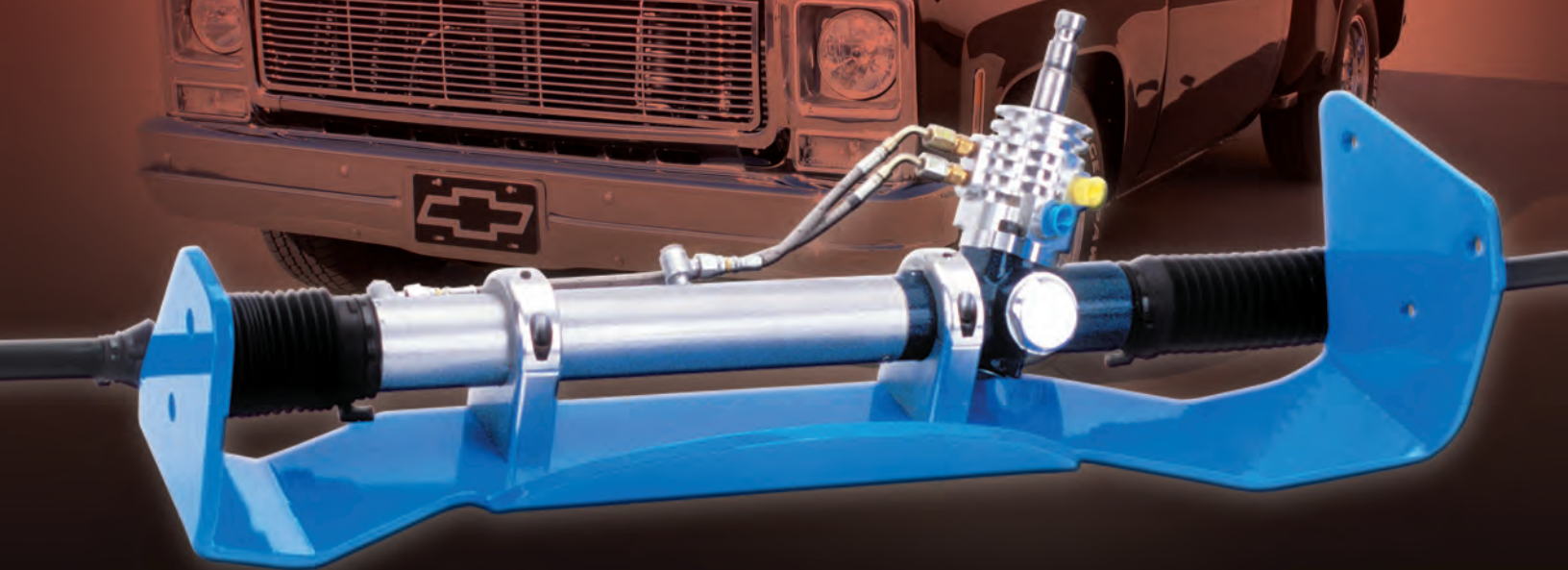




*73-87 C-10
Power Rack & Pinion
Cradle Kit*



Index

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

NOTE: Hoses (FR1610) Pump Mounting Bracket (FR1611) is sold separately and is not included in this kit.

Before paint or powder coating of the rack and pinion cradle system we recommend that you pre-fit the system to ensure proper fit.

Installation hardware and inventory	PG 2
Electrical System Verification (Only if using a Flaming River Column)	PG 3
Removal of Factory Steering Shaft	PG 3
Removal of Factory Steering Column (Only if using a Flaming River Column)	PG 4
Steering Box & Linkage Removal	PG 4-5
Installation of Flaming River Column (For kits including new Column)	
Installation of New Flaming River Tilt Column	PG 6
Electrical System Notes	PG 7
Installation of Rack and Cradle	PG 8-9
<u>Universal Joint and Steering Shaft Installation</u>	PG 10-11
Steering Wheel Installation	PG 12
Power Steering Pump Installation	PG 13
Bleeding the power Steering System	PG 13-14
Torque Specs	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. 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.

