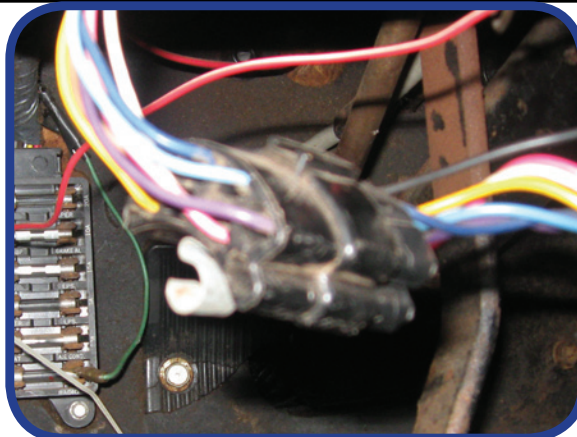
- Brake Light Switch _____
- Right Rear Turn Signal _____
- Left Rear Turn Signal _____
- Turn Signal Power _____
- Hazard Power _____
- Right Front Turn Signal _____
- Left Front Turn Signal _____
- Horn _____

Original System Removal

- 1) For safety, disconnect your battery.
- 2) Before disassembly measure from zirc to zirc on the outer tie rod ends. Write this dimension down for future reference.

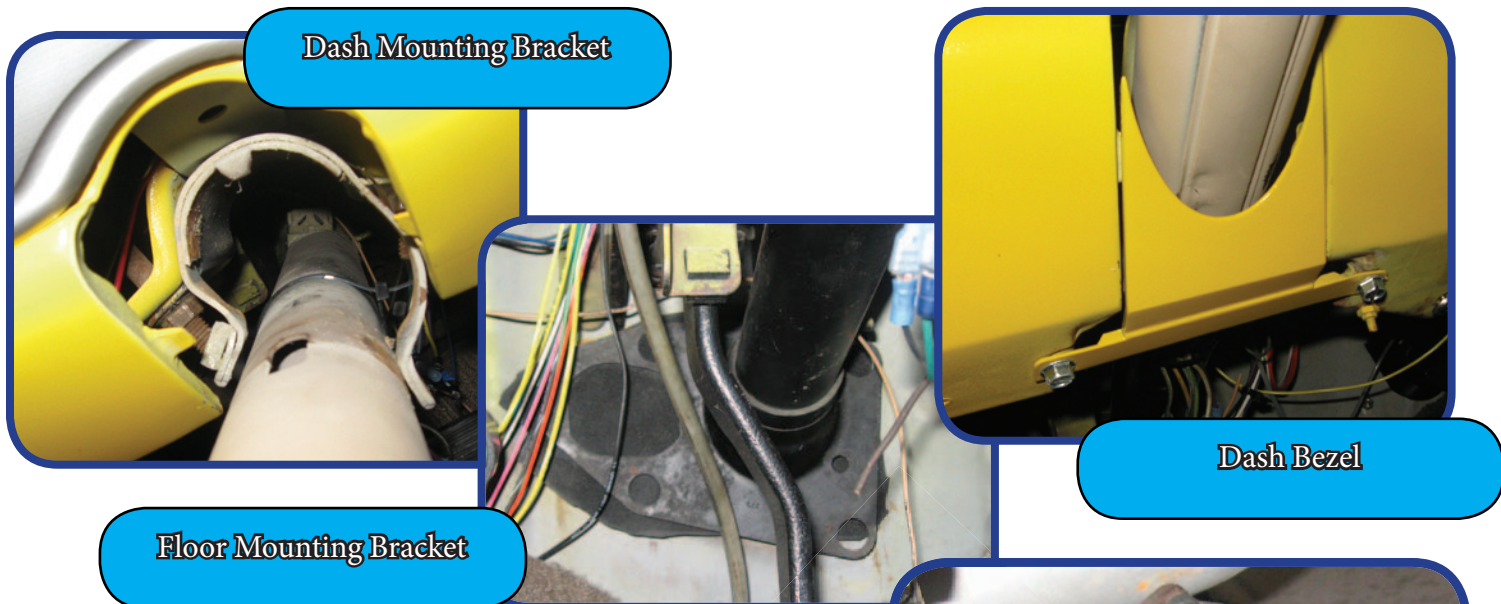


- 3) Disconnect the wiring at the steering column under the dash.

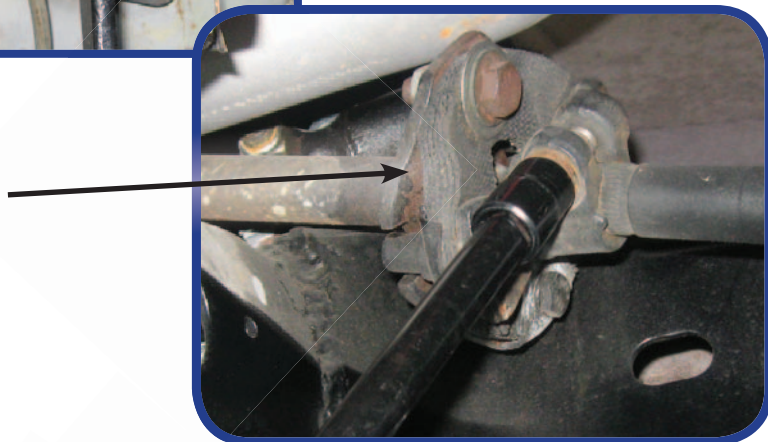


Original System Removal

- 4) Remove the bolts retaining the dash bezel, column dash mounting bracket and floor mounting plate.



