



Flaming River Ind.  
800 Poertner Dr  
Berea, OH 44017  
800-648-8022

*62-64 Galaxie  
Rack and Pinion  
Conversion Kit*



*Galaxie*



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

**NOTE: Power Steering Line Kit (FR1610) is sold separately and is not included in this kit.**

**We recommend that you always install new outer tie rod ends when installing 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.**

**NOTE: A front end alignment is necessary after installation.**

**NOTE: Flaming River Recommends that you use synthetic or high grade power steering fluid.**

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**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.

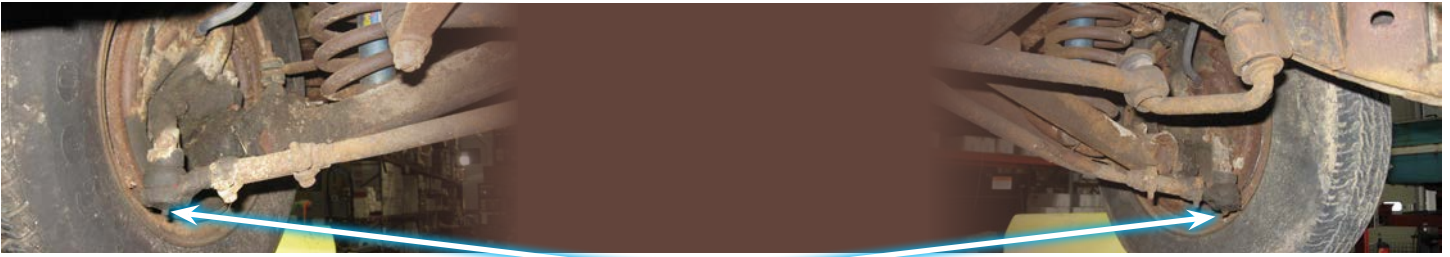
Item No.	Part No.	Description	Qty	Notes
1	FRMPSB-V	Power Steering Pump w/ V-Belt Pulley	1	
2	FRHRN2	Horn Relay	1	
3	FRDMDCL	FR Domed Decal	1	
4	FR20005SS	Tilt Floor Shift Steering Column (Polished)	1	In Kit FR317KTPL
5	FR20005	Tilt Floor Shift Steering Column (Mill Finish)	1	In Kit FR317KT
6	FR20118	Female Connector Kit	1	
7	FR1810-2	3/4 Zinc Support Bearing	1	
8	FR1798-5	1" DD x 3/4" DD Double Universal Joint	1	
9	FR1614	FR Power x 3/4" DD Universal Joint	1	
10	FR1614	Remote Power Steering Fluid Reservoir	1	
11	BK10200	Support Bearing Bracket, Bent	1	
12	100296	Power Rack & Pinion Cradle Assembly	1	
13	100652	Mounting Hardware Kit	1	

- Column Mounting Bushing,  
3/4" DD x 18" Shaft and Mustang Floor Mounts  
Included in Hardware Kit