Installation Kit Hardware Package

QTY	Part Number	Description
1	100436	C-10 Rack and Cradle Assembly
1	BK10200	Support Bearing Bracket
1	FR1810	Support Bearing
3	7/16"-14x1"	7/16" Driver's Side Mounting Bolts
6	7/16" Flat Washers	7/16" Driver's Side Washers
3	7/16" Lock Washers	7/16" Driver's Side Lock Washers
3	7/16"-14 Lock Nuts	7/16" Lock Nuts
2	3/8"-16x1"	3/8" Passenger Side Mounting Bolts
4	3/8" Flat Washers	3/8" Passenger Side Washers
2	3/8" Lock Washers	3/8" Passenger Side Lock Washers
2	3/8"-16 Lock Nuts	3/8" Lock Nuts
1	FR1789P	FRPOWER x 3/4"DD Universal Joint
1	FR1920	3/4"DDx3/4"DD Chrome Moly Universal Joint
1	FR1934	3/4"DDx1"DD Chrome Moly Universal Joint
1	FR1850	18" DD Steering Shaft
1	FR30006 or FR30006SS	Floorshift Tilt Key Column (Floor Shift Kit)
1	FR30106 or FR30106SS	Column Shift Tilt Key Column (Column Shift Kit)
1	FR20114	OEM Column Mount
1	FR1614	Power Steering Reservoir
1	FRPMP5B-V	Power Steering Pump with V-Belt Pulley



If using a Flaming River Steering Column it is recommended that before any disassembly you should first verify the wiring for your turn signals and ignition switch to ensure proper operation.

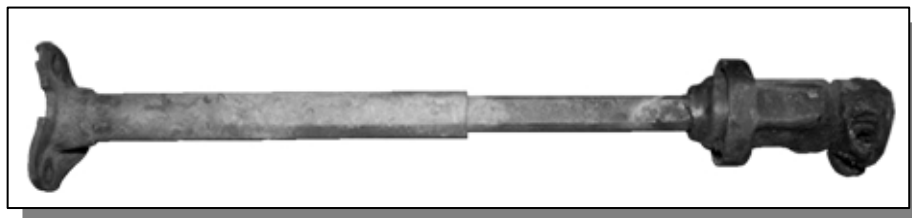
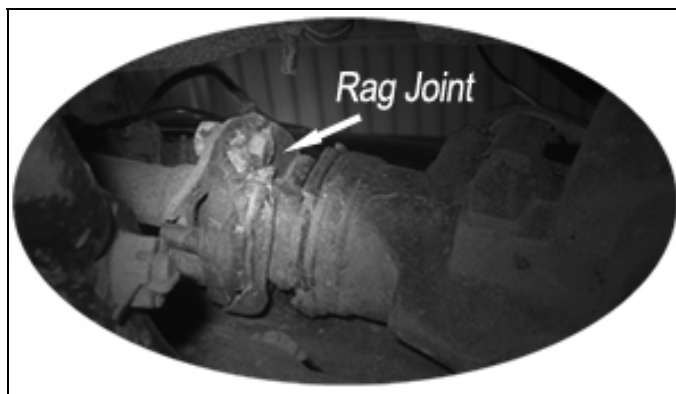
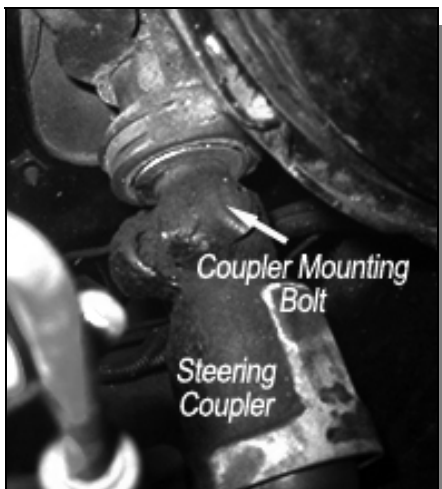
Color Verification to be completed before disassembly

Before disconnecting the turn signal and the ignition connectors verify the wiring color to ensure proper operation. The colors listed with the ignition switch diagram below are from a stock wiring system. Wire colors may change due to the use of aftermarket wiring harnesses and wiring modifications. The use of a wiring diagram is recommended.

- Brake Light Switch : _____
- RR Turn Signal : _____
- LR Turn Signal : _____
- Turn Signal Power : _____
- Hazard Power : _____
- RF Turn Signal : _____
- LF Turn Signal : _____
- Horn : _____

Original Steering Shaft Removal

- 1) Remove the pinch bolt that retains the steering coupler to the steering column and the bolt that retains the rag joint to the steering box. Collapse shaft and remove it from the car.



Original Column Removal

Only perform these steps if using a new Flaming River Steering Column

- 1) Disconnect the column wiring connectors.
- 2) Remove the bolts that hold the column floor mount to the firewall.
- 3) Support the column and remove the bolts that retain the under dash mounting clamp.
- 4) Remove the factory steering column from the vehicle.