- 5) Remove the bolt that retains the rag joint to the factory steering box. Spread the flange and then slide the shaft off of the steering box and remove the column assembly from the car.



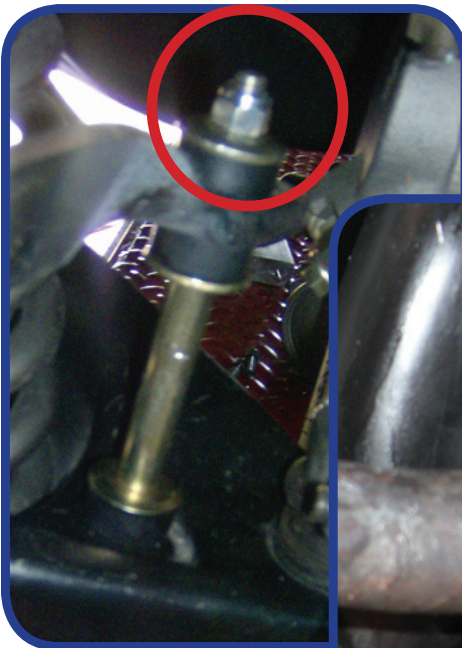
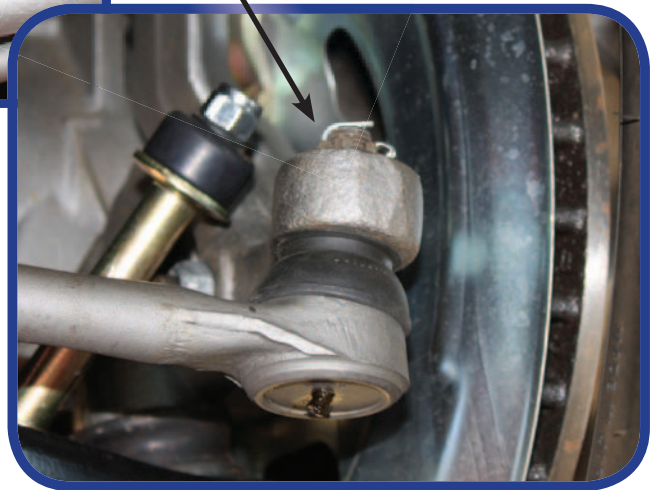
- 7) Remove the bolts that hold the steering box to the frame, and then remove the box from the car.



Original System Removal



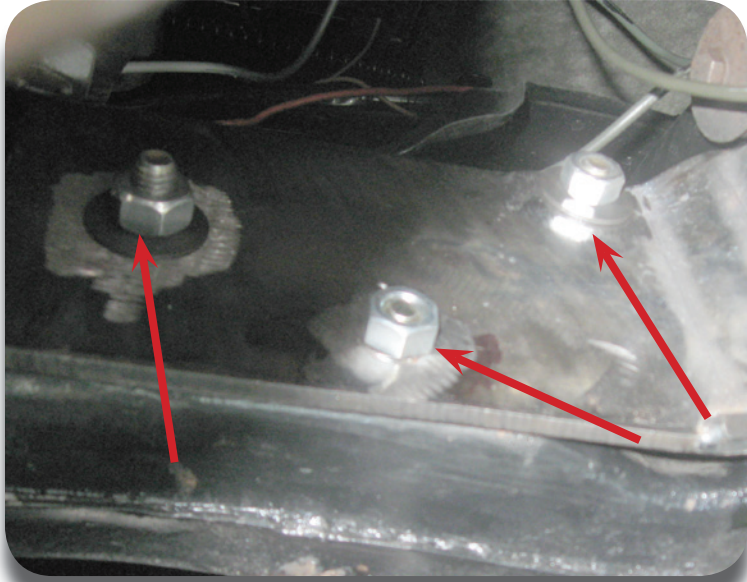
- 8) Remove the bolts that hold the idler arm bracket to the frame, remove the outer tie rod ends from the spindle arms, then remove the steering linkage from the car.