*1962-64 Galaxie  
Cradle and Shaft  
Assembly Power*



## Factory Steering Removal



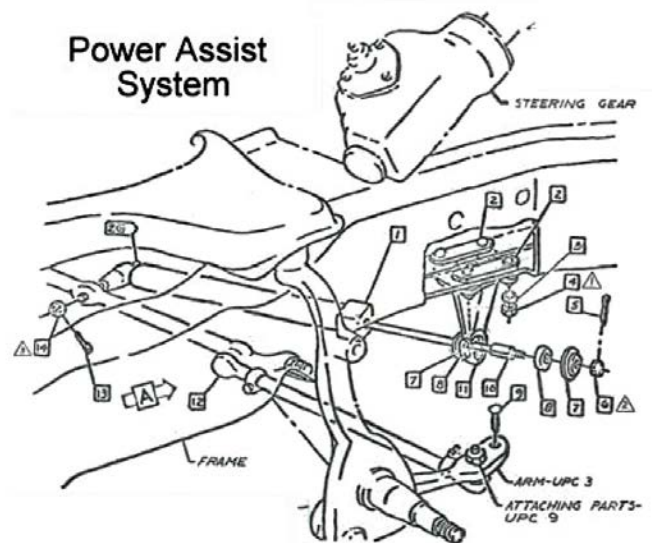
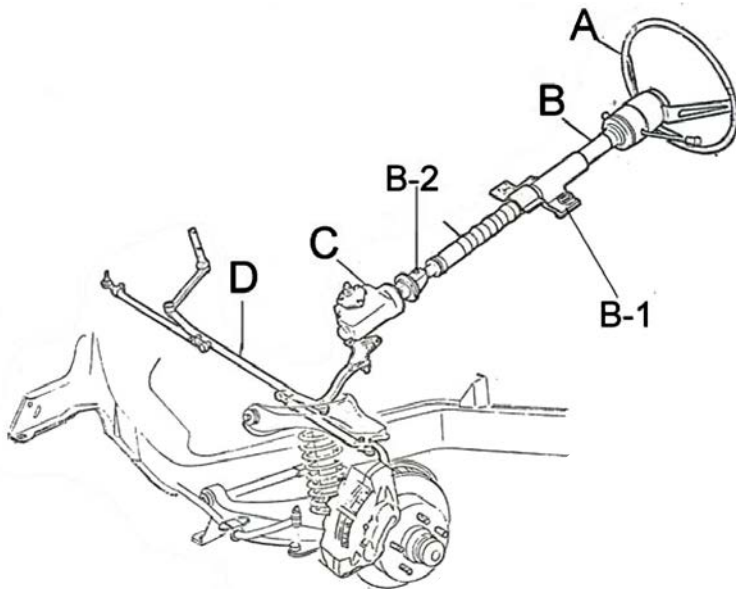
**NOTE: Before beginning you must first measure the width of your front end from LEFT outer tie rod end zerk to the RIGHT outer tie rod end zerk to determine the overall width of your front end. Write dimension here for further reference**

## Steering Box and Linkage Removal

- 1) Remove horn button by pushing down on horn hub and turning counter clockwise.
- 2) Remove steering wheel retaining nut and remove steering wheel (A) by using a steering wheel puller.
- 3) Disconnect the electrical plug towards the base of the column (B).
- 4) Remove the column support bracket under the dash. There are two nuts one on each side of the column. (B-1)
- 5) Remove the upper bushing located at the center of the turn signal switch.
- 6) Remove the column tube by sliding it up off the steering box shaft.

## Steering Box and Linkage Removal (See Diagram Below)

- 1) Remove the pitman arm from the steering box (C) using a pitman arm puller.
- 2) If you have power steering, remove pump, lines, and valve and assist cylinder. (See diagram below) A shorter belt may need to be installed.
- 3) Remove the two bolts that retain the idler arm to the frame.
- 4) Remove the cotter pins, castle nuts, separate the tie rod ends from the spindles and remove the steering linkage (D) from the car.
- 5) Remove the three retaining bolts that secure the gearbox (C) and remove the gearbox.



## **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 \_\_\_\_\_

## **Flaming River Rack and Pinion Cradle Installation**



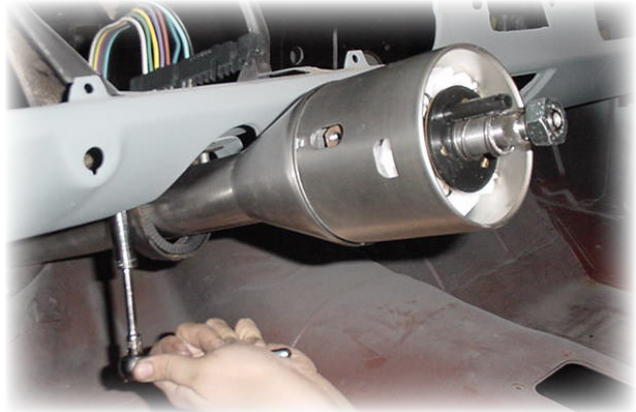
1) Install the Power Rack and Pinion Cradle Assembly by sliding it into place, installing the new hardware using three 7/16" bolts where the steering box was mounted and two 3/8" bolts where the idler arm was located. Tighten all nuts and bolts to 50-65 ft lbs.