Steering Box and Linkage Removal

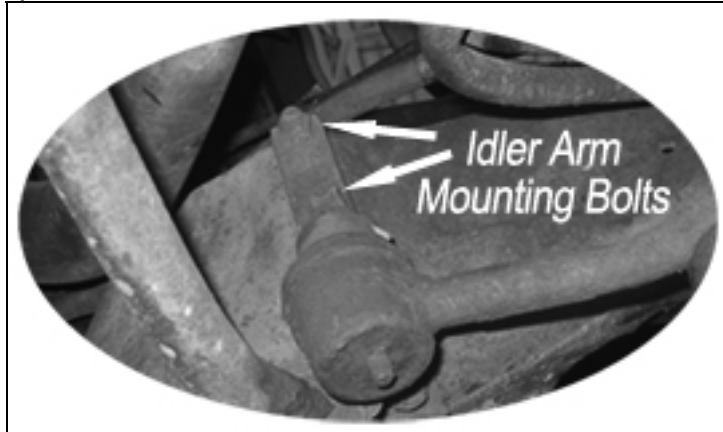
Before beginning you must first measure the width of your front end from LEFT outer tie rod end zerk to the RIGHT outer tie rod end zerk to determine the overall width of your front end. Write dimension here for further reference _____

- 1) Remove the pitman arm nut and then the pitman arm from the steering box using a pitman arm puller.



Steering Box and Linkage Removal con't

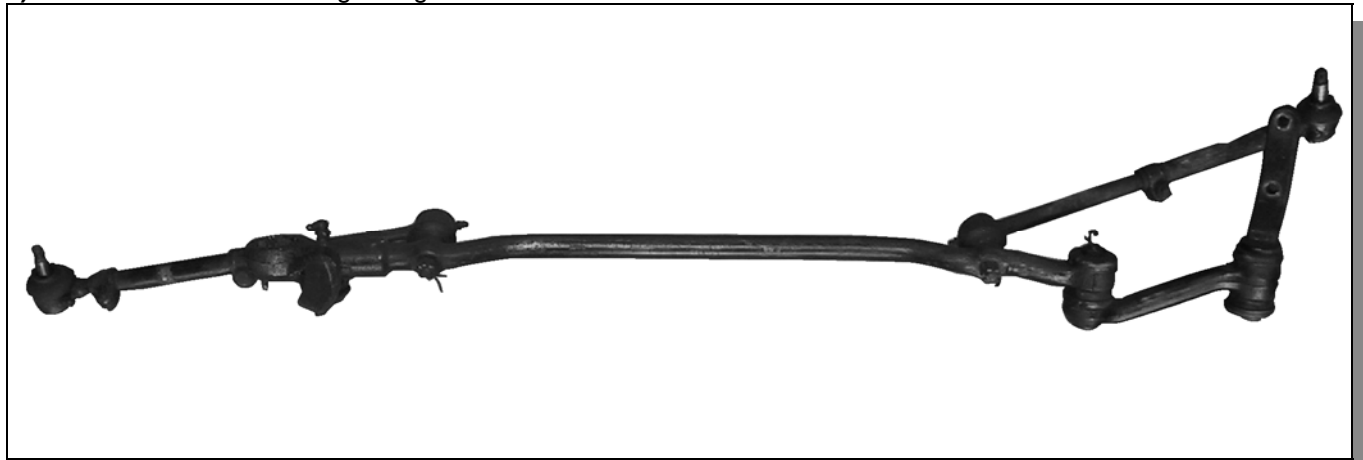
- 2) Remove the two bolts that retain the idler arm to the frame rail.



- 3) Remove the cotter pins and castle nuts and separate the outer tie rod ends from the spindles.



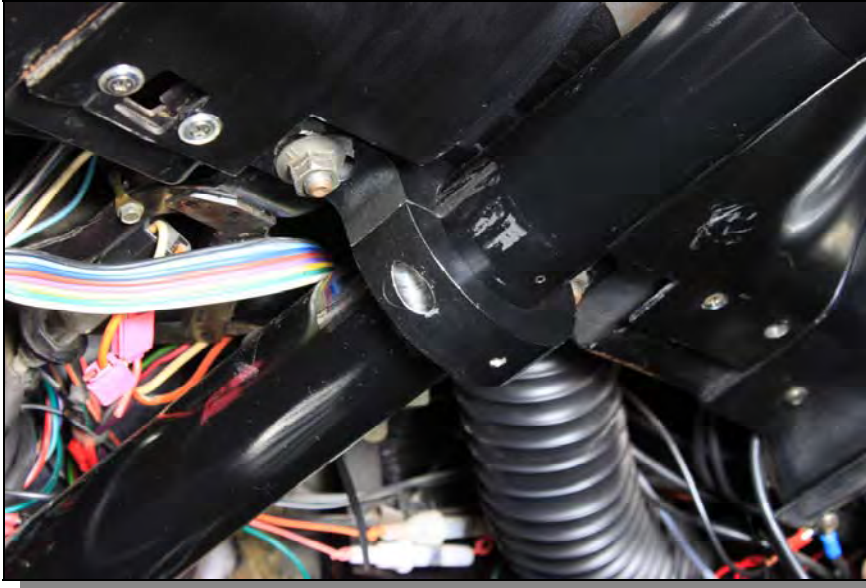
- 4) Next remove the steering linkage from the car.