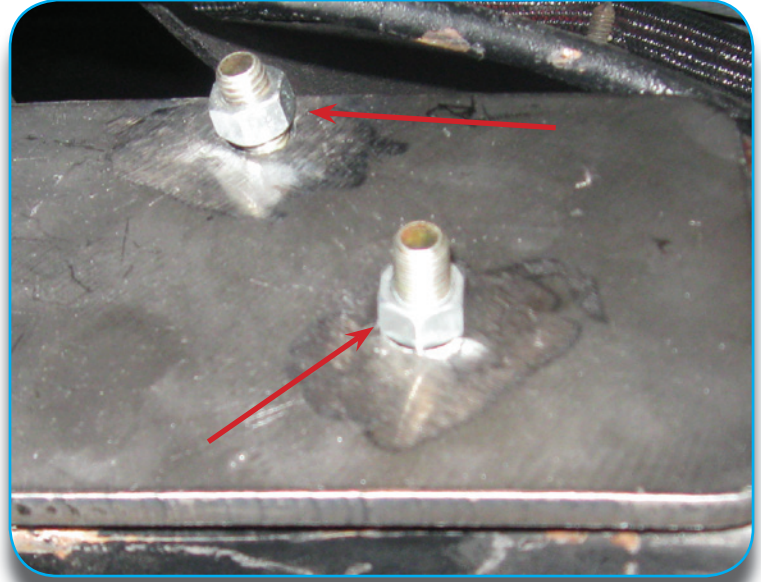
- 9) Remove the bolts that hold the sway bar bracket to the frame and the pin and remove the factory sway bar from the vehicle.

Flaming River Rack and Pinion Installation

- 1) Install the rack and pinion cradle by sliding it into place between the frame rails. Using the new hardware, install the three (3) 7/16" bolts on the drivers side using the original holes from the steering gear box. On the passenger side use the two (2) 3/8" bolts where the idler arm was mounted. Tighten the 7/16" bolts and nuts to 50-65 ft lbs. and the 3/8" bolts and nuts to 40-45 ft. lbs..

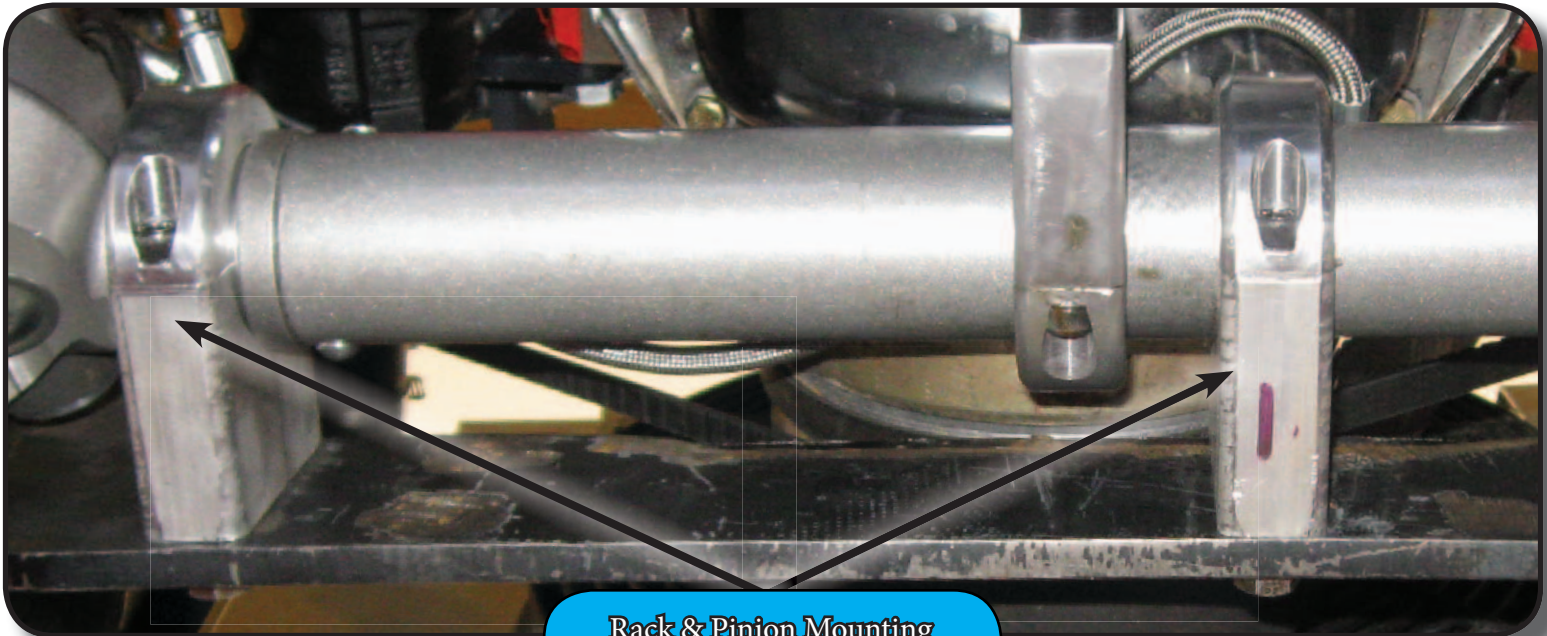


Driver Side Mounting



Passenger Side Mounting

- 2) To install the Flaming River rack and travel bar system, position the rack into place, then install and the rack to the cradle using the mounting brackets provided. Note: The locking set screw and the mounting cap bolts can be loosened to adjust the pinion angle which will aid in u-joint alignment.