2) Install the jam nuts and outer tie rod ends onto the rack and pinion assembly.

3) To install the outer tie rod ends in the spindle arms 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.

## **Flaming River Tilt Column Installation**

1) Using your original dash support (note: you must first place a shim that is included between the support and the column to ensure a tight fit. This is included in your installation kit). Hold the column under the dash and tighten the two support nuts.  
(Or, you can install our new 65-70 Mustang dash mount FR20114FD, sold separately – See page 15)



2) Make sure that the column is straight before securing column.  
3) Mark the location of the tabs on the column using a center punch or scribe, then remove the column from the car and drill a small pilot hole for each screw.



4) Fasten the new floor mount to the column by using the screws provided with the hardware kit then reinstall the steering column into the car.

## **Installation of Original Wheel**



**Note: Some modification to your original wheel is necessary for the horn to work correctly.**

1) Install steering wheel spacer ensuring that canceling cam hole is at the 10 o'clock position. For 65-66 cars, align the spring clip on the backside of the wheel so that the prongs are at the 3 o'clock and 5 o'clock positions.

2) Install horn contact into canceling cam and run wire through slot in steering wheel

3) Install steering wheel and tighten the steering wheel retaining nut.

4) The horn plates on the bottom of your horn button must be permanently attached to each other. Drilling a small hole and inserting a small sheet metal screw accomplish this. (1/4") (See picture below)

5) Connect the horn contact wire to the horn contact on top of the horn button.

6) Install the horn button by pushing down and turning clockwise, this will lock the button in position.

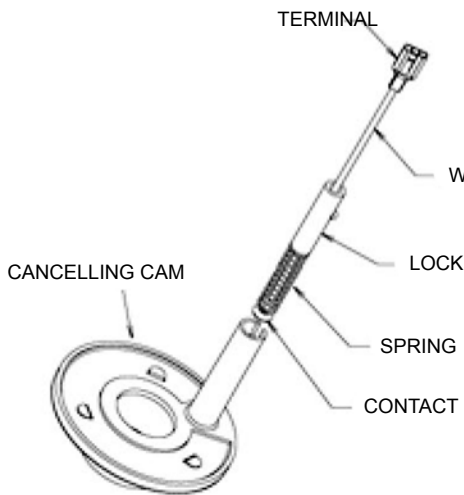
## For Wheels Without a Slot for the Wire or Wooden Wheels

Turn wheel over to show the horn contact plates on the back of the wheel. (If it is an early wheel the turn signal tabs are at the 9 o'clock and the 6 o'clock position).

Place wheel spacer plate onto the wheel with the canceling cam hole approximately the 1-1:30 positions. This is where you will need to drill a 3/8-diameter hole for the canceling cam stem and horn contact wire to go through. (See picture at right)



## Aftermarket Wheel Installation



1) Install horn contact kit into canceling cam tube and turn to lock.

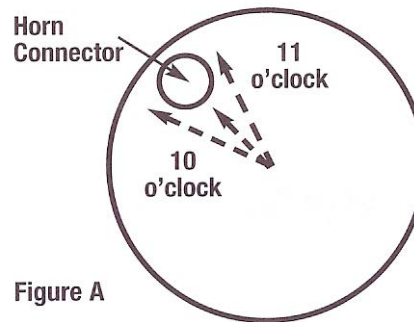


Figure A



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.

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.