- 5) If you have power steering remove the lines from your power box, pump and pump brackets.
6) Remove the three bolts that retain the box to the frame rail and remove the box from the car

Installation of Flaming River Column

- 1) Install the upper portion of the new Flaming River under dash mount into the stock location.



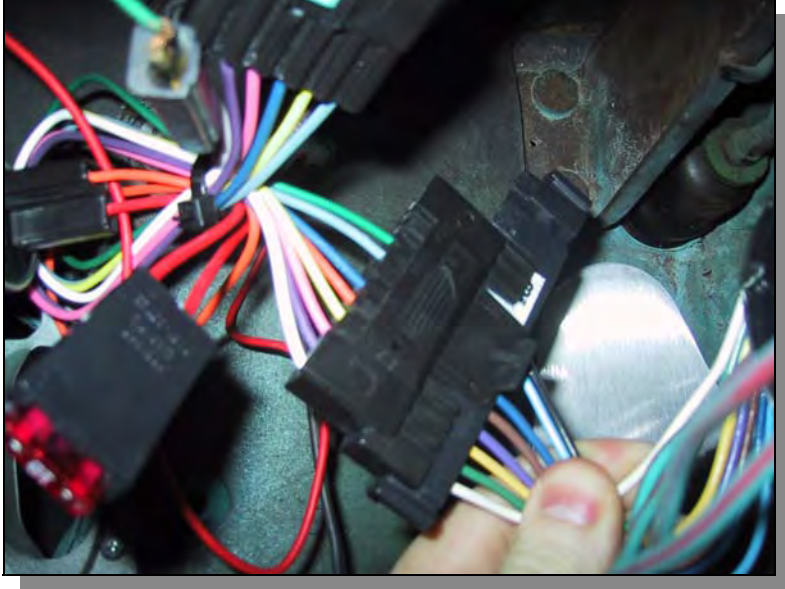
- 2) Slide the new steering column through the opening in the original floor mount, and then slide the column through the opening in the firewall.



- 3) Ensure that the column straight by having the turn signal arm points to the 9 o'clock position. Tighten the two mounting screws on the new Flaming River dash mounting clamp, and then tighten the center set screw to lock the column in place.

Installation of Flaming River Column con't

4) Install the wiring connector according to the diagram below.



Electrical System Notes

Caution: Before disconnecting your original steering column wiring harness please verify each wire color and function on the worksheet below. Some wire colors may vary from year to year.

FLAMING RIVER COLUMN WIRING

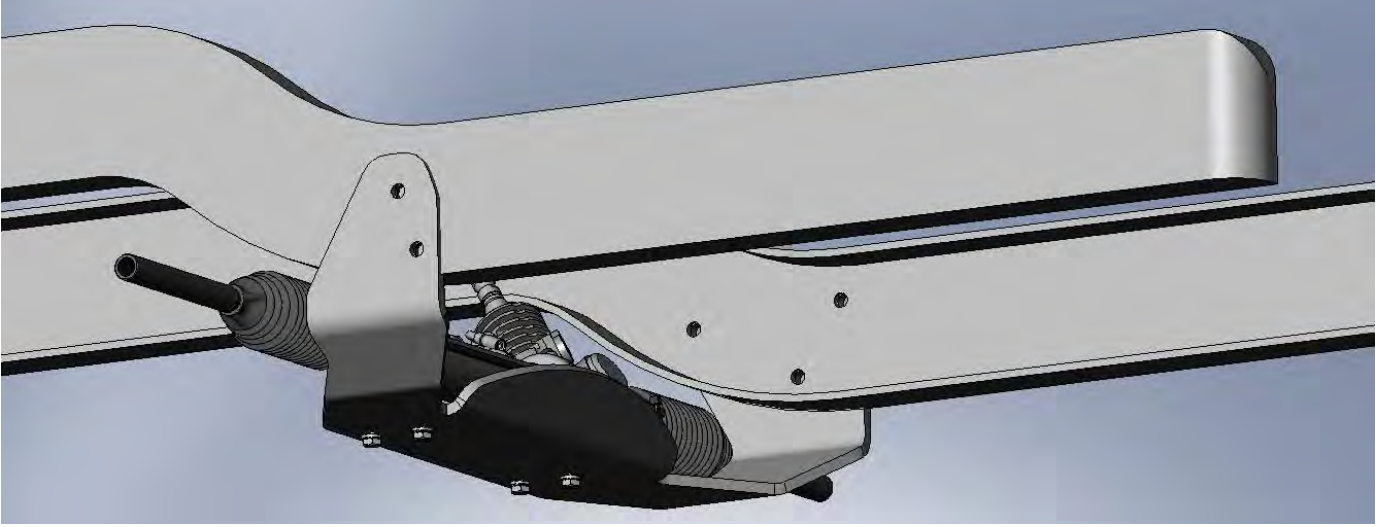
P-WHITE-BRAKELIGHT SWITCH
N-DK GREEN-RR TURN SIGNAL
M-YELLOW-LR TURN SIGNAL
L-PURPLE-TURN SIGNAL POWER
K-BROWN-HAZARD POWER
J-DK BLUE-RF TURN SIGNAL
H-LT BLUE-LF TURN SIGNAL
G-BLACK-HORN

