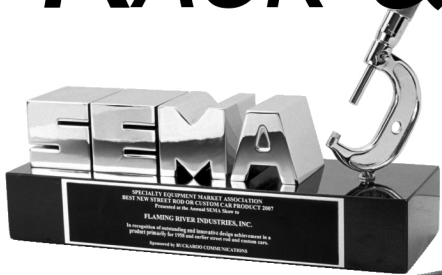




800-648-8022



68-72 GM A BODY RACK & PINION CRADLE KIT



**SEMA BEST NEW
PRODUCT WINNER**



Rack & Pinion Cradle System

Thank you for your interest in Flaming River products. We hope you enjoy your rack and pinion cradle system.

The product that you have selected has been built and designed for improved driving comfort and convenience. No drilling welding or grinding is necessary.

All systems have been created on stock chassis with little or no change to the original suspension, engine, or transmission.

Quality grade fasteners and materials are used to allow normal installation. We do recommend new outer tie rod ends and a professional alignment.

Thanks again,

Jeanette Ladina

Jeanette Ladina
President

Rack & Pinion Cradle System

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

NOTE: Hoses (FR1610) Pump Mounting Brackets (FR1611) is sold separately and is not included in this kit. Chevelle Outer Tie Rod Ends ES333RL and adjuster sleeves ES2032S must be used with this rack and pinion kit.

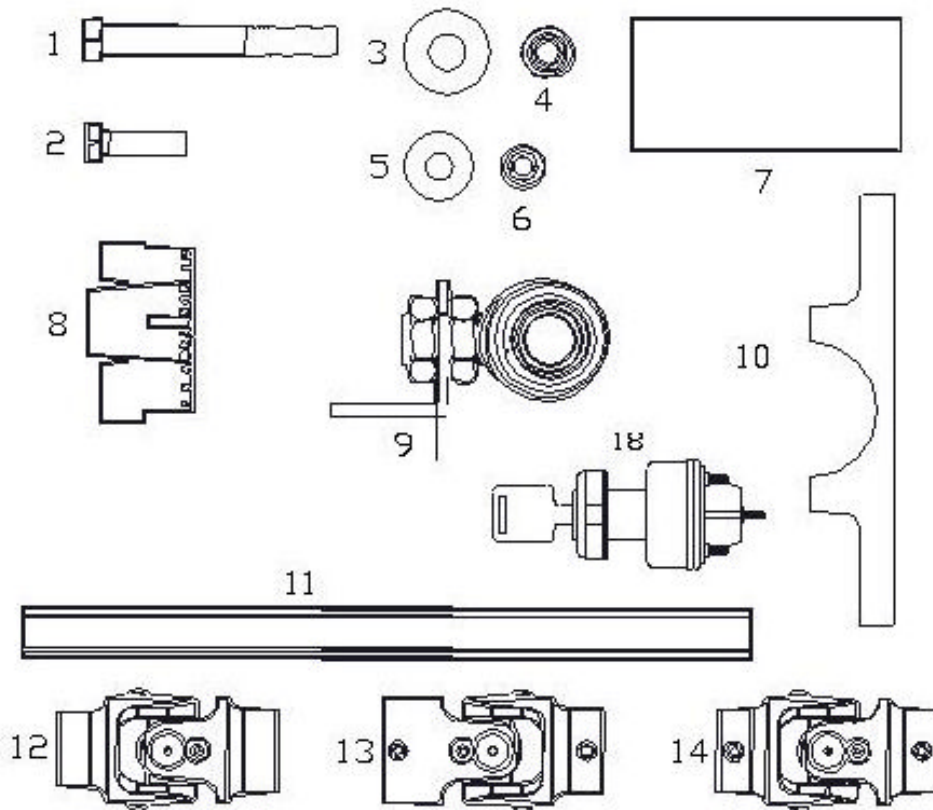
Before paint or powder coating of the rack and pinion cradle system we recommend that you prefit the system to ensure proper fit.

