



***FR40002***  
***79-93 Mustang***  
***Power Rack & Pinion***



## Original Rack Removal

**Note:** For vehicles with airbags disconnect the negative battery cable and the positive. Wait 2 minutes before proceeding. This is to avoid any accidental deployment of the airbags.

**Note:** We recommend the use of new outer tie rod ends and mounting bushings when installing this product to obtain the proper performance.

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

- 1) Position the front wheels straight ahead and the lock the steering column in place.
- 2) Raise your vehicle and ensure that it is properly supported.
- 3) Disconnect your power steering lines from the rack and pinion and cap the ends to make sure that no contamination gets into the lines.
- 4) Remove the pinch bolt that retains the rag joint to the rack and pinion.
- 5) Remove the cotter pins and castle nuts from the outer tie rod ends and then remove the outer tie rod ends from the spindles.(A tie rod end puller or pickle fork may be necessary.)
- 6) Next remove the nuts and bolts that mount the rack to the cross member.
- 7) As you lower the steering gear separate the steering shaft from the input shaft of the steering gear.
- 8) Remove the bolt that retains the steering shaft to the column and remove the steering shaft from the car.

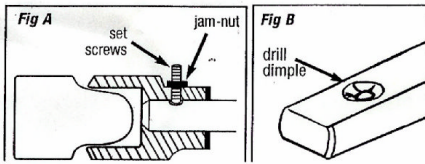
## New Flaming River Rack Installation

- 1) Before installing the new rack you must first notch the driver's side engine mounting boss 3/8" wide x 3/4" long. (See photo below)



- 2) Install the lower u-joint from the shaft kit onto the pinion shaft of the new power rack.
- 3) Install the rear portion of the rack and pinion mounting bushings into the mounting bosses of the new rack.
- 4) Slide rack over the mounting pins and install the front portion of the mounting bushings.
- 5) Install the steering gear mounting bolts, nuts and washers and tighten to 30-40 ft lbs.
- 6) Insert splined shaft in to the opposite end of the u-joint connecting to the rack. (Note: This shaft may need to be trimmed to the correct length for your application.)
- 7) Slide top u-joint over shaft.
- 8) Insert tongue into end of steering column shaft and then into DD side of top u-joint, next install through bolt. (Do not tighten bolt at this time).
- 9) Adjust each u-joint so that there is 7/8" of shafting into each yoke; make sure the set screw on the pinion shaft is set in the groove.
- 10) Snug each set screw so that it will leave a mark on the shaft including the tongue.
- 11) Remove the shaft and dimple (see fig B) each set screw mark using a 1/4" drill bit **Note: do not dimple pinion shaft on rack and pinion damage to rack may occur.**

- 12) Reassemble shaft kit in car tightening each set screw to 25 ft-lb. using red loctite or another thread locker and tighten jam nuts ( fig A )
- 13) Install the outer tie rod ends onto the steering gear and install them into the spindles
- 14) Install the castle nuts and cotter pins making sure to tighten the nuts to 35-47 ft lbs.
- 15) Install the 5/16" pressure line and the 3/8" return line into the rack and tighten fittings.
- 16) Bleed system following the steps on next page.



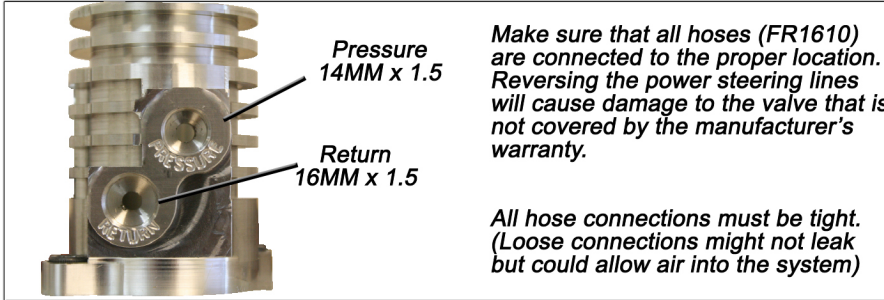
#### **Warranty Disclaimer**

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 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 void 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 recommended placement of the switch on the vehicle. Use qualified chassis specialist 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 found 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.**



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



**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.

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.

11) If all proper conditions apply, bleeding is complete.

12) If any problem remains see "Special Conditions".

**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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