Color Verification to be completed before disassembly

- Brake Light Switch : _____
- RR Turn Signal : _____
- LR Turn Signal : _____
- Turn Signal Power : _____
- Hazard Power : _____
- RF Turn Signal : _____
- LF Turn Signal : _____
- Horn : _____

Installation of the Flaming River Rack and Cradle

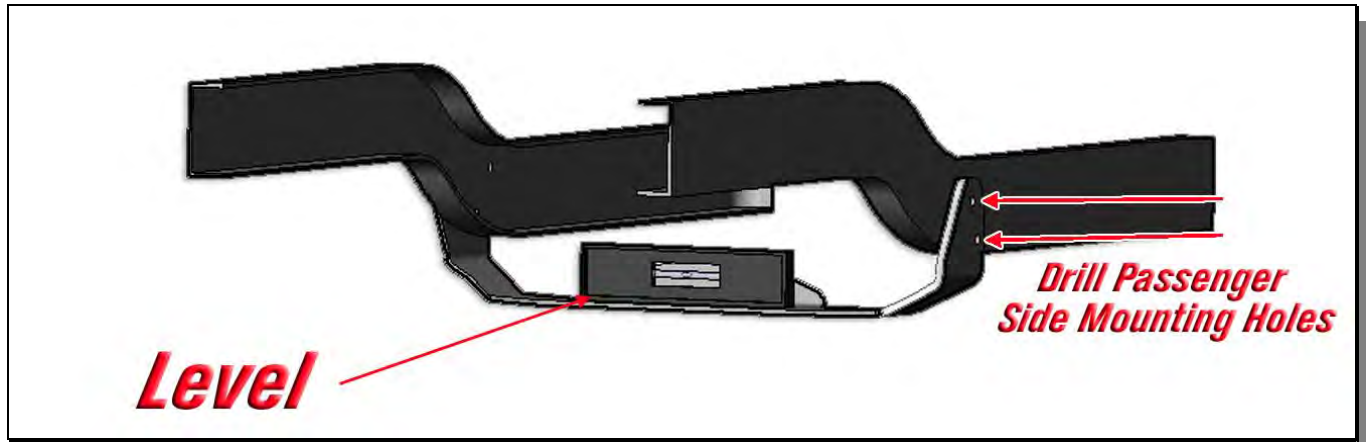
- 1) Remove the Rack from the cradle.
- 2) Install the rack and pinion cradle by sliding it over the frame rails



- 3) Installing the new hardware using three 7/16" bolts where the gear box was mounted and tighten the 7/16" nuts and bolts to 50-65 ft lbs.



- 4) Next place a level on the cradle and level the cradle. Once the cradle is level, then mark and drill the passenger side mounting holes.



Installation of the Flaming River Rack and Cradle con't

- 5) Install the new hardware using two 3/8" bolts in the newly drilled holes on the passenger side and tighten the bolts to 40-45 ft lbs.



- 6) Re-install the power rack and pinion onto the cradle.
- 7) Install the outer tie rod ends into the inner tie rod ends and adjust tie rods until the original zerck to zerck measurement taken before disassembly is obtained. _____ Measurement from the index page to install the outer tie rod ends into the spindles you must load the front suspension. (Securely placing jack stands under the lower control arms and lowering the car onto the jack stands accomplishes this.) Install the outer tie rod ends into the spindle and tighten the castle nuts to 30-40 ft lbs. Make sure to install cotter pins into the castle nut and tie rod end and bend the tabs over for security.