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Warranty Disclaimer

Because of their intended usage, the manufacturer makes no warranties whatsoever express or implied, oral or written, to purchasers of their products regarding performance, safety, fit merchantability, or length of service. Purchasers are responsible for selection of proper goods and must rely on there own skill or judgment that such goods are suitable for purchasers application.

Rack & Pinion Cradle System
Installation Kit Hardware Package



<u>ITEM #</u>	<u>QUANTITY</u>	<u>SIZE / PART NUMBER</u>	<u>DESCRIPTION</u>
1	3	7/16-14 x 4 1/2"	Driver's Side Cradle Mounting Bolts
2	2	3/8-16 x 1 1/4"	Passenger Side Cradle Mounting Bolts /
3	6	7/16 Washers	Washers for 7/16 Mounting Bolts
4	3	7/16-14 Lock Nuts	Locking Nuts for 7/16 Mounting Bolts
5	4	3/8 Washers	Washers for 3/8 Mounting Bolts
6	2	3/8-16 Lock Nuts	Locking Nuts for 3/8 Mounting Bolts
7	2	FRBSH2	Floor Mount Bushing (Column Kits Only)
8	1	FR20118	Wiring Adapter (Column Kits Only)
9	1	FR1810 & BK10500	Support Bearing and Bracket
10	1	FR20114	Column Dash Mount (Column Kits Only)
11	1	FR1850-22	22" DD Shaft
12	1	FR1924	9/16-26 X 3/4-DD Chromemolly U-Joint
13	1	FR1934	1"DD x 3/4"DD Chromemolly U-Joint
14	1	FR1920	3/4"DD x 3/4"DD Chromemolly U-Joint
17	1	FR20006 OR FR20006SS	Column (Column Kits Only)
18	1	FRIGN1	Ignition Switch (Column Kits Only)

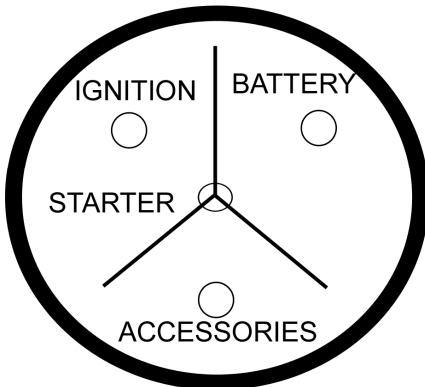
Rack & Pinion Cradle System

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 ensue 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 : _____



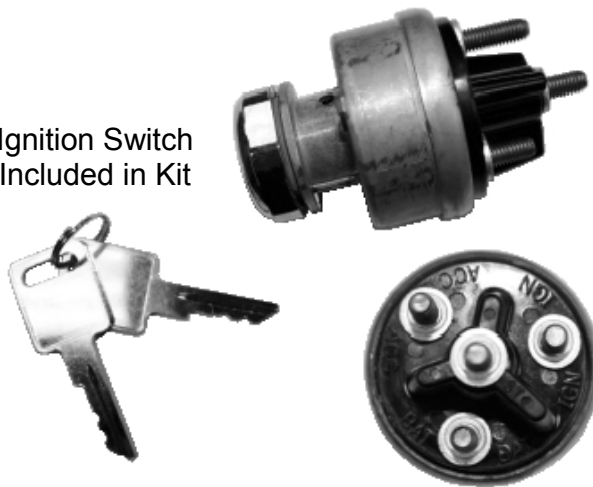
Ignition Wiring

Color	Location
Red	Battery
Pink	Ignition
Orange	Ignition
D / Green	Ignition
Brown	Accessories
Brown/White	Accessories
Purple	Solenoid

The ignition switch included with this kit is not located in the steering column and will have to be relocated in the interior of the vehicle. Ex. Dash board, center console or hidden.

If lengthening the ignition wiring be sure to use proper gauge wire to ensure proper function and safety.