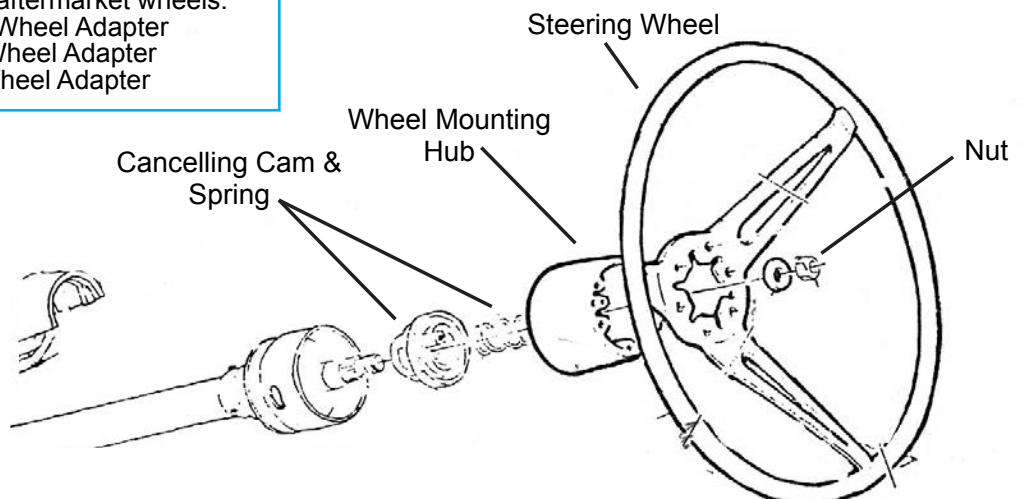
4) Tighten the adapter-retaining nut until the adapter is approximately 1/16" away from the column shroud.