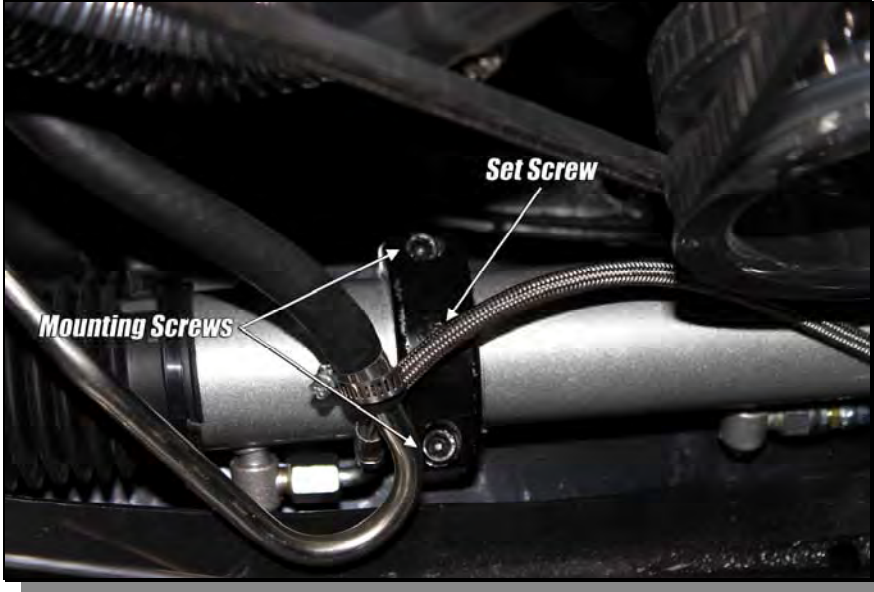


Note: The new Flaming River Rack and Pinion has been centered in its travel from the factory. If the rack becomes off center it will turn more in one direction than the other. When performing the front end alignment, adjust your toe by rotating the inner ends only.

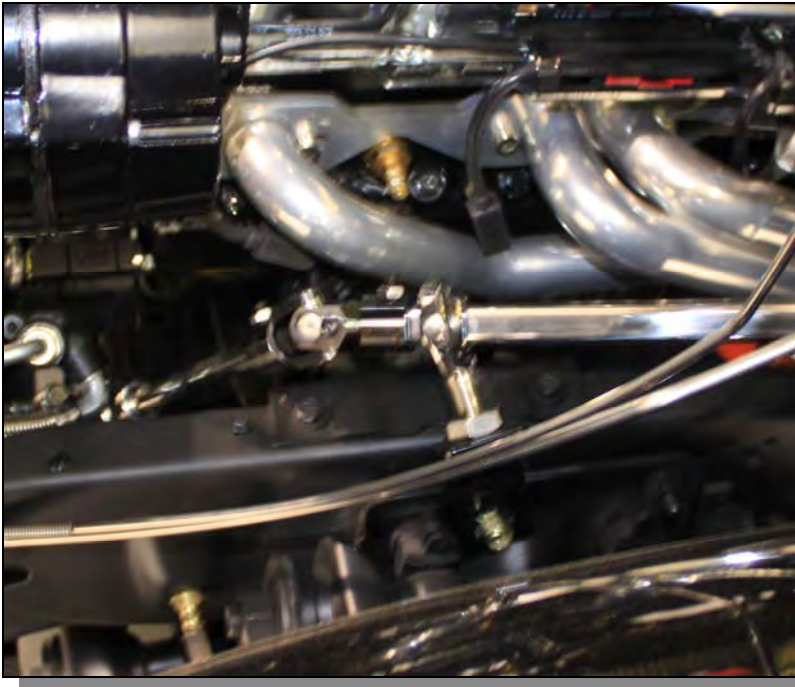
You may have to re-center the steering wheel. To re-center the steering wheel: remove the wheel and adapter from the column and re-install in the straight position.

Universal Joint System

- 1) Loosen the set screws in the rack mounting blocks. – This will allow to you to adjust the pinion angle for proper u-joint alignment.