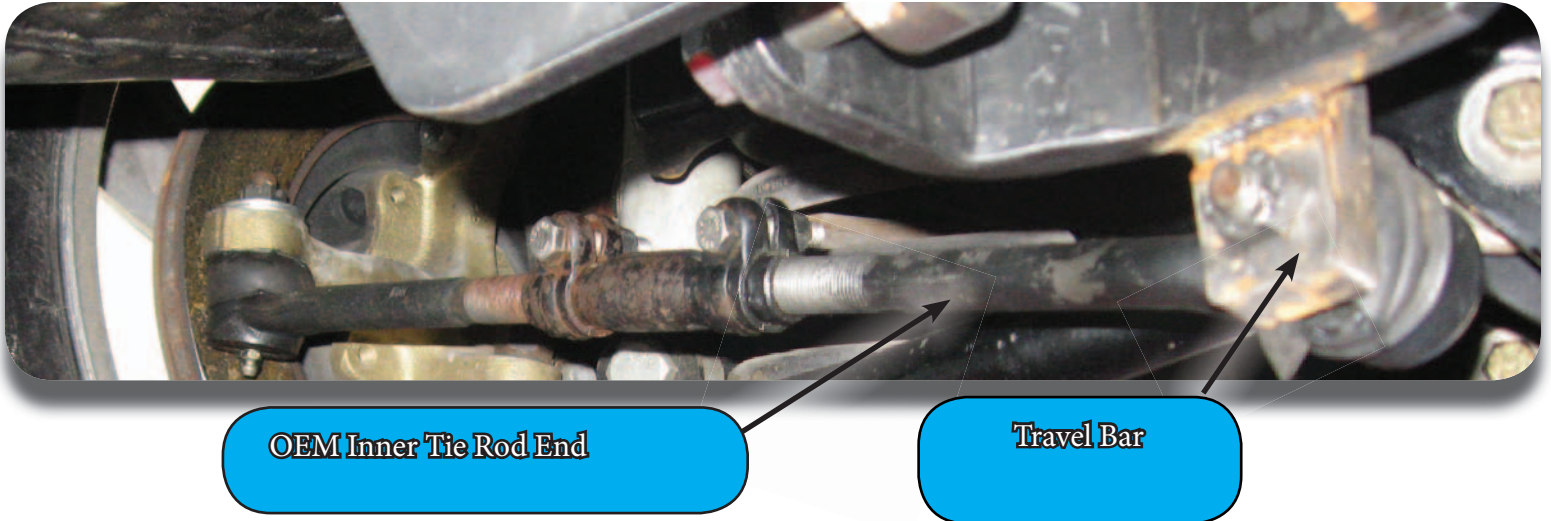
Driver Side Mounting

**Rack & Pinion Mounting
Brackets**

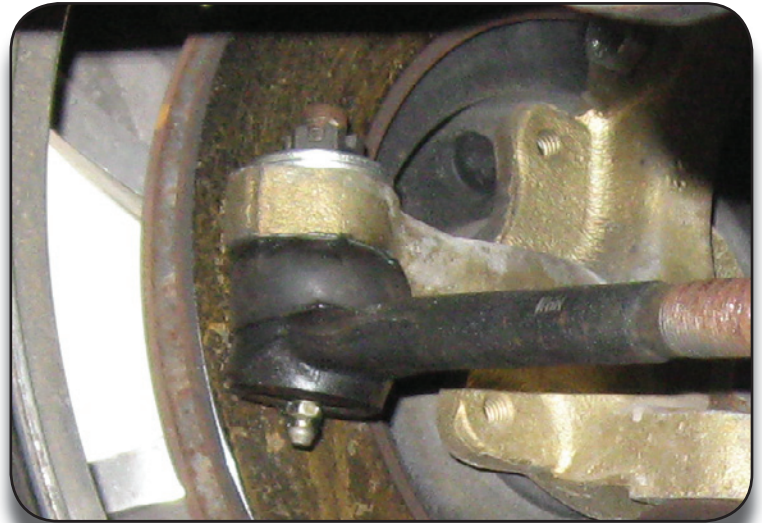
Passenger Side Mounting

Flaming River Rack and Pinion Installation

- 3) Install the OEM inner tie rod end into the Flaming River Travel Bar. Note: If using the original parts some adjustment of the tie rod assembly may be required when connecting the to the spindle arm and the travel bar.



- 4) To install the outer tie rod end into the spindles you must load the front suspension. Securely place jack stands under the lower control arms and lowering the car onto the jack stands. Make sure that your wheels are centered, then install the outer tie rod into the spindle arms and tighten the castle nuts to 30-40ft lbs. Make sure to install the cotter pins through the castle nut and tie rod end and bend the tabs over.