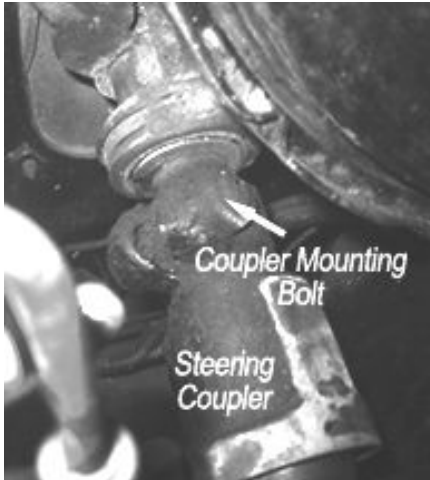
Ignition Switch
Included in Kit



Rack & Pinion Cradle System

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.



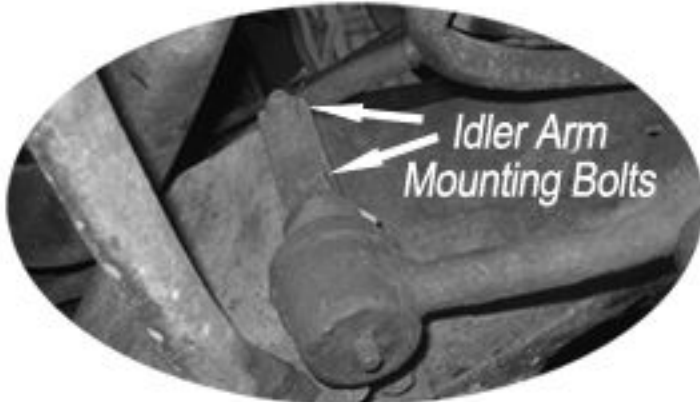
Rack & Pinion Cradle System Steering Box and Linkage Removal

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 from the steering box using a pitman arm puller.



- 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.