**Note:** The following Flaming River part numbers are for wheel adapters for aftermarket wheels.

FR20119FD 5-6 Bolt Wheel Adapter

FR20113FD 9 Bolt Wheel Adapter

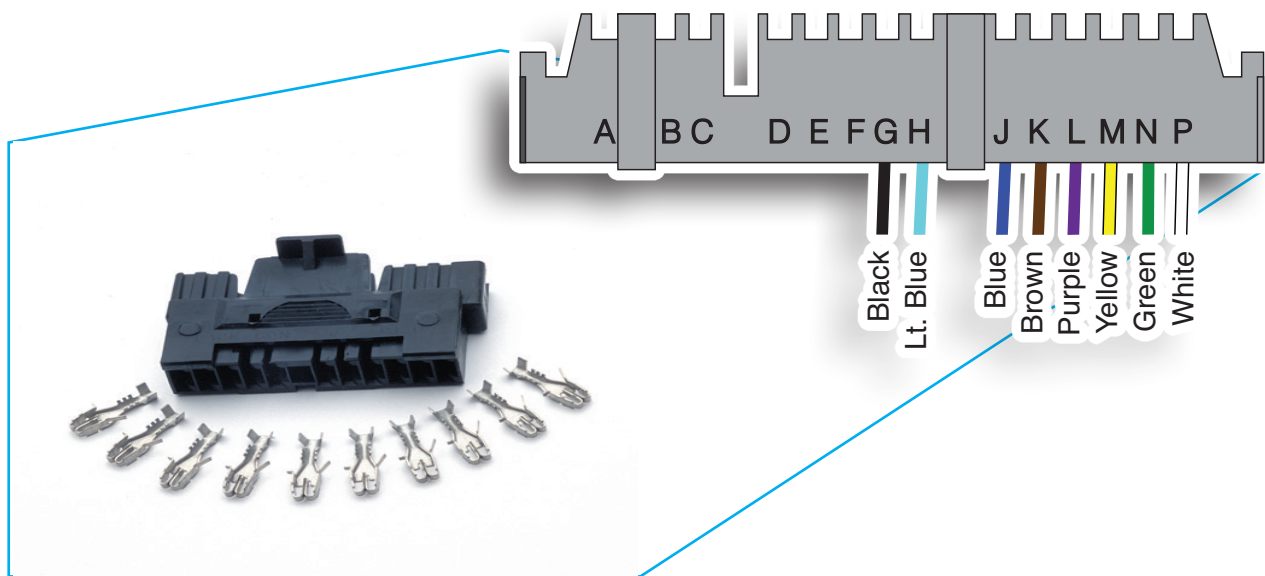
FR3302FD 3 Bolt Wheel Adapter



## Connecting the Electric System

<u>Function</u>	<u>FR Column</u>	<u>Location</u>	<u>Vehicle Wiring</u>
Horn	Black	G	<b>Brown</b> (Horn Relay)
Lt Front Turn Signal	<b>Light Blue</b>	H	<b>Green/White</b>
Rt Front Turn Signal	<b>Blue</b>	J	<b>White/Black</b>
Hazard	<b>Brown</b>	K	See Note
Turn Signal - Power	<b>Purple</b>	L	<b>Blue</b>
Lt Rear Turn Signal	<b>Yellow</b>	M	<b>Green/Orange</b>
Rt Rear Turn Signal	<b>Green</b>	N	<b>Orange/Blue</b>
Brake Light	<b>White</b>	P	<b>Green</b>

Note: The hazard power wire goes to a 12v power source from the vehicle's fuse panel. This feature will add 4-Way Emergency flasher to the car.



### Installing Horn Relay

1. Connect the **Yellow** and **Blue** wires on the horn relay to the **Yellow** wire on the vehicle harness.
2. The **Red** wire on the horn relay connects to the **Yellow** wire with a stripe on the vehicle harness.
3. The **Brown** wire on the horn relay connects to the Black wire on the steering column harness terminal G.

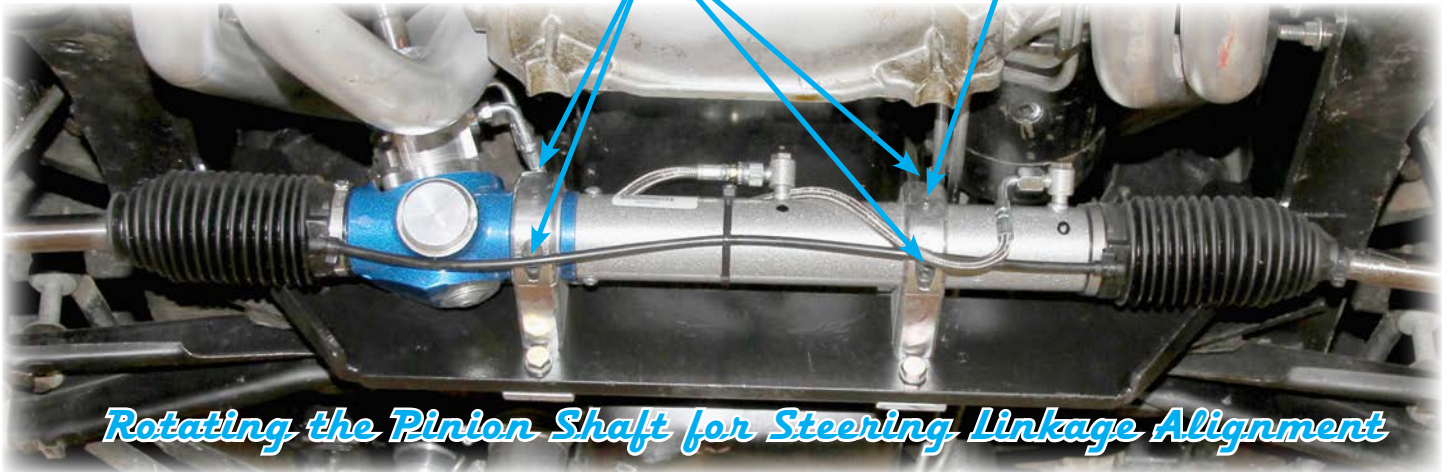
**Note: The Black wire on the horn relay is not used.**



## Rack & Pinion Universal Joint System

*Pillow Block Clamp  
Mounting Bolts*

*Set Screw*



1) The Flaming River Power Rack and Pinion Cradle Assembly comes preassembled from the factory, however you may need to adjust the pinion angle for proper u-joint alignment. – First, loosen the set screw on the passenger side pillow block. Next, loosen the (4) four pillow block clamp mounting bolts, then adjust your pinion angle. Once your pinion angle is set, tighten the (4) four pillow block mounting clamp bolts and then the set screw. (See picture above)



2) Install support-bearing mount onto the chassis.

Note: The angle of this mount is set for most applications. Some adjustment may be necessary for the correct angle and u-joint alignment.