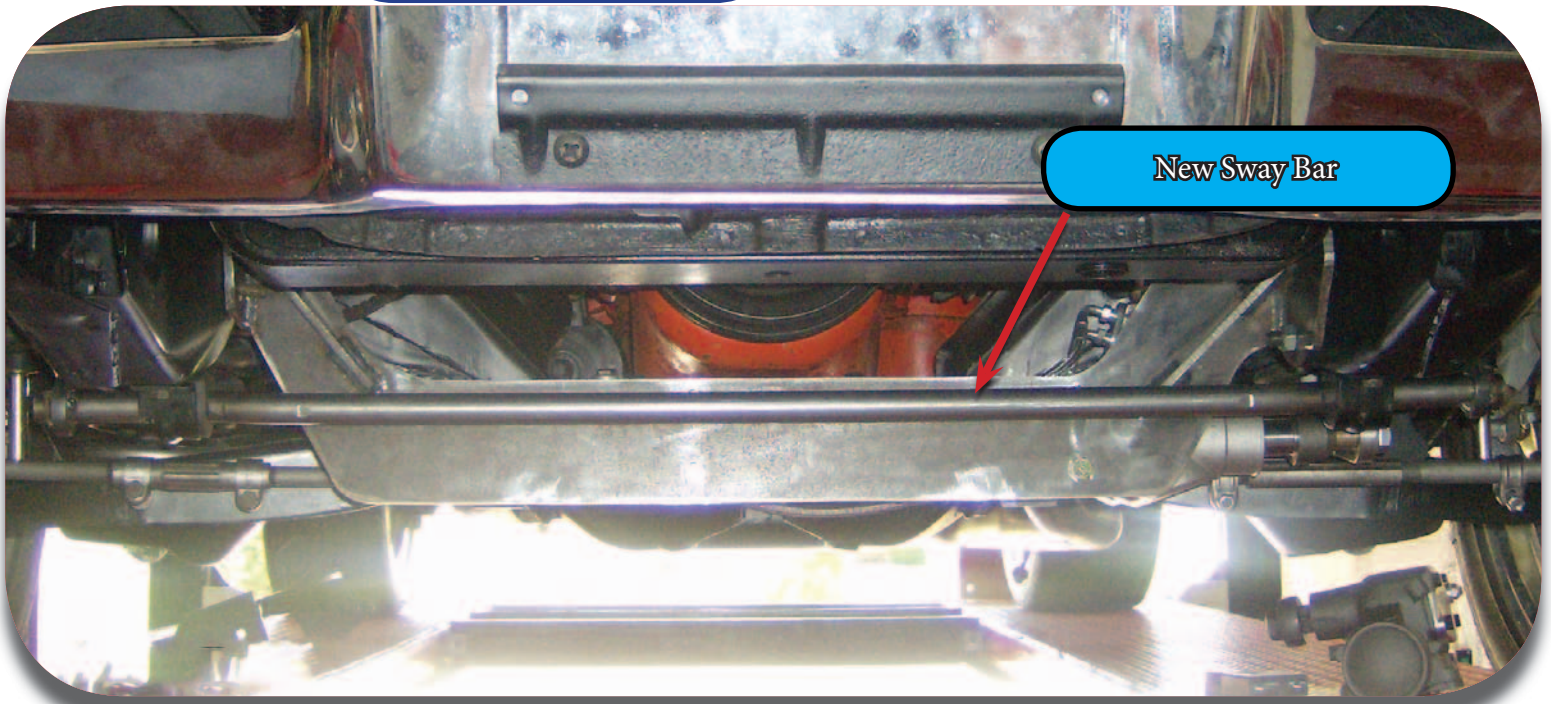
**Rack & Cradle Installed
In Car**



Flaming River Rack and Pinion Installation

- 5) Install the new Flaming River sway bar into the vehicle by using the factory sway bar bushings and sway bar pins. Tighten to factory torque specs.

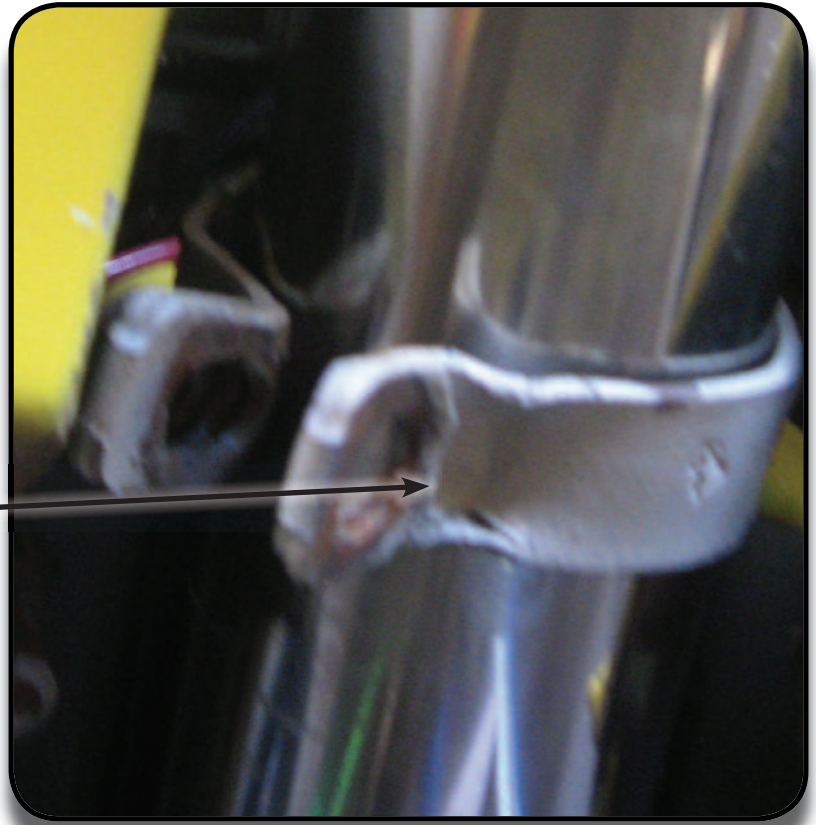
Note: The Flaming River Sway bar has been designed to use the factory sway bar bushings and pins. When installing the new sway bar we recommend also replacing the bushings (MOOG K8266) and sway bar pins (MOOG K5227).