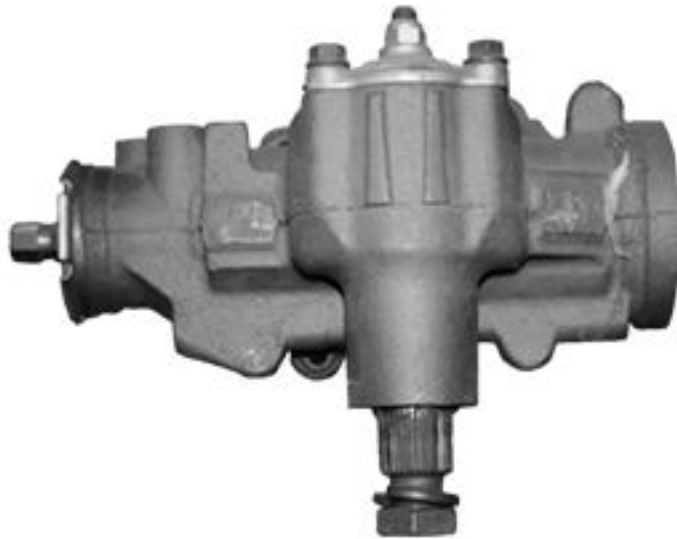


Rack & Pinion Cradle System

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

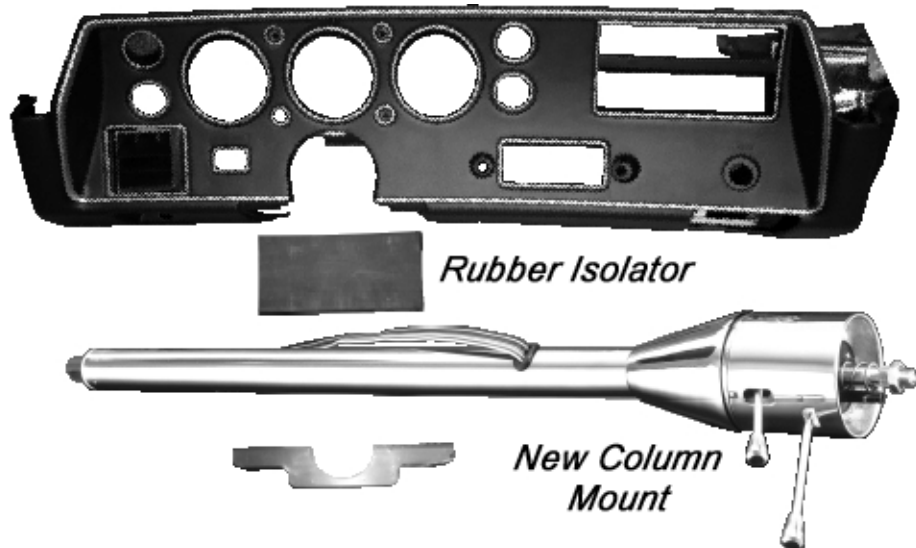


Rack & Pinion Cradle System
Installation of Flaming River Column

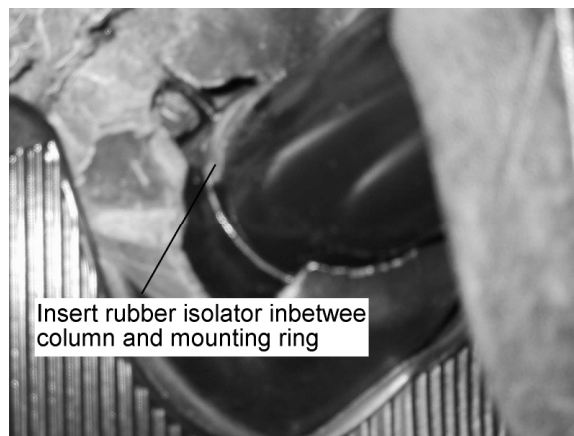


- 1) Install one the rubber isolator strips into the original dash mounting location in-between the dash and the new steering column.
- 2) Hold the new column into the mounting location and using the original column mounting screws tighten the new column mounting clamp to hold the column in place.

- 3) Install



rubber isolator into the original floor mount and then slide it over the column tube. Slightly snug clamp.



- 4) Place the column under the dash and snug the two mounting screws for the under dash mount.

Rack & Pinion Cradle System

- 5) Install the floor mounting screws and tighten to 15 ft lbs.
- 6) 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 clamp. (see photo B)
- 7) Tighten the floor mounting clamp around the tube. (see photo A)
- 8) Install the wiring jumper harness.

Electrical System Notes

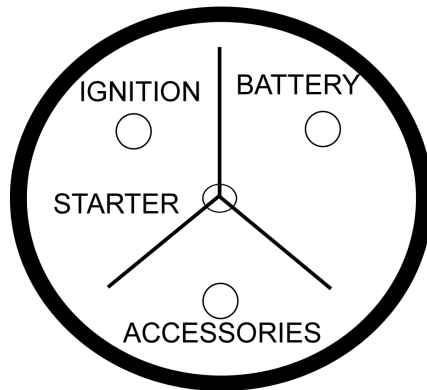
Caution: Before disconnecting your original steering column wiring harness please verify each wire color and function on the worksheet below. Some wire colors may vary from year to year.

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 : _____

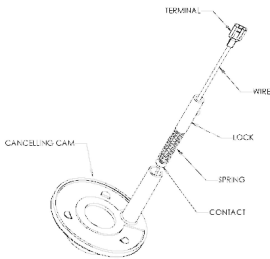


Ignition Wiring

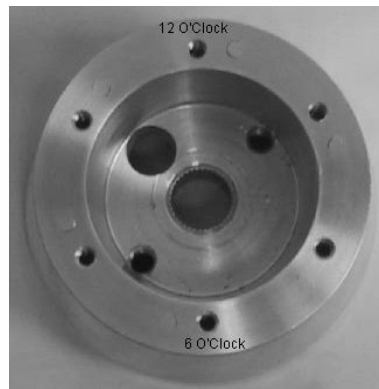
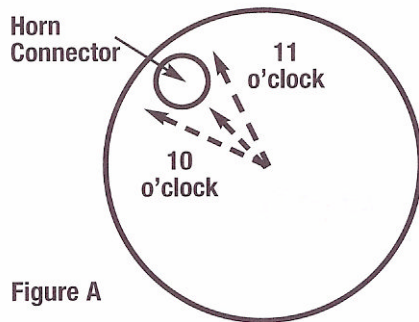
Color	Location
Red	Battery
Pink	Ignition
Orange	Ignition
D / Green	Ignition
Brown	Accessories
Brown/White	Accessories
Purple	Solenoid