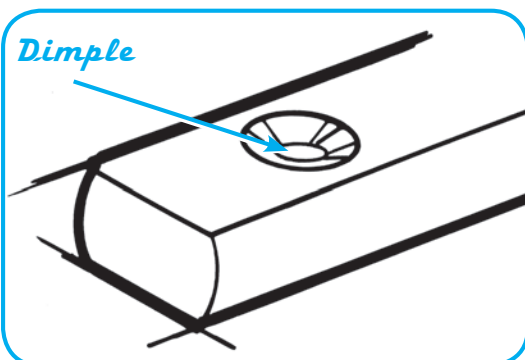
3) Using a 3/4" wooden dowel rod, mock up the steering shaft to obtain the correct shaft lengths and u-joint angle.

4) 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.

5) Remove the shafts and using a 1/4" drill bit, dimple each mark left by the set screws.

6) 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.

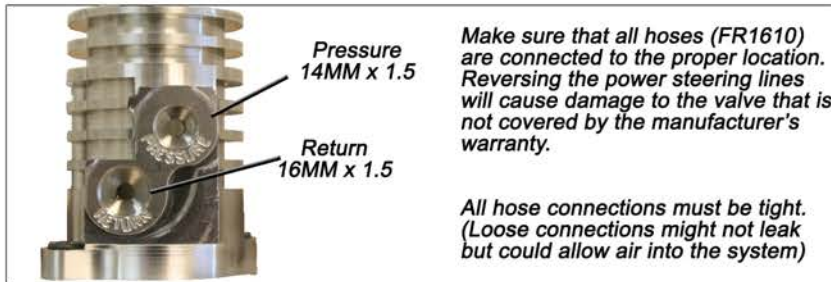
\*\* We recommend that you regularly inspect the u-joint set screws for tightness.\*\*





# Instruction Bulletin #1021

## Correct Bleeding Procedure for Flaming River Power Rack & Pinion Systems.



Make sure that all hoses (FR1610) are connected to the proper location. Reversing the power steering lines will cause damage to the valve that is not covered by the manufacturer's warranty.

All hose connections must be tight. (Loose connections might not leak but could allow air into the system)

**Important**

**\*\*\* Power Steering Fluid\*\*\***  
Use clean, new power steering fluid only.

- 1) Turn Ignition Off
- 2) Raise front wheels off the ground.
- 3) Turn the steering wheel full left.
- 4) Fill fluid level to "Full Cold" level or if using remote reservoir 1" over inner tube.
- 5) With assistant checking fluid level and condition, turn steering wheel lock to lock at least 20 times.
- 6) While turning wheels check fluid level constantly.
- 7) Start engine. With engine idling, maintain fluid level. Reinstall cap.
- 8) Return wheels to center. Lower front wheels to the ground.
- 9) Keep engine running for two (2) minutes.
- 10) Turn steering wheel in both directions.
- 11) If all proper conditions apply, bleeding is complete.
- 12) If any problem remains see "Special Conditions".

Verify:  
Smooth power assist  
Noiseless operation  
Proper fluid level  
No system leaks  
Proper fluid condition  
No bubbles, no foam,  
no discoloration.

**Note:** On systems with long return lines or fluid coolers, turn steering wheel lock to lock at least 40 times.

Trapped air may cause fluid to overflow. Thoroughly clean spilled fluid to allow for leak check.

**Note:** No bubbles are allowed.

For any sign of bubbles, recheck connections then repeat step 5.

### Special Conditions:



- Foam or bubbles in fluid

Fluid must be completely free of bubbles. In step 5, be alert to periodic bubbles that could indicate a loose connection or leaky O-Ring seal in either the return hose or pressure hose.

- Discolored fluid (milky, opaque, or light tan color)

Switch ignition off. Wait two (2) minutes. Recheck hose connections. Repeat steps 7-10. If condition still exists, replace and check a possible cause:

- Return hose clamps
- Return hose o-ring
- Pressure hose o-ring
- Gear cylinder line o-rings

Fill system and repeat bleed procedure for each possible cause. Repeat steps 7-10 to verify whether noise has been eliminated.