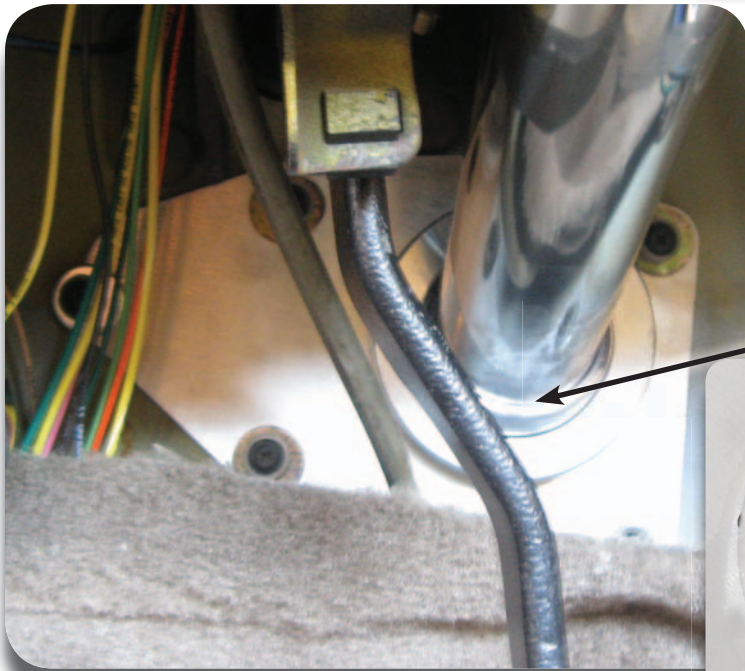
Flaming River Tilt Column Installation

- 1) Install the new Flaming River tilt column into the factory dash mounting bracket..

OEM Column
Dash Mount

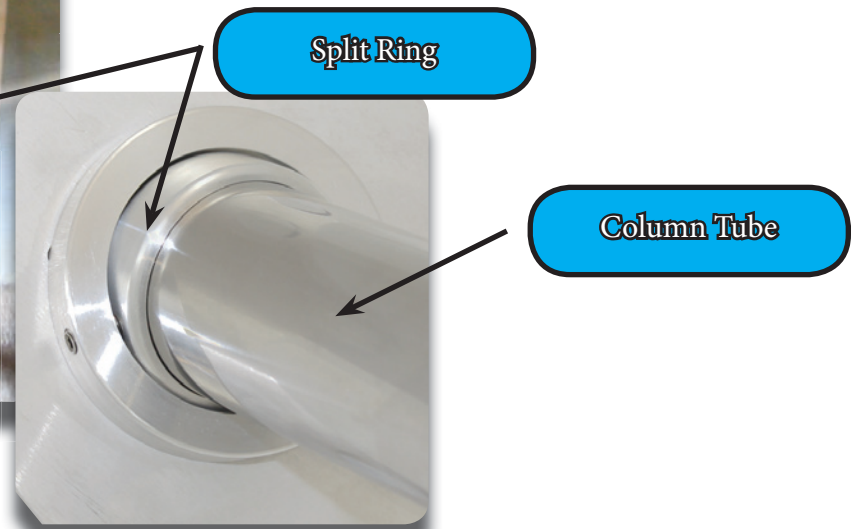


- 2) Slide new tilt column through the split ring of the new aluminum floor mount and then tighten the dash and floor mounts.



Split Ring

Column Tube



Flaming River Tilt Column Installation

- 4) Replace the factory dash bezel using the screws that were removed earlier.



Connecting the Electric System

Wiring Circuit

Brake Light Switch
Right Rear Turn Signal
Left Rear Turn Signal
Turn Signal Power
Hazard Power
Right Front Turn
Signal
Left Front Turn Signal
Horn

Vehicle Wiring

Reference Color
Verification from
column disassembly.