Rack & Pinion Cradle System Steering Wheel Installation

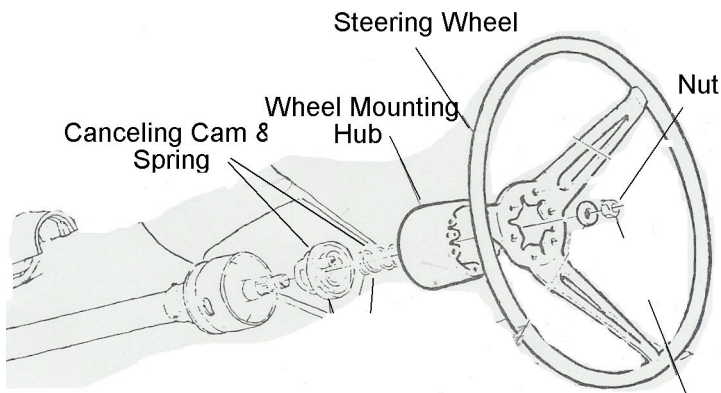
- 1) Install horn contact kit into canceling cam tube and turn to lock.



- 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.

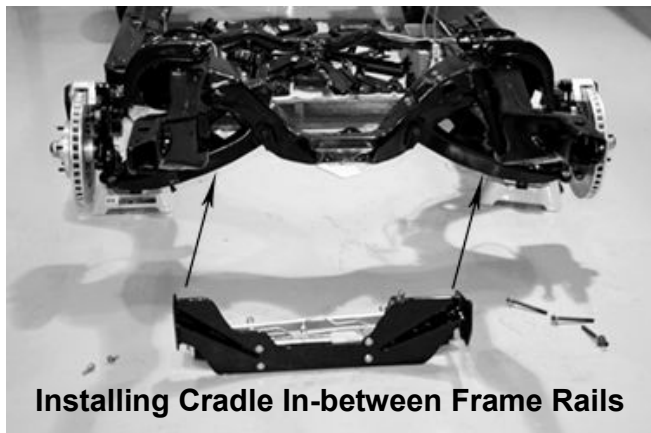


- 3) To install the wheel adapter run the horn contact wire through the hole for the canceling cam and place the adapter on to the splined column shaft.
- 4) Tighten the adapter-retaining nut until the adapter is approximately 1/16" away from the column shroud.

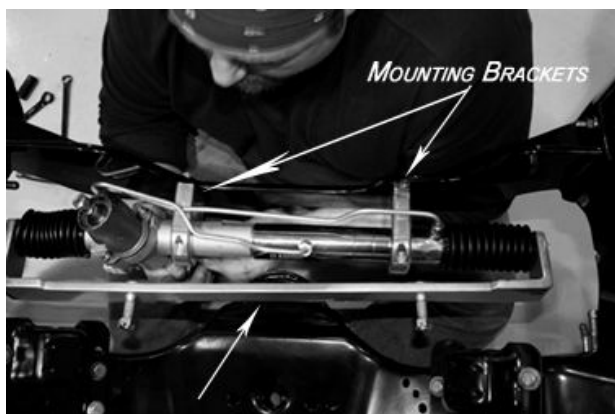


Rack & Pinion Cradle System Installation of the Flaming River Rack and Cradle

- 1) Install the rack and pinion cradle by sliding it into place between the frame rails, installing the new hardware using three 7/16" bolts where the gear box was mounted and two 3/8" bolts where the idler arm was located. Tighten the 7/16" nuts and bolts to 50-65 ft lbs and the 3/8" nuts and bolts to 40 -45 ft lbs.