- Pump whine or groan

With engine running, recheck hoses for possible contact with frame body or engine. If no contact is found, follow either method below to cool down fluid and re-pressurize system.

**Method 1:**  
Normal Cool Down

Switch engine off.  
Wait for system to cool.  
Install reservoir cap.

**Method 2:**  
Partial Fluid Replacement

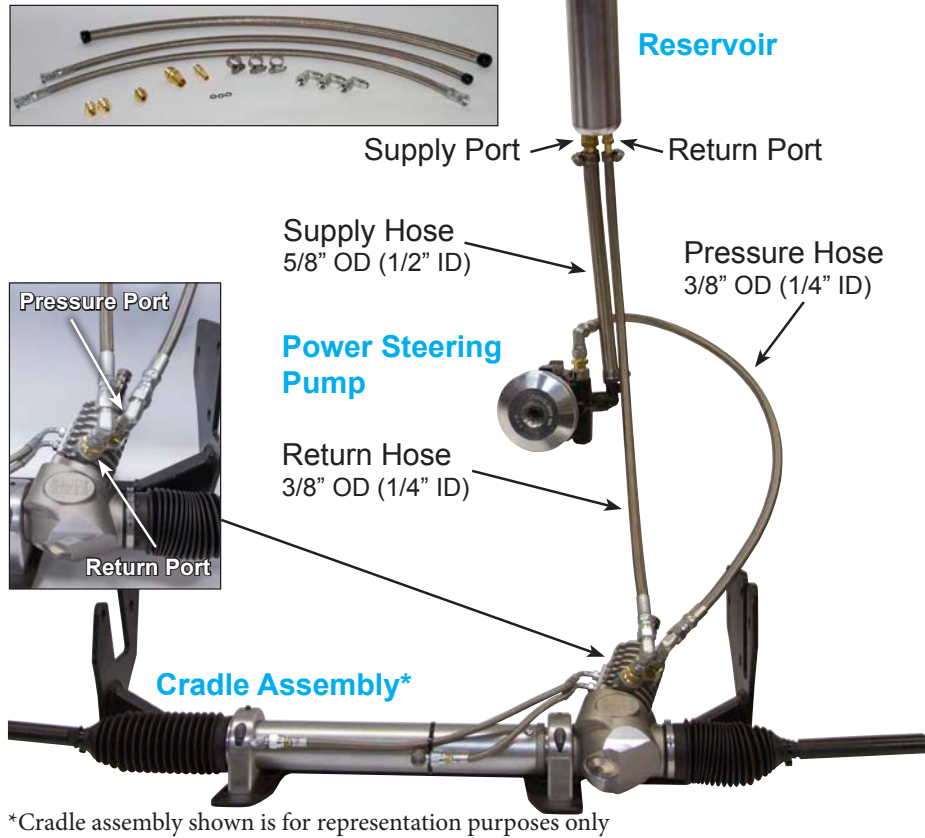
Switch engine off. Use a Suction device to remove fluid from the reservoir. Refill with cool, clean fluid. Install Reservoir cap.

After either method of cooling, start engine and allow engine to reach normal operating temperature. If noise persists, remove and replace power steering pump. Repeat bleed procedure following pump replacement.

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## FR1610 Hose Kit Routing



If not using our hose kit, we recommend purchasing the FR1632 Pressure and Return fittings kit. If you have any questions regarding connecting alternate hose kit to Flaming River Cradle Assembly, please call 1-800-648-8022.



## Aftermarket Steering Wheels and Adapters



In order to ensure the best customer experience possible, we've created a Customer Satisfaction Survey to gather important feedback about different facets of our business. We would appreciate it if you could please take a couple of minutes to fill out this survey about your experience.

The results of the survey will be used to improve and gather feedback about customer service, technical and sales support, order processing and fulfillment, manufacturing, and new product development.

Upon completing the survey, you will be issued a discount coupon code to be used on your next online purchase at [www.flamingriver.com/survey](http://www.flamingriver.com/survey).



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