Pin Location

P
N
M
L
K
J

H
G

Column Wiring

White
Green
Yellow
Purple
Brown
Blue

Light Blue
Black



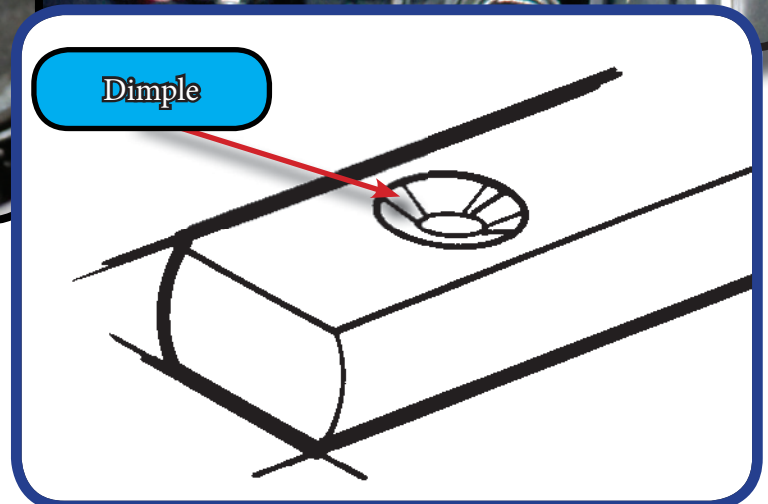
Universal Joint Installation

- 1) Install the support bearing and bracket, with the bend facing towards the outside of the car, onto the rear control arm mounting bolt.
- 2) Using a 3/4" wooden dowel rod, mock up the steering shaft to obtain the correct shaft lengths and u-joint angle.
- 3) Once the correct shaft lengths are obtained, install shafts and u-joints snugging down each set screw so that it leaves a mark in the shaft.
- 4) Remove the shafts and using a 1/4" drill bit, dimple each mark left by the set screws.
- 5) Re-install the shafts and u-joints using a red thread locker on the set screw threads. Tighten each set screw to 25 ft. lbs. and then tighten all jam nuts securely.

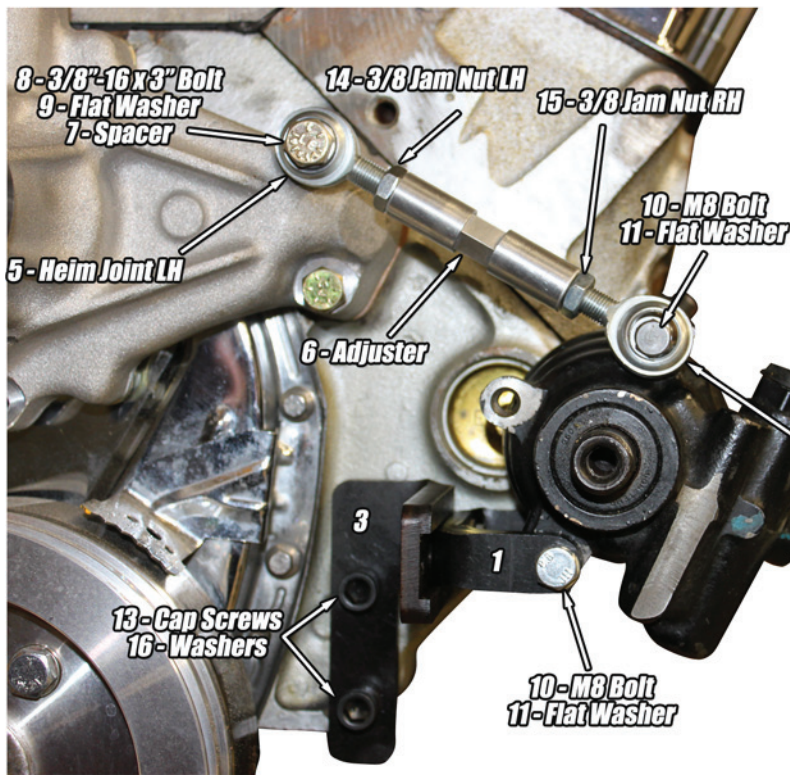
** We recommend that you regularly inspect the u-joint set screws for tightness.**