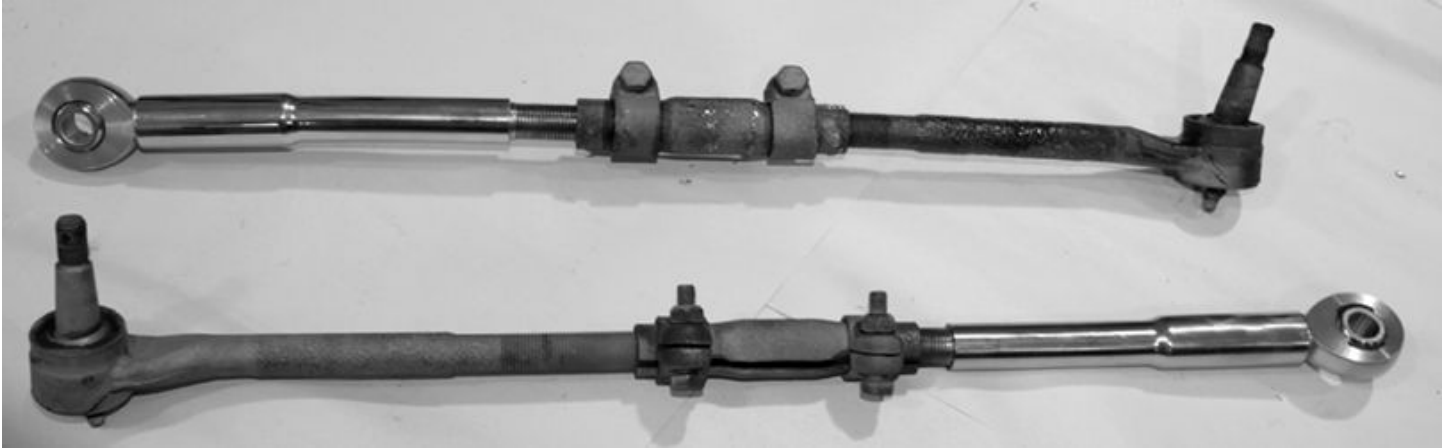


- 2) To install the Flaming River rack and travel bar system rotate the travel bar over the lip of the cross member, next position the rack into place and install the rack to the cradle using the mounting brackets provided. Once you have adjusted the pinion angle tighten the 4 mounting bracket bolts and the 2 1/4-20 set screws to lock the rack in place.



Rack & Pinion Cradle System

- 3) Install the OEM adjuster sleeves onto the new Flaming River inner tie rod ends, next install the outer tie rod ends into the adjuster sleeves and adjust tie rods until the original zerk to zerk measurement taken before disassembly is obtained. _____ Measurement from the index page.



- 4) 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.

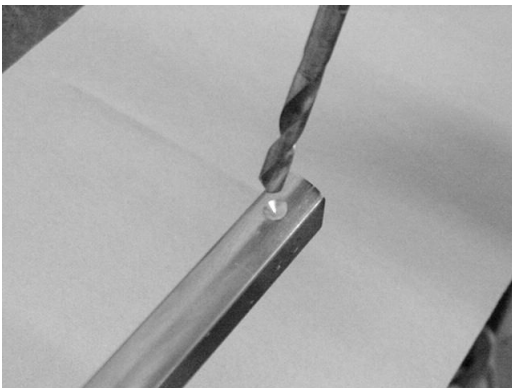


Rack & Pinion Cradle System Universal Joint System.

- 1) Install support-bearing mount onto the rear 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.



- 2) 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.
- 3) Install your shaft kit and snug each set screw so that it will leave a mark in the shafts.
- 4) Remove shaft and dimple each setscrew mark using a $\frac{1}{4}$ " drill bit. (As shown below.)



Continued on Next Page

Rack & Pinion Cradle System

- 5) 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.

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