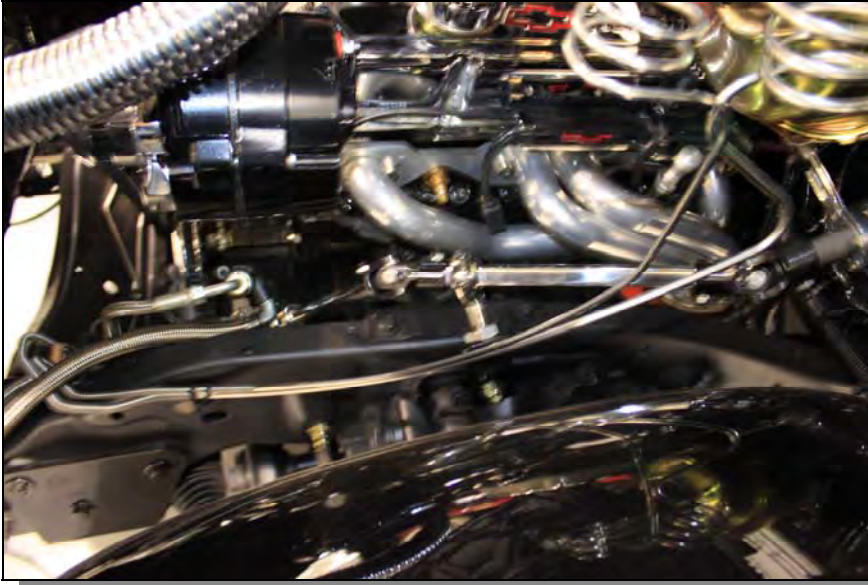


- 2) Install support-bearing mount onto the inner front control arm bolt. (Picture below). Note: The angle of this mount is set for most applications. Some adjustment may be necessary for the correct angle and u-joint alignment.



Universal Joint System con't

- 3) We recommend the use of $\frac{3}{4}$ " wood dowel rod to mock up the steering shaft to obtain the correct length of the shafts.



- 4) Install your shaft kit and snug each set screw so that it will leave a mark in the shafts.
5) Remove shaft and dimple each setscrew mark using a $\frac{1}{4}$ " drill bit. (As shown below.)

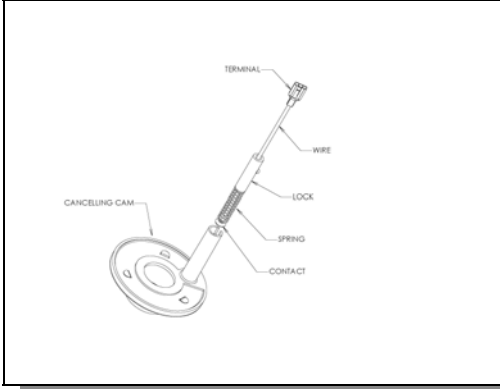


- 6) Re-install the shafts using **red loc-tite thread locker** on the set screw threads. Tighten each setscrew to 25 ft. lbs. Tighten all lock nuts securely. We recommend that you inspect setscrews periodically for tightness.
7) Re-tighten the set screw that was loosened in the rack mounting blocks in step #1.

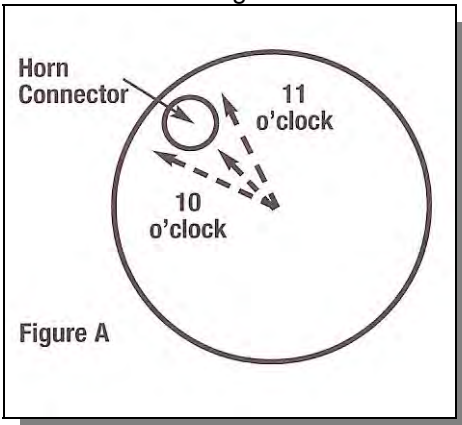
Steering Wheel Installation

Note: Before installing the steering wheel, make sure the wheels are straight.

- 1) Install horn contact kit into canceling cam tube and turn to lock (Included with column).



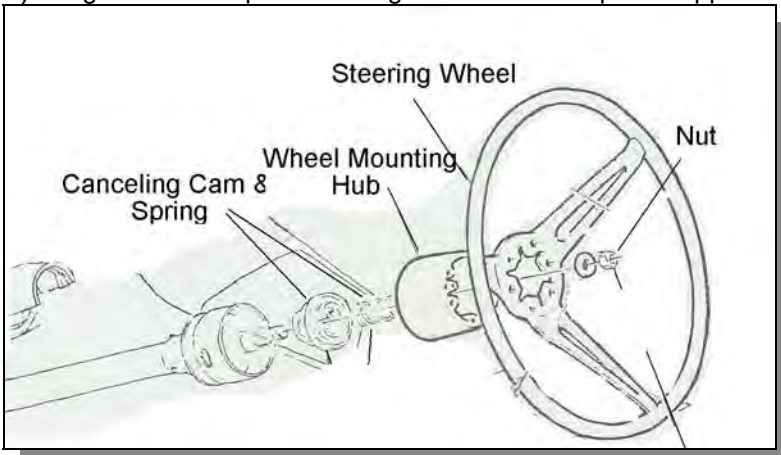
- 2) Align steering wheel adapter so that the canceling cam hole is at approx the 11 o'clock position and that one of the steering wheel mounting holes is at the 12 o'clock position.