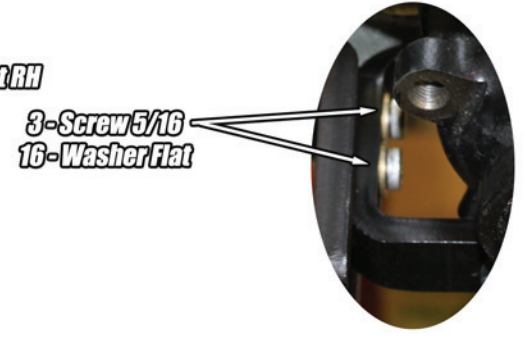
**Support Bearing
& Bracket**



Power Steering Pump Bracket



ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	1	100633	BRACKET, MOUNT PUMP PS
2	2	100634	SCREW, 5/16-18 X .75 SOC HD LOW PROFILE
3	1	100649	BRACKET, MOUNT PUMP-MOTOR BB
4	1	100667	HEIM JOINT, END ROD 3/8-24 RH
5	1	100668	HEIM JOINT, END ROD 3/8-24 LH
6	1	100720	SPACER, ADJ Ø.62 X 2.52 W/ 3/8-24 RH-LH
7	1	100721	SPACER, Ø.39 X Ø.62 X 1.00 ALUM
8	1	100722	BOLT, 3/8-16 X 3.00 HEX HD GR 8
9	1	100723	WASHER, FLAT Ø.39 X Ø.62 X .05
10	3	100724	BOLT, M8X1.25 X 20 HEX HD GR8.8
11	3	100725	WASHER, FLAT Ø.32 X Ø.47 X .04
12	1	100728	NUT, 3/8-24 JAM LH
13	1	100729	NUT, 3/8-24 JAM RH
14	2	100730	WASHER, FLAT Ø.32 X Ø.57 X .06
15	2	100731	SCREW, 7/16-14 X 1.00 SOC HD CAP
16	2	100732	WASHER, LOCK SPLIT 7/16 HIGH COLLAR



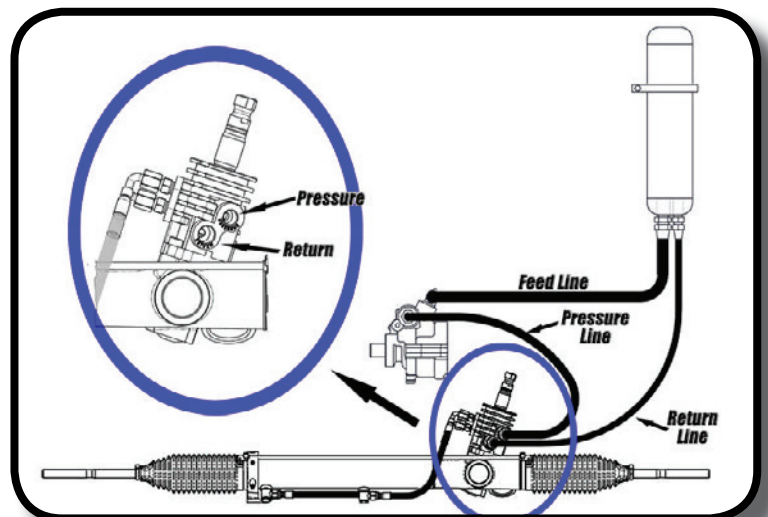
Power Steering Lines (FR1610 Not included in Kit)

Included in the FR1610 kit is a ½” feed line that connects from the remote reservoir to the power steering pump. This is attached using the 2 stainless steel hose clamps. The 3/8” Double Crimped Pressure Line will attach the pressure port of the power steering pump and to the pressure side of your steering gear. AN fittings with o-rings are included to complete the installation. The single crimped 3/8” line is used for the return line from the steering gear to the reservoir. This will attach to the steering gear to the reservoir using a AN Fitting and the ¼”NPT barbed fitting with a stainless steel hose clamp. Custom length hose kits can be ordered from Flaming River by providing a drawing with dimensions.

When cutting the stainless steel hose it is easier to use a chop saw or cut off wheel. Wrap the hose in black electrical tape and cutting through the tape to help avoid fraying. You may need to use a side cutter to trim any frayed stainless steel line. The lines can be installed to the 90 degree fittings loose until to ensure proper line routing. To tighten, hold the line itself and tighten the fittings to 10-12 ft. lbs.

Note: Over crimping or kinking the line may cause damage to the Teflon liner and voids warranty.

Note: If you are not using FR1610 P/S Line Kit you must order FRM14x6AN & FRM16x6AN AN Fittings for the rack.



Power Steering Bleeding Procedure

- 1) Raise the front wheels off the ground and support the vehicle on jack stands.
- 2) Turn the steering wheel to the left lock and fill the reservoir and let the vehicle sit for 2 minutes.
- 3) WITH THE ENGINE OFF - Rotate the steering wheel lock to lock 20-25 times, while rotating the wheel have someone monitor the fluid level and fill as necessary.
- 4) Top off fluid
- 5) WITH THE ENGINE RUNNING - Rotate the steering wheel lock to lock 20-25 times, while rotating the wheel have someone monitor the fluid level and fill as necessary.
- 6) Lower the vehicle
- 7) Top off fluid
- 8) WITH THE ENGINE RUNNING - Rotate the steering wheel lock to lock 20-25 times, while rotating the wheel have someone monitor the fluid level and fill as necessary.



Install your power steering lines to the correct pressure or return ports.

If using a stainless steel line kit, follow the instructions provided with your kit.

FR1610 Stainless Steel Line Kit is available Separately.

Note: If using the original power steering pump, you must first flush the pump of any power steering fluid. Contaminated power steering fluid may cause damage to the new rack and pinion.

Note: If the power steering fluid is foamy, let the vehicle sit for 10 minutes and then repeat the bleeding procedure.

Note: Trapped air in the system will cause a milky appearance in the fluid. Trapped air will also cause the fluid level to rise in the reservoir when the engine is not running.



*Flaming River Industries, Inc.
800 Poertner Dr. Berea, Ohio 44017
1-800-648-8022 • www.flamingriver.com/chevelle*