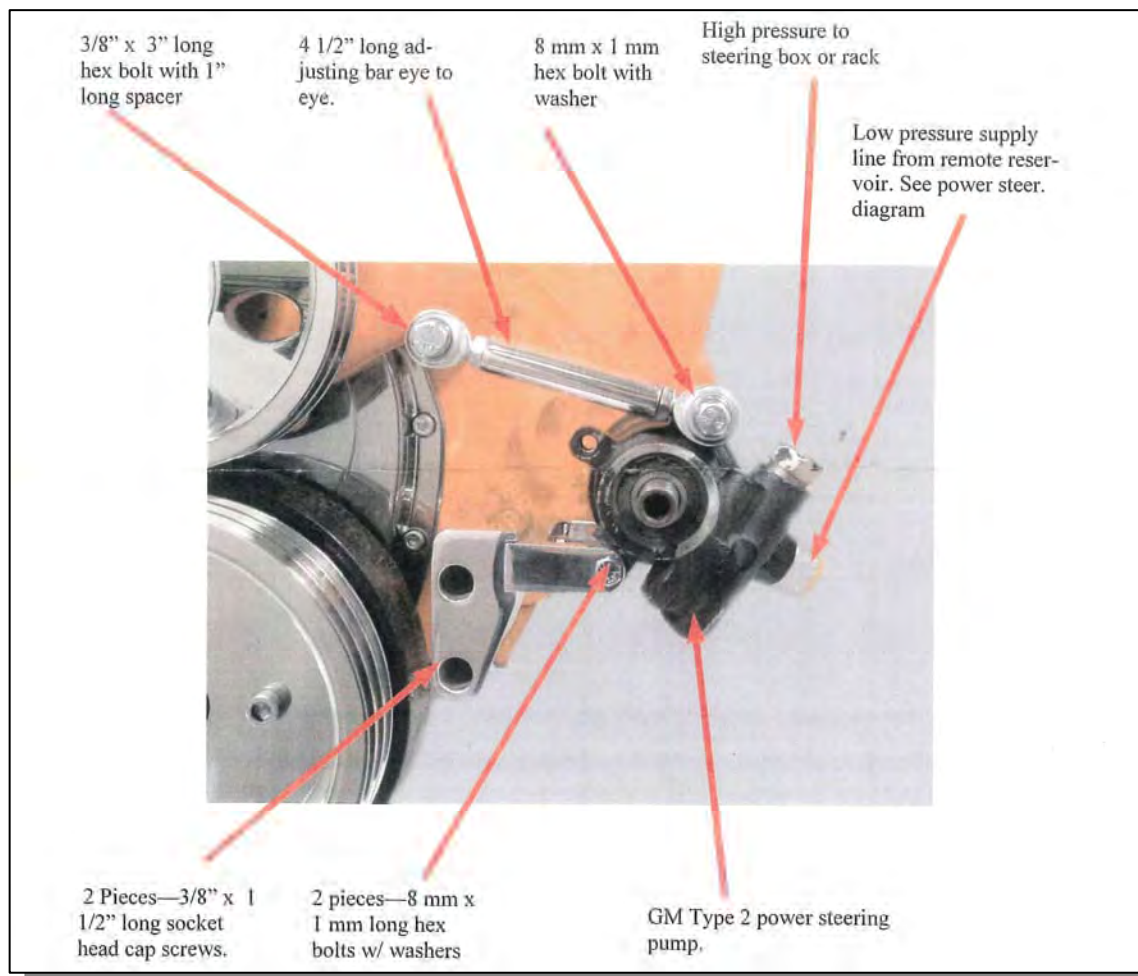
12 O'clock



- 3) To install the wheel adapter run the horn contact wire through the hole for the canceling cam and place the adapter on to the splined column shaft.
- 4) Tighten the adapter-retaining nut until the adapter is approximately 1/16" away from the column shroud.



Power Steering Pump Installation



Bleeding the System

- 1) Raise the front wheels off the ground and support vehicle on jack stands.
- 2) Turn the wheel to the left lock and fill the reservoir with high-quality power steering fluid and allow vehicle to sit for 2 minutes.
- 3) With the engine off and someone checking the fluid level rotate the steering wheel lock to lock 20 times filling with fluid as necessary.
- 4) With the engine running, rotate the steering wheel back and forth from lock-to-lock. Repeat several times. Check fluid level and add fluid if necessary.
- 5) Lower the vehicle on the ground and with the engine running, repeat step 4. Check fluid level and add if necessary.

Bleeding the System con't

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

See picture to the right.



If using a stainless line kit follow the instructions that are included in your kit.

FR1610 Power Steering Line Kit is Available Separately

Always consult your factory manual for proper torque settings for your vehicle.

NOTE: If the fluid is extremely foamy, let the vehicle sit for a few minutes and repeat steps 1-5.

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.

Torque Specs

Cradle to Frame Mounting Bolts

7/16" Mounting Bolts 50-65 ft lbs

3/8" Mounting Bolts 40-45 ft lbs

Outer Tie Rod Ends to Spindle 30-40 ft lbs

Universal Joint Set Screws 25 ft